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PROCESS MANAGEMENT OF FOOD SECURITY ISSUES IN HIGHER EDUCATION INSTITUTIONS IN LATIN AMERICA

Andrea Malavé-Gómez¹, Víctor Hugo Meriño-Córdoba ², Ricardo Elías Celis-Parra³, María Laura Herrera-Falcon⁴, Ramiro Campos-González⁵, Ana Haro-Velasteguí⁶, Carlos Almeida-Alvarado⁷, Guido Homero Poveda-Burgos⁸

Abstract

A documentary review was carried out on the production and publication of research papers related to the study of the variables Food Security Management in Higher Education by Latin American institutions. The purpose of the bibliometric analysis proposed in this document was to know the main characteristics of the volume of publications registered in the Scopus database during the period 2017-2022, achieving the identification of 45 publications. The information provided by this platform was organized through graphs and figures categorizing the information by Year of Publication, Country of Origin, Area of Knowledge and Type of Publication. Once these characteristics have been described, the position of different authors towards the proposed theme is referenced through a qualitative analysis. Among the main findings made through this research, it is found that the United States, with 10 publications, was the country with the highest scientific production registered in the name of authors affiliated with institutions in that country. The Area of Knowledge that made the greatest contribution to the construction of bibliographic material referring to the study of Food Safety Management in Higher Education Institutions was Medicine with 22 published documents, and the Type of Publication most used during the period indicated above were Journal Articles with 73% of the total scientific production.

Keywords: Food Security, Higher Education, Latin America.

1. Introduction

Food safety is an important aspect of public health and a consideration in the food industry. Ensuring the safety and quality of the food supply chain is critical to protecting consumers from foodborne illness and maintaining the reputation of food businesses. In recent years, the

¹ Docente, Universidad Estatal de Milagro amalaveg@unemi.edu.ec

² Profesor Investigador Titular - Universidad Católica Luis Amigó - Medellín – Colombia victor.merinoco@amigo.edu.co

³ Profesor Investigador - Facultad de Ciencias Económicas y Administrativas, Universidad Antonio Nariño Duitama, Boyacá, Colombia ricardo.celis@uan.edu.co

⁴ Universidad Continental, laurafalhe@gmail.com

⁵ Fonoaudiólogo, Máster en Seguridad y Salud Ocupacional, máster en auditoría de servicios de salud, Doctor en Administración Educativa, Docente Universitario liccampos2002@yahoo.com

⁶ Docente – Universidad de Guayaquil, anaharov@ug.edu.ec

⁷ Abogado especialista en Contratación Pública y Control Gubernamental, Magister en Derecho Procesal, Doctor Honoris Causa en Filosofía y Derechos humanos, Docente Universitario, calmeida56@hotmail.com

⁸ Docente – Universidad de Guayaquil, guido.povedabu@ug.edu.ec

importance of food safety has grown exponentially, prompting higher education institutions to play an important role in the training and production of competent professionals in this field.

Higher education institutions in Latin America have recognized the urgency of addressing food safety challenges in a comprehensive manner. As a result, many universities and colleges have established programs and courses dedicated to food safety management. These academic initiatives aim to equip students with the knowledge and skills necessary to effectively identify, prevent and manage food safety risks.

The importance of food safety management in higher education institutions goes beyond theoretical knowledge. These organizations are actively engaged in research and development to improve food safety standards, conduct risk assessments, and provide innovative solutions for safer food practices. In addition, they partner with regulatory authorities, industry stakeholders and international organizations to disseminate best practices and drive positive changes in food safety protocols.

This article highlights the importance of food safety management in higher education institutions, emphasizing their role as knowledge centers and catalysts for advances in food safety practices. By nurturing a generation of competent food safety professionals and producing cutting-edge research, these organizations make a significant contribution to protecting public health and improving overall food safety standards. For this reason, this article seeks to describe the main characteristics of the compendium of publications indexed in the Scopus database related to the variables Food Security Management in Higher Education by Latin American institutions, as well. As the description of the position of certain authors affiliated with institutions, during the period between 2017 and 2022.

2. General objective

Analyze from a bibliometric and bibliographic perspective, the elaboration and publication of research works in high-impact journals indexed in the Scopus database on the variables Food Safety Management in Higher Education Institutions, during the period 2017-2022.

3. Methodology

This article is carried out through a mixed orientation research that combines the quantitative and qualitative method.

On the one hand, a quantitative analysis of the information selected in Scopus is carried out under a bibliometric approach of the scientific production corresponding to the study of Food Safety Management in Higher Education Institutions

A qualitative perspective, examples of some research works published in the area of study indicated above, starting from a bibliographic approach that allows to describe the position of different authors towards the proposed topic. It is important to note that the entire search was performed through Scopus, managing to establish the parameters referenced in *Figure 1*.

3.1 Methodological design

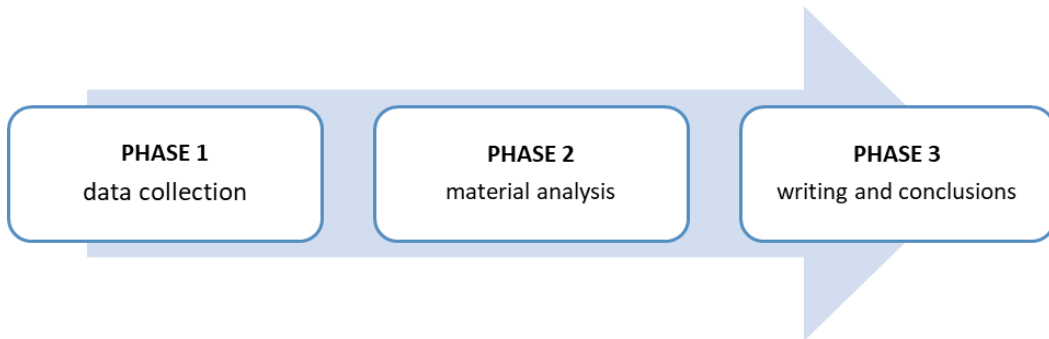


Figure 1. Methodological design

Source: Authors.

3.1.1 Phase 1: Data collection

Data collection was executed from the Search tool on the Scopus website, where 54 publications were obtained from the choice of the following filters:

TITLE-ABS-KEY (food AND safety, AND higher AND education, AND management) AND PUBYEAR > 2016 AND PUBYEAR < 2023

- Published documents whose study variables are related to the study of Food Security Management in Higher Education Institutions.
- Limited to the years 2017-2022.
- Limited to Latin American countries.
- Without distinction of area of knowledge.
- Regardless of type of publication.

3.1.2 Phase 2: Construction of analysis material

The information collected in Scopus during the previous phase is organized and subsequently classified by graphs, figures and tables as follows:

- Co-occurrence of words.

- Year of publication.
- Country of origin of the publication.
- Area of knowledge.
- Type of publication.

3.1.3 Phase 3: Drafting of conclusions and outcome document

In this phase, we proceed with the analysis of the results previously yielded resulting in the determination of conclusions and, consequently, the obtaining of the final document.

4. Results

4.1 Co-occurrence of words

Figure 2 shows the co-occurrence of keywords found in the publications identified in the Scopus database.

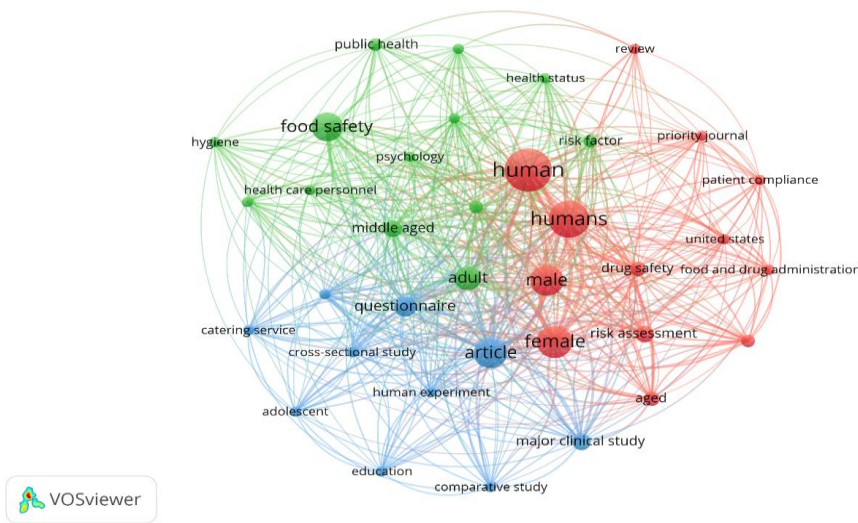


Figure 2. Co-occurrence of words

Source: Own elaboration (2023); based on data exported from Scopus.

Food Safety was the most frequently used keyword within the studies identified through the execution of Phase 1 of the Methodological Design proposed for the development of this article. Risk Factor is also among the most frequently used variables, associated with variables such as Hygiene, Risk Assessment, Higher Education, Food and Drug Management. From the above, it is striking that food safety management in higher education institutions is fundamental to define

the future of the food industry and public health. By incorporating food safety principles into the curriculum, conducting cutting-edge research, providing specialized training, setting food safety standards on campus, and fostering partnerships in partnership, higher education institutions can make significant advances in advancing food safety practices and foster a new generation of professionals committed to food safety. and consumer welfare. By taking responsibility for promoting food security, higher education institutions can play an important role in creating a safer, more sustainable and resilient food system for future generations.

4.2 Distribution of scientific production by year of publication

Figure 3 shows how scientific production is distributed according to the year of publication.

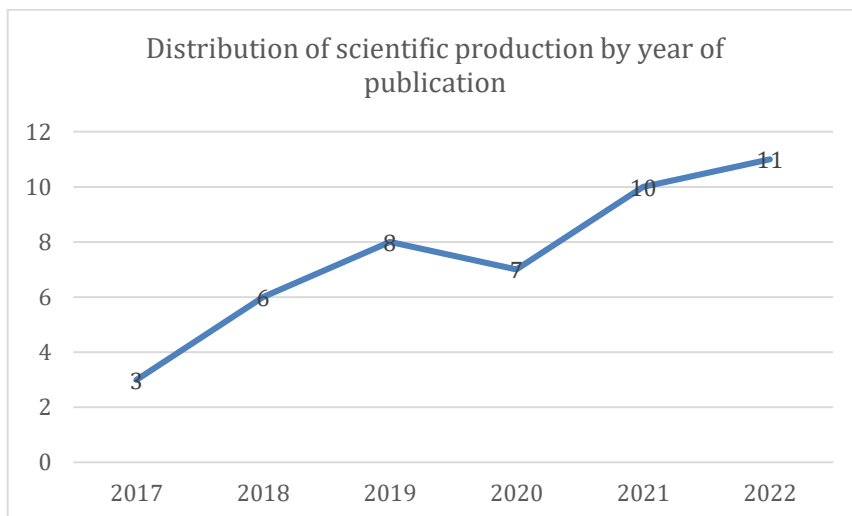


Figure 3. Distribution of scientific production by year of publication.

Source: Own elaboration (2023); based on data exported from Scopus

Among the main characteristics evidenced by the distribution of scientific production by year of publication, a level of number of publications registered in Scopus is notorious in the years 2022, reaching a total of 11 documents published in journals indexed in said platform. This can be explained by articles such as "Vaccine approval literacy and its effects on the intention to receive a future COVID-19 immunization" The objectives of this study were (1) to assess participants' knowledge of COVID-19 and vaccine approval processes, (2) to assess participants' intentions to receive the COVID-19 vaccine, and (3) to compare the results of the evaluation of the knowledge of the participants. with COVID-19 vaccine intentions. Methods: A prospective cross-sectional questionnaire was administered to patients participating in a pharmacist-led chronic disease status management program. The 22-item questionnaire assessed demographic

information and assessed the participant's knowledge and vaccination intentions. Data were analyzed with an a priori alpha value of 0.05. Results: Nearly all participants correctly answered questions related to COVID-19 infection ($n = 92, 93\%$), COVID-19 symptoms ($n = 96, 96\%$), and the roles of the Food and Drug Administration in vaccine approval processes ($n = 92, 92\%$). Participants scored lower on questions related to different requirements between phases of clinical trials ($n = 20, 21\%$) and vaccine safety in the United States ($n = 51, 53\%$). Most participants ($n = 54, 55.1\%$) did not believe trials would take too long to produce a vaccine, but 40.4% of participants ($n = 40$) believed the vaccine was approved too quickly. More than half of the participants ($n = 55, 56.1\%$) wanted more information about how vaccines are approved in the United States. (Carmosino, 2022)

4.3 Distribution of scientific production by country of origin.

Figure 4 shows how scientific production is distributed according to the nationality of the authors.

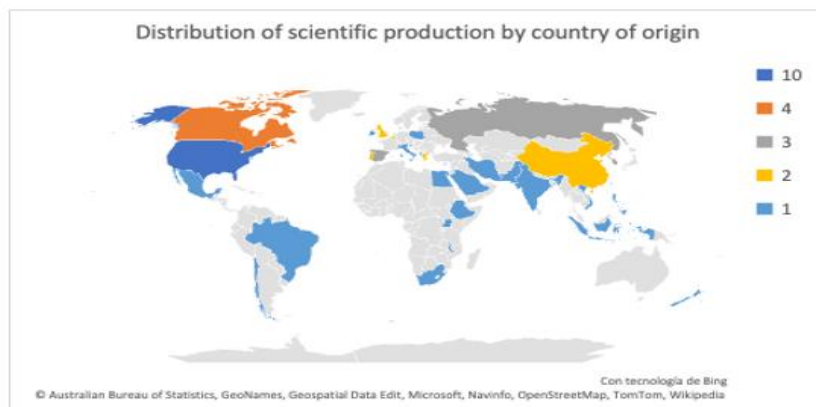


Figure 4. *Distribution of scientific production by country of origin.*

Source: Own elaboration (2023); based on data provided by Scopus.

Within the distribution of scientific production by country of origin, records from institutions were taken into account, establishing the United States, as the country of that community, with the highest number of publications indexed in Scopus during the period 2017-2022, with a total of 10 publications in total. In second place, Canada with 4 scientific documents, and Russia occupying the third place presenting to the scientific community, with a total of 3 documents among which is the article entitled "The risk of allergens not declared on food labels for pediatric patients in the European Union" The objective of this study was to analyze the presence of allergens not declared in food labeling through RASFF notifications in the European Union, focusing on those allergens that frequently affect the paediatric population and the products

involved, in order to provide useful information for their risk assessment and the development of educational materials for patients. The results showed that milk (20.5%), gluten (14.8%) and nuts (10.9%) are the pediatric allergens with the highest presence. In 80 % of the notifications for milk and milk products, the specific compound present (lactose or lactoprotein) was not identified. They were mainly present in cereals and bakery products, ready meals and snacks, cocoa and confectionery, all of which are frequently consumed in the paediatric population. Also noteworthy is the large amount (7.6%) of undeclared allergens in "allergen-free" products, especially with regard to allergens allegedly not present. Undeclared allergens in food products pose an obvious risk to allergic patients and their knowledge should play a relevant role in patient nutrition education. It is also necessary to raise awareness among manufacturers and safety authorities. (Martínez-Pineda, 2022)

4.4 Distribution of scientific production by area of knowledge

Figure 5 shows the distribution of the elaboration of scientific publications from the area of knowledge through which the different research methodologies are implemented.

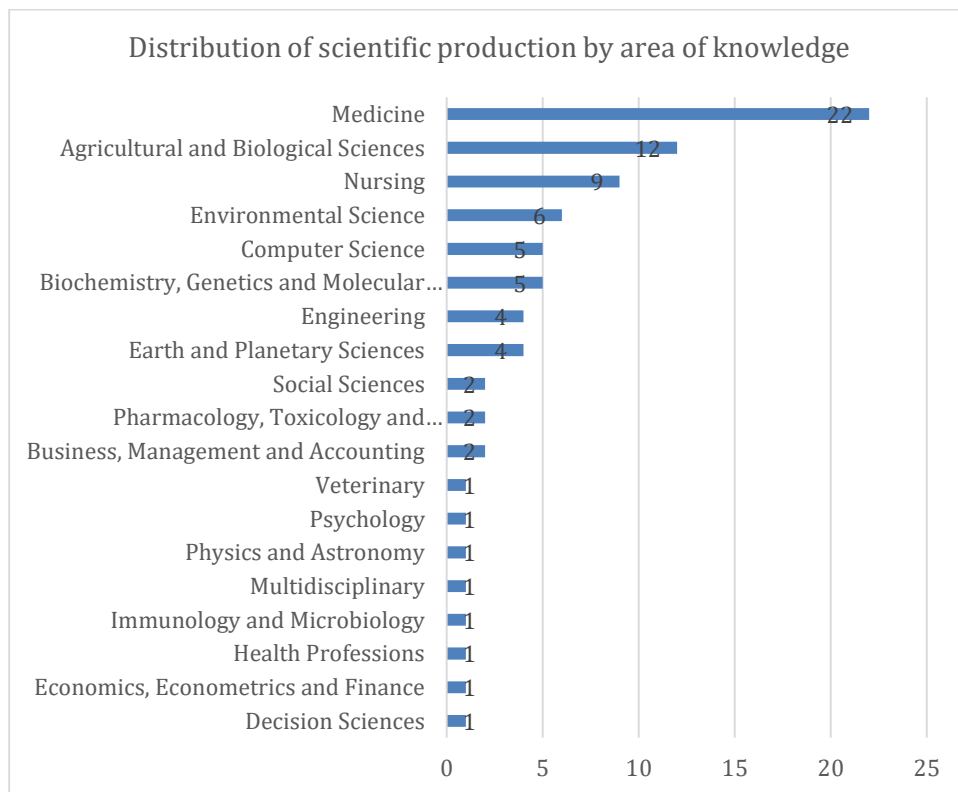


Figure 5. Distribution of scientific production by area of knowledge.

Source: Own elaboration (2023); based on data provided by Scopus.

Medicine was the area of knowledge with the highest number of publications registered in Scopus with a total of 22 documents that have based their methodologies Management on Food Security in Higher Education by Latin American institutions. In second place, Agricultural and Biological Sciences with 12 articles and Nursing in third place with 9.

The above can be explained thanks to the contribution and study of different branches, the article with the greatest impact was registered by the Medicine area entitled "Short-term therapeutic adherence of hospitalized elderly patients with oropharyngeal dysphagia after an educational intervention: analysis of compliance rates, risk factors and associated complications" whose scope of study was to evaluate the adherence of older patients to the management recommendations of dysphagia during hospitalization, after a specific intervention of education in dysphagia guided by nurses and identify the short-term complications of DO and its relationship with short-term adherence. We conducted a prospective observational study in an acute and orthogeriatric unit of a university hospital for ten months with one month of follow-up. Four hundred and forty-seven patients (mean age 92 years, 70.7% female) were diagnosed with dysphagia by the volume-viscosity swallowing test (V-VST).

Compensatory measures and individualized recommendations were explained in detail by a trained nurse. Therapeutic adherence was observed directly during hospital admission, after an educational intervention and self-reported after one month. We also recorded the following reported complications per month, including respiratory infection, antibiotic use, weight loss, emergency room transfers, or hospitalization.) Postural measurements and fluid volume were recommended to all patients, followed by foods of modified texture (95.5%), liquid thickeners (32.7%) and mode of administration (12.5%).

The rate of hospital compliance with all recommendations was 37.1% and at one month of hospital discharge 76.4%. Both compliance rates were interrelated and lower in patients with dementia, malnutrition and safety signs.(Mateos-Nozal, 2022)

4.5 Type of publication

In the following graph, you will observe the distribution of the bibliographic finding according to the type of publication made by each of the authors found in Scopus.

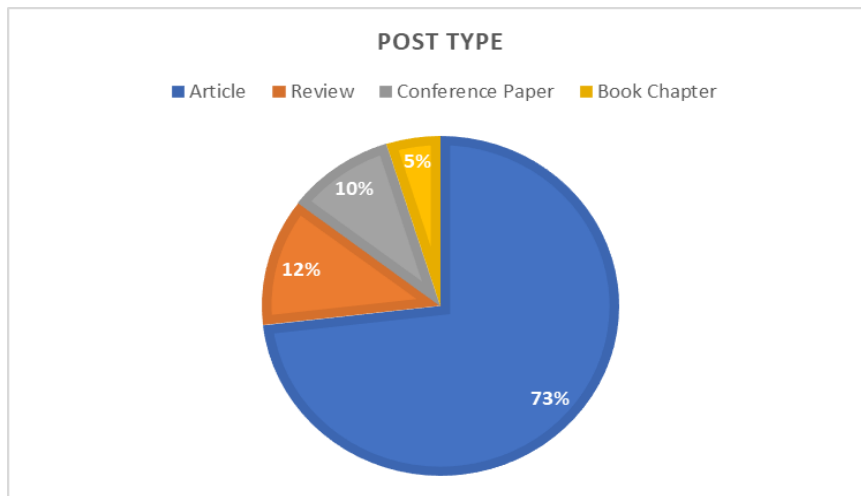


Figure 6. Type of publication.

Fountain: Own elaboration (2023); based on data provided by Scopus.

The type of publication most frequently used by the researchers referenced in the body of this document was entitled Journal Articles with 73% of the total production identified for analysis, followed by Journal with 12%. Session Paper are part of this classification, representing 10% of the research papers published during the period 2017-2022 in journals indexed in Scopus. In this last category, the one entitled "Performance of health management according to the characteristics of franchised cafeterias and knowledge about sanitation according to the characteristics of employees" stands out. This study was conducted to investigate the performance of health management according to the characteristics of franchised cafeterias and the health knowledge of employees according to their characteristics of employees. In 2019, an on-site survey was conducted among 60 coffee franchise stores in Korea and 302 employees of those stores.

The health management performance of the stores was assessed through observations and interviews conducted by trained experts. Employees' health knowledge was surveyed using a self-registration method through the distribution of a questionnaire. The performance of the health management of the shops was 47.87 points out of 55 (87.0%). Store health management performance was significantly higher when the store (1) was a directly managed store, (2) had a designated sanitary manager, (3) was located in the metropolitan area, (4) provided health education to employees, (5) had no history of experience in violations of the Food Hygiene Act, and (6) had a sanitary grade workshop designated by the Ministry of Food and Drug Safety. The health knowledge score of the employees was 10.60 points out of 15 (70.6%). Employees' health

knowledge score level was highest when they (1) performed customer service tasks, (2) worked eight hours or less, and (3) did not have appropriate licenses. There was no significant correlation between sanitation management performance and employees' health knowledge score. (Gu, 2021)

5. Conclusions

Through the bibliometric analysis carried out in this research work, it was established that the United States was the country with the largest number of records published with regard to the variables Food Security Management in Higher Education by Latin American institutions. with a total of 10 publications in Scopus database. In the same way, it was established that the application of theories framed in the area of Medicine, were used more frequently in the implementation of food management in higher education institutions since this is an essential component to guarantee the protection of public health and which seeks to promote safe and responsible food practices. These institutions, key actors in the training of professionals and knowledge creators, play a fundamental role in promoting safer and more sustainable food systems. By integrating food safety principles into curricula and courses, higher education institutions can prepare their students to meet emerging challenges related to whole food quality and safety. In addition, by conducting innovative research in the field of food safety, these organizations contribute to the development of effective solutions to prevent and control food-related risks. In addition, strategic alliances with the food industry and government agencies allow the exchange of knowledge and experiences that enrich food safety management in academia and applied to practical use in the real world. These partnerships can also help drive evidence-based policy adoption, thereby promoting more consistent and effective regulations to protect consumer health. Finally, food safety management in higher education institutions not only fulfills social responsibility, but also represents an opportunity to catalyze significant change in the food industry. By training experts and creating cutting-edge research, these organizations can play a vital role in creating safer, healthier and more sustainable food systems for the benefit of society as a whole.

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