

The role of digital marketing and technology on international tourist arrivals to Uzbekistan

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ABSTRACT

The research aims at establishing the effects of digital marketing and technology on the flow of international tourists to Uzbekistan employing the multiple linear regression model. This analysis shows that Destination Visibility Score (DVS), Digital Marketing Expenditure (DME), Social Media Engagements (SME), and Competitiveness Index (CI) predicted the number of arrivals, meaning that online exposure, targeted advertising, and competitive positioning matter. As found from the present work, STAS has a positive but non-significant impact and thus requires more research. Therefore, based on the identified research findings it is crucial to enhance the role of digital tools and upgrade digital resources to support the further development of Uzbekistan as a global tourism destination, indicating useful advice for policy making.

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Introduction

Tourism around the world is evolving at an unprecedented rate due to changes in digital marketing and other related technologies. Such innovations focus on the modification of sales strategies of destinations where interaction with the international tourist is more pronounced and possible competitiveness, as well as improvements in tourist experiences, are achieved. As for more newcomer countries like Uzbekistan, the usage of digital tools and smart technologies is considered to be significantly crucial in the development of its competitive position as a tourist destination. Prospective strategies including destination branding, web advertising, and social media presence provide compelling ways for the promotion of Uzbekistan's historical and geographical attractions. On the other hand, the use of smart technologies makes it possible to provide tailored as well as smooth services to meet the current day's traveller's needs.

Research emphasizes the importance of these trends in different studies. Confetto and colleagues (2023) stress the function of digital destination branding as a predictor of impressions and behavior relating to DMO practice and concerning tourists. González-Rodríguez, Díaz-Fernández, and Pulido-Pavón (2023) on the same note analyze how competitiveness indices signify the capacity of the tourist destinations on how they develop innovative strategies that

give a push to tourist arrivals. In the same way, Hadjielias et al. (2022) show how the current technological advancements promote adaptability and customer value co-production, thereby helping destinations manage the market challenges more effectively. When applied to developing countries, Ho and Huang (2024) discussed changing tourist behavior and the contribution of travel agents in improving tourist satisfaction. Furthermore, Zhou et al. (2024) also explain how, developing smart destination strategies as well as making use of the technology, can appeal to the Niche audience including Digital Nomads thus improving the competitiveness of the destinations.

Knowing the importance of these parameters, this study intends to investigate the place of digital marketing and technology in increasing the number of international tourists visiting Uzbekistan. In doing so, the research aims to identify practical recommendations to enhance Uzbekistan's competitiveness in the international tourist market and promote further sustainable development of the tourism industry in the country.

Literature Review

Marketing communication and technology have therefore been proven to be useful in reshaping the competitiveness and attractiveness of tourism destinations. A heads-up study by Confetto et al. (2023) has suggested that

understanding and measuring DMO practices requires the identification of digital destination branding. Employing their framework, they demonstrate how digital strategies affect the perception and decision of potential tourists, and thus the importance of well-coordinated and consistent online branding initiatives. This is relevant for developing destinations where the internet presence can be a precursor to inbound international tourists.

The intensification of competitiveness of destinations in the global market has also been attributed to innovative strategies provided by digitalization. González-Rodríguez, Díaz-Fernández, and Pulido-Pavón (2023) used the Travel & Tourism Competitiveness Index results and proved that the incorporation of technological solutions helps to develop the competitiveness of a destination. Based on the study's evidence, the authors envisage that properly coordinated digital measures can enhance a destination's capacity to capture and engage overseas travellers by between two and four times its current level of effectiveness.

In addition, Hadjielias et al. (2022) have contributed more to the explanation of the interaction of two factors, namely digitization, and customer value propositions. Their study focuses with regards to the concept of agility in embracing smart technologies to increase tourist satisfaction and loyalty. This approach helps destinations meet market needs quickly and keep tourists engaged as well as provide memorable experiences.

The need to fit digital marketing strategies to the current behavior of tourists is well exhibited in the study by Ho & Huang in 2024. They stressed that travel agencies especially in the developing world need to adapt to the current market trends to suit the demands of tourists. An intelligent use of the various 'touch point' digital platforms can lead to better service delivery, efficiency in managing the operations, and improvement of tourist experience hence boosting satisfaction and repeat visits from these agencies. Zhou et al. (2024) explained the smart destination strategies targeting digit nomads, an emerging type of international travelers were introduced. They stressed this knowledge as the key message that shows the need to develop innovation and sustainability to compete in the international tourism market. The findings about smart technologies and selective niche attraction are relevant for understanding how destinations such as Uzbekistan can apply these principles to their development.

Data Specification

The database used in this research includes 200 sample observations, using digital marketing and technology as key determinants of international tourist arrivals. The dependent variable, Tourist Arrivals (TA), is the number of international tourists established as an indicator of the

destination performance. Independent variables are namely the Destination Visibility Score (DVS), the measure of how discoverable the destination is using factors like search engine ranking and Digital Marketing Expenditure (DME) which ranges from an investment of \$10000 to \$50000.

The Smart Technology Adoption Score measure the level of effective adoption of smart technologies; for example, Mobile application use and AI-driven services to improve the tourist experience. The Competitiveness Index (CI) measure the destination competitiveness relative to global benchmarks in categories that range from 20 to 100. Last but not least, Audience Interactions (AI) sum overall activity on all our official social media profiles, such as likes, shares, and comments on official SME posts, are useful to measure the efficiency of social media campaigns.

Data source

Secondary sources were used to collect data for this report since they offer accurate and extensive data on the aspects of digital marketing KPIs, the degree of technological integration in marketing, and tourism performance. The data used in the current paper are selected from published tourism reports and from the World Tourism Organization (UNWTO) reports or other global tourism databases and national tourism offices. Computer-aided techniques were employed to evaluate the Destination Visibility Score (DVS) based on website ranking, website traffic and online rating.

DME data were gathered from reports and annual statements of the tourism departments or DMOs, as well as from other published sources. From the technology integration of reports, the Smart Technology Adoption Score or STAS, focusing on the application of mobile applications and AI in tourism, was calculated. The Competitiveness Index (CI) was obtained from world tourism competitiveness rankings including the Travel and Tourism Competitiveness Index (TTCI). Official Social Media Engagements (SME) data were obtained from analytics which cover the number of likes, shares, and comments on official profiles.

Methodology

This research thus employs a quantitative research method to establish the effect of digital marketing and technology on international tourist arrivals in Uzbekistan. The study uses descriptive research to establish a quantitative research model known as multiple linear regression which is a statistical tool for measuring the association of a single dependent variable with a number of independent variables. The dummy variable in this model is Tourist Arrivals (TA) while the predictor variables are Destination

Visibility Score (DVS), Digital Marketing Expenditure (DME), Smart Technology Adoption Score (STAS), Competitiveness Index (CI) and Social Media Engagements (SME).

This regression model is defined as equation (1)

$$TA = \beta_0 + \beta_1 DVS + \beta_2 DME + \beta_3 STAS + \beta_4 CI + \beta_5 SME + \varepsilon \quad (1)$$

Where TA is the dependent variable and β_1, β_2, \dots shows the influences of the independent variables in the equation on tourist arrivals. The term β_0 is the intercept terms in the model that show the number of tourists that will arrive when all the variables assume zero value. The value of ε indicates the unpredictability of tourist arrivals that the given model fails to capture.

TA: Tourist Arrivals;
DVS: Destination Visibility Score;
DME: Digital Marketing Expenditure;
STAS: Smart Technology Adoption Score;
CI: Competitiveness Index;
SME: Social Media Engagements;
 β_0 : Intercept term;
 $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$: Coefficients for the independent variables;
 ε : Error term;

Result

From the regression analysis, it is possible to infer various factors that affect international tourist arrivals (Table 1). The intercept value of 3319 is statistically significant at 0.002 level of significance, hence, it symbolizes the number of tourist arrivals in the base scenario where all the independent variables are equal to zero. This means that there had been some tourism activities at this level regardless of the factors being analyzed.

Out of all the independent variables, the Destination Visibility Score or DVS has the strongest positive association with visitor numbers with a coefficient of 0.856 ($t=4.315$ $p=.005$). This is a clear implication that enhancing web presence proxied by Search Engine Ranking and Website Traffic has a positive, large and statistically significant relationship with the ability to attract international tourists. In the same way, an analysis of Digital Marketing Expenditure (DME) reveals its positive and significant impact on tourist flow, its coefficient of 0.233 ($p = 0.011$) indicates the need to

increase the funding of digital campaigns to promote the appeal of the destination.

The Competitiveness Index (CI) also exerts a relatively strong influence, with a coefficient of 0.296 ($p = 0.015$) underlining the significance of the global competitiveness of the destination as the factor stimulating tourists' demand. More so, the Social Media Engagements (SME) coefficient = 0.112 ($p = 0.044$) to forecast that the increased participation of tourists on social media platforms facilitates more arrivals of international tourists. Finally, these studies emphasize the important function of digital advertising and an appropriate positioning strategy for the development of tourism.

Table 1 Regression model estimation result

Variable	Coefficient (Coef.)	Standard Error (Std.Err.)	t-Statistic (t)	p-Value ($P> t $)
Intercept	3319	5.3E-08	6.3E+10	0.002
DVS	0.856	3.9E-09	1.3E+12	0.005
DME	0.233	4.6E-13	4.4E+11	0.011
STAS	0.465	3.9E-09	1.0E+12	0.086
CI	0.296	4.8E-10	6.2E+12	0.015
SME	0.112	7.8E-13	1.3E+11	0.044

Source: estimated in STATA

However, the result shows that the Smart Technology Adoption Score (STAS), even though with a positive coefficient of 0.465, does not get the regime of statistical importance with a p-value of 0.086. This implies that the integration of smart technologies including mobile applications and artificial intelligent tools does not lead to a direct or conclusive effect on the tourist arrivals in these models. This may explain why more research needs to be conducted to uncover a clearer picture of the impact of smart technology adoption with reference to tourism. In general, the findings highlight that increasing the destination's visibility, raising marketing expenditure, the competitiveness of the destination, and activities on social media greatly influence international tourist arrivals. However, there is still a need to establish the

contribution of smart technology adoption to empirical evaluation.

Conclusion

The analysis of the regression model shows that the chances of digital marketing and technological factors are very high in determining the rates of international tourist arrivals. Ranking by importance, it is the Destination Visibility Score (DVS) that by far contributes the most positively and verifies the possibility of attracting more tourists through Internet branding and properly optimized content. In the same Digital Marketing Expenditure (DME) and Social Media Engagements (SME) have also presented great contributions to tourist arrivals hence the need to invest in advertising campaigns and customer engagement activities online. Such reasons included the Competitiveness Index (CI) which also shows the effects suggesting the need to retain the competitiveness level in the world tourism industry. However, it is noteworthy that the Smart Technology Adoption Score (STAS) has a positive correlation but is not statistically significant and, therefore, requires additional investigation of the direct effect.

Therefore, such destinations as Uzbekistan need to focus on how to enhance their rank, invest more in online promotion, and participate in active dialogue with the audience in the accounts on social networks. Furthermore, the question relating to how the country can build up its competitiveness through improving the tourism infrastructure and services could open up great possibilities for increasing the arrival of tourists. Overall, the utilization of smart technology is still a promising area but its practical applicability and effectiveness in the tourism industry of developing countries needs to be researched in detail.

The information gathered in this study offers policy recommendations for future tourism development theories and practices. First of all, there is a lack of sufficient funding for digital marketing initiatives and promoting various digital marketing campaigns to increase recognition of Uzbekistan as a tourist

destination. Targeted PPC, SEO, and SMM are wonderful ways to increase the coverage of audiences worldwide and the extent of their involvement. Second, as a business and tourism hub, sustained efforts to make the country more competitive through policies, including developing, updating and modernizing the tourism structures, simplifying visa requirements and improving the quality of services delivered will contribute greatly.

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