

## WTHC: wine tourism clustering and future directions

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**Abstract** | Wine tourism is growing worldwide, assuming a significant share of overall tourism and hospitality; therefore, scholars are attracted to understanding what drives wine tourists' behaviours. This study aims to analyse and cluster wine tourism research and propose directions for future research. A systematic literature review followed by a text-mining approach explored conceptual developments in wine tourism and hospitality. A full-text analysis of 230 articles was conducted to (1) present the WTHC wine tourism and hospitality clustering of core topics that emerged from the literature and (2) suggest directions for future research. The literature on wine tourism and hospitality employs more quantitative than qualitative approaches, utilising structural equations or regression analysis to explore the data. Seven topic clusters were found representing the core research topics on wine tourism and hospitality. Academics tend to employ well-known theories from psychology, sociology, and the economy. Future research topics include the development of new theories, constructs, contexts, and methodologies applied to wine tourism.

**Keywords** | wine tourism, text-mining, loyalty, winescape, experience

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## 1. Introduction

Wine tourism is a multifaceted activity that significantly contributes to the economic development of wine regions (Byrd et al., 2016; Molina et al., 2015). It serves as a complementary vector between the wine production industry and the tourism sector (Hojman & Hunter-Jones, 2012), and its importance continues to grow for wine-growing regions (Gómez et al., 2019). Recognised as a strategic priority, wine tourism attracts tourists and helps mitigate the seasonality effect (Sarmiento and Seguro, 2014).

Since the 2000s, research on wine tourism has emerged as a distinct field of study in reputable journals. However, comprehensive analyses of the literature have been limited, with most studies only covering papers up to 2014 (Gómez et al., 2019; Durán-Sánchez et al., 2016). Recent studies have opened new research avenues, such as examining visitor satisfaction with various aspects of the cellar door environment to predict behavioural intentions (Prayag et al., 2021). Additionally, the metaverse has been identified as a novel channel for customising and co-creating hybrid virtual and physical experiences, enhancing consumer engagement with brands and other customers before, during, and after their visits (Buhalis et al., 2022).

Technological innovations have become increasingly significant in wine tourism. Digital marketing, immersive technologies (AR/VR), and smart technologies for winery management are now pivotal in promoting wine tourism and creating engaging tourist experiences (Piras, 2024). Furthermore, research has explored the causes and effects of wine tourism development within organisational contexts, highlighting the dynamic capabilities and institutional pressures that shape wineries' behaviour and performance (Lavandoski et al., 2018).

Recent studies have also emphasised the role of sustainability in wine tourism. Sustainable practices in vineyard management, eco-friendly tourism services, and the promotion of local culture and heritage are becoming essential components of wine tourism strategies (Hall et al., 2020; Salvado & Kastenholz, 2017). These practices not only enhance the tourist experience but also contribute to the long-term viability of wine regions.

Moreover, wine tourism has been identified as a key driver for rural development, fostering local economies by creating jobs, supporting local businesses, and preserving cultural landscapes (Alonso & Liu, 2012). The integration of wine tourism with other forms of tourism, such as gastronomic and cultural tourism, further enhances its appeal and economic impact (Getz & Brown, 2006).

Given the lack of recent comprehensive literature analyses that can help develop new understudied topics in wine tourism, the current study aims to contribute to existing knowledge by (1) exploring past literature through a comprehensive collection of relevant articles and (2) employing a text mining approach based on a hierarchical Bayesian model to identify latent topics that have emerged in recent years (Guerreiro et al., 2016; Loureiro et al., 2019). Additionally, the study examines the main trends in wine tourism and hospitality through a systematic review approach (Vrontis et al., 2021, 2022; Billore, Anisimova, & Vrontis, 2023). The TCCM framework is used to complement this analysis, exposing not only new papers on the topic but also the main (T)heories, (C)onstructs, (C)ontexts, and (M)ethodologies used (Paul and Rosado-Serrano, 2019). This structured information is valuable for both scholars and managers, helping them understand the most influential determinants of wine tourism.

## 2. Database search process

Scientific articles on wine tourism for this literature review were collected from Scopus and Web of Science using the query (("route\*" OR "customer\*" OR "segmentation\*" OR "consumer\*" OR "experience\*" OR "winery manager\*" OR "producer\*" OR "hospitalit\*") AND "wine tourism") applied to the titles, abstracts, and keywords. A total of 366 articles were extracted from journals indexed in the Web of Science, and 423 articles from the Scopus database. After merging the sources to identify single articles, 457 articles were selected for further analysis. When those not associated with Business and Management were excluded, the remaining were 360.

Considering the consistency standards proposed by Macpherson and Holt (2007), two researchers separately analysed the relevant articles and classified them according to how they were related to pro-environmental issues (see Appendix A). A Cohen's Kappa coefficient of greater than 0.85 was found after discussing the analysis among the researchers. Cohen's Kappa (k) (Cohen, 1960) is a widely used and accepted measure of inter-rater reliability and is frequently used as a measure of how much a group of evaluators agrees about a decision. An agreement is reached when  $k > 0.80$ , ensuring the reduction of selection bias (Pérez et al., 2020). Although the articles included some keywords used in the query, the first analysis of the title and abstracts revealed that 59 did not address issues directly connected to the sector (Figure 1). An in-depth analysis of the full texts also removed 71 articles that (1) were not directly related

to the research objective, (2) were not so robust in using theory, (3) were not so related to argumentation, and (4) made little contribution to theory and/or practice (see Appendix A). Finally, a total of 230 articles were analysed in depth to identify the underlying clusters.

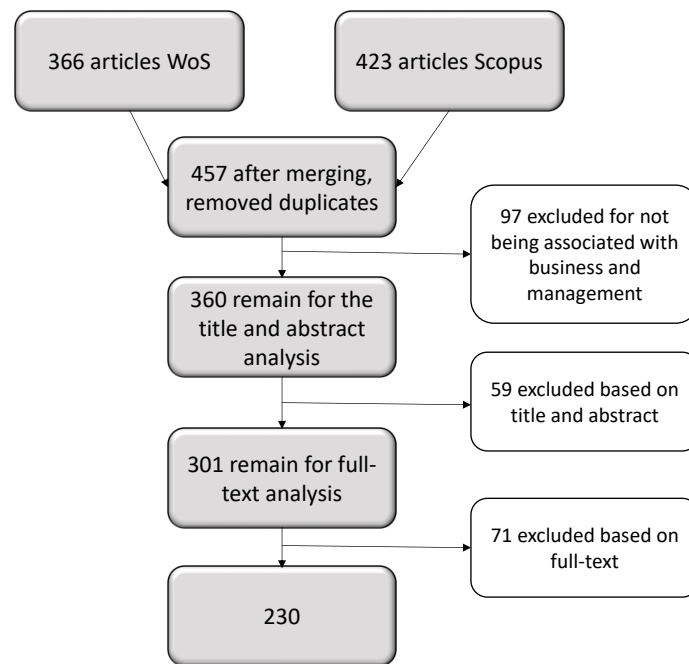


Figure 1. The screening process for selecting the final papers for analysis.

Source: Authors' elaboration

### 3. Topic analysis method

A Bayesian inference topic model based on the latent Dirichlet allocation (LDA) algorithm (Blei et al., 2003) was used to associate each paper with a probability distribution over latent topics. The LDA is a generative probabilistic model that produces a set of latent topics through a multi-membership clustering technique, utilising the Dirichlet distribution to assign posterior probabilities. The method first creates the latent topics that have correlated terms and then produces the posterior probability of each paper belonging to each topic. However, because the papers do not exclusively discuss a single topic, the topics are not mutually exclusive, which means that each paper always has a posterior probability of belonging to every topic.

The most correlated documents with each topic are those with a higher posterior probability (Blei *et al.*, 2003). First, the full text of the papers was transformed into *corpora* using text mining (Feinerer *et al.*, 2008). A document-term matrix is a bag-of-words representation of the

document, including the frequency of all words in each document. A transformation procedure to reduce the sparsity of the matrix was applied following Guerreiro et al. (2016) and Feinerer et al. (2008). The measures of log-likelihood and perplexity, as proposed by Griffiths and Steyvers (2004) and Cao et al. (2009), were used to determine the optimal number of latent topics. Log-likelihood and perplexity are two measures commonly used to evaluate the LDA. While log-likelihood evaluates how well the latent topics reflect the observed data, perplexity is a measure that shows whether “the model predicts the remaining words in a specific topic after observing part of it” (Guerreiro et al., 2016, p. 113). While a higher log-likelihood measure means that the latent topic structure is better to fit the data, a “lower perplexity score indicates better generalisation performance” (Cao et al., 2009, p.1780). Figure 2 illustrates the set of possible topics tested in the current paper, which ranged from  $K = 2$  to  $K = 60$ .

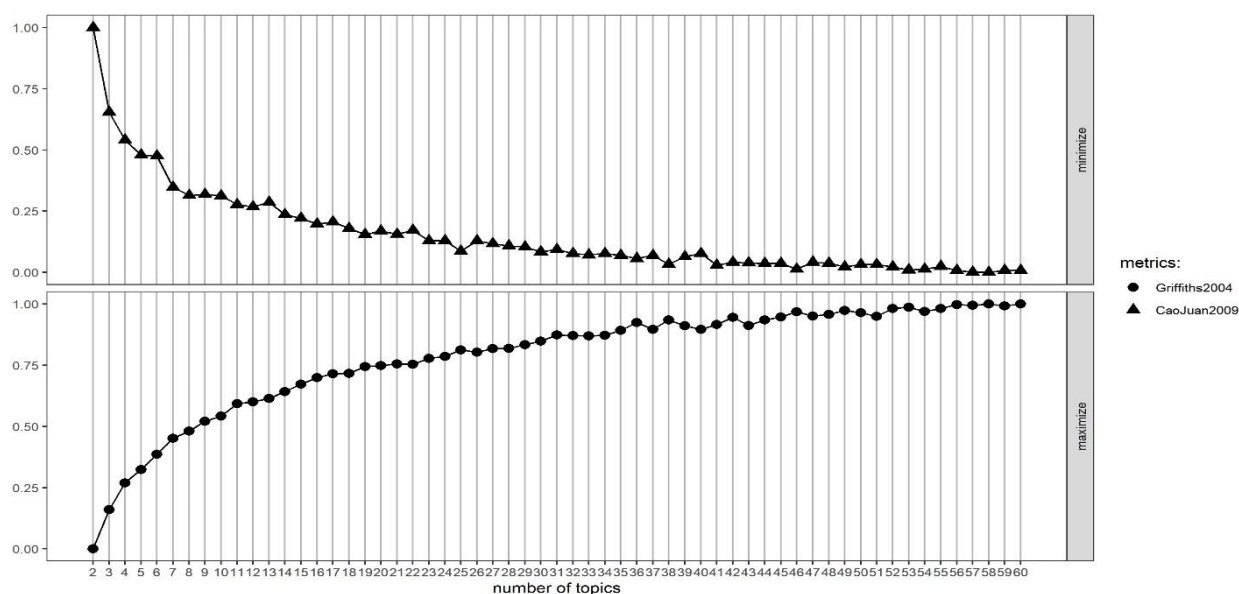


Figure 2. Log-likelihood and perplexity metrics to evaluate K.

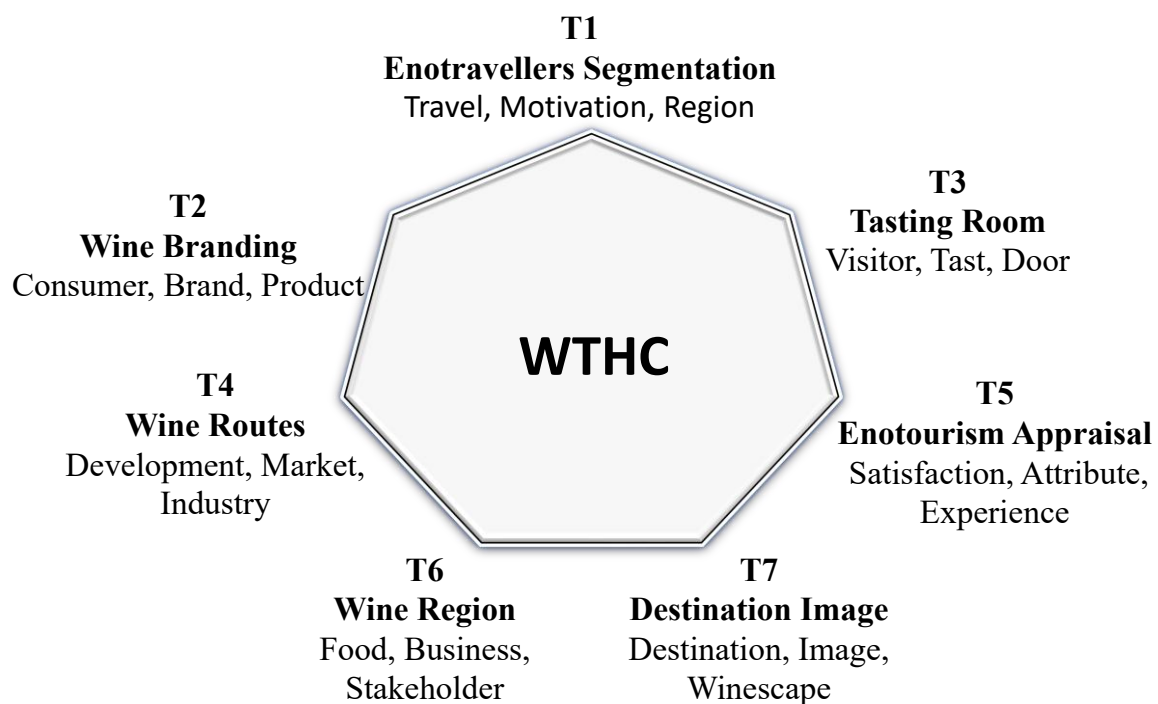
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The results from the models show that Cao et al. (2009) measure has a first inflexion on  $K=7$  and only achieves its optimal values at  $K=25$ . This study used  $K=7$  to analyse the clusters (seven topics were found), given that there is a first inflexion on the variance explained and used a parsimonious number of clusters for the interpretation (Guerreiro et al., 2016). The LDA Bayesian inference topic model with Gibbs sampling was used to divide the papers into different latent topics (Blei *et al.*, 2003). Using the LDA, each word found in the documents

was assigned a posterior probability of belonging to a specific topic. Each paper was then assigned accordingly.

#### 4. Topic content

The clustering process, utilising the LDA algorithm for text mining, enabled the identification of seven topics, represented in Figure 3 as the WTHC: Wine Tourism Heptagon clustering.



Note: The words behind the name of the topic are the core terms for each topic.

Figure 3. WTHC: Wine Tourism Heptagon clustering.

Source: Authors' elaboration

#### Topic 1- Enotravellers Segmentation

Papers with the highest posterior probability of belonging to this topic were used to analyse how Enotravellers are being segmented. Socioeconomic variables have been commonly used for market segmentation and are widely applied in describing winery visitors (Galloway *et al.*, 2008) (post. prob. =0.62). Other aspects have contributed to understanding Enotravellers'

behaviours, such as personality (Galloway et al., 2008) (post. prob. =0.62) and constraints [Cho et al., (2017a) (post. prob. =0.72), Gu and Huang (2019) (post. prob. =0.73)]. For instance, Galloway et al. (2008) analysed how the personality variable sensation seeking adds to the ability to predict differences in various attitudes and behaviours of wine tourists, suggesting that, in many instances, sensation seeking adds to the ability of the mediator involvement construct to predict those characteristics and conclude that high-sensation seekers have a higher wine consumption and wine tourism consumption. Cho et al. (2017a) addressed segmentation from the constraint approach to understanding the potential importance they may have on preference and behavioural intentions to visit wine regions, identified as consequence constructs. In this study, using constraints scales customised to the wine tourism context, a factor-cluster segmentation approach – applied by several other studies (Chen, 2003; Kim & Ritchie, 2012; Kim et al., 2010; Tan & Lo, 2008) – generated five homogenous subgroups: “highly constrained,” “cost & time conscious,” “family togetherness,” “unmotivated,” and “minimally constrained.” The analysis of variance tests revealed that preferences and intentions to visit wine regions differed significantly among the five clusters. Specifically, two cluster groups, representing “minimally constrained” and “family togetherness”, were found to offer the most utility for further wine tourism market segmentation research. Gu and Huang (2019) compared Chinese Australians with long-haul Chinese tourists in Australia and identified four segments: the “group constrained by personal inhibitors”, “group constrained by facilities and attractions”, “less constrained group”, and “highly constrained group”. Here, the identification of intrapersonal constraints is different from the previous constraint literature. The “language and transportation” factor indicated the difficulties faced by Chinese wine tourists and captured the fact that Chinese wine tourists had language/transportation barriers. This intrapersonal constraint is different from Cho *et al.*'s (2017a) intrapersonal factor (e.g., “lack of interest”) in the context of wine tourism. This finding highlights the importance of understanding cultural specificities.

## **Topic 2- Wine Branding**

This topic focuses on wine branding. Wolf et al. (2016) (post. prob. =0.70) connects luxury wine and consumer motivation, which mediates the loyalty and recommendation of luxury branded products. The literature points to several attributes that contribute to brand development, such as the region of origin (Lockshin & Corsi, 2012; Sutanonpaiboon & Atkin,

2012). High price, rarity, and exclusivity have also been identified as key characteristics of luxury wines (Reyneke *et al.*, 2011). Wolf *et al.* (2016) explored self-congruency theory, which posits that consumers tend to acquire brands that align with their self-image, thereby differentiating the motivations for consuming luxury wine. For example, some wine consumers prefer and may find a wine more luxurious with a simple and unassumed label, whereas others prefer more prominent labels if the luxury wine is being consumed for status purposes more prominent labels may be preferred (Beverland, 2006). Dobeles *et al.* (2018) (post. prob. =0.68) found that wine branding assumes different importance depending on the conspicuous indicators, being more relevant if the wine is being purchased for a gift and less important if the purchaser is also the consumer. This can be explained by risk-averse purchasers and their willingness to offer something of value or worth admiring. These findings can be valuable for practitioners to differentiate between wine purchased for personal consumption and purchases made for gift purposes. Lockshin and Corsi (2012) (post-prob. = 0.64) proposed that tourism substantially benefits the winery, but not in a different way than any other type of buyer; high-involvement and heavy buyers are more likely to visit and purchase wine. Despite this behaviour, the authors claim that there is little evidence to suggest that a typical tourist changes their purchasing behaviour regarding the brands they buy. From another perspective, Friedman (2015) argued that the winery tasting room experience is an essential part of a winery's brand management. By creating positive experiences, brand awareness can be increased among winery visitors, which could lead to increased post-visit purchases. Lockshin and Corsi (2012) also highlighted that wineries can gain from wine tourism through brand building and cash flow.

### **Topic 3- Tasting Room**

Mitchell and Hall's (2001) (post. prob. =0.77) study on tasting rooms and cellar doors was found to play a vital role in the hospitality of wine tourists. They also found that women tend to rate the winery's wine and cellar door service higher than their male counterparts. However, this does not translate into higher wine purchases, either during the visit or on intended future purchases. To determine whether wine tasting should be free of charge, Kolyesnikova and Dodd (2009) (post. prob. =0.69) built on reciprocity theory. The norm of reciprocity claims that mutual exchange benefits are necessary for a social system to be stable. Thus, most people tend to feel a sense of obligation after someone treats them kindly. Kolyesnikova and Dodd (2008)



argued that the higher feelings of gratitude – identified as an antecedent of obligation to buy – and obligation while at the winery, the higher the expenditure. Therefore, small groups tend to experience higher levels of gratitude and obligation than larger groups. Wine tourists from smaller groups also tend to purchase more wine than those from larger groups (Kolyesnikova & Dodd, 2008) (post. prob. =0.67). Differences were found in the purchasing behaviour of visitors who had free wine tasting spent more money at the wineries than visitors who paid for wine tasting (Kolyesnikova and Dodd, 2009). The feelings of gratitude for the winery personnel were also higher in the groups that had free wine tasting.

#### **Topic 4- Wine Routes**

For the topic “wine routes,” the paper with the highest posterior probability of belonging to this topic is from Demhardt (2003) (post. prob. =0.81), which studied the well-known South African wine route from Stellenbosch. The Stellenbosch wine route was established in 1971, following a 1960s tour of Burgundy by two Stellenbosch wine estates: Frans Malan of Simonsig and Neil Joubert of Spier. They believed that the establishment of a French-style wine route could be a valuable marketing tool to boost the equity and sales of the Cape wine industry (Demhardt, 2003). The wine route was defined by Ferreira and Hunter (2017, p.679) as a “kind of cultural itinerary playing a part in the overall tourism strategy of a region.” The concentration of many wineries in a region has led to the establishment of wine tourism clusters (Telfer, 2001a). These clusters have evolved based on collaboration and simultaneous competition between wineries, leading to a competition ecosystem (Telfer, 2001a (post. prob. =0.80); Zineldin, 2004). This collaboration can be seen both formally and informally, showing vertical and horizontal linkages (Telfer, 2001b) (post. prob. =0.72). Porter (1998) anchored the concept of clusters to growth poles, backwards and forward linkages, agglomeration economies, economic geography, and regional development. Many papers have been published regarding the success factors of wine routes (Brás *et al.*, 2010; Getz & Brown, 2006; Hall *et al.*, 1997). Studies have pointed out the need for cooperation among wineries and other stakeholders, as wine producers tend to focus on the core business of wine production (Brás *et al.*, 2010; Cunha *et al.*, 2023; Eusébio *et al.*, 2023; Hojman & Hunter-Jones, 2012).

## Topic 5- Enotourism Appraisal

This topic examines the satisfaction and behavioural intentions of wine tourists (Lee et al., 2017a, 2017b; Yeh & Jeng, 2015). Satisfaction, a mediator of behavioural intentions such as intention to return, and loyalty, is considered the overall consumer's evaluation of the consumer experience. Lee et al. (2017a) (post. prob. =0.62) studied consumers' experiences and how the perceived value of products/services has become critical in the context of wine tourism hospitality. Lee et al. (2017b) (post. prob. =0.64) also demonstrated that both "goal-oriented attendees" and "experiential attendees" had significant relations with all "consumer return on investment" (CROI), "escapism", "service excellence, and "aesthetic experiential values". The "goal-oriented attendees" valued more reactive values, such as "service excellence" and "aesthetics". Yet, the "experientially oriented attendees" valued more the active values like CROI and "escapism." Such results align with the previous research from Mathwick et al. (2002), who adapted the cognitive continuum theory and examined the analytic (goal-oriented) and intuitive (experiential-oriented) impacts on consumers' perception of experiential value in a retail environment. Lee et al. (2017a) extended the model of goal-directed behaviour proposed by Perugini and Bagozzi (2001) by incorporating experience (an antecedent within the relationship quality constructs) and involvement (a mediator of behavioural intentions) toward wine tourism. The two constructs related to wine tourism, the experience of a wine tour, and wine tourism involvement, have positive and significant relationships with attitudes toward participation. Subjective norms, attitudes, and positive anticipated emotions influence tourists' desire to participate in wine tourism and influence their behavioural intentions (Lee et al., 2017a). In contrast, the frequency of past behaviour studied as a moderator between desire and behavioural intentions, does not have a significant effect on desire and behavioural intentions, and perceived behavioural control has no significant impact on behavioural intentions (Lee et al., 2017a). Yeh and Jeng (2015) (post. prob. =0.62) studied how motivation and perceived value influence wine tourists' satisfaction and how satisfaction influences tourists' behavioural intentions. The results indicated that the three factors were influenced by motivation and perceived value.

## **Topic 6- Wine region**

Wine-related tourism can have a significant impact on regional economies (Tafel & Szolnoki, 2020). Stakeholder theory and the dynamic capabilities approach were used by Alonso et al. (2022a) (post. prob. =0.79) to study how organisations, specifically hospitality and tourism firms, interact with the wine and food sector during a crisis, in this case, the impact of COVID-19. Crisis impacts can be analysed through three theoretical dimensions: financial, operational, and human aspect (Alonso et al., 2022a). This financial pillar stresses the importance of wine tourism in this region. Thus, the strongly diminished volume of guests was responsible for the decrease in wine company revenues. The operational pillar relates to a firm's ability to transform its operations during crisis periods. The human aspect emphasises the uncertainty of the future, boosted by the impact of the crisis, which is a source of emotional distress (Alonso et al., 2022a). Using family social capital and social learning theory, Alonso and Kok (2021) (post. prob. =0.78) indicates that the relevance of family education (including instilling effort, values, and codes of conduct) was perceived more strongly than formal academic education, thus having a greater influence on attracting talent to a managerial or ownership role in the wine industry. Alonso et al. (2022b) (post. prob. =0.78), based on the knowledge-based view theory and dynamic capabilities – studied the perspective of food tourism providers from the wine regions of Argentina. Others did the same in different areas of Chile (Cafayate, Mendoza, & San Juan) and identified three opportunities for wineries to positively contribute to food tourism through wine tourism experiences, namely the enhancing availability, guidance, and foundation setting and identified four challenges, the necessity for involvement, enhancing food repertoires, generating excitement, and creating a niche.

## **Topic 7- Destination image**

Destination image is the sum of tourists' beliefs, thoughts, emotions, knowledge, and impressions regarding a destination. Over the last decade, destination image has received significant attention from academics (Bruwer et al., 2016, 2017; Bruwer & Lesschaeve, 2012; Montes-Guerra et al. 2023). According to Wu and Liang (2020a), the destination image is crucial for the development and management of a destination. It is also pivotal to attract new and repeat visitors. Destination images assume even greater importance when tourists share content they have generated themselves (Tasci et al., 2019). Wine product involvement can

directly or indirectly influence consumers' behavioural intentions (Agnoli et al., 2011; Lee et al., 2019) and can be positively related to their destination perceptions (Loureiro et al., 2013; Santos et al., 2017). Destination image is also studied from a more holistic perspective, where co-creation from several stakeholders assumes a central role. For instance, Carvalho et al. (2023, p.683) (post. prob. =0.74) proposed the following definition: “co-creation in food and wine tourism refers to the process of engaging in (more or less) personalised tourist experiences, characterised by the tourist's active participation, cognitive and emotional involvement, interaction with others (service staff, local agents, community, and other tourists) and with the physical, sensory-rich experiencescape, optionally enhanced by technology, contributing to tourists' production of value, and possibly resulting in tourists' satisfaction, learning, experience memorability, and loyalty toward a place, region/terroir, and food/wine (brands).” This aligns with previous research that suggests that overplaying the role of wine is unnecessary in the development of a wine tourism destination (Scorrano et al., 2019). Brochado et al. (2021) (post. prob. =0.66) reinforced that the four economic experience dimensions of Pine and Gilmore (1998) adapted to wine tourism (Quadri-Felitti & Fiore, 2012) play a role in destination image formation. However, their finding contradicts that of Vo Thanh and Kirova (2018), who claimed that visitors rarely mentioned aesthetic experiences. In favour of an integrated approach to destination image formation, Kirova (2021) (post. prob. =0.63) suggests that the coherence of one construct with others can potentiate the value of co-creation, thus improving the wine tourist experience. When one construct is incoherent with others, the wine tourist experience deteriorates in terms of well-being, leading to potential value co-destruction.

## 5. Future research directions

### Theory

Our literature review highlights the relevance of five core theories: servicescape theory, experience economy theory, consumer behaviour theory, destination choice theory and the theory of planned behaviour (TBP). Involvement plays a significant role in wine tourism research and is incorporated into the five theories mentioned above. Several studies suggest that the level of involvement with wine affects not only consumers (Bruwer & Lesschaeve, 2012), but also wine tourism and hospitality pursuits (Brown et al., 2007; Getz and Carlsen, 2008, Pé-Curto et al., 2024). Charters and Ali-Knight (2002) detected a sequential relationship between

tourists' level of interest in wine and their motivations for visiting wineries, while other empirical findings reveal that wine involvement can predict purchases at the cellar door (Kolyesnikova et al., 2007). Experience economy theory has been applied to analyse the wine tourism experience (Quadri-Felitti & Fiore, 2012). Quintal et al., (2015) incorporated the winescape concept into the TBP. They examined the effects of winescape – composed of seven supply-related attributes: setting, atmospherics, wine quality, wine complementary products, signage, and wine service staff (Thomas et al., 2011) – on wine tourist behaviour. Quintal et al.'s (2015) study confirms the findings of previous studies of Quintal et al. (2010) and Sparks (2007), who asserted the positive effects of subjective norms and perceived behavioural control on willingness to revisit and recommend the winery.

Previous studies have also combined theories to better understand wine hospitality and tourism. For instance, Sampaio (2012) built on consumer behaviour theory, servicescape theory, and the development of in-destination features (Yoon & Uysal, 2005) to understand how tourist expectations about the wine region's characteristics may directly affect attitudes toward a specific wine product and indirectly affect global tourist satisfaction. Thomas et al. (2018) combined servicescape theory, multiattribute attitudinal theory, and destination choice theory to develop and validate a scale to measure various winescape dimensions.

Other theories can be employed more often in the future, such as the self-determination theory (assuming that tourists are self-determined when their needs for autonomy, connection, and competence are fulfilled), social exchange theory (the social behaviour of the interaction of two parties), and reciprocity theory (tourists' feelings of obligation to make future repayments for what they have received). Researchers should pursue merging theories to explain what prevents tourists from visiting wineries more often. Namely, understanding what behaviours can motivate or demotivate winescape consumption can be intrinsic/extrinsic, values/beliefs, as well as emotions/attachment. Finally, other theories and models of those mentioned above can be used. One example is the investment model, which suggests that commitment to a target is influenced by the satisfaction level, quality of alternatives, and investment size. This theory, which was initially developed to understand romantic associations and used later in the work relations context, can now be used to understand repatronage and switch intentions toward wineries and wine brands. A new theory specific to the wine tourism context was proposed.

## Context

Research on wine tourism and hospitality has enhanced our understanding by classifying the relevant business perspectives. Most existing studies explored in the current research employ a demand-side perspective. A total of 98 papers studied wine tourists' motivations connected to theories such as consumer behaviour theory and cognitive continuum theory (Afonso et al., 2018; Byrd et al., 2016; Taylor et al., 2017). Tourist profiling is also a well-explored area of study (Cho et al., 2017b). Gu and Huang (2019) studied the profiling of Chinese wine tourists based on constraint theory, a framework that has been widely applied in tourism and hospitality research (Bonn et al., 2016; Cho et al., 2017b; Lin et al., 2017). In addition, from the demand side, satisfaction, loyalty, and behavioural intentions have been widely studied. The satisfaction construct has been explored through reactance theory (Lunardo and Ponsignon, 2020) and extended model of goal-directed behaviour (Prayag et al., 2021), the loyalty construct by attribution theory and the theory of satisfaction (Chen et al., 2016). Behavioural intentions (such as intention to visit, intention to revisit, and intention to buy) constructs have been analysed using self-congruity theory (Pratt & Sparks, 2014) and servicescape theory (Bruwer, 2014). The supply side accounted for the second-highest share of papers (14%). Constructs such as destination image formation and collaboration have been studied. Destination image constructs have been studied by Molina (2011) using destination choice theory and by Alonso (2014) using collaborative theory.

Another perspective has been mildly studied: the perspective of stakeholders and wine route communities (Partalidou & Tilkeridou, 2023). Some studies analysed this perspective by exploring the residents' perceptions of wine tourism benefits by applying social exchange theory (Xu et al., 2016), and by studying winery managers' perceptions in the scope of resource-based view theory (Torres et al., 2021). We suggest that future research integrate the three perspectives – suppliers, demand, and stakeholders – into a single framework by applying theories such as co-creation or non-core business theory. Such research can add to managerial and academic knowledge of wine tourism and hospitality.

## Characteristics

An increasing number of researchers have explored the constructs associated with the main theories, such as servicescape, experience economy, consumer behaviour, destination choice,

and TBP. Therefore, the constructs most often found in the articles are connected to these theories, including involvement, satisfaction, intention to revisit, and loyalty.

Involvement is a construct that emerges mainly in studies based on TBP (Sampaio, 2012; Sparks, 2007). The role of involvement depends on the type of study. For instance, involvement has been studied as a moderator (Pratt & Sparks, 2014), mediator (Afonso et al., 2018), and driver of intention to visit wineries (Sparks, 2007; Wu & Liang, 2020a). Wu and Liang (2020a) used wine product involvement as an antecedent of destination image, analysing the three dimensions of destination image: destination affective image, destination wine image, and destination cognitive image. They concluded that wine product involvement had a positive impact on the three dimensions of the destination image studied.

Other constructs have been analysed in specific situations, such as authenticity, intention to participate, terroir, or marketing value. Kim and Bonn (2016) added to the debate on the sociological origin of authenticity by applying it to the tourism and hospitality contexts (Robinson & Clifford, 2012; Steiner & Reisinger, 2006). They demonstrated that authenticity plays a substantial role in the behavioural intentions of winery tourists, in line with previous research on authenticity (Chhabra, 2010). Charters et al. (2017) explored the terroir concept, aiming to understand the impact of place as a value proposition in the context of resource advantage theory, meaning that firms “seek resources that are valuable, rare, imperfectly mobile, inimitable, and non-substitutable” (Hunt, 2010; p. 408). In this study, Charters et al. (2017, p. 748) propose “place as a unique and organic marketing resource, firm-created or man-made marketing”, which helps shape competitive advantage. Thus, terroirs, when identified, can be used to create a unique selling proposition and can provide a strong barrier to rival entries.

Other constructs should be explored further, such as variety seeking and commitment to a region or winery. Commitment can act as a driver or moderator (Newton et al., 2018). Variety seeking behaviour (Olsen et al., 2010) can provide valuable insights in the context of wine tourism and hospitality, for example, to understand whether situational aspects are more relevant than individual characteristics. Other opportunities for future research include investigating how relationships among wine brand loyalty, perceived value, satisfaction, emotions, categories of authenticity, and behavioural intentions are related to future winery visits and hospitality. Finally, in wine consumption, several research questions arise, such as how guilt and/or regret affect future behaviour related to future intention to engage in wine

tourism? Can guilt or regret be connected to individual or social characteristics or emotional states?

## Methodology

The most common methodology found in the existing literature is the primary data survey, which uses a convenience sample of 250 to 500 participants. Only four studies used secondary data (Garibaldi et al., 2017; McFarlane et al., 2016; Qiu et al., 2013). Structural equations and multiple regressions (Capitello et al., 2021; Shin & Nicolau, 2022; Wu & Liang, 2020b) are the most used analytical methods in the literature. Regarding structural equations, the covariance approach (CB-SEM) is employed more often than the variance approach (PLS-SEM) (Afonso et al., 2018; Wu & Liang, 2020b). A qualitative approach emerges in exploratory studies conducted through semi-structured interviews (Torres et al., 2021) and focus groups (Carlsen & Boksberger, 2015). One study used netnography (Vo Thanh & Kirova, 2018). The mixed-methods approach typically involves surveys and interviews (Alonso & Kok, 2020; Thomas et al., 2018). Conceptual papers present theoretical frameworks (Charters et al., 2017; Quadri-Felitti & Fiore, 2012). Based on the above, other methodologies are recommended for research in this area of wine tourism, such as case studies, mixed methods, experiments, ethnography, storytelling, text mining, and FcQCA. Content analysis, such as netnography or text mining, can be useful when embarking on new research directions because it leverages information from websites and social media. More research using grounded theory is encouraged because previous studies tend to apply and extend well-known theories from psychology and sociology.

New technologies such as virtual reality (VR), augmented reality (AR), and artificial intelligence should also be employed as interfaces to conduct experiments, simulate experiences, and understand new tourism opportunities. A few studies have explored the use of virtual environments as autonomous agents to promote tourism destinations, and more recent examples have discussed the role of mobile technology, artificial intelligence, and AR/VR in sustainable and smart tourism (O'Dwyer et al., 2019). Big data can also be better explored with text mining and machine learning techniques to (1) structure textual opinions about consumers' behaviours regarding wine tourism and (2) predict wine tourism pro-environmental behaviour from the Internet of Things (IoT sensors). Can grounded theory be useful to develop a prototype of wine tourism behaviour that accommodates these new technologies.



## 6. Conclusion

### *Theoretical and Managerial Contributions*

Wine tourism and hospitality have become hot topics among scholars and tourism managers. Despite its importance, this study is the first to conduct an in-depth analysis of the most significant topics discussed in the existing literature, highlighting potential avenues for research on wine tourism and hospitality. Therefore, this study addresses the gap in the literature regarding the topics and constructs that have been most studied in the wine tourism sector. Thus, it contributes to the literature by (1) using a recent and advanced methodological approach based on text mining to analyse the full text of extant research, and (2) suggesting further theories (T), contexts (C), characteristics (C), and methodologies (M) that can be explored in the topic.

The results show that current studies tend to employ more quantitative (survey-based) approaches than qualitative ones. Structural equations or regression analyses are among the techniques used most to analyse data, and researchers tend to employ well-known theories, mainly coming from other fields, such as psychology and sociology, to support their studies. Most studies focus on the domain of consumer behaviour, which is related to the intention to visit or revisit, satisfaction, and loyalty. Implementing different wine programs, improving tasting rooms, and segmentation have been the main areas of research, followed by concerns about the economic impact of wine tourism on local economies through wine route networks.

This study can also help destination managers, winery managers, and other relevant stakeholders by highlighting the most relevant issues that can affect wine tourists' behaviour. Some examples include the relevance of tourists' and guests' values and beliefs in explaining what they value in a winery. At the destination and hotel levels, the results highlight the need for managers to spread messages to raise tourists' and guests' awareness of wine tourism activities, which can involve employees and citizens for the same purpose.

Furthermore, the study underscores the importance of interdisciplinary collaboration in wine tourism research. By integrating perspectives from various fields, such as marketing, psychology, sociology, and environmental science, researchers can develop a more holistic understanding of wine tourism and its impact on different stakeholders. This interdisciplinary approach can also lead to the development of innovative solutions to address the challenges faced by the wine tourism industry.

The study also emphasises the need for more longitudinal research to understand the long-term effects of wine tourism on both tourists and wine regions. Longitudinal studies can provide valuable insights into how tourists' perceptions and behaviours evolve over time, as well as how wine regions adapt to changing market conditions and consumer preferences.

Moreover, the study highlights the potential of emerging technologies, such as virtual reality and artificial intelligence, to enhance the wine tourism experience. These technologies can be used to create immersive and interactive experiences for tourists, improve customer service, and streamline operations for wine tourism businesses. Future research should explore the applications and implications of these technologies in the context of wine tourism.

In conclusion, this study provides a comprehensive overview of the current state of wine tourism research and offers valuable insights for future studies. By identifying key trends, challenges, and opportunities, it contributes to the ongoing development of wine tourism as a vibrant and sustainable sector. The findings of this study can inform policy-making, business strategies, and academic research, ultimately leading to a more robust and resilient wine tourism industry.

Additionally, the study provides a detailed analysis of the various constructs used in wine tourism research, such as satisfaction, involvement, loyalty, and behavioural intentions. These constructs are often used to formulate hypotheses and conceptual frameworks, and the frequent application of theories such as the Theory of Planned Behaviour, Servicescape Theory, and Destination Choice Theory supports their significance.

The study also reveals that wine tourism research has evolved over the years, with a steady increase in the number of studies addressing issues related to wine tourism. Recent studies have opened new research avenues, such as examining visitor satisfaction with various aspects of the cellar door environment, the role of the metaverse in enhancing consumer engagement, and the impact of technological innovations on wine tourism.

Sustainability has also emerged as a key theme in wine tourism research. Sustainable practices in vineyard management, eco-friendly tourism services, and the promotion of local culture and heritage are becoming essential components of wine tourism strategies. These practices not only enhance the tourist experience but also contribute to the long-term viability of wine regions.

Moreover, wine tourism has been identified as a key driver for rural development, fostering local economies by creating jobs, supporting local businesses, and preserving cultural landscapes. The integration of wine tourism with other forms of tourism, such as gastronomic and cultural tourism, further enhances its appeal and economic impact.

Given the lack of recent comprehensive literature analyses that can help develop new understudied topics in wine tourism, this study aims to contribute to existing knowledge by exploring past literature through a comprehensive collection of relevant articles and employing a text mining approach based on a hierarchical Bayesian model to identify latent topics that have emerged in recent years. The study discusses the main trends in wine tourism and hospitality through a systematic review approach and the TCCM framework, which exposes the key theories, constructs, contexts, and methodologies employed in the field.

Overall, this research provides a valuable foundation for future studies in wine tourism and hospitality. By identifying the most prominent topics and trends, as well as suggesting directions for future research, this study paves the way for further advancements in this dynamic and evolving field. The insights gained from this research can help scholars and practitioners better understand the determinants of wine tourism and develop strategies to enhance the tourist experience and promote the sustainable development of wine regions.

### *Limitations*

Despite the contributions of this study, it has some limitations. The search query focused on wine tourism. Other related terms, such as tourism practices, tourism networks, and tourism policies, were not used, which restricts the results to wine tourism. Finally, the studies focused on wine tourism in general, rather than behavioural changes in particular, which is also a very relevant topic for tourism and hospitality and may be explored in more detail in future research.

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Appendix A

Element	0: Absence	1: Low Level	2: Medium level	3: High level	Not Aplicable
1. Directly related to objective of the research	There is not enough information to evaluate	Not related	Somehow related	Totally related	Not Aplicable
2. Theory robustness	There is not enough information to evaluate	Weak development of literature	Superficial development of theories and constructs within existing literature	Robust use of theory	Not Aplicable
3. Congruence of theory, methodology and findings	There is not enough information to evaluate	Incomplete data and not related to theory	Data somehow related to the arguments	Strong link between the arguments presented and data	Not Aplicable
4. Directly related to objective of the research	enough information to evaluate this criterion	Makes a low contribution	Makes a medium contribution	Makes a high contribution	Not Aplicable

Source: Adapted from Macpherson and Holt (2007).