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THE MAXIMIZATION OF BENEFITS UNDER TOTAL QUALITY STANDARDS: AN APPROACH TO THE APPLICATION IN SMES OF THE AGRI-FOOD SECTOR FOR THE PRODUCTION OF SUPERFOODS

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Abstract

Through this document, it was possible to analyze the main characteristics of the volume of scientific production referring to the study of the variables Total Quality and Agri-food Sector in order to understand the maximization of benefits to SMEs in this sector that implement strategies based on total quality standards. A bibliometric analysis was proposed to analyze the details such as Year of Publication, Country of Origin of the publication, Area of Knowledge in which the published research is carried out and the Type of Publication most frequently used by the authors of each document published in high impact journals indexed in Scopus database. Among the main findings, it was possible to determine that for the execution of the different research methodologies, the report of 32 scientific documents related to the study of Total Quality and the Agri-food Sector was achieved. The year in which the highest number of publications of this type was registered was in 2022 with a total of 7 documents. The country of origin of the institutions that reported the highest number of records in Scopus, was Italy with 9 documents. The

area of knowledge with the greatest influence at the time of executing the research projects that resulted in scientific publications was Agriculture, and Biological Sciences which contributed great theoretical material in a total of 21 documents and the type of publication used most frequently to

publicize findings from the analysis of the aforementioned variables, was the Journal Article, which represented 78% of the total scientific production.

Keywords: Total Quality, Agri-food Sector, SMEs, Superfoods.

1. Introduction

The food patterns of all countries have evolved in a significant way, many of these are motivated by the effects of globalization and active trade competitiveness. The modern strategic direction has provided a set of tools that have allowed an analysis to be carried out both in the specific environment and the microenvironment in which SMEs perform in agri-food. The changes that have been generated in both environments have great relevance on the new practices that are being adopted, the new companies in the agri-food sector have the purpose of generating safety and managing the quality of food.

The improvement of the management and the orientation of results of the organization, the search for excellence and the improvement in the perfect attention to customers are not elements that can be bought, nor something that is managed effectively from one day to the next. In this sense, the competitiveness of all organizations, sectors, companies and markets have managed to condition the new sectors, SMEs to redirect to new results emphasized in better terms of efficiency and effectiveness and the implementation of management tools that contribute to this new management.

On the other hand, it is important to highlight that the new trends in food consumption They are reflected in people's behavior. The new generation dedicated to the conservation of the environment and new lifestyles are manifested in the concern for the presence of diseases are linked to food and poor diet. In this sense, the global food market with an increasingly demanding consumer public in terms of the benefits and characteristics that products can offer, new alternatives have been made focused on healthy and nutritional foods made from an integrity, safety and sustainability perspective. For this reason, this article seeks to describe the main characteristics of the compendium of publications indexed in Scopus database related to the variables Total Quality and Agri-food Sector in order to understand the maximization of benefits to SMEs in this sector that implement strategies based on total quality standards, Like this. As the description of the position of certain authors affiliated with institutions.

2. General objective

Analyze from a bibliometric approach, the characteristics in the volume of scientific production related to Total Quality in the Agri-food Sector, registered in Scopus.

3. Methodology

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

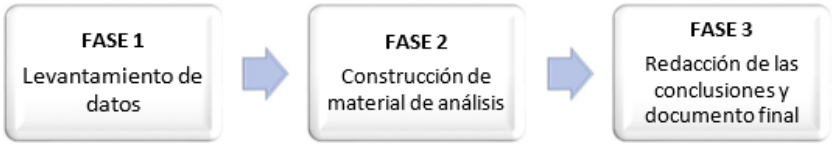
On the one hand, a quantitative analysis of the information selected in Scopus is carried out under a bibliometric approach of the scientific production corresponding to the study of the implementation of Total Quality standards in the Agri-food Sector.

On the other hand, it is analyzedfrom a qualitative perspective, examples of some research works published in the area of study indicated above, starting from a bibliographic approach that allows describing the position of different authors against the proposed topic.

It is important to note that all thesearch was carried out 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

The data collection was executed from the Search tool on the Scopus website, where 32 publications were obtained from the choice of the following filters:

- TITLE-ABS-KEY (total AND quality, AND agri-food AND sector) AND (EXCLUDE (PUBYEAR , 2023))
- Published documents whose study variables are related to the study of Total Quality and the Agri-Food Sector
- The present research only excludes works published in the year 2023 in order to measure the total annual record.
- No restriction by country of origin
- Without distinction in areas of knowledge.
- Without distinction of type of publication.

3.1.2 Phase 2: Construction of analytical material

The information collected in Scopus during the previous phase is organized to later be 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

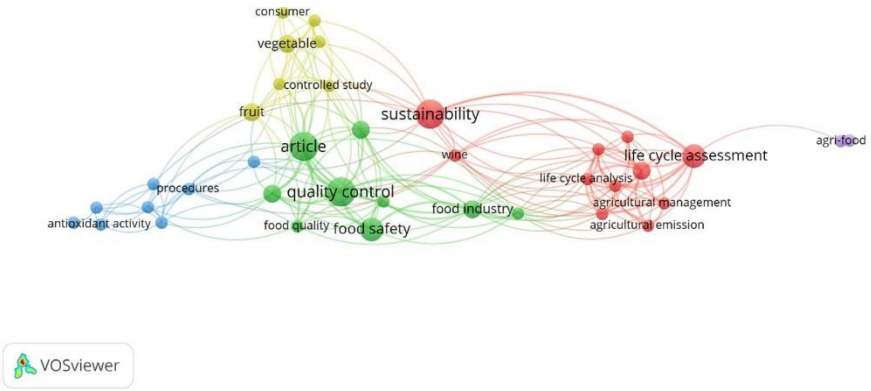
In this phase, we proceed with the analysis of the results previously yielded resulting in the determination of conclusions and, therefore, the obtaining of the final document.

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: Authors. (2023); based on data exported from Scopus.

Within the study of the research carried out by the Scopus platform, referring to the variables Total Quality and Agri-food Sector in order to understand the maximization of benefits to SMEs in this sector that implement strategies based on total quality standards, object of this scientific debt, it is said that under the perspective The growing international demand for superfoods is reflected in the dynamism of both national and global markets, which accentuates the complexities of a highly competitive environment. It is for this reason that through the interpretation of Figure 2, it is possible to determine as keywords of the publications reported in Scopus, Food Industry, Sustainability, Quality

Control. In general, SME companies in the food sector face a number of challenges that they must manage to defend their market share. Maximizing the benefits of quality standards in the consumption of superfoods.

4.2 Distribution of scientific output by yearof publication

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

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

|}Source: Authors. (2023); based on data exported from Scopus

Among the main characteristics evidenced through the distribution of scientific production by year of publication, it is noted that the year in which the highest number of publications were registered in Scopus was 2022, reaching a total of 7 documents published in journals indexed on said platform. Among which stands out the article entitled "Bioremediation of effluents from coastal aquaculture enriched with florfenicol using granular sludge based on microalgae: a promising solution for aquaculture recirculation systems" (Oliveira, 2022) This work aimed to evaluate the self-granulation process of a consortium based on microalgae and its ability to bioremediate coastal aquaculture streams containing sporadically the antibiotic flower fenicol (FF). A photo- sequencing batch reactor was inoculated with a native phototrophic microbial consortium and fed wastewater that mimicked coastal aquaculture currents. A rapid granulation process occurred within ca. 21 days, accompanied by a substantial increase in extracellular polymeric substances in the biomass. The microalgae-based granules developed exhibited high and stable organic carbon removal (83-100%). Sporadically, wastewater contained FF which was partially removed (approx. 5.5-11.4%) from the effluent. In FF loading periods, ammonium

removal decreased slightly (from 100 to approx. 70%), recovering 2 days after FF feeding ceases. An effluent of high chemical quality was obtained, complying with the concentrations of ammonium, nitrite and nitrate for the recirculation of water within a coastal aquaculture farm, even during the feeding periods of FF.

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: Authors. (2023); based on data provided by Scopus.

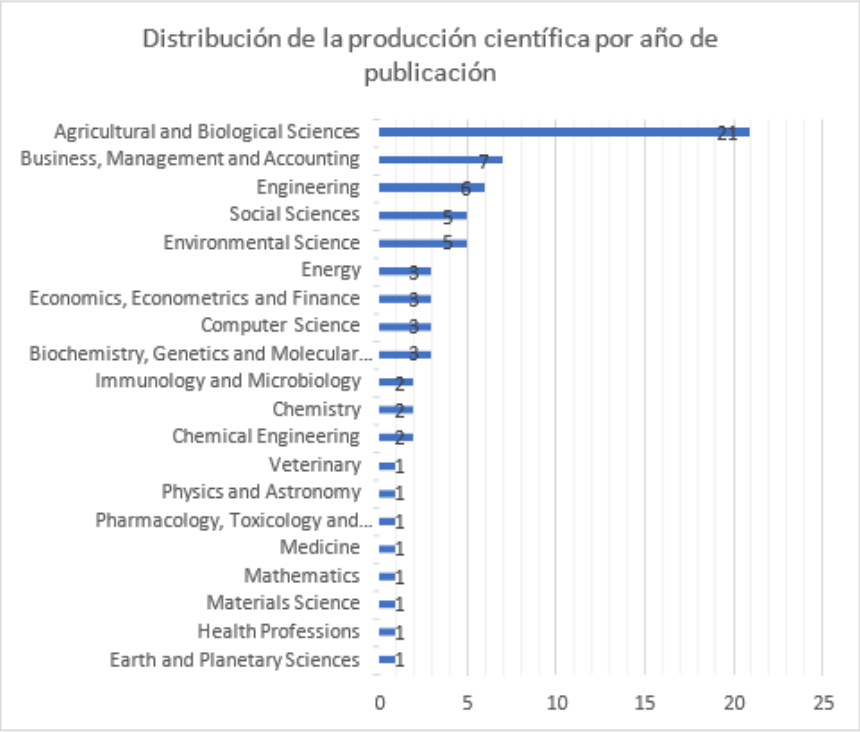
Within the distribution of scientific production by country of origin, records from different institutions were taken into account, establishing Italy as the country of that community, with the highest number of publications indexed in Scopus, with a total of 9 publications in total. Secondly, it isSpain with 5 scientific papers, and Germany with 3. Canada ranked fourth presenting to the scientific community, a total of 2 documents among which is the article entitled "Development of eco-efficiency indicators to assess the environmental performance of the Canadian food and beverage industry" (Marcotte, 2011) The objective of this research is conduct a comprehensive national assessment on the key environmental issues facing the Canadian Food and Beverage (FBI) industry. It includes the development and validation of appropriate methodologies, using statistical survey data, as well as a first national report. Since the temporary trend is not yet available, the results are discussed with the intention of differentiating sectors of the FBI. The Canadian FBI sector uses a significant amount of energy: about 4% of the energy used by the Canadian manufacturing industry as a whole. The consumption of this energy is responsible for most of the FBI's

greenhouse gas (GHG) emissions. In 2005, the FBI was responsible for nearly 20% of the total water used by all Canadian manufacturing industries. Of this water intake (i.e., volume of water extracted), the FBI discharges 77% and recirculates 4%. The FBI transforms raw agricultural products or ingredients into semi-prepared, consumer-ready food and beverage products that must be properly packaged to ensure they can reach consumers without losing their physical and hygienic integrity and quality attributes, as well as to transmit to the consumer and manufacturer information. The first results of the Packaging Use Indicator (PUI) reported here are sectoral measures for 2002 and provide a baseline for future references.

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 6. Distribution of scientific production by area of knowledge.



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

Agricultural and Biological Sciences was the area of knowledge with the highest number of publications registered in Scopus with a total of 2 1 documents that have based their methodologies on the impact of Total Quality and Agri-food Sector in order to understand the maximization of benefits to SMEs in this sector that implement strategies based on total

quality standards. Secondly, Business, Management and Accounting with 7 documents. The above can be explained thanks to the contribution and study of different branches, the article with the greatest impact was registered by the area of Agricultural and Biological Sciences entitled "Consumer acceptance of freshly cut peppers and tomatoes and their improvement through edible coatings" (Cloete L, 2022) whose scope of study is based on determining that Quality is an important term in the agri-food sector and refers to the totality of characteristics and characteristics of a product that are required to satisfy the consumer. Therefore, the objectives of the study were (i) to shed light on the desirable quality traits of freshly cut peppers and tomatoes sought by consumers and (ii) to evaluate the effectiveness of edible coatings applied to these vegetables in improving quality retention. Survey questionnaires were administered to 100 consumers. The quality characteristics of peppers and tomatoes treated with edible coatings were also evaluated. The edible coatings analyzed were alginate (A), carboxymethylcellulose (CMC) and xanthan gum (X), which were left alone or incorporated with potassium sorbate (PS, 0.5% w / v) and / or sodium acetate (SA, 1 % w / v). /v). Untreated and treated samples were extracted at 3-day intervals and subjected to microbiological (total viable counts (TVC), yeast and mold counts (YMC)), physicochemical (instrumental color, moisture content), and sensory (hedonic) analyses. Consumers indicated that the most important attributes when buying freshly cut peppers and tomatoes were overall appearance, freshness and nutritional value.

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.

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

The type of publication most frequently used by the researchers referenced in the body of this paper was the Journal Article with 78% of the total production identified for analysis, followed by Conference Articles with 13%. Book Chapters are part of this classification, representing 6% of the research papers published in journals indexed in Scopus, and finally the Reviews, 3%. In this last category, the one entitled "The impact of good governance on EU agricultural exports" is highlighted The purpose of the article is to test the hypothesis of the impact of good governance on(Kiforenko, 2022) the amounts of EU agricultural exports. The document analyses the amounts of agricultural exports outside the EU for 19 years, i.e. from 2002 to 2020 inclusive. The general dynamics of these exports, differences in exports from previous periods and the share of agricultural exports in total trade in agricultural products outside the EU were analysed using the tools of univariate and empirical analysis as well as visualization. . The projection of the aforementioned export amounts for two periods was made using the polynomial function having chosen between the exponential, linear, logarithmic, polynomial and power. The choice was made judging by the values of the R^2 coefficient. As a result of the research, it was stated that good governance has a positive impact on exports of agricultural products outside the EU. But, even so, good governance cannot be considered the only factor influencing the amount of such exports, having its place close to the events of EU enlargement, the impact of CAP reforms, as well as the impact of global economic and social challenges. The research presented in the article can be used by public administration bodies, politicians and decision-makers both from the EU and the rest of the world, large and small companies involved in trade in agricultural products, EU international trade bodies, as well as beginners and experienced. Specialists in data analysis.

5. Conclusions

Through the bibliometric analysis carried out in this research work, it was established that Italy was the country with the highest number of records published for the variables Total Quality and Agri-food Sector in order to understand the maximization of benefits to SMEs in this sector that implement strategies based on total quality standards with a total of 9 publications in Scopus database. In the same way, it was established that the application of theories framed in the area of Agricultural and Biological Sciences, were the most frequently used in the measurement of the impact generated by the dynamism of the global market,that today is reflected in the changes in consumer behavior, interested in a healthier diet and the proper care of our ecosystems. In this context, the rise of an elasticity of demand for superfoods is inserted by a need that national or international SMEs must manage in order to maintain a participation in the stock market, nation and global that are highly

competitive. In linewith the objective of this article, specifically, analyzing those market trends focused on the consumption of superfoods, we can identify which countries that represent opportunities for SME food companies we identify Italy, Germany and Canada. To incorporate entrepreneurs' perceptions of the challenges posed by changing global consumer behaviour, strategies must be put in place to address new trends in potential markets. However,it can be concluded that when organizations want to excel to achieve competitive advantage, quality orientation is a key strategy to achieve excellence. So, currently, companies in the agri-food sector must be involved in various quality assurance systems, environmental requirements and government policy.

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