Analysis of the quality of life in Brazilian offshore companies

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Abstract — The offshore labor regime is very common in companies operating in the Campos Basin, due to the large number of companies that operate in the petroleum exploration and production processes, including companies that support these operations, which also require the professionals to work on board. The life quality is directly linked to the results, because it interferes in behavioral aspects important for individual and collective productivity. This research aimed to study and analyze the aspects of this work regime that has peculiar characteristics, and the relation with the quality of life of the professionals that work on board, so that positive and negative points could be identified, and to seek possible improvements. The methodology used to develop the study involved an exploratory research in consonance with the bibliographical study. As an instrument for data collection, a questionnaire with closed questions was used, aimed at professionals working on board. This issue is relevant for organizations, since the life quality affects the physical and psychological condition and also, the satisfaction of professionals, interfering in the performance and consequently in the results.

Keywords — Quality, life at offshore.

I. INTRODUCTION

The theme “life quality” (LQ) has been gaining space and repercussion in society. Studies in this area aim to facilitate and help organizations find ways to meet the needs of the worker in developing their activities, after all, people are more productive as they are more satisfied (RAQUEL E SALOMÃO, 2011). Soto (2005) conceptualizes LQ such as the dynamic and contingent management of physical, technological and socio-psychological factors that affect culture and renew the organizational climate, reflecting on worker well-being and corporate productivity. As organizations and people constantly change, this is a subject that must be dealt with in a dynamic and contingent manner, as it depends on the reality of each organization and the context in which it is inserted. In addition, it is necessary to be attentive to the physical, sociological and psychological factors because all these interfere in the satisfaction of the individuals.

The offshore work regime has its own characteristics, different from the other work regimes, and have a different impact on the lives of professionals who are in this condition, confined for a long period of time, on the high seas, away from society, and in a space, so this topic deserves special attention from organizations.

The petroleum sector is becoming more prominent in the Brazilian scenario, tending to increase with the evolution...
of deepwater extraction technology. In this way, we will increasingly have professionals working on platforms and ships.

The objective of this work is to analyze the quality of life in confinement environments, identifying what is already being applied by the organizations and what needs to be improved. The life quality is reflected in personal, social and family life, and also has an impact on employee productivity and consequently on the performance of an organization, and therefore is a subject of great relevance for organizations.

As for the approach, the research can be qualitative or quantitative. A qualitative research is not turned to numbers, but to aspects that can not be quantified. For Santos (2014), qualitative research works with the universe of meanings, motives, aspirations, beliefs, values and attitudes, which corresponds to a deeper space of relationships, processes and phenomena that can not be reduced to the operationalization of variables.

In a quantitative survey the data can be quantified. This type of research uses mathematical language to describe the causes of a phenomenon. For Gil (2008), quantitative research is used to quantify both the collection and treatment of information using statistical techniques, aiming at results that avoid possible distortions of analysis and interpretation, allowing a greater margin of safety.

II. LIFE QUALITY

Chiavenato (2002), presents the three phases by which organizations have passed. The first phase, Classical Industrial Age (1900 at 1950), was focused on industrial relations, with centralization, focus on traditions, static and predictable, where people were considered factors of production, subject to strict rules and regulations. The second phase, Era of Neoclassical Industrialization (1950 at 1990), emphasizes departmentalization, focus on the present, and intensification of change, considering people as organizational resources that need to be managed. The third phase, Information Age (after 1990), is flexible and totally decentralized, focused on change, considers people to be proactive human beings with intelligence.

After several researches and experiments, several theories have emerged, such as Lewin's Field Theory and Maslow's Hierarchy of Needs, showing that man is motivated not only by economic stimuli but also by social stimuli, symbolic and not materials. "The life quality (LQ) represents the degree to which the members of the organization are able to meet their personal needs through their experiences in the organization " (CHIAVENATO, 2009, p. 59). LQ is the democratization of the work environment and satisfaction of the worker, humanizing the labor relations in the organization. It is a set of actions that involves diagnosis and implementation of improvements in and out of work aimed at providing full conditions of human development. Several sciences contribute to the development of this theme, such as health, ecology, ergonomics, psychology, sociology, economics, administration and engineering, among others.

Life quality involves good salaries, benefits, profit sharing, but goes far beyond this, including respect for human beings, health, moral, physical and psychological integrity, the promotion of training with the purpose of developing employees, praise, demonstrations of trust, etc., because in fact, what the employee wants is to be involved in the work, to feel valued and to be recognized. According to Wagner and Hollenbeck (1999), people do not just want to fulfill a routine of tasks and duties. They want to be part of the business.

The improvement of the quality of life in the work leads to the adaptation of the person to the work, being also necessary, a continuous adaptation of the work to the person. According to the scribe Chiavenato (2010, p.17) "When adaptations are made - the person's adequacy to work and the work's adequacy to the person - the person-work relationship becomes more productive and happier."

III. SATISFACTION AND MOTIVATION

Satisfaction and motivation are two concepts that are interconnected, since satisfaction leads individuals to feel motivated. "Satisfaction at work is a pleasant feeling that results from the perception that our work accomplishes or allows the realization of important values relative to the work itself", (WAGNER; HOLLENBECK, 1999, p.119). There are three key components to satisfaction: values, importance, and perception. Values are "subjective requirements," existing in the mind of the human being, is what "a person wishes to obtain consciously or unconsciously." People also differ in the degree of importance they attach to values, what is most important to one individual may not be so important to another. And perception is how we see the current situation in relation to our values (MARÇAL; MELO; NARDI, 2013).

A study conducted in 1930 by Professor Elton Mayo, known as the "Hawthorne Effect," led to the conclusion that people's performance is much more related to behavioral or emotional factors than to working methods (MARÇAL; MELO; NARDI, 2013). Marras (2005, p.33) says that "each develops distinct motivational forces at different times and that these forces directly affect the way they view work and their own lives."

Hunt and Osborn (2002), believe that regardless of theories, what should be kept in mind is that they are people and their behavior is not always predictable.
Intrinsically or extrinsically, true motivation is only effectively achieved when employees are able to fulfill their needs and life goals, both within and outside the company, motivation is an internal force responsible for the level, direction and persistence of the effort expended.

In the following figure, Hunt and Osborn (2002) observe that performance and job satisfaction are isolated but potentially interdependent results.

If the employee does not find the means at work to meet his expectations and achieve his goals, he will feel that he is being exploited, not in a relationship of exchange. The balance between work and the person has positive consequences for both the organization and the employee. Today, more than ever, organizational effectiveness depends on people working in teams (MARÇAL; MELO; NARDI, 2013). In this way, the motivation for the work must be analyzed at the individual, group, sectoral and organizational levels, thus a whole, comprising the micro, meso and macro levels.

**IV. STRESS AT WORK**

Hans Selye in 1926 used the term occupational stress for the first time, defining it as "a set of reactions that the organism develops by being subjected to a situation that requires effort to adapt." Occupational stress refers to workplace stimuli that require responses from the worker and that exceed their ability to cope with a private situation.

Stress can be said to be a change of the organism to react to a situation of pressure, tension and oppression. Stress is a process, because once a person is subjected to a source of stress, a long biochemical process sets in, causing symptoms such as tachycardia, excessive sweating, muscle tension, back and neck pain, tiredness excessive, sleep and digestive problems, decreased libido, among others (HENZ, 2013).

Stress in society worries due to its consequences for health, quality of life and also the implications it has for business and society, this wear and tear entails symptoms that impair the performance and daily activities of the individual. It can also lead to a drop in productivity, demotivation, lack of concentration and unhappiness in the personal sphere, generating high costs for the person and for the company (HENZ, 2013).

Some jobs are stressful in and of themselves and it is not very realistic to think about reducing or eliminating all these risk factors. In such circumstances it makes sense to teach employees to deal with the necessary conditions of work (HENZ, 2013).

**V. SAFETY AT WORK**

Attention issue of occupational safety has increased several countries in recent decades. In Brazil, in part, this result of legislative evolution with actions labor, criminal, social security, civil, administrative and tax liability those responsible for damages caused to workers (BRID; FORMOSO; PELLICER; FABRO; CATELLO; ECHEVESTE, 2013).

Regarding above, is important to highlight, addition to occupational safety professionals, the professionals who work area important "tools" in construction of safety measures, since know-activity and can often have Therefore, organizations must take account opinion of professional activity when elaborating security measure.

Regulations, norms and procedures are necessary devices for the management of occupational hazards, “but being conceived without any participation or auscultation of those who must comply with them, are often subject to [legitimate] resistance on the part of the workers” (HENZ, 2013).

Analyzes that turn to the complexity inherent in these productive processes identify a series of factors related to working conditions and organizational aspects (shift work, fatigue, long journeys, outsourcing, precariousness, poor training, low quality and efficient PPE , collection for productive goals that are not compatible with the nature of the tasks) as elements that predispose the worker not to carry out his activities safely.

According to NR-33 (Regulatory Standard nº 33 - Health and Safety in Confined Space Work), subitem 33.1.2, confined space is: "Any area or environment not designed
for continuous human occupation, which has limited means of entry and exit, whose existing ventilation is insufficient to remove contaminants or where oxygen deficiency or enrichment may exist." Thus, the environment platforms and ships considered confined spaces.

Accidents confined spaces often fatal and therefore special care needed to avoid tragedies. In 2006, the Ministry of Labor published the NR-33, which establishes requirements evaluate and recognize certain space confinement, in addition to having rules and procedures to be followed by companies and your employees.

The accidents Campos basin primarily related very nature tasks performed sector and working conditions offshore oil exploration platforms, since complex, continuous, confinement and isolation, among other characteristics. Such characteristics make this environment a source of extreme adversity, potentially harmful health and safety of workers (SOARES; ALVAREZ; FIGUEIREDO, 2008).

Faced with great risks fatal accidents platforms and ships, companies have sought disseminate the concept of job security their employees, that due importance given this issue.

VI. OFFSHORE WORK

The activities exploration, drilling, production and transfer from the sea are governed by Law 5,811 / 72. For this, working offshore platforms has very specific characteristics regards remuneration, working time and rest periods.

Rodrigues (1998, p.204) describes offshore work platforms and ships, as follows: "Workers confined space, isolated all sides by the sea. Within prism are many limitations movement, constituted risk areas where only workers that area must circulate ."

The platforms and ships operate the coast, which requires certain degree autonomy, requiring a service such as food and lodging crew, electricity supply, compressors and pumps, water, transport the coast (helicopters or boats), means loading and unloading, telecommunications, medical services, lifeboats and other life-saving appliances (FREITAS et al., 2001).

Brazil there two scale type activity, 12-hour shift relay, where the worker follows a 14x14 scale (14 days on board and 14 days off), and warns, where the worker only embarks when the need for him to be on board. Often there is a need to perform the fold, which happens when a professional need to replace another professional. For employees (bankrupt) of the company Petrobras differential, scale is 14x21 (14 days on board and 21 days off) (CARVALHO, 2014).

The 12-hour shift relay scale most aggressive because, addition to being onboard for 14 days, workers work into the week daytime period and in the other week during the night, affecting health, sleep, life familiar and social, performance and productivity professional.

According to Santos (2002), confinement main generator job dissatisfaction due the fact they stay 14 days or more away from family and social life. According author, main adversarial factors offshore work confinement at sea, shift work, lack partnership with society, accumulation domestic problems pre-shipment stress, exposure a high-risk environment safety, health and the gap between expectations created compensations obtained.

Rest hours limitation becomes more present, since the worker must stay house or walk through heliport, atmospheric conditions movement aircraft allow. Another relevant aspect proximity between workplaces house (cabins, TV rooms, cafeteria, etc). This makes difficult workers disconnected, during their feeding, leisure time, work activities (RODRIGUES, 1998, p.204).

For leisure on board, available: gym, sauna, table games, swimming pool, internet, cinema, music room, video game, etc. (these items may vary by platform / ship). But their restrictions, such as noise, because people workplace. Developing good relationships with other professionals on board is important to help in these moments of rest and to ease the absence of family members.

The intense relation with the work, makes the workers have a chronological notion of the time differentiated, both in the period in which they are embarked, as in their days off. It is as if every day embarked on Monday, and every day on land were weekends.

For maritime activity, there specific collective labor agreements, given the special conditions which work carried out. These agreements drawn up jointly with Trade Unions. After some accidents on platforms the Brazilian society became aware of the conditions of offshore work. However, regarding the mental wear and suffering caused by these activities, they have not always been given adequate attention. On the one hand, major accidents and episodes of environmental damage do not go unnoticed, but the mental health of offshore professionals is not always glimpsed.

VII. QUALITY LIFE OFFSHORE WORK ANALYSIS

The objective study is the quality life offshore work analysis, and from the results, to be able to evaluate what needs to be improved, so that the professionals of the branch have adequate conditions to carry out their activities on platforms or ships, so that the damage to their physical and mental health is minimized.
VIII. OFFSHORE PROFESSIONAL PROFILE

Firstly, we sought to elaborate the profile of the offshore professional. In Figure 2, referring to the Age Group, it can be observed that 81% of respondents are between 23 and 30 years old, and 19%, more than 30 years.

\[ \text{Fig. 2: Age Group} \]

Figure 3 shows the Degree of Instruction of the professionals. This graph shows that 19% of respondents have Incomplete Higher Education, 25% have Complete Higher Education and the vast majority, 56%, have Technical Training. This result is consistent with the reality in the region, taking into account that most of the positions related to the oil exploration, production and drilling process are Technical Level positions.

\[ \text{Fig. 3: degree of education} \]

In Figure 4, referring to the offshore work time of professionals, it can be observed that most of them, 50%, work from 3 to 8 years under offshore regime, 37% work from 0 to 2 years and a minority, 13%, have been working for more than 8 years.

\[ \text{Fig. 4: Offshore Working Time} \]

Figure 5 presents information about the workplace of the professionals interviewed. 31% of professionals board only on Petrobras platforms/ships, 25% of professionals only board Privately/Multinational companies/platforms and 44% board both on Petrobras platforms/vessels and Private/Multinational companies.

\[ \text{Fig. 5: Platform/Ship you board.} \]

Figure 6, referring to the embarkation regime of the professionals interviewed, shows that 56% of them work with a fixed scale of 14x14 or 14x21, and 44% work under the regime of sobre aviso.

\[ \text{Fig. 6: Boarding Regime.} \]

8.1 LIFE QUALITY PLATFORMS AND SHIPS

Life quality very individual concept, looking issue and implementing improvements is not an easy process. But the goal of this research is to evaluate and present critical points that need to be improved.

As discussed in figure 7, 66% of professionals prefer to work on land and 34% of professionals prefer to work onshore.

\[ \text{Fig. 7: Preference Boarding Regime.} \]

The confinement situation is very uncomfortable for any individual. Being away from people you like, not being able to go where you want, or doing what you want, missing commemorative dates alongside family and friends, not being able to get completely off work, as they remain in the work environment, among many others, are
negative points of the offshore regime, and which influence the professional when choosing the work regime.

But still, many professionals choose to work on-board. Figure 7, related to the motivation to work on the job, shows that 69% of the professionals interviewed see their main motivation to work on the salary, and 31% consider the work regime, which provides days off equal to the days worked, to main motivation.

A minority sees in the work regime the main motivation to work on the high seas, because despite having negative points, this regime provides more free days than work ashore. But the main motivation for carrying out shipments is still salary. Due to the peculiarities of this work regime, the companies pay the additional professionals of insalubridade, dangerousness, etc., that make the salary of these professionals above the salary paid to the professionals who work in the land. According to Thielmann (2013), the specific percentage of salary comparison varies from time to time, but, according to data released in March 2013, the remuneration of these offshore workers corresponded to values 58% above the national average.

Figure 9 presents the opinion of the professionals interviewed about the structure of the platforms and ships on which they embark. According to the Ergonomics Research Society "Ergonomics is the study of the relationship between man and his work, equipment and environment, and particularly the application of the knowledge of anatomy, physiology and psychology in the solution that emerged in this relationship”.

Maritime units have jobs that cause fatigue and induce more postures. In addition to having working environments with high temperatures and also work in height.

As shown in figure 8, 6% of respondents consider the structure of the platforms and ships they are embarking on excellent, 19% consider it very good, 56% consider it good and 19% consider it as regular.

The human being needs to communicate, and in situations of confinement this need becomes even greater, in order to avoid the feeling of loneliness.

Most platforms / vessels do not allow the use of mobile (on-board) handsets, and for professionals to communicate with the outside world, internet access and landlines are available, but there is a maximum period for use, making this communication limited. In addition, there are few resources (computers and phones) for many people. Due to the distance from the shore, often these means of communication do not function satisfactorily making communication difficult with the family and friends.

In figure 10, which refers to the quality of the external means of communication available on the platforms and ships, it can be observed that 50% of professionals consider regular, 25% consider good and 25% consider very good.

Shift work routinely requires the worker to perform his or her work at times when he or she would normally be resting, in leisure or sleeping, and to practice leisure, rest or sleep at times when he or she should be working (RODRIGUES, 2001, 36).).

Figure 11, regarding the leisure structure provided on board, shows that 69% consider this structure regular and 25% consider this structure good and only 6% consider the structure very good.

It can be observed that the vast majority of professionals are dissatisfied with what companies make available for leisure time. Realizing the importance of leisure so that the individual can actually get away from work, pressures and concerns, this is a point that needs to be improved by
Balanced meals help decrease tiredness and increase disposition at work. Those who eat healthier produce more, have less risk of accidents at work, and better health. Important benefits for both professionals and organizations.

Irregular lifestyle for mealtimes caused by shift work may also reflect metabolic disorders increasing the risk of developing obesity, diabetes, cardiovascular disease, digestive problems, sleep disorders, depression etc.

In figure 12 it can be observed that 56% of the professionals consider the feeding provided on board to be very good, 31% consider good and 13% consider regulating the feeding.

Companies seek to provide quality food of great variety, but it is important to guide and educate professionals about nutritional issues so that they can eat in a healthy way.

Organizational climate refers to the degree of material and emotional satisfaction of people in the work environment. Therefore, it is extremely relevant to seek to keep it favorable, in view of the influence on the motivation and interest of the employees for the organization's operation (RACHEL, SOLOMÃO, 2011, p.5).

There are complaints about the relationship between "oil tankers" and "contractors" on Petrobras platforms, because there is discrimination or abuse of "power", and this is seen as a problem for the organizational climate, which exacerbates the problems already faced by workers on the platforms, where there should be relationships of trust and solidarity between individuals, so that they can survive in this environment that is already hostile in itself (PENA, 2002).

Figure 13 shows 44% consider the weather very good, 50% consider it good and only 6% consider it regular, which leads us to believe that despite the difficulties faced on board, the organizational climate is satisfactory.

The effects of stress are negative for people and businesses. Due to competitiveness, companies end up creating situations of emotional pressure on their employees, which pressure is not only experienced in the work environment, but also in life in general.

Figure 14 shows that 94% of professionals sometimes experience moments of stress, and 6% reported that they always experience situations of stress.

The stress directly affects the performance of the professional research it was observed that the professionals face situations of stress very frequently, being thus, this is a point that must be seen and treated seriously by the companies, as well as causing damages to the professional, affects the outcome of their work.

Security within platforms and ships is a matter of paramount importance. The activities carried out within these facilities are dangerous and can cause minor accidents to major catastrophes. Are campaigns and meetings to raise awareness of the workforce, and mandatory rules and procedures to be followed by all.

Oil exploration and production platforms and vessels are complex systems in relation to risks as they are linked to
the processing of flammable hydrocarbons, the use of toxic chemical compounds, and the use of equipment that can cause major accidents (FREITAS; SOUZA; MACHADO, 2001).

Figure 15 shows the vision that professionals have regarding safety in marine units. 56% consider security care very good and 44% consider it good. Despite the already implemented precautions, there is still a lot to be done to improve safety in oil exploration and production activities.

![Fig. 15: Platforms and Ships Security.](image)

In figure 16, referring to the state of health of the professionals who work on board, it can be observed that 19% consider their health excellent, 75% consider it very good and 6% consider it good.

Offshore work requires a lot from the professional, both physically and psychologically. Extensive days of work, movement of loads, excessive displacement within the unit, excessive time in which the professional has to remain standing, difficulty sleeping, confinement, feeling of loneliness, among others, are factors that directly affect the health of the that can be perceived in the short, medium or long term.

![Fig. 16: Health status professional.](image)

8.2 IMPROVEMENT PROPOSITIONS ANALYSIS

Based above, we can observe most interviewees prefer work on land and that the main motivation to work on board is wages, higher than the wages paid in other work regimes.

The structure of ships and platforms are considered regular by most of the interviewees. Companies should seek to improve the structure of ships / platforms from an ergonomic point of view, seek to reduce noise pollution, provide more spacious, cozy and en suite cabins - as some do not have a bathroom. Hygiene issues are also the subject of complaints from professionals, who do not consider hygiene in bathrooms, especially in collective toilets, and complain of the fact that some units do not allow personal clothes to be washed, only clothes used for work.

The means of communication available so that people can communicate with their family and friends do not meet the needs of professionals, the quality and the availability of these communication channels must be improved in order to ease the discomfort caused by confinement. The leisure structure provided on board should be re-evaluated and improved taking into account its importance in helping professionals to get out of work and also as a way to approach and integrate people in moments outside work.

The food on board is a point considered very good by the professionals, showing concern of the organizations with their health, as a proposal for improvements I suggest only the incentive to carry out healthy meals, since although the food provided is considered good, there is a control or incentive for the professionals to feed well, where many the emotional state of the professional can lead him to feed himself ill.

In spite of a constant experience with stress situations the interviewees generally evaluate well the organizational climate on board. Organizations should always seek ways to make the organizational climate pleasant and seek ways to minimize stress, since in the medium and long term they can cause health problems for professionals. There must be constant action to encourage teamwork, respect between workers independent of the position held and punishments for abuse of power. Training and development actions are also important for the professional to feel valued for the work he does and thus stay motivated.

The professionals interviewed consider the safety of ships and platforms to be very good, but I believe this is a point that must be constantly improved, since even with all the existing technology and worry, accidents continue to occur. Accidents on ships and platforms can cause major catastrophes, destroy dreams and families, so, with respect to professionals facing all the difficulties of work on board, safety improvements should never stop.

IX. FINAL CONSIDERATIONS

The term Quality of Life must be created and maintained through the values of the organization, with respect to the human being, health, moral, physical and psychological integrity and the rights of the people. It must also be pursued through people’s maintenance systems in organizations, with living wages, training and development, primarily aimed at their growth and psychological maturation, preparing them to accept
responsibilities and make decisions, involving them in achieving the results of the organization and especially giving them the freedom of choice, thereby reducing alienation at work (CARVALHO, 2014).

In Chapter 5, the realization of this study reaffirmed that the oil sector organizations, with activities that involve offshore work, still need to develop more actions to provide their employees with a better quality of life at work, considering the peculiarities of this work regime. Carvalho (2014) believes that the organization should provide adequate conditions so that people do not feel uncomfortable and unable to do an excellent job. On the other hand, people should also be aware of this aspect, seeking a better balance between the professional and the personal side.

It is concluded that there are many points that need to be improved so that there is quality of life at work on board ships and platforms. It is necessary to diagnose and implement measures and possible improvements. Organizations must see that this is a two-way street, where satisfied professionals produce more and better, thus contributing to the achievement of desired outcomes by organizations.

As proposals for future work, suggest the topics: “The social relations of people working under offshore regime” and “The psychological impacts that the offshore regime has under the professionals”.

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