A Bibliometric Analysis: Wine Tourism in the Sector

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ABSTRACT

The term "wine tourism" was first used in 90's from Australia. The definition of ecotourism has been studied by many academics throughout its history, reaching the conclusion that it is the activities carried out by people outside their usual environment in a given period of time related to the viticulture of the environment and wine. This study aims to enhance knowledge in the wine tourism field by employing bibliometric methods to quantitatively analyze its evolution over the past two decades. This analysis shows that from 2019 onwards, publications increased considerably, reaching a peak in 2020, mostly (linking with COVID-19 lockdown). In the areas of geography and economics, as research in the area of tourism is still very recent. The conceptual analysis shows the variety of terms used by researchers and how they have evolved over time, the most commonly used being "touristic" and "vineyard", with others appearing such as "meal" connected to "winery waste" or "tourism development", which are more akin to current management.

1. INTRODUCTION

In recent years, wine tourism, a segment within the global tourism industry, has seen significant fluctuations. According to the World Tourism Organization [1], an estimated 1.3 billion international tourists traveled in 2023, reaching approximately 88% of pre-pandemic levels-a notable recovery from the downturn caused by COVID-19. Regions such as Europe, the Middle East, and Africa have been instrumental in this resurgence, with the Middle East even surpassing its 2019 numbers. Projections indicate that international tourism will fully return to pre-pandemic levels by the end of 2024. Following the COVID-19 lockdowns, the landscape of wine tourism has transformed, necessitating new strategies and measures to support activities in wineries [2]. However, wine tourism still requires robust research support. This form of tourism involves visits to wineries and vineyards and includes tastings and samples of regional products [3]. It is becoming an increasingly significant activity that promotes rural, sustainable, and technological development within certain wine-producing regions [4].

This study aims to analyze the knowledge structure within the field of wine tourism through a bibliometric analysis to deepen understanding of this area, following recent research, such as that by Martínez-Falcó et al. [5]. A bibliometric approach provides insights into the current knowledge landscape by systematically reviewing study findings over time and identifying connections between key terms used in scholarly publications on wine tourism. Bibliometric analysis, being quantitative, offers a comprehensive perspective on the research landscape [6].

Wine tourism plays a vital role in the development of numerous regions, with private companies and public organizations working diligently to promote these activities. García-Rivas et al. [7] assert that the increasing relevance of wine tourism requires a comprehensive review of the existing literature. At the moment, no study has consolidated the literature on wine tourism communication and marketing, nor has a bibliometric perspective been applied. This research seeks to address this gap in the academic literature, complementing the study by Martínez-Falcó et al. [5], and advancing the understanding of wine tourism and communication by mapping its evolution through mathematical and statistical methods. Drawing from the scientific literature on wine tourism and communication from 2000 to 2022, this study employs a bibliometric approach, specifically co-word analysis [8]. A total of 615 publications on wine tourism communication were collected from the Web of Science (WoS) database and 664 from the Scopus database, with the following research questions guiding the analysis:

RQ 1: How has wine tourism research evolved in the last two years?

This question investigates recent developments and shifts within the field of wine tourism research. It aims to identify emerging trends, methodologies, and thematic focuses that have surfaced since 2022, providing a snapshot of how researchers are responding to current issues, innovations, and demands in wine tourism.

RQ 2: Which authors and journals are prominent in publishing on wine tourism topics, and which works are the most cited?

This question focuses on identifying leading authors and journals contributing to wine tourism research. The objective is to highlight influential works, determine the reach of key publications, and understand which researchers and outlets are shaping the discourse within this field. The analysis includes citation metrics to assess the impact and recognition of these contributions.

RQ 3: What are the main topics of interest in wine tourism, and what research gaps need to be addressed in future studies?

This question examines the primary themes and areas of interest within wine tourism research, as well as the gaps in the literature that present opportunities for future exploration. By identifying under-researched topics, this analysis aims to provide a roadmap for future studies that can enhance the understanding and development of wine tourism, supporting both academic inquiry and practical applications in the industry.

These research questions are designed to map the current state of wine tourism scholarship, assess its influence and contributors, and suggest directions for advancing the field.

Overall, bibliometrics is an essential tool for examining the historical progression, current status, and future directions of a scientific field. This method allows researchers to formulate research questions, select an appropriate database, set criteria for data selection, filter relevant data, apply suitable analytical methods, and interpret findings. For journal editors, bibliometric analyses serve as a means of evaluating scholarly contributions and guiding editorial decisions.

This paper outlines a methodology based on bibliographic databases and data acquisition, focusing on the use of the WoS and Scopus. The methodology section details the databases selected, search criteria employed, and the bibliometric and conceptual analysis techniques that constitute the foundation of this study. The results and key conclusions are then presented, structured as responses to the research questions introduced at the outset.

2. LITERATURE REVIEW

Recently, bibliometric analysis has been employed in various disciplines, such as consumer neuroscience [9], restaurant studies [8], and smart tourism destinations [10]. Collaborative economics research has also used this method to explore and trace the evolution of tourism research [11].

Due to the relevance of wine tourism, research in this area provides value both for industry practitioners and academics by enhancing understanding of this scientific field in two key ways. First, it enables an analysis of wine tourism research, identifying the most influential authors, their affiliated institutions, publication volumes over time, and the range of bibliometric studies conducted within this subfield to date. Second, this study explores the central themes related to wine tourism and communication, highlighting topics that have garnered the greatest interest among scholars during the period analyzed. Additionally, it contextualizes the field's evolution, particularly since the advent of the Internet and the introduction of digital travel tools.

Since 2006, research on wine tourism has spanned various perspectives, including geopolitical, landscape, and management dimensions [12]. Some studies have utilized models of tourist behavior to analyze primary motivations for wine tourism [13]. Other research has focused on understanding wine tourism activities and the impact they have on tourists and wine [14]. Online wine tourism activities, such as virtual tastings, have also gained popularity since the onset of the pandemic, prompting studies that examine the virtual wine tourism experience [3]. Wine tourism represents an ideal convergence of wine and tourism, appealing to tourists seeking novel experiences and contributing to the long-term competitiveness of wineries [15]. According to Carvalho et al. [16], wine tourism is an activity linked to the enjoyment of vineyards, wines, and wineries, aiming to enhance competitiveness, foster regional development, and drive organizational innovation.

Recent years have seen a proliferation of bibliometric studies examining scientific output in tourism research [17]. Bibliometric analysis involves quantifying and evaluating the scientific output of a field, tracking advancements, identifying trends, and recognizing research gaps [18]. In a comprehensive review, Salod and Mahomed [17] identified 190 bibliometric articles published across nine leading tourism and hospitality journals from 1988 to 2015. The study noted a marked increase in bibliometric research since 2008, with most articles (157) being review studies, followed by 24 evaluative studies and nine relational studies [19].

At present, this style of tourism is growing in popularity in New World wine-producing countries, including Australia and the United States. In California's Napa Valley, for instance, wine tourism generated over $58.8 billion in 2021 (Wine Institute, 2021). It is also considered a vital economic activity for wineries in Europe's traditional wine regions [20]. The increasing importance of wine tourism, given its recognized potential to boost sales for wineries and promote rural culture and development, has spurred academic interest across multiple disciplines [21]. Hall [22] highlights that early studies on wine tourism date back to the 20th century, focusing on the influence of rural regions and wine tourists' behaviors. Despite its expansion, confusion remains in the academic literature regarding the definitions and subdomains within wine tourism, complicating efforts to understand its activities. Additionally, the rapid growth of wine tourism, encompassing gastronomy, wine experiences, and scenic landscapes, has drawn researchers to examine these activities more closely. The theoretical and empirical developments generated over recent years underscore the need for ongoing analysis of the current state of knowledge [8].

3. METHODOLOGY

The quantitative method has been extensively employed in the literature, encompassing both evaluative and relational techniques [23]. The research questions addressed in this study involve a quantitative dimension (tracking the evolution of publications over time, citation frequency, influential authors, leading journals, etc.) and a qualitative component (examining

terminology used and relationships between concepts). Consequently, we utilized the WoS Core Collection database, conducting our search. Relevant terms from the field of study were applied in this search.

Following data collection, a bibliometric analysis was performed using the SciMAT software. While previous bibliometric studies, such as that of Martínez-Falcó et al. [24], do exist, they are more constrained in scope compared to the present analysis. The former focuses on publications from 2001 through mid-2010, and the latter spans 2011 to 2024, thus covering two decades in total. To ensure comprehensive search results, we first identified key terms for inclusion, based on an examination of prior publications addressing this topic.

Although it is true that there is some previous bibliometric analysis, such as that of Tite, Carrillo and Ochoa, from 2021, or that of Qiao et al. from 2022, these are more limited than the one we propose here. In the case of the former, the study covers publications between 2008 and the first half of 2019, and the latter from 2008 to 2020. For our study, we have extended the search in years by examining publications from 2000 to 2024. On the other hand, the most recently published article analyses only articles written in English, whereas our study includes both English and Spanish articles.

3.1 Analytical tools

After downloading the document containing data from the selected published studies, the information was subjected to detailed analysis. The SciMAT software [25, 26] was employed for content analysis, providing a framework to examine scientific data longitudinally. SciMAT categorizes and organizes articles according to the journal in which they were published, citation count, and publication year, facilitating a structured bibliometric overview. SciMAT is a new open-source software tool that performs science mapping analysis with features like data preprocessing, bibliometric impact analysis, and a configuration wizard. Bibliometrix and its Shiny platform contain the broadest set of implemented techniques, and together with the ease of its interface, they could be a great software for professionals. VOSviewer contains great visualization, and you can load and import data from a large number of sources. SciMAT has great pre-processing and export capabilities, and further visualization through the strategy diagram and subject areas could allow the analyst to focus deeply on some specific research topics. The number of exportable records is between 500 and 50,000 and the coverage of the different scientific fields is uneven in each database. SciMAT is the tool with powerful pre-processing and export capabilities. In view of the variability of the characteristics, users must decide on the desired analysis result and choose the option that best suits their objectives [27].

Moreover, SciMAT enables co-occurrence analysis of terms, encoding textual information at the word level to construct a term network based on associative relationships [10, 28]. The co-occurrence analysis outputs a visualization that reveals the conceptual structure of the field through a strategic diagram. This diagram includes four quadrants: (1) the upper-right quadrant indicates "driving themes"; (2) the upper-left quadrant shows "highly developed and isolated themes"; (3) the lower-left quadrant displays "emerging or declining themes"; and (4) the lower-right quadrant contains "basic and transversal themes".

To identify the primary themes based on word co-occurrence, the analysis adhered to the systematic procedures

outlined by Cobo et al. [25]. This methodological approach allowed for the development of scientific maps that visually represent central themes within the field over time.

- **Selection of Keywords**: This stage involves selecting key elements related to wine tourism, such as relevant authors and journals, to be included in the analysis.
- **Standardization of Terms**: Words are grouped according to their original meanings to maintain consistency. Specific terms and their variations were standardized for analysis.
- **Determination of Analysis Period**: The analysis time frame was divided into two distinct periods: 2000-2010 and 2011-2024. The first period corresponds to the initial emergence of wine tourism in the academic literature, while the second period represents its growth and development phase.
- **Selection of Analysis Units**: Words and terms associated with authors and journals were chosen as primary units for analysis.
- **Data Reduction**: This step reduces data based on keyword co-occurrence, selecting words that frequently appear together across different documents. The frequency of co-occurrence was calculated from the uploaded data.
- **Network Construction Method**: Co-occurrence of terms was used to construct a term network. Based on previous steps, similarity between terms was calculated, with a minimum co-occurrence frequency set at two to account for the large number of terms.
- **Choice of Similarity Measure**: The equivalence index was selected as the most suitable measure to normalize the term network's frequency distribution.
- **Selection of Clustering Algorithm**: Following Cobo et al. [25], a simple center algorithm was applied, with minimum and maximum cluster sizes set to 1 and 3, respectively.
- **Document Mapping**: Primary and secondary document maps were selected for graph construction, excluding considerations of union or intersection between maps.
- **Quality Measures Represented in the Strategic Diagram**: The quality indicators "h-index" and "sum of citations" were chosen to represent the data in the strategic diagram.

3.2 Bibliographic database and acquisition

New research builds upon related academic publications, contributing to the advancement of knowledge within a specific field. The databases employed in this study were WoS and Scopus, both of which are essential tools for conducting bibliometric research. These platforms facilitate the analysis, processing, and extraction of accurate, reliable data from a wide array of research.

WoS (Clarivate Analytics, Philadelphia, PA, USA) and Scopus are web-based platforms that aggregate collections of bibliographic databases, citation records of scholarly publications, and keyword records provided by the authors of each publication. In this study, scientific articles published between 2000 and 2021 were collected. The selection of this period reflects the absence of indexed reports within the Hospitality, Leisure, and Sports Tourism categories prior to 2000. Although articles on wine tourism may have been published before 2000, they were not categorized under this

specific field of study.

((ALL=(wine)) AND ALL=(tourism)) OR ALL=(winetourism)

A total of 1943 documents found in the WoS database were analyzed; however, 16,844 documents from the Scopus database were analyzed. Figure 1 presents the annual trajectory of publications across both databases through 2024. A discernible upward trend in publication volume emerges from 2008 onward. The initial period (2001-2010) indicates a phase of relative stagnation, after which publication numbers exhibit a consistent and substantial increase. As shown in Figure 1, the period from 2011 to 2024 reveals a notable growth in publications that include the specified search terms.
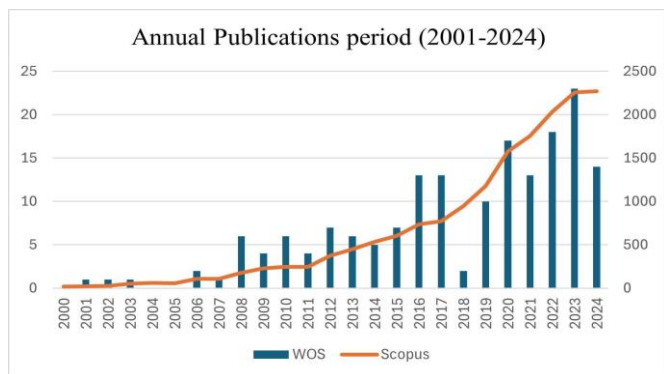
Figure 1. Annual publications period (2001-2024)

4. RESULTS

4.1 Ranking of journals

The 1,943 scientific articles analyzed are sourced from 174 publications in WoS and 16.844 in Scopus, including International Journal of Wine Business research (54 documents) and Sustainability (896).

The 1,943 articles retrieved from the WoS database were authored by 1,770 distinct authors, while the 16,844 articles in Scopus correspond to 30,087 authors (Table 1). Among the most prolific contributors to the wine tourism literature are Alonso Abel Duarte (21 documents) and Colin M. Hall (111 documents), with Hall being the most prominent in Scopus.

4.1.1 Citations maps

SciMAT generated a two-dimensional graph, segmented into four quadrants (see Figure 2), which illustrates the strategic topics. This diagram is based on centrality and density metrics, which assess the significance of each topic. Specifically, the centrality metric reflects the interaction of a network with other networks, indicating the degree of interconnection between a topic and others within its domain [25]. In contrast, density pertains to the internal cohesion of the network, representing the concentration of keywords that define and develop a topic.

The content of each quadrant is described below, according to Cobo et al. [25]:

- Highly developed or isolated topics exhibit high density and low centrality. This quadrant identifies themes with well-established, specialized internal development, but with minimal connections to other areas.

- Driving themes are characterized by high density and high centrality. This quadrant encompasses the core themes of the scientific field upon which the research is grounded.

- Emerging or declining themes are characterized by low density and low centrality. These topics are either underdeveloped or in the early stages of emergence.

Table 1. Ranking of 10 journals

| Ranking of Journals	Scopus	WoS	No. of Documents
Sustainability (Switzerland)	896	International Journal of wine Business Research	54
International Journal of Wine Business Research	272	Sustainability	47
Tourism Management	204	Pasos-Revista de Turismo y Patrimonio Cultural	31
British Food Journal	194	Tourism Analysis	22
International Journal of Hospitality Management	194	International Journal of Contemporary Hospitality Management	15
Current Issues in Tourism	191	Tourism Management	15
International Journal of Contemporary Hospitality Management	187	Cuadernos de Turismo	14
Journal of Cleaner Production	167	International Journal of Tourism Research	14
Journal of Travel and Tourism Marketing	165	Current Issues in Tourism	13
Journal of Retailing and Consumer Services	144	Economics of Agriculture	13
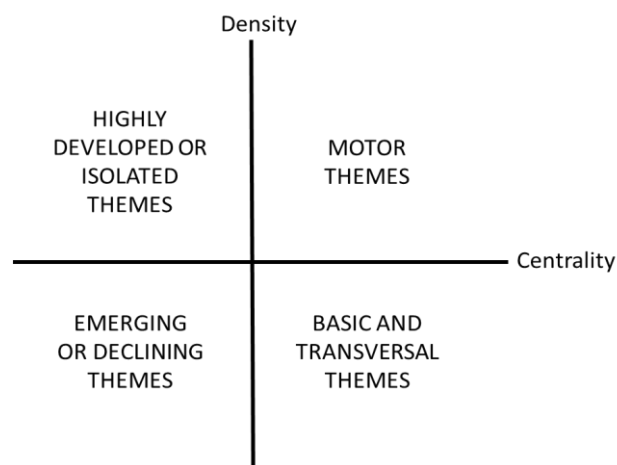
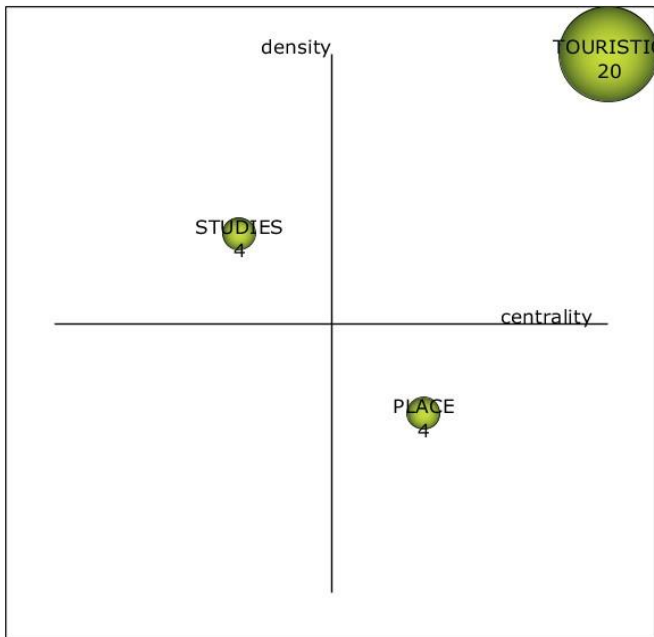**Figure 2.** Quadrants of the strategic diagram

Figure 3. Strategic diagrams of the analysed steps (First stage 2000-2010) in WoS
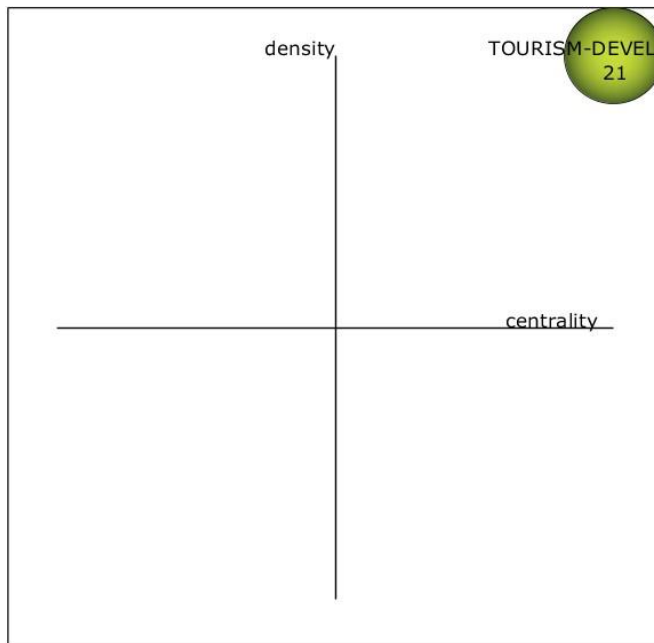

Figure 4. Strategic diagrams of the analysed steps (First stage 2000-2010) in Scopus

This network of themes illustrates, through a cartographic representation, the interrelationships between thematic areas. It enables the visualization of the status of various topics (isolated, emerging, primary, or essential). The analysis of keywords across both periods reveals the interconnections within each theme, as represented in the strategic diagrams. Diagrams for each stage are presented below (see Figures 3 and 4). The evolution of these themes over the established periods is further visualized, following the approach of Cobo et al. [25].

4.2 Stage of penetration of the new activity (2000-2010)

Figures 5-8 illustrate the research topics that are similar in both the WoS and Scopus databases. Specifically, the themes that appear in both platforms are related to Touristic, Studies, Place and tourism development. In contrast, the topics published in Scopus predominantly addressed Tourism development (see Table 2). The variation in circle size reflects the total number of citations associated with the terms within each theme. In the case of WoS, the performance metrics indicate that, during this early phase of activity adoption, the driving themes in the research field were Tourism Development (Total Citations=1.672H-index=17). Regarding the nodes of the first period, in Scopus, *Tourism-Development* is associated with *Canary-Island* (2 documents), as well as *Ecotourism* (27 documents), *Italy* (10 documents), *Vineyard* (8 documents), and *Perception* (10 documents). In WoS for the nodes *Touristic* (21 documents), *Meal* (20 documents), *Activities* (3 documents), *Website/online* (2 documents) and *Subject* (5 documents); *Place* (5 documents), *Service* (4 documents), *Environmental* (2 documents), *Problems* (2 documents) and *Result* (3 documents); *Studies* (7 documents), *Feeling* (2 documents), *People* (2 documents).

Table 2. Comparative analysis of leading authors and document output in tourism studies (WoS vs. Scopus, 2000-2010)

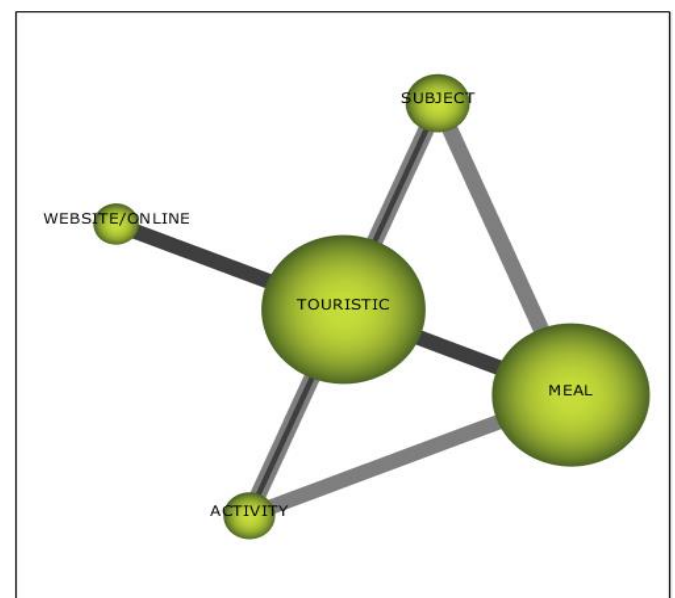| WoS		Scopus	
Authors	**Documents**	**Authors**	**Documents**
Alonso, Abel Duarte	21	Hall, C.M.	111
Kastenholz, Elisabeth	19	Wang, Y.	72
Bruwer, Johan	18	Marco-Lajara, B.	72
Perri, Giovanni	11	Zhang, Y.	70
Croce, Erica	11	Alonso, A.D.	61
Ramos, Paulo	10	Kim, S.	60
Valduga, Vander	9	Vrontis, D.	54
Festa, Giuseppe	9	Sánchez-García, E.	54
Carneiro, Maria Joao	9	Liu, Y.	54
Ruediger, Jens	9	Saayman, M.	53

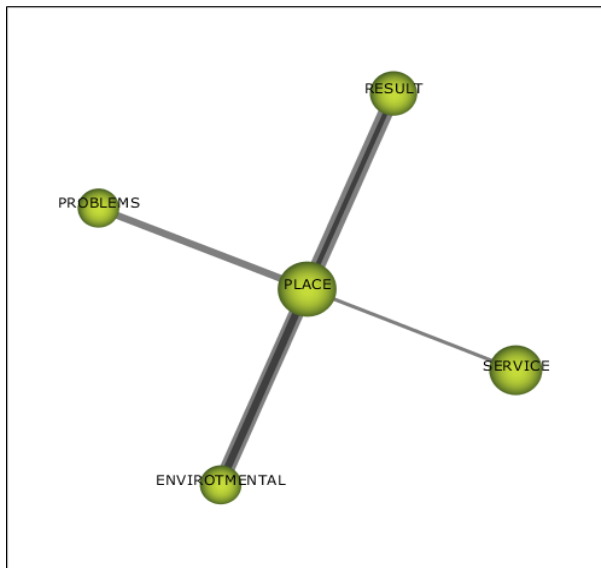**Figure 5.** Cluster network TOURISTIC in WoS

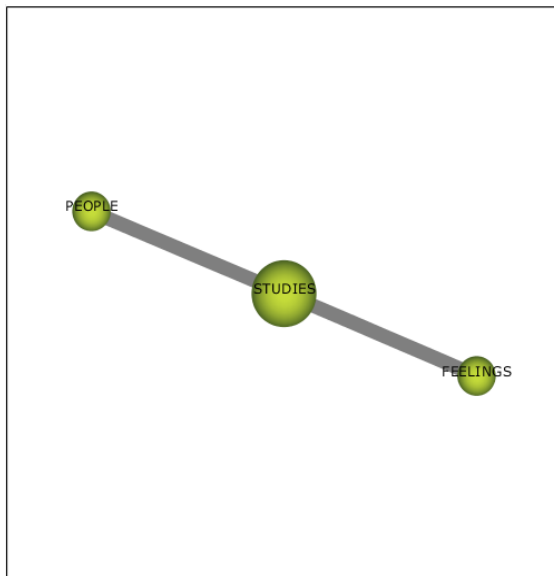**Figure 6.** Cluster network PLACE in WoS
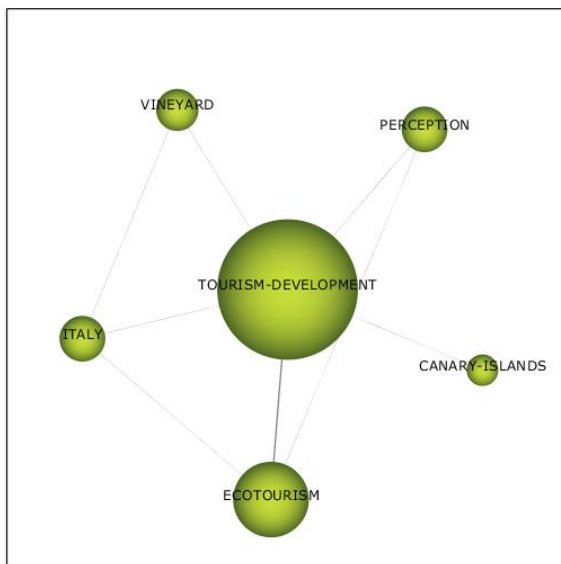

Figure 7. Cluster's network STUDIES in WoS

Figure 8. Cluster's network TOURISM-DEVELOPMENT in Scopus

The focus of research appears to have transitioned from the study of management to the examination of consumer behavior, as evidenced by the existing body of literature.

4.3 Growth and development stage (2011-2024)

The bibliographic corpus of the WoS during this period retains the research topics from the previous stage, including consumer behavior, regions, tourist destinations, sustainability, and business management. However, the number of issues was increased and included new topics of study: *TECHNOLOGY, ACTIVITY* and *MEAL*. In the case of Scopus, topics such as *winery-waste. volcanic-island, perception, vineyard and consumer-behaviour* (see Figures 9 and 10).

Over the years, the terms used to designate "wine tourism" have changed (Figures 11-13). The analitical system show the 'Technology' node seems to act as a central axis connecting all the others. This reflects the growing influence of technology on all aspects of human life, from our social relationships to our perception of our environment.
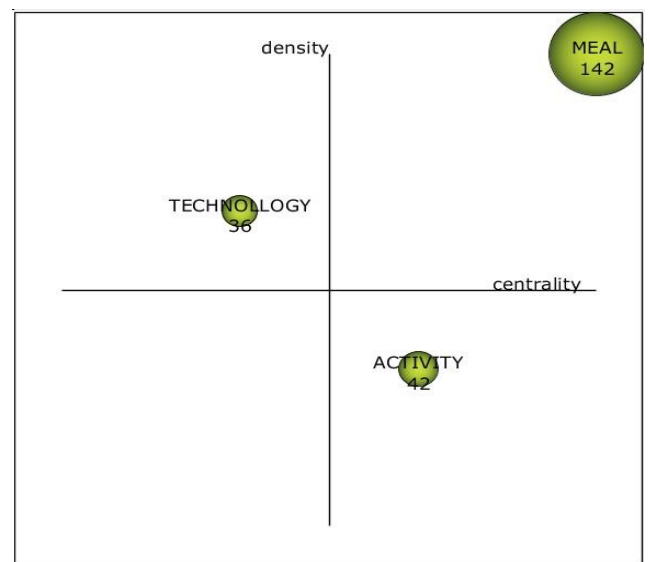

Figure 9. Strategic diagrams of the analysed steps (First stage 2011-2024) in WoS

Figure 10. Strategic diagrams of the analysed steps (First stage 2011-2024) in Scopus

However, in the case of WoS, the nodes for *Technology* are *Place* (58), *Environmental* (47), *Feeling* (28) and *People* (20); for *Meal,* are *Result* (30), *Subject* (28), *Service* (16) and *Touristic* (143); and for *Activity* nodes are *Website/online* (10), *Studies* (51), *Problems* (26), and *Creative* (7).
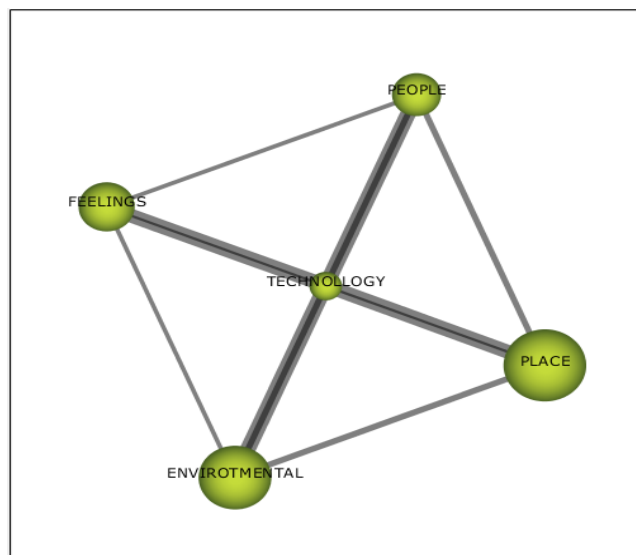
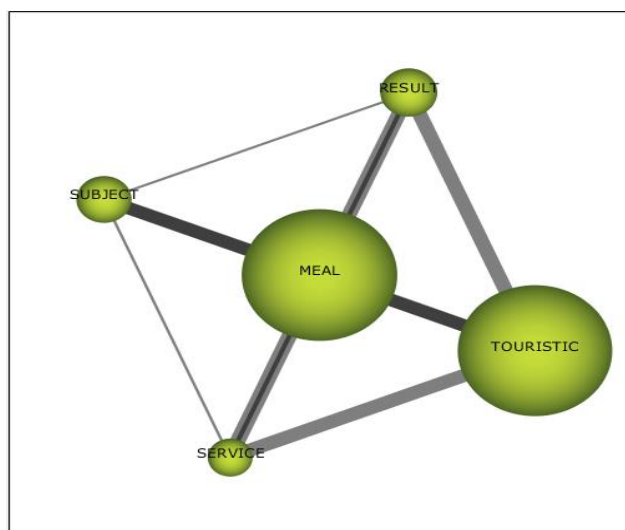

Figure 11. Cluster's network TECHNOLOGY in WoS
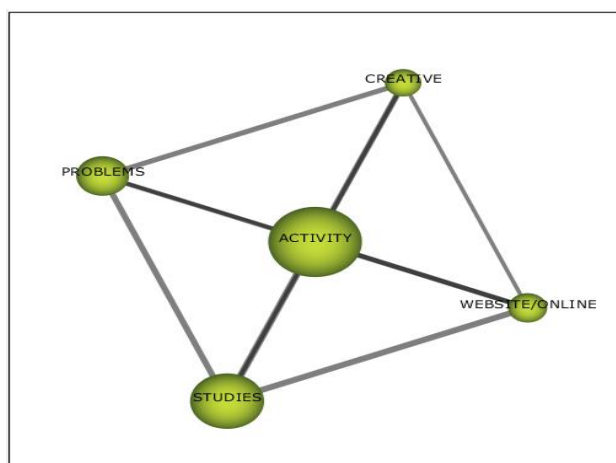

Figure 12. Cluster's network MEAL in WoS

Figure 13. Cluster's network in WoS

In the case of Scopus, the Nodes for *Winery-waste* are: *aminod-acid, concentration (Parameter), PH, Valorization, winery-waste* and *yeast*. The nodes for *Volcanic-island* are: *geoconservation, geotourism, resources, canary-islands, database, volcanic-island.* For *Perception*, the nodes are: *ecotourism, Italy, Perception, Questionnaire-Survey, Behavioral-response* and *Tourism-development*. For *Vineyard* the nodes are *Terraced-Vineyard, Buffer-zone, Cultural-Landscape, Vineyard, World-heritage-site, sustainable-development-goal;* And the *Consumer-behaviour,* the nodes are *environmental-attitudes, consumer-attitude, consumer-behaviour, restaurants, bibliometric-analyses* and *consumption.*

The analysis in the (Figure 14) represent the "Winery-Waste" in Scopus, The 'Winery-Waste' node is represents an area of research with a growing interest due to environmental concerns and the search for a circular economy in the wine industry.

- Valorisation: The strong connection with the 'Valorisation' node points to the interest in finding alternative uses for winemaking residues. This may include the production of biofuels, fertilisers, bioactive compounds or even food products.
- Yeast: The link with 'Yeast' suggests research on how winemaking residues can influence yeast activity and thus wine quality.
- pH: The link with 'pH' indicates that the acidity of the residues is an important factor to consider in their management and valorisation.
- Amino Acids: The link to 'Amino Acids' suggests that winemaking residues can be a source of nitrogenous compounds important for other biological processes.
- Concentration (Parameter): This general connection indicates that studies focus on determining the concentrations of different substances in the residues and how these influence their valorisation potential.
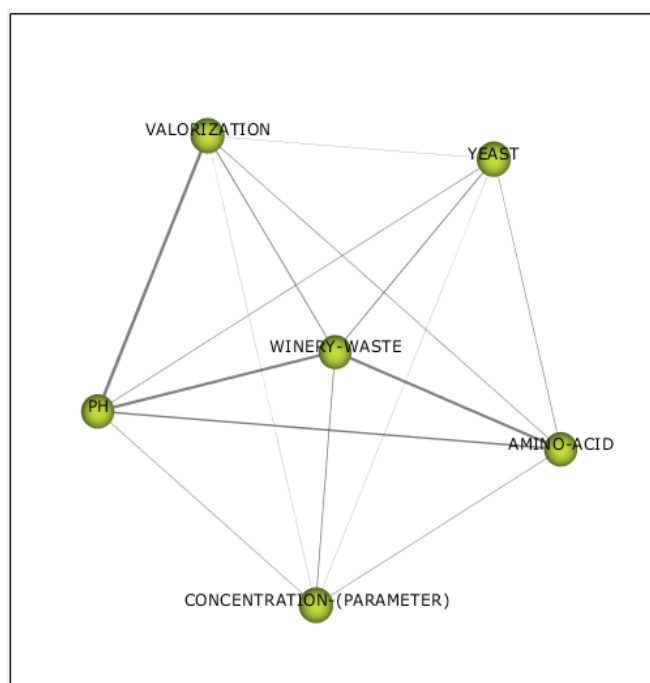

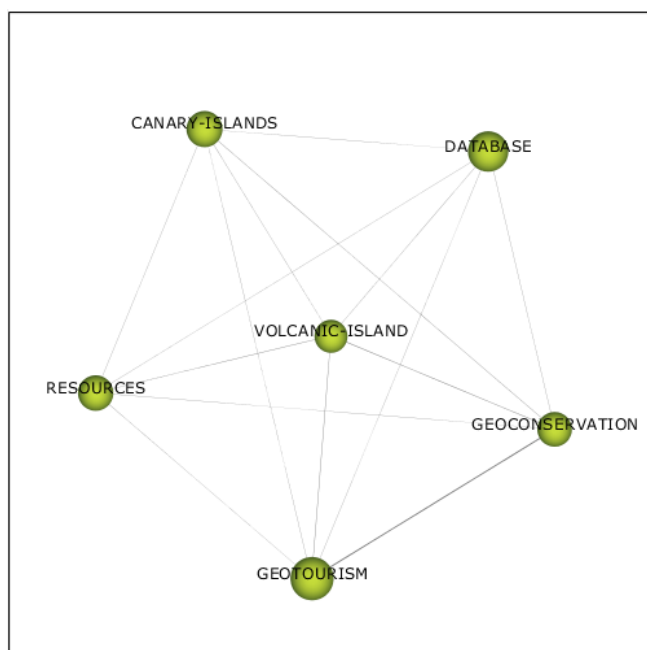**Figure 14.** Cluster's network WINERY-WASTE in Scopus

Figure 15. Cluster's network VOLCANIC-ISLAND in Scopus

In this case (Figure 15), the nodes (circles) represent key concepts and the lines connecting them indicate a co-occurrence relationship, i.e., these terms often appear together in the texts analysed.

Canary Islands: This central node indicates that the study focuses specifically on the Canary Islands archipelago. The Canary Islands are an interesting case study due to their volcanic origin, diversity of natural resources and growing interest in geotourism.

- Volcanic island: The direct connection with 'Canary Islands' highlights the distinctive geological feature of the archipelago. This term could appear in contexts related to island formation, geodiversity, volcanic hazards or geological attractions for tourism.
- Resources: The connection with 'Resources' suggests that the natural resources of the Canary Islands, whether mineral, water, biological or geological, have been analysed. These resources could be related to the local economy, conservation or tourism.
- Geoconservation: The presence of this node indicates an interest in the protection and management of the geological heritage of the Canary Islands. It could include topics such as the creation of geoparks, the conservation of sites of geological interest and environmental education.
- Geotourism: The connection with 'Geoconservation' and 'Resources' suggests that geotourism, i.e., tourism based on geological heritage, is a relevant topic in the study. It could include analysis of geotourism routes, development of geological tourism products or the impact of geotourism on local communities.
- Database: This node indicates that a database has been used to carry out the analysis.

In the representation of the co-occurrence graph of the Figure 16:

Figure 16. Cluster's network PERCEPTION in Scopus

- Behavioural Response: This node suggests that the study focuses on how people react or behave in response to certain stimuli or situations related to tourism.
- Tourism Development: Indicates that the study is linked to processes of growth and change in the tourism sector.
- Perception: This node indicates that how people perceive different aspects of tourism, such as destinations, experiences or impacts, has been analysed.
- Questionnaire Survey: The presence of this node indicates that surveys have been used to collect data on the perceptions and behaviours of tourists or residents.
- Ecotourism: This node suggests that the study focuses on a specific form of tourism that seeks to minimise environmental impact and maximise benefits for local communities.
- Italy: The inclusion of this node indicates that the study has focused specifically on the case of Italy, suggesting that the particularities of tourism in this country have been analysed.
- Vineyard: This central node indicates that the main theme of the research revolves around vineyards. Vineyards are a key element in many cultural landscapes and play an important role in the economy and society of many regions (Figure 17).
- World Heritage: The connection between 'Vineyard' and 'World Heritage' suggests that vineyards that have been recognised as World Heritage sites by UNESCO are being studied. These sites have outstanding universal value and are protected at international level.
- Cultural Landscape: This node indicates that the vineyard is being considered as part of a wider cultural landscape, i.e., a landscape shaped by the interaction between humans and the environment over time.
- Terraced Vineyard: The connection to 'Terraced

Vineyard' suggests that vineyards are being studied that are cultivated on terraces, a traditional agricultural practice that is often associated with cultural landscapes of great beauty and historical value.

- Buffer Zone: This node indicates that the importance of establishing buffer zones around World Heritage vineyards is being considered, in order to protect them from external threats and ensure their long-term conservation.
- Sustainable Development Goals: The connection to this node indicates that consideration is being given to how vineyard management can contribute to achieving the SDGs, a global agenda that aims to eradicate hunger and poverty.
- Bibliometric Analysis: This node indicates that quantitative methods have been used to analyse a large number of scientific publications on the related topics.
- Consumption: This central node indicates that the main theme of the research revolves around the acts of acquiring and using goods and services.
- Consumer Behaviour: The connection with 'Consumption' suggests that you are studying how consumers make decisions, how they behave when buying and consuming products or services, and what factors influence their behaviour.
- Restaurants: This node indicates that consumer behaviour is being analysed in a specific context: restaurants. This could include issues such as restaurant choice, customer experience, or the influence of factors such as sustainability or health on consumption decisions.
- Environmental Attitude: The link with 'Consumer Behaviour' suggests that how consumers' attitudes towards the environment influence their purchasing decisions, especially in the context of food and catering, is being studied.
- Consumer Attitude: This node indicates that the opinions, beliefs and values of consumers, and how these influence their behaviour, are being analysed.
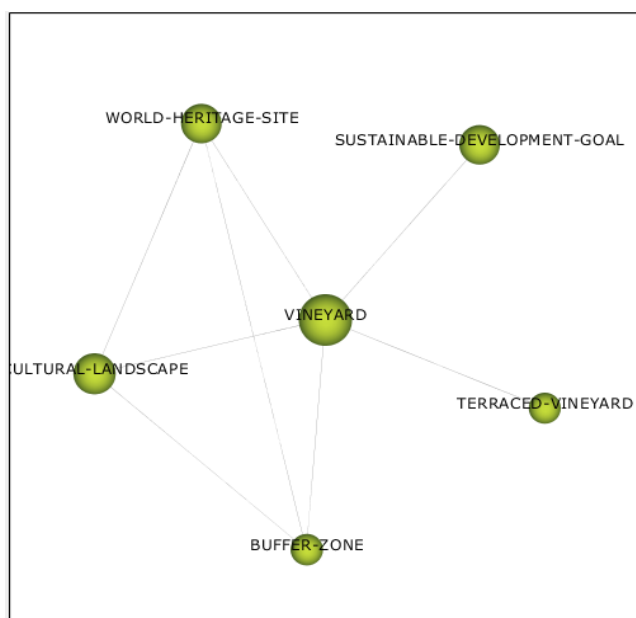

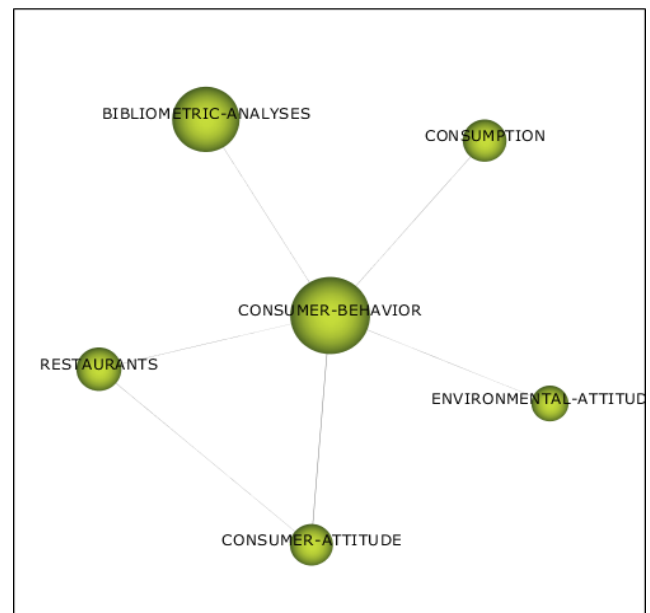**Figure 17.** Cluster's network VINEYARD in Scopus

Figure 18. Cluster's network CONSUMER-BEHAVIOUR in Scopus

At this stage, consumer behavior continues to be the central focus of the scientific domain, maintaining superior performance metrics across several publications, including citation counts and H-index. The study of behavior is closely associated with the consumer experience during wine tourism activities in this phase of growth. In the case of Scopus, tourist behavior also emerges as a prominent theme during this period, specifically in relation to the attitudes and emotions elicited by wine (Figure 18).

During this decade, wine tourism scholars have increasingly focused on satisfaction, which has emerged as a key theme in the literature. Research has primarily concentrated on analyzing motivations to explain visitor satisfaction. This trend underscores a growing interest in placing the consumer at the center of organizational strategies in order to maximize satisfaction with the services provided. In contrast, within the Scopus database, the theme of satisfaction is poorly integrated with other topics and remains underdeveloped within the context of wine tourism.

4.4 Analysis of the thematic development in wine tourism research

The SciMAT software not only facilitates the identification and study of research topics by period, but also enables longitudinal analyses that track the evolution of these topics over time (see Figure 9). This analysis reveals that research themes in wine tourism have evolved from the first to the second decade of the 21st century. The figure displays spheres of varying sizes, as well as continuous and dashed lines, the meanings of which are explained below.

- Spheres: These represent the most significant topics in each period.
- Continuous line: Indicates the relationships between topics across periods, where the topics connected by these lines either share the same name or one topic is a subset of another.
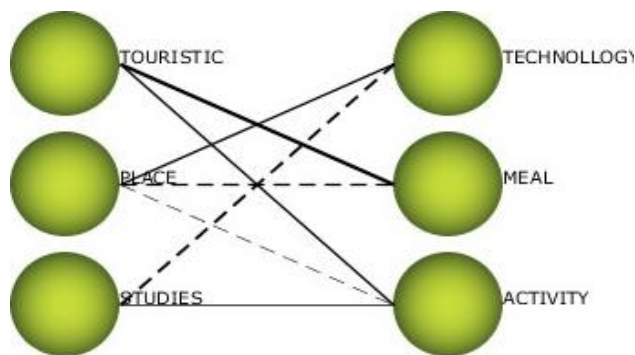- Dashed line: Highlights topics that share common keywords between periods.

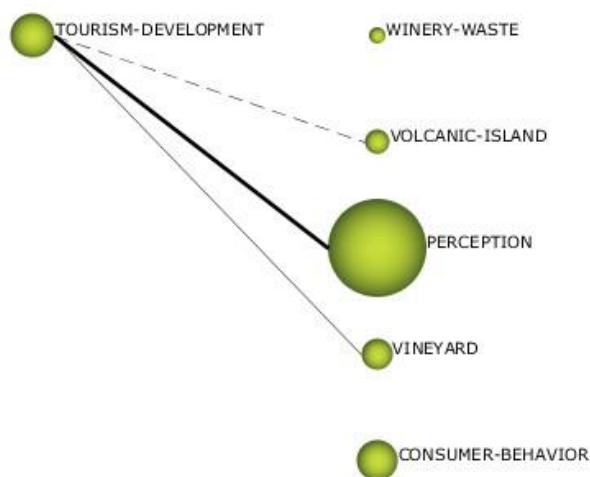**Figure 19.** Longitudinal map of wine tourism topics in WoS

Figure 20. Longitudinal map of wine tourism topics in Scopus

Figure 19 illustrates that research topics in wine tourism exhibit a degree of cohesion across the periods under analysis. According to Murgado-Armenteros et al. [29], the diameter of the spheres corresponds to the total number of citations, while the thickness of the lines reflects the inclusion rate. In WoS, both periods retain the topics of consumer behavior, tourism destinations, regions, sustainability, and business management. In contrast, in Scopus, the common topics across both periods are regions, wineries, tourist destinations, and family businesses.

Finally, in the Figure 20, it is suggest that tourism-development are interconnected with vineyard, consumer-behaviour and perception. It have a light connection with volcanic. Perception plays a key role in the success of these initiatives, and understanding consumer behavior is key to designing sustainable tourism development strategies.

5. CONCLUSIONS

This study is the first to analyze the development of the scientific literature on wine tourism from 2001 to 2024 within the WoS and Scopus databases. A generally positive trend in the number of publications is evident across both databases. Using the methodology outlined, the journals with the highest publication output in both WoS and Scopus were identified. Furthermore, the authors with the greatest number of publications in each database were also determined.

The analysis conducted segmented the published papers into two distinct phases. During the first phase, spanning from 2001 to 2010, the primary research themes exhibited variations between Scopus and WoS. Specifically, WoS publications concentrated on consumer behavior, service quality, and wine culture [30]. In contrast, research within Scopus was predominantly oriented towards regional studies, tourism destinations, and marketing strategies.

In this initial phase, topics such as sustainability, sustainable development, and regional studies were prevalent in both databases. The prominence of these themes may be attributed to the publications that emerged from the conference organized by the Travel and Tourism Research Association, held in Canada in October 2001. This conference addressed issues such as the sustainable development of regions and the interplay between food, wine, and tourism, which Duarte Alonso and Liu [31] refer to as the "missing link" between local hospitality and wine.

During this initial period, the emerging themes in Scopus and WoS exhibited notable differences. In WoS, electronic travel tools and social networks were identified as topics anticipated to shape the subsequent stage of research; however, this projection did not materialize. Conversely, in Scopus, research on wineries was expected to guide the future trajectory of academic inquiry into wine tourism. This focus on wineries evolved into a significant and cross-cutting theme in the second period, as evidenced by various studies [32, 33].

Research on wine tourism has evolved following the initial decade under review. However, in the second phase, a customer-centric approach has persisted, incorporating a more nuanced analysis of customer behavior. This enhanced understanding has drawn increased research attention to the determinants of winery visit satisfaction, including quality, motivation, and experience. While this topic remains emerging in Scopus, it has become a strategic area of significant interest and impact in WoS literature. The development of behavioral studies in the most recent phase, along with the growing emphasis on experience and satisfaction as precursors to visitation and revisitation behaviors, has led scholars to explore these variables in depth. Specifically, the experiences of tourists at wineries influence their emotions and shape their intentions to revisit through the satisfaction derived.

Moreover, positive emotions are significant predictors of satisfaction and influence visiting behavior. The body of scientific literature on this topic has expanded notably over the past decade, as evidenced by studies conducted. Additionally, other researchers have examined the impact of satisfaction on loyalty and regional competitiveness. The relationship between perceived image, attitudinal variables, and their effect on satisfaction levels has also been investigated.

This shift may be associated with the expansion of the wine tourism sector over the past decade, characterized by the emergence of new events, fairs, and festivals, as well as enhanced services provided by restaurants and family-owned businesses linked to the wine industry. These developments have drawn the interest of researchers.

Over the past decade, regional studies in WoS have emerged as a highly developed, standalone topic, whereas in Scopus, they remain a primary focus interconnected with themes such as local tourism market development and the impact of wine tourism on these markets. For instance [34], the socio-economic effects across thirteen German wine regions, providing valuable insights into these dynamics.

6. LIMITATION OF THE STUDY

Future research directions within WoS include a strong emphasis on sustainability, anticipated to garner significant academic interest. Given the imperative for a sustainable future, it is expected that practices promoting the responsible development of wine tourism will be prioritized. These practices aim to foster land stewardship, support more sustainable wine production, and enhance the availability of organic wines to attract environmentally conscious and responsible tourists.

In the context of business management, WoS has emerged as a new theme in the current stage, similar to how family businesses have become a focal point in Scopus. However, management is positioned as a central theme in Scopus. The literature includes comparative analyses of wine tourism destination management to explore the potential causes of the uneven territorial development of these regions. Simultaneously, the management of various events and their life cycles has been analyzed, with suggesting the need to balance a portfolio of options to enhance the competitiveness and sustainability of tourist destinations. In line with this, the work of compiles case studies, offering various examples of management, development, and the visitor experience across different wine destinations. It is likely that, in the future, family-owned or traditional businesses will capture the attention of experts due to the innovations these enterprises continuously implement in their services. One such example is the study by Paunovic et al. [33], which compares the online strategies developed by a group of family-owned wineries in Hungary and Germany.

Future perspectives, such as social media and electronic travel tools, are closely interconnected [35]. These innovations address the growing information demands of tourists, who increasingly seek more detailed insights, and facilitate destination branding electronic tools, including social networks, have supported the growth of wine tourism by offering tourists the opportunity to share images, comments, and opinions, thereby contributing to the spread of electronic word-of-mouth [36]. From this initial information, potential tourists can form perceptions and attitudes toward the destination, which in turn influence their intention to visit [37].

In the post-pandemic lockdown, wine tourism has increasingly evolved alongside these digital tools, enabling the identification of spatiotemporal patterns of tourist movement within destinations, the mapping of spatial distributions, the detection of crowds, and the monitoring of transportation modes used [38]. Future research could focus on the impact of new technologies, such as artificial intelligence, on wine tourism. These technologies may enhance the understanding of tourist behavior at destinations, aid in more effective strategy planning, foster greater engagement, and facilitate the design of more attractive offerings [39]. Artificial Intelligence (AI) is applied to research in the field of wine tourism transforming business processes, research methodologies and interactions between tourists and destinations [40]. This enables much more personalized travel experiences, improving the efficiency of services and increasing competitiveness among destinations [41]. Applications of AI in tourism encompass demand forecasting, metadata analysis and hospitality automation. Sustainable tourism development is also supported through innovative collaborations with Government, Universities and Industry [42]. However, the adoption of AI in tourism research is still incipient in countries such as Brazil, where concerns about ethical use and lack of scientific debate persist. This is seen in the need to shape the tourism sector through AI and more research is needed to explore its full potential, addressing ethical considerations in academic and practical applications.

Among the emerging topics for future research in Scopus, authenticity has been identified. Authenticity attracts tourists and is a critical component of the tourist experience at the destination. This concept not only has marketing potential but also plays a role in enhancing the entire hospitality sector, tourism, and local development. Research on the authenticity of wine tourism destinations evolves during the second stage, particularly in connection with stakeholders and family businesses, Montaguti and Mingoto [43] suggest that innovation in business models is crucial for tourism companies, especially SMEs, to target new profitable segments in mature destinations. Successful companies develop flexible networks, emphasizing shared identity and authenticity guaranteed by the life stories of the founders. Duarte Alonso et al. [32] argue that a tourist's search for tradition when visiting wine tourism destinations should not rely solely on traditional businesses; it is crucial to engage all social agents to provide a memorable and authentic service. The authors suggest that future research should explore how to fully experience the essence of a wine tourism destination.

Catering activities have developed in the second phase, with a focus on attitudes, wineries, and stakeholders. The wine tourism market appears to increasingly demand these types of experiences, such as sensory tastings paired with local food, and menus accompanied by wines with digital explanations. In urban centers where restaurants are located, some of these activities can be implemented. Understanding the value of these experiences to travelers and their impact on the intention to revisit the destination will be another important area for future research.

Although the study included articles, books, chapters, and other working papers, the absence of research published in books can be attributed to the fact that the results reflect only the ten authors and ten publications with the highest number of articles published, excluding those with fewer papers.

In addition to this limitation, we acknowledge that the technical decisions made a priori in establishing the thresholds for data treatment, its processing, and the resulting structured network of subdomains are influenced by the precision of the bibliometric method. Inevitably, the categorization performed is subjective, with its main consequence being the grouping of words and the final graphical representations. Word standardization and the substitution of words with acronyms are techniques that have helped mitigate this limitation.

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