

## Mapping the Research Landscape of Food Safety and Hygiene Awareness in Hotel Kitchens: A Bibliometric Analysis

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### Abstract

This study maps the trends in food safety and hygiene awareness in hotel kitchens across the world. Food safety has always been a subject of concern with rapid industrialization and urbanization. Food safety awareness plays a crucial role in promoting public health, as food can become contaminated at any point from harvest to consumption. Better understanding of food safety and hygiene awareness in hotel kitchen trends is also associated with SDGs and its understanding is essential to enable a safe food supply globally. Bibliometric analysis allows us to examine academic literature to identify the food safety and hygiene in relation to hotel kitchens for understanding global patterns, trends and gaps while aiming to deliver a detailed analysis of the study on the topic. This study analyses 1232 research articles published from 2016 to 2025. The result showcases food safety and hygiene awareness in hotel kitchen keyword patterns amongst research articles. The data analysis establishes a steady growth in academic publications. The results demonstrate the growing recognition of food safety and food hygiene awareness worldwide.

**Keywords:** Hotel kitchen hygiene, Food safety awareness, Food handler practices, Bibliometric Analysis, VOS-Viewer

### 1. INTRODUCTION

Food safety is a prime concern globally. Although advancements in technology, policy updates and investments in the food safety field, the concern tends to persist with multiple stakeholders still trying to resolve issues related to foodborne illness. (Thimoteo, D. C. D., 2021). Food hygiene refers to undertaking the necessary conditions and measures for securing food from production to consumption, ensuring food is safe and wholesome for consumption by humans. Contamination of food can occur at any stage from harvesting, slaughtering, processing and transportation. (Kamboj et al., 2020) Food hygiene is crucial for maintaining public health by preventing contamination throughout the food supply chain. (Griffith, 2006)

The culture of food safety holds common beliefs, values and practices which ensures safety of food in an organisation. This culture depends upon collaborative team efforts in the direction of effective communication, training and good leadership along with employees' motivation towards continued development. A good organisational culture amalgamates these elements at all levels of an organisation to support development and improvement as per the national legislation, ensuring public health. (Nyarugwe et al., 2016). In this Bibliometric Study Variables such as the number of published research articles by journals, countries and authors affiliation along with year of publication, research topic and local & global authors' collaborations, were studied to identify the most influential documents and their affiliations. Also, co-occurrence of keywords to record the trends of research on food safety hygiene practices in hotel kitchens. Citation counts are popularly marked as indicators of a study's scientific impact and quality. Bibliometric analyses depict that mostly cited papers have a strong influence on moulding food safety. The research trends affect both the academia and relevant stakeholders (Shen et al., 2021; Onyeaka, 2022). These analyses help identify crucial discoveries and promote research emphases in the area.

### 2. Literature Review

Food safety has always been a fundamental for ensuring better nutrition and health. (Pearson et al., 2024) As per the **World Health Organisation (WHO)** 2025 records, Unsafe food globally causes 600 million cases of foodborne diseases and 420,000 deaths. WHO estimated that 33 million years of healthy lives are lost to eating unsafe food globally each year and this number is likely an underestimation. Moreover, foodborne diseases are causing economic loss. In low- and middle-income countries, the consequences of lost productivity from premature death and disability. (Pearson et al., 2024) Efforts are required in the direction of safeguarding the food system for both consumers and producers. (Griffith, 2006). Food safety ensures international trade, which is also a prerequisite for the economic development of agricultural and food systems globally. (Pearson et al., 2024) Food safety is an essential for public health priority and ranking food-borne diseases. Researchers are trying to mark findings related to food-borne diseases for policy development. (Pires et al., 2021). Safe and hygienically prepared food is a fundamental requirement of life to ensure that consumers are protected from food-borne illnesses globally. Lack of knowledge, practices and habits is directly responsible for increasing food contamination risk, as found in research studies (Ahmed & Sadiq, 2021). This shows that food safety is highly impacted by the knowledge and behaviour of the food handlers and stakeholders.

#### 2.1 Food safety and Global concerns

Safety of food is of vital importance worldwide because of food-borne diseases causing harm to the economy, industry and individuals of countries. Food safety stabilises economies and maintains growth and stability in the food supply chain, showcasing its importance in today's world. (Kafenstein, Motarjemi, & Bettcher, 1997). Unsafe food doesn't just spoil meals—it erodes food security, hampers human development, disrupts entire food economies and stalls global trade. (World Bank, 2019). Hazardous bacteria such as Salmonella, Campylobacter, E. coli, Norovirus, etc. tend to contaminate food globally at different stages of food processing and pose a serious threat to the vulnerable population. (WHO, 2024) ;(Vergis et al. 2025) There are more than 200 identified diseases that are caused by the consumption of unsanitary food. Though Food legislation is present, practising food safety lies beyond said guidelines and should be an obligation for all involved in food handling throughout the food handling processing system. (Vergis et al. 2025)

Major factors for food-borne illness are due to improper food handling and approx 97% of the incidents in catering outlets are due to the same. (Howes et al., 1996) Most factors contributing to food contamination arise from improper food handling, inadequate cooking, incorrect temperature and time control and poor personal hygiene of food handlers (WHO, 2022). For ensuring food safety, necessary legislation and policies must be developed for the protection of the general public's health throughout the food supply chain. Food safety takes into account all the procedures for safeguarding food from biological, chemical and physical as well as allergens across the food production, transportation and consumption. (WHO, 2024).

#### 2.2 Food safety: Challenges and opportunities

As commercial catering businesses are connected to food safety, such organisations remain a challenge till date. A large amount of food is being processed in the commercial catering system. Foodborne illness affects a larger population than served and a strict code for hygiene and safety should be followed in the interest of public health. (Hartantyo et al., 2023). There are various causes impeding food safety, including industrialisation of food production, changes in dietary habits and climate change. (Food and Agriculture Organisation [FAO], 2018; WHO, 2024). Most of the contaminants include heavy metals, antibiotics, mycotoxins, molds and pesticide residues. Each stage of food handling in the food industry is critical in maintaining public health. Concerns such as repurposing stale ingredients, excessive use of additives, repurposing cooking oils, unethical meat processing, cheaper variants of meats and food packaging material being used are also leading to multiple lifestyle-related diseases such as metabolic, cardiovascular disease and organ failure due to prolonged consumption of such food. The underlying agenda are capitalizing over regulatory gaps while overlooking ethics. Enhancing safety regulations, vigilant monitoring of food sources, traceability in the system and nutritional labelling are a few measures suggested for safeguarding the food processing system. (Yin et al., 2025). With convolutions in the world's food supply system, it has become critical to follow risk prevention on the whole system rather than just focusing on the end processes. With the development of food variety in the green revolution, risks such as excessive usage of fertilisers and pesticides, drugs etc has also become critical. The current method of detection, i.e. laboratory testing of samples, is proving to be inefficient in following food safety timelines. (WHO, 2024; Science Direct, 2021). The discrepancies in food safety due to onsite detection and hindrance in real-time monitoring can be overcome using AI technologies for monitoring and sensing food safety. (WHO, 2024; Science Direct, 2021; Food Safety and Standards Authority of India [FSSAI], 2025). AI technology, such as big data monitoring, deep learning and machine learning with hyperspectral imaging, is being used in the identification of unethical and critical contamination points in the food processing industry (Yin et al., 2025). Further predictive microbiology is also evolving in collaboration with HACCP principles to aid food safety management. (Taiwo et al., 2024).

#### 2.3 Bibliometrics for Research

The bibliometric findings reveal emerging research trends and knowledge gaps, providing a foundational understanding to inform risk control strategies, formulate effective food safety standards and enhance product quality. This approach underscores the critical role of scientific investigation in the safety of widely consumed food products (Saraswati, Angraini, & Azima, 2023). Bibliometrics is a scientific approach that quantitatively analyse academic publications to assess and track progress in various research fields. It examines citations, publications, authorships, keywords and collaboration networks to evaluate research influence. Citations are vital as they reflect the impact of publications within the academic community. This method helps identify emerging trends, key contributors and research gaps across disciplines. (Köseoğlu et al. 2016). Bibliometric analysis is a quantitative method that employs statistical and mathematical tools to study scientific literature. It measures research productivity and impact using techniques like citation analysis, co-citation, authorship patterns and keyword co-occurrence. This approach reveals research trends, key contributors, collaboration networks and knowledge gaps, aiding strategic research planning and resource allocation (Donthu, Kumar, Mukherjee, Pandey & Lim, 2021). Analysing collaboration networks among researchers, institutions and countries reveals vital information about how knowledge is shared and research effectiveness. Understanding these linkages helps identify influential contributors, facilitates partnerships and enhances the overall impact and

coordination of scientific efforts across disciplines. (Kumar et al. 2021). This process enables a detailed evaluation of publications, citations and other bibliographic data. It promotes a deep understanding of the theoretical foundations within academic disciplines and highlights the achievements of scholars, offering valuable insights into the development and progression of scientific knowledge. (Nagendrababu et al. 2021) Citation potency is defined as the average number of citations a research paper receives yearly. This is used as an authentic measure of a study's prominence and visibility despite its publication date. This metric helps to standardise the influence across publications of varying ages, providing a fair assessment of their influence. Additionally, the consistent rise reflected in citation counts reveals the increasing engagement amongst researchers in innovative food safety topics. (Marušić, 2011; Onyeaka, 2022). Citation metrics are an influential Bibliometric tool used to recognise prominent studies and assess their contributions to the furtherance of food safety knowledge and oversight. This emphasis on citation frequency depicts a common understanding related to food safety research. Research articles that are highly cited are considered to be of better quality and a positive contribution (Shen et al., 2021; Onyeaka, 2022). Bibliometric analysis for research collaborations between academia and institutions enables the identification of research groups. These groups and clusters show groups progressing towards specific fields, expediting comprehension of research groups, fostering collaborations and enhancing resource allocation towards scientific understanding of topics (Ullah et al. 2022; Rashid et al. 2023). This bibliometric perspective is crucial for analysing research outcomes and identifying research potency, enabling institutions and researchers to analyse growth and impact methodologically (Ortega, 2019).

### 3. Methodology

This study uses a bibliometric approach by using the dataset of [dimensions.ai](https://www.dimensions.ai). This is an organisation working on research globally with data-based web applications since 2018. (Khadivi and Sato, 2023). This database is accessible without any cost (Hook, Porter and Herzog, 2018). Dimensions.ai contains mostly cited research articles and is an adequate substitute for Scopus and Web of Science (Thelwall, 2018). The Term '**food safety and hygiene awareness in hotel kitchen**' is used in this study analysis of data from 2016 to 2025. **59,288 publications** were identified under the findings. The data set was reduced to 1234 research publications by restricting the outcome to only open-access research articles. VOS viewer software is utilised for extracting and analysing keywords from the title and from the extracted literature. The final data set count, after duplicate articles elimination from the list was 1232. For the understanding of the data and result the best method is a visual representation of bibliometric analysis (Martins et al., 2024). For the data presentation study, the VOS viewer software was selected as a result. Nees Jan van Eck and Ludo Waltman created this software in 2010 at the Centre for Science and Technology Studies (CWTS) at Leiden University. The VOS viewer platform helped identify maps for identifying reoccurrence of keywords and the proximity helps in understanding the frequency of the work. (Saraswati et al., 2023) Apart from the bibliographic examination, Microsoft Excel was utilised for data analysis.

#### 3.1 Annual trend in publication:

Figure 1 illustrates the yearly publication trend. A line graph shows the total number of articles on food safety and hygiene awareness in hotel kitchens in academic research from 2017 to 2025, collected from the Dimensions.ai database. As the graph depicts, there is no significant rise in publications pre-COVID, i.e. 2017-2018. However, during COVID a noticeable increase is observed from 2019 onward, peaking around 2021-2022, followed by a minor decline post-2022 and a slow surge in 2023.

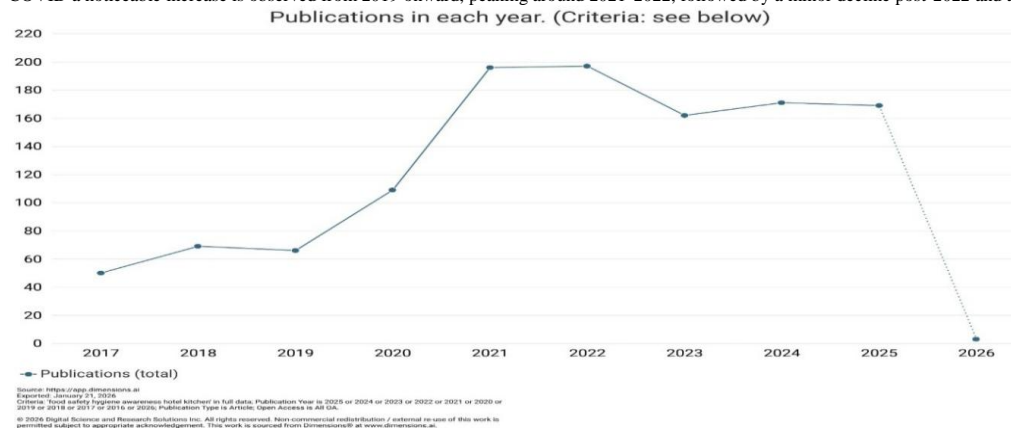


Figure 1: Annual trend in publications

#### 3.2 Distribution of Organisation: Author's Affiliation

Organisations leading in publications on food safety and hygiene awareness in hotel kitchen is depicted in Figure 2. The table lists selected organisations verified by the VOS viewer. Leading the field with the most publications is **North-West University of Potchefstroom**, South Africa with 8 impactful documents and 745 citations. Followed by **Norway's University of Bergen** with 5 documents having 736 citations. **London School of Hygiene & Tropical Medicine**, UK tops document count at 10 with 603 citations, while **University College London** delivers 9 documents, 392 citations. **King Faisal University** in Saudi Arabia's Al-Ahsa have 6 documents and 156 citations, Australia's **University of Sydney**, along with the Canadian **University of British Columbia** and **University of Toronto**, with 6 and 5 documents having 303 and 86 citations respectively. Malaysia's Universiti **Teknologi MARA in Shah Alam** and Italy's **University of Bologna** are leading organisations with 12 cited 78 times and 6 documents with 364 citations each.

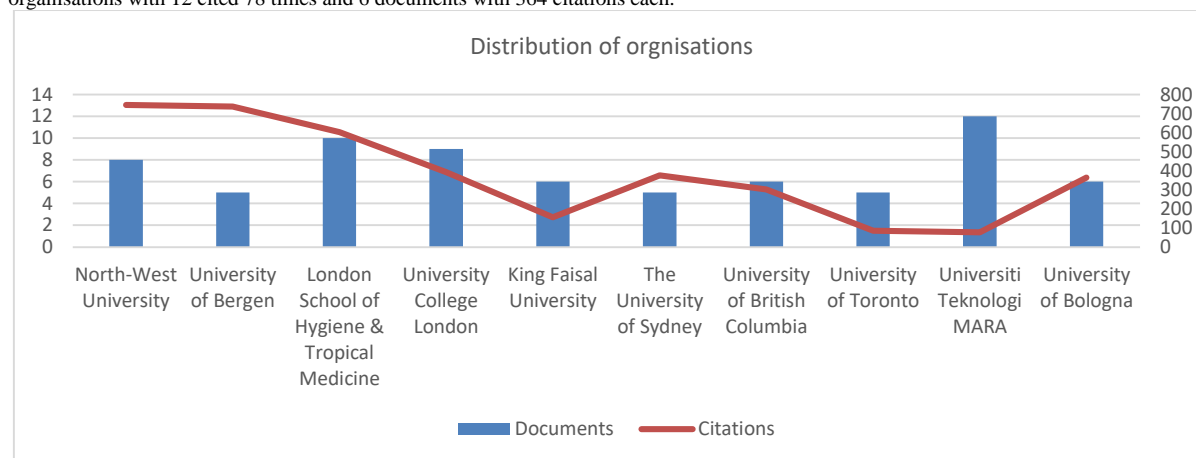


Figure 2: Distribution of organisations: author's affiliation

**3.3 Top 10 countries according to the number of publications :** Figure 3 showcases the top countries based on the number of publications on food safety and hygiene awareness in hotel kitchens, as verified in VOS viewer. The **United Kingdom** dominates the leaderboard with 109 documents and 4395 citations. The **United States** followed with 87 documents and 3646 citations, while **China** has the third largest publications in the compiled list with 68 documents pulling in 2059 citations. **Australia** is the fourth country on the list of publications with 53 documents and 2043 citations, followed by **India** with 46 documents and 1568

citations. India is followed by **Indonesia** with 45 documents and **Ethiopia** with 42 documents. **Italy, Spain** and **Malaysia** holding 37,36 and 35 documents each.

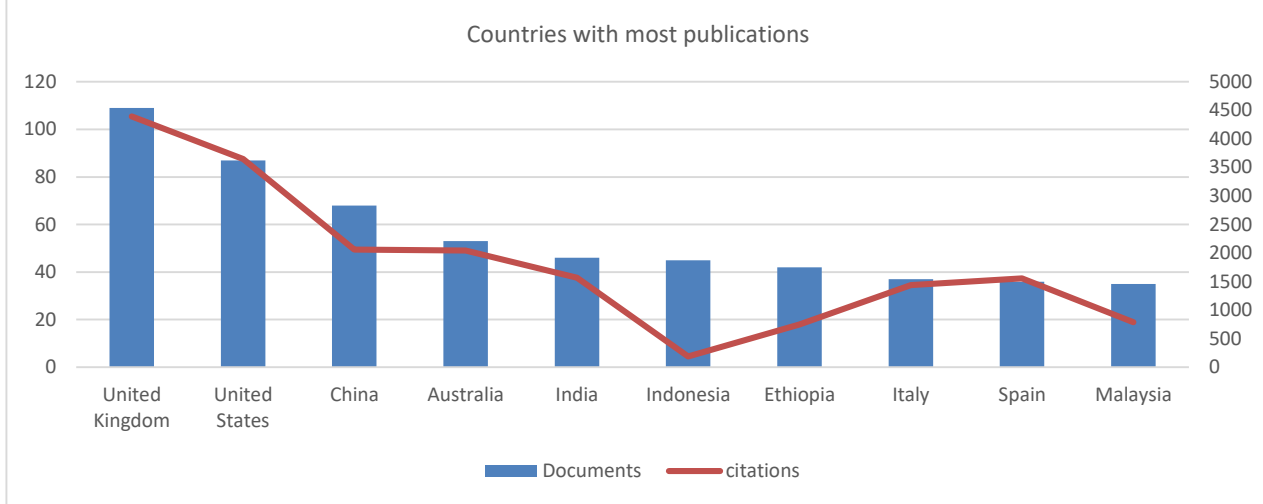


Figure 3: Countries with the most publications and citations.

**3.4 Distribution of published journals :** Presented in figure 4 are the leading journals in academic research publishing on food safety and hygiene awareness in hotel kitchens. A total of 210 documents were classified into the top 10 journals as verified through VOS viewer analysis.

Rank	Journal	Publisher	Focus	IF (2024)	H-Index	Documents count and percentage
1	Sustainability	MDPI	Multidisciplinary sustainability/food security	~3.9	117	77 (35.3%)
2	Foods	MDPI	Food science/hygiene	~5.1	90	22 (10.1%)
3	International Journal of Environmental Research and Public Health (IJERPH)	MDPI	Public health/environmental	2.1	145	20 (9.2%)
4	Przegląd Epidemiologiczny	Państwowy Zakład Higieny/National Institute of Hygiene in Poland	Polish epidemiology/health outbreaks	~1-1	-23	17 (7.8%)
5	Journal of Infection	Elsevier	Infectious diseases/foodborne	11.9	145	16 (7.3%)
6	Heliyon	Elsevier	Multidisciplinary open-access	3.6	66	15 (6.9%)
7	International Journal of Hospitality Management	Elsevier	Hospitality/hotel kitchens	8.3	186	15 (6.9%)
8	BMC Public Health	BMC	Public health/policy	3.6	149	13 (6%)
9	PLOS One	PLOS	Multidisciplinary	2.6	312	12 (5.5%)
10	International Journal of Academic Research in Business and Social Sciences (IJARBSS)	- Human Resource Management Academic Research Society (HRMARS)	Business/social sciences/hospitality	~0.4	40	11 (5%)

Table 1: Journals with the most publications.

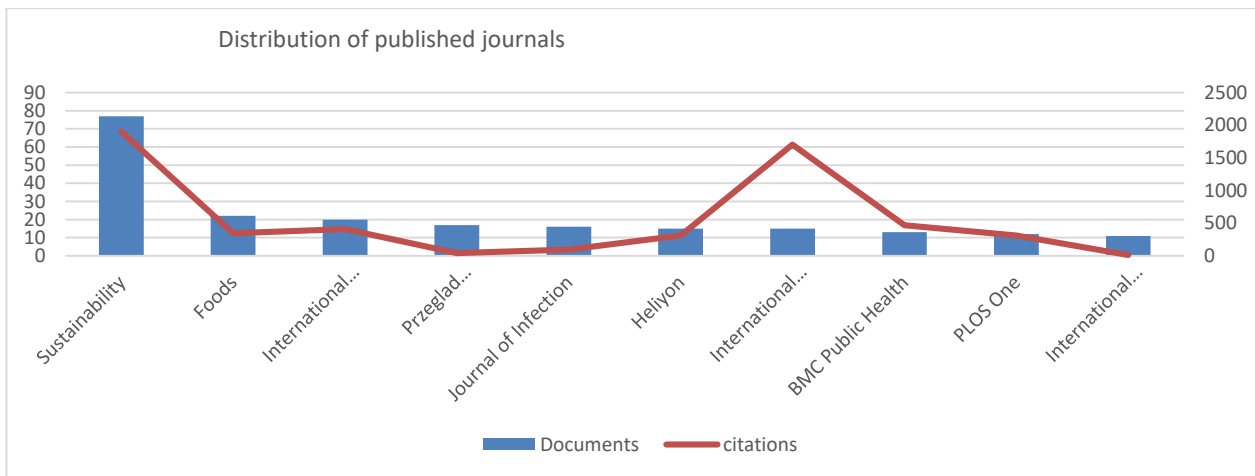


Figure 4: Journals with the most publications and citations.

**3.5 Highly cited publications:**

The citation count of an academic paper explains its importance in multiple aspects, such as scientific contribution towards the study and resource allocation. (Martins et al., 2024). The analysis identifies key publications in food safety and hygiene awareness in hotel kitchen research by their citation counts and connectivity. Table 2 analysis of the top 10 journals as extracted from data received from Dimensions.ai and research articles were categorised as per citations received. **Total citations from the top 10 research documents accounts to 5,832.** Further, in terms of research articles published 6 out of 10 of published highly cited articles belong to reports published by *European Food Safety Authority* (EFSA) along with *European Centre for Disease Prevention and Control* (ECDC) with their annual *The European Union One Health Zoonoses Reports*—starting with ‘*The European Union summary report on trends and sources of zoonoses, zoonotic agents and food-borne outbreaks in 2017 & 2018*’ accumulating 1442 citations followed by the **2022 edition** having 703 citations, **2021 version** follows with 663 citations, **2023 report** holds 577 citations with and the 2024 ‘*The European Union One Health 2023, Zoonoses report*’, has 290 citations. These reports are the most influential documents in the food safety and hygiene policy-making. EFSA’s reports collectively have approx 63% of the total citations and the most cited single document was the **EFSA 2017 report with 24.7% citations.** Apart from the research documents from EFSA, a diverse peer-reviewed studies follow: An Empirical observational study, published in *Food Science & Nutrition*, Wiley by *Wang Shao-Kang et al.*, ‘s -2020, titled ‘*Multisite survey of bacterial contamination in ready-to-eat meat products throughout the cooking and selling processes in urban supermarket, Nanjing, China*’ by Hao has 600 citations. *EFSA Panel on*

*Biological Hazards' 2018*, a review article published by *Food Control*- Elsevier, titled '*Listeria monocytogenes contamination of ready-to-eat foods and the risk for human health in the EU*', *Hazards* with 464. Research article by *Marie Hebrok and Casper Boks* (2017 with a review article titled '*Household food waste: Drivers and potential intervention points for design – An extensive review*' has 427 citations. Review study of *Amandeep Dhir, Shalini Talwar, Puneet Kaur and Areej Malibari's* 2020, '*Food waste in hospitality and food services: A systematic literature review and framework development approach*' holds 369 citations. *Michael Oteng-Peprah, Mike Agbesi Acheampong and Nanne K. de Vries*' 2018 '*Greywater Characteristics, Treatment Systems, Reuse Strategies and User Perception—a Review*' have 297 citations. This highlights important relations between contamination risks, waste management and sustainable practices in global food systems.

Rank	Citation count and percentage	Authors	Publication (Title)	Journal Name	Year
1	1442 (24.7%)	European Food Safety Authority & European Centre for Disease Prevention and Control	The European Union summary report on trends and sources of zoonoses, zoonotic agents and food-borne outbreaks in 2017	EFSA Journal	2018
2	703 (12.1%)	European Food Safety Authority & European Centre for Disease Prevention and Control	The European Union One Health 2021 Zoonoses Report	EFSA Journal	2022
3	663 (11.4%)	European Food Safety Authority & European Centre for Disease Prevention and Control	The European Union One Health 2020 Zoonoses Report	EFSA Journal	2021
4	600 (10.3%)	Hao, H.; Wang, S. K.; Fu, L. M.; Chen, G. W.; Xiao, H. M.; Pan, D.; Sun, G. J.	Multisite survey of bacterial contamination in ready-to-eat meat products throughout the cooking and selling processes in an urban supermarket, Nanjing, China	Food Control	2020
5	577 (9.9%)	European Food Safety Authority & European Centre for Disease Prevention and Control	The European Union One Health 2022 Zoonoses Report	EFSA Journal	2023
6	464 (8%)	EFSA Panel on Biological Hazards et al.	Listeria monocytogenes contamination of ready-to-eat foods and the risk for human health in the EU	EFSA Journal	2018
7	427	Hebrok, M.; Boks, C.	Household food waste: Drivers and potential intervention points for design – An extensive review	Journal of Cleaner Production	2017
8	369 (6.3%)	Dhir, A.; Talwar, S.; Kaur, P.; Malibari, A.	Food waste in hospitality and food services: A systematic literature review and framework development approach	Journal of Cleaner Production	2020
9	297 (5.1%)	Oteng-Peprah, M.; Acheampong, M. A.; de Vries, N. K.	Greywater characteristics, treatment systems, reuse strategies and user perception — A review	Water, Air, & Soil Pollution	2018
10	290 (5%)	European Food Safety Authority & European Centre for Disease Prevention and Control	The European Union One Health 2023 Zoonoses Report	EFSA Journal	2024

Table 2: top cited Research articles.

### 3.6 Country Co-Authorship Analysis:

The country co-authorship analysis requires an examination of which countries have published on the topic of study and the degree of interaction between them. The relationship between food safety, hygiene and hotel kitchen practices is shown in Figure 5. The largest nodes indicate the nations with the greatest influence and the thickness and spacing between nodes on the links show the connections between the different nations' institutions. With 4035 citations, the United Kingdom and 3646 citations and United States, respectively are the two countries with the highest numbers. The United Kingdom with 175 and the United States with 130, have the highest total link strength.

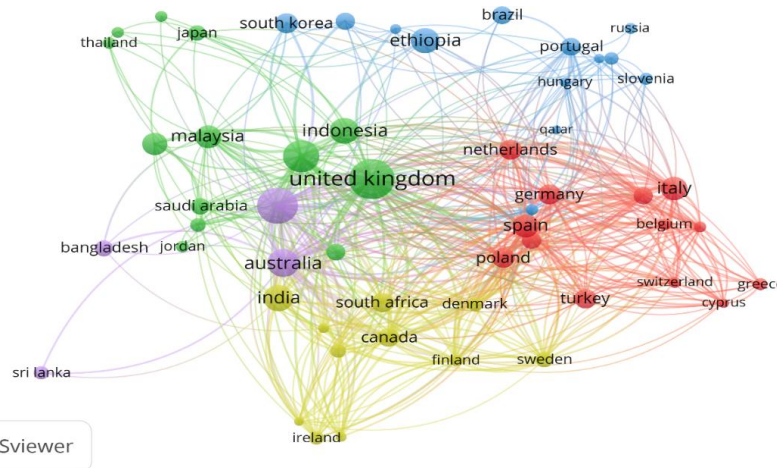


Figure 5: The country co-authorship network of food safety hygiene in hotel kitchens.

### 3.7 Co-citation analysis based on authors

In co-citation visualisations, node size and colour denote authors' prominence and clustering into shared research themes. These clusters delineate recurring collaborations and central thematic foci within the academic discourse. Co-citation analysis extends beyond mere citation counts, elucidating the intellectual foundations of topic food safety practices by mapping collaborative networks and patterns of knowledge dissemination over time.

Cluster evaluation showcases main themes with food safety research streams, tracing idea evolution, emergent trends, research gaps for future advancements (Martins et al., 2024). The following are among the top 10 co-citation authors analysis: The *European Food Safety Authority* leads with 7 documents having 2,245 citations. *The European Centre for Disease Prevention and Control* follows with 4 documents accumulating 2,233 citations. These are the main institutions shaping global food safety policy. Researchers *Amandeep Dhir and Puneet Kaur* are in positions third and fifth, each contributing 5 documents with 739 citations. *Shalini Talwar* has 4 documents and 736 citations alongside a cohesive cluster advancing hospitality and sustainability scholarship. *Matteo Vittuari* has 4 documents and 335 citations. *Volker Harth and Ann-Christin Kordsmeyer* further contribute with 4 documents with 66 citations each and *Joanna Bogusz and Iwona Paradowska-Stankiewicz* follow 4 documents with 7 citations each, providing specialised interconnected contributions to the bibliometric landscape.



Figure 6: The reference co-citation analysis network of Food safety and hygiene awareness in hotel kitchens.

### 3.8 Co-citation analysis based on journals

The journal co-citation network analysis shows a critical understanding of research on food safety and hygiene awareness in hotel kitchens, highlighting the pivotal

role of influential journals. Node size reflects each journal's citation volume, signifying its activity level. Journals positioned in closer proximity exhibit higher co-citation frequencies, denoting robust interconnections within the field. This VOS viewer network map depicts co-citation relationships amongst journals. Round nodes representing journals and curved lines indicating the frequency of joint citations in the same papers. Journal titled **Food Control**, **PLoS One**, **Green Aligning on Sustainability in hospitality** and **International Journal of Hospitality Management** and **Journal of Cleaner Production**. Colours delineate research clusters and interdisciplinary intersections, providing a vivid portrait of scholarly interplay and evolving academic networks.

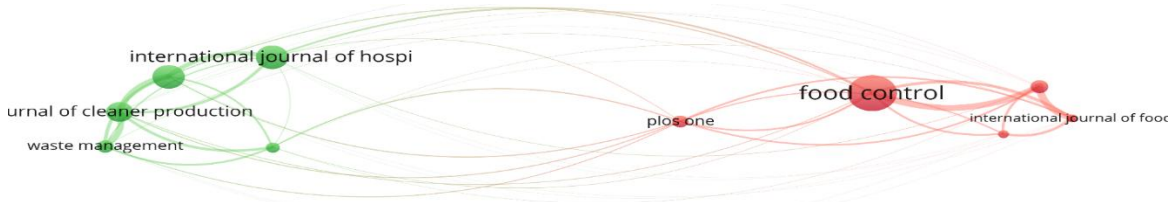


Figure 7: The journal co-citation network of food Safety and Hygiene Awareness

### 3.9 Keyword Analysis

The study analysis's main themes in food safety and hygiene awareness in hotel kitchen research using keyword co-occurrence analysis. The sample includes 1232 papers with 28,780 keywords and a minimum occurrence cutoff of 47 was applied to enhance the visual clarity and relevance of the VOS viewer network map. After filtering, 100 keywords are represented on the map. The colored circles on the keyword network indicate how often each term appears in publication titles and abstracts: larger circles and text represent more frequent occurrences. According to the co-occurrence methodology, this provides a clear overview of the dominant terms in the literature. This VOS viewer map provided a vivid picture of the top 100 keywords often used in research articles around food safety research, with terms like 'covid', 'management', 'challenges' and 'waste' located in the centre with a dense red cluster— this is the main topics of the study due to constant rising pressure towards maintaining safer food environment. Green spots showcase concerns related to operational delivery in the hospitality industry with words such as 'practice', 'food handler', 'hygiene', 'education' and 'level'. These terms depict how daily operations are being mingled with global sustainability issues. Terms depicted in blue cluster 'case', 'patient', and 'treatment' show disparity concerns.

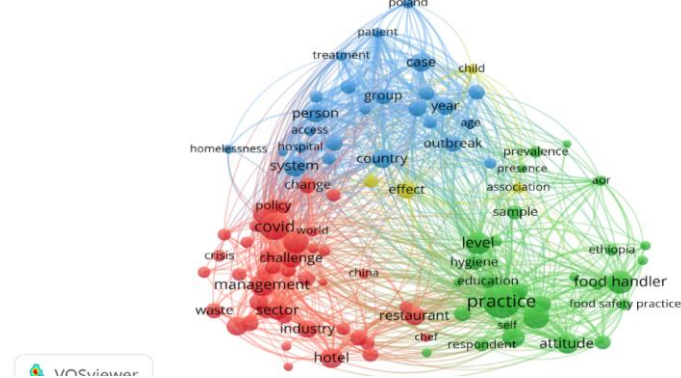


Figure 8: The keywords co-occurrence network of food safety and hygiene awareness in hotel kitchens.

### 4. Discussion of Results

This article explores key trends in food safety and hygiene awareness in hotel kitchen research based on bibliometric data from 2016 to 2025. The data indicate minimal publication activity before 2019, followed by a notable rise from 2019 onward, with publication counts peaking in 2021 and maintaining high levels into 2025 due to increased research activity. A country publication analysis highlights the **United Kingdom** leading with 109 documents and 4395 citations, followed closely by the **United States**, holding 87 documents, 3646 citations, **China** has 68 documents, 2059 citations and **Australia** with 53 documents, 2043 citations, while **India** ranks fifth with 46 documents and 1568 citations. The journals driving the greatest impact in this food safety domain are **Sustainability**, which holds 77 documents, 1905 citations, **International Journal of Hospitality Management** with 15 documents, 1703 citations and **International Journal of Environmental Research and Public Health** have 20 documents, 411 citations, with **BMC Public Health** having 13 documents, 468 citations and **PLOS One** 12 documents, 310 citations also prominent. These outlets anchor primary research clusters, spanning interdisciplinary sustainability, hospitality operations, public health policy, hygiene practices and broader epidemiological insights. Keyword co-occurrence analysis further highlights the most influential topics in food safety and hygiene awareness in hotel kitchen research. Keyword co-occurrence reveals 'practice', 'food safety', 'food handler', 'hygiene,' and 'COVID' as dominant themes in hotel kitchen research, linking to 'hotel', 'restaurant', 'food', 'waste', 'health' and 'prevalence.' This underscores behavioural training, contamination control and policy needs.

### 5. Conclusion & Implications

Research studies were analysed on the mutual relationship between food safety and hygiene and hotel kitchens from a bibliometric approach between 2015 and 2025. This study highlighted the current situation of food safety hygiene practices and their focus in hotel kitchen operations. Bibliometric analysis provides a comprehensive overview of the research landscape by quantifying and visualising the scholarly output, which supports academics, practitioners and policymakers in making informed decisions regarding research and innovation. This approach is valuable for understanding how knowledge in a field evolves, recognising influential works and contributors and guiding future studies effectively. In this specific study, bibliometric analysis offered insights into service innovation's development, dominant themes and the concentration of research activity geographically and institutionally.

The objective of this research is to ascend from the theoretical knowledge of food safety and hygiene and its implementation in hotel kitchen practices. The quantitative analysis of research articles cited is utilised for the expansion of the information about Food safety and hygiene awareness in hotel kitchens in academic research. It further displays patterns that cannot be understood using statistical analysis. Food safety and hygiene knowledge for processing food in all steps of food processing stages, leading towards a scenario where food is free from any contaminants. (Insfran-Rivarola et al., 2020). Awareness about food safety and hygiene in hotel kitchen practices amongst staff involved in food handling goes alongside the development of a safer food handling environment. This study will result in the reduced spread of food-borne diseases while coinciding with all the SDGs.

#### 5.1 Limitations

This study conducted a bibliometric analysis on the literature review on food safety and hygiene awareness in hotel kitchen is confined. The first limitation is that this study was conducted on open-access articles accumulated from [the dimensions.ai](https://www.dimensions.ai) dataset. This dataset provides dependable data to assess information from. Bibliometric analysis fails to acknowledge the quality of the paper but holds a stance dependent on the quantitative support of a few published articles and citations. Further, the VOS viewer is limited in showing a direct visualisation of the complex dataset relationship.

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