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PERCEPTION OF CONSUMERS ABOUT PORTUGUESE FOOD SERVICE

A.O.
ARTIGO ORIGINAL

PERCEÇÃO DOS CONSUMIDORES SOBRE A ALIMENTAÇÃO COLETIVA EM PORTUGAL

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ABSTRACT

INTRODUCTION: Food Service is the provision of meals and drinks to well-defined groups of people. It aims to provide nutritionally balanced, safe, and sustainable meals compatible with the client's conditions and needs. Food service companies must meet the client's expectations, while simultaneously satisfying consumers in their daily meals.

OBJECTIVES: To identify the general perception of Portuguese consumers about food service, more precisely their characterisation of this sector, its products and services, and companies operating in Portugal.

METHODOLOGY: This cross-sectional study is based on a survey of the Portuguese population, aged above 18 years old, and who is currently, or has already been, a food service consumer. The study's sample consisted of 1900 consumers.

RESULTS: Overall, 42% of respondents considered that food service satisfies both their needs and expectations, while 44% reported that it satisfies their needs but not their expectations. Most consumers recognised key characteristics of food service, namely good location and accessibility (88%), operating schedules adapted to users' activities (85%), and provision of social interaction during meals (82%). Hygiene and food safety were the most highly valued attributes of both products (82%) and services (81%), followed by meal temperature (78%). Regarding food service companies, trustworthiness was the most appreciated characteristic (71%), whereas innovation received the lowest ratings across products (41%), services (45%) and companies (43%).

CONCLUSIONS: Portuguese consumers generally have a positive perception of food service in Portugal, particularly regarding hygiene and food safety, meal temperature, accessibility and trust. Innovation remains a key area for improvement to better meet consumer expectations.

KEYWORDS

Consumers, Food Service, Perception, Portugal

RESUMO

INTRODUÇÃO: A alimentação coletiva corresponde ao fornecimento de refeições e bebidas a grupos específicos de indivíduos, tendo como objetivo disponibilizar refeições nutricionalmente equilibradas, seguras e sustentáveis, adequadas às necessidades e características dos clientes. Neste contexto, as empresas de alimentação coletiva devem responder às expectativas dos seus clientes, garantindo simultaneamente a satisfação dos consumidores relativamente às refeições servidas diariamente.

OBJETIVOS: Identificar a perceção em geral dos consumidores sobre a alimentação coletiva em Portugal, mais concretamente sobre a caracterização do setor, dos seus produtos, serviços e empresas a operar em Portugal.

METODOLOGIA: Este estudo transversal baseia-se na realização de um inquérito aos consumidores de alimentação coletiva em Portugal. A população em estudo foi a população portuguesa, maior de idade e que seja ou que já tenha sido consumidora num serviço de alimentação coletiva. A amostra do estudo foi composta por 1900 consumidores.

RESULTADOS: No geral, 42% dos consumidores consideraram que a alimentação coletiva satisfaz simultaneamente as suas necessidades e expectativas, enquanto 44% referiram que satisfaz as suas necessidades, mas não as suas expectativas. A maioria dos consumidores reconhece características gerais da alimentação coletiva, nomeadamente a boa localização e acessibilidade dos serviços (88%), os horários adaptados à atividade dos consumidores (85%) e a possibilidade de convívio durante as refeições (82%). A higiene e segurança alimentar foram os aspetos mais valorizados ao nível dos produtos (82%) e dos serviços (81%), seguidos da temperatura das refeições (78%). Relativamente às empresas de alimentação coletiva, a confiança transmitida foi a característica mais apreciada pelos consumidores (71%), enquanto a inovação apresentou as avaliações menos favoráveis, quer ao nível dos produtos (41%), quer dos serviços (45%) e das próprias empresas (43%).

CONCLUSÕES: Os consumidores portugueses apresentam, em geral, uma perceção positiva da alimentação coletiva em Portugal, sobretudo quanto à higiene e segurança alimentar, à temperatura das refeições, à acessibilidade e à confiança. A inovação constitui uma área prioritária de melhoria para responder melhor às expectativas dos consumidores.

PALAVRAS-CHAVE

Consumidores, Alimentação Coletiva, Perceção, Portugal

INTRODUCTION

According to the World Health Organization (WHO) (1), food is the most important factor for an individual's health, not only for biological reasons, but also for the economic, social, scientific, political, psychological, and cultural aspects involved (2). In Portugal, the concept of the food industry is commonly referred to as catering, despite comprising other terms, such as hospitality (hotel and accommodation) and provision of food and beverages outside the home. Thus, this sector involves products and services provided by restaurants, catering and food service (FS) (3).

FS comprises all establishments that are open to a specific public, such as cafeterias/canteens, bars, and meal services, and is based on the production and distribution of food for a group of consumers (companies, schools, hospitals, social institutions, prisons, among others) (3, 4). Moreover, FS comprehends a type of food that is neither individual nor familial, considering that the food is prepared and served in specific places and in a similar way to consumers (4).

In Europe, the first consolidated meal company for communities was founded in 1934, even though the legislative regulation of FS, as it stands today, was only consolidated between 1955 and 1965 (5). In Portugal, the first FS company was the Instituto Técnico de Alimentação Humana (ITAU), founded in 1963 (6). Throughout the 20th century, especially in the 60s and 70s, major developments occurred in this industry, mainly after April 25, 1974, with a slower growth until the 90s (5). More recently, this industry registered a significant growth, rising to 37.72 thousand establishments (+0.92%), serving 300 million meals per year (7).

The goal of the FS industry is to provide nutritionally balanced, safe, and sustainable meals, compatible with both the financial and contractual conditions of the client institution and suitable to consumers, aiming to maintain or recover their health and well-being and to promote healthy eating habits (3,8). In the traditional process, meals are consumed immediately after preparation, and must be kept above 60ºC until their consumption, complying with hygiene and food safety regulations and operating costs. Consequently, FS includes all stages of the production process, from the reception of the products to the distribution of meals to the consumer (9).

The most common type of FS is self-service, in which consumers serve themselves, choosing the quantity and variety of food that they prefer (4). As for the menus, most FS units operate on rotating cycles (weekly menus, usually four weeks long), to allow some predictability in terms of service organisation and the respective cost control (10).

Regarding FS consumers, they are often a very restricted and specific target audience, but frequently heterogeneous (4). Hence, as service providers FS companies must consider a double requirement in their activity: i) meet the client institution's expectations, and ii) satisfy consumers who consume meals daily (11). In the case of consumers that completely depend on these services for their daily diet, some aspects become even more relevant, namely the possibility of choosing food, suitability and punctuality or the possibility of adjusting mealtimes, maintaining autonomy and relations with the food unit's personnel (12). This dependence between consumer and meal service is precisely one of the aspects that distinguishes FS from other types of restaurants (4).

FS companies influence consumers' food choices, considering that a significant part of many consumers' daily diet is actually provided by these companies (13). Consumers' consumption habits have been changing, largely due to alterations in lifestyles and family structure (14), with an increase in the number of meals outside being reported (15). Therefore, the consumer profile underwent some transformations, with consumers in general becoming more critical and demanding in terms of the food offer (4).

Consumers' choice of food depends on several factors, particularly physiological, economic, psychological, sociodemographic, religious, and life satisfaction factors (16). However, marketing (i.e., digital advertising, leaflets, or word-of-mouth) has a significant influence on consumers' perception of products/services and their differentiation from other competitors (4).

It is noteworthy to mention that perceptions based on service experience must be equal to or exceed previous experiences to generate consumer satisfaction. Consumer satisfaction results from a subjective judgment of the characteristics of the product/service, determining consumers' intentions and future behaviour regarding the product/service in question or similar (17). Hence, to improve consumer satisfaction it is important to improve the quality of the FS experience, and consequently the reputation and consumer perception of FS (18).

It is important to know the profile of consumers' behaviour to adapt the product/service to their preferences, which is becoming increasingly important on the management of a FS company (4, 10). However, studies addressing consumers' behaviour profile are still lacking, highlighting the need to develop research to tackle this gap within the literature, which also affects the FS sector and its performance.

OBJECTIVES

The objective of this research is to identify the Portuguese consumers' perception about FS, more specifically about the characterization of the FS industry, its products, services, and companies operating in Portugal.

METHODOLOGY

This cross-sectional descriptive study is based on a survey of Portuguese consumers, aged above 18 years old, who are or have already been a consumer of food services (students, patients admitted to a health unit, workers in companies, social institutions' users, etc.). The questionnaire entitled "Food Service in Portugal: A study of consumer-driven trends" was specifically developed for this study. It comprised four sections: consumers' experience with FS, opinions regarding FS in Portugal, proposals for improvement of FS, and sociodemographic characteristics. Consumers' perceptions were assessed using a five-point Likert scale, ranging from 1 to 5. Prior data collection, a preliminary version of the questionnaire was pilot tested in a convenience sample of current and former FS consumers. Following the pilot application, the questionnaire was reviewed and minor adjustments were made to improve the clarity and wording of the questions, resulting in the final version used in the study.

All respondents provided their informed consent to participate in this survey. Participants were recruited using a non-probabilistic convenience sampling approach. The questionnaire was administered online (LimeSurvery® digital platform) and on paper, and disseminated through email, social media platforms, FS units, and institutional contacts from schools, care institutions, health units and companies from both the public and private sectors, with the collaboration of several FS companies and organizations. The exclusion criteria were refusal to participate in the study and lack of knowledge of what FS is or having never been a consumer of FS in Portugal. The research protocol was submitted for ethical review to the Ethics Committee of the University of Porto.

Data collection was carried out at two different moments: from July to October 2020, when data was collected through the online survey; and from March to August 2021, when data was collected through the online and paper survey. Following the first data collection period, an assessment of the sample characteristics revealed an overrepresentation of participants with higher educational attainment and from specific Portuguese regions. Therefore, a second data collection period, including both online and paper-based questionnaires, was conducted to increase the diversity of respondents and improve the geographical and sociodemographic coverage of the sample.

Paper questionnaires were returned by email and their data were manually entered into the LimeSurvey® digital platform by the main researcher and two properly trained assistants, aiming to minimize transcription errors. All unanswered questions were considered under the option "I don't know/I don't answer".

Data was analysed using the Statistical Package for the Social Sciences (SPSS®) software, version 28.0 for Windows®, and the Microsoft® Excel® software, for Microsoft 365 MSO (version 2202). Statistical analysis involved descriptive statistics measures (absolute and relative frequencies, means, and respective standard deviations) and inferential statistics. The significance level to reject the null hypothesis was set at $\alpha \leq 0.05$. The Pearson correlation coefficient (parametric correlations) was calculated to evaluate the degree of association between pairs of variables; the Chi-square and Fisher tests of independence, to assess the dependence between pairs of variables; and mean orders of independent samples were compared using the Mann-Whitney and Kruskal-Wallis tests.

Data from the open-ended question, which explored consumers' perceptions regarding the problems and challenges faced by FS companies in Portugal, were analysed using an a posteriori thematic categorization approach. Responses were initially grouped into detailed subcategories according to thematic similarity and subsequently aggregated into broader categories representing the main areas of intervention identified by consumers. The final categorization considered both the diversity of themes mentioned and the frequency with which they were reported, enabling a systematic interpretation of the qualitative data.

RESULTS AND DISCUSSION

In total, 1900 responses were obtained, constituting the study's sample. The sample consists of individuals who are mostly Portuguese (95%), female (95%), aged between 26 and 55 years old (67%), higher educated (56%). The majority of individuals are married or live in a de facto union (46%) and their household comprises 3 or 4 individuals (53%). The majority of individuals lived in the North area (37%), in the Lisbon metropolitan area (37%), and in the Centre of the country (21%). The sociodemographic data of our sample is similar to one of a national study conducted by EY Consulting (19), with general consumers, regarding age, gender, and region of residence.

Perception about the Food Service

Overall, consumers' opinions about FS in Portugal are diverse, with 42% considering that FS satisfies their needs and expectations, while 44% believe that it only satisfies their needs, but not their expectations. Consumers who had a better perception about FS in general were less educated ($p<0.001$) and live in the North region of the country ($p=0.007$). Essentially, the better the perception towards the adequacy of products and services to consumers' needs ($p<0.001$ and $p<0.001$) and expectations ($p<0.001$), the better the perception about FS in general. Abreu, Spinelli and Pinto (20) have described that consumer satisfaction is associated with menu presentation, and the physical appearance of the food unit, as well as some intangible aspects, namely the consumers' expectations, perceptions, and conscious and unconscious desires, including the emotional aspects (i.e., the service, the environment, and the sensory characteristics of food). Therefore, the same service can be perceived as being of low quality by one consumer and of high quality by another, depending on their perception of the provided service (20). Indeed, if the service does not reflect or if it is lower than consumers' expectations, then satisfaction and/or service quality is perceived as low; on the other hand, if the perception exceeds the consumers' expectations, satisfaction and/or quality is perceived as high (20).

A large number of consumers (39%) believe that FS in Portugal has improved over time, but only in certain aspects, while 22% consider that it has improved in general. In fact, the better the perception of the evolution of FS, the better the perception of FS in general ($p<0.001$), just as the greater consumer's satisfaction with their current FS, the better their perception of FS in general ($p<0.001$), and of its evolution over time ($p<0.001$).

Perception about General Characteristics of Food Service

The majority of consumers recognize as general characteristics of FS: good location and easy access to restaurants (88%); opening hours dependent on consumers' working hours or activity (85%); convenient spot that provides company during meals (82%); production of a high number of meals (78%), especially younger consumers; and aware that spaces belong to the client institution and not to FS companies (77%) (Figure 1). Furthermore, consumers also recognize the reduced price (77%), especially those with a household with two or more members ($p<0.001$) and higher educated.

Despite less agreement, consumers also recognize other general characteristics of this industry, such as the simplicity of the service, with 62% of respondents stating that there are few meal options, with simple preparation or cooking, and that there is a similarity in terms of consumer needs and expectations in general (57%). Indeed, the origin of FS goes back precisely to a popular and simple menu, assuming simple and low-cost preparations or cooking process (21). Nonetheless, over time this trend has changed, with new menus being added, with a more administrative standard, encompassing more complex and diversified preparations at a higher cost (21). Then, liberal or luxury menus were introduced, including more elaborate and sophisticated preparations or cooking processes, with more expensive cuts of meat and a greater number of options for dishes, salads, and desserts (21). These changes demonstrate that the food production process in FS is increasingly complex throughout time (in terms of materials, human resources, costs, and production policy), comprising different activities and coordinated movements (3).

43% of respondents are aware that cafeterias have a reduced period for making meals available, especially male respondents ($p=0.023$). Based on Reis and Dias (22), the perception of the general characteristics of FS is affected by consumers' perception of the several types of service (22). Hence, the obtained results show some changes from the original characteristics of FS, particularly in terms of the increasingly longer period for the availability of meals, and the increasing complexity of the service to respond to the most demanding consumers.

Most male individuals ($p=0.037$) less educated ($p<0.001$) and residing in the North region of the country ($p<0.001$) do not recognize the lack of qualified and abundant human resources in the FS unit as a characteristic of the industry (58%). It is true that although in the early days of this activity, it was not expected to have specialized and abundant human resources in the cafeterias, it is increasingly necessary to invest in this area of the service, namely, to respond to the demands and expectations of an increasingly informed public (3, 17) and national (23, 24) and European Regulations (25, 26).

Perception about Products

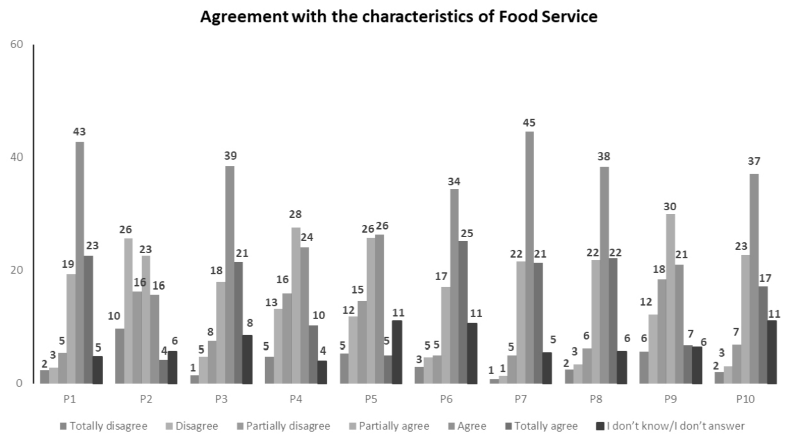
Regarding the products, the parameters most appreciated by consumers are the hygiene and food safety (82%) and the meals' temperature (78%) (Figure 2). These results are similar to those of previous studies, also carried out in the scope of Portuguese FS units (27, 28). Nonetheless, when evaluating the products, respondents also mentioned: i) quantity of meals (76%); ii) product quality (70%); iii) quality (71%) and nutritional balance of meals (70%); and iv) quality-price ratio of products (70%). The sensorial quality of products and/or meals is considered to be the most important factor in consumer satisfaction with FS, with positive correlations found between consumer satisfaction and the quality of products and their intention to return (29, 30). The parameter with the worst appreciation was product innovation (41%), which is in line with other studies nowadays (31). In fact, in a study carried out during the pandemic, the Portuguese population demonstrated that they were more willing to buy products from innovative brands (19, 31).

It should be noted that data collection was conducted during the COVID-19 pandemic (2020-2021), a period characterised by heightened public awareness regarding hygiene, food safety and health protection measures. This context may have influenced consumers' evaluations, contributing to the particularly high appreciation observed for hygiene and food safety attributes across food service products and services, as well as trust-related aspects associated with FS companies.

Overall, the average assessment of parameters related to FS products was good (69%). The results show that less educated consumers can make a better assessment of all variables related to the products,

Figure 1

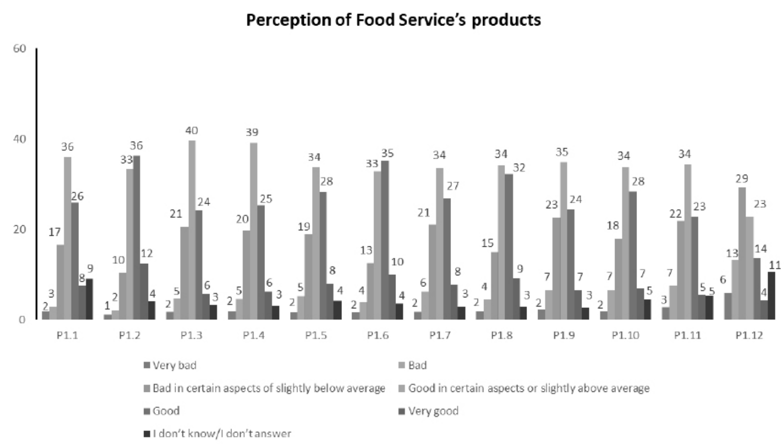
Consumers' degree of agreement with the characteristics of food service (relative frequency (%); n=1 900)



P1: The cafeterias (food service) have opening hours depending on the working hours/activity of consumers;
P2: The cafeterias (food service) have a reduced period for making meals available;
P3: The cafeterias (food service) produce a high number of meals;
P4: The cafeterias (food service) are characterised by simplicity in the service, that is, they have few meal options and are simple to prepare/cook;
P5: Cafeterias (food service) have consumers with similar dietary needs and expectations;
P6: The cafeterias (food service) are the customer's kitchen and dining room spaces (that is, these spaces belong to education institutions, companies, hospitals, etc.) and not spaces belonging to the companies that provide the meals;
P7: The cafeterias (food service) have a good location and access;
P8: The cafeterias (food service) provide company during meals;
P9: The cafeterias (food service) have qualified and abundant human resources;
P10: The cafeterias (food service) have reduced prices.

Figure 2

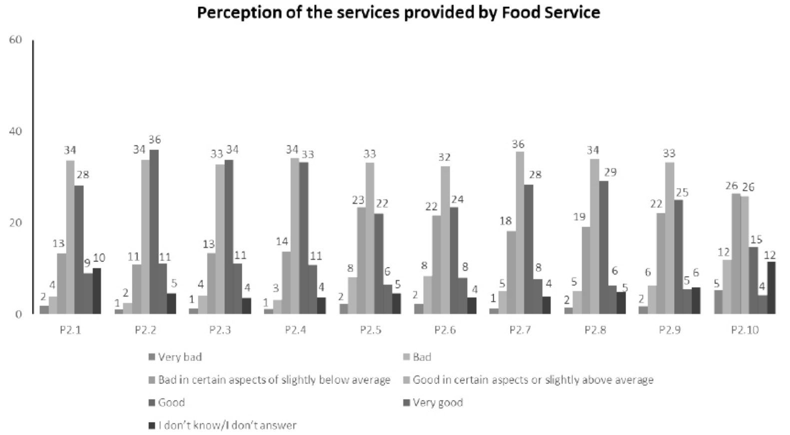
Consumers' perception of food service's products and services provided by food service in Portugal (relative frequency (%); n=1 900)



P1.1: Quality-price ratio of products;
P1.2: Hygiene and food safety of products;
P1.3: Quality of products;
P1.4: Quality of meals (preparation/cooking);
P1.5: Nutritional balance of meals (assessment in terms of health);
P1.6: Meal temperature;
P1.7: Variety of meals;
P1.8: Quantity of meals;
P1.9: Presentation of meals;
P1.10: Adequacy of products/meals to consumers' dietary needs;
P1.11: Adequacy of products/meals to consumers' expectations;
P1.12: Product innovation.

Figure 3

Consumers' perception of the services provided by Food Service in Portugal (relative frequency (%); n= 1 900)



P2.1: Quality-price ratio of the service;
P2.2: Hygiene and food safety of the service;
P2.3: Service to the client (competence, professionalism, and responsiveness);
P2.4: Speed of service;
P2.5: Image of the dining spaces (design and decoration);
P2.6: Environment (light, noise, and smell);
P2.7: Infrastructures (adequacy, organization, and state of conservation);
P2.8: Adequacy of the service to consumers' dietary needs;
P2.9: Adequacy of the service to consumers' expectations;
P2.10: Service innovation.

except for the meals' temperature. In turn, more educated and wealthier consumers consume more nutritionally balanced food and more innovative products (15, 32), hence they showed lower appreciation of FS products.

Perception about Services

The parameter most appreciated by respondents is hygiene and food safety (81%) (Figure 3). This finding is corroborated by Bai *et al.* (33), stating that hygiene is the most important point in consumers' perception of food safety, directly influencing their decision to select, stay, or return to an establishment, as well as their satisfaction with the services. Food services companies with better conditions in terms of hygiene and food safety also tend to have good evaluations regarding their environmental performance, confirming that health and environmental actions can converge (34). Consumers often trust authorities to ensure that food hygiene and safety requirements are met, but a transparent rating of the food hygiene of establishments could lead to improvements in food services (35).

The other parameters most appreciated by respondents are: i) speed of service (78%); and ii) service with professionalism and responsiveness from human resources (78%). In terms of service speed, several studies show consumer satisfaction (30, 35), while others highlight consumer dissatisfaction with this parameter, since the speed was not as expected (36). The existing literature corroborates the trend identified in this study, since the friendliness and helpfulness of human resources are very important for consumers in the FS industry (10, 30, 35).

Consumers also demonstrate a positive perception regarding the adequacy, organization, infrastructures' state of conservation (72%) and the quality-price ratio of the services (71%). Service quality is one of the main factors related to consumer satisfaction, and if the improvements in quality do not meet consumers' needs, there will be no improvement in their satisfaction (37). Service price is a parameter that significantly impacts consumers' perception of the value of a product/service, influencing consumer purchasing behaviour (29).

Similarly to the evaluation of the products, the parameter with the worst appreciation by respondents is service innovation (45%). It is common knowledge that this industry is relatively outdated in terms of technology, perhaps due to the lack of significant development by companies (5, 15, 31, 38). Therefore, investments must be made in terms of internal developments, namely through the acquisition of research, advanced technology, and the training of human resources, aiming to both improve the internal processes and the interaction with consumers (5). The average appreciation of the parameters related to the services provided by this industry was good (69%), and identical to the perception about the products, with less educated individuals having a better appreciation of all variables related to the services.

Perception of Food Services Companies

Consumers' perception of FS companies, respondents appreciate their reliability (71%) (Figure 4). Indeed, trust impacts the relationship between consumers and FS companies, with consumers appearing to trust companies that they believe act in their best interests. Hence, working on trust in FS companies can be a good strategy to ensure consumers' trust in food systems (39).

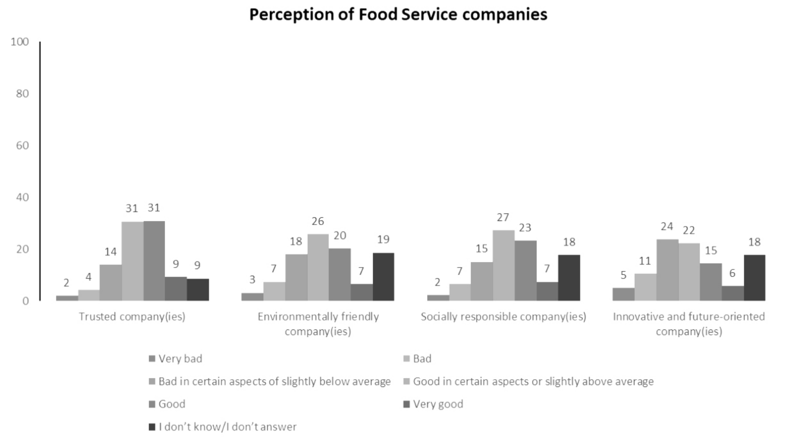
The importance attributed to trust may have also been reinforced by the pandemic context, during which consumers placed greater emphasis on safety, reliability and risk management practices within food-related services.

Consumers also appreciate FS companies as socially responsible (58%) and environmentally friendly (53%), especially older respondents ($p=0.024$ and $p<0.001$). Age is a factor that influences an individual's environmental awareness and hope for the future (40). Thus, younger consumers are often more socially and environmentally conscious, adopting more sustainable practices, which is why their evaluations may be lower, as their standards of demand are higher in these parameters (40). Overall, older consumers tend to be more satisfied in general, as corroborated by other studies (40, 41).

Innovative and future-oriented companies is the parameter with the worst appreciation (43%), which is in line with the appreciation of innovation for products and services. However, after the pandemic period, FS companies became more aware of the need to be entrepreneurial and reinvent themselves, to be able to continue carrying out their activity and remain in the market as competitive companies, innovating their operations and strategies both during and after the pandemic, which ultimately contributed to the sector's growing competitiveness (42). More precisely, FS companies adopted digital

Figure 4

Consumers' perception of food service companies in Portugal (relative frequency (%); n=1 900)



commerce as a strategy to increase the number of consumers and to simultaneously reduce production costs (21).

The average appreciation of parameters related to FS companies was good (56%), despite being lower than the appreciation obtained for products and services. Less educated individuals made a better appreciation of all variables about FS companies, as was the case with their perception about the products and services. It is important to add that a considerable number of consumers did not know what to answer or chose not to answer (average of 16%) to questions about FS companies, indicating that there is a lack of knowledge or interest in these companies.

Problems and/or Challenges of Food Service

Finally, in terms of problems and/or challenges for FS companies in Portugal, 32% of consumers identified issues related to the category / area of products or services (193%; 1 157 references). In total, 1998 references were obtained, which were grouped into six areas of intervention (Products/Services, New Products/Services, Human Resources, Consumers, FS Companies and External Determinants). This information allows to understand consumers' perceptions regarding the challenges/problems faced by FS companies in Portugal, which can be used to determine future action plans that can be prioritized in this sector (43).

Limitations

Some limitations of this study should be acknowledged. Although a large number of responses were obtained, the use of a non-probabilistic convenience sampling approach may limit the generalisability of the findings to the Portuguese population. Furthermore, the predominance of female respondents and the data collection period during the COVID-19 pandemic may have influenced consumers' perceptions, particularly regarding hygiene, food safety, trust and service quality. Future studies should seek to recruit more balanced and representative samples and explore whether these perceptions remain stable in post-pandemic contexts.

CONCLUSIONS

Most respondents recognize that FS units have a good location and access as general characteristics of FS; and are located in the client institution's spaces; are open on convenient working hours or activity; provide company at mealtimes; produce a high number of meals; and have reduced prices.

Globally, there is currently no negative connotation associated with FS. Many consumers consider that these services meet their needs but only half consider that they also meet their expectations. Similarly, most consumers consider that the service in Portugal has improved over time, although there are still some aspects to improve. Generally, the better the perception of FS in general, the better the perception of its evolution over time. A better perception of FS and of its evolution is associated with higher consumer satisfaction.

Hygiene and food safety and the meals' temperature are the parameters that consumers most appreciate, both in the evaluation of products and services. A good perception of infrastructures and the quality-price ratio of the service was also obtained. Nonetheless, the least appreciated parameter was innovation.

Trust is the most appreciated parameter of FS companies. The perception regarding companies being socially responsible and environmentally friendly is also positive. However, the majority does not consider FS companies to be innovative and forward-looking, pointing out several challenges/problems that the industry needs to overcome in the future less education. Less educated individuals showed a better appreciation of all variables regarding FS products, services, and companies.

Knowledge about consumer perception can be an inspiration for FS companies, contributing to future improvement. The present investigation was one of the first to focus on creating a national portrait of consumers' opinions on the area of FS and on its evolution over time. Considering the important role of the consumer in the human food system, the scarcity of research work that focuses on the study of FS, and the area of FS as having a potential impact on all stages of an individual's life, it is found to be extremely important to carry out complementary studies.

CONFLICTS OF INTEREST

None of the authors reported a conflict of interest.

AUTHORS' CONTRIBUTION

CC: Conceptualization, Methodology, Investigation, Data curation, Formal analysis, Writing – original draft, Writing – review & editing; AR and CV: Conceptualization, Supervision, Validation, Writing – review & editing.

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