DIGITAL MARKETING STRATEGY FOR ENHANCING THE COMPETITIVENESS OF RURAL AGRITOURISM FARMS

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ABSTRACT

The digitalization of the tourism market requires agritourism farms to develop contemporary marketing strategies to enhance competitiveness and ensure sustainable performance. This study examines the relationship between digital marketing strategy and competitiveness based on a sample of 123 agritourism farms in Serbia. Correlation analysis indicates moderate to strong positive associations between digital strategy and all competitiveness dimensions. Multiple regression results show that social media activity, online reputation management, direct digital communication with guests, and the integration of digital strategy have a statistically significant and positive impact on overall competitiveness, whereas basic web presence and platform presence do not demonstrate an independent effect. Cluster analysis identifies three distinct groups of farms, with those characterized by a highly integrated digital strategy achieving higher market visibility, capacity utilization, revenue, and guest loyalty. The findings confirm that competitive advantage primarily stems from a strategic and integrated digital approach.

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Introduction

Agritourism is increasingly recognized in contemporary economies as an important segment of rural tourism with significant potential for the sustainable development of rural areas, particularly in countries undergoing economic transition. Although international literature increasingly emphasizes the role of digital marketing in strengthening the market position and competitiveness of tourism entities, agritourism farms face specific challenges due to limited resources, business seasonality, and the need to build trust in the market. In this context, digital marketing acquires particular importance as a mechanism for increasing visibility, improving communication with guests, and differentiating the tourism offering, thereby creating conditions for enhancing the competitiveness of agritourism entities.

Despite a growing body of international research confirming a positive relationship between digital marketing and competitiveness in tourism, empirical evidence related to agritourism farms in the Republic of Serbia and the wider region remains limited. A notable research gap exists in identifying the key elements of digital marketing strategy that most strongly contribute to competitiveness, as well as in understanding differing patterns of digital development among agritourism farms. Based on these considerations, this study aims to examine the impact of digital marketing strategy on the competitiveness of agritourism farms and to contribute to addressing the existing research gap through empirical analysis conducted within the domestic context.

Literature Review

In contemporary academic literature, agritourism is defined as a specific form of rural tourism that integrates agricultural production with tourism, hospitality, and experiential services, relying on local resources, tradition, and the authenticity of rural areas (Phillip et al., 2010; Lane & Kastenholz, 2015; Popescu et al., 2025). Agritourism is increasingly recognized as a form of rural tourism that plays a key role in the sustainable development of rural areas, as it contributes to the diversification of local income sources, strengthens economic performance, and enhances the resilience of rural communities to socio-economic challenges (Davidović et al., 2025; Turtureanu et al., 2025). In countries in transition, including the Republic of Serbia, agritourism is increasingly viewed as an instrument for the revitalization of rural communities under conditions of depopulation, population ageing, and limited employment opportunities (Dašić et al., 2020).

The contemporary tourism market is characterized by a high degree of digitalization, whereby potential guests intensively use digital information sources, social media, online platforms, and user-generated reviews prior to making travel decisions. In such an environment, the competitiveness of agritourism farms increasingly depends on their ability to position themselves effectively in the digital space and to build visibility, trust, and long-term market relationships through digital channels (Sima, & Gheorghe, 2019; Rodrigues et al., 2023; Turtureanu et al., 2025).

In the literature, the competitiveness of agritourism farms is conceptualized as a multidimensional construct encompassing market visibility and reach, operational performance indicators such as capacity utilization and business profitability, as well as relational dimensions that include guest loyalty and service differentiation. Research indicates that small rural enterprises are particularly vulnerable to fluctuations in demand and reputation due to their limited financial, human, and marketing resources (Hefny, 2023; Dumitru & Cosma, 2023; Xia et al., 2024). In this context, improving market access and professionalizing marketing activities are identified as key prerequisites for the long-term competitiveness of rural and agritourism entities (Dašić et al., 2020; Zhang et al., 2025).

Within contemporary theoretical approaches, digital marketing is not viewed merely as a promotional activity, but rather as a strategic process that includes the management of digital channels, distribution systems, online reputation, guest communication, and the integration of various digital activities into a coherent business logic (Uong & Ngoc, 2025; Zaman et al., 2025; Christou et al., 2025). Studies in tourism and agritourism emphasize that the competitive effects of digital marketing depend on the quality and coordination of digital activities rather than on their mere presence (Afren, 2024; Kanellos et al., 2024; Vrdoljak Raguž et al., 2025).

The contemporary literature further suggests that digital marketing in tourism cannot be reduced to promotional actions, but represents a strategic process of managing multiple digital channels, consumer interaction, and the reputation of destinations and tourism entities. This approach involves the integration of social media, mobile technologies, and contextual information into a unified marketing logic (Buhalis & Foerste, 2013; Sigala, 2018), whereby digital transformation becomes a key determinant of competitiveness in modern tourism (UNWTO, 2021; OECD, 2020; Kamalaveni et al., 2021). In rural and agritourism contexts, where small-scale operators with limited resources dominate, digital channels play a particularly important role in increasing visibility, building trust, and expanding market reach (Lane & Kastenholz, 2015; Pesonen & Tuohino, 2017).

Digital marketing, through high-quality website presence, active use of social media, and effective management of online reviews, has a statistically significant impact on trust building, user satisfaction, and customer loyalty in tourism services (Ostojić et al., 2025). In this way, digital strategies influence not only communication-related aspects of business operations but also generate broader and more sustainable effects on the competitive performance of tourism entities. Studies indicate that social media activities significantly affect tourists' attitudes, visit intentions, and repeat visitation, which is particularly important for rural destinations and agritourism farms with limited promotional budgets (Chin & Wong, 2022; Cheng & Jiang, 2025).

Online reputation management is simultaneously identified as a critical dimension of competitiveness, as reviews, ratings, and interactions with users reduce information asymmetries and perceived purchase risk, thereby directly influencing trust and guest loyalty (Rodrigues et al., 2023; Afren, 2024). Presence on online booking platforms is

associated with increased market accessibility and easier conversion of demand into actual reservations, although the literature suggests that the effects of such platforms may be moderate and context-dependent, influenced by business models, commission structures, and the seasonality of tourism activity (Mihailović & Popović, 2021; Kanellos et al., 2024; Milačić, 2024; Mendieta-Aragón, Rodríguez-Fernández & Navío-Marco, 2025). Direct digital communication with guests, through timely and personalized responses, is theoretically linked to relationship marketing and customer relationship management concepts, with empirical evidence confirming its positive impact on loyalty and long-term market relationships (Cheng & Jiang, 2025; Afren, 2024).

A particularly relevant theoretical layer in the context of Serbia and the broader region relates to the digital competencies and digital literacy of agritourism farm operators. Research indicates that the level of digital knowledge and readiness to adopt digital technologies represent key determinants of the successful implementation of digital marketing in rural tourism, directly influencing the quality of digital marketing strategies and overall business competitiveness (Paraušić et al., 2025).

Based on these theoretical insights, it can be expected that a higher level of digital marketing strategy development contributes to strengthening the competitiveness of agritourism farms through increased market visibility, trust, operational efficiency, and service differentiation. This conceptual framework is consistent with contemporary research that views agritourism as a sustainable business model with significant development potential, alongside a growing need for strategic and integrated digital positioning within the modern market environment (Nguyen et al., 2025; Horvat et al., 2025; Turtureanu et al., 2025). Hossain, Abdul Hamid, and Hanafiah (2024) emphasize that tourist destinations with higher competitive performance achieve superior overall results in moderately developed countries, implying that competitiveness in tourism represents a multidimensional construct encompassing economic, operational, and market dimensions.

Materials and methods

Rural agritourism farms represent an important instrument for income diversification and rural development. However, in practice, they often face limited market visibility and insufficient competitiveness. In the context of the increasingly digitalized tourism market, digital marketing strategy has become a key factor for the effective market positioning of agritourism offerings. Nevertheless, in Serbia and the wider region there remains a lack of empirical studies that systematically examine the manner and intensity of the impact of digital marketing strategy on the competitiveness of rural agritourism farms, assessed through their market and economic performance.

The subject of this study is the impact of digital marketing strategy on the competitiveness of rural agritourism farms, while the overall research objective is to examine the role and importance of digital marketing strategy in enhancing their competitiveness. In line with this objective, the research focuses on determining the level of implementation

of key elements of the digital marketing strategy and analyzing their relationship with competitiveness indicators. In addition, the study aims to identify elements with a statistically significant impact on competitiveness and to segment agritourism farms according to their level of digital development and business performance.

Based on available statistical data, the population of rural agritourism farms in the Republic of Serbia is operationalized through registered rural tourism households that provide tourism services in rural areas. According to data from the central tourism information system of the Republic of Serbia (eTurista), approximately 700 rural tourism households are registered nationwide. This approach is methodologically justified and consistent with previous research that considers rural tourism and rural tourism households as a relevant segment of the rural economy and agricultural diversification in Serbia (Dašić et al., 2020).

The research was conducted between April and September 2025. The sample consists of 123 rural agritourism farms in the Republic of Serbia. To ensure regional representativeness, stratification by regions was applied: Vojvodina Autonomous Province (39 farms), Šumadija and Western Serbia (47 farms), and Southern and Eastern Serbia (37 farms). The surveyed entities are family-owned agritourism farms that, in addition to primary agricultural production, generate additional income through tourism services. These services include rural accommodation, traditional gastronomy, and the organization of authentic rural experiences.Their activities are positioned at the intersection of agriculture and tourism, with agritourism serving as an important instrument for business diversification and the enhancement of economic sustainability in rural areas. The respondents were owners, co-owners, or managers who are directly involved in business and marketing decision-making processes. The largest share of respondents belongs to the 36-50 age group (52%), while 23% are younger than 35 and 25% are older than 50. In terms of education, 61% of respondents have completed higher or university education, while 39% have secondary education. From the perspective of professional experience, 68% of respondents have more than five years of experience in agritourism, indicating that the findings are based on assessments provided by decision-makers with substantial practical experience.

The variables of digital marketing strategy in this study encompass key elements of the digital presence of agritourism farms that influence their visibility, communication with the market, and the effectiveness of marketing activities. The quality of digital presence is defined as the level of professionalism and functionality of the website or the overall digital presentation of the farm, as previous studies confirm that digital channels represent the foundation of visibility and image formation of rural tourism offerings (Rodrigues et al., 2023; Afren, 2024). Social media activity is understood as the planned and continuous use of social platforms for promotion, information dissemination, and communication with guests, with empirical findings indicating its direct impact on consumer behavior and the sales of rural tourism products (Cheng & Jiang, 2025; Afren, 2024). Presence on online booking platforms is included as a variable due to the importance of digital intermediaries in facilitating market access and increasing the availability of rural

tourism offerings, particularly in conditions of limited traditional distribution channels (Mihailović & Popović, 2021). Online reputation management is defined through the monitoring, analysis, and response to guest reviews and ratings, as research confirms a strong relationship between online image, trust, and intention to visit rural destinations (Rodrigues et al., 2023). Direct digital communication with guests is considered an element of personalization and customer relationship management, while the level of digital literacy and skills of farm operators represents a key prerequisite for the effective implementation of these activities in rural tourism (Paraušić et al., 2025). Finally, the integration of digital activities refers to the degree of alignment and interconnection among digital channels within a unified marketing strategy, which is recognized as a prerequisite for effective digital presence and long-term business effects in tourism (Afren, 2024; Rosić & Getman 2025; Mihailović & Popović, 2021). The digital marketing strategy variables were measured using a multi-item scale adapted from previously validated instruments in the tourism and rural marketing literature. The scale dimensions and item formulation were contextually adjusted to reflect the specific characteristics of small, family-owned agritourism farms in Serbia. All items were measured using a five-point Likert scale ranging from 1 ("strongly disagree") to 5 ("strongly agree").

The competitiveness variables of agritourism farms comprise several interrelated dimensions that together reflect market, operational, and economic performance. Market recognition is defined as the degree to which an agritourism farm is known and recognizable to potential guests, which the destination competitiveness literature identifies as a basis for differentiation and successful market positioning (Hefny, 2023; Xia et al., 2024). Market reach refers to the ability of the farm to attract guests from a wider geographical area, with empirical research indicating that this aspect of competitiveness is strongly associated with market accessibility and the development of modern distribution channels (Dumitru & Cosma, 2023; Zhang et al., 2025). Accommodation capacity utilization is considered an operational indicator of competitiveness, as it reflects the effectiveness of converting market visibility and interest into realized tourism demand (Hossain et al., 2024). Business profitability is defined as the ability of an agritourism farm to generate positive financial outcomes from agritourism activities relative to invested resources and cost structures, with the relevant literature recognizing profitability as a key economic indicator of competitiveness and long-term sustainability in rural tourism (Hossain et al., 2024; Zhang et al., 2025). Guest loyalty includes repeat visits, recommendations, and positive word-of-mouth and is identified in destination competitiveness studies as one of the most important indicators of long-term sustainability and service quality (Xia et al., 2024). Offer differentiation refers to the degree of uniqueness of tourism products and experiences compared to competitors, with authenticity, local identity, and specific local resources emphasized as significant sources of competitive advantage in rural tourism and agritourism (Dumitru & Cosma, 2023; Nguyen et al., 2025). The competitiveness of agritourism farms was measured using a multi-item scale adapted from established studies on destination competitiveness and rural tourism performance. The scale dimensions and item wording were adjusted to reflect the specific characteristics of agritourism

farms, capturing market, operational, and economic performance aspects. All items were measured on a five-point Likert scale, and the reliability analysis confirmed satisfactory internal consistency of the adapted scale.

In this study, two main hypotheses are formulated, derived from the theoretical framework of digital marketing and the competitiveness of agritourism farms, as well as from the objectives of the empirical analysis.

The first main hypothesis (H1) assumes that elements of digital marketing strategy have a statistically significant impact on the competitiveness of agritourism farms. This hypothesis is operationalized through the following sub-hypotheses:

H1.1 Quality of digital (web) presence has a statistically significant impact on the competitiveness of agritourism farms.

H1.2 Social media activity (DM2) has a statistically significant impact on the competitiveness of agritourism farms.

H1.3 Presence on online booking platforms (DM3) has a statistically significant impact on the competitiveness of agritourism farms.

H1.4 Online reputation management (DM4) has a statistically significant impact on the competitiveness of agritourism farms.

H1.5 Direct digital communication with guests (DM5) has a statistically significant impact on the competitiveness of agritourism farms.

H1.6 Integration of digital marketing strategy (DM6) has a statistically significant impact on the competitiveness of agritourism farms.

The second main hypothesis (H2) assumes that agritourism farms can be classified into distinct and clearly differentiated clusters based on the level of implementation of digital marketing strategy elements. This hypothesis is further elaborated through the following sub-hypotheses:

H2.1 There are statistically significant differences among the identified clusters of agritourism farms in the level of implementation of digital marketing strategy elements.

H2.2 There are statistically significant differences among the identified clusters of agritourism farms in the level of competitiveness.

The collected data were processed and analyzed using the statistical software package IBM SPSS Statistics 26**.** Within the empirical analysis, descriptive statistics were applied to examine the basic characteristics of the sample and variables, correlation analysis was used to assess relationships between digital marketing strategy elements and competitiveness variables, multiple regression analysis was employed to determine the impact of digital marketing activities on the competitiveness of agritourism farms, and cluster analysis was conducted to identify homogeneous groups of farms based on the level of implementation of digital marketing strategy elements.

Results

The results of the descriptive statistical analysis and the assessment of the reliability of the measurement scales are presented in Table 1. The analysis provides an overview of the level of implementation of digital marketing strategy elements and the competitiveness of agritourism farms, as well as an examination of the internal consistency of the applied measurement instruments based on a sample of 123 respondents. All variables were measured using a five-point Likert scale ranging from 1 to 5.

Table 1. Descriptive statistics of digital marketing strategy variables (n=123)

Variable	Min	Max	Mean	Standard Deviation	Cronbach's Alpha
DM1 - Quality of digital (web) presence	1	5	2.90	1.094	0.80
DM2 - Social media activity	1	5	3.30	0.984	0.78
DM3 - Presence on online booking platforms	1	5	3.10	1.176	0.81
DM4 - Online reputation management	1	5	3.02	0.993	0.79
DM5 - Direct digital communication with guests	1	5	3.41	0.912	0.77
DM6 - Integration of digital activities	1	5	2.79	1.094	0.83

Source: Author's research

Table 1 presents the descriptive statistics and reliability of the digital marketing strategy scale. The mean values of the variables range from 2.79 to 3.41, indicating a moderate level of implementation of digital marketing activities among agritourism farms. The highest mean values are observed for direct digital communication with guests (M = 3.41; SD=0.912) and social media activity (M=3.30; SD=0.984), whereas the lowest mean value is recorded for the integration of digital activities (M=2.79; SD=1.018). This finding suggests an insufficient level of strategic alignment and coordination among different digital channels. The Cronbach's alpha coefficients for the individual dimensions range from 0.77 to 0.83, while the overall scale reliability is α=0.82, confirming good internal consistency and the suitability of the scale for further statistical analysis.

Table 2. Descriptive statistics of farm competitiveness variables (n=123)

Variable	Min	Max	Mean	Standard Deviation	Cronbach's Alpha
K1 - Market awareness	1	5	3.02	0.921	0.83
K2 - Market coverage	1	5	2.88	1.004	0.84
K3 - Accommodation capacity utilization	1	5	3.12	0.843	0.82
K4 - Business profitability	1	5	2.81	0.936	0.85
K5 - Guest loyalty	1	5	3.23	0.824	0.81
K6 - Offering differentiation	1	5	3.38	0.712	0.79

Source: Author's research

The mean values of the variables range from 2.81 to 3.38, indicating a moderate level of competitiveness among the observed farms. The highest mean scores are recorded for offering differentiation (M=3.38; SD=0.712) and guest loyalty (M=3.23; SD=0.824), whereas market coverage (M=2.88; SD=1.004) and business profitability (M=2.81; SD=0.936) exhibit the lowest mean values. The overall Cronbach's alpha coefficient of the scale equals α=0.85, indicating high reliability, while the alpha values obtained in the case of deleting individual variables (0.79-0.85) confirm that none of the indicators undermine the internal consistency of the scale. These results confirm the adequacy and stability of the variables employed for use in subsequent statistical analyses.

Table 3 presents the results of Pearson's correlation analysis between the elements of digital marketing strategy and individual dimensions of the competitiveness of agritourism farms, allowing for an assessment of the direction and strength of the relationships among the analyzed variables.

Table 3. Pearson correlation matrix between digital marketing strategy elements and competitiveness dimensions of agritourism farms

Variable	K1	K2	K3	K4	K5	K6
DM1	0.340**	0.410**	0.290**	0.260**	0.220*	0.280**
DM2	0.480**	0.550**	0.370**	0.330**	0.310**	0.390**
DM3	0.390**	0.460**	0.440**	0.420**	0.280**	0.300**
DM4	0.520**	0.490**	0.410**	0.380**	0.470**	0.360**
DM5	0.360**	0.400**	0.450**	0.340**	0.510**	0.330**
DM6	0.430**	0.470**	0.390**	0.410**	0.350**	0.460**

**. The correlation is significant at the 0,01 level (2-tailed).
Source: Author's research

The results of the correlation analysis indicate statistically significant positive relationships of moderate to relatively strong intensity between the elements of digital marketing strategy and the indicators of competitiveness of agritourism farms. The strongest relationship was observed between social media activity and market coverage ($r=0.550$; $p<0.01$), confirming that an active presence on social media platforms represents a key mechanism for expanding market reach and accessing new geographical and market segments. Furthermore, online reputation management demonstrates a strong association with market awareness ($r=0.520$; $p<0.01$) and guest loyalty ($r=0.470$; $p<0.01$), highlighting the importance of reviews, ratings, and continuous interaction with users in building trust and maintaining long term relationships with guests.

Relatively strong correlations were also identified between direct digital communication with guests and guest loyalty ($r=0.510$; $p<0.01$), as well as between presence on online booking platforms and accommodation capacity utilization ($r=0.440$; $p<0.01$). These findings confirm the role of digital channels in facilitating the reservation process and contributing to more stable tourism demand. In addition, the integration of the digital marketing strategy shows statistically significant associations with multiple dimensions of competitiveness, particularly market coverage ($r=0.470$; $p<0.01$) and

offering differentiation (r=0.460; p<0.01), indicating that coordinated and strategically aligned use of digital channels contributes to strengthening the market position of agritourism farms.

On the other hand, weaker but still statistically significant correlations were observed between the quality of basic web presence and certain competitiveness indicators, especially guest loyalty (r=0.220; p<0.05) and business profitability (r=0.260; p<0.01). These results suggest that the mere existence of a website has a limited direct impact on competitiveness if it is not accompanied by active content management, systematic communication, and consistent reputation management. Overall, the observed pattern of correlations supports contemporary theoretical perspectives in digital marketing, according to which competitive effects in tourism are achieved primarily through the integrated and interactive application of digital tools, whereas isolated use of individual digital channels yields limited outcomes, particularly in the context of rural and agritourism farms.

Given that the correlation analysis revealed statistically significant relationships between the elements of digital marketing strategy and the competitiveness indicators, a multiple regression analysis was subsequently conducted in order to determine the individual contribution of each digital marketing strategy element to the overall competitiveness of rural agritourism farms. Results of the regression analysis are presented in Table 4.

Table 4. Results of the multiple regression analysis: Impact of digital marketing strategy elements on the competitiveness of agritourism farms (n=123)

Independent variable	Standardized β	t	p	Partial R^2 (sr^2)	Explained variance (%)
DM2	0.310	3.840	<0.001	0.113	11.3
DM4	0.280	3.420	0.001	0.092	9.2
DM5	0.260	3.180	0.002	0.080	8.0
DM6	0.220	2.710	0.008	0.060	6.0

Model summary: R^2=0.49, Adjusted R^2=0.46, F=27.3, p<0.001
Note: The dependent variable is a composite competitiveness index. Only statistically significant predictors (p<0.05) are presented. Partial R^2 (sr^2) indicates the unique contribution of each predictor to the explained variance.
Source: Author's research

The results of the multiple regression analysis indicate that the overall model is statistically significant (F=27.3; p<0.001), with the elements of the digital marketing strategy explaining 49% of the total variance in the competitiveness of agritourism farms (R^2=0.49). This level of explained variance is considered high in tourism and digital marketing research, thereby confirming the general research assumption regarding the substantial role of digital marketing strategies in enhancing the competitiveness of agritourism farms. After adjusting for the number of predictors, the adjusted coefficient of determination (Adjusted R^2=0.46) further confirms the stability and robustness of the model.

Out of the six analyzed elements of the digital marketing strategy, four variables exhibited a statistically significant and positive independent effect on the competitiveness of agritourism farms, thereby confirming the corresponding sub-hypotheses within the main hypothesis H1. The strongest individual predictor is social media activity (DM2), with a standardized coefficient of $\beta=0.31$ ($p<0.001$), which independently explains 11.3% of the variance in competitiveness. Accordingly, hypothesis H1.2, which assumed that social media activity has a statistically significant impact on the competitiveness of agritourism farms, is empirically confirmed.

Online reputation management (DM4) also demonstrates a strong and statistically significant effect ($\beta=0.28$; $p=0.001$), with a unique contribution of 9.2% to the explained variance, thus confirming hypothesis H1.4. This finding highlights the crucial role of reviews, ratings, and digital interaction with users in building trust and customer loyalty, which directly affects overall competitiveness.

Direct digital communication with guests (DM5) shows a statistically significant and stable effect ($\beta=0.26$; $p=0.002$), contributing an additional 8.0% to the explained variance, thereby confirming hypothesis H1.5. These results indicate that personalized, timely, and continuous digital communication represents an important mechanism for guest retention and the strengthening of long-term market relationships.

The integration of the digital marketing strategy (DM6) exhibits a somewhat weaker, yet still statistically significant effect ($\beta=0.22$; $p=0.008$), with a unique contribution of 6.0% to the explained variance, confirming hypothesis H1.6. This finding empirically supports the assumption that a coordinated and strategically aligned use of digital channels further enhances the overall market and business performance of agritourism farms.

In contrast, the quality of basic digital (website) presence (DM1) and presence on online booking platforms (DM3) did not demonstrate a statistically significant independent effect on competitiveness within the regression model ($p>0.05$). Consequently, hypotheses H1.1 and H1.3 were not supported. These results suggest that passive forms of digital presence, if not accompanied by active content management, reputation management, and interactive communication, have a limited impact on competitiveness.

Based on the obtained results, it can be concluded that the main hypothesis H1 is partially supported, with sub-hypotheses H1.2, H1.4, H1.5, and H1.6 confirmed, while sub-hypotheses H1.1 and H1.3 are not supported. Overall, the findings clearly indicate that the competitive effects of digital marketing in agritourism primarily arise from active, interactive, and strategically integrated digital activities, whereas isolated and passive use of individual digital tools provides a limited contribution to business performance improvement.

Cluster Analysis of Digital Marketing Strategy and Competitiveness of Agritourism Farms

Cluster analysis was applied with the aim of identifying homogeneous groups of agritourism farms based on the level of implementation of digital marketing strategy elements. Six dimensions of the digital marketing strategy were used as input variables: quality of digital (web) presence (DM1), activity on social media (DM2), presence on online booking platforms (DM3), online reputation management (DM4), direct digital communication with guests (DM5), and the integration of the digital marketing strategy (DM6).

In the first phase, hierarchical cluster analysis was conducted using Ward's method and squared Euclidean distance in order to determine the optimal number of clusters. The analysis of the dendrogram and the agglomeration schedule indicated a three-cluster solution. Based on this result, a K-means cluster analysis with a predefined number of three clusters was applied in the second phase. Convergence of the solution was achieved after four iterations, indicating the stability and reliability of the clustering solution. These results confirm that, based on the elements of the digital marketing strategy, clearly differentiated types of agritourism farms can be identified.

The final cluster centers according to the elements of the digital marketing strategy are presented in Table 5**.**

Table 5. Final cluster centers based on digital marketing strategy elements

Digital marketing strategy elements	Cluster 1 (n = 41)	Cluster 2 (n = 46)	Cluster 3 (n = 36)
DM1	2.18	4.21	3.12
DM2	2.34	4.67	3.45
DM3	2.51	4.54	3.66
DM4	2.29	4.72	3.58
DM5	2.41	4.81	3.69
DM6	2.02	4.60	3.2

Source: Author's research

The results presented in Table 5 indicate clearly differentiated patterns in the application of digital marketing strategies among agritourism farms. The first cluster is characterized by consistently low values across all analyzed dimensions, suggesting farms with weak, fragmented, and predominantly passive digital presence. The second cluster records the highest mean values across all dimensions, particularly in social media activity (M=4.67), online reputation management (M=4.72), and direct digital communication with guests (M=4.81). This cluster represents the most digitally developed and strategically oriented agritourism farms. The third cluster exhibits moderate values and includes farms that are currently in a phase of gradual digital transformation.

A one-way analysis of variance (ANOVA) was conducted to examine differences in competitiveness dimensions among the identified clusters, and the results are presented in Table 6.

Table 6. One-way ANOVA results - differences in competitiveness across clusters

Competitiveness variable	F value	Sig.
K1	214.36	< 0.001
K2	198.42	< 0.001
K3	176.58	< 0.001
K4	163.21	< 0.001
K5	221.74	< 0.001
K6	189.63	< 0.001

Source: Author's research

The average values of the composite competitiveness index across the identified clusters are presented in Table 7, providing additional comparative insight into the overall competitive performance of agritourism farms in relation to the level of development of their digital marketing strategies.

Table 7. Average values of the competitiveness index by cluster

Competitiveness	Cluster 1	Cluster 2	Cluster 3
Competitiveness index	2.41	4.62	3.57

Source: Author's research

The results reveal a clearly defined hierarchy among the clusters. Cluster 2, which comprises agritourism farms with the most advanced and integrated digital marketing strategies, achieves by far the highest average competitiveness index value (M=4.62), indicating superior market, operational, and relational performance. In contrast, Cluster 1, characterized by a low level of digital marketing adoption, records the lowest competitiveness index value (M=2.41), reflecting limited market visibility and weaker overall business performance. Cluster 3 occupies an intermediate position (M=3.57), which is consistent with its moderate level of digital development and its transitional stage of gradual digital transformation. These findings further corroborate the results of the ANOVA and cluster analyses, clearly demonstrating that a higher degree of strategic and integrated application of digital marketing strategies is associated with significantly higher levels of overall competitiveness among agritourism farms.

The results of the hierarchical and K-means cluster analyses enabled the identification of three clearly differentiated clusters of agritourism farms based on the level of development and integration of their digital marketing strategies, thereby confirming the main research hypothesis H2. An examination of the final cluster centroids revealed pronounced and systematic differences among the clusters across all observed elements of the digital marketing strategy, including social media activity, online reputation management, direct digital communication with guests, and the degree of integration of digital activities, thus fully confirming hypothesis H2.1. The results of the one-way ANOVA indicated the existence of statistically significant differences among the identified clusters across all analyzed dimensions of competitiveness ($p<0.001$), including market awareness, market coverage, accommodation capacity utilization, business profitability, guest loyalty, and offering differentiation. These findings provide full empirical support for hypothesis H2.2, with a high level of statistical reliability.

Based on the conducted cluster analysis, it can be concluded that digital marketing strategy represents a key factor of differentiation among agritourism farms. Farms characterized by a highly developed and strategically integrated digital marketing strategy achieve significantly higher levels of competitiveness across all analyzed dimensions, whereas farms with a low level of digital adoption lag behind in market, operational, and relational performance. Farms positioned in an intermediate phase of digital transformation exhibit moderate competitive outcomes, further confirming the existence of a hierarchical and gradual relationship between the level of digital development and overall competitiveness.

The obtained findings empirically confirm that competitive advantages in contemporary agritourism do not stem from fragmented or isolated use of digital tools, but rather from their systematic, coordinated, and strategically oriented application. This underscores the central role of digital marketing as a key mechanism for enhancing competitiveness and ensuring the long-term sustainability of agritourism farms within the contemporary market environment.

Discussions

The results of the present study confirm theoretical assumptions regarding the growing role of digital marketing as a strategic determinant of competitiveness among agritourism farms operating in a highly digitalized tourism environment. In line with contemporary literature, digital marketing is not understood as a set of isolated promotional activities, but rather as an integrated strategic process encompassing the management of digital channels, online reputation, guest communication, and the coordinated use of multiple digital tools aimed at achieving market and business performance (Buhalis & Foerste, 2013; Sigala, 2018; UNWTO, 2021). The empirical findings obtained in this study further demonstrate that such an integrated approach is particularly relevant in the context of agritourism, which is predominantly characterized by small-scale operators with limited financial, human, and marketing resources.

The analysis of individual elements of the digital marketing strategy indicates that active and interactive digital channels exert a substantially stronger impact on competitiveness than passive forms of digital presence. In particular, social media activity, online reputation management, direct digital communication with guests, and the degree of integration of digital activities emerge as the most influential determinants of competitive performance, thereby confirming the relevant research hypotheses. These findings are consistent with prior studies emphasizing that social media engagement and electronic word of mouth (eWOM) play a crucial role in shaping trust, visit intention, and guest loyalty, especially within rural and agritourism contexts (Chin & Wong, 2022; Cheng & Jiang, 2025; Rodrigues et al., 2023). At the same time, the relatively weaker independent effects of basic website presence and participation on online booking platforms corroborate earlier evidence suggesting that digital tools, when applied without strategic integration, yield limited competitive advantages (Kanellos et al., 2024; Mendieta-Aragón et al., 2025).

The results of the cluster analysis further reinforce the theoretical framework by revealing the existence of clearly differentiated types of agritourism farms based on the level of development and integration of their digital marketing strategies. Farms characterized by highly developed and strategically integrated digital marketing practices achieve significantly higher levels of competitiveness across all analyzed dimensions, including market awareness, guest loyalty, and business profitability. These findings align with contemporary research highlighting that competitiveness in tourism represents a multidimensional construct, and that destinations and tourism enterprises exhibiting a higher degree of strategic coherence tend to achieve superior market and economic outcomes (Hossain et al., 2024; Xia et al., 2024).

Finally, the findings also support theoretical perspectives emphasizing the importance of digital competencies in rural tourism, as the effectiveness of digital marketing largely depends on the ability of farm operators to strategically plan, implement, and integrate digital activities. This confirms that digital marketing does not operate in isolation, but rather as an integral component of broader processes of digital transformation and professionalization of agritourism offerings, particularly in transition economies such as Serbia (Paraušić et al., 2025). Overall, the results contribute to the existing body of knowledge by providing robust empirical evidence that digital marketing strategy represents a key mechanism for enhancing both the competitiveness and long-term sustainability of agritourism farms under contemporary market conditions.

Conclusions

This study confirms the central role of digital marketing strategy in enhancing the competitiveness of agritourism farms within the contemporary and highly digitalized tourism environment. The empirical findings clearly demonstrate that the competitive effects of digital marketing do not arise from mere digital presence, but from the strategic, integrated and interactive application of digital channels. Elements involving active communication and relationship management with guests, such as social media activity, online reputation management, direct digital communication and the integration of digital activities, emerged as the most influential determinants of competitiveness. In contrast, passive forms of digital presence showed a limited independent contribution. These results provide strong empirical support for theoretical perspectives that conceptualize digital marketing as a strategic resource and a key mechanism for strengthening the market position of agritourism enterprises.

Nevertheless, the study is subject to several limitations. First, the data were collected from a relatively limited sample of agritourism farms and within a cross sectional research design, which restricts the generalizability of the findings and prevents an assessment of long term effects of digital strategies. Second, the research relied on self reported evaluations provided by respondents, which may involve a certain degree of perceptual bias. In addition, the analysis focused on a selected set of digital marketing strategy elements, while other aspects of digital transformation, such as the use of advanced analytics, automation or artificial intelligence in tourism, were not included in the scope of this study.

Despite these limitations, the findings offer significant theoretical and practical implications. From a theoretical perspective, the study contributes to the existing literature by reinforcing the multidimensional nature of competitiveness and by emphasizing the importance of strategic integration of digital activities in the context of agritourism. From a practical standpoint, the results provide valuable guidance for agritourism farm operators, public policymakers and rural development support institutions, highlighting the need for investments in digital competencies and the development of integrated digital marketing strategies. Future research should focus on longitudinal analyses, comparative studies across different regions and types of rural tourism, as well as on examining advanced digital tools and their role in enhancing the sustainability and competitiveness of agritourism farms.

Conflict of interests

The authors declare no conflict of interest.

References

1. Afren, S. (2024). The role of digital marketing promoting tourism business. A study of use of the social media in prompting travel. *World Journal of Advanced Research and Reviews*, *21*(01), 272-287. https://doi.org/10.30574/wjarr.2024.21.1.2668
2. Buhalis, D., Foerste, MK. (2013). SoCoMo Marketing for Travel and Tourism. In: Xiang, Z., Tussyadiah, I. (eds) Information and Communication Technologies in Tourism 2014. Springer, Cham. https://doi.org/10.1007/978-3-319-03973-2_13
3. Cheng, S., & Jiang, Y. (2025). Effects of Social Media Marketing on Rural Tourism Product Sales: Evidence from Controlled Experiments. *Frontiers in Sustainable Food Systems*, *9*, 1714233. https://doi.org/10.3389/fsufs.2025.1714233
4. Chin, C. H., & Wong, P. M. W. (2022). Exploring the impact of social media marketing on tourism destination marketing and revisit intention: The extension of stimulus-organism-response (SOR) model. *Studies of Applied Economics*, *40*(2). https://doi.org/10.25115/eea.v40i2.6848
5. Christou, E., Giannopoulos, A., & Simeli, I. (2025). The Evolution of Digital Tourism Marketing: From Hashtags to AI-Immersive Journeys in the Metaverse Era. *Sustainability*, *17*(13), 6016.
6. Dašić, D., Živković, D., & Vujić, T. (2020). Rural tourism in development function of rural areas in Serbia. *Economics of Agriculture*, *67*(3), 719-733. https://doi.org/10.5937/ekoPolj2003719D
7. Davidović, J., Pantović, D., & Mićović, A. (2025). Agritourism as a catalyst for sustainable rural development: A literature review. *The European Journal of Applied Economics*, *22*(2), 99-117. https://doi.org/10.5937/ejae22-57241
8. Dumitru, I. M., & Cosma, S. A. (2023). A measurement of rural tourism destinations' competitiveness. *Studia Universitatis Babeș-Bolyai Negotia*, *68*(1), 81-97.

9. Hefny, L. (2023). An overview of literature on destination competitiveness: A theoretical analysis of the travel and tourism competitiveness index. *Pharos International Journal of Tourism and Hospitality*, *2*(2), 45-60.

10. Horvat, D., Pjanić, M., Ivanišević, R., & Gluščević, L. . (2025). The impact of robotic process automation in financial institutions. *BizInfo Blace*, *16*(2), 67-74. https://doi.org/10.71159/bizinfo250016H

11. Hossain, M. K., Abdul Hamid, A. B., & Hanafiah, M. H. (2024). Tourism destination competitiveness and tourism performance in middle income countries/ Md. Kaium Hossain, Abu Bakar Abdul Hamid and Mohd Hafiz Hanafiah. *Journal of Tourism, Hospitality and Culinary Arts*, *16*(1), 781-801. https://ir.uitm.edu.my/id/eprint/97888

12. Kamalaveni, M. S., Suriya, A., Sakthivel, P. S., & Vignesh, S. (2021). Digital transformation in tourism. *International Journal of Advance and Innovative Research*, *8*(4), 33-39.

13. Kanellos, N., Karountzos, P., Giannakopoulos, N. T., Terzi, M. C., & Sakas, D. P. (2024). Digital Marketing Strategies and Profitability in the Agri-Food Industry: Resource Efficiency and Value Chains. *Sustainability (2071-1050)*, *16*(14). https://doi.org/10.3390/su16145889

14. Lane, B., & Kastenholz, E. (2015). Rural tourism: the evolution of practice and research approaches-towards a new generation concept?. *Journal of Sustainable tourism*, *23*(8-9), 1133-1156. https://doi.org/10.1080/09669582.2015.1083997

15. Mendieta-Aragón, A., Rodríguez-Fernández, L., & Navío-Marco, J. (2025). Tourism usage of digital collaborative economy platforms in Europe: Situation, behaviours, and implications for the digital policies. *Telecommunications Policy*, *49*(1), 102874. https://doi.org/10.1016/j.telpol.2024.102874

16. Mihailović, B., & Popović, V. (2021). *Digital marketing of agri-food products in support of rural tourism during the COVID pandemic.* In: *Tourism challenges amid COVID-19 (TISC 2021)*. University of Kragujevac, Faculty of hotel management and tourism, Vrnjacka Banja, pp. 111-126. ISBN 978-86-89949-53-7 http://repository.iep.bg.ac.rs/id/eprint/568

17. Milačić, D. (2024). Strategijski menadžment kao instrument razvoja održivog turizma u Srbiji. *Održivi razvoj*, *6*(2), 7-22. https://doi.org/10.5937/OdrRaz2402007M

18. Nguyen, A. T., Vu, T. T. T., Nguyen, T. P. N., Phuong, N. T., Le, N. A., Do Thi, T., & Le Huyen, T. (2025). Sustainable Agritourism Monitoring: An Expert Delphi Study on Provincial-Level Indicators in Vietnam. *Environmental and Sustainability Indicators*, 100966. https://doi.org/10.1016/j.indic.2025.100966

19. Organisation for Economic Co-operation and Development (OECD). (2020). *Tourism policy responses to digitalisation.* OECD Publishing. https://doi.org/10.1787/646db84c-en

20. Ostojić, B., Bajramović, D., & Cvjetković, M. (2025). The impact of digital marketing on customer satisfaction in dental tourism in Serbia. *Hotel and Tourism Management*, *13*(1). https://doi.org/10.5937/menhottur2500008O

21. Paraušić, V., Pantović, D., Mihailović, B., & Radosavljević, K. (2025). *Digital literacy of farmers in the context of rural tourism services provision in Serbia.* Hotel and Tourism Management, 13(1), 99-117. https://doi.org/10.5937/menhottur2500002P

22. Pesonen, J. A., & Tuohino, A. (2017). Activity-based market segmentation of rural well-being tourists: Comparing online information search. *Journal of Vacation Marketing*, *23*(2), 145-158. https://doi.org/10.1177/1356766715610163

23. Phillip, S., Hunter, C., & Blackstock, K. (2010). A typology for defining agritourism. *Tourism management*, *31*(6), 754-758. https://doi.org/10.1016/j.tourman.2009.08.001

24. Popescu, G. H., Fortea, C., Nica, E., Antohi, V. M., Andrei, J. V., & Szpilko, D. (2025). Investments in the green transition and their impact on economic growth and competitiveness in the European Union. *Oeconomia Copernicana*, 16(4), 1665-1725.

25. Rodrigues, S., Correia, R., Gonçalves, R., Branco, F., & Martins, J. (2023). Digital marketing's impact on rural destinations' image, intention to visit, and destination sustainability. *Sustainability*, *15*(3), 2683.

26. Rosić. M., & Getman, V.R. (2025). Menadžerski aspekti timova i grupa. *Finansijski Savetnik*, *30*(1), 95-105. https://fa-journal.com/index.php/fa/article/view/5

27. Sigala, M. (2018). Implementing social customer relationship management: A process framework and implications in tourism and hospitality. *International Journal of Contemporary Hospitality Management*, *30*(7), 2698-2726. https://doi.org/10.1108/IJCHM-10-2015-0536

28. Sima, V., & Gheorghe, I. G. (2019). Green Customer Satisfaction. *In Green Business: Concepts, Methodologies, Tools, and Applications* (pp. 153-180). IGI Global Scientific Publishing.

29. Turtureanu, A. G., Crețu, C. M., Pripoaie, R., Marinescu, E. Ș., Sîrbu, C. G., & Talaghir, L. G. (2025). Sustainable Development Through Agritourism and Rural Tourism: Research Trends and Future Perspectives in the Pandemic and Post-Pandemic Period. *Sustainability*, *17*(9), 3998. https://doi.org/10.3390/su17093998

30. Uong, T., & Ngoc, L. (2025). The Ability to Maintain the Attractiveness of Destinations: Exploring the Role of Digital Marketing. *Advances in Consumer Research*, *2*(4).

31. Vrdoljak Raguž, I., Hordov, M., & Rajko, M. (2025). Digital transformation as a function of rural tourism strategic development in the Republic of Croatia. *Ekonomski vjesnik: Review of Contemporary Entrepreneurship, Business, and Economic Issues*, *38*(1), 153-168. https://doi.org/10.51680/ev.38.1.11

32. World Tourism Organization (UNWTO). (2021). *Digital transformation in tourism.* UNWTO. https://doi.org/10.18111/9789284422456

33. Xia, H., Muskat, B., Karl, M., Li, G., & Law, R. (2024). Destination competitiveness research over the past three decades: a computational literature review using topic modelling. *Journal of Travel & Tourism Marketing*, *41*(5), 726-742. https://doi.org/10.1080/10548408.2024.2332278

34. Zaman, S. U., Tabassum, H., & Alam, S. H. (2025). A Multi-Channel Digital Marketing Approach to Enhance Brand Awareness and Purchase Intentions in Emerging Firms. *Research Journal of Psychology*, *3*(1), 756-775. https://doi.org/10.59075/rjs.v3i1.117

35. Zhang, C., Xu, K., Zhang, X., Han, D., & He, Y. (2025). An evaluation of the rural tourism industry's competitiveness in the Yangtze River economic belt based on the "Diamond Model" - exampled by Wenjiang District, Huangpi District, and Jiangning District. *Regional Science and Environmental Economics*, *2*(1), 5. https://doi.org/10.3390/rsee2010005