Assessment of safety culture maturity in a food industry: a comparison between manufacturing and administration sector

Avaliação da maturidade da cultura de segurança em uma indústria de alimentos: uma comparação entre os setores de produção e administrativo

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RESUMO

A segurança e a saúde no trabalho são preocupações constantes para muitas organizações, especialmente para os setores econômicos que são líderes em acidentes de trabalho, como a indústria de alimentos. Uma cultura de segurança estabelecida é essencial para apoiar o desenvolvimento e o progresso bem-sucedido de qualquer programa de gestão de segurança. Portanto, monitorar a maturidade da cultura de segurança de uma empresa é necessário para o planejamento de mudanças e a melhoria contínua a fim de garantir um ambiente de trabalho seguro. Este artigo tem como objetivo avaliar o grau de maturidade da cultura de segurança de uma indústria multinacional de alimentos, que representa um dos segmentos com mais acidentes de trabalho no Brasil. Foi desenvolvida uma pesquisa exploratória e descritiva, com abordagem quantitativa e baseada na estratégia de estudo de caso único. O setor de manufatura apresentou uma cultura de segurança madura, com predominância do nível sustentável (58%), enquanto o segmento administrativo apontou alta dispersão de dados, incorrendo em uma cultura de segurança entre os níveis burocrático (23%), proativo (29%) e sustentável (33%). Constatou-se que a segurança no trabalho está associada a variáveis de diferentes naturezas, e o diagnóstico deste estudo aponta que a implementação de uma cultura organizacional voltada para a segurança requer uma visão holística que vai além dos aspectos técnicos da atividade ou individuais do funcionário, de modo a englobar elementos sociais e organizacionais, devendo as particularidades de cada setor serem consideradas pelos líderes para que a gestão da segurança seja efetiva.

Palavras-chave: Cultura organizacional, Cultura de segurança, Segurança no trabalho, Acidente de trabalho, Modelo de maturidade, Indústria de alimentos.

ABSTRACT

Occupational safety and health are ongoing concerns for many organizations, especially for economic sectors that are leaders in work-related accidents, such as the food

industry. An established safety culture is essential to support the development and successful progress of any safety management program. Therefore, monitoring the maturity of a company's safety culture is required for change planning and continuous improvement to ensure a safe workplace. This paper aims to assess the maturity degree of the safety culture of a multinational food industry, representing one of the segments with more occupational accidents in Brazil. An exploratory and descriptive research was developed, with a quantitative approach and based on a case study strategy. The manufacturing sector showed a mature safety culture, with a predominance of the sustainable level (58%), while the administration segment presented a high dispersion of data, incurring in a safety culture between the bureaucratic (23%), proactive (29%), and sustainable (33%) degrees. Safety at work was found to be associated with variables of different natures and the diagnosis carried out in this paper points out that the implementation of an organizational culture focused on safety requires a holistic view that goes beyond the technical aspects of the activity or the employees' attributes, encompassing social and organizational elements, as well as the characteristics of each sector that must be considered by leaders for safety management to be effective

Keywords: Organizational culture, Safety culture, Safety at work, Occupational accident, Maturity model, Food industry.

1. INTRODUCTION

Occupational health and safety aim to promote better working conditions to keep employees at an adequate level of health and care within the organization (Clarke, 2013; Barreto et al., 2014; Williams et al., 2020). According to the Brazilian Social Security Statistical Yearbook, in 2017, 557,626 workplace accidents were recorded, of which 24.95% resulted in temporary disabilities of more than 15 days, and 53.3% of the accidents occurred in the Southeast region (Brasil, 2018). In 2019, there was an increase of about 4.5% in occupational accidents compared to 2017, recording 582,507 occurrences in Brazil. Of the total accidents, an increase was registered in the number of deaths at work (2,184), and the number of employees permanently disabled as a result of occupational accidents represented 12,624 cases (Brasil, 2021).

The way a company deals with work-related accidents and risks, as well as its encouragement of safety and health in the workplace, is directly related to the organizational culture (Buffon et al., 2018; Inness et al., 2010). Schein (1992) conceptualizes organizational culture as beliefs and assumptions defined by the members of an organization. For Luz (2003), if culture influences the attitudes of individuals, it is likely to influence safety behavior. Hopkins (2006) considers that safety culture has its origin in the organizational culture, when the company prioritizes safety at work.

Therefore, one of the most effective approaches to manage safety at work is the promotion of a safety culture within the organization. To prevent accidents and incidents at work, as well as to improve the company's competitiveness and sustainability, a strong safety culture that is implemented as part of the organizational culture and integrated throughout the organization is essential (Okanga, 2016; Toole et al., 2016).

According to Richter & Koch (2004), safety culture is composed of people and their relationships, so it is changeable over time. In addition, safety culture is not unique in the organization, implying that there may be different cultures in each department or sector, with characteristics that determine different stages of maturity of safety management in the organization. Therefore, assessing and monitoring the maturity of the safety culture is a fundamental part of managing the organization in order to enable in-depth discussions and aligned strategies to improve results.

Assessing the safety culture has particular importance in strategic sectors of the economy, especially in emerging countries such as Brazil. According to the Brazilian Food Industry Association (ABIA, 2019), the food and beverage industry grows every year, and was the sector that generated more jobs in Brazil, reaching in 2018 1.6 million direct jobs and revenue of R$ 656 billion, which corresponds to 9.6% of GDP. However, it also represented the economic sector of the industry with more work accidents.

National statistics show that, after the field of services, the industry segment has the highest number of work accidents, with 189,814 cases recorded in 2017, equivalent to 34.5% of accidents in the Brazilian context. The food and beverage sector recorded the highest number of accidents, with 42,975 occurrences, which corresponds to 22.64% of accidents in industry and 7.82% of the total number of cases in 2017 (Brasil, 2018). Actually, the production of food and beverages includes a variety of industrial processes with associated risks, such as sharp objects, working in extreme temperatures, transport of loads, intense transit of people, handling of fresh food, among others, requiring an efficient safety management in order to ensure a healthy working environment and the company's productivity.

This paper aims to assess the safety culture maturity in a Brazilian plant of a multinational food manufacturing company, applying a maturity model developed and validated (Gonçalves Filho et al., 2011) according to the Brazilian reality. To discuss particular reflections on the workplace in order to mitigate risks and improve safety culture, a comparison was done between the administration and the manufacturing sectors. With this purpose, an exploratory and descriptive research was developed, with a quantitative approach and using a case study

strategy. The main contribution of this paper refers to the diagnosis, according to primary data collection, of cultural factors concerning both the individual and the workplace that should be considered in safety management, promoting safe and healthy occupational environments.

2. THEORETICAL BACKGROUND

Safety at the workplace need to be a concern for all companies, jobs, and activities, because in any organization there are occupational risks that include chemical, physical, biological, and ergonomic factors, which affect and can harm workers (Barreto et al., 2014; Hystad et al., 2013).

The accident at work can be represented by an injury generated to the body during the work process, causing temporary incapacity, disability, or death. Most accidents associated with production systems are predictable and susceptible to prevention. It is necessary to recognize the risks, eliminate the agents, and implement control measures, promoting safety and quality of life for workers (Enache, 2013; Kumagai et al., 2021).

In addition, companies should have a safety culture that promotes actions to reduce or eliminate any harmful agents in the workplace and that encourages employees to engage in safety behavior through voluntary conduct (Neal et al., 2000; Toole et al., 2016).

In this perspective, according to Martínez-Córcoles et al. (2011), organizational leaders have an important role in influencing attitudes and practices related to safety in the workplace. Also, close dialogue on safety and occupational health issues between the leader and the employee improves performance and commitment. The systematic observation and registration of target behaviors can lead to the reduction of work injuries (Geller et al., 1996).

In the literature, different definitions of culture are discussed, from the simplest to the most complex. According to Godoy & Santos (2014), Edward Burnett Tylor's definition, 1871, is one of the most traditional and adds a universalist conception of culture, associating it with a set of knowledge, beliefs, morals, law, customs, and human capabilities.

Schein (1992) understands organizational culture as the beliefs and assumptions of an organization, and defines that culture is expressed through three different levels. The first level refers to visible artifacts, which are easy to observe but have complex interpretation, encompassing language, technology, and architecture. Then there are the values, which are used as the basis for clarifying and justifying the acts committed. Basic assumptions, in the final analysis, are invisible and unconscious cultural expressions, determining how the members feel and think.

According to Cameron & Quinn (1999), regardless of the perspective adopted, the strength of the organization's culture is in keeping people together, making them overcome diversities to lead the company to success. Therefore, culture can be seen as a competitive strategy, being manageable and subject to change.

In 1988, the first concept of safety culture emerged based on the organization's characteristics that guarantee safety at workplace, disclosed in the technical report carried out by the International Nuclear Safety Advisory Group (INSAG), in which the origins of the disaster at the nuclear plant in Chernobyl were analyzed. It was concluded that, particularly in Chernobyl and in the Soviet industries, there was a weak culture of security (Buffon et al., 2018).

Pidgeon (1997) studied the factors that preceded a major accident and suggested that workplace accidents differ according to organizational beliefs and norms. The author analyzed 84 major occurrences, determining that culture has great importance in technical, social, administrative, and institutional aspects, and can foster occupational accidents.

According to Zohar (1980), the safety culture influences individuals' behavior and the organization. Blockley et al. (1989) determined that the safety culture is similar and a part of the organizational culture, corresponding to a set of norms, beliefs, and attitudes that aims to reduce workers' exposure to occupational risks. Indeed, for Hopkins (2006), the characteristics are always of a group or the organization and not of each individual specifically, so to improve health and safety in the workplace an intervention in organizational culture is necessary to positively influence employee behavior.

Safety culture encompasses three main dimensions, covering perceptions and attitudes; behavior and actions; and the structure of the organization. Perceptions and attitudes are related to the individual and the way they comprehend the organization. Behaviors are the actions taken by the worker in the organization. Finally, the structure of the organization encompasses its policies, procedures, and flow. Perceptions are unobservable, as they are subjective to each individual. However, behaviors are observable aspects and, therefore, allow to measure safety culture at organizational stages (Cooper, 2000).

Regarding a nationwide perspective, in accordance with International Labour Organization (ILO), the country's safety culture refers to the right to safety in the workplace, considering the participation of all and based on principles of prevention. Also, as reported by the International Atomic Energy Agency (IAEA), accidents often indicate problems in the organization's safety culture, requiring the industry to focus on its culture, regardless of what

stage the company is in. As a result, depending on the stage of maturity that the organization has, the safety of workers is more valued by the company (Gonçalves Filho et al., 2011).

To assess the safety culture, some maturity models were proposed and discussed in the literature. Fleming (2001) developed a model with the initial objective of identifying the maturity of the culture of the UK oil companies, using a scale of five degrees and ten dimensions of the safety culture. However, for this model to be applied, organizations need to meet some criteria, such as having an adequate safety management system at work.

A more comprehensive maturity model was proposed by Westrum (1993), considering three stages of safety culture, being pathological, bureaucratic, and constructive degrees. Based on this framework, Hudson (2001) proposed a maturity model of occupational safety culture, adding two degrees, the reactive and the proactive. Gonçalves Filho et al. (2011) changed the name of the calculative degree to bureaucratic, and the constructive level to sustainable. Then, the authors applied and validated the Hudson model in Brazil, and this was the maturity model used in this paper, as detailed in section 3.

3. METHODOLOGY

This study can be considered as exploratory and descriptive, using a quantitative approach based on primary data collection and application of statistics methods for data treatment. As a strategy to diagnose the interactions between employees and the company about safety culture, a single case study was developed. The Brazilian plant of a multinational food industry located in São Paulo State was chosen mainly because it is a reference in its market. The company has other plants in the USA, China, and France and produces flavor enhancers for seasonings, sauces, etc.

To assess the maturity degree of the safety culture, the validated model developed by Gonçalves Filho et al. (2011) was applied, considering a five-stage evolution scale (pathological, reactive, bureaucratic, proactive, and sustainable) and five dimensions of the culture of safety, including information, organizational learning, involvement, communication, and commitment.

The pathological stage represents few safety actions at work, so the company's focus is to fulfill the legislation. In the reactive degree, all the actions that the organization performs take place after the work accident has happened, being an attitude focused on the consequence and not to avoid the accidents. Regarding the bureaucratic level, the company uses a system to manage risks, but does not think in a systemic way to preserve the health and safety at the

workplace. According to the proactive degree, this refers to the transition to a constructive safety culture, highlighting that the leaders need to communicate the organization's values and to encourage continuous improvement for health and safety at the workplace. The last level, sustainable, has safety as an effective part of the business, so there is a management of safety at work to assess risks and provide appropriate actions to ensure a safe and healthy environment. (Gonçalves Filho et al., 2011; Hudson, 2001).

In relation to the five dimensions of safety culture, there is the information domain associated with the behavior of employees in reporting errors, accidents, and incidents that occur at work, as well as indicators for monitoring safety. Organizational learning includes the way accidents and incidents are handled, as well as continuous improvement actions. The involvement dimension is described by the level of employee participation in work safety issues. The evaluation of the form and effectiveness of communication on work safety matters describes the fourth dimension of safety culture. Finally, the evaluation of the commitment domain is carried out by analyzing the use and availability of resources allocated to the management of work safety (Gonçalves Filho et al., 2011).

Information and organizational learning dimensions had four items, while involvement, communication, and commitment domains included two, three, and eight items respectively, totaling 21 questions. Sociodemographic questions were added to characterize the sample.

To allow a comparative study, in the same day the instrument was applied to workers on the factory floor (pulp, dryer, and mix) as well as to employees in the administration sector (purchasing, planning, marketing, customer service, and quality). For each question, the respondent was instructed to select the item that best represented their perception of the organization. Prior to its application, a Term of Free and Informed Consent was presented to explain the research objective, in addition to ensuring the anonymity of the respondent, and to give the employee the option to participate or not.

The sampling was non-probabilistic, in which there is dependence on the researcher's judgment to select the elements of the sample (Mattar, 2001). According to Aaker et al. (2008), this sampling option minimizes costs and makes work faster. The technique used in sampling was for convenience, which is based on the convenience of the researcher to select the members of the sample.

Data processing was done using descriptive statistics to organize and analyze the data obtained. Data tabulation in electronic spreadsheets was performed in Microsoft Excel®, version 2016, to generate dynamic and stacked graphs. According to the applied model, each

item in each dimension corresponded to a degree of maturity, resulting in a tabulated point for that level of factor evolution. For those questions that contained only four alternatives, one of the alternatives corresponded, simultaneously, to more than one degree of maturity. To assess the safety culture maturity of the organization, the maturity level of each dimension was analyzed.

4. RESULTS AND DISCUSSION

4.1. Characterization of the safety culture maturity in the manufacturing sector

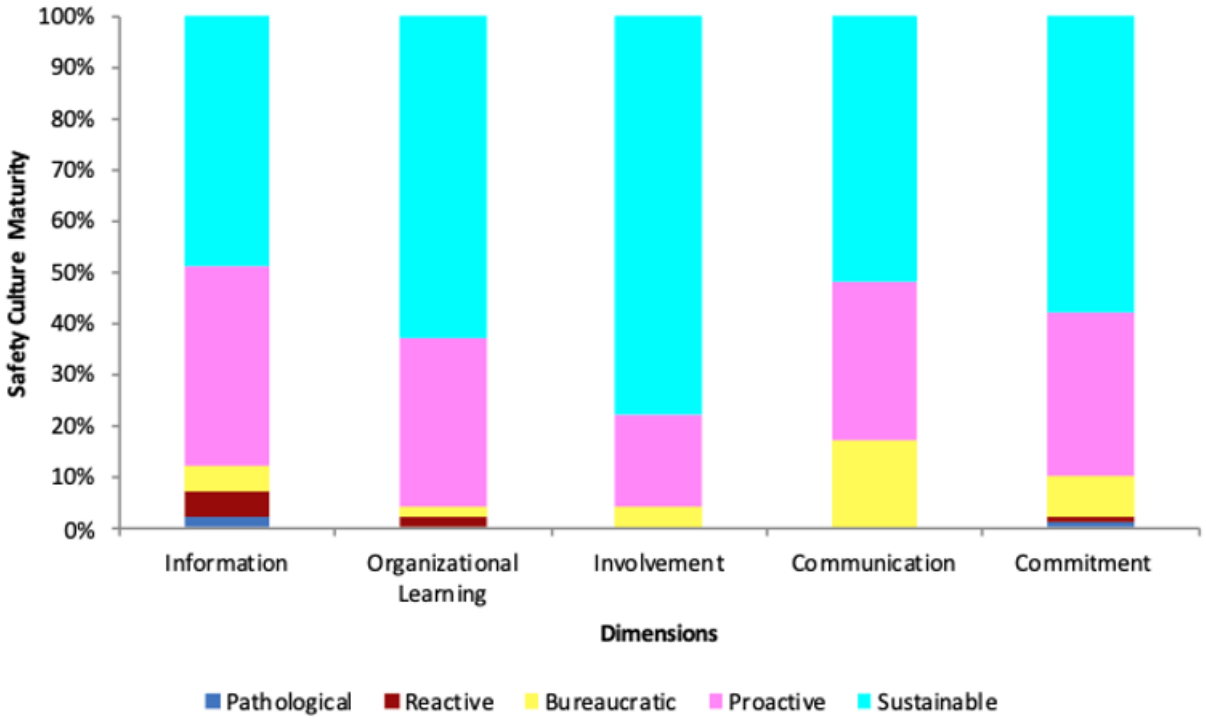
The application of the instrument to the factory employees resulted in 14 responses, all from men over 25 years old, with 93% of the sample having completed high school or incomplete college education, and the majority (64%) had been working at the company for at least 6 years. Of the 14 respondents, 10 (71%) were married and 4 (29%) were single.

Figure 1 presents the degree of safety culture maturity for information, organizational learning, involvement, communication, and commitment dimensions. It was identified that the responses showed a certain degree of conformity among the participants, highlighting items that corresponded to the highest levels of the safety culture. The involvement and communication domains demonstrate a higher frequency of response in proactive and sustainable degree, showing an evolution in these requirements compared to others.

It was noted that the information dimension has a concentration of responses at the proactive (39%) and sustainable (49%) levels, pointing out that all occurrences in the food industry, regardless of their gravity, are informed and the company offers ways to communicate them. Also, it was reported that 72% of the sample believes that the majority, or all employees, feel comfortable reporting occurrences.

Westrum (1993) states that the information factor is one of the most important for occupational safety since the failure of information flow is involved in most accidents. The author noted that, in some organizations, information hangs due to political issues or bureaucratic obstacles, and the quality of the communication flow also depends on relevance and convenience from the point of view of the listener. In fact, information is an essential domain of a safety culture, and must necessarily include the indicators that monitor safety performance at the workplace (Hudson, 2001).

Figure 1. Safety culture maturity of the organization's manufacturing sector, according to each dimension.



Source: authors (2021).

The organizational learning dimension concentrates responses at higher levels, and all respondents consider that the company makes constant improvements in safety at work, besides informing the results of the analysis of occurrences for employees to share the lessons learned. According to the IAEA, the lack of continuous improvement in safety issues prevents the evolution of organizational learning and damages the safety culture (Gonçalves Filho et al., 2011).

For most respondents (79%), the company's analysis of occurrences covers the organization as a whole, such as work processes, management decisions and procedures, which leads the organizational learning domain to be between the proactive (33%) and sustainable (63%) degrees.

The involvement dimension did not receive responses at a pathological and reactive level, focusing on the more mature level (78%) and pointing out that workers are involved in the safety culture. Furthermore, 86% of the manufacturing sector sample consider that all workers participate in the safety issues of the food industry.

Choudhry et al. (2007) define involvement as the participation of employees in safety matters, including accident analysis, identification of risks in the work environment, development of improvement actions and necessary procedures. For Garcia et al. (2004), the development of a culture of safety at work requires the involvement of managers in particular, with the role of involving workers in this kind of subject, improving their discernment and attitudes towards health and safety.

Regarding the communication domain, 52% represented the sustainable level, 31%, the proactive level, and 17%, the bureaucratic level. The sustainable degree obtained a higher percentage, mainly because all respondents stated that the company publishes news about safety at work, such as lectures, accident rates, results of the analysis of occurrences, among others.

Additionally, 29% of the sample states that the organization provides an open communication channel between the company and employees to talk about safety. However, 71% believe that the channel is only formal, as part of the Internal Commission for Accident Prevention (CIPA), suggesting that communication is still a deficient and bureaucratic element in the company's culture.

According to Toole et al. (2016), due to competitiveness and the constant changes occurring in the business environment, organizations are inclined to adopt an open attitude towards people, seeking not only to improve communication between company and individual, but also to build employee commitment.

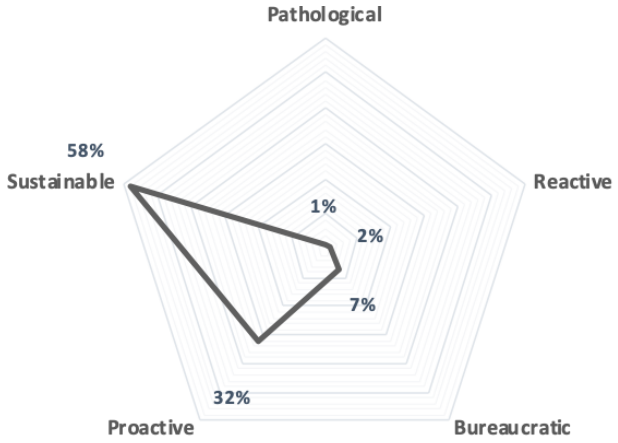
Regarding the commitment dimension, items from all levels were indicated, with 1% of the pathological stage, 1% of the reactive, 8% of the bureaucratic, 32% of the proactive, and 58% of the sustainable. Although the two highest maturity levels stood out, a lack of uniformity in the responses may suggest a weakness in this domain. The evolution of the safety culture requires a strong commitment from the leader, with close contact and communication between all levels of the company, controlling risks, selecting adequate personnel, and reinforcing the importance of safety at work (Cooper, 2000).

About the company's investment in the purchase of protective equipment and other items to improve ergonomics and safety at work, all respondents reported that the organization continuously invests in its sectors, which is a positive element, since Westrum (1993) states that the commitment is evidenced by the proportion of resources, such as money, people, time, and support for safety management. The definition of responsibilities, training, and procedures emphasizes the commitment.

Regarding the organization's planning to keep the workplace safe, 86% of the respondents believe that it is integrated into the planning of the other areas of the company, while 14% claim that the company's planning for occupational safety aims only at identifying and analyzing the existing risks in the occupational environment, which makes the factor bureaucratic (8%), since the risks need to be prevented and not only identified. In addition, it was noted that 93% of the factory workers believe that occupational safety is the company's highest priority.

The holistic assessment of the set of dimensions (Figure 2) pointed out that the maturity of safety culture in the manufacturing sector is concentrated at the sustainable level (58%), with little representation down to the reactive level (3%).

Figure 2. Safety culture maturity in manufacturing sector of the food industry.



Source: authors (2021).

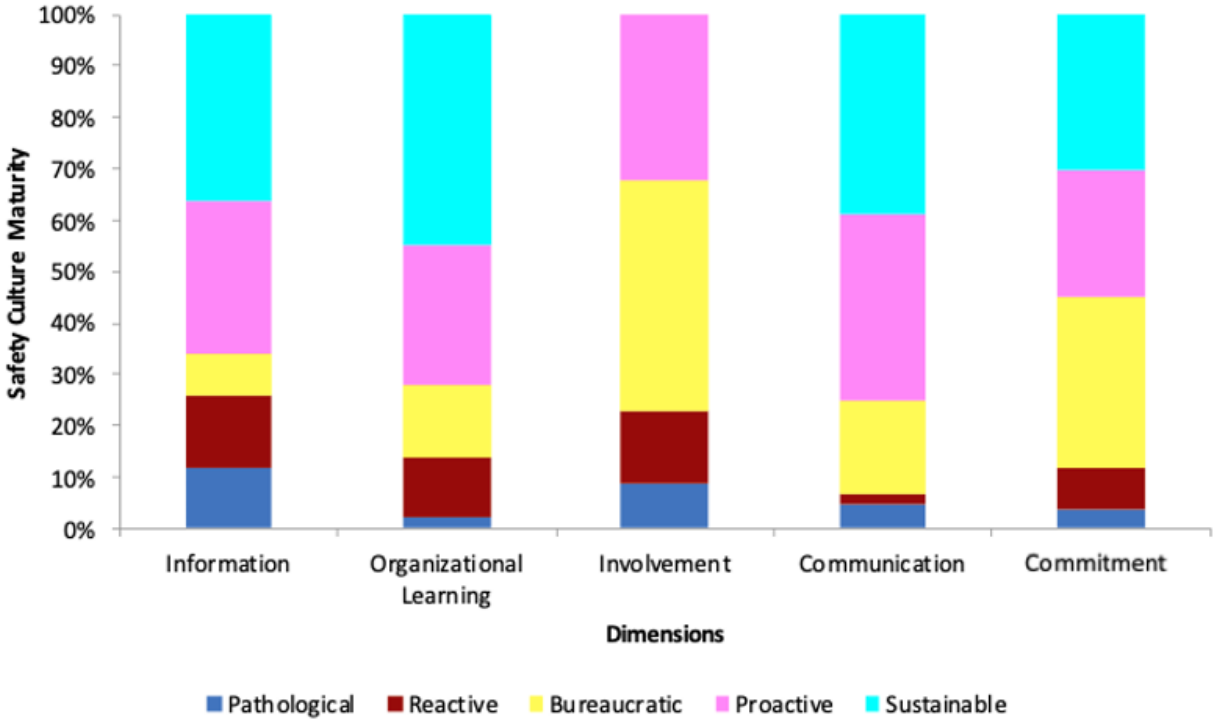
Therefore, the radar chart profile shown in Figure 2 points to a more homogeneous set of responses oriented towards the most advanced level of maturity in safety culture. These results are positive and indicate the implementation of a culture that fosters safety in the workplace, although factors have been identified that require efforts in the manufacturing sector in order to fully achieve safety objectives.

4.2. Characterization of the safety culture maturity in the administration sector

The application of the model to employees in the administration segment reached 22 participations, with 64% female and 36% male. The age of the respondents ranged from 18 to 44 years old, with 82% up to 34 years old, and all had incomplete or completed college education. In this sector, the entire sample had worked for less than 5 years in the company.

Figure 3 presents the maturity degree of each dimension of safety culture in the administrative environment. It was observed that the respondents do not have the same perspective on safety at work, since each domain obtained a considerable number of selected items for all levels of maturity, suggesting that a different approach on culture is developed in each administrative department. In addition, the involvement dimension had the proactive level as the maximum achieved, pointing out that this domain is a challenge for the safety culture in the administrative field.

Figure 3. Safety culture maturity of the organization's administration sector, according to each dimension.



Source: authors (2021).

Information dimension had 34% of the responses up to the bureaucratic level. Although the proactive (30%) and sustainable (36%) degrees were the most frequent, the responses that fitted the other levels demonstrate that the flow of information may be insufficient. Indeed, it was reported that a percentage of employees have no knowledge of how to report occurrences in organization if necessary. Also, for most respondents (37%), only occurrences resulting in serious accidents are reported by workers. However, about 27% of the sample stated that, regardless of the severity, occurrences are reported. Therefore, it was noted that the definition

of what should or should not be reported by the workers is a concern, being a consequence of the lack of information between the leadership and the professionals.

The behavior of the employees towards the occurrences was analyzed, and about 36% state that they do not have confidence in reporting occurrences, suggesting that workers are uncomfortable dealing with safety events with the company. For Reason (2006), organizations that have a positive safety culture have attributes based on mutual trust, shared perception about the importance of safety, and trust in preventive actions.

Regarding the indexes for monitoring the occurrences mentioned, 36% believe that the indicators are only for accident rates, against 46% who state that there are other indexes besides accident rates. A concern is that 18% of the sample indicated that the food industry does not use indicators, which raises the hypothesis that, although there is a communication channel and a certain number of workers report occurrences, the analysis of this data is not transmitted to the workforce, affecting their commitment, since they do not receive adequate feedback regarding the incidents that occurred.

The organizational learning dimension proved to be a potentiality in the administration sector, reaching the highest sustainable index (45%) among the analyzed domains. This result is because, for 73% of respondents, the company makes constant improvements in safety at work. In addition, 64% of the sample believes that all incident results are reported to all employees. In fact, for Quelhas et al. (2004), adequate safety management, in addition to monitoring and analyzing, often needs changes and continuous improvement.

However, respondents pointed out a perception that there are gaps in the analysis of occurrences, hindering organizational learning. Therefore, 36% of the administration segment sample stated that only occurrences that result in serious work-related accidents are analyzed. Furthermore, 27% of the sample declared that it is limited to identifying mechanical or operational failures, and 18% believe that the analysis focuses on finding the immediate causes.

It was identified that the domain of involvement is concentrated at the bureaucratic degree (45%), highlighting also that no items were selected for the sustainable stage as well as there was a high score at the pathological (9%) and reactive (14%) levels, indicating that this dimension is a challenge for safety culture. Indeed, 55% of respondents believe that employees do not participate in occupational safety issues, or only the minority do. To identify the causes of low employee participation, interest in participating was questioned. About 45% of the sample reported that the majority are interested in participating, 10% believe that employees are not interested, and the other 45% stated that the minority are willing to participate. As a

result, it was observed that administrative workers are not being encouraged to be active in occupational safety matters, a topic of great importance that needs to be examined by the organization to engage and bring employees closer.

According to the type of communication that is being performed, 36% indicated that the communication is limited to reports on safety standards. The remaining 64% stated that the disclosed news is diverse and not limited. According to Luz (2003), the organization needs to be aware of its weaknesses and strong characteristics to strengthen the internal communication process focused mainly on the requirements that need to be improved.

Regarding to a channel for communication between employees and the food industry, 19% stated that there is no open channel, 9% believe that the channel is only for when serious accidents happen, and 36%, that the channel is formal. These results indicate that the communication may not be clear and precise.

The commitment domain had the highest percentage at the bureaucratic level (33%), followed by the sustainable degree (30%). The main question that took the dimension to an intermediate stage refers to investments in protection equipment, which received 64% of the answers, indicating that the company's investments are focused on areas with higher accident risks. According to Campos & Dias (2012), investments in safety need to be directed to every area regardless of the severity of the risks, considering that safety is much more than just using protective equipment and identifying risks, it is about developing a participative administration, with the commitment and active behavior of the workers.

It is also necessary for the company to have an occupational safety strategy that involves the entire organization, but, when asked about this topic, respondents were divided between four alternatives. The diversity of answers clearly shows that this industry does not have a defined safety plan, or at least that it is not properly shared with the administrative workers.

The identification that occupational safety planning is inefficient points a concern to another topic that may be affected by this weakness, such as training. Approximately 36% of workers responded that training is conducted continuously, while another 36% feel that it is dedicated only to individuals who are vulnerable to severe accident risks. These answers show that training in the administration sector is poor, or even not carried out at all, showing that they are not involved in the company's planning for safety issues.

In relation to audits to identify if the workplace is safe and if the workers perform their activities safely, 45% of the sample considers that these actions are carried out in all sectors, while 45% deduce that audits are only carried out in sectors with severe accident risks. As a

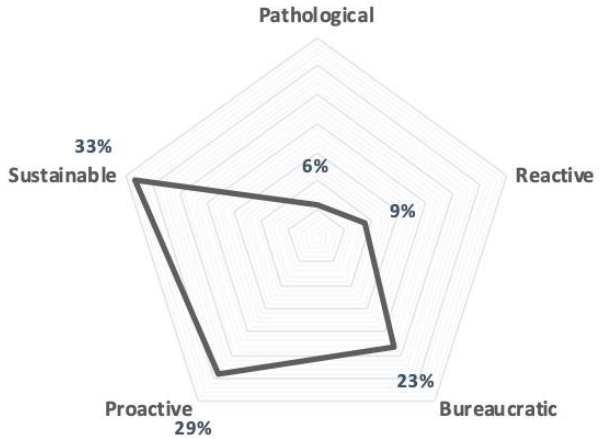
result, it is inferred that audits are not carried out in all areas, demonstrating actions possibly directed at sectors with only higher risks.

The element with the highest score at the sustainable level was the attention given to outsourced companies, so that 73% consider it to be an integral part of the company's occupational safety management system. The data obtained is positive, pointing out that the food industry is not only focused on the employees themselves, but considers that everyone needs to be involved in safety workplace.

According to the administrative workers, one point that requires efforts refers to the image that the organization conveys to them on safety issues, showing that 46% believe that safety at work is not the industry's priority. Another 18% of respondents stated that safety is not the company's priority or believe that it only becomes a priority when accidents occur.

The holistic evaluation of the set of dimensions (Figure 4) pointed to the dispersion of the data, demonstrating that there is no expressively dominant maturity level for safety culture in the administration segment, so the degrees of evolution range between sustainable (33%), proactive (29%), and bureaucratic (23%). In addition, the two lower levels of maturity showed to be representative (15%), indicating the need for route correction based on a diagnosis, to optimize the indices and achieve a homogeneous perception by the workers of the administration sector about the safety culture in the food industry.

Figure 4. Safety culture maturity in administration sector of the food industry.



Source: authors (2021).

4.3. Comparison of the safety culture maturity in the manufacturing and administration sectors

According to the manufacturing sector data, all dimensions were concentrated at the most advanced maturity level (≥ 52%) and a homogeneous response was observed, resulting in a low frequency of selected items up to the bureaucratic degree. The information factor was the one with the highest score at the lower degrees (pathological and reactive), and the communication domain was the one that scored the most at bureaucratic stage. Thus, weaknesses were identified, such as identifying and addressing why not all employees are comfortable reporting occurrences; improving and clearly disclosing the company's performance metrics; and improving the communication channel by ensuring that communication is reaching everyone.

Unlike the factory floor, the administration segment presented a dimension (involvement) that did not reach the sustainable level, as well as all factors presented considerable indices in the initial two degrees of maturity (≥ 7%). The information domain was also the one with the lowest degree of maturity, while the dimension that received the most responses at the bureaucratic degree was the involvement. It is highlighted that the employees' interest in participating and the frequency of participation in safety issues are challenges to be overcome in the administration sector to improve the safety culture in the food industry.

Therefore, it was observed that in the factory the participation of employees is higher when compared to the administration segment, which influences the domains to reach a more advanced maturity stage, since with the participation, knowledge is achieved. The exchange of experiences and practices among employees provides an alignment among the sector regarding safety culture, and this point was observed in the manufacturing sector, as most of the answers were uniform among the workforce.

The factory workers have more time working in the company than in the administration sector, which may be a consequence of the fact that the company's manufacturing unit has been installed in the region for 19 years. On the other hand, the administration sector moved to the region 5 years ago, renewing its human capital. Even with the change in the sector, the factory and the corporate office are in the same metropolitan region, but in different cities.

The sustainable mature in the production plant suggests that the company's safety management is more directed toward the industrial part of the business where more accidents can occur and is further supported by the presence of employees with longer time in the organization, pointing out that the implementation of a safety culture is associated with long-term actions. In addition, in the manufacturing field, the perception of risks is high due to the nature of the activity, as pointed out by the respondents. Workers handling machinery and equipment have the feeling that accidents can easily happen if the task is not carried out in a

safe manner. In contrast, in the office, the risks are not always so clear, so that administrative area may not be aware of the agents that cause accidents, such as falls from ladders, accidents with electricity, handling of sharp objects, and physical damage due to wrong posture.

Furthermore, since the organization is a multinational group, the influence of foreign employees is hypothesized. In the factory, all employees are Brazilian, while in the company office there are professionals from abroad, which can create an environment with a mixture of cultures. According to Hofstede et al. (2005), organizations that have headquarters and branches in different countries may have different practices, resources, and structures, resulting in different degrees of maturity of their occupational safety culture.

Based on the literature, it is common and consistent for two sectors of the same company to have different degrees of maturity, because the safety culture does not develop and apply at the same pace throughout the company. Therefore, for the improvement of safety practices and policies, the differences that each department has must be considered (Fleming, 2001; Hudson, 2001; Richter & Koch, 2004). Likewise, the study conducted by Buffon et al. (2018), which applied Hudson's maturity model in the production sector of a dairy plant located in Paraná (Brazil), highlighted that the comprehension about safety culture can also differ according to the hierarchical position of the professional in the organization. The authors observed that individuals directly involved in the operation attributed a sustainable degree to the safety culture, while for managers, the maturity stage is still in the proactive level.

5. CONCLUSION

To contribute to discussions of safety in the workplace, this paper showed that the approaches and perspectives of occupational accidents go beyond individual and technical aspects to encompass social and organizational drivers, especially the company's culture. Therefore, the management of the organization's safety culture system becomes essential to prevent accidents and mitigate risks at work.

The safety culture assessment pointed out that the manufacturing sector had a more advanced degree of maturity, highlighting the involvement of the workers. In the administration segment, organizational learning stood out as a potential aspect in the safety culture. It was noted that, in both sectors, information is a weakness, in addition to the need for attention to communication, by the factory, and involvement, by the office. It is noteworthy that no domain of safety culture fully reached the sustainable grade, demonstrating that the organization needs joint efforts to move forward in occupational safety management.

It is concluded that the organizational culture oriented to safety at work did not present identical characteristics in the different sectors studied, pointing managers to the need to consider the peculiarities of each plant, department, or area of the business for the development of safety management practices and policies. In addition, the characterization of the safety culture in the company contributes to the identification of improvement points and the implementation of long-term action plans to increase its performance, both social and financial, aiming at the sustainable level in its entirety to foster a safe workplace.

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