



Wine Tourism in the Digital Era: A Systematic Review of Emerging Trends

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ABSTRACT

The aim of this study is to systematically examine the role and future of digital technologies and digital transformation in the wine tourism experience. For this purpose, 23 studies selected according to criteria determined by searching the Scopus database was examined. The examinations revealed that digital technologies are used in various areas of wine tourism, such as augmented reality, virtual reality, metaverse applications, and social media platforms, and that they have positive effects on tourists' destination preferences, purchase intentions, and overall satisfaction. Furthermore, it was observed that digital experiences for wine tourists became widespread, especially during the pandemic, and that this has so far been adopted by only a small number of wine tourism destinations. Theoretically, this study reveals conceptual gaps in the literature regarding the place of digital experiences in wine tourism. Practically, it offers suggestions to wine tourism stakeholders on the strategic use of digital technologies, the development of digital competencies, and sustainable content production.

INTRODUCTION

Today, digitalization is not only a technological transformation but also a multifaceted change process shaping the functioning and production process of the tourism industry (Zeqiri et al., 2020). The effects of digital technologies on travel decision-making processes, destination image, experience design, and consumer behavior have been investigated in the context of many types of tourism. For example, in areas



such as health tourism (Khizzou et al., 2025), cultural tourism (Zheng et al., 2023), gastronomy tourism (Zoran, 2025), and rural tourism (Erianda et al., 2023), the interactive tools offered by digitalization both enhance the quality of experiences and strengthen accessibility. Global digitalization processes have caused transformations in many types of tourism, and have also brought about transformations in experiences within wine tourism (Savchenko, 2022).

Wine tourism is defined as travel undertaken by tourists for various activities, primarily including visits to vineyards, wineries, wine festivals, and wine tasting (Hall, 2000; Quadri-Felitti and Fiore, 2012). Saayman and Merwe (2015) define wine tourism as a unique experience encompassing wine, gastronomy, culture, art, education, and travel. Tourists who choose this type of tourism focus on outcomes such as relaxation, enjoyment, learning, and sensory pleasures (Cohen and Ben-Nun, 2009). This type of tourism, which offers tourists a variety of experiences from wine tasting to harvest events, has undergone a transformation process in recent years due to the impact of digitalization (Festa et al., 2023; Direction, 2023; Yu et al., 2022). With the impact of this digitalization, enriched and personalized wine tourism experiences are offered, particularly through the use of digital tools such as augmented reality (AR), virtual reality (VR), artificial intelligence (AI), and mobile applications (Gastaldello et al., 2024). For example, online tasting events, virtual vineyard tours, or sharing wine production processes on digital platforms make the wine tourism experience more accessible and personalized, transcending geographical boundaries (Cui et al., 2024; Gastaldello et al., 2024).

With the impact of changing technological developments, tourists' expectations and interaction patterns are changing, encouraging wine tourism destinations to produce innovative solutions (Levitskaia, 2020). Furthermore, digitalization enables wine producers to communicate with consumers (Berkholz et al., 2023). Thus, targeted marketing strategies can be developed by taking into account consumer preferences for the wine tourism experience. In this context, the changes and developments in digital experiences that have emerged in recent years are reshaping the traditional structure of wine tourism, while also creating new opportunities in terms of the sustainability and competitiveness of the sector. When examining scientific studies on wine tourism, many researchers have conducted studies addressing both the supply and demand aspects. The conducted studies revealed that the wine tourism literature is structured around traditional themes such as tourist motivations (Alant and Bruwer, 2004; Bruwer and Rueger-Muck, 2019; Vorobiova et al., 2020), quality of experience (Gómez-Carmona, 2023; Madeira et al., 2019), destination image (Sekhniashvili and Bujdosó, 2023; Scherrer et al., 2009; Wu and Liang, 2020), and economic impacts (Montella, 2017; Quadri-Felitti and Fiore, 2012). Particularly in recent years, with the impact of digitalization, an increase in the number of studies conducted in the field of tourism has been observed



(Moreno-Izquierdo et al., 2022; Pencarelli, 2020). However, when these studies are examined specifically in the context of wine tourism, it is seen that research on digitalization and wine tourism is limited. The use of digital technologies in wine tourism has led to changes for both consumers and producers. Despite this, the literature still lacks a comprehensive understanding of the role of digital technologies.

The lack of systematic studies examining the impact of digital experiences on wine tourism is noteworthy. This situation creates a significant gap in the wine tourism literature and limits strategic planning for the future of the sector. In this context, this study aims to fill the theoretical and practical gaps in the literature by systematically addressing how digital transformation occurs in special interest tourism types such as wine tourism. The main objective of this study is to present a systematic examination to reveal the current state and future potential of digital experiences in wine tourism. In addition to this main objective, it also aims to evaluate the effects of digitalization on wine tourism from a holistic perspective and to reveal current trends by classifying academic studies in this field. Thus, it is aimed to provide both researchers and practitioners with a deeper understanding of wine tourism developing with digitalization. It is thought that this study, by revealing how the opportunities offered by digital technologies transform the wine tourism experience, can serve as a guide for research and applications to be carried out in this field.

METHOD

The aim of this study is to present the literature through a systematic review, focusing on digital experiences in the context of wine tourism. The study will be addressed in two main aspects. The first objective is to review and synthesize the relevant research in the literature, considering digital experiences in wine tourism. The second objective is to develop theoretical and practical suggestions within the context of relevant studies in order to shed light on future research on digital experiences in wine tourism.

A systematic literature review is the systematic collection, presentation, and critical evaluation of findings obtained from multiple studies on a subject (Pati and Lorusso, 2017). This method offers a more objective and transparent approach compared to traditional literature reviews. For this reason, it allows for the identification of trends, gaps, and methodological diversity in the literature. In this study, this method was preferred to systematically and critically examine the academic accumulation on digital wine tourism experiences. The systematic review process of the study was carried out using the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) model, which is frequently



preferred in the literature (Moher et al., 2009). This model is a reporting technique that aims to make the stages of the research process clear and traceable in systematic reviews.

DATA COLLECTION PROCESS AND PRISMA PROTOCOL

In the PRISMA model, the research question was determined in a way that clearly focuses on the purpose of the study as “What is the place of digital experiences in the current literature in the context of wine tourism, and how do these experiences shape the future of wine tourism?” Electronic databases are used as the primary source to access reliable and comprehensive data in systematic review studies. Among the most frequently preferred databases in systematic literature reviews in the field of tourism are Web of Science (WoS), Science Direct (Elsevier), Emerald, Scopus, Taylor and Francis, and Sage (Chi et al. 2020; Japutra et al. 2022; Hu et al. 2023). In this research, Scopusdatabase was used to access academic publications on the themes of wine tourism and digital experiences. Within the framework of the study, “wine tourism (winethe terms and phrases “digital experience”, “virtual wine tasting”, “virtual tourism”, “smart tourism”, “technology in tourism”, “digital transformation”, “augmented reality (AR)”, “virtual reality (VR)”, and “online wine tourism” were searched in the titles, abstracts, and keywords using the conjunction “and”. Duplicate studies were first identified and excluded from the lists. Then, academic publications directly related to the research question were selected based on abstract and full-text evaluations. 236 records were obtained from database searches and subjected to field limitations according to the determined subject matter. In the first stage, 113 articles that were found to be duplicates and not within the scope of the research question were excluded from the review. Subsequently, a final review was conducted in accordance with the PRISMA protocol, based on predefined inclusion and exclusion criteria, and the studies to be included in the analysis process were determined (Table 1). Exclusion criteria excluded books, book chapters, conference proceedings, editorial articles, theses, and other non-academic publications. Only English-language articles published in peer-reviewed journals after 2015, with full-text access and scientific merit, addressing the relationship between digitalization and wine tourism were considered. The main reason for choosing this period was the significant acceleration of digitalization in the tourism sector and the increasing reflection of digital experiences in the wine tourism literature, particularly before and after the pandemic. This left 37 articles.

Table No.1 Inclusion, exclusion and topic selection criteria

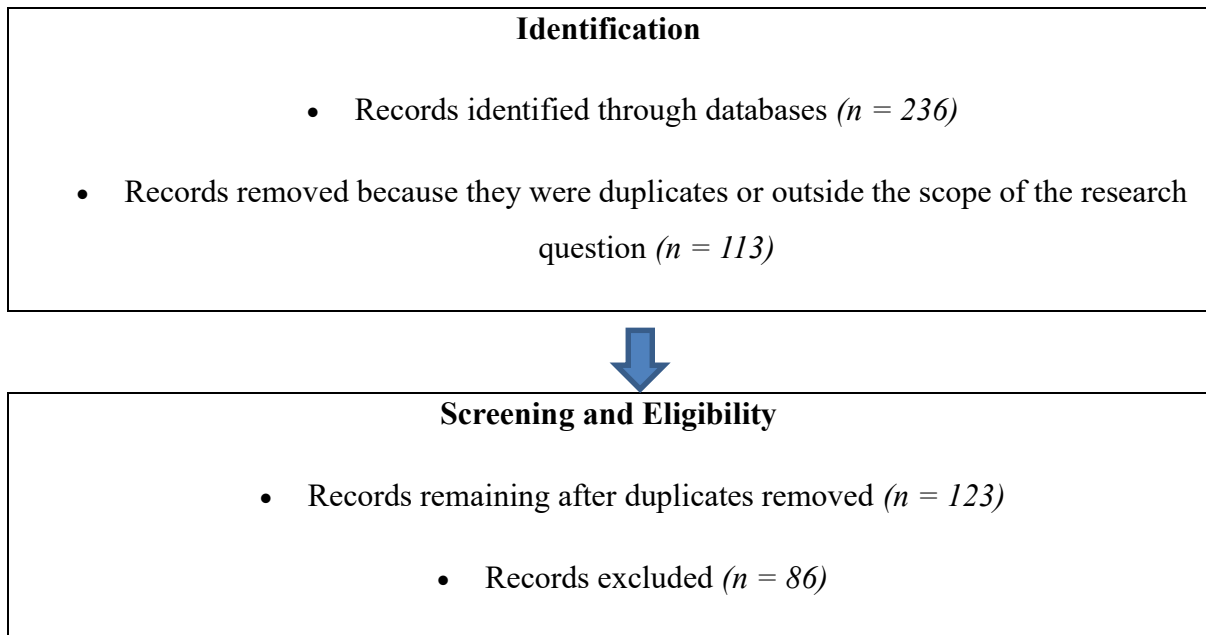
Screening Criteria		
Inclusion	Exclusion	Selection Criteria

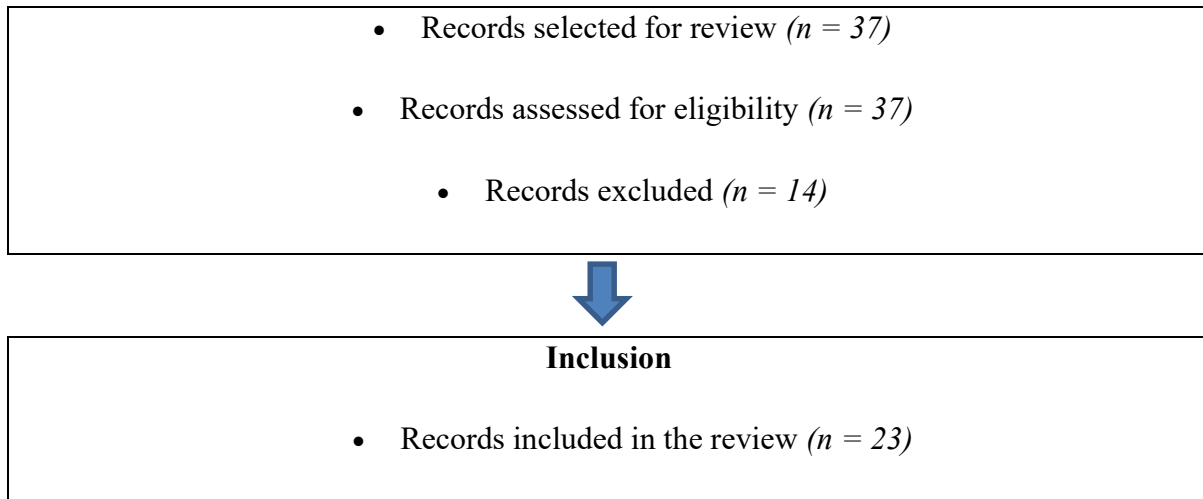


<ul style="list-style-type: none"> • Journal Articles • Peer-reviewed publications • Publications from 2015 onwards • Publications in English 	<ul style="list-style-type: none"> • Recurring Publications • Books, book chapters, conference papers and theses • Publications published before 2015 • Publications not in English 	<ul style="list-style-type: none"> • Focusing on digitalization in the context of wine tourism • Digital experiences including virtual tasting, VR/AR • Publications dealing with the impact of digital technologies on tourist behaviour or experience • Related to research purposes
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The abstracts of the 37 selected publications were manually scanned, and the extent to which each study aligned with the research objective was evaluated separately in two different time periods according to the previously mentioned inclusion criteria. In cases where a definitive decision could not be made based on the title and abstract, the full texts of the relevant articles were examined to determine scope suitability. In line with the inclusion criteria, conceptual or empirical (qualitative or quantitative) studies addressing themes such as digitalization, digital experience, virtual wine tasting, and smart tourism technologies in the context of wine tourism were included. Journal diversity was considered, and no journal restrictions were imposed. At the end of the review process, 14 articles that did not meet the research questions and/or the specified criteria were excluded, and a total of 23 articles were included in the evaluation. The PRISMA flowchart for this process is presented in Figure 1.

Digital Experiences in Wine Tourism





Source: Page et al. 2021

Figure No. 1: PRISMA Flow chart

FINDINGS

In this section, the main trends, digital themes they focus on, and methods used in the 23 studies evaluated within the scope of the systematic review are classified and presented. The findings were analyzed through thematic grouping, and a holistic framework was created regarding how digital technologies are used in the context of wine tourism. In this context, findings related to different digital tools such as virtual reality, augmented reality, metaverse applications, social media use, and digital marketing are systematically addressed under the relevant subheadings. In addition, the methodological approaches and geographical distributions of the studies examined are presented with a general evaluation.

GENERAL CHARACTERISTICS OF THE STUDIES EXAMINED

As part of the systematic review, a total of 23 academic studies meeting the defined inclusion criteria were evaluated. The vast majority of the studies examined were published after 2020, reflecting the impact of the COVID-19 pandemic on digital tourism practices. In terms of geographical distribution, it was observed that a significant portion of the studies were European-centered, particularly concentrated in traditional wine-producing countries such as Italy, France, Spain, and Germany. However, studies focusing on destinations such as Australia and the USA were also included. These findings offer important clues about the geographical distribution of digitalization in the wine tourism literature.

From a methodological perspective, it was found that the majority of the studies were conducted using qualitative research methods. Case analysis, in-depth interviews, and document analysis were particularly



preferred. While fewer in number, quantitative methods (survey applications) were also used, and some studies adopted a mixed-methods approach. The digital themes focused on in the studies varied. Virtual reality (VR), augmented reality (AR), social media use, and digital marketing applications were among the most frequently addressed topics. Studies focusing on more recent technologies such as metaverse applications, artificial intelligence-based systems, and mobile applications were limited in number. This indicates a research gap in the context of wine tourism, focusing on themes where digitalization has not yet been explored in depth. Detailed information on these studies is presented in a table in the appendix (Appendix-1). The table includes the author, year, country of publication, methodology used, digital theme of focus, and key findings for each publication.

APPLICATIONS OF DIGITAL TECHNOLOGIES IN WINE TOURISM

In recent years, the tourism sector has undergone a significant transformation driven by rapid technological advancements, compelling destinations to balance the preservation of traditional experiential elements with the integration of digital innovations. This transition is particularly evident in wine tourism, where digitalization has intensified and diversified the ways in which experiences are created, delivered, and consumed. The literature reviewed within this study indicates that digital transformation in wine tourism is primarily facilitated through technologies such as virtual reality (VR), augmented reality (AR), mobile applications, social media platforms, metaverse environments, and smart systems powered by artificial intelligence (AI). These technologies are not merely supplementary; rather, they are increasingly redefining the wine tourism experience. Empirical studies highlight the substantial influence of VR on tourists' behavioral intentions. Experimental research demonstrates that immersive virtual environments positively affect tourists' willingness to visit, recommend, and engage with wine destinations. VR-based wine tours, for instance, have been shown to generate stronger emotional engagement and higher purchase intentions compared to traditional promotional methods. Similarly, AR and multisensory technologies contribute to more interactive and memorable experiences, enhancing the hedonic and educational dimensions of wine tourism. These tools enable tourists to engage with vineyards and wine production processes in innovative ways, thereby enriching their overall experience.

Social media and web-based platforms also play a critical role in the digital transformation of wine tourism. While many winery owners acknowledge the promotional potential of these platforms, studies indicate that their strategic utilization remains limited, particularly among small and medium-sized enterprises (SMEs). Issues such as inadequate digital expertise and limited resources often hinder



effective online engagement, resulting in reduced digital visibility. This gap is even more pronounced in rural wine destinations, where some businesses lack a basic digital presence altogether.

Emerging technologies such as the metaverse further expand the scope of digital wine tourism by offering immersive, virtual environments where users can explore vineyards and interact with wine culture remotely. Additionally, AI-driven systems are increasingly being employed to enhance customer experiences and support strategic decision-making processes. The COVID-19 pandemic accelerated the adoption of such technologies, as wine tourism businesses turned to e-commerce, home delivery, and digital communication tools to sustain operations and maintain customer engagement.

The impact of digitalization extends beyond technological adoption to fundamentally reshape the wine tourist experience. Digital tools have transformed tourists from passive observers into active participants, enabling personalized, interactive, and information-rich experiences. Virtual wine tastings and online events, for example, have facilitated social interaction and knowledge sharing, while also influencing purchasing behavior. Research suggests that digital wine tourists often exhibit distinct characteristics, including a high level of interest in wine, openness to technology, and a preference for accessible and low-risk experiences.

Furthermore, digitalization has significantly altered marketing and promotional strategies within wine tourism. Digital platforms allow destinations and producers to reach global audiences more efficiently, shifting the focus from traditional marketing approaches to dynamic, digitally driven strategies. Social media, in particular, has become a vital tool for content dissemination and consumer engagement. Virtual events and online tastings have also emerged as effective marketing instruments, enhancing brand visibility and fostering emotional connections with consumers.

Despite these advancements, the adoption of digital technologies remains uneven across regions and stakeholders, leading to disparities in digital accessibility and implementation. While some destinations have successfully integrated advanced technologies such as the metaverse into their marketing strategies, others continue to struggle with basic digital infrastructure. Consequently, although digitalization has made wine tourism more interactive, accessible, and innovative, it also underscores the need for inclusive and strategic approaches to ensure balanced and sustainable development across the sector.

SECTORAL AND LOCAL IMPLICATIONS OF DIGITALIZATION

The integration of digital technologies in wine tourism has not only transformed visitor experiences but has also significantly reshaped the structural dynamics of the sector and the operational profiles of local



producers. The reviewed studies highlight that digitalization creates substantial opportunities for innovation, sustainability, and enhanced competitiveness within wine tourism. However, these benefits are not uniformly distributed, as the impact of digital transformation varies across geographical regions and institutional contexts. In particular, small and medium-sized enterprises (SMEs) face considerable challenges in adopting digital technologies due to limited financial resources, inadequate digital skills, and deeply rooted traditional practices. Existing studies indicate that, although many wine tourism stakeholders recognize the potential of digital tools such as social media, their strategic and consistent utilization remains limited, especially in rural settings where digital presence is often minimal.

The COVID-19 pandemic acted as a catalyst for accelerating digital adoption across the tourism sector. For many wine producers, digitalization shifted from being optional to essential. Producers increasingly relied on e-commerce platforms, home delivery services, and electronic word-of-mouth communication to sustain operations. Additionally, practices such as virtual wine tastings gained prominence, enabling continued engagement with consumers despite physical restrictions.

Beyond marketing, digitalization also contributes to sustainability in wine tourism. Research indicates that higher levels of digital adoption are associated with improvements in both environmental and economic performance, including more efficient resource management and data-driven decision-making. At the local level, the influence of digital technologies extends beyond individual businesses to encompass destination management, regional development, and community participation. Digital platforms can effectively promote local identity and cultural heritage, enhancing both economic and cultural value.

However, for digitalization to yield sustainable outcomes, digital content must remain authentic, localized, and consistent. Overall, while digital transformation serves as a powerful driver of innovation in wine tourism, its uneven adoption underscores the need for inclusive and context-sensitive digital strategies across the sector.

TRENDS AND GAPS OBSERVED IN THE LITERATURE

The systematic review reveals that digitalization in wine tourism has gained substantial academic attention, particularly over the past decade. This growth has been further accelerated in the post-COVID-19 period, as digital tools became essential for maintaining tourist engagement. Despite this increasing interest, the literature exhibits notable limitations in terms of content, methodology, and geographical representation. A significant proportion of studies are concentrated in traditional European wine-



producing countries such as Italy, France, Germany, Spain, and Greece, while emerging wine regions in Asia, Africa, and South America remain underexplored. This imbalance indicates that the global diversity of digital wine tourism experiences is not yet adequately reflected in existing research.

From a methodological perspective, most studies rely heavily on qualitative approaches, particularly case studies and interviews. While these methods provide in-depth insights, there is a clear lack of methodological diversity. Experimental designs, mixed-method approaches, and robust quantitative tools are relatively scarce, highlighting a gap in the measurement and generalization of digital wine tourism experiences. This limitation restricts the development of standardized frameworks and comparative analyses across contexts.

In terms of thematic focus, existing studies primarily emphasize applications such as virtual reality (VR), social media engagement, and online wine tastings. Although emerging technologies like augmented reality (AR), artificial intelligence, metaverse platforms, and mobile interfaces are gaining attention, their roles remain insufficiently examined. Furthermore, the majority of research adopts a visitor- or business-centric perspective, with limited consideration of other key stakeholders such as local communities and government authorities. This narrow focus fails to capture the inherently multi-stakeholder nature of wine tourism.

Overall, while the literature acknowledges the transformative potential of digital technologies, the field remains in a developmental stage. There is a pressing need for more comprehensive, comparative, and multidisciplinary research approaches. Future studies should explore the differential impacts of digital technologies across tourist segments, examine destination-level strategies, and assess long-term implications for sustainability. Such efforts will contribute to a more holistic understanding of digital transformation in wine tourism and strengthen both theoretical and practical advancements in the field.

THEORETICAL IMPLICATIONS

One of the key theoretical contributions of this study lies in clarifying the conceptual role of digitalization within wine tourism literature. The reviewed studies highlight the transformative potential of digital technologies, particularly virtual reality (VR), augmented reality (AR), and metaverse platforms, in reshaping the wine tourism experience and influencing tourist behavior. In experience-based tourism contexts, the integration of such technologies necessitates a re-examination of experiential marketing theory in light of digital environments. The findings indicate that digitally mediated experiences enhance tourists' emotional and perceptual engagement, thereby influencing destination



choice and behavioral intentions. Additionally, the study identifies conditions under which digital technologies can either enrich or constrain visitor experiences and perceptions. Despite these insights, notable gaps persist in the literature, especially regarding inclusivity and methodological diversity. The absence of robust quantitative scales and comparative analytical models to assess digital experience outcomes remains a critical limitation.

Accordingly, this study offers directions for future research, including the need to test and refine theoretical frameworks across diverse geographical contexts. Developing reliable measurement scales will strengthen empirical validation. Furthermore, greater emphasis on stakeholder-centric perspectives—incorporating local communities and destination management organizations—is essential. Finally, future studies should establish comprehensive frameworks to examine the long-term impact of digital innovations on sustainable tourist behavior and destination image, thereby advancing theoretical understanding in digital wine tourism.

PRACTICAL IMPLICATIONS

The practical implications of this study demonstrate that digital transformation is significantly reshaping the wine tourism sector at multiple levels. Digital technologies enhance visitor experiences and positively influence tourists' attitudes, satisfaction, and behavioral intentions toward destinations. Tools such as virtual reality (VR), augmented reality (AR), online tastings, and metaverse platforms contribute to increased destination preference and revisit intentions. However, the adoption of such technologies remains uneven, particularly among small and medium-sized enterprises (SMEs), creating disparities in sectoral competitiveness. Wine producers are encouraged to develop immersive digital vineyard experiences through AR and VR, while digital wine tastings can serve as preliminary engagements that stimulate physical visits. Despite these benefits, challenges such as limited technical knowledge, inadequate infrastructure, and resource constraints hinder the effective implementation of digital tools. Addressing these barriers requires not only technological investment but also the development of human capital through targeted training programs to enhance digital competencies. To ensure effective digital transformation, it is essential to establish local and national support mechanisms, including training initiatives, technical assistance, and financial incentives for SMEs. Collaborative platforms involving destination management organizations and tourism stakeholders can further strengthen digital promotion strategies. Additionally, designing user-friendly digital content aligned with tourist expectations, while preserving authenticity, cultural heritage, and sustainability principles, is crucial for the long-term growth and resilience of the wine tourism sector.

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