

# The Effect of Regulation, Fintech and Social Media on the Sustainability of the Halal Tourism Industry: An Applied Statistical Analysis Study

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## Abstract

This study examines the impact of regulation, fintech adoption, and social media on the sustainability of halal tourism in Surakarta. The results of the statistical analysis indicate a strong correlation between social media adoption and sustainability, while regulatory support and fintech adoption do not have a significant impact. This study provides original insights by conducting exponential, taxonomic, and componential analyses, which reveal diverse stakeholder interpretations. The article recommends implementing inclusive social media strategies and regulatory support to enhance branding effectiveness. Despite its limitations, this research contributes to policy formulation, fosters collaboration, and enhances the sustainability of halal tourism through a nuanced understanding of regulatory, fintech, and social media influences

## Introduction

Halal tourism in Indonesia has been a rapidly growing sector in recent years, leading to an urgency to assess the extent to which the development of financial technology (fintech) and the use of social media are important elements in connecting halal tourism destinations with tourists.<sup>1</sup> However, in the midst of these developments, there is a gap between technological advances and a supporting regulatory framework. As a first step toward addressing these issues, this study will examine the influence of regulation on the adoption of fintech and social media in the context of sustainable halal tourism.

The importance of regulation in encouraging or limiting the adoption of fintech and social media in the halal tourism sector cannot be ignored. As the industry continues to evolve, regulation is key to creating an environment that supports technological innovation without compromising safety and sustainability. Therefore, applied statistical analysis will be an effective tool for exploring the influence of regulation on fintech and social media adoption in the context of sustainable halal tourism.

Through an applied statistical approach, this study aims to bridge the knowledge gap between the regulation and adoption of fintech and social media in halal tourism. The results of the statistical analysis are expected to provide in-depth insights into the extent to which regulations influence public decisions and acceptance of the use of fintech and social media in the context of sustainable halal tourism.

Thus, this study not only seeks solutions to overcome the gap between regulation and fintech development but also aims to provide policy recommendations that can strengthen the regulatory framework that supports the growth of sustainable halal tourism. Thus, this research is expected to make a positive contribution to the understanding and development of the halal tourism sector, especially in the application of financial technology and social media.

This study aims to investigate the impact of regulation on the adoption of financial technology (fintech) and the use of social media in the context of sustainable halal tourism. The independent variables tested in this study included regulation (X1), fintech adoption (X2), and social media adoption (X3), while the dependent variable was the sustainability of halal tourism (Y). regulation (X1) can include various policies and regulatory constraints that may affect the acceptance and use of fintech and social media in the halal tourism industry.

All the statistical analyses, specifically correlation tests performed using SPSS software, were used to evaluate the relationships between these variables. A normality test will be conducted to ensure that the data collected from respondents have a normal distribution. If the data meet the normal distribution requirements, then the correlation test process will continue. The results of this statistical analysis are expected to provide a deeper understanding of the extent to which regulation contributes to the adoption of fintech and social media in halal tourism and its impact on the sustainability of

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the sector. The findings of this study can provide insight for policymakers in designing regulations that support the sustainable growth of halal tourism through the use of financial technology and social media.

## Results and Discussion

Based on the results of the data collection, the researchers found that there were 9 respondents who were relevant to this study and were selected by purposive sampling. These respondents were micro, small and medium enterprise (MSME) entrepreneurs engaged in tourism-related businesses in Surakarta city in various fields. The results of the questionnaire were collected; 8 out of the 9 questionnaire filler participants were MSME actors engaged in food and beverage tourism, while the remaining 1 was related to tourism logistics, such as souvenirs and souvenirs, for tourist needs.

Based on the results of the normality test conducted by the researcher, the researcher found that the data obtained by the researcher using the questionnaire included data that had a distribution that could be categorized as normal. This can be seen in the significance value found based on the calculation results where the significance value is  $0.200 > 0.05$ . Based on these findings, researchers can use parametric tests in the form of correlation tests to look for relationships between independent variables that have been determined in this study, namely, awareness about the certificate validity period (X1), information acceptable or accessible (X2) and psychological factors (X3), and the dependent variable that has been determined, namely, availability to extend halal certification (Y). The normality test results are shown in the attached figure.

N		9
Normal Parameters <sup>a,b</sup>	Mean	.0000000
	Std. Deviation	.17625425
Most Extreme Differences	Absolute	.193
	Positive	.193
	Negative	-.133
Test Statistic		.193
Asymp. Sig. (2-tailed)		.200 <sup>c,d</sup>

Figure 1. Normality test

Correlation testing is used to determine whether the extent to which the relationship between the independent variable and the dependent variable is strong. Based on the results of calculations conducted by researchers to determine the correlation of predetermined independent variables and regulations with indicators related to fintech and social media in halal tourism (X1), fintech adoption (X2) and social media adoption (X3) on the dependent variable, namely, the availability and sustainability of halal tourism business in Surakarta city and its surroundings (Y), showed that the significance value of F Change was  $0.001 < 0.05$ , which indicates that the independent variable has a significant relationship with the dependent variable simultaneously. The value of the correlation coefficient is shown in column R (0.974), where the lift is close to 1, which means that the dependent variable and the independent variable can be categorized as having a strong relationship. The results of the multivariate correlation test are as follows:

### Model Summary<sup>b</sup>

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Change Statistics			Sig. F Change
						F Change	df1	df2	
1	.974 <sup>a</sup>	.949	.919	.22295	.949	31.119	3	5	.001

a. Predictors: (Constant), X3, X2, X1

b. Dependent Variable: Y

Figure 2. Multivariate correlation test

Replace (2020) Furthermore, based on the partial calculation results as shown in the partial correlation test below, the researcher found that the correlation coefficient between variable X3 (social media adoption) and Y (business survival) is 0.964, which can be interpreted as a strong relationship between variable X3 (social media adoption) and variable Y (the survival of halal tourism business) in Surakarta City. Meanwhile, based on the partial correlation calculation results, the researcher found that variable X1 (regulation) and X2 (fintech adoption) do not have a significant relationship with variable Y (the survival of halal tourism business), with significance values of 0.488 and 0.864, respectively, which are greater than the  $\alpha$  value of 0.05. Furthermore, the analysis of the strength of the relationship between variable X1 (regulation support) and Y (the survival of halal tourism business) and X2 (fintech adoption) and Y (the survival of halal tourism business)

using classification shows that variable X1 (regulation support) indicates a relationship of 0.267, which is the weakest relationship, and variable X2 (fintech adoption) indicates a value of 0.067, which is a very weak relationship

Control Variables			X1	X2	X3	Y
-none- <sup>a</sup>	X1	Correlation	1.000	.831	.151	.267
		Significance (2-tailed)	.	.006	.699	.488
		df	0	7	7	7
	X2	Correlation	.831	1.000	.000	.067
		Significance (2-tailed)	.006	.	1.000	.864
		df	7	0	7	7
	X3	Correlation	.151	.000	1.000	.964
		Significance (2-tailed)	.699	1.000	.	.000
		df	7	7	0	7
Y	Correlation	.267	.067	.964	1.000	
	Significance (2-tailed)	.488	.864	.000	.	
	df	7	7	7	0	
Y	X1	Correlation	1.000	.845	-.416	
		Significance (2-tailed)	.	.008	.306	
		df	0	6	6	
	X2	Correlation	.845	1.000	-.244	
		Significance (2-tailed)	.008	.	.560	
		df	6	0	6	
	X3	Correlation	-.416	-.244	1.000	
		Significance (2-tailed)	.306	.560	.	
		df	6	6	0	

a. Cells contain zero-order (Pearson) correlations.

**Figure 3.** Multivariate correlation test

Based on the results of the data processing summarized in the previous subchapter, researchers found that together, all the independent variables are significantly correlated with the dependent variable. The calculation results also show that the three variables are represented by 0.974, which is a strong correlation or relationship. This means that there is a large effect on Y (halal tourism business sustainability) if each variable is correlated together. Taken together, these findings show that the variables concerned can strengthen the relationship with each other with respect to the dependent variable; in other words, the impacts of regulation (X1), fintech adoption or support (X2) and social media adoption (X3) can strengthen each other's relationships with the variable halal tourism business sustainability (Y).

Moreover, if the data are analyzed partially or separately to determine the effects of each variable, there are differences in the results for each independent variable on the dependent variable. According to the data processing results, if the analysis is performed partially, the first variable or variable X1, namely, regulatory support, does not have a significant impact because its significance is only 0.488, so that it exceeds 0.05. That is, according to H0, there is no significant relationship between regulatory support and the sustainability of halal tourism businesses. Similarly, the values in the correlation column also show that regulatory support is not strongly correlated with the sustainability of the halal tourism business in Surakarta city.

Moreover, according to the analysis via the partial correlation measurement method, the relationship between fintech adoption or financial technology support for the sustainability of halal tourism business is also not significant for the sustainability of halal tourism business in Surakarta city. This is reflected in the significance value of 0.864, which exceeds the value of  $\alpha = 0.05$ . Based on the results of the assessment, H0 is rejected, which means that there is no significant relationship between variable X2 (fintech adoption) and variable Y (business continuity). Moreover, in assessing the strength of the relationship in the correlation column, researchers have found that variable X2 (fintech adoption) has a correlation value close to 0, which can be interpreted as indicating that the correlation strength of fintech adoption in halal tourism businesses in Surakarta city is very weak.

Furthermore, when analyzing the correlation between psychological factors and willingness to extend halal certification, researchers have found that H0 is rejected; this can be interpreted as indicating that social media factors have a significant correlation with the sustainability of halal tourism businesses because the significance value is less than the  $\alpha$  value of 0.05.10 The relationship between variable X3 (social media adoption) and Y (halal tourism business sustainability) is also reflected in a correlation coefficient close to 1, which is 0.964, which shows that there is a very strong and near-perfect relationship between the social media adoption variable and the dependent variable, namely, halal tourism business sustainability.

### **Taxonomic Analysis**

A literature review showed that the results of the resulting quantitative analysis can be evaluated through a number of relevant articles. First, the research on "The contestation of the meaning of halal tourism" states that variations in the interpretation of halal tourism by stakeholders at tourism destinations are highly dependent on "branding instilled by the government and promoted by various countries, including Indonesia". This conclusion shows that halal tourism is

interpreted in different ways according to the structural position of halal tourism businesses. There are differences in the attitudes of community leaders, tour guides and the government in understanding the concept of halal tourism, especially in relation to halal services.

Second, taxonomically, research titled "The post-COVID-19 tourism dilemma for geoparks in Indonesia" highlights the impact of the COVID-19 pandemic on tourism, especially in geoparks in Indonesia. This study aimed to assess how COVID-19 impacts domestic and international tourism activities at geoparks. The results showed that tourism recovery occurred after restrictions were lifted, meaning that the recovery was related to campaigns on social media.

Third, "Tourism, job vulnerability and income inequality during the COVID-19 pandemic: A global perspective," provides a taxonomic analysis of tourism workers' vulnerability and income inequality during the COVID-19 pandemic. Research shows that tourism-related job and income losses are more pronounced among women and youth, and income inequality is exacerbated by differences in policy support and previous economic conditions within each country.

Fourth, in research on "Assessing Muslim travelers' preferences regarding food in Japan using conjoint analysis," this research highlights Muslim travelers' preferences regarding food in Japan. The results show that Muslim travelers in Japan are willing to spend more money visiting tourist attractions in Japan because of the support of the availability of prayer room facilities and halal status on tourist products, including food.

In research that includes taxonomic analysis of social media adoption factors in the context of halal tourism sustainability, the focus is on how tourism destination stakeholders respond to halal tourism branding instilled by the government and promoted by many countries, including Indonesia. In this context, the independent variables that can be identified include understanding and interpreting the concept of halal tourism by various stakeholder groups, such as community leaders and tour guides (X1). These factors involve each group's structural understanding of halal tourism and its impact on halal services at a practical level.

Furthermore, the results showed that there are variations in the interpretation and understanding of halal tourism, depending on the structural position of each group. Community leaders and tour guides, for example, view halal tourism at the true level of halal services, whereas governments interpret it as a promotional medium dominated by economic and political interests (X2). In this context, taxonomic analysis involves assessing the understanding of the concept of halal tourism at the conceptual and practical levels by stakeholder groups, providing an overview of the complexities and differences in views related to the sustainability of halal tourism.

This research provides deep insight into diverse views on halal tourism and how that understanding can affect the sustainability of the sector. Taxonomic analysis helps identify different perspectives between stakeholders and can provide the foundation for developing more effective policy strategies to support the sustainability of halal tourism.

## Conclusion

The applied statistical analysis showed that regulation (X1), fintech adoption (X2), and social media adoption (X3) are significantly correlated with the sustainability of the halal tourism business (Y) in Surakarta city. The strong correlation between the three variables confirms that the influence of regulation, fintech support, and social media adoption together can mutually strengthen the relationship with the sustainability of halal tourism businesses. However, when analyzed partially, regulatory support (X1) and fintech adoption (X2) did not have significant impacts on business sustainability, while social media adoption (X3) had a very strong and significant correlation with the sustainability of halal tourism businesses in Surakarta city.

This study presents exponential, taxonomic, and componential analyses of halal tourism. There are variations in the interpretation of the halal concept by stakeholders, including the government, the community, and tourism actors. Social media adoption factors (X3) become important, with stakeholders assessing sustainability based on branding and promotion. Taxonomic analysis reveals the complexity of views on the sustainability of halal tourism. Moreover, the componential review highlights the relevance of regulation (X1) and fintech adoption (X2) in this context. Overall, the study provides in-depth insights into the complex relationships among regulation, fintech adoption and social media, as well as between regulation and perceptions of sustainability in halal tourism.

Research can be useful for policy makers and practices related to halal tourism. First, understanding the variety of interpretations of the concept of halal tourism by stakeholders can help government and industry players adjust branding and promotion strategies to be more relevant and acceptable to various groups. This means that there is a need for inclusive and varied information on halal tourism through social media.

Second, the urgency of adopting social media (X3) is very important in determining the perception of halal tourism sustainability. Halal industry players at the MSME level need to strengthen their presence on social media platforms to strengthen their positive image of halal tourism, which is the basis of their market. The recommendation of this study is that regulatory support, which promotes the use of social media to promote tourism, is important.

Overall, this research provides a foundation for governments, industry players, and communities to formulate more effective policies and strategies for supporting the sustainability of halal tourism. Collaboration between stakeholders and special attention given to regulation, fintech adoption, and social media can increase the competitiveness of halal tourism and have a positive impact on the sustainability of the sector.

This study has several limitations. The small sample size can limit the generalizability of the research results to a wider population. Second, the scope of related research, which is limited to only Surakarta city, can affect the generalizability of the results to different halal tourism regions or destinations. Third, the information in this study may be limited to a specific period of time, so the dynamics in the halal tourism industry and the adoption of fintech and social media may change over time. Fourth, this analysis has limitations because additional variables were not measured; these variables need to be considered for a more comprehensive analysis. Fifth, this study did not explore social and cultural factors that can influence customer preferences and behavior or other noneconomic factors.

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