
THE INFLUENCES OF ENGAGEMENT ON THE PERCEPTION OF QUALITY MANAGEMENT SYSTEMS IN THE OIL AND GAS INDUSTRY

**Nathalia Gomes da Silva
Neves**

nathaliag.dasilvaneves@gmail.com
Fluminense Federal University –
UFF, Niterói, RJ, Brazil.

**Denise Medeiros Ribeiro
Salles**

denisesalles@id.uff.br
Fluminense Federal University –
UFF, Niterói, RJ, Brazil.

ABSTRACT

Companies are increasingly involved in a continuous improvement system, highlighting the need to guarantee their customers the quality of the products and services offered. To this end, they seek to implement significant changes to prove it. Organizations are investing daily in Quality Management Systems to achieve greater organizational control, attract new customers, and improve their performance and relationships with suppliers. This study aims to verify the influence of people's engagement on the perception of organizational management systems, according to the Job-Demands Resources model, in companies in the oil and gas segment that have opted to have their management systems certified by the API (American Petroleum Institute). The research used a triangulation of data collection and analysis techniques to provide an attentive view of subjective aspects, focusing on observing the involvement of managers and employees, the adoption of good practices, and critical success factors for implementing the Quality Management System (QMS). The field research carried out in three companies in Macaé, Rio de Janeiro State, showed that some problems occurred during the QMS implementation, such as low employee involvement, the need for constant support and feedback through continuous communications, and difficulty concentrating and prioritizing activities on the part of employees, as well as the need for training and a larger workforce; there were also reports of resistance to change. However, the certification implementation and employee engagement positively impacted all the organizations interviewed, contributing to a broad internal improvement, increased customer satisfaction, a perception of a good reputation, efficient supplier relations, and greater process control and productivity. By analyzing the engagement and consequences of certifications, this study aims to contribute to understanding the relevance of these processes, providing a broader view of the perception of organizational management systems in the oil and gas industry.

Keywords: Engagement; Perception; Management Systems.

INTRODUCTION

In the current scenario of vehement changes in an increasingly competitive market, companies are inserted into a continuous adaptation and improvement system, seeking to respond to the challenges that arise to maintain a prolific position in this area. According to Carpinetti (2012), to conquer markets and remain competitive, it is necessary to respond positively to customer requirements in terms of products and services. Therefore, quality management has become an even more relevant part of organizations' competitive strategy.

Various authors have addressed the concept of quality, and it is a challenge to define it. Chiarini (2020) states that there is no global understanding and that different descriptions emerge from different circumstances. Yang (2020) believes that quality is easily recognized but difficult to define.

Chen, Lee, and Wang (2020) state that it is necessary to understand this phenomenon, as quality is a business management tool of great importance in the competitive and turbulent market since it has the ability to affect organizations' and all individuals' lives positively. It is worth noting that its conceptualization is not the mandatory factor but rather its understanding by the company's employees, regardless of their field of activity (Ali, Hilman, and Goronduste, 2020). Thus, it is now essential to comprehend quality and total quality management. In this way, the market demands that the products and services presented have excellence; thus, it seeks to implement significant transformations to prove it. Intending to monitor and control the processes in question, as well as attracting potential customers, boosting performance, and building relationships with external providers, the Quality Management System is a topic vehemently inserted in organizations.

In addition to certification and the QMS as a requirement sought by organizations, the quality culture must be disseminated with the participation of the leadership and the engagement of stakeholders, allowing for internal order. Otherwise, deviations and difficulties in implementing this logic are noted. In view of this, this article aims to verify the influence of people's engagement on the perception of organizational management systems in compliance with API Spec Q1 and API Spec Q2 standards, analyzing their impact on the dissemination and consolidation of quality culture in organizations in the oil and gas industry.

THEORETICAL BACKGROUND

Quality management systems

According to the Michaelis dictionary, one of the definitions of a system is the interrelationship of units, parts, and others responsible for the functioning of an organized structure. The term management is defined as the act of managing or administering. According to ISO 9000:2015, "the quality of products and services includes not only their intended function and performance but also their perceived value and benefit to customers." This standard presents two other important concepts for understanding the subject presented in this paper. One is conformity: "meeting a requirement," and the second is process: "a set of interrelated or interactive activities that transform inputs into outputs."

Based on the concepts mentioned above, it is understood that an organization has various processes that interrelate to transform customer needs into compliant services, and quality management systems are processes that interrelate to meet specified requirements aimed at increasing the satisfaction of the organization's stakeholders.

The CSA (Canadian Standards Association) developed the CSA Z299 series of standards in the 1970s and published them in 1985. This pioneering series has five standards, and CSA Z 299-0 is a guide for selecting and implementing the standards of the quality assurance program of the series. The other four standards aim at meeting the Quality Assurance Program requirements in different business categories.

In 1986, the American Petroleum Institute released API Spec Q1 for quality management for manufacturing organizations in the oil and gas industry. ISO launched the 9000 series in 1997, where ISO 9001 was aimed at quality assurance in design and development, production, installation, and technical assistance, focusing on creating new products. ISO 9002 had basically the same scope as the previous one, except for the creation of new products, while ISO 9003 was related to final product inspection.

Revisions were performed in 1994, 2000, 2005, 2008, and 2015, and from the 2000 version onwards, the requirements were unified into a standard applicable to all business sectors, ISO 9001. As noted by Martínez-Costa et al. (2009), during the updates, the ISO standards have incorporated practices and concepts related to To-

tal Quality Management (TQM) regarding the comprehensive management perspective of organizations and the focus on customer satisfaction. To manage these processes and facilitate the provision of products and services with perceived quality, organizations have implemented quality management systems, usually based on the ISO 9001, API Spec Q1, or API Spec Q2 standards, which determine requirements for quality management systems and, through periodic external audits, verify that these requirements have been met.

Thus, not only the technical but also the behavioral part involved in the processing and results of quality management deserves special attention due to the consequences for productivity of the perception of those involved in this management system.

Engagement and the JD-R model

Bakker, Demerouti, and Sanz-Vergel (2014) consider the understanding of engagement through the glimpse of individual characteristics, especially vigor, dedication, and absorption, as proposed by the JD-R model. Vigor is defined as the demonstration of energy and mental resilience during work; dedication, in turn, is defined as a sense of significance, enthusiasm, pride, and inspiration during the performance of work; and absorption is defined as the ability to be totally absorbed by work, according to Schaufeli et al. (2003).

The JD-R model considers that engagement is preceded by work resources (physical, psychological, social, and organizational aspects) and work demands. According to this understanding, work resources and demands affect engagement, either positively or negatively. Work resources can contribute to employees achieving goals, and this contribution can boost work engagement and, consequently, work performance. Work resources are factors that help individuals cope with work demands. Examples of resources can be mentioned as social and organizational support, professional development opportunities, and autonomy (Bakker, Demerouti, and Sanz-Vergel, 2014). For example, work demands are related to high workloads, role ambiguity, job variety, support from supervision and coworkers, feedback on work performed, among others, according to Bakker (2011).

Okon (2016) concluded that employees who are engaged in their activities are emotionally, physically, and cognitively connected to their work, resulting in tasks being carried out with great enthusiasm. The study of engagement at work has therefore been gaining ground due to its potential impact on employee well-being and performance in carrying out activities directly related to

organizational results.

The literature still lacks studies that clearly demonstrate the impact of personal resources (e.g., emotional competencies) and work resources (e.g., social and organizational support) on employee work engagement. Kim, Han, and Park (2019) carried out one of the first studies in a Korean organization, with a total of 571 complete responses from the organization's employees, to compare the mediating power of the constructs of work engagement with personal resources and work resources on employee outcomes, thus adding personal resources to their study. Borst, Kruijen, and Lako (2019), in turn, expanded the application of the JD-R model in public administration by also integrating the concept of positive psychology. Given the nature of the study in public administration, we considered the concept of red tape, which is defined as bureaucratic material that is not managed by public employees, thus generating one of the work stressors, which are those excessive or undesirable work demands, circumstances, and/or restrictions that inhibit the employee's involvement.

As you can see, the JD-R model has been adapted by scholars to assess other constructs, such as personal resources, and to consider specific work realities, such as the example of public administration.

Total Quality Management (TQM)

TQM is seen as a change in the culture of an organization and the way people behave at work. Organizational culture is a significant driver of variation in TQM implementation programs that can inhibit or enable the success of such a program. TQM's success as an organizational change will depend on the organizational culture. TQM's successful implementation requires a significant change in the organization's values, attitudes, and culture. TQM programs are more likely to succeed if the prevailing organizational culture is compatible with the basic values and assumptions proposed by the TQM discipline (Alofan, Chen, and Tan, 2020).

Andrade, Mendes, and Lourenço (2017) believe that much is said about TQM and employee engagement, but little attention is paid to the individual-level determinants of employee engagement. Thus, one of the purposes of the authors' study was to analyze the potential differences in the perception of empowerment among employees in leadership roles between TQM-based companies and non-TQM-based companies. The authors showed statistically significant differences in some dimensions of empowerment between the two groups of companies, but no previous study has investigated this

issue. As a result, this research has brought new insights into the TQM framework, especially concerning employee behavior (Andrade, Mendes, and Lourenço, 2017).

Krajcsák (2018) has created a theoretical framework that shows how the specialties of organizational culture relate to the successful implementation of quality management systems (QMS). In addition, the dependent variables of employee self-assessment and some dimensions of commitment are also analyzed. Organizations that had unsuccessfully implemented ISO 9000, TQM, and Six Sigma were studied. It states that the characteristics of adhocracy determine self-efficacy and professional commitment; through high levels of these variables, Six Sigma can be suggested for adhocracies.

Bennis and Warren (1985) developed the concept of adhocracy, which is currently used as an antonym for bureaucracy. It is an administrative and business model that simplifies and streamlines processes and helps develop an agile culture adaptable to the market's needs and demands. This term originated in World War II, when armies organized ad-hoc teams to carry out temporary missions to simplify processes. Nowadays, it is used in the corporate sphere to provide agility and flexibility within organizations (Bennis, Warren, 1985).

Krajcsák (2018) argues that clan culture is characterized by a high level of affective commitment and self-esteem, which support TQM along with the internal focus dimension of culture. Market culture is characterized by a high level of continuity commitment and neuroticism, which support ISO 9000 standards with the control dimension of culture. According to Bozionelos (2004), neuroticism is related to negative emotions involving anxiety, excessive worry, irritability, and pessimism. In this sense, individuals with this type of behavior are less likely to develop positive attitudes towards their work and have difficulties controlling their impulses (Costa and McCrae, 1992).

Oluwafemi and Okon (2018) set out to investigate the conceptual and empirical link between TQM practices, job satisfaction, and employee engagement. The study was designed with 300 participants, 190 of whom were employees of a multinational food and beverage company, who answered a questionnaire. Regression and correlation analysis showed a significant and positive relationship between the dimensions of TQM practices (leadership and management support, employee participation, training, reward and recognition, and customer focus), job satisfaction, and employee engagement at work. It was also noted that job satisfaction and TQM

practices build employee engagement, as predicted jointly and independently.

He et al. (2019) aimed to investigate the relationships between structural empowerment (SE), role conflict (RC), person-job fit (PJF), satisfaction with Six Sigma use (SSSU), and employees' continuous use intention (CUI) of Six Sigma. Structural equation modeling of the Expectancy-Confirmation Theory (ECT) was used to analyze the degree of relationship between the constructs. This modeling was conducted with AMOS 21.0 based on raw data collected from Chinese companies implementing Six Sigma. The results showed that employee satisfaction is essential to stimulating their work in the context of mandatory implementation.

In view of this theoretical framework that encompasses TQM practices, job satisfaction, and employee engagement, this study seeks to uncover the perceptions linked to organizational management systems and their effects on the consolidation of a quality culture, considering the mental process and context of the interviewees.

METHOD

The data was processed and analyzed using semantic interpretation of the results as well as content analysis in its qualitative form, considering a representative selection of Global Corporate Solutions clients who use the API Spec Q1 and/or API Spec Q2 standards as references for their quality management systems. According to Miles and Huberman (1994), there is a characteristic of "undeniability" in qualitative studies due to the more concrete and vivid nature of words, which become more convincing to the reader when compared to numbers.

Data was collected through semi-structured interviews, whose questions were based on theoretical categories of engagement, leadership, and TQM and took place over two months. The interviews were conducted by videoconference due to the COVID-19 pandemic during the collection period. In total, sixteen subjects were interviewed, represented as follows: seven subjects representing the leaders of three different organizations in the oil and gas industry—one from each company and three managers from the same company—and nine subordinates aimed at verifying the impact of engagement on the perception of quality (or integrated) management systems.

To apply the research in question, we used the Job Demands-Resources (JD-R) work engagement model in its

extended version by Bakker, Demerouti, and Sanz-Vergel (2014), as referenced by Santos et al. (2019). In line with this understanding, we sought, through interviews, a specific discursive structure that would help us observe the influence of people’s engagement on the perception of organizational management systems and their effects on the consolidation of a quality culture. The interviews were conducted with leaders and managers of organizations in the oil and gas sector and were recorded with the individuals’ consent, considering the concept of thematic analysis described by Bardin (2011, p. 135): “as the nuclei of meaning that make up the communication and whose presence, or frequency of appearance, can mean something for the chosen analytical objective.”

Specifying Mayring’s (1983) and Flick’s (2006) criteria, a content analysis summary was developed, paraphrasing the material, gathering similar paraphrases, and eliminating less relevant ones. Content analysis was also conducted, introducing contextual material into the analysis and clarifying contradictory or ambiguous content. This

stage is carried out by including dictionary terminology, contextual information, and theoretical propositions, illustrating the material under analysis. Once this stage has been completed, a clarifying paraphrase is formulated and tested.

Finally, as explained above, Bardin’s (2011) analysis of enunciation was considered, showing that discourse is not a given, consolidated result of attitudes and opinions but is surrounded by a process of elaboration, which includes contradictions and inconsistencies. Thus, the mechanism chosen to obtain structural data is formed by a spontaneous discourse that encompasses the personal and professional dynamics of the interviewee, showing their mental and affective processes holistically (Bardin, 2011, p. 96). With a meticulous conceptual analysis, the aim was to observe the implementation of the quality management system in oil and gas companies, taking into account the study’s guiding categories, such as absorption, resources and work demands, dedication, and vigor, as shown in **Chart 1** below.

Chart 1. Categories from the theoretical review

Theme	Categories	Three most used expressions
Engagement according to the JD-R model	Absorption	Difficulty, interruption, other demands
Engagement according to the JD-R model	Resources and work demands	Balance, need for more manpower, commitment
Engagement according to the JD-R model	Dedication	Need for training, motivation by the manager, mutual learning
Engagement according to the JD-R model	Vigor	Differentiated effort, search for training, system specificity
Transformational leadership	Encouragement	Need for constant communication, feedback, involvement
Transformational leadership	Values	Trust, commitment, need for follow-up
Transformational leadership	Cooperation	Incentives, need for meetings, collection
Quality management systems from the perspective of TQM and API Spec Q1 and API Spec Q2 standards	Continuous improvement	Efficiency, billing, productivity
Quality management systems from the perspective of TQM and API Spec Q1 and API Spec Q2 standards	Performance	Commitment, consistency, awareness
Quality management systems from the perspective of TQM and API Spec Q1 and API Spec Q2 standards	Impact on performance	Improvement, growing evolution

Chart 2. Example of a collection of the main points raised in one of the interviews

Key points	Developments
Average energy due to repetition	Encouragement of teamwork, but practical difficulties due to individualism
Little time dedicated due to focus on other productive activities	Learning with leadership in terms of clarity, honesty, and self-confidence
Average concentration due to constant external interruption	Difficulty in continuous improvement due to deadlocks in the integration of the production, warehouse, and engineering areas
The balance between resources and demand volume could be improved with more information and better updating and control	Improved performance due to a clear system with detailed procedures
Encouragement of leadership, especially on the eve of audits, with abrupt changes	Improved performance due to information, but not uniformly; some outputs remain the same because details do not reach everyone equally

Engagement according to the JD-R model. Category: absorption, resources, and work demands

Bearing in mind that qualitative analysis is based on “the fact that the inference, whenever it is made, is based on the presence of the index (theme, word, character, etc.), and not on the frequency of its appearance in each individual communication” (Bardin, 2011, p. 146), a first point to be emphasized in the sample set is that in all the interviews, the individuals unanimously pointed out that they have difficulty concentrating when using the QMS. This information is of great value because it shows that the system demands focus and attention to detail in the procedures, and, thus, the sixteen respondents pointed out that sometimes elements beyond their control hinder their concentration. In this way, the difficulty in concentrating mentioned may be directly related to the prioritization of other demands in addition to the quality management system, which, by demanding more

focus on its implementation, causes those involved to postpone its development, constantly leaving the QMS in the background. Considering this data, it is essential that, in future certifications, the companies responsible create strategies and mechanisms that better integrate employees in the management of this system, making them prioritize and focus on the moment of the QMS implementation.

Oluwafemi and Okon (2018) clarify through empirical data that, with regard to concentration and absorption of content related to the quality management system, both the emotional state of those analyzed and the work environment, as well as encouragement to consolidate learning, influence TQM implementation and work involvement. The authors contribute to the analysis in question by pointing out that quality must be positioned at the top of the agenda for business organizations since quality allows the differentiation between excellent and regular processes, which is why the absorption category must be improved, creating an environment conducive to continuous and priority use, not something secondary or less of an emergency.

In addition, it may be up to the leadership to use instruments that allow for more effective engagement and for employees to dedicate time exclusively to these activities rather than seeing them as residual tasks. This could reduce the diversity of employee assignments, “relieving” possible bottlenecks. In this case, it can be seen that the high workload and difficulty focusing on that specific activity can lead to emotional exhaustion and, consequently, lower professional performance. On the other hand, when employees feel motivated by their managers and experience strong social support, mutual trust, and interpersonal learning, their health and performance tend to reach high levels.

In general, the proportion of resources and volume of demands is positive among the respondents and could be improved, either by hiring more manpower or through constant communication, collection, and support mechanisms on the part of the leadership and the team more broadly.

Parand, Dopson, and Vincent (2013) demonstrate the need to motivate staff to “create an appetite” and “liberate people’s thinking,” integrating these individuals into the system’s *modus operandi*. One of the measures pointed out to stimulate staff and maintain a balance between resources and work demands was the creation of leadership rounds and constant meetings.

Engagement according to the JD-R model. Categories: dedication and vigor

As pointed out in the previous section, although most interviewees said they spent much time on quality management system activities, the causes and consequences varied within the sample. One element that should be highlighted is that commitment and dedication to work are relevant predictors of future customer satisfaction and the organization's performance and should be considered because they deeply impact the company's results. Once the adaptation period has passed, with clarification and information about the system, employee engagement and motivation become a consequence once they see the benefits of implementing the system.

The work environment and the possibility for employees to express their opinions while being actively listened to by their respective managers consequently influence their commitment and dedication to their professional tasks (Kahn, 1990, 1992).

Andrade, Mendes, and Lourenço (2017) show that training practices and empowerment of employees by leadership greatly contribute to employees focusing more on TQM practice application and interpretation, as well as business strategy. In the field of quality, aiming to satisfy customer requirements, the strength of employees and managers is essential, enabling individuals with different roles in the organization to contribute to the results so that processes remain in harmony.

A major difficulty exposed in the interviews was the consolidation of a quality culture linked to the awareness that conducting the change process requires the behavioral management of employees in the direction of change. In general, change is carried out by neglecting the psychological aspects of the company's employees, especially those not involved in making the decision and planning the change. Therefore, commitment in the workplace should be understood as a set of factors linked to a positive, work-oriented state of mind determined by vigor, dedication, and absorption.

The role of encouragement and leadership

It has been shown that the relationship between leaders and subordinates should be closer in terms of the QMS so that they can share resource needs and training,

thus reducing wear and tear in the quality management application. According to Oluwafemi and Okon (2018), the leader's commitment is crucial in the employee management process, as their contribution can bring about significant change in the workplace. At the same time, employee involvement is essential to the organization's daily operations since their participation can lead to self-confidence among others, making team members feel dedicated to the organization.

Thus, it was observed that the leadership must be vehemently involved in directing and ordering the system's goals and improvements, generating trust and effort so the entire organization works towards this goal. This encouragement must be constant, not just on the eve of audits, a period of abrupt change, and little listening to employees.

The adoption of a total quality management program impacts organizational results and the work behavior of employees. For full and efficient implementation, the leader must be committed to managing employees and bringing about a significant change in the workplace. The difficulty of engagement and performance and the commitment of much effort to perform activities within the quality management scope is pertinent information to be investigated since it is related to the hierarchy adopted in the company, in which not all sectors have defined leaders, and the lack of demand for management skills or the collection only before audits can lead this reality to reverberate.

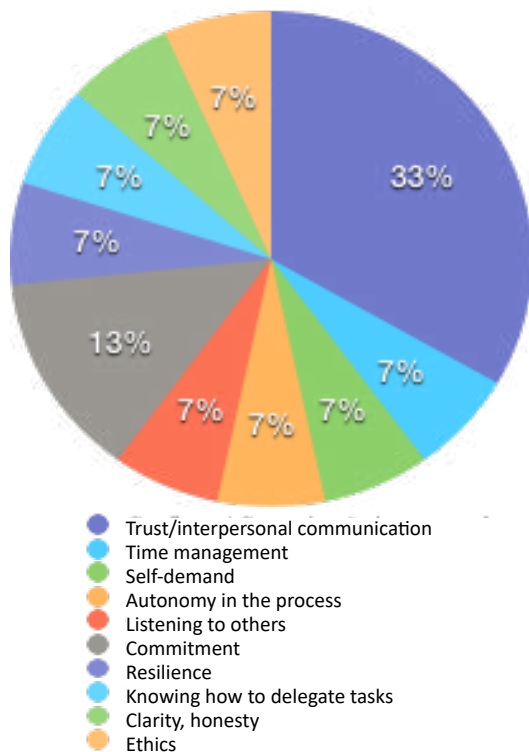
According to the interviewees, employees would consider far fewer "negative" or non-replicable aspects of leaders when compared to the positive aspects of learning.

Despite this perception of the managers' need for greater pressure, most respondents summed up their learning experience with leadership as positive and with the characteristics described in **Table 7**:

Chart 3. Topic: Transformational leadership. Category: values

Values learned from leadership	Answers
Trust/interpersonal communication	5
Time management	1
Self-demand	1
Autonomy in the process	1
Listening to others	1
Commitment	2
Resilience	1
Knowing how to delegate tasks	1
Clarity, honesty	1
Ethics	1

Graph 1. Representative of the values learned from leadership



As such, the non-replicable features would be constant demands, pressure, disagreement over micromanagement, and a lack of positioning at key moments. The respondents broadly stressed that the leaders' behaviors generate resilience, greater commitment, and trust in them. Moreover, the values highlighted as positive and learned from managers were those of mutual trust, firm leadership, and believing in their staff's work and competence, demonstrating the essential role that leadership plays in this area.

According to Carpinetti (2012), managers must take on the commitment and responsibility for defining the quality policy and objectives, as well as the critical analysis for the system's continuous improvement. Therefore, managers will only be able to influence their employees to incorporate customer focus and continuous QMS improvement into the organizational culture through training, demanding results, constant presence, and appropriate working methods. With the most recurrent words in the interviews, such as constancy, team, commitment, safety, and meetings, it can be inferred that the speeches of the interviewed leaders showed a perception of the quality management system linked to continuity and persistence in procedures that map and organize without wasting managers' time in re-evaluating the rules to correct the assigned tasks. Proof of this can be seen in the audits with positive results and excellent performance in terms of customer service. Illustrating this understanding, manager 11 says that "leadership involves learning to always do the right thing, regardless of the circumstances, context, or collective error. It is important to maintain ethics, commitment, and respect for people and the environment."

Parand, Dopson, and Vincent (2013) showed that managers recognize their roles through five dimensions: motivating the team, incorporating the elements of the program, providing resources, monitoring progress, and committing to results. Although the managers themselves recognize these elements, the authors stress the need for further monitoring in managers' decision-making, along with constant communication through leadership rounds and reviewing the program's progress and its results.

The management's feedback at meetings is highlighted as a powerful influence on team involvement and accountability, as staff is influenced by the managers' positive or negative responses. It is worth noting that the accountability generated in the constant meetings occurs through the appraisal of the objectives achieved and the actions taken, and the managers' main intention is to monitor the process and its indicators to familiarize themselves with the program and control progress and challenges.

Most respondents point out that the improvement, although slight, is noticeable. What is required is a more austere approach, reducing the gap between theory and practice, with a joint dedication to going beyond mandatory forms and neglected rules.

Procedures are becoming increasingly "tied down" and consolidated with reference within the framework of the company and the team that operates them, giving

greater control of processes and equipment and allowing for greater instruction and direction. The continuity of improvement was also described in the flow of information, the treatment of some non-conformities, and quality engagement.

Furthermore, it can be seen that certifications and the QMS are essential for companies; however, during the course of the interviews, it was noted that the respondents initially attributed this to the fact that it was a guide for them and, during conversation, they attributed this importance to the benefits involved, such as improved quality in customer relations, the corporation's reputation, enhanced internal communication, increased sales, demands from suppliers, and top management initiative.

The QMS implementation was seen as a fruitful investment for the interviewees, and the companies, with effective planning, would be able to achieve the expected goals. Despite the interviewees' different work fields, the answers were very similar, and it could not be said that the samples observed and the answers given depended on the field in which each person works. Therefore, the organizational culture directly affects the success of the quality system implementation, given that the joint awareness of the team is a determining factor within companies for the Quality Management System's success.

CONCLUSION

In terms of personal resources, the expanded JD-R model used in this study showed that they tend to increase an individual's well-being and self-assessment compared to their work. In addition, the possible interrelationship and correlation of personal and work resources that need future investigation were pointed out.

Furthermore, the study in question showed that satisfaction with work-related resources, such as autonomy, support from colleagues, and work content, tended to increase employee engagement more than other work-related resources, such as supervisory support, development opportunities, and performance measurements. Therefore, encouraging employee engagement and integration into the quality management system can be impacted by factors in the work environment along with the personality traits of the team and leader, confirming the understanding that engagement can encompass a deep mental state.

It must be noted that the quality management system involves processes requiring a great deal of dedication and commitment from the entire organization since it in-

volves specific and technical procedures and also strict supervision and monitoring to control the processes. Engagement promotes a sense of belonging, reducing the desire to leave the organization.

The difficulties in using the QMS and the certifications observed in the interviews consist of adapting and becoming used to the procedures, requiring dedication and vigor until this process gets off the ground and, in the long term, these activities become routine and widely integrated by the organization's teams. In addition, it is important to focus on the involvement of the entire organization in the QMS implementation, the need for managers' leadership, accountability, and commitment, as well as strong and constant leadership, willingness to give feedback, and holding meetings.

As for the benefits mentioned in the interviews, it is worth mentioning customer satisfaction, with a reduction in the number of complaints, organizational control, access to new markets, improved reputation, structuring of the company's processes, better communication between the various departments, and a global vision of the entire organization. In addition, the bond with employees is growing and deepening as they become increasingly focused on their tasks, avoiding making mistakes, and striving to propose solutions since they understand that a failure affects the work of colleagues and the organization's results, having an understanding of their duties and functions and how these are intrinsically linked to the rest of the company's functions.

REFERENCES

- Ali, G.A., Hilman, H., & Gorondutse, A. H. (2020), "Effect of entrepreneurial orientation, market orientation and total quality management on performance: Evidence from Saudi SMEs", *Benchmarking: an International Journal*, Vol. 27, No. 4, pp. 1503-1531.
- Andrade, J., Mendes, L., & Lourenço, L. (2017), "Perceived psychological empowerment and total quality management-based quality management systems: an exploratory research", *Total Quality Management & Business Excellence*, Vol. 28, No. 1-2, pp. 76-87.
- Bardin, L. (2011), *Análise de Conteúdo*, ed. rev. e ampl., Edições 70, São Paulo.
- Bakker, A.B., Demerouti, E., & Sanz-Vergel, A. I. (2014), "Burnout and work engagement: The JD-R approach", *Annual Review of Organizational Psychology and Organizational Behavior*, Vol. 1, No. 1, pp. 389-411.
- Bakker, A.B. (2011), "An evidence-based model of work engagement", *Current Directions in Psychological Sci-*

- ence, Vol. 20, No. 4, 265-269.
- Bennis, W., & Nanus, B. (1985), *The strategies for taking charge*, Harper & Row, Leaders, New York.
- Borst, R.T., Kruyen, P.M., & Lako, C.J. (2019), "Exploring the job demands-resources model of work engagement in government: Bringing in a psychological perspective", *Review of Public Personnel Administration*, Vol. 39, No. 3, pp. 372-397.
- Bozionelos, N. (2004), "The big five of personality and work involvement", *Journal of Managerial Psychology*, Vol. 19, No. 1, pp. 69-81.
- Carpinetti, L.C.R. (2012), *Gestão da qualidade*, Atlas, São Paulo.
- Chen, R., Lee, Y.D., & Wang, C.H. (2020), "Total quality management and sustainable competitive advantage: serial mediation of transformational leadership and executive ability", *Total Quality Management & Business Excellence*, Vol. 31, No. 5-6, pp. 451-468.
- Chiarini, A. (2020), "Industry 4.0, quality management and TQM world. A systematic literature review and a proposed agenda for further research", *The TQM Journal*, Vol. 32, No. 4.
- Costa Júnior, P.T., & McCrae, R.R. (2008), *Revised NEO personality inventory (NEO-PI-R) and NEO five-factor inventory (NEO-FFI) professional manual*, Psychological Assessment Resources, Odessa, Florida.
- Flick, U. (2006), *An Introduction to Qualitative Research*, 3 ed, Editora Sage, Califórnia, EUA.
- Foster, G.L., Kenward, K., Hines, S., & Joshi, M.S. (2017), "The relationship of engagement in improvement practices to outcome measures in large-scale quality improvement initiatives", *American Journal of Medical Quality*, Vol. 32, No. 4, pp. 361-368.
- Gray, D.E. (2012), *Pesquisa no mundo real*, 2. ed., Penso, Porto Alegre.
- He, Z., Wang, W., Zhang, M., Deng, Y., Fu, W., & Chau, K. Y. (2019), "Motivated for continuance? Associations between structural empowerment, role conflict, person-job fit, and satisfaction in Six Sigma programs", *Total Quality Management & Business Excellence*, Vol. 30, sup1, S255-S273.
- Jones, B., Vaux, E., & Olsson-Brown, A. (2019)", How to get started in quality improvement", *BMJ*, Vol. 364.
- Krajcsak, Z. (2018), "Successes of quality management systems through self-evaluation and commitment in different organizational cultures: A case study", *Management Decision*, Vol. 56, No. 7, pp. 1467-1484.
- Kahn, W.A. (1992), "Psychological conditions of personal engagement and disengagement at work", *Academy of Management Journal*, Vol. 33, No. 4, pp. 692-724.
- Kim, W., Han, S.J., & Park, J. (2019), "Is the role of work engagement essential to employee performance or 'nice to have'?", *Sustainability*, Vol. 11, No. 4, p. 1050.
- Martínez-Costa, M., Choi, T.Y., Martínez, J.A., & Martínez-Lorente, A.R. (2009), "ISO 9000/1994, ISO 9001/2000 and TQM: The performance debate revisited", *Journal of Operations Management*, Vol. 27, No. 6, pp. 495-511.
- Mayring, P. (1983), *Qualitative Inhaltsanalyse*, 7a ed., Editora Beltz, Weinheim Basel.
- Okon, E.O. (2016), "Business development in Nasarawa State: Effect of poor sanitation and waste management system", *International Journal of Economics, Business and Management Studies*, Vol. 3, No. 1, pp. 36-46.
- Oluwafemi, O. J., & Okon, S.E. (2018), "The nexus between total quality management, job satisfaction and employee work engagement in the food and beverage multinational company in Nigeria", *Organizations and Markets in Emerging Economies*, Vol. 9, No. 2, pp. 251-271.
- Parand, A., Dopson, S., & Vincent, C. (2013), "The role of chief executive officers in a quality improvement initiative: a qualitative study", *BMJ Open*, Vol. 3, No. 1, p. e001731.
- Soares, S.V., Picolli, I R.A., & Casagrande, J.L. (2018), "Pesquisa bibliográfica, pesquisa bibliométrica, artigo de revisão e ensaio teórico em administração e contabilidade", *Administração: ensino e pesquisa*, Vol. 19, No. 2, pp. 308-339.
- Vergara, S.C. (2000), *Projetos e relatórios de pesquisa*, Atlas, São Paulo.
- Yang, C.C. (2020), "The effectiveness analysis of the practices in five quality management stages for SMEs", *Total Quality Management & Business Excellence*, Vol. 31, No. 9-10, pp. 955-977.

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