DIGITAL MARKETING AND THE FINANCIAL PERFORMANCE OF AGROTOURISM IN RURAL AREAS: THE MODERATING ROLE OF SOCIOLOGICAL FACTORS

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ABSTRACT

This paper examines the impact of digital marketing on the financial performance of agrotourism farms in rural areas, with particular emphasis on the moderating role of sociological factors. The empirical research was conducted during the first six months of 2026 using a structured questionnaire on a sample of 240 respondents. Digital marketing was analyzed through social media, online presence, online booking, online reputation, and digital advertising, while financial performance was assessed through revenue, profitability, occupancy rate, financial stability, and return on investment. Sociological factors included cooperation with the local community, guest recommendations, and the preservation of local tradition and authenticity. The data were analyzed using descriptive statistics, correlation analysis, regression analysis, and moderation regression analysis. The findings indicate that digital marketing is positively and statistically significantly associated with financial performance, while guest recommendations and the preservation of local authenticity strengthen this relationship.

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Introduction

Agrotourism represents one of the important forms of contemporary rural development, as it integrates agricultural production, tourism supply, local tradition, authentic experience, and the economic empowerment of rural households. In the context of increasing competition in the tourism market, agrotourism farms can no longer rely exclusively on traditional forms of promotion and direct contact with guests. Digital communication channels, social media, online booking systems, web presence, reviews, and digital advertising are becoming important instruments for market positioning and increasing the visibility of agrotourism offerings.

Digital marketing is of particular importance for agrotourism farms because it enables direct communication with potential guests, the presentation of authentic content, the promotion of local products, and a more efficient alignment of supply and demand. At the same time, the financial performance of agrotourism farms does not depend solely on their presence on digital platforms, but also on their ability to convert digital visibility into a higher number of reservations, more stable revenues, greater profitability, improved occupancy rates, and justified investment in promotion.

In addition to economic and marketing factors, agrotourism also has a pronounced sociological dimension. An agrotourism farm is not an isolated business entity, but rather a part of the local community, a network of social relations, trust, tradition, and the cultural identity of the rural environment. Therefore, this study pays particular attention to the sociological factors of agrotourism farms, namely cooperation with the local community, guest recommendations, and the preservation of local tradition and authenticity. These factors are examined as potential moderators of the relationship between digital marketing and financial performance.

The subject of this research is the analysis of the impact of digital marketing on the financial performance of agrotourism farms in rural areas, with an examination of the moderating role of sociological factors. The main objective of the paper is to determine whether digital marketing represents a significant predictor of the financial results of agrotourism farms, as well as whether cooperation with the local community, guest recommendations, and the preservation of local tradition and authenticity alter the strength of this relationship.

Literature Review

Agrotourism represents a specific form of rural tourism that integrates agricultural production, tourism services, local culture, authentic experience, and direct interaction between hosts and visitors. In contemporary literature, agrotourism is regarded as an important mechanism for the diversification of rural farms, as it enables additional sources of income, more efficient use of existing resources, and the strengthening of household economic resilience. Nickerson, Black, and McCool (2001) emphasize that one of the key reasons for the development of agrotourism is the need of farms and ranches to generate additional income beyond primary agricultural production. Tew and

Barbieri (2012) further underline that the benefits of agrotourism are not exclusively financial, but also include visitor education, the preservation of family farms, and stronger connections with the local community.

Agrotourism plays an important role in rural development, as it contributes to employment, the promotion of local products, the preservation of tradition, and the development of local communities. Previous studies indicate that agrotourism can contribute to income growth, improved market positioning of farms, and more sustainable development of rural areas (Barbieri & Mshenga, 2008; Khanal & Mishra, 2014; Liu et al., 2023; Turtureanu et al., 2025). Accordingly, in this study, the financial performance of agrotourism farms is examined through revenue, profitability, occupancy rate, financial stability, and return on investment.

Digital marketing has a specific role in agrotourism, as it enables farms to increase their visibility, communicate with guests, promote the authenticity of their offerings, and directly influence the decisions of potential visitors. Contemporary tourists increasingly search for information about rural destinations and farms through the internet, social media, online reviews, websites, and booking platforms. Buhalis and Law (2008) argue that information technologies have substantially transformed the functioning of tourism, while Rodrigues et al. (2023) show that digital marketing affects the image of rural destinations, visit intention, and destination sustainability. In this study, digital marketing is operationalized through five dimensions: the use of social media, online presence and visibility, online booking, online reputation and reviews, and digital advertising. Cvijanović and Ostojić (2026) emphasize that digital marketing in rural tourism contributes to destination promotion through social media, visual content and the communication of local authenticity, which supports the relevance of digital visibility in agrotourism.

Social media enables the visual presentation of farms, the promotion of experiences, and direct communication with guests. Online reviews, electronic word-of-mouth, and digital reputation represent important elements of contemporary tourism decision-making. Nilashi et al. (2022) show that eWOM on social media affects tourists' trust and the travel decision-making process. Similarly, Nguyễn (2025) indicates that electronic word-of-mouth influences trust, attitudes, destination image, and visit intention in the context of ecotourism. Cho et al. (2024) further confirm that online reviews have a significant effect on hotel demand. These findings are relevant to agrotourism because they demonstrate that the digital visibility of farms becomes more important when supported by positive online experiences, reputation, and guest trust. Xia et al. (2022) indicate that online hotel reviews significantly influence booking intention, while Tao et al. (2025) show that experiences presented in online reviews may shape tourists' perceptions and travel intentions. These findings further confirm that digital reputation and previous guests' experiences represent important decision-making factors in tourism, which is particularly relevant for agrotourism farms. Additional research confirms that online reviews and electronic word-of-mouth influence tourist decisions and bookings. Ruzima et al. (2024) show that online hotel reviews affect booking

intention, while Yu et al. (2024) indicate that the analysis of online reviews can identify tourists' needs and expectations. Akhi (2024) further confirms that eWOM influences tourists' travel intentions. These findings are significant for agrotourism because they suggest that previous guests' experiences and digital reputation may contribute to the decision to visit and to the selection of a particular farm.

The financial performance of agrotourism farms does not depend solely on the number of guests, but also on the ability of farms to convert digital visibility into bookings, revenue, and long-term business stability. In the literature, agrotourism is often considered a strategy for income diversification, particularly among small and family-owned farms. Arru et al. (2021), Pitrova et al. (2020), and Tafidou et al. (2023) indicate that diversification through agrotourism can contribute to the economic performance of farms. In this regard, digital marketing can be viewed as an instrument that enables the market potential of agrotourism offerings to be transformed into measurable financial effects.

In addition to economic and marketing factors, agrotourism has a pronounced sociological dimension. A farm is not an isolated business entity, but rather a part of the local community, a network of trust, tradition, local products, and social relations. For this reason, sociological factors are introduced in this study as moderating variables: cooperation with the local community, guest recommendations, and the preservation of local tradition and authenticity.

Cooperation with the local community can be theoretically linked to the concept of social capital. Social capital includes local networks, trust, cooperation, reciprocity, and collective action. Pramanik (2019) and Prayitno et al. (2024) emphasize that social capital plays an important role in community-based tourism, as it enables the connection of local actors and the development of sustainable tourism initiatives. In the context of agrotourism, cooperation with the local community may contribute to joint promotion, the inclusion of local products, and the strengthening of rural identity.

Guest recommendations represent another important sociological factor, as they reflect trust, reputation, and informal social influence. In tourism, recommendations from previous guests often have a stronger effect than formal promotion, since they originate from user experience. Phillips et al. (2013) demonstrated that satisfaction, value, and destination perception are associated with recommendations and revisit intention in rural destinations. Torabi et al. (2023) and Santos et al. (2023) indicate that digital technologies, revisit intention, and word-of-mouth play an important role in rural destinations. Therefore, in this study, guest recommendations are examined as a sociological moderator that may strengthen the effects of digital marketing on financial performance.

The third sociological factor is the preservation of local tradition and authenticity. Authenticity is particularly important for agrotourism because visitors often seek a direct experience of rural life, homemade food, local customs, tradition, and interaction with the host. Sims (2009) emphasizes that local food contributes to the sense of authenticity and sustainability of the tourism experience. Do (2025) shows that authenticity and sustainability influence visitors' experiences in farm-to-table agrotourism, while Fandos-

Herrera, Labuena, and Orús (2026) emphasize that authenticity and sustainability are key elements of rural tourism. Therefore, digital marketing may generate stronger effects when it promotes an authentic and locally embedded offering. Ostojić et al. (2025) show that green marketing supports sustainable rural tourism by connecting local resources, environmental responsibility and destination promotion, which is relevant for understanding the role of authenticity and community-based factors in agrotourism.

In this study, sociological factors are examined as moderators, based on the assumption that digital marketing does not operate in the same way across all farms. In farms with strong guest recommendations, digital promotion may be more persuasive because it is supported by social trust. In farms that preserve local tradition and authenticity, digital marketing may have a stronger effect because it promotes content that is differentiated, recognizable, and culturally grounded. In this way, the study integrates marketing, economic, and sociological perspectives in the analysis of the financial performance of agrotourism farms.

Materials and methods

The empirical research was conducted during the first six months of 2026 using a structured questionnaire administered to agrotourism farms in rural areas. The study is based on a quantitative approach, as numerically coded responses were used to examine the relationship between digital marketing, financial performance, and sociological factors of agrotourism farms.

The main objective of the research is to determine whether digital marketing represents a significant predictor of the financial performance of agrotourism farms, as well as whether selected sociological factors alter the strength of this relationship. Accordingly, the research includes one main independent variable, one dependent variable, and three moderating sociological variables.

The independent variable in the study is digital marketing. This variable includes activities used by agrotourism farms to increase visibility, communicate with guests, facilitate online bookings, manage reputation, and conduct digital advertising. Digital marketing was operationalized through five dimensions: the use of social media, online presence and visibility, online booking, online reputation and reviews, and digital advertising. This operationalization is based on contemporary studies indicating that digital channels, web analytics, online communication, and digital marketing activities may play an important role in improving market position, reducing advertising costs, increasing visibility, and strengthening the competitiveness of enterprises in the agri-food and tourism sectors (Kanellos et al., 2024; Cvjetković et al., 2026). This is particularly relevant because, through social media, online presence, and reputation management, agrotourism farms can communicate more directly with potential guests and increase the recognition of their offerings.

The dependent variable in the study is the financial performance of agrotourism farms. It was operationalized through five dimensions: revenue, profitability, occupancy rate,

financial stability, and return on investment. These dimensions were selected because agrotourism is not only a form of tourism activity, but also a mechanism for the economic diversification of rural households. Through the development of agrotourism offerings, farms can generate additional income, increase capacity utilization, improve financial stability, and reduce dependence on agricultural production alone. Previous studies indicate that agrotourism contributes to rural development, local income generation, employment, and the sustainability of rural communities (Liu et al., 2023; Turtureanu et al., 2025).

In addition to digital marketing and financial performance, sociological factors of agrotourism farms were also included in the research. These factors were examined as moderating variables, based on the assumption that certain social characteristics of farms may strengthen or weaken the relationship between digital marketing and financial performance. Sociological factors were operationalized through three binary categorical variables: cooperation with the local community, guest recommendations, and the preservation of local tradition and authenticity. These variables were measured using "yes" and "no" responses, with "yes" coded as 1 and "no" coded as 0.

It should be noted that financial performance was measured based on respondents' perceptions rather than objective accounting data. This approach was selected because many agrotourism farms are small or family-owned businesses and may not be willing or able to provide detailed financial records. Nevertheless, perception-based financial indicators provide useful insight into how farm representatives assess the economic effects of digital marketing in their business operations.

To test the first hypothesis, descriptive statistics, correlation analysis, and regression analysis were applied. Descriptive statistics were used to present the basic characteristics of the variables, correlation analysis was used to examine the associations between the dimensions of digital marketing and financial performance, while regression analysis was used to assess the predictive effect of digital marketing on the financial performance of agrotourism farms.

To test the second, third, and fourth hypotheses, moderation regression analysis was applied. Sociological factors, coded as binary variables, were included in the regression models through interaction terms. In this way, the study examined whether cooperation with the local community, guest recommendations, and the preservation of local tradition and authenticity alter the strength of the relationship between digital marketing and financial performance.

In accordance with the research objective, the following hypotheses were formulated:

H1: Digital marketing has a positive effect on the financial performance of agrotourism farms.

H2: Cooperation with the local community moderates the relationship between digital marketing and the financial performance of agrotourism farms.

H3: Guest recommendations moderate the relationship between digital marketing and the financial performance of agrotourism farms.

H4: The preservation of local tradition and authenticity moderates the relationship between digital marketing and the financial performance of agrotourism farms.

Results

Before analyzing the main research variables, the structure of the respondents and the basic characteristics of the agrotourism farms are presented in Table 1. This analysis provides insight into the socio-demographic profile of the respondents, their level of education, experience in agrotourism business activities, and the primary activity of the farms. These characteristics represent an important contextual basis for the subsequent interpretation of the relationships between digital marketing, financial performance, and sociological factors.

Table 1. Structure of Respondents and Basic Characteristics of Agrotourism Farms

Variable	Category	Frequency	Percentage Share
Gender of respondents	Male	78	32.5%
	Female	162	67.5%
Age of respondents	Up to 30 years	153	63.7%
	From 30 to 50 years	60	25.0%
	Over 50 years	27	11.3%
Level of education	Primary/secondary education	21	8.8%
	College/university education	174	72.5%
	Master's/doctoral degree	45	18.8%
Length of involvement in agrotourism business	Less than 3 years	111	46.3%
	From 3 to 10 years	81	33.8%
	More than 10 years	48	20.0%
Primary activity of the farm	Accommodation	48	20.0%
	Food production	48	20.0%
	Hospitality services	66	27.5%
	Recreational activities	33	13.8%
	Combined activities	45	18.8%

Source: Author's research

The results presented in Table 1 show that female respondents dominate the sample, accounting for 67.5%, while male respondents account for 32.5%. The largest share of respondents belongs to the age category of up to 30 years, representing 63.7% of the sample, which indicates a pronounced representation of the younger population. This finding is relevant because younger respondents may be more open to the use of digital communication channels, social media, and online booking systems.

The educational structure shows that the majority of respondents have college or university education, accounting for 72.5%, while 18.8% have a master's or doctoral degree. This structure indicates a relatively high educational level among the respondents, which may be important for understanding the application of contemporary marketing and digital tools in agrotourism business.

Regarding experience in agrotourism, 46.3% of respondents reported that they had been engaged in this activity for less than three years, while 33.8% had been involved for three to ten years, and 20.0% for more than ten years. This indicates that a substantial share of the farms represent relatively young business entities that are still in the stage of development and market positioning. In terms of primary activity, hospitality services are the most represented category, accounting for 27.5%, followed by accommodation and food production, each accounting for 20.0%. Combined activities account for 18.8%, while recreational activities account for 13.8%.

Overall, the structure of the sample indicates that the analyzed farms are predominantly associated with younger and more highly educated respondents, as well as with entities that are largely in the earlier stages of agrotourism business development. Such a sample profile is relevant for the study of digital marketing, since farms in the development stage may use digital tools as an important instrument for increasing visibility, attracting guests, and improving financial results.

The sociological factors of agrotourism farms are presented in Table 2. The analysis includes three binary variables: cooperation with the local community, guest recommendations, and the preservation of local tradition and authenticity. These variables play an important role in the study, as they provide insight into the social context in which agrotourism business activities take place.

Table 2. Sociological Factors of Agrotourism Farms

Sociological Variable	Category	Frequency	Percentage Share
Cooperation with the local community (LC)	Yes	123	51.2%
	No	117	48.8%
Guest recommendations (GR)	Yes	112	46.7%
	No	128	53.3%
Preservation of local tradition and authenticity (LTA)	Yes	162	67.5%
	No	78	32.5%

Source: Author's research

The results presented in Table 2 show that 51.2% of farms cooperate with the local community, while 48.8% do not engage in this form of cooperation. This finding indicates a relatively balanced distribution between farms that are integrated into local cooperation networks and those that operate more independently. Regarding guest recommendations, 46.7% of respondents stated that a significant number of guests arrive through recommendations, while 53.3% reported the opposite. The most prominent sociological factor is the preservation of local tradition and authenticity, which is present in 67.5% of the farms.

Overall, the results indicate that the authenticity of the rural offering is the most prevalent sociological factor, while cooperation with the local community and guest recommendations are present in approximately half of the analyzed farms. These findings provide a basis for further examination of their moderating role in the relationship between digital marketing and financial performance.

Descriptive statistics for the digital marketing and financial performance variables are presented in Table 3. All analyzed variables were measured on a scale from 1 to 5, where higher values indicate a stronger degree of respondents' agreement with the stated items. The results show that the mean scores of all variables are relatively high, indicating a positive perception of digital marketing and its financial effects in agrotourism business.

Table 3. Descriptive Statistics for Digital Marketing and Financial Performance Variables

Variable Code	Variable Name	N	Min	Max	Mean	Standard Deviation
DM1	Use of social media	240	1	5	3.920	0.805
DM2	Online presence and visibility	240	1	5	4.108	0.722
DM3	Online booking	240	1	5	4.070	0.758
DM4	Online reputation and reviews	240	1	5	4.127	0.905
DM5	Digital advertising	240	1	5	4.140	0.875
FP1	Revenue	240	1	5	4.031	0.740
FP2	Profitability	240	1	5	4.153	0.682
FP3	Occupancy rate	240	1	5	4.259	0.703
FP4	Financial stability	240	1	5	4.104	0.833
FP5	Return on investment	240	1	5	4.163	0.995

Source: Author's research

Among the digital marketing variables, the highest mean score was recorded for DM5 (M = 4.140; SD = 0.875), followed by DM4 (M = 4.127; SD = 0.905) and DM2 (M = 4.108; SD = 0.722). These results indicate that respondents particularly recognize the importance of digital advertising, online reputation, and online presence in the promotion of agrotourism farms. The lowest mean score within the digital marketing dimension was recorded for DM1 (M = 3.920; SD = 0.805). However, this value is still above the midpoint of the scale, indicating that the use of social media is also evaluated positively, although slightly less strongly compared with other digital marketing activities.

Among the financial performance variables, the highest mean score was recorded for FP3 (M = 4.259; SD = 0.703), indicating that respondents particularly emphasize the contribution of digital marketing to higher occupancy rates. High scores were also recorded for FP5 (M = 4.163; SD = 0.995) and FP2 (M = 4.153; SD = 0.682), suggesting that respondents also associate digital marketing with return on investment and profitability. The lowest mean score was recorded for FP1 (M = 4.031; SD = 0.740), although this result also indicates a positive perception of the impact of digital marketing on revenue.

The standard deviations range from 0.682 to 0.995, indicating a moderate dispersion of responses. The lowest variability was observed for FP2 (SD = 0.682), suggesting that respondents were relatively consistent in their view that digital marketing contributes to profitability. The highest variability was recorded for FP5 (SD = 0.995), indicating more pronounced differences in the assessment of return on investment in digital marketing.

The results of the descriptive statistics indicate that respondents perceive digital marketing as an important instrument for improving the financial performance of agrotourism farms. The effects on occupancy rate, profitability, and return on investment are particularly prominent, while all variables recorded mean values above 3.9, confirming a high level of positive perception of the analyzed factors.

The correlation analysis presented in Table 4 was used to examine the associations between the dimensions of digital marketing and the dimensions of financial performance of agrotourism farms. All correlations are positive and statistically significant at the $p < 0.01$ level, indicating that a higher level of digital marketing implementation is associated with a higher level of financial performance. Pearson's correlation coefficients range from 0.482 to 0.775, indicating moderate to strong positive relationships between the analyzed variables.

Table 4. Correlations Between the Dimensions of Digital Marketing and the Financial Performance of Agrotourism Farms

Variable	FP1	FP2	FP3	FP4	FP5
DM1	0.719**	0.775**	0.607**	0.687**	0.624**
DM2	0.727**	0.703**	0.709**	0.764**	0.629**
DM3	0.699**	0.743**	0.690**	0.669**	0.514**
DM4	0.482**	0.646**	0.599**	0.667**	0.602**
DM5	0.641**	0.754**	0.707**	0.671**	0.589**

Note: Correlation is statistically significant at the $p < 0.01$ level. N = 240.

Source: Author's research

The strongest correlation was found between DM1 and FP2 (r = 0.775), indicating that this dimension of digital marketing is most strongly associated with the profitability of farms. A high correlation was also recorded between DM2 and FP4 (r = 0.764), suggesting that online presence and visibility may play an important role in stabilizing financial operations. In addition, a strong and statistically significant correlation was identified between DM5 and FP2 (r = 0.754), confirming that digital advertising is strongly associated with the profitability of agrotourism farms.

The weakest, although still statistically significant, correlation was recorded between DM4 and FP1 (r = 0.482). This result indicates that the association between online reputation and reviews and revenue is present, but weaker compared with the other analyzed relationships. A relatively weaker correlation was also observed between DM3 and FP5 (r = 0.514), as well as between FP3 and FP5 within the broader correlation pattern. This may indicate that online bookings and occupancy rates do not necessarily translate directly into return on investment, as this relationship may depend on promotional costs, pricing structure, and the seasonality of business operations.

The presented results of the correlation analysis provide strong empirical support for the basic assumption that the dimensions of digital marketing are positively associated with the financial performance of agrotourism farms. The relationships with profitability, financial stability, and return on investment are particularly notable,

indicating that digital marketing functions not only as a promotional tool, but also as a factor contributing to the improvement of farms' economic performance.

Regression analysis was applied to determine the predictive contribution of individual dimensions of digital marketing to explaining the financial performance of agrotourism farms. Unlike correlation analysis, which indicates the degree of association between variables, regression analysis provides insight into which dimensions of digital marketing make a statistically significant independent contribution to explaining specific aspects of financial performance. The table 5 presents only statistically significant predictors, while non-significant variables were omitted for the sake of clarity and readability of the results.

Table 5. Results of the Regression Analysis of the Effects of Digital Marketing Dimensions on Financial Performance

Dependent Variable	Independent Variable	β	t	Sig.	R^2	F	Sig.
FP1	DM1	0.316	4.544	0.000	0.626	78.211	0.001
	DM2	0.358	5.052	0.000			
FP2	DM1	0.306	5.136	0.000	0.725	123.421	0.001
	DM3	0.195	3.199	0.002			
	DM4	0.169	3.680	0.000			
	DM5	0.292	5.184	0.000			
FP3	DM2	0.235	3.299	0.001	0.621	76.604	0.001
	DM3	0.275	3.849	0.000			
	DM4	0.161	2.986	0.003			
	DM5	0.309	4.672	0.000			
FP4	DM2	0.404	6.079	0.000	0.671	95.391	0.001
	DM4	0.255	5.073	0.000			
FP5	DM1	0.327	4.145	0.000	0.520	50.628	0.001
	DM2	0.283	3.530	0.001			
	DM4	0.283	4.662	0.000			

Note: The table presents only statistically significant predictors. Predictors that were not statistically significant were excluded from the table. The β values represent standardized beta coefficie

Source: Author's research

The results show that all regression models are statistically significant, as confirmed by the F-test values and the significance level of $p < 0.001$. This indicates that the dimensions of digital marketing jointly represent significant predictors of all analyzed dimensions of financial performance. The coefficients of determination range from $R^2 = 0.520$ for FP5 to $R^2 = 0.725$ for FP2, indicating that the models explain between 52.0% and 72.5% of the variance in financial performance. These values represent a high level of explained variance and indicate a strong contribution of digital marketing to the financial results of agrotourism farms.

The highest level of explained variance was recorded in the model for FP2, where $R^2 = 0.725$. This means that the dimensions of digital marketing explain 72.5% of the variability in this financial dimension. DM1, DM3, DM4, and DM5 emerged as significant predictors, with the highest standardized beta coefficient recorded for DM1 ($\beta = 0.306$), followed by DM5 ($\beta = 0.292$). This result indicates that this financial dimension particularly depends on the combined effect of several digital activities, including digital communication, online booking, reputation, and digital advertising.

In the FP4 model, 67.1% of the variance is explained, with DM2 and DM4 identified as statistically significant predictors. The strongest predictor is DM2 ($\beta = 0.404$; $p < 0.001$), indicating that online presence and visibility play a particularly important role in explaining this dimension of financial performance. DM4 also makes a significant contribution ($\beta = 0.255$; $p = 0.000$), confirming that online reputation and reviews represent important factors of financial stability and market reliability for agrotourism farms.

The model for FP1 explains 62.6% of the variance, with DM1 and DM2 identified as significant predictors. DM2 makes a stronger contribution ($\beta = 0.358$; $p = 0.001$), while DM1 is also a strong and statistically significant predictor ($\beta = 0.316$; $p = 0.001$). This result shows that farm revenue is particularly associated with digital visibility and the active use of digital channels for promotion and communication with potential guests.

For FP3, the R^2 value is 0.621, meaning that digital marketing explains 62.1% of the variance in this financial dimension. DM2, DM3, DM4, and DM5 emerged as significant predictors, with the strongest contribution made by DM5 ($\beta = 0.309$; $p = 0.000$), followed by DM3 ($\beta = 0.275$; $p < 0.001$). This finding indicates that digital advertising and online booking are particularly important for explaining FP3, which is expected given that digital channels directly affect the availability of the offer, guest attraction, and capacity utilization.

The lowest, although still high, percentage of explained variance was recorded for FP5, where $R^2 = 0.520$. The significant predictors are DM1, DM2, and DM4, with the strongest contribution made by DM1 ($\beta = 0.327$; $p = 0.001$), while DM2 and DM4 have identical standardized beta values ($\beta = 0.283$). This result shows that return on investment in digital marketing is most strongly associated with the active use of digital channels, online visibility, and the farm's reputation.

The results of the regression analysis confirm that digital marketing has a significant and strong predictive effect on the financial performance of agrotourism farms. DM2 and DM4 are particularly notable, as they appear as significant predictors in four out of five models. This indicates that online presence, visibility, and reputation are key elements of digital marketing in the context of the financial performance of agrotourism farms. Based on the obtained results, it can be concluded that the first research hypothesis is supported, since the dimensions of digital marketing statistically significantly explain all analyzed dimensions of financial performance.

After examining the direct effect of digital marketing on the financial performance of agrotourism farms, moderation regression analysis was conducted to determine

whether sociological factors alter the strength of this relationship. Three sociological variables were included in the analysis: cooperation with the local community, guest recommendations, and the preservation of local tradition and authenticity. Interaction terms are of particular importance in these models, as they indicate whether a specific sociological factor has a moderating role.

Table 6 presents the results of the moderation regression analysis for the second hypothesis, which examined whether cooperation with the local community moderates the relationship between digital marketing and the financial performance of agrotourism farms. The model is statistically significant, $F = 406.409$; $p < 0.001$, with an R^2 value of 0.838. This means that the included predictors explain 83.8% of the variance in overall financial performance, representing a very high level of explained variance.

Table 6. Results of the Moderation Regression Analysis for H2

Dependent Variable	Independent Variable	β	t	Sig.	R^2	F	Sig.
FP_TOTAL	LC	-0.152	-0.972	0.332	0.838	406.409	0.001
	DM_TOTAL	0.893	23.803	0.001			
	INTLC	0.117	0.747	0.456			

Source: Author's research

Within the model, digital marketing has a strong and statistically significant positive effect on financial performance, $\beta = 0.893$; $t = 23.803$; $p < 0.001$. This result confirms that the overall level of digital marketing is one of the key predictors of the financial performance of agrotourism farms. Conversely, the direct effect of cooperation with the local community is not statistically significant, $\beta = -0.152$; $t = -0.972$; $p = 0.332$. This indicates that the mere fact that a farm cooperates with the local community does not significantly contribute to explaining financial performance when digital marketing is included in the model.

The key indicator for testing the second hypothesis is the interaction term INTLC, which represents the product of digital marketing and cooperation with the local community. The results show that this interaction effect is not statistically significant, $\beta = 0.117$; $t = 0.747$; $p = 0.456$. Since the p-value is greater than 0.05, it can be concluded that cooperation with the local community does not significantly alter the strength of the relationship between digital marketing and financial performance.

Table 7 presents the results of the regression analysis for the third hypothesis, which examined the role of guest recommendations in the relationship between digital marketing and the financial performance of agrotourism farms. The model is statistically significant, $F = 35.405$; $p < 0.001$, while the R^2 value is 0.310. This means that the model explains 31.0% of the variance in financial performance.

Table 7. Results of the Moderation Regression Analysis for H3

Dependent Variable	Independent Variable	β	t	Sig.	R^2	F	Sig.
FP_TOTAL	DM_TOTAL	-0.063	-1.174	0.242	0.310	35.405	0.001
	GR	-2.504	-9.845	0.001			
	INTGR	2.593	10.193	0.001			

Source: Author's research

The results show that the main effect of digital marketing is not statistically significant in this interaction model, β = -0.063; t = -1.174; p = 0.242. This means that, when guest recommendations and the interaction term are included in the model, digital marketing does not make a significant independent contribution to explaining financial performance. However, this result should not be interpreted in isolation, because the interaction term is statistically significant.

The most important result for testing the third hypothesis refers to the interaction term INTGR. The results show that the interaction is statistically significant, β = 2.593; t = 10.193; p = 0.001. This means that guest recommendations have a significant moderating role in explaining financial performance. In other words, the effect of digital marketing on financial performance differs depending on whether a significant number of guests arrive through recommendations from previous guests.

Table 8 presents the results of the regression analysis for the fourth hypothesis, which examined whether the preservation of local tradition and authenticity moderates the relationship between digital marketing and the financial performance of agrotourism farms. The model is statistically significant, F = 130.650; p = 0.001, with an R^2 value of 0.624. This means that the model explains 62.4% of the variance in financial performance, representing a high level of explained variance.

Table 8. Results of the Moderation Regression Analysis for H4

Dependent Variable	Independent Variable	β	t	Sig.	R^2	F	Sig.
FP_TOTAL	DM_TOTAL	-0.015	-0.363	0.717	0.624	130.650	0.001
	LTA	-2.745	-19.549	0.001			
	INTLTA	2.735	19.441	0.001			

Source: Author's research

The main effect of digital marketing is not statistically significant in this interaction model, β = -0.015; t = -0.363; p = 0.717, indicating that it does not make a significant independent contribution when the preservation of local tradition and authenticity and the interaction term are included in the model. The variable LTA, which refers to the preservation of local tradition and authenticity, shows a statistically significant effect, β = -2.745; t = -19.549; p < 0.001. As in the previous model, the negative sign of the beta coefficient should be interpreted with caution, particularly due to the binary coding of the variable and the presence of the interaction term.

The key result for testing the fourth hypothesis is the interaction term INTLTA. The results show that this effect is statistically significant, $\beta = 2.735$; $t = 19.441$; $p < 0.001$. This means that the preservation of local tradition and authenticity statistically significantly moderates the relationship between digital marketing and the financial performance of agrotourism farms. In other words, the effect of digital marketing on financial performance is not the same among farms that base their offerings on local tradition and authenticity and those in which this factor is not present.

The results of the moderation regression analysis show that sociological factors do not have an equal role in explaining the relationship between digital marketing and the financial performance of agrotourism farms. Cooperation with the local community was not confirmed as a significant moderator, since the interaction effect INTLC was not statistically significant. In contrast, guest recommendations and the preservation of local tradition and authenticity showed statistically significant interaction effects, indicating that these two factors alter the strength of the relationship between digital marketing and financial performance.

These findings suggest that digital marketing generates the strongest effects when it is connected with elements of trust, reputation, and authenticity. Guest recommendations represent social proof of service quality, while local tradition and authenticity represent the substantive foundation of the agrotourism offering. In this sense, digital marketing does not operate in isolation; rather, its effects depend on the social and cultural context in which the farm conducts its business.

Discussion

The results of the conducted research confirm that digital marketing plays a significant role in explaining the financial performance of agrotourism farms. Descriptive statistics showed relatively high mean scores for all dimensions of digital marketing and financial performance, indicating that respondents recognize digital channels, online presence, online reputation, booking systems, and digital advertising as important instruments of contemporary agrotourism business. This finding is particularly relevant given the structure of the sample, which is predominantly composed of younger and more highly educated respondents, suggesting a potentially greater openness to the use of digital technologies in agrotourism operations.

The positive and statistically significant relationships between digital marketing dimensions and financial performance dimensions provide strong empirical support for the importance of digital marketing in agrotourism. The regression models explained a high proportion of variance in financial performance, which indicates that digital marketing contributes not only to the visibility of agrotourism farms, but also to their economic outcomes. These findings are consistent with Buhalis and Law (2008), who emphasized that information technologies have substantially transformed the tourism sector, as well as with Rodrigues et al. (2023), who confirmed the importance of digital marketing for rural destination image, visit intention, and sustainability. The present

study extends these findings by showing that digital marketing is also associated with concrete financial outcomes of agrotourism farms, including revenue, profitability, occupancy rate, financial stability, and return on investment. Therefore, the first research hypothesis, which stated that digital marketing has a positive effect on the financial performance of agrotourism farms, is supported.

The results further indicate that online presence and visibility, as well as online reputation and reviews, repeatedly appeared as significant predictors across several regression models. This suggests that the financial performance of agrotourism farms does not depend merely on their presence on digital platforms, but also on the quality of online presentation, the availability of information, the visibility of the offer, and the trust developed through online reviews. This finding is in line with Nilashi et al. (2022), Nguyễn (2025), Cho et al. (2024), Xia et al. (2022), and Ruzima et al. (2024), who emphasize the importance of electronic word-of-mouth, online reviews, trust, and digital reputation in tourism decision-making and booking behavior. In the context of agrotourism, these elements are particularly important because guest decisions are often based on expected experience, authenticity, and trust in the host.

The moderating role of cooperation with the local community was not statistically confirmed. Although the overall moderation model was statistically significant, the interaction effect between digital marketing and cooperation with the local community was not significant. This indicates that cooperation with the local community did not significantly strengthen or weaken the relationship between digital marketing and financial performance in the analyzed model. This result does not imply that local community cooperation is irrelevant for agrotourism. Previous studies on social capital and community-based tourism, such as Pramanik (2019) and Prayitno et al. (2024), emphasize the importance of local networks, trust, cooperation, and collective action for sustainable tourism development. However, the findings of the present study suggest that the effects of community cooperation may be more indirect and long-term, related to social cohesion, rural identity, destination sustainability, and the broader development of the local environment, rather than to immediate financial performance. In addition, the binary measurement of this variable may not have sufficiently captured the intensity, quality, and continuity of cooperation with local actors. Accordingly, the second research hypothesis, which assumed that cooperation with the local community moderates the relationship between digital marketing and financial performance, is not supported.

Unlike cooperation with the local community, guest recommendations showed a statistically significant moderating effect. This result indicates that the relationship between digital marketing and financial performance becomes stronger when a significant number of guests arrive through recommendations from previous visitors. Such a finding confirms the importance of social trust, reputation, and informal communication in agrotourism. It is consistent with Phillips et al. (2013), who showed that satisfaction, perceived value, and destination perception are associated with recommendations and revisit intention in rural tourism. It is also in line with Torabi et al. (2023) and Santos et al. (2023), who emphasized the role of word-of-mouth,

digital technologies, and revisit intention in rural destinations. In this context, digital marketing appears to generate stronger financial effects when it is supported by positive guest experiences and recommendations. Therefore, the third research hypothesis, which stated that guest recommendations moderate the relationship between digital marketing and the financial performance of agrotourism farms, is supported.

The preservation of local tradition and authenticity also proved to be a statistically significant moderator. The results indicate that authenticity, local customs, homemade food, and the rural way of life strengthen the financial effectiveness of digital marketing. This finding is consistent with Sims (2009), who emphasized the importance of local food for authentic and sustainable tourism experiences, as well as with Do (2025), who showed that authenticity and sustainability shape visitor experiences in farm-to-table agrotourism. The result is also aligned with Fandos-Herrera, Labuena, and Orús (2026), who identified authenticity and sustainability as key elements of rural tourism. In this sense, digital marketing has the greatest effect when it promotes content that is locally embedded, culturally recognizable, and authentic. Therefore, the fourth research hypothesis, which assumed that the preservation of local tradition and authenticity moderates the relationship between digital marketing and financial performance, is supported.

Taken together, the findings indicate that digital marketing has a direct and strong effect on the financial performance of agrotourism farms, confirming H1. Sociological factors, however, do not have an equal moderating role. Cooperation with the local community was not confirmed as a significant moderator, meaning that H2 is not supported. In contrast, guest recommendations and the preservation of local tradition and authenticity were confirmed as significant sociological moderators, supporting H3 and H4. These results suggest that the financial effects of digital marketing are strongest when digital visibility is combined with trust, reputation, guest satisfaction, and authentic rural content. Therefore, digital marketing in agrotourism should not be understood only as a promotional instrument, but as a mechanism whose effectiveness depends on the social and cultural context in which the farm operates.

Conclusions

The research results show that digital marketing plays a significant role in the financial performance of agrotourism farms. Correlation and regression analyses confirmed that the dimensions of digital marketing are positively and statistically significantly associated with revenue, profitability, occupancy rate, financial stability, and return on investment. This confirms that digital marketing represents an important predictor of the financial performance of agrotourism business.

The moderation analysis showed that sociological factors do not have an equal role in this relationship. Cooperation with the local community was not confirmed as a statistically significant moderator, whereas guest recommendations and the preservation of local tradition and authenticity showed significant moderating effects. This indicates that digital marketing generates stronger financial effects when supported by guest trust, positive recommendations, and an authentic rural offering.

The theoretical contribution of the paper lies in linking digital marketing, financial performance, and sociological factors within a single research model. From a practical perspective, the results indicate that agrotourism farms should develop their digital presence while simultaneously strengthening their reputation, encouraging guest recommendations, and preserving local identity as a basis for market differentiation.

The limitations of the research relate to the binary measurement of sociological factors, since "yes" and "no" responses do not capture the intensity, quality, or continuity of cooperation, recommendations, or the preservation of tradition. In addition, financial performance was measured based on respondents' perceptions rather than objective financial indicators.

Future research should include objective data on revenue, number of bookings, occupancy rates, and investments in digital marketing. Furthermore, the use of more detailed scales for measuring sociological factors is recommended, as well as a longitudinal approach that would enable the effects of digital marketing to be monitored across several tourism seasons.

Conflict of interests

The authors declare no conflict of interest.

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