

Sociodemographic profile of employees and their contribution to the development of a Food Safety Culture

Perfil sociodemográfico dos colaboradores e sua contribuição para o desenvolvimento da Cultura de Segurança de Alimentos

ABSTRACT

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Introduction: The Food Safety Culture (FSC) is made of individual and collective behaviors of the members of a company, including beliefs, attitudes, and shared values, related to Food Safety. This concept was incorporated into the Food Safety Management System to reduce the risk of foodborne diseases. **Objective:** To discuss how the sociodemographic profile can be used in the process of development and maturation of the FSC in an organization that operates in the retail food trade. **Method:** An FSC characterization instrument, already validated, was answered by a total of 300 workers, in 13 different stores in the greater São Paulo - Brazil. The sociodemographic profile was composed of “gender”, “age”, “origin”, “education”, “experience in the food sector”, “experience in the company”, “position and sector” of work. **Results:** The most relevant sociodemographic data for CSA in this article were “age”, “origin” and “experience in the food area”. these can be leveraged by leaders, in companies in the food sector, for the construction and development of FSC. **Conclusions:** The socio-demographic profile of employees can help in the: identification of talents and skills; planning of qualifications and training; and effective communication and understanding of the concept of risk. It can ultimately help leadership in shaping high-performance teams, capable of acting with responsibility and freedom, achieving high performance in terms of productivity and the health safety of food produced and sold.

KEYWORDS: Food Safety Management; Organizational Culture; Food Handling; Leadership; Food Handling

RESUMO

Introdução: A Cultura de Segurança dos Alimentos (CSA) é formada a partir dos comportamentos individuais e coletivos dos membros de uma empresa, das crenças, atitudes e valores compartilhados, relativos à Segurança de Alimentos. Esse conceito foi incorporado ao Sistema de Gestão de Segurança de Alimentos a fim de reduzir o risco da ocorrência de doenças veiculadas por alimentos. **Objetivo:** Discutir como o perfil sociodemográfico pode ser aproveitado no processo de desenvolvimento e amadurecimento da CSA em uma organização que atua no comércio varejista de alimentos. **Método:** Um instrumento de caracterização de CSA já validado foi respondido por um total de 300 trabalhadores em 13 diferentes lojas na Grande São Paulo. O perfil sociodemográfico foi composto por “gênero”, “idade”, “origem”, “escolaridade”, “experiência na área de alimentos”, “experiência na empresa”, “cargo e setor” de trabalho. **Resultados:** Os dados sociodemográficos mais relevantes para a CSA nesse artigo foram “idade”, “origem” e “experiência na área de alimentos” e podem ser utilizados pela liderança em empresas do setor de alimentos, de forma favorável na construção e no desenvolvimento da CSA. **Conclusões:** O perfil sociodemográfico dos colaboradores pode ajudar na identificação de talentos e habilidades, no planejamento de capacitações e treinamentos, na comunicação

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efetiva e na compreensão do conceito de risco, auxiliando a liderança na formação de equipes de alta performance capazes de atuar com responsabilidade e liberdade para atingir, assim, alto desempenho na produtividade e na segurança sanitária dos alimentos produzidos e comercializado.

PALAVRAS-CHAVE: Gestão da Segurança de Alimentos; Cultura Organizacional; Liderança; Manipulação de Alimentos

INTRODUCTION

The Food Safety Culture (FSC) is based on the individual and collective behaviors of the members of a company, their shared beliefs, attitudes and values regarding food safety (FS). This concept has been incorporated into the Food Safety Management System in order to reduce the risk of food-borne illnesses (FBD)^{1,2}. In FSC, the safety of products becomes a non-negotiable value for a company, with value being understood as the principles and beliefs that will guide decision-making at all hierarchical levels¹. When a FSC is established, employees internalize FS as a relevant value within the production process and recognize the importance and responsibility they play in the whole process. In this way, the repeated practice of correct conduct leads to the development of the habit of practicing it, regardless of supervision and verification³.

It is essential that leaders master knowledge of human behavior so that they can structure effective strategies for building FSC. There are various theoretical lines and approaches, such as: Behaviorist Theory, Social Cognitive Theory, Health Belief Model, Theory of Reasoned Action, Transtheoretical Model, and Social Marketing¹.

The leadership needs to use effective communication channels to convey the concepts of FS, in order to involve employees and arouse their interest in the subject. In order to do this, it is essential to get to know your employees in more detail, in aspects such as: origin, habits, attitudes and motivations, as well as behaviors and beliefs, identifying what is congruent and adjacent to the organization's values, purposes and goals in the context of FS.

The sociodemographic characterization of an organization's food handlers can contribute to the construction and development of the FSC. For example, a more detailed knowledge of the "age" aspect among employees associated with the Generational Cohort Theory enables leadership to establish more assertive and effective communication, interpersonal relationships, training and coaching aimed at compliance with good hygiene and manufacturing practices (GHMP). According to this theory, people born in the same period experience similar events and social influences, such as technological, political and economic circumstances, in their adolescence. These events and experiences play a part in shaping their beliefs and values, creating cultures that change over the generation⁵. Martin and Peters⁶ and Glazer et al.⁵, studying generational differences in the workplace, classified the age groups into four generations: *baby boomers* (born between 1946 and 1964), generation X (1965 to 1976), generation Y (1977 to 1998), and

generation Z (1998 to 2012), with generations X and Y being the most frequent. The characteristics of people from these two generations are:

- a. Generation X: entrepreneurial, highly educated, but lack organization or loyalty. They are the first technologically literate generation, have a strong sense of entitlement and work for a living. They value individual contributions and achievements and work-life balance.
- b. Generation Y: highly tolerant, extremely tech-savvy, very independent. They are ambitious but have little focus. They aim for themselves in their professional lives and are immediate. They seek high performance, qualifications and professional activities that reinforce autonomy and freedom.

Each generation has its own expectations about the work environment, leadership and how to behave socially, which can lead to conflicts⁵. Knowledge of the behavioral diversity of the different generations helps in the process of management and leadership focused on productivity, harmony, and the psychological well-being of workers, achieving and reinforcing the values and purpose of FSC in an organization⁶.

Even employees' perceptions of training vary according to their age. In the study by Beqiri and Mazreku⁷, it was observed that workers between the ages of 21 and 35 predominantly consider them to be opportunities for new learning; those between 36 and 50 use them to share information, while those between 51 and 65 are able to associate and use both of the above approaches. Leadership can adopt strategies that take advantage of behavioral diversity, not just in relation to age, but in relation to different factors, in order to obtain the best results in training and compliance with the GHMP.

Knowing the workers' place of origin allows us to find out a little more about their beliefs, traditions, customs and values. As Brazil is a continental country, there is a great deal of cultural diversity which significantly interferes with the way in which GMHPs are understood and interpreted, a fact which will require leadership skills, commitment and persistence in order to harmonize the practices required and necessary within an establishment which handles and prepares food⁴.

Amorim⁸, in his study on the risk perception of consumers in the Southeast and Northeast regions of Brazil, identified situations, behaviors and beliefs that can directly interfere with the risk for FS, among them: ignorance of the importance of temperature in food preservation; practices that lead to



cross-contamination; the belief that foods that cause health problems have some kind of alteration, be it in taste, color or odor; the lack of disinfection of fruits and vegetables before consuming them raw and the low rate of hand hygiene when handling food. As for the differences between the regions, Amorim⁸ observed that in the Northeast it is common to: defrost food in the sun or at room temperature; discard the part of the food with some alteration and consume the rest; and store leftover food at room temperature. In the Southeast, the author associated lower levels of education with a higher frequency of thawing food in the sun; a greater tendency to consume expired food that has no perceptible change in color, taste and/or smell; and little knowledge of critical food temperatures, despite the practice of storing leftover food in refrigeration.

The sociodemographic characterization of food handlers in an organization can provide leadership with strengths and weaknesses in the behavioral aspect, in order to structure the approach that will be adopted for the processes of qualification, training and the development of a friendly and cooperative climate in the workplace. It will also be useful for creating opportunities for dialogue about FS, self-confidence to take on responsibility and sufficient well-being for the real involvement and commitment of employees to the company's purpose.

In this context, the aim of this article is to show how the sociodemographic profile of workers can contribute to the development of FSC and to the targeting of training in the various sectors of an organization.

METHOD

Various resources can be used to access and characterize the sociodemographics of an organization's employees, including questionnaires and interviews. The questionnaire, despite its momentary nature, provides an indicative "snapshot" of trends and occurrences within the work environment. It can provide information on the *status* of the organization's FSC and its strengths and weaknesses, serving as a guide for correcting the route towards safe food.

Following on from the work carried out by Galvão et al.⁴, a survey was carried out in a food retail chain in Greater São Paulo between April 2019 and March 2020, using the modified Galvão et al.⁴ questionnaire. This instrument was structured in two sections: one for the sociodemographic characterization of the respondents and another containing items on FSA.

This article refers to the analysis of the results obtained from the data relating to the sociodemographic characterization of the participants, i.e., relating to the following aspects: "gender", "age", "origin of birth", "education", "experience in the food sector", "experience in the company", "position and sector", discussing the sociodemographic profile of the employees and their contribution to the development of FSC. The discussion of FSC items was not the subject of the study.

The questionnaire was administered by a single researcher, personally to each employee who voluntarily and anonymously agreed to take part after the research project and the Informed Consent Form (ICF) were presented to each of them. The survey included workers from different sectors: butchery, cafeteria, fruit/vegetables, bakery, fishmonger, and sausage shop. The chain has a centralized Food Quality and Safety Department and teams in each unit. The project was approved by the Research Ethics Committee of the Faculty of Veterinary Medicine and Zootechny of the University of São Paulo (FMVZ-USP), no. 7248021219, and on the Brazil Platform no. 3.326.824.

A total of 316 workers from 13 different units answered the questionnaire, including store assistants (SA), supervisors (managers) and the health and safety teams of the respective participating units, made up of technical managers and trainees. Questionnaires that didn't have more than 50% of the fields filled in were eliminated and a total of 300 completed and used in the study.

The sociodemographic data was evaluated in general and by sector, using absolute frequency (n), which refers to the number of responses for each sociodemographic variable, and relative frequency (%), which reports the relationship between the number of responses and the total number of participants. Correlations were checked between sociodemographic characterization items and FSC characterization factors found in the questionnaire using *Spearman's* Correlation Test and the *R software* version 3.6.1.

RESULTS AND DISCUSSION

A total of 266/300 SAs took part in the study, making up 88.67% of the respondents. There were also 19 managers (6.33%), ten trainees (3.33%) and five technical managers (1.67%). The sociodemographic characterization of the SAs is shown in Table 1 and that of the managers in Table 2. The results of the *Spearman* Correlation Test are shown in Table 3, which refers to the statements contained in the FSC characterization section. The focus was on the SAs and store managers, who were food handlers and were guided by the technical managers and FS trainees.

A positive correlation was found between "education" and "risk-based judgment" (represented by items 30 and 31 of the questionnaire), indicating that the higher the level of education, the greater the perception of risk. This correlation was also found in Amorim's study⁸. According to Soares⁹, formal study is capable of stimulating people to develop the cognitive skills necessary for life in society, preparing them for work and discovering their own talents. It follows that there is a tendency towards a greater understanding of risk the greater the cognitive capacity developed.

The majority of respondents (65.67% or 197/300) had completed high school and 14.00% (42/300) had higher education. This group with higher education includes technical managers and trainees, 14/266 SAs (5.26%) and 3/19 managers (15.79%).



Table 1. Sector sociodemographic profile of store assistants (SA) - São Paulo (SP), 2020.

Category	Fishmonger		Bakery		Sausage shop		Butchery		FV		Cafeteria	
	n	%	n	%	n	%	n	%	n	%	n	%
Gender												
Male	14	77,78	20	35,09	10	37,04	27	64,29	9	56,25	6	31,58
Female	4	22,22	34	59,65	17	62,96	11	26,19	6	37,50	13	68,42
No answer	0	0,00	3	5,26	0	0,00	4	9,52	1	6,25	0	0,00
Age												
18-20 years	1	5,56	0	0,00	1	3,70	1	2,38	0	0,00	1	5,26
21-25 years	7	38,89	5	8,77	6	22,22	7	16,67	7	43,75	6	31,58
26-30 years	2	11,11	6	10,53	4	14,81	3	7,14	1	6,25	4	21,05
31-35 years	3	16,67	8	14,04	3	11,11	11	26,19	2	12,50	4	21,05
36-40 years	3	16,67	11	19,30	5	18,52	10	23,81	3	18,75	0	0,00
41-45 years	0	0,00	9	15,79	2	7,41	3	7,14	0	0,00	0	0,00
46-50 years	1	5,56	6	10,53	1	3,70	1	2,38	2	12,50	2	10,53
51-55 years	1	5,56	9	15,79	4	14,81	5	11,90	1	6,25	1	5,26
56-60 years	0	0,00	2	3,51	0	0,00	1	2,38	0	0,00	0	0,00
61-65 years	0	0,00	0	0,00	0	0,00	0	0,00	0	0,00	1	5,26
66-70 years	0	0,00	0	0,00	0	0,00	0	0,00	0	0,00	0	0,00
No answer	0	0,00	1	1,75	1	3,70	0	0,00	0	0,00	0	0,00
Origino f birth												
North	0	0,00	0	0,00	0	0,00	0	0,00	0	0,00	0	0,00
North East	5	27,78	28	49,12	14	51,85	16	38,10	3	18,75	6	31,58
Midwest	0	0,00	0	0,00	0	0,00	1	2,38	0	0,00	0	0,00
South East	12	66,67	22	38,60	12	44,44	22	52,38	13	81,25	13	68,42
South	0	0,00	1	1,75	1	3,70	0	0,00	0	0,00	0	0,00
DF	0	0,00	0	0,00	0	0,00	0	0,00	0	0,00	0	0,00
Foreigners	0	0,00	0	0,00	0	0,00	1	2,38	0	0,00	0	0,00
No answer	1	5,56	6	10,53	0	0,00	2	4,76	0	0,00	0	0,00
Education												
Incomplete primary education	0	0,00	2	3,51	0	0,00	3	7,14	0	0,00	0	0,00
Complete primary education	2	11,11	8	14,04	0	0,00	5	11,90	2	12,50	0	0,00
Incomplete high school	0	0,00	3	5,26	2	7,41	1	2,38	1	6,25	2	10,53
Complete high school	14	77,78	34	59,65	20	74,07	29	69,05	12	75,00	14	73,68
Incomplete higher education	0	0,00	3	5,26	2	7,41	0	0,00	0	0,00	2	10,53
Complete higher education	1	5,56	2	3,51	1	3,70	3	7,14	0	0,00	0	0,00
Postgraduate studies	0	0,00	0	0,00	0	0,00	0	0,00	0	0,00	0	0,00
Technical education	0	0,00	1	1,75	1	3,70	0	0,00	0	0,00	0	0,00
No answer	1	5,56	4	7,02	1	3,70	1	2,38	1	6,25	1	5,26
Experience in the food sector												
No experience	1	5,56	0	0,00	0	0,00	1	2,38	0	0,00	1	5,26
< 6 months	1	5,56	2	3,51	2	7,41	2	4,76	4	25,00	1	5,26

Continue



Continuation

Category	Fishmonger		Bakery		Sausage shop		Butchery		FV		Cafeteria	
	n	%	n	%	n	%	n	%	n	%	n	%
6 months to 1 year	1	5,56	0	0,00	1	3,70	2	4,76	1	6,25	2	10,53
1-2 years	3	16,67	1	1,75	4	14,81	4	9,52	1	6,25	3	15,79
3-5 years	3	16,67	15	26,32	7	25,93	5	11,90	6	37,50	3	15,79
6-10 years	5	27,78	8	14,04	4	14,81	11	26,19	0	0,00	6	31,58
11-15 years	1	5,56	6	10,53	2	7,41	1	2,38	0	0,00	1	5,26
16-20 years	2	11,11	6	10,53	3	11,11	3	7,14	1	6,25	1	5,26
21-25 years	0	0,00	7	12,28	0	0,00	2	4,76	0	0,00	0	0,00
26-30 years	0	0,00	6	10,3	0	0,00	0	0,00	0	0,00	0	0,00
31-35 years	0	0,00	1	1,75	1	3,70	0	0,00	0	0,00	0	0,00
36-40 years	0	0,00	0	0,00	1	3,70	1	2,38	0	0,00	0	0,00
No answer	1	5,56	5	8,77	2	7,41	10	23,81	3	18,75	1	5,26
Experience in the company												
< 6 months	4	22,22	5	8,77	3	11,11	3	7,14	5	31,25	1	5,26
6 months to 1 year	1	5,56	1	1,75	0	0,00	3	7,14	2	12,50	4	21,05
1-2 years	2	11,11	5	8,77	7	25,93	7	16,67	2	12,50	4	21,05
3-5 years	6	33,33	13	22,81	7	25,93	8	19,05	2	12,50	5	26,32
6-10 years	3	16,67	4	7,02	1	3,70	7	16,67	1	6,25	1	5,26
11-15 years	1	5,56	11	19,30	2	7,41	4	9,52	2	12,50	3	15,79
16-20 years	0	0,00	7	12,28	2	7,41	3	7,14	1	6,25	1	5,26
21-25 years	0	0,00	6	10,53	1	3,70	0	0,00	0	0,00	0	0,00
26-30 years	0	0,00	2	3,51	0	0,00	0	0,00	0	0,00	0	0,00
31-35 years	0	0,00	0	0,00	0	0,00	0	0,00	0	0,00	0	0,00
No answer	1	5,56	3	5,26	4	14,81	7	16,67	1	6,25	0	0,00
Total	18	100,00	57	100,00	27	100,00	42	100,00	16	100,00	19	100,00

Source: Prepared by the authors, 2022.

FV: Fruits and vegetables; n: absolute frequency; %: relative frequency.

Of the SAs, 123/266 (46.24%) had completed high school and of the managers, 13/19 (68.42%). It is part of the company's hiring strategy to have completed high school, creating better opportunities to understand the risk of food contamination. Qualifications and training should seek to increase employees' perception of risk, as this has been shown to induce FS behavior^{10,11}.

Positive correlations were found between "experience in the food sector" and "experience in the company", which highlighted the organization's influence on its employees in the context of FS and favored their modeling through immersion in FSC. Between "experience in the food sector" and "risk-based judgment" (represented by item 6 of the FSC section of the questionnaire), it was observed that the greater the experience in the area, the greater the ability to perceive risk. And between "experience in the food sector" and "self-commitment" (represented by item 8 of the FSC section of the questionnaire), it was found that more experienced people are more committed to GMHPs. These last two correlations

confirm the findings of Kouabenan and Ngueutsa¹⁰ and Young et al.¹¹, who state that risk perception encourages employees to have attitudes and behaviors favorable to FS.

The correlations found for "experience in the food sector" suggest that workers with professional, previous or local experience tend to act favorably towards FS.

A positive correlation was found between "age" and "environmental support" (represented by item 17 of the questionnaire). This factor is related to workplace infrastructure, such as access to sinks for washing hands and well-maintained equipment and utensils. The results showed that more mature workers were able to make better use of the equipment, materials and infrastructure in the workplace than younger workers.

The positive correlation found between "experience in the company" and "support from managers and employees" (represented



Table 2. Sociodemographic profile of managers - São Paulo (SP), 2020.

Categories	n	%
Gender		
Male	13	68,42
Female	4	21,05
No answer	2	10,53
Age		
18-20 years	0	0,00
21-25 years	4	21,05
26-30 years	4	21,05
31-35 years	2	10,53
36-40 years	6	31,58
41-45 years	2	10,53
46-50 years	0	0,00
51-55 years	1	5,26
No answer	0	0,00
Origin of birth		
North	0	0,00
North East	9	47,37
Midwest	0	0,00
South East	9	47,37
South	0	0,00
DF	0	0,00
Foreigners	0	0,00
No answer	1	5,26
Education		
Incomplete primary education	0	0,00
Complete primary education	1	5,26
Incomplete high school	1	5,26
Complete high school	13	68,42
Incomplete higher education	3	15,79
Complete higher education	0	0,00
Postgraduate studies	0	0,00
Technical education	0	0,00
No answer	1	5,26
Experience in the food sector		
No experience	1	5,26
< 6 months	0	0,00
6 months to 1 year	1	5,26
1-2 years	0	0,00
3-5 years	2	10,53
6-10 years	6	31,58
11-15 years	2	10,53
16-20 years	2	10,53

Continue

Continuation

Categories	n	%
21-25 years	1	5,26
26-30 years	1	5,26
31-35 years	0	0,00
36-40 years	0	0,00
No answer	3	15,79
Experience in the company		
< 6 months	1	5,26
6 months to 1 year	2	10,53
1-2 years	1	5,26
3-5 years	2	10,53
6-10 years	6	31,58
11-15 years	2	10,53
16-20 years	3	15,79
21-25 years	0	0,00
26-30 years	0	0,00
31-35 years	0	0,00
No answer	2	10,53
Sector		
Fishmongers	1	5,26
Bakery	1	5,26
Sausages	2	10,53
Butchers	2	10,53
FV	4	21,05
Cafeteria	0	0,00
No answer	9	47,37
Total	19	100

Source: Prepared by the authors, 2022.

FV: Fruits and vegetables; n: absolute frequency; %: relative frequency.

by item 15 of the questionnaire) suggested that older employees in the company cooperated in favor of FS. This correlation is also in line with Beqiri and Mazreku's⁷ observations that older employees like to share experiences and serve as role models for younger employees.

Adesokan et al.¹² observed that comprehensive training and qualification, i.e., not sectorized, does not improve individual worker performance. With this in mind, this study aims to make an effective contribution by presenting a discussion between the sector of activity in the company and the sociodemographic profile of the workers. Knowledge of the personal and social characteristics of workers can help in the planning and structuring of training, capacity building, communication, and engagement for FS, within the context of GHMP. The content of these training courses focused on the needs of each handler's work area.

**Table 3. Spearman's test values for ordinal demographic variables - São Paulo (SP), 2020.**

Education		
Variable	rho	P-value
Item 31	0,14	0,017*
Item 30	0,13	0,023*
Age		
Variable	rho	P-value
Experience in the company	0,51	2,2e-16***
Experience in the food sector	0,50	2,2e-16***
Item 17	0,11	0,044*
Experience in the food sector		
Variable	rho	P-value
Experience in the company	0,68	2,2e-16***
Item 6	0,11	0,048*
Item 8	0,11	0,047*
Experience in the company		
Variable	rho	P-value
Item 15	0,11	0,043*

Source: Prepared by the authors, 2022.

Significance level: ***0.001 **0.010 *0.050; rho: correlation coefficient.

Store operators

Fishmonger

The fish is kept on ice, sold whole (gutted or not), in cuts or as requested by the customer. Various species are sold, including fish, crustaceans, and molluscs.

In this sector, there was a predominance of male workers (77.78% or 14/18), aged between 21 and 40 (83.33% or 15/18), which corresponds to generation Y. As for education, the majority (77.78% or 14/18) reported having completed high school.

As for origin, 66.67% (12/18) of the respondents came from the Southeast. Attention should be paid to the beliefs and customs of this region reported by Amorim⁹ to see if they could affect FSC in this sector.

The SAs reported having between 3 and 10 years of professional experience (44.44% or 8/18) and time in the company (50.00% or 9/18), with a predominance of 3 to 5 years as time in service (33.33% or 6/18) and 6 to 10 years (27.78% or 5/18) in professional experience, showing that some already had experience prior to being hired. Four of the 18 SAs in the fishmongers' sector (22.22%) had just joined the company, less than 6 months ago. As only 11.11% (2/18) reported professional experience of less than 6 months, it is understood that some of the new employees also had previous experience in the food sector.

The results showed that the workers had professional experience in the sector, were young, from the Southeast and had some

perception of risk. They were also open to learning new things, changing their attitudes and behaviors, and showed self-commitment. When workers bring previous experience in the activity, it is interesting to explore it, as well as the skills they have developed and their experiences. Whatever is congruent with the purposes of the new company should be valued and encouraged. With regard to undesirable practices, beliefs and habits, it is necessary to identify methods, techniques and strategies capable of offering new opportunities for understanding, learning and perception.

Considering the predominant generation found in this sector (generation Y), technical guidance, training and corrective actions on a daily basis must prioritize objectivity, be attractive and interactive, keeping them focused and attentive. Baldwin and Evans¹³ cited various techniques that can be used in training, such as augmented reality technology, tasks in simulated environments, among others. Technology can be used intensively, generating fast, fun, and real-time actions.

Technical content for training in the fish market includes maintaining the cold chain, careful handling of fish and strict hygiene in the environment. Technical guidance, corrective actions and monitoring should be carried out directly during the execution of the work.

Butchery

The butcher's shop sells beef, pork, poultry, and other meats, pre-packaged, in bulk, at the customer's request, in chilled and frozen form.

There was also a predominance of males in the butcher's shop (64.29% or 27/42), with 73.81% (31/42) in the 21-40 age group. There were 21.43% (9/42) of SAs aged between 41 and 55. The majority had completed high school (69.05% or 29/42). Looking at the age groups found, the majority belonged to generation Y, whose defining characteristic is the search for learning and new information. With the second highest frequency were those from generation X, who are interested in sharing information and experiences, according to Beqiri and Mazreku⁷. As with the fishmongers, the majority came from the Southeast (52.38% or 22/42), with one foreigner from Haiti.

We found that 38.10% (16/42) of the SAs had between 3 and 10 years of professional experience, with a predominance in the 6-to-10-year range (26.19% or 11/42), while the length of service in the company was more concentrated between 1 and 10 years (52.38% or 22/42), with a predominance between 3 and 5 years (19.05% or 8/42). When comparing SAs with more than 6 years' professional experience (42.86% or 18/42) with those with more than 6 years' service (33.33% or 14/42), it emerged that some of these employees had professional experience before being hired.

The butchery sector requires quite specific practical knowledge, as does the fishmonger's, which may justify the previous experience. When you consider the age groups found, professional experience and the Spearman test correlations, you can



see that it is possible to use older, more experienced workers strategically, creating situations in which they can influence the behavior of younger workers and/or those with less experience in the job, boosting the use of the local infrastructure and the intellectual capital that exists in the organization.

For this sector, technical training should focus on the safe handling of meat products, sanitizing machinery and instruments, knowledge of critical food temperatures, etc. Programs that reward performance are also recommended. The Haitian had some difficulty expressing himself in Portuguese. Cultural and language differences need to be taken into account, as they can compromise understanding and, consequently, performance and engagement in the team. In these cases, the use of photos, images, figures and the simulation of situations experienced by the employee, their team and the leadership can be valued, exposing and explaining risk situations, correct and incorrect practices and their consequences¹.

Sausage shop

The sausage shop sells various types of pre-processed meat sausages and dairy products, whole or partitioned, pre-packaged or at the customer's request. There was a predominance of women in this sector (62.96% or 17/27), with ages ranging from 21 to 40 (66.67% or 18/27). Only four people (14.81%) were aged between 51 and 55. Similarly to the fishmonger and butcher, the sausage shop had the majority of its employees belonging to generation Y. The majority of respondents (74.07% or 20/27) reported having completed high school and coming from the Northeast (51.85% or 14/27). In this sector, unlike the previous ones, it is interesting to learn about the beliefs, habits, and attitudes of northeasterners in relation to AS.

Regarding professional experience in the area, the majority (55.56% or 15/27) reported having between 1 and 10 years, with a higher frequency between 3 and 5 years (25.93% or 7/27). However, 51.85% (14/27) reported having worked for the company for between 1 and 5 years. There was a predominance of workers in the sector with experience prior to being hired: over 6 years, 33.33% (11/27), with the same length of experience and length of service in the company, 22.22% (6/27).

The knowledge that employees with experience in the area were working in favor of FS, as suggested by the correlations found and discussed above, combined with the knowledge of the generations, provides the leadership with the means to structure the distribution of activities among employees and bring those with a greater perception of risk closer to those who have not yet clearly identified and/or incorporated the importance of the work they do for FS. Socializing and interpersonal relationships naturally create conditions for sharing knowledge, values, and beliefs and, if properly guided, can lead to an increasing gain in assertiveness and performance, both individually and collectively in the company.

Depending on affinities, resources, interest and availability, various techniques can be used in training and capacity building.

They should focus on the safe handling of the sector's products, sanitizing utensils and machinery, critical food temperatures, among other topics. To attract the attention of these generations, you can periodically take these employees away from their daily work environment and, in a reserved place, develop interactive, dynamic and challenging activities.

Bakery

In the bakery sector, breads, cakes, pastries, and other confectionery made from wheat flour are prepared. The stores have industrial equipment with a large operating capacity used to make the products sold daily, pre-packaged and also at the customer's request. In this sector, as in the sausage shop, there was a predominance of females (59.65% or 34/57) with ages evenly distributed between 26 and 55, i.e., people from generation Y and X⁷. The majority (59.65% or 34/57) reported having completed high school, similarly to the bakery sector. Regarding origin, 49.12% (28/57) reported coming from the northeast of the country, as in the sausage sector.

It was found that 40.35% (23/57) of the SAs had between 3- and 10-years' professional experience and 31.58% (18/57) reported between 11- and 20-years' service in the company, so that part of the experience gained in the area came from the establishment itself. There were also a good number of employees (22.81% or 13/57) with between 3- and 5-years' service. This was the sector with the longest-serving employees.

In the bakery sector, there was the widest range of variation in age and the lowest turnover. It can be assumed that this phenomenon is influenced by the very nature of the work carried out there, which requires skills in making specific products such as bread, savory snacks, cakes, pies and confectionery. The constancy of team members in a sector is highly desirable, allowing for the improvement of practices and conduct, as well as the possibility of developing self-confidence, cooperation between team members, responsibility and autonomy, consistent interpersonal relationships between employees and with the leadership. As many of the employees have gained experience in the field within the company itself, it is very likely that they will develop a cohesive team.

Older and more experienced workers play an important role in building and, above all, maintaining the organization's values, beliefs and objectives, especially when their behavior and attitudes are already incorporated and harmoniously aligned with the organization's purposes. They act, even if unintentionally, as role models and points of reference, directly and indirectly influencing younger and inexperienced employees. Thus, the leadership can take advantage of these generation X employees to actively participate and contribute to training and capacity building, valuing their behaviors and their strategic importance in the company.

In order to attract the younger generation, it is suggested to use the technology and teaching resources available, involving those of generation Y in a creative way. Designing interactive activities



where people can learn, share, discuss and value each other can be very promising and fun. You can also stimulate the contributions made by generation Y, recognizing the involvement of generation X with FS, by creating programs in which employees themselves nominate those who have shown solidarity, collaboration, engagement, goodwill, and group spirit. The idea is to encourage virtuous attitudes and behaviors aimed at complying with the GHMP.

Regarding technical content in the Bakery sector, maintaining hygiene, avoiding access, food and shelter for various types of pests and the frequent and correct use of personal protective equipment (PPE) are some of the important aspects that should be emphasized in training, supervision, corrective actions and work monitoring.

Cafeteria

The cafeteria sells hot and cold snacks, salty snacks, sweets, and various non-alcoholic drinks. The products are displayed on closed, temperature-controlled counters. There was a specific employee for the cash desk and another for customer service. In this sector there was a predominance of women (68.42% or 13/19), aged between 21 and 35 (73.68% or 14/19) and only four employees (21.05%) were over 45. As in the butcher's shop, Generation Y also predominated. The majority reported having completed high school (73.68% or 14/19) and coming from the southeast of the country (68.42% or 13/19), as in the fishmonger's and butcher's shops.

More than half reported professional experience between 1 and 10 years (63.16% or 12/19), with the range between 6 and 10 years being the most frequent (31.58% or 6/19). As for length of service, in this sector the highest frequencies were concentrated in the 6 months to 5 years range (68.42% or 13/19), with 26.32% (5/19) of the SAs belonging to the 3 to 5 years of experience range in the company. Five SAs (26.32%) reported more than 6 years' service, of which four SAs (21.05%) had more than 10 years' service. It is possible that the professional experience reported is empirical, as the service consisted of assembling a snack with ready-made ingredients chosen by the customer, operating the espresso machine, and making juices. This may explain the higher frequency of workers with less experience. The services performed in cafeterias and snack bars are less complex than those in butchers, fishmongers, and bakeries. It's up to the leadership to see the opportunities in the lack of experience and the predominance of young people in the sector to offer training and improve professional practices.

Communication, exquisite service, and excellent preparation practices allow the organization to express its real purpose, mission and values to its internal and external employees through its services. The aim should be to create a harmonious environment where colleagues can interact with each other and teach each other, thus encouraging cooperative and team behavior. Due to the origin of most SAs, knowledge about critical temperatures for food, cross-contamination, hand hygiene, food unfit

for consumption, etc. should be highlighted⁸. Training should be geared towards the safe handling of food in the sector, always focusing on risk perception. Programs that reward performance can be stimulating.

Fruits and vegetables

In the FV sector, most products are sold *fresh*. In the stores, only the fruit salad (various fruits cut into cubes and then packaged) and the salad mix (leaves and raw vegetables cut and packaged) are prepared. Employees were trained to display the products for sale according to their degree of ripeness. In this sector there was a predominance of males (56.25% or 9/16), aged between 21 and 25 (43.75% or 7/16), belonging to generation Y. Only 3/16 (18.75%) were over 45 (generation X). Seventy-five percent had completed high school (12/16) and were from the Southeast (81.25% or 13/16). This sector had the greatest diversity of experience in the area: 37.5% (6/16) reported between 3 and 5 years and 25.00% (4/16), less than 6 months. As for length of service in the company, 31.25% (5/16) reported less than 6 months. There were 37.50% (6/16) of SAs with more than 3 years' service. Comparing the length of professional experience with that reported in the company, it was found that the majority acquired their *expertise* in the company itself. In the FV sector, there was the highest concentration of young people recently hired, indicating high turnover. High turnover is an unfavorable phenomenon in the construction of FSC, as it weakens the establishment of deeper relationships between workers and between them and the leadership, which are important for engagement in the common goal of FS. It also often destabilizes the organizational climate and, consequently, influences the FSC. The leadership will need to develop specific strategies for this situation, looking for successful experiences in other sectors, always taking into account the diversity of origin, culture, generation and prior knowledge of employees.

Turnover means that training and education for these employees must be geared towards guidance on specific GMHPs for the sector's products, with an emphasis on risk perception. They need to be engaging and motivating, demonstrating the importance of FS. Due to the origin of most of them, guidance on critical food temperatures, cross-contamination, washing and disinfecting fruit, and hand hygiene should be prioritized⁸.

From a systemic analysis, considering all sectors, there was a predominance of workers belonging to generation Y, followed by generation X, mainly from the Southeast and Northeast regions of the country.

In the fishmonger, butcher, and sausage sectors, previous professional experience was a common observation. As these sectors require specific knowledge, it is possible that previous knowledge is sought when hiring. In the cafeteria, several experienced workers were also found but, in this case, as already mentioned, this experience may be empirical. These people with previous professional experience showed an affinity with the activities they carried out, identified with the work or the role they played in the company and showed greater



engagement, involvement, and commitment. It is highly desirable for leadership to identify people with this profile so that they can occupy roles and positions that allow them to interact with others, creating opportunities to influence less experienced and/or motivated colleagues to identify with the activity, improving their performance and productivity.

Another interesting observation that indicates the presence of FSC is the fact that the older workers in the company are engaged and contribute favorably to FS. This leads us to believe that low turnover is an ally of FSC, as it creates a solid work team with strong emotional ties, committed to the proper execution of its activities.

In the FV sector, there was a high turnover of workers and most of them had no previous experience. In this sector, the leadership will have to deal with a fragile team, with less engagement and the need for constant training to train the new members.

Managers

Each sector has a specific manager, responsible for coordinating activities and personnel. There was a predominance of males (68.42% or 13/19) and a balanced distribution between their origins in the Northeast and Southeast regions (9/19 or 47.37% for each). Of the 19 managers who took part, eight (42.11%) were aged between 21 and 30 and six (31.58%) were aged between 36 and 40. The majority had completed high school (68.42% or 13/19) and three (15.79%) reported incomplete higher education. The majority of managers (68.42% or 13/19) had between

3- and 20-years' experience in the company. Only three (15.79%) reported less than one year's experience in the company.

As for experience in the food sector, the majority (63.16% or 12/19) reported between 3 and 20 years, two claimed more than 20 years and only one reported having no experience. No manager reported working for the company for 20 years or more, which leads us to conclude that the majority of managers obtained their knowledge of OS from the company itself.

Training and qualification for managers should be differentiated, aimed not only at transmitting knowledge about FS, but also at developing local leaders who will serve as multipliers of FSC, helping senior management as strategic articulators in the process. It is up to senior management to invest in training manager-leaders, developing knowledge in the areas of administration, human behavior, work psychology, conflict management, among others. It is also advisable to improve communication and interpersonal skills and to influence people¹. It is recommended that guidance on FS be specific to the sector in which they are responsible.

CONCLUSIONS

The socio-demographic profile of employees can help to identify talents and skills, plan training and education, communicate effectively, and understand the concept of risk, helping leadership to form high-performance teams capable of acting responsibly and freely to achieve high performance in productivity and product safety.

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Authors' Contribution

Matukuma CA - Acquisition, analysis, data interpretation, and writing of the work. Balian SC - Conception, planning (study design) and writing of the work. Boanova A - Writing of the work. Osowski GV, Silva GSOD - Data analysis and interpretation. All the authors approved the final version of the work.

Conflict of Interest

The authors inform that there is no potential conflict of interest with peers and institutions, political or financial, in this study.



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