

# The Impact of Artificial Intelligence on Investment Strategies and Financial Governance in the Tourism and Hospitality Industry

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## ABSTRACT

This paper focused on the effect of artificial intelligence (AI) on investment and financial management from the year 2010-2024 tourism and hospitality industry. In this context, based on the analysis of quantitative industry data and qualitative case studies, this research explained how the application of artificial intelligence in the field of predictive analytics changed the possibilities of investment decision making and risk controlling. The current research also aimed at finding out how AI can facilitate the improvement of financial governance in terms of processing, monitoring and compliance processes. Studies affirmed that AI implementation resulted to enhanced forecasting precision, operations and financial outcomes for the firms in the sector. However, several limitations such as data privacy, algorithmic bias, and integrated legacy system, were also discussed. This research discusses the emerging trends of AI that can be adopted in tourism and hospitality finance and studies the implications of these trends for the stakeholders.

**Keywords:** artificial intelligence, tourism, hospitality, investment strategies, financial governance, predictive analytics

## INTRODUCTION

Technological advancement has continued to change the upcoming years rapidly especially in the field of tourism and hospitality industry where innovations such as artificial intelligence (AI) has taken the centre stage. Therefore, with the new formation of the above-mentioned difficulties and risks when the sector originally reacted to global disruptions, the demand for more innovative methods and techniques in decision-making in the financial resources (Sampaio et al., 2020). Solutions that embraced artificial intelligence promised capabilities that could dramatically transform how market stakeholders made sense of trends as well as forecast and manage their financial outlook for future.

This present research tried to provide a synthesis of the effects that AI impose for investment paradigms and financial management in the tourism and hospitality industry from the year 2010 up to the year 2024. In this period, the research aimed at offering insights about the possibilities and risks of the use of AI in this industry and based on the analysis of trends, technologies and case studies.

The use of AI in tourism and hospitality finance is a revolution of the traditional method that is used in organizations in making decisions as well as managing risks. Machine learning algorithms can then analyse huge volumes and complex datasets that results into accurate and predictive models which may not be easily discernible using conventional analysis techniques (Dey & Shukla, 2020). This capability facilitates a better prediction of demand, appropriate pricing as well as better identification of areas that need to be invested in.

In addition, it came to realize that AI may complement financial governance for example through applications for automating evaluations, increasing the speed and accuracy of monitoring and compliance measures. With the new regulations coming along the corridors, AI based systems can assist organizations lower the chance

of an error while at the same time maintaining the organization's transparency and accountability (Nagaraj et al., 2020).

However, the application of AI to tourism and hospitality finance brings along benefits that need to be embraced but also the following challenges which need to be accorded due attention. Some of the topics ranging from the impact of AI on data privacy, problems arising from algorithmic bias and compatibility of post AI systems to existing infrastructure call for better strategies and consistent assessment (Tuo et al., 2021).

Thus, this research considers the following objectives: Summarize the state of the art of the uses of AI in shaping investment decisions and financial regulations as it relates to the TIH industry, as well as the insights it holds for industry players, policymakers and academics.

## LITERATURE REVIEW

Critically discussing the role of AI in the tourism and hospitality industry increases in the number of studies on this topic in the recent years. Quite a number of publications covering the nature and impact of AI takeover have been published focusing various elements of the phenomenon.

### Predictive Analytics and Investment Strategies

Some of the most emerging AI application domains that have attracted huge interest in the recent past is the ability to advance predictive analytical capacities for investment decision-making. Kazak et al. (2020) have worked on the paper evaluating the application of machine learning algorithms in demand forecasting of the hotel industry. Their research showed that for occupancy rate and total revenue, all of their AI-based models provided better prediction than the statistical models allowing for better investment and pricing decisions.

Also, in the same context, Li et al. (2018) examined the more use of deep learning architectures in the forecasting of tourism demand. In their research, such authors were able to ascertain that by using an algorithm based on the neural network, whereby the model was trained using a large data set of past tourism flows and economic parameters, yields high forecast accuracy of the future demand, which enables the places and companies to adjust their investment strategies and resource distribution.

### Financial Governance and Risk Management

The importance of applying AI in improving the financial governance and risk management practices has also considered in recent studies. According to the study conducted by Nikitas et al. (2019) reviewed the application of AI in detecting fraud in the hospitality industry. In their study, they pointed out that, through machine learning, algorithms could learn transaction patterns as well as customer behavior to detect the existence of fraudulent activities than rule-based systems could in the shortest time.

AI has been extensively reviewed by Tussyadiah (2020) in the context of tourism and hospitality and the reviewed possibilities of AI concern, among others, enhancement of financial compliance and reporting. The author pointed out that other complicated activities such as regulatory compliances, alleviation of errors in financial reporting, and real-time information regarding the financial health of an organization could be executed by AI-enabled systems.

### Challenges and Considerations

Although AI has a wide range of potentials that apply to tourism and hospitality finance, many challenges and factors have been also underlined by researchers. Gretzel et al., (2019) analyzed some of the main ethical concerns that affect the tourism industry regarding the use of AI such as privacy, fairness, and unbiased algorithms, and impact on employment. To overcome the above challenges, the authors urged responsible AI governance frameworks.

Melián-González and Bulchand-Gidumal (2021) pointed out the drivers that affect the decisions made by the firms from the hospitality industry regarding adoption of AI. Their study also revealed that, even though larger organizations reported that they are investing in the AI technologies, there are some issues, which small business encountered in the way of AI implementation, including cost, technical know-how and compatibility with other systems.

### **Conceptual Framework**

However, in line with the literature review a conceptual framework for this study was established. The main hypotheses of the framework are the organisational factors (size, resources, technological infrastructure), business factors (competitive pressure, regulatory requirements) and technological factors (AI capability, data availability) for AI implementation in tourism and hospitality finance. These factors, in turn, impact the two main areas of focus: investment management decisions as well as financial policies and regulations.

The framework also reveals that with the application of Artificial Intelligence, investment strategies are advanced based on better predictive analytics, risk evaluation and decision making. Subsequently for the financial governance applications AI is expected to assist in the automation of various processes, compliance as well as real-time monitoring of the finances.

### **Research Objectives**

The primary objectives of this study were: The primary objectives of this study were:

- To measure the level of the AI utilization in investment processes and financial management in the tourism and hospitality industry between the years 2010 and 2024.
- Finally, the subsequent research question focuses on assessing the effect of AI-Predictive analytics on investing decision and risk management of the sector.
- In order to compare efficiencies of the introduced AI applications and their impact on the improvement of the financial governance automation, compliance and real-time monitoring activities.
- In order to formulate the key issues that are crucial to the evaluation of the processes related to the use of artificial intelligence in the sphere of tourism and hospitality finance.

With the aim to provide some tips for players of the industry how they might apply AI in managing finances and investment plans.

### **Research Questions**

The study aimed to address the following research questions:

- How has the adoption of AI in investment strategies and financial governance evolved in the tourism and hospitality industry from 2010 to 2024?
- What is the impact of AI-powered predictive analytics on forecasting accuracy and investment performance in the sector?
- How does AI enhance financial governance processes and compliance measures in tourism and hospitality organizations?
- What are the key challenges and considerations for AI adoption in tourism and hospitality finance?
- What strategies can industry stakeholders employ to effectively leverage AI for improved financial management and investment decision-making?

### **Hypotheses**

Based on the research objectives and questions, the following hypotheses were formulated:

H1: The adoption of AI in investment strategies is positively associated with improved forecasting accuracy in tourism and hospitality firms.

H2: AI-powered predictive analytics lead to better investment performance in the tourism and hospitality sector.

H3: The use of AI in financial governance processes is positively associated with improved compliance and reduced errors in financial reporting.

H4: Larger tourism and hospitality organizations are more likely to adopt AI for financial management and investment strategies than smaller firms.

H5: The perceived benefits of AI adoption in finance are positively associated with the intention to invest in AI technologies among tourism and hospitality firms.

## RESEARCH METHODOLOGY

This study employed a mixed-methods approach, combining quantitative analysis of industry data with qualitative case studies to provide a comprehensive understanding of AI's impact on investment strategies and financial governance in the tourism and hospitality sector.

### Data Collection

Quantitative data were collected from a sample of 500 tourism and hospitality companies across various subsectors (hotels, airlines, tour operators, etc.) for the period 2010-2024. The data included financial performance metrics, AI adoption indicators, and relevant organizational characteristics. This information was obtained from company reports, industry databases, and a survey administered to financial executives in the sector.

Qualitative data were gathered through in-depth interviews with 30 industry experts, including C-level executives, AI specialists, and financial analysts specializing in the tourism and hospitality sector. Additionally, 10 case studies of organizations that had implemented AI solutions for financial management and investment strategies were conducted.

### Data Analysis

**Quantitative Analysis:** The study utilized Partial Least Squares Structural Equation Modeling (PLS-SEM) to test the hypothesized relationships between AI adoption, organizational factors, and financial outcomes. This technique was chosen for its ability to handle complex models with multiple relationships and its robustness in dealing with non-normal data distributions (Hair et al., 2017).

The PLS-SEM analysis was conducted using Smart PLS software. The measurement model was assessed for reliability and validity, followed by an evaluation of the structural model to test the hypotheses.

**Qualitative Analysis:** The interview transcripts and case study data were analyzed using thematic analysis to identify key themes and patterns related to AI adoption, challenges, and best practices in tourism and hospitality finance.

## RESULTS

### Measurement Model Assessment

The reliability and validity of the measurement model were evaluated using the following criteria:

**Internal consistency reliability:** Cronbach's alpha and composite reliability values exceeded the threshold of 0.7 for all constructs.

**Indicator reliability:** All indicator loadings were above 0.7 and statistically significant.

**Convergent validity:** Average Variance Extracted (AVE) values were above 0.5 for all constructs.

**Discriminant validity:** The Fornell-Larcker criterion and Heterotrait-Monotrait (HTMT) ratio confirmed discriminant validity.

Table 1 presents the reliability and validity indicators for the key constructs in the model.

Table 1: Measurement Model Results

Construct	Cronbach's Alpha	Composite Reliability	AVE
AI Adoption	0.89	0.92	0.74
Forecasting Accuracy	0.88	0.91	0.72
Investment Performance	0.91	0.94	0.79
Financial Governance	0.87	0.90	0.69
Organizational Size	0.93	0.95	0.86
Perceived Benefits	0.90	0.93	0.77

### Structural Model Assessment

The structural model was evaluated based on the following criteria:

**Collinearity:** VIF values were below 5, indicating no multicollinearity issues.

**Path coefficients:** Bootstrapping with 5000 subsamples was used to assess the significance of path coefficients.

**Coefficient of determination (R<sup>2</sup>):** The model explained substantial variance in the endogenous constructs.

**Effect size (f<sup>2</sup>):** The impact of exogenous constructs on endogenous constructs was assessed.

Table 2 presents the results of the hypothesis testing based on the PLS-SEM analysis.

Table 2: Hypothesis Testing Results

Hypothesis	Path	Path Coefficient	t-value	p-value	Supported
H1	AI Adoption → Forecasting Accuracy	0.412	7.836	<0.001	Yes
H2	AI-powered Analytics → Investment Performance	0.385	6.942	<0.001	Yes
H3	AI Use → Financial Governance	0.476	8.573	<0.001	Yes
H4	Organizational Size → AI Adoption	0.329	5.781	<0.001	Yes
H5	Perceived Benefits → AI Investment Intention	0.558	10.247	<0.001	Yes

The results support all five hypotheses, indicating significant positive relationships between AI adoption and various aspects of investment strategies and financial governance in the tourism and hospitality industry.

### Qualitative Findings

The thematic analysis of interview transcripts and case studies revealed several key themes:

1. AI as a competitive advantage: Many executives viewed AI adoption as crucial for maintaining competitiveness in an increasingly data-driven industry.
2. Challenges in data integration: Organizations faced difficulties in integrating data from various sources to leverage AI effectively.

3. Skill gap: There was a notable shortage of professionals with both domain expertise in tourism/hospitality and AI skills.
4. Ethical considerations: Concerns about data privacy and algorithmic bias were prominent, especially in customer-facing AI applications.
5. Phased implementation: Successful organizations typically adopted a phased approach to AI implementation, starting with pilot projects and scaling gradually.

## DISCUSSION

Based on the findings from the study, there is sufficient support for the Hospitality and Tourism industry to embrace Artificial Intelligence in altering of investment approaches and the structure of financial governance. The quantitative findings reveal that AI has a positive correlation to the accuracy of forecast (H1) as well as the overall performance of investment (H2), which can only suggest that the application of logical analytics through the advanced use of artificial intelligence can only contribute greatly to the improvement of decision making in the given industry.

The role of AI use with regard to financial governance (H3) signifies the prospects of AI to enhance various compliance solutions and boost the reliability of the financial reports. This is in line with prior literature pointing to the use of AI to improve on the regulation and management of risk (Tussyadiah, 2020).

The study also supports the fact that the bigger organisations are more likely to implement AI for financial management (H4) as pointed out by Melián-González and Bulchand-Gidumal (2021). This point to the assumption that while larger firms in the sector are in a position to exploit the use of AI, smaller firms could require more encouragement as well as support in order to fully harness it.

As postulated in hypothesis five (H5) the overall perceived benefits have a significant and positive effect on the organizations' AI investment intention. This however also underscores the need for educational Enlightenment as well as awareness campaigns for the advancement of the use of the AI in the industry.

The aforesaid quantitative findings are supported and explained by the qualitative results which show that AI is perceived as the critical business priority and that many companies encounter significant difficulties in AI deployment. The identified areas like data integration issues, and shortage of skills are significant findings that the industry players can use to harness the opportunities in AI implementation.

## CONCLUSION

This paper aims at giving a critical evaluation on the application of artificial intelligence in investment decision and corporate governance of tourism and hospitality sector 2010 to 2024. The enhancements in the different relevant areas including forecasting, investment and financial governance processes to an extent confirm the benefits of AI adoption. However, there are issues that need to be resolved regarding data integration and data skills and ethical issues that stand in the way for an organization to harness the benefits of AI.

## FUTURE DIRECTIONS

Future research will be directed to establish how the implementation of AI will continue to enhance financial performance and competitiveness of the tourism and hospitality companies in the future. Furthermore, exploring the factors where the usage of AI might also improve sustainability and resilience of the industry's financial solutions, should also offer useful information as these factors are more essential than before.

## LIMITATIONS

Such research are based on a given period of time say 2010-2024 and as such, the findings might not be an accurate reflection of the current state of affairs when it comes to AI technology. However, social sampling

was large enough but it might not be enough generalizable across the subsectors of the tourism and hospitality industry.

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