UNIVERSITY RESTAURANT IN THE CONTEXT OF STUDENT ASSISTANCE: ANALYSIS OF SCIENTIFIC PRODUCTION (2010-2021)

RESTAURANTE UNIVERSITÁRIO NO CONTEXTO DA ASSISTÊNCIA ESTUDANTIL: ANÁLISE DA PRODUÇÃO CIENTÍFICA (2010-2021)

EL RESTAURANTE UNIVERSITARIO EN EL CONTEXTO DE LA ASISTENCIA ESTUDIANTIL: ANÁLISIS DE LA PRODUCCIÓN CIENTÍFICA (2010-2021)

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ABSTRACT: The objective of this study is to analyze the scientific production on university restaurants in the context of post-PNAES student assistance (2010-2021). A qualitative and exploratory approach is used, guided by a literature review. Searched in the main reference bases and returned 144 studies with the keyword “University Restaurant” - English and Portuguese. The final sample had 33 studies and they were read in full. He noted that most studies focused on nutritional assessment (13) and optimization of production-waste reduction (6). The discussion is complemented by studies of the variables that impact the UK and it was possible to demonstrate which variables need further studies. Studies are grouped into a single variable, without due systemic focus at the macro level. Finally, it instituted 8 focus categories: use of public resources; family farming; service capacity; production optimization - waste reduction; environmental sustainability; user satisfaction; and nutritional assessment.

KEYWORDS: Student Assistance. University Restaurant. Literature Review.

RESUMO: Objetiva no estudo analisar a produção científica sobre restaurantes universitários no contexto da assistência estudantil pós-PNAES (2010-2021). Utiliza-se abordagem qualitativa e exploratória, orientado a revisão de literatura. Pesquisou nas principais bases de referência e retornaram 144 estudos com a palavra-chave “Restaurante Universitário” - inglês e português. A amostra final contou com 33 estudos e foram lidos integralmente. Observou que a maioria dos trabalhos se debruçaram sobre a avaliação nutricional (13) e otimização da produção-redução do desperdício (6). A discussão é complementada por estudos das variáveis que impactam no RU e foi possível demonstrar quais variáveis carecem de estudos futuros. Os estudos se agrupam em uma única variável, sem o devido enfoque sistêmico em nível macro. Por fim, instituiu 8 categorias de enfoque: utilização de recursos públicos; agricultura familiar; capacidade de atendimento; otimização da produção - redução de desperdício; sustentabilidade ambiental; satisfação dos usuários; e avaliação nutricional.


RESUMEN: El objetivo de este estudio es analizar la producción científica sobre restaurantes universitarios en el contexto de la asistencia estudiantil post-PNAES (2010-2021). Se utiliza un enfoque cualitativo y exploratorio, guiado por una revisión bibliográfica. Se realizaron búsquedas en las principales bases de datos de referencia y se devolvieron 144 estudios con la palabra clave "Restaurante Universitario" - inglés y portugués. La muestra final estuvo constituida por 33 estudios y fueron leídos en su totalidad. Observó que la mayoría de los estudios se centraron en la evaluación nutricional (13) y en la optimización de la producción-reducción de residuos (6). La discusión se complementa con estudios de las variables que impactan en el Reino Unido y fue posible demostrar qué variables necesitan estudios futuros. Los estudios se agrupan en una sola variable, sin un enfoque sistémico adecuado a nivel macro. Finalmente, instituyó 8 categorías de enfoque: uso de recursos públicos; agricultura familiar; capacidad de servicio; optimización de la producción - reducción de residuos; sostenibilidad ambiental; satisfacción del usuario; y evaluación nutricional.

Introduction

University restaurants (RUs) have the mission of offering quality meals at affordable prices to the entire academic community and assistance incentives for students in vulnerable economic conditions. The RUs, as part of public assistance policies, have different types of management, different activities and peculiarities within the Federal Higher Education Institutions (IFES), which justifies the research carried out in this work, which will contribute to identifying which activities have been the subject of study within the scope of RUs and highlight which paths require further investigation.

Food at the university has a social impact on the student's life, which reflects both on their health, through a quality meal, and in economic terms, considering that RUs have lower costs for students, in addition to optimizing the time spent on food, favoring the daily routine of students, who generally have variation in class times (HARTER et al., 2013). Linked to the need to manage time, students have reduced travel breaks during meal times, which makes the RU an attractive and advantageous service, as the university's food offering provides convenience, cost-benefit and food quality (SANTOS et al., 2017). The collective food service produces balanced and hygienic meals (STICCA; SILVA; MANDARINI, 2019).

Through an analysis of scientific production on the public policy of student assistance (AE) through food and nutrition units, with the search for scientific works within the theme of RUs, it was possible to verify the lack of review works before or after the implementation of PNAES. Considering the importance of the systematic review technique, Zoltowski et al. (2014) consider that systematizing the literature allows maximizing the search potential through the organization of results. Starting from this gap, the study aims to systematize the scientific production on the RUs from 2010-2021, in order to evaluate the bibliography produced in the context of the AE post-Decree n. 7,234/2010, which regulated the National Student Assistance Program (PNAES). The study is expected to identify the focuses of studies on the RU in the context of AE, as well as the gaps that could be filled in future research.

To this end, a bibliographical research was carried out, along the lines of a systematic literature review, with the aim of gathering works that focused on the RU in the context of AE. Furthermore, inclusion and exclusion criteria were established and after analyzing the title, abstract and introduction of the 144 works found, a final sample of 33 studies related to RUs was obtained. Finally, the results were synthesized based on the focus of the themes, as well as seeking to highlight the gaps in the literature. The study was structured into six parts, starting...
from this introduction, followed by the theoretical framework, methodological procedures, results, final remarks, and references.

**Public Student Assistance Policy in Brazil: a Brief Report**

For years, access to Brazilian higher education was an almost exclusive privilege of economic elites (ARIOVALDO, 2016). The perception of reduced access for public high school students and certain ethnic groups to public universities led to the creation of policies aimed at equal access to higher education (GRINER; SAMPAIO; SAMPAIO, 2015). The relevance of AE takes on greater proportions due to the fact that Brazil is a country with a high level of social inequality and a large proportion of students already enter university at a disadvantage compared to others (CECHET, 2013). AE, in the context of social inclusion, is configured as a strategy whose objective is to reduce the effects caused by social inequalities that compromise the performance of students from the poorest social segments (ABREU, 2014).

In Brazil, the initial report is the creation of the Student House in Rio de Janeiro in 1930, where activities began with university housing and food programs (ARAÚJO; BEZERRA, 2007; BACK, 2018; KOWALSKI, 2012). Many other actions were carried out after 1930 that are aligned with AE practiced today, such as: creation of the National Union of Students (UNE) in 1937; the attempt to regulate the AE in 1943; the AE guarantee as mandatory in 1946; creation of the Student Assistance Department (DAE) in 1970 and its extinction in 1980; the National Education Guidelines and Bases Law strengthened AE actions; the 1988 Federal Constitution gave new vigor to education and AE; the management of ANDIFES and FONAPRACE with effective proposals for AE (BACK, 2018; IMPERATORI, 2017; KOWALSKI, 2012; LIMA; MELO, 2016; POGGERE, 2017; SOUZA; CINTRA, 2020). However, with Normative Ordinance no. 39, of December 12, 2007, the National Student Assistance Program was established, being a historic milestone within the scope of AE, articulating with teaching, research and extension activities, whose focus is the permanence of students (IMPERATORI, 2017) and reveals itself as a way of guarantee such permanence in higher education (ASSIS et al., 2013).

The PNAES, regulated in 2010 by the Brazilian government, has four objectives: democratize the conditions for permanence in federal higher education; minimize the effects of social and regional inequalities on retention and completion of higher education; reduce retention and dropout rates; and contribute to the promotion of social inclusion through
education (BRASIL, 2010). Although simple, achieving these objectives has been a complex task, as new realities and demands continually arise for public administration and public policies (FAVA; CINTRA, 2022; FERNANDES; ALMEIDA, 2019). It is noted in the literature that there are several possibilities for implementing, managing and evaluating the PNAES and, therefore, grouping the literature into similar studies seems opportune and promising for new insights.

As a most recent action, the 2010 PNAES Decree provides that AE actions must be developed in the areas of: student housing, food, transport, health care, digital inclusion, culture, sport, daycare, pedagogical support and access, participation and learning of students with disabilities, pervasive developmental disorders and high abilities and giftedness (BRASIL, 2010). It is important to highlight that within the list of actions contained in the decree, there is an imbalance in the service provided by all universities (FAVA; CINTRA, 2022), although there is an attempt to integrate the actions (ASSIS et al., 2013). It can be seen that PNAES is open and the university carries out the actions it deems pertinent (SANTANA et al., 2015). However, the pandemic caused changes in these executions, mainly in actions involving digital inclusion and pedagogical support (CINTRA et al., 2022).

Finally, AE in Brazil can be divided into two phases: scarcity of resources and few actions aimed at helping students; and public policies aimed at student support and greater investments (COSTA, 2010). From literature, Bordim et al. (2019) highlight, in an embryonic way, four waves in the contemporary discussion of AE in the Brazilian context: quota law and discussion of access; redemocratization of higher education; student assistance results; and professional and job market-oriented training.

University Restaurants in the Context of Student Assistance

In an unequal country like Brazil, access to quality education is inserted in a broad and complex context, in which education weighs heavily as an instrument of development and exponential possibilities of opportunities. In this context, affirmative actions are understood as a set of public policies aimed at including excluded classes or certain groups of people who, for various reasons, do not have access to educational programs. Baez (2017) defines affirmative actions as mechanisms to promote equality between individuals in a society and social, economic and professional inclusion.
Among the affirmative actions for access, retention and completion of higher education, AE plays a significant role. The PNAES, through Decree no. 7,234/2010, which is currently used to democratize the student's condition of permanence at a public university. The current AE policy prioritizes the student's remaining at the university until completing their studies (CHAVES; SILVEIRA, 2018).

The PNAES decree mentions the areas in which AE actions will be developed, one of which is the guarantee of meals for students in vulnerable situations through feeding programs. Inserted in this context, the RUs aim to produce and offer quality meals at a reduced cost, or even no cost, to serve the academic community (CARDOSO et al., 2018). RUs can be managed in two ways: self-management or outsourced (MESQUITA, 2014). Self-management occurs when the unit is managed by the institution itself and outsourcing occurs in two ways, with the distribution of some of its functions to outsourced agents or the concession of all RU activities.

Braga, Pereira, and Andrade Jr. (2015) indicate the university's contribution to society and investments in students, who find support in the RU for everyday problems, also identifying that the activities of food units at universities are responsible for menu, care for the physical environment and service. RUs are food infrastructures that face the challenge of managing planning, production, distribution and adaptation of menus and service capacity in response to the growing demand that has been established following the expansion of universities since 2007, and which have challenges to be addressed in terms of management (CARDOSO et al., 2018).

Methodological procedures

The study has a qualitative and exploratory approach, guiding the literature review. The research was carried out in the main reference bases: Scielo, Capes Periodical Portal and Spell Electronic Library. The search was carried out using the keyword “University Restaurant”, in English and Portuguese, for the period from 2010 to 2021. 144 studies were found (26 in Capes, 14 in Scielo and 4 in Spell). After analyzing the title, summary and introduction, the exclusion criteria were applied, discarding topics on private restaurants, working conditions, exclusive studies on solid waste, associated with the topic of nutrition unrelated to the RU and other works whose theme and objectives did not focus the RUs. The final sample consisted of 33 studies on RUs in AE (Figure 1).
Afterwards, the 33 works were read. After identifying the theme of each work, the results obtained were collected and systematized to form categories (Figure 2) and analysis of the discussion of RUs in the context of AE. With this information in hand, framing was carried out within the theme (Table 1). To complement the analysis, a cloud of keywords from the studies was organized to have a holistic view (Figure 3).

Source: Prepared by the authors.

Presentation and Discussion of Results

Descriptive Analysis of Themes and the Evolution of Scientific Production

In order to clarify the focus of studies that addressed RUs, it was necessary to group them into eight categories (Figure 2): use of public resources; family farming; service capacity; environmental sustainability; food handling; user satisfaction; production optimization–waste reduction; and nutritional assessment.
Figure 2 – Analysis categories of selected works

Source: Prepared by the authors.

It is noted that most of the work is linked to research focusing on the nutritional quality of RUs, followed by user satisfaction and waste reduction. Another observation is that no works on infrastructure and meal prices were found in this research, although they were listed as variables that determine evaluations of RUs (SOUZA, 2022). It is clear that themes that address management, indicators, efficiency and critical vision of RUs in the role of student AE are neglected in studies, as can be seen in the keyword cloud of the studies analyzed (Figure 3).

Figure 3 – Keyword cloud of the 33 selected studies

Source: Prepared by the authors.

The scientific publications collected and selected allow the construction of a systemic focus on the functioning of Food and Nutrition Units within the IFES, and support the analysis of strategies that optimize the progress of the RUs. It is also noted that studies on RUs have been gaining notoriety and peaked in 2018, with a significant drop in publications in the last three years – 2019 to 2021 (Figure 4).
It is important, in future research, to understand the aspects that may be linked to this decline, given that some evidence can be advanced, but would require further elaboration and correlations, such as the political/management model, the (dis)incentive and (de)financing of IFES that has been applied by the last two presidents of Brazil (Michel Temer and Jair Bolsonaro) – periods that include a drop in production. This situation had already been indicated in the most recent literature, as a drop was observed with the freezing of resources (SANTOS; ABRANTES; ZONTA, 2021) from 2018 and reached the level of expenditure in 2022 of the 2013 value that since the Bolsonaro government, education in general has suffered many budget cuts (SANTOS; ABRANTES; ZONTA, 2021; MORAES; ALMEIDA; ALMEIDA, 2022) and the decrease in public spending causes suffocation in the budget of universities (SANTOS; LIRA, 2022). In this context, the financing crisis for higher education became "quite visible with the public university inserted in the middle of political and ideological disputes over the allocation of resources within the scope of the public budget" (MARTINS; ARAÚJO JR.; RODRIGUES, 2019, p. 3). Therefore, in order to understand where the research went and what the approaches were, the discussion of the RU was structured as an action of the AE policy, which will be explained in the next item.

The University Restaurant as an Action of the Student Assistance Policy

The RU stands out as a tool to support students in feeding activities. Among the actions developed in AE, the most significant and most comprehensive of the demands of university students and offered in almost all IFES are the housing, food, transportation, health and support programs for participating in events (FAVA; CINTRA, 2022). Inserted in this context, the RUs
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aim to produce and offer quality meals at a reduced cost, or even no cost, to serve the academic community (CARDOSO et al., 2018).

When considering that university students move from their family life to carrying out their studies, and face a chain of changes in their lives and new experiences when entering a higher education course, the existence of RUs can minimize the social impacts linked to this new reality and contribute comprehensively to maintaining students' health (BENVINDO; PINTO; BANDONI, 2017). Although studies and models are plural in attempts to establish a framework of reasons for student dropout at higher education and the different contexts in which this phenomenon occurs, these studies reinforce the RU program as a space that promotes education and support in the fight against evasion (CARMO, 2018).

The difficulty of equalizing the triad of demand, cost and production capacity, in the context of budget restrictions, is a limiting factor in the production of meals at universities. The price of the meal is a variable that directly impacts users of food units, especially individuals subject to greater socioeconomic vulnerability and who find support in the RU for the viability of their continued studies (SANTOS et al., 2017). To build a systemic focus, the studies were grouped within their thematic area and sought to establish connections and direction in understanding the RU in the context of AE (Table 1).

<table>
<thead>
<tr>
<th>Themes</th>
<th>Authorships</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family Farming</td>
<td>Martinelli et al. (2015)</td>
</tr>
<tr>
<td>Service Capacity</td>
<td>Cardoso et al. (2018) and Santos et al. (2017)</td>
</tr>
<tr>
<td>Food Handling</td>
<td>Santos et al. (2015), Vieira and Rezende (2019) and Borges et al. (2020)</td>
</tr>
<tr>
<td>User Satisfaction</td>
<td>Harter et al. (2013), Cavalcante, Silva and Baratto (2018), Amorim et al. (2019) and Barbosa et al. (2019)</td>
</tr>
<tr>
<td>Environmental Sustainability</td>
<td>Figueira et al. (2017), Araújo et al. (2018) and Gomes et al. (2020)</td>
</tr>
<tr>
<td>Use Of Public Resources</td>
<td>Souza e Silva (2011)</td>
</tr>
</tbody>
</table>

Source: Prepared by the authors.

It is noted that the studies are grouped into a single variable, without the appropriate systemic focus. Therefore, it will seek to synthesize the studies of each theme. On the theme of family farming analyzed the potential for purchasing food in a RU managed by the institution itself and pointed out the importance of the RU in promoting sustainable and local agri-food
systems, with the possibility of purchasing products from family farming (MARTINELLI et al., 2015).

On the topic of nutritional assessment, studies discuss the nutritional quality of the meals offered, pointing out that it is a variable that specifically impacts the RU’s performance. Thus, Barbosa et al. (2020) assessed the food environment of an IFES, pointing out that fresh and “more natural” (minimally processed) food options were only available in RUs, compared to other IFES food locations. Demonstrating the effectiveness of RUs, Perez et al. (2019) evaluated the diet of 1,131 students before and after the implementation of a RU in an IFES and observed an improvement in the quality of the students’ diet only after the implementation of the RU, with an increase in the proportion of students who consume vegetables, and a reduction in consumption French fries, fried snacks, hamburgers, processed meats, biscuits, packaged snacks, confectionery and sugary drinks. Barbosa (2016) presents a comparison of the quality of meals in a RU before and after the restructuring of the PNAES, which resulted in an improvement in the nutritional quality and satisfaction of the meals served. Benvindo, Pinto and Bandoni (2017) evaluated the nutritional quality of the menus planned in the IFES RUs, guided by the second edition of the 2014 Food Guide for the Brazilian Population, evaluating the presence of regional foods and the offer of vegetarian dishes. Nascimento, Gavron and Bowles (2017) analyzed the quantitative variations in sodium and potassium in meals in a RU, and indicate that the amount of sodium in lunch and dinner exceeds the daily recommendation of the World Health Organization (WHO), thus pointing out the need for actions to reduce salt in the preparation of meals in the RU. In this sense, Monteiro et al. (2013) analyzed the amount of soybean oil used in the production of meals in the RU of Belo Horizonte/MG, compared to the levels established by the WHO and indicated excessive use of the oil. Still on the use of soybean oil, Soares, Monteiro and Silva (2016) carried out an evaluation of the quantity used in the preparation of rice and beans in a RU, based on the WHO, and indicated the use of the product in quantities above the recommendations. Complementary to these, Mendes et al. (2018) looked at the health and eating habits of UFT RU employees, and revealed that the eating habits of these individuals are unhealthy, with high fat consumption, low fiber consumption, sedentary lifestyle and overweight resulting from poor diet. However, the study does not relate the diet of these individuals to the RU menu. Sousa et al. (2018) carry out an assessment of salt consumption in a RU in Belo Horizonte/MG, pointing out the use of excess salt in the production of its meals, with levels higher than those recommended by the WHO. In the opposite direction, Mesquita (2014) develops procedures for receiving meat in the RUs of IFES
in five regions of the country. Demonstrated adequate procedures with low quality of meat purchased from different suppliers. Cavalier et al. (2018) evaluated the information from the RUs' bidding notices for planning and preparing the menu and concluded that the bidding notices for hiring a company to provide meals need improvements, in order to produce a more suitable menu for students. Morte, Lira and Fonseca (2021) evaluated the quality of menus in a RU conducted by 16 observers who analyzed both lunch and dinner. The results point to a menu with a high frequency of leafy vegetables and fruits, little fried food, fatty meats and sweets with fried foods, as well as foods with the same color and rich in sulfur. They point out the need to improve the menu for good nutrition. Finally, Santos et al. (2020) analyzed the nutritional needs of students who use the UFBA RU by collecting information about lifestyle and anthropometric assessment measuring several variables. They point out that the study's reference individuals are young adults with body mass classified as normal and insufficiently active, with inadequate eating habits. The recommended total energy value was 2,181 calories, with 436.20 calories for breakfast, 763.35 calories for lunch and 654.30 calories for dinner, for both sexes.

On the subject of service capacity, Cardoso et al. (2018) analyzed the RU of UFPB regarding the service capacity in the unit. Even though the RU is outsourced and the provision of services is for a specific audience, it requires an increase in the supply of meals, as well as a new unit. Finally, Santos et al. (2017) addressed demand forecasting at UNESP, whose meal supply is insufficient to serve users, and propose the inclusion of contextual information about the user in the demand forecasting model.

On the topic of food handling, Santos et al. (2015) raise questions about the quality of UFCG's RU, indicating risks of contamination in the handling and preparation of food in the restaurant. They demonstrated poor hygiene and management of the unit. The study finds that after implementing training for the team, there was an improvement in food handling, preparation and hygiene procedures. Vieira and Rezende (2019) explored an extension project with the aim of carrying out food handling training in the RU aimed at hygiene and food safety. He considered that, despite the success, constant training is necessary to improve training actions. Borges et al. (2020) evaluated a training program developed with RU employees by surveying the manufacturing situation, analyzing the level of knowledge, verifying changes in work activity and good food handling practices after training. They point out that, even after training, levels did not increase satisfactorily; however, it influenced the adequacy of behaviors and practices, suggesting other necessary measures to verify what needs to be improved.
On the topic of **optimizing production and/or reducing waste**, Scheidegger *et al.* (2015) pointed out points for production optimization, such as the analysis of demand in RUs, the implementation of demand forecast models, the implications of the lack of a certain product, information systems models and the importance of inventory control. Bessan, Santos and Zebediff (2016) propose to determine the approximate quantity to be produced of each food offered daily in a RU with mathematical models, based on the number of users. Soares *et al.* (2018) studied waste in the RU of a public university in the state of Piauí, by calculating the food consumed and leftovers, projecting how many more meals could be served if there was no waste. They point to a high rate of waste (+ or - 119kg/day), and indicate the need for improvement in management. Borges *et al.* (2019) verify how a training action for RU employees has an impact on waste compared to the period before training. They point to a significant improvement in reducing the amount of wasted food by more than 50%. Massarollo, Fagundes and Prieto (2019) evaluated waste in an UR in Francisco Beltrão/PR and its relationship with menu planning or diners' preferences. They point out that waste in 15 days was + or - 30g per capita. Although waste is not high, it indicates the importance of reducing these rates. Deliberador, César and Batalha (2021) provide a bibliographical research on waste, seeking to understand the causes that contribute to food loss in RUs and interventions that can be used to avoid it. The research indicates 13 causes: portion size, quality, price, emotion, palatability, preparation, menu composition, time, satiety, storage, service, excess purchases, and safety; and 14 possible interventions: campaigns, tray removal, waste management, portion size, quality, menu change, planning, forecasting, donations, nutritional information, coercion, changing dishes, preparation, and storage.

**User satisfaction.** Harter *et al.* (2013) analyze the RU of UFMT, Cuiabá unit, in relation to user satisfaction with the quality of services and infrastructure and highlight the importance of the RU in maintaining students at the institution and indicates that almost all users are satisfied. In this same line of studies, Cavalcante, Silva and Baratto (2018) analyze the services provided by the RU in the interior of Paraná. Studies indicate users' dissatisfaction with the variety of the menu, flavor, seasoning and appearance of the food. Complementary to these are the studies by Amorim *et al.* (2019), which aim to understand the academic community's perspective on the services offered in the RU of UFMG. The results indicate that the variables quality of service, price charged for meals and environmental infrastructure are fundamental to users. The study by Barbosa *et al.* (2019) carried out a survey with student diners in a RU, with the purpose of identifying the main descriptors that guide the quality of the service offered.
according to the customers' perception. The results indicate that in the students' perception, the variables service, price and infrastructure require greater focus.

On the topic of environmental sustainability, Araújo et al. (2018) quantify solid waste produced by the RU in the state of Rio de Janeiro. Users were sensitized from the perspective of environmental sustainability, which led to positive awareness to guide consumption and reduce waste. Figueira et al. (2017) suggested a solution to replacing the disposable plastic cups used in UFES RU with reusable mugs. Over a three-week period, on Tuesdays, the RU did not offer disposable cups, with users being encouraged to bring their own mugs. The action had positive repercussions, but the behavior did not continue after the end of the action. Gomes et al. (2020) prepare a proposal for reusing RU water and propose measures to reduce consumption. The study measured that 2400 liters are used per day to prepare fruit and vegetables and 478 liters to clean dishes and cutlery. Finally, they pointed out that it is possible to store and reuse approximately 2878 liters of water per day to be used to sanitize the unit's floor, contributing to environmental preservation and reducing RU costs.

Finally, on the topic of use of public resources, Souza and Silva (2011) analyzed the use of resources in the RU, the value of individual meals, the evolution of the unit and user satisfaction with the quality of services offered. Therefore, they point to a deficit in the unit, highlighting the economic dependence on AE resources.

Final remarks

The study analyzed scientific production on RUs in the context of the 2010-2021 AE and, therefore, contributes to presenting an overview of reality, by grouping it into 8 categories, as well as presenting gaps for future research. Methodologically, we opted for qualitative, exploratory research and literature review. The final sample for in-depth analysis was 33 studies related to RUs in the context of AE.

The importance of RU in the student context is noted, since the diet of users at the university has a positive impact on eating habits and consequently on improving student performance and success. The nutritional quality, as well as the amount of sodium, potassium and soybean oil, used in the preparation of meals served to the academic community and the quality of the food purchased deserve greater attention from the institution's management, given the impact on customer satisfaction.
It was clear that the studies were grouped into a single variable, without the proper systemic focus at a macro level. Furthermore, in some cases, the process of purchasing fresh food is an issue to be studied, being relevant since studies point out the importance of the RU in promoting sustainable and local agri-food systems, with the possibility of purchasing products from family farming, which would encourage local commerce. The scarcity of literature in the AE area and the relevance of the topic within AE programs are also highlighted and, to this end, new studies are proposed in the RUs relating their impact to the improvement of AE actions and student performance. As a limitation, there are the reference bases used and the time frame, which was restricted when investigating post-PNAES decree, which could be an opportunity for future research.

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