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HOLISTIC APPROACH: *HUMAN RESOURCE DEVELOPMENT* , MULTI-MANAGEMENT AND IMPLEMENTATION OF BIG DATA TECHNOLOGY AS A *SUSTAINABILITY STRATEGY FOR* THE EAST JAVA TOURISM INDUSTRY

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Abstract: The tourism industry in East Java plays a strategic role in economic growth and Gross Regional Domestic Product (GRDP) . However, it still faces several challenges: 1) inconsistencies in *human resource development* , marketing strategies, and industrial policy strategies. 2) limited data-based evaluation systems, which hinder the sector's *competitiveness* . Therefore, a holistic, integrated approach with multiple management aspects based on big data technology is needed to strengthen the contribution to tourism industry performance and provide a strategic implementation solution. Identifying and analyzing factors that impact the performance of the tourism industry **;** Identifying the gap between the importance and performance of factors that impact the integration of HRD, marketing, strategic management, and the East Java tourism industry **;** Knowing the relationship between HRD factors, marketing strategies, and strategic planning on the performance of the tourism industry in East Java **;** Designing and validating the PARIS *(Performance Analysis and Recommendation for Integrated Strategy) system model* as a data-based decision-making support tool in the integration of HRD, marketing, and strategic management in the East Java tourism industry. Analysis Tools: *Systematic Literature Review;* Survey & *Focus Group Discussion* . The population is all tourism industry employees in East Java. 200 tourism sector business samples, each with five employees as respondents, a total of 1000 respondents, proportionally from 11 selected cities/regencies: Malang, Batu, Surabaya, Banyuwangi, Blitar, Jombang, Ponorogo, Pacitan, Pasuruan, Probolinggo, Tulungagung. Due to limited time, the researcher chose one in the Batu city area.
Keywords : *Human Resource Development* ; Marketing; Strategic Management; Tourism; *Importance Performance Analysis*

1. Introduction

The strategic role of the tourism industry contributes to supporting regional economic growth, particularly in East Java, which boasts a variety of prime destinations such as Mount Bromo, Ijen Crater, and historical and *cultural attractions* . The development of the tourism sector has been proven to contribute to improving community welfare and reducing poverty levels in tourist destination areas (Hermawati, 2020) . Research shows that the tourism sector has a significant contribution to East Java's Gross Regional Domestic Product (GRDP), with the number of tourist visits and the occupancy rate of star-rated hotels as the main sectors influencing regional economic growth (Hermawati et al., 2022) , (Hermawati, 2020) . This growth demonstrates that the tourism industry has significant potential for growth if managed with the right strategy (Hermawati & Gunawan, 2021) .

Meanwhile, from a field perspective, East Java destinations have not yet achieved tourism results comparable to those before the pandemic, as depicted in **Figure 1** below:

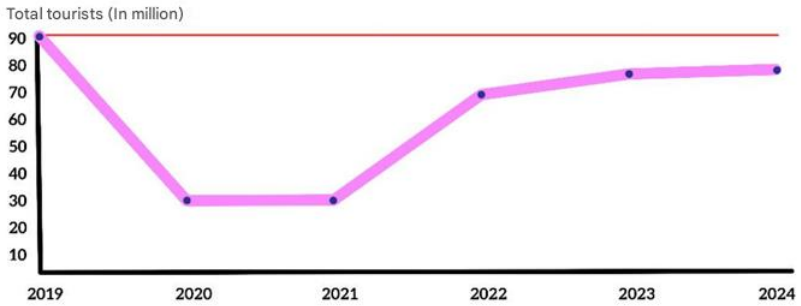

Figure 1. Tourist Visit Graph in East Java 2019-2024 period
Source: East Java Tourism Office

Figure 1 shows that tourist visits to East Java in 2022-2024 were relatively lower than before the COVID-19 pandemic. Therefore, strategies are needed to increase total tourist visits. Furthermore, given current global competition, competitiveness in the tourism sector must be enhanced. One key strategy is to use data-driven implementation as a crucial element to support planning, decision-making, and optimize tourism services. By utilizing accurate data, tourism destination managers can conduct evaluations to understand tourist trends, identify visitation patterns, and measure the economic impact of the tourism sector, both directly and indirectly. Data-driven strategies can play a role in anticipating several challenges, such as fluctuations in tourist numbers due to seasonal factors or changes in global tourism trends (Salam & Angelyca, 2023) . Implementing data-driven strategies is a key element in increasing the competitiveness of the tourism industry in East Java.

Although data-driven strategies have significant potential to enhance the competitiveness of the tourism industry, several challenges hinder the management of this sector. One such challenge is the limited integration of human resource development, marketing strategies, and strategic management, which results in ineffective management of the tourism industry. This can occur because, despite the existence of training programs to improve the skills of the tourism workforce, if they are not supported by effective marketing strategies and conducive industrial policies, the results will be less than optimal (Hermawati et al., 2020) , (Fauzi et al., 2024) . Furthermore, innovative marketing strategies require the support of competent human resources and supportive policies to achieve the planned market targets (Hermawati et al., 2020) . Given these challenges, a holistic approach is needed that integrates *Human Resource Development* (HRD), marketing strategies, and industrial policy strategies to enhance the competitiveness of the tourism industry.

The lack of a data-driven evaluation system for decision-making is one of the factors hampering the competitiveness of the tourism sector. Without integrated and accurate data, it is difficult for tourism industry managers to evaluate the effectiveness of human resource development programs, formulate effective *tourism industry strategies* , and establish appropriate policies. Decisions without data are often inaccurate and have the potential to reduce the efficiency of tourism destination management and the competitiveness of the tourism industry (Hermawati et al., 2019) . With a data-driven evaluation system, decisions are made more accurately, precisely, and based on evidence. The government and tourism sector managers need to collaborate, improve data management capacity, and implement data-driven

policies to create more adaptive and sustainable tourism destinations, thereby increasing tourism competitiveness (Hermawati & Sembhodo, 2024) .

2. Literature review

1. Human Resource Development (HRD)

Human Resource Development is the process of developing employee abilities, skills, and knowledge to improve individual and organizational performance. According to Swanson (1995) , HRD encompasses training, career development, and organizational development aimed at improving human resource capabilities.

2. Marketing

Marketing is a management process aimed at identifying, meeting, and satisfying customer needs profitably. Kotler and Keller (2016) define marketing as the art and science of choosing target markets and building profitable customer relationships.

3. Strategic Management

Strategic management is the process of formulating, implementing, and evaluating cross-functional decisions that enable an organization to achieve its long-term goals. According to Wheelen & Hunger (2012) , strategic management involves analyzing the internal and external environment, establishing a vision and mission, and developing strategies that adapt to market changes.

4. Tourism

Tourism is the activity of traveling by individuals to places outside their usual environment for recreation, business, or other purposes. Cooper et al. (2005) state that tourism is an important economic sector that involves interactions between tourists, service providers, and the environment.

5. Importance-Performance Analysis (IPA)

Importance-Performance Analysis is a management tool used to identify aspects that need improvement in a service or product based on two dimensions: attribute importance and actual performance. According to Martilla & James (2010) , IPA helps organizations prioritize resources to improve customer satisfaction by focusing on important but low-performing attributes.

3. Method

This research was conducted by analyzing factors influencing tourism industry performance using *Principal Component Analysis* (PCA). This method reduces the dimensionality of existing variables and identifies the most influential primary factors in the tourism industry. This allows the research to determine truly significant variables for further analysis. After identifying the primary factors, an Importance-Performance Analysis (IPA) was conducted to evaluate the extent to which these factors have been implemented in the tourism industry and the level of satisfaction and expectations of industry players regarding these factors. IPA helps identify areas for improvement to optimize tourism industry performance.

For future research, cluster analysis can be used to group tourism Small and Medium Enterprises (SMEs) by region. This grouping allows for more specific performance improvement strategies tailored to the needs of each SME category. Furthermore, this research can be continued by analyzing the relationships between variables in the tourism industry using

nonparametric path methods, which are more flexible in capturing complex relationship patterns without assuming linearity.

Research flowchart is adapted from previous research that has been conducted and will be conducted during the proposed timeframe to ensure continuous implementation. The research steps are visualized in a flowchart, as shown in Figure 2 :

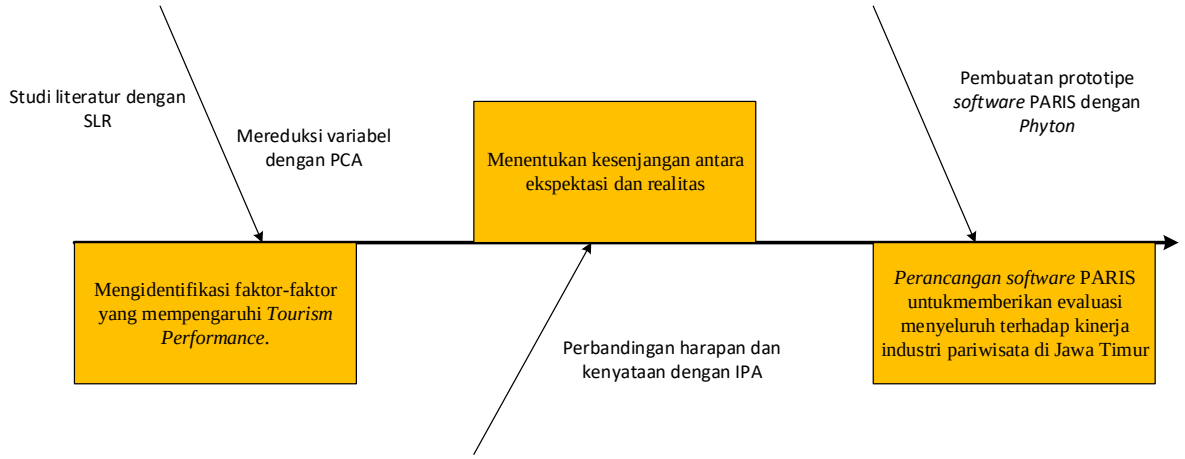

Figure 2. Research Flowchart

This research instrument was constructed using a *Likert scale*, with a rating scale ranging from 1 (very low) to 5 (very high). Prior to data collection, the questionnaire was tested for validity and reliability to ensure measurement accuracy and consistency. After the instrument was declared valid and reliable, a survey was conducted among tourism industry players in East Java to collect representative data.

In addition to the survey, this research also involved *Focus Group Discussions* (FGD) with stakeholders, including business actors, academics, and local governments, to gain a more comprehensive perspective regarding the challenges and opportunities in the integration of *Human Resource Development* , marketing, and strategic management.

The population of this study included all employees of SMEs in the tourism industry. The sample consisted of 200 SMEs selected proportionally from 11 selected cities and regencies, with each SME involving five employees as respondents, bringing the total number of respondents to 1,000. This study was implemented in 11 regions in East Java, namely Malang, Batu, Surabaya, Banyuwangi, Blitar, Jombang, Ponorogo, Pacitan, Pasuruan, Probolinggo, and Tulungagung. Due to limited time, the researcher chose one of the areas in Batu City.

The success of this research is measured based on the level of activity completion, the validity of the performance evaluation model, and the effectiveness *of the software* in providing analysis results that are useful for users, both tourism industry players and local governments.

4. Results and Discussion

Results

Based on the planned implementation stages, this research successfully completed several key activities in the first year. The results obtained reflect significant achievements in building a scientific foundation for developing a sustainable tourism industry strategy system in East Java. The following are the findings of this research.

1. *Systematic Literature Review* (SLR)

This study applies the *Systematic Literature Review* (SLR) approach as a structured and systematic literature review method to avoid subjective bias and gain a deep understanding of previous research developments. The SLR method is used to identify and group variables relevant to strengthening the sustainability strategy of the tourism industry, particularly through the integration of *Human Resource Development* , multi-level management, and the use of big data technology. This approach has proven capable of formulating a conceptual model that combines the dimensions of technology, management, and human resource development in sustainable tourism (El Archi et al., 2023) .

This SLR plays a crucial role in identifying patterns, methodologies, and key variables that can strengthen the implementation of tourism sustainability strategies in East Java. The literature review results were visualized using the bibliometric software VOSviewer, which maps the relationships between keywords (keyword co-occurrence) from scientific articles retrieved from the Google Scholar database. This visualization produces a relationship map between concepts that illustrates thematic connections in related studies and serves as the basis for variable mining and relationship mining processes to build relevant conceptual models. The following is a visualization of the SLR results.

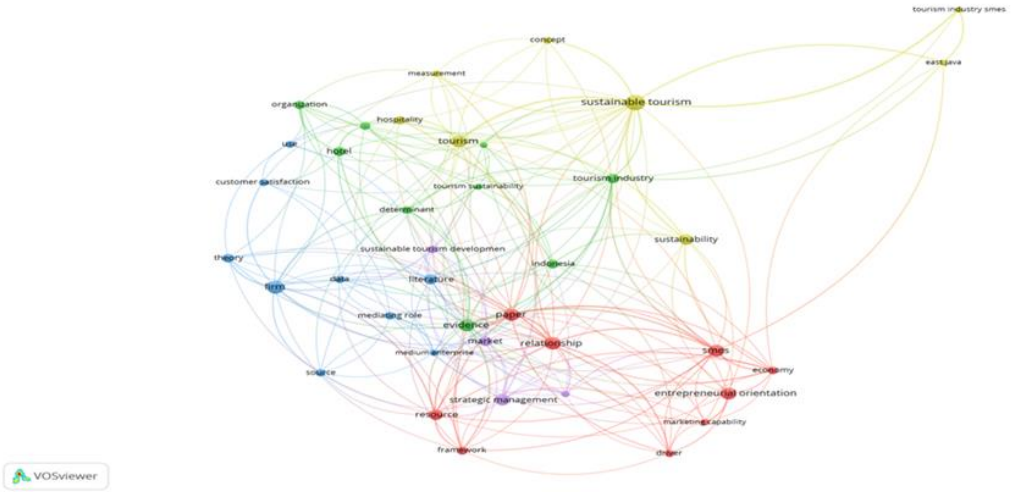

Figure 3. Database Network Visualization

Based on these results, various key keywords were found that were strongly related to each other in previous studies, such as entrepreneurial orientation, marketing capability, tourism sustainability, SMEs, HR development, and strategic planning. The relationship between these keywords illustrates that increasing the competitiveness and sustainability of the tourism industry is greatly influenced by the integration of internal factors such as entrepreneurial orientation and marketing capability, as well as external factors such as the sustainability of the tourism sector itself. The interconnectedness of these words leads to three main variables that are considered most relevant to study in this context, as follows.

- *Entrepreneurial* Orientation
- Marketing Capability (*Marketing Capability*)
- *Tourism* Sustainability

These findings reinforce that the success of the tourism industry is not only determined by the internal capacity of SMEs (e.g., innovation and marketing capabilities), but is also greatly influenced by how the sector adopts sustainability principles in its operations.

In the context of variable mining, SLR results were used to identify dominant and influential

variables based on their occurrence and interrelationships in the literature. These three variables were selected because they consistently appear in various scientific publications and have high interconnectedness in bibliometric visualizations, indicating their important role in supporting the performance and transformation of the tourism sector, particularly those based on SMEs. Next, relationship mining was conducted to explore the relationships between the identified variables. For example, the close relationship between *Entrepreneurial Orientation* and marketing capability demonstrate that success in developing a marketing strategy often begins with an innovative and proactive orientation embedded within the organization. The following is a model developed after conducting an SLR.

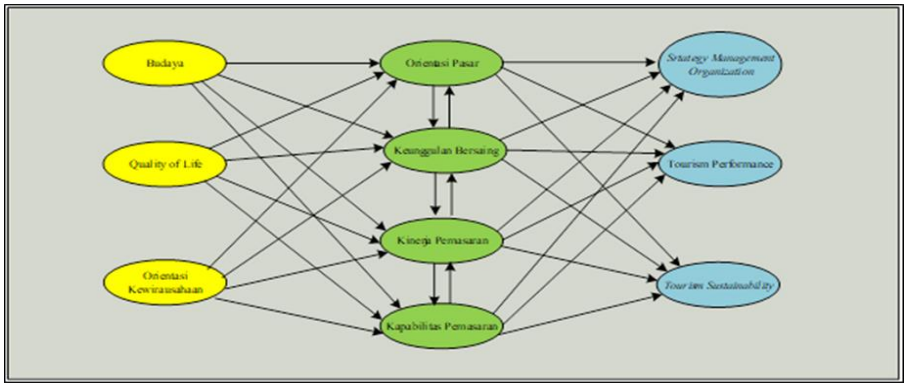

Figure 4. Model After SLR

Thus, the results of this SLR not only help in selecting the main variables, but also show how these variables influence each other in the context of the tourism industry. The use of big data methods such as variable and relationship mining through SLR allows researchers to build a more accurate and evidence-based conceptual model, and serves as a starting point in designing a data-based performance evaluation system, namely the PARIS (Performance Analysis and Recommendation for Integrated Strategy) system, as a strategy to strengthen the competitiveness and sustainability of the tourism sector in East Java.

b. Test of Direct and Indirect Effects

Batu City

The following visualization depicts the direct relationship between variables, complete with path coefficient (β) values and their significance (*p-value*). Arrows indicate the direction of influence, while numbers reflect the strength and significance of the relationship.

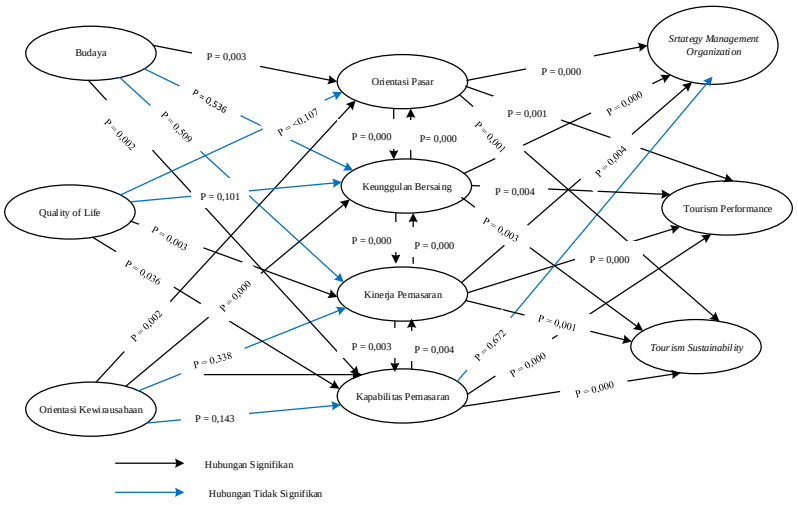

Figure 1Direct Influence between Variables for Batu City Area

The following table presents a numerical breakdown of the results of the direct effect hypothesis test in Batu City. The table lists the pairs of variables tested, their path coefficients, and their significance (*p-values*). These results serve as the basis for statistically confirming the relationships in the research model and also reinforce the visual findings outlined previously.

Table 1. Direct Effect Hypothesis Test

Influence between variables		Path Coefficient	SE	CR	*P-values*	Information
Exogenous Variables	→	Endogenous Variables				
Culture (X1)	→	Market Orientation (Y1)	0,218	0,073	2,966	0,003*	Significant
Culture (X1)	→	Competitive Advantage (Y2)	0,032	0,059	0,536	0,592^{ns}	Not Significant
Culture (X1)	→	Marketing Performance (Y3)	0,034	0,052	0,661	0,509^{ns}	Not Significant
Culture (X1)	→	Marketing Capabilities (Y4)	0,284	0,092	3,103	0,002*	Significant
Quality of Life (X2)	→	Market Orientation (Y1)	0,113	0,070	1,613	0,107^{ns}	Not Significant
Quality of Life (X2)	→	Competitive Advantage (Y2)	0,163	0,100	1,638	0,101^{ns}	Not Significant
Quality of Life (X2)	→	Marketing Performance (Y3)	0,220	0,075	2,921	0,003*	Significant
Quality of Life (X2)	→	Marketing Capabilities (Y4)	0,201	0,096	2,101	0,036*	Significant
Entrepreneurial Orientation (X3)	→	Market Orientation (Y1)	0,210	0,067	3,118	0,002*	Significant
Entrepreneurial Orientation (X3)	→	Competitive Advantage (Y2)	0,232	0,062	3,772	0,000*	Significant
Entrepreneurial Orientation (X3)	→	Marketing Performance (Y3)	0,058	0,061	0,959	0,338^{ns}	Not Significant
Entrepreneurial Orientation (X3)	→	Marketing Capabilities (Y4)	0,142	0,097	1,464	0,143^{ns}	Not Significant
Market Orientation (Y1)	→	*Strategy Management Organization* (Y5)	0,270	0,064	4,240	0,000*	Significant
Market Orientation (Y1)	→	*Tourism Performance* (Y6)	0,180	0,057	3,180	0,001*	Significant

Influence between variables		Path Coefficient	SE	CR	*P-values*	Information
Exogenous Variables	→	Endogenous Variables				
Market Orientation (Y1)	→	*Tourism Sustainability* (Y7)	0,269	0,079	3,414	0,001*	Significant
Competitive Advantage (Y2)	→	*Strategy Management Organization* (Y5)	0,212	0,052	4,065	0,000*	Significant
Competitive Advantage (Y2)	→	*Tourism Performance* (Y6)	0,278	0,098	2,848	0,004*	Significant
Competitive Advantage (Y2)	→	*Tourism Sustainability* (Y7)	0,236	0,080	2,953	0,003*	Significant
Marketing Performance (Y3)	→	*Strategy Management Organization* (Y5)	0,236	0,082	2,883	0,004*	Significant
Marketing Performance (Y3)	→	*Tourism Performance* (Y6)	0,337	0,092	3,669	0,000*	Significant
Marketing Performance (Y3)	→	*Tourism Sustainability* (Y7)	0,201	0,061	3,279	0,001*	Significant
Marketing Capabilities (Y4)	→	*Strategy Management Organization* (Y5)	0,033	0,080	0,418	0,676^{ns}	Not Significant
Marketing Capabilities (Y4)	→	*Tourism Performance* (Y6)	0,277	0,055	5,001	0,000*	Significant
Marketing Capabilities (Y4)	→	*Tourism Sustainability* (Y7)	0,039	0,092	0,423	0,672^{ns}	Not Significant
Market Orientation (Y1)	→	Competitive Advantage (Y2)	0,270	0,068	3,942	0,000*	Significant
Competitive Advantage (Y2)	→	Market Orientation (Y1)	0,310	0,068	4,536	0,000*	Significant
Competitive Advantage (Y2)	→	Marketing Performance (Y3)	0,224	0,057	3,949	0,000*	Significant
Marketing Performance (Y3)	→	Competitive Advantage (Y2)	0,340	0,095	3,564	0,000*	Significant
Marketing Performance (Y3)	→	Marketing Capabilities (Y4)	0,275	0,092	2,992	0,003*	Significant
Marketing Capabilities (Y4)	→	Marketing Performance (Y3)	0,234	0,081	2,904	0,004*	Significant

Source: Research Data (2025)

Information:

* = significant at $\alpha = 0{,}05$

ns = not significant

Based on the results of the hypothesis testing in Table 29, it can be seen that of a number of relationships between the variables tested, most showed a significant influence, while several others were not significant.

The following table presents the numerical results of the indirect effect hypothesis test. The information displayed includes the variable pairs with the mediating paths, the indirect path coefficient values, and the significance level (*p-value*). These results provide empirical

evidence regarding the role of mediating variables in explaining the relationships between constructs, while also reinforcing the statistical and visual findings described previously.

Table 2 . Indirect Effect Hypothesis Test

Influence between variables					Path Coefficient	SE	CR	*P-values*	Information
Exogenous Variables	→	***Intervening* Endogenous Variables**	→	**Pure Endogenous Variables**					
Culture (X1)	→	Market Orientation (Y1)	→	*Strategy Management Organization* (Y5)	0.059	0.019	3,160	0.002	Significant
Culture (X1)	→	Market Orientation (Y1)	→	*Tourism Performance* (Y6)	0.039	0.011	3,529	0,000	Significant
Culture (X1)	→	Market Orientation (Y1)	→	*Tourism Sustainability* (Y7)	0.059	0.015	3,952	0,000	Significant
Quality of Life (X2)	→	Market Orientation (Y1)	→	*Strategy Management Organization* (Y5)	0.031	0.013	2,321	0.020	Significant
Quality of Life (X2)	→	Market Orientation (Y1)	→	*Tourism Performance* (Y6)	0.020	0.016	1,234	0.217	Not Significant
Quality of Life (X2)	→	Market Orientation (Y1)	→	*Tourism Sustainability* (Y7)	0.030	0.011	2,720	0.007	Significant
Entrepreneurial Orientation (X3)	→	Market Orientation (Y1)	→	*Strategy Management Organization* (Y5)	0.057	0.012	4,570	0,000	Significant
Entrepreneurial Orientation (X3)	→	Market Orientation (Y1)	→	*Tourism Performance* (Y6)	0.038	0.016	2,382	0.017	Significant
Entrepreneurial Orientation (X3)	→	Market Orientation (Y1)	→	*Tourism Sustainability* (Y7)	0.056	0.012	4,748	0,000	Significant
Culture (X1)	→	Competitive Advantage (Y2)	→	*Strategy Management Organization* (Y5)	0.007	0.010	0.644	0.519	Not Significant
Culture (X1)	→	Competitive Advantage (Y2)	→	*Tourism Performance* (Y6)	0.009	0.013	0.663	0.507	Not Significant
Culture (X1)	→	Competitive Advantage (Y2)	→	*Tourism Sustainability* (Y7)	0.007	0.011	0.684	0.494	Not Significant
Quality of Life (X2)	→	Advantage (Y2)	→	*Strategy Management Organization* (Y5)	0.035	0.010	3,439	0.001	Significant
Quality of Life (X2)	→	Competitive Advantage (Y2)	→	*Tourism Performance* (Y6)	0.045	0.012	3,629	0,000	Significant
Quality of Life (X2)	→	Competitive Advantage	→	*Tourism Sustainability*	0.038	0.017	2,199	0.028	Significant

Influence between variables					Path Coefficient	SE	CR	*P-values*	Information
Exogenous Variables	→	***Intervening* Endogenous Variables**	→	**Pure Endogenous Variables**					
		(Y2)		(Y7)					
Entrepreneurial Orientation (X3)	→	Competitive Advantage (Y2)	→	*Strategy Management Organization* (Y5)	0.049	0.017	2,914	0.004	Significant
Entrepreneurial Orientation (X3)	→	Competitive Advantage (Y2)	→	*Tourism Performance* (Y6)	0.064	0.015	4,206	0,000	Significant
Entrepreneurial Orientation (X3)	→	Competitive Advantage (Y2)	→	*Tourism Sustainability* (Y7)	0.055	0.012	4,451	0,000	Significant
Culture (X1)	→	Marketing Performance (Y3)	→	*Strategy Management Organization* (Y5)	0.008	0.016	0.493	0.622	Not Significant
Culture (X1)	→	Marketing Performance (Y3)	→	*Tourism Performance* (Y6)	0.012	0.018	0.628	0.530	Not Significant
Culture (X1)	→	Marketing Performance (Y3)	→	*Tourism Sustainability* (Y7)	0.007	0.016	0.436	0.663	Not Significant
Quality of Life (X2)	→	Marketing Performance (Y3)	→	*Strategy Management Organization* (Y5)	0.052	0.013	4,124	0,000	Significant
Quality of Life (X2)	→	Marketing Performance (Y3)	→	*Tourism Performance* (Y6)	0.074	0.013	5,903	0,000	Significant
Quality of Life (X2)	→	Marketing Performance (Y3)	→	*Tourism Sustainability* (Y7)	0.044	0.014	3,081	0.002	Significant
Entrepreneurial Orientation (X3)	→	Marketing Performance (Y3)	→	*Strategy Management Organization* (Y5)	0.014	0.017	0.808	0.419	Not Significant
Orientation (X3)	→	Performance (Y3)	→	*Tourism Performance* (Y6)	0.020	0.015	1,351	0.177	Not Significant
Entrepreneurial Orientation (X3)	→	Marketing Performance (Y3)	→	*Tourism Sustainability* (Y7)	0.012	0.019	0.610	0.542	Not Significant
Culture (X1)	→	Marketing Capabilities (Y4)	→	*Strategy Management Organization* (Y5)	0.009	0.014	0.682	0.495	Not Significant
Culture (X1)	→	Marketing Capabilities (Y4)	→	*Tourism Performance* (Y6)	0.079	0.010	7,549	0,000	Significant
Culture (X1)	→	Marketing Capabilities (Y4)	→	*Tourism Sustainability* (Y7)	0.011	0.018	0.600	0.548	Not Significant
Quality of Life (X2)	→	Marketing Capabilities	→	*Strategy Management*	0.007	0.015	0.455	0.649	Not Significant

Influence between variables					Path Coefficient	SE	CR	*P-values*	Information
Exogenous Variables	→	***Intervening* Endogenous Variables**	→	**Pure Endogenous Variables**					
		(Y4)		*Organization* (Y5)					
Quality of Life (X2)	→	Marketing Capabilities (Y4)	→	*Tourism Performance* (Y6)	0.056	0.012	4,764	0,000	Significant
Quality of Life (X2)	→	Marketing Capabilities (Y4)	→	*Tourism Sustainability* (Y7)	0.008	0.011	0.689	0.491	Not Significant
Entrepreneurial Orientation (X3)	→	Marketing Capabilities (Y4)	→	*Strategy Management Organization* (Y5)	0.005	0.014	0.333	0.739	Not Significant
Entrepreneurial Orientation (X3)	→	Marketing Capabilities (Y4)	→	*Tourism Performance* (Y6)	0.039	0.011	3,722	0,000	Significant
Entrepreneurial Orientation (X3)	→	Marketing Capabilities (Y4)	→	*Tourism Sustainability* (Y7)	0.006	0.015	0.373	0.709	Not Significant

Source: Research Data (2025)
Note: * = significant at$\alpha = 0{,}05$
ns = not significant

Based on the results of the indirect influence hypothesis testing in Table 30, it can be seen that of the 36 hypotheses tested, 25 were proven to be significant and 11 were not significant.

2. *R-squared*

The coefficient of determination (*R-Squared*) is used to determine how much of the variability of an endogenous variable can be explained by the exogenous variables in the model. *R-Squared values* range from 0 to 1, with higher values indicating a greater proportion of the variation in the endogenous variable that can be explained by the model. In this study, the *R-Squared measurement was used to evaluate the strength of the model in explaining various key variables, such as market orientation, competitive advantage, marketing performance, and tourism sustainability. High R-Squared* values for several variables indicate that the model has good explanatory power and can be relied upon to predict the influence between variables. R-Squared is indeed the main explanatory measure in PLS-SEM to assess the model's ability to empirically explain latent construct variance (Suhartanto et al., 2020). The coefficient of determination values for each variable can be seen in Table 7 below.

a. Batu City

The R-squared test in Batu City examines the extent to which the independent variables explain the variation in the dependent variable. The R-squared value provides an overview of the model's predictive power, with a higher value indicating a greater proportion of the dependent variable's variance that can be explained by the independent variable. The results of the R-squared test in Batu City are shown in the following table, which contains the R-squared values for each research variable.

Table 3. Results of the Determination Coefficient (R-Squared) of Batu City

Variables	*R-Squared*
Market Orientation (Y1)	0.795
Competitive Advantage (Y2)	0.761
Marketing Performance (Y3)	0.795
Marketing Capabilities (Y4)	0.751
Strategy Management Organization (Y5)	0.690
Tourism Performance (Y6)	0.676
Tourism Sustainability (Y7)	0.669

Source: Processed research data, (2025

Based on the analysis results, the coefficient of determination (*R-Squared*) for the Market Orientation variable (Y1) of 0.795 indicates that approximately 79.5% of the variation in the Y1 variable can be explained by the independent variables that influence it (X1, X2, X3). This indicates that the model has a very strong explanatory ability for Y1. For the Competitive Advantage variable (Y2), the *R-Squared value* of 0.761 indicates that the model is able to explain approximately 76.1% of its variation by the variables that influence it (X1, X2, X3, Y1, Y3), so it is included in the very strong category. The Marketing Performance variable (Y3) also has a high *R-Squared value* , namely 0.795, indicating that approximately 79.5% of the variation in Y3 can be explained by the variables that influence it (X1, X2, X3, Y2, Y4). This makes Y3 one of the variables with the strongest level of explanation in the model. Meanwhile, the Marketing Capability variable (Y4) obtained an *R-Squared value* of 0.751, which means that 75.11% of the variation in Y4 can be explained by the variables that influence it (X1, X2, X3, Y3), so it is included in the very strong category.

Strategy Management Organization variable (Y5) has an *R-Squared value* of 0.690, indicating that approximately 69% of its variance can be explained by the variables that influence it (Y1, Y2, Y3, Y4). This indicates that the relationship between variables in the model is relatively strong. For the *Tourism Performance variable* (Y6), an *R-Squared value* of 0.676 indicates that approximately 67.6% of the variation in Y6 is successfully explained by the variables that influence it (Y1, Y2, Y3, Y4), which means the model has a fairly strong explanatory ability although there is still room for improvement. Finally, the *Tourism Sustainability variable* (Y7) has an *R-Squared value* of 0.669, which means that approximately 66.90% of its variation can be explained by the variables that influence it (Y1, Y2, Y3, Y4). This value is still in the strong category.

Overall, the model in Batu City successfully explains variation in most endogenous variables. Variables Y1, Y2, and Y3 have the highest explanatory power, while variables Y6 and Y7 have relatively lower explanatory power, although they remain in the strong category.

Discussion:

The results of this study have strategic applications in developing policies and programs to strengthen the tourism industry, particularly in the East Java region, which is based on small and medium enterprises (SMEs). Using a Systematic Literature Review (SLR) approach and bibliometric data processing, this study successfully identified three main variables that contribute significantly to the sustainability of the tourism sector: Entrepreneurial Orientation, Marketing Capability, and Tourism Sustainability. These three variables serve as the basis for

building a conceptual model to design intervention strategies relevant to the needs of local tourism industry players.

Practical applications of the resulting model can be implemented through entrepreneurship training programs for tourism SMEs, strengthening digital marketing capabilities, and mentoring in implementing sustainable tourism principles. For example, dominant indicators such as risk tolerance in entrepreneurial orientation and brand management in marketing capabilities can be focused on in integrated training modules. Local governments and supporting institutions such as tourism offices and cooperatives can utilize these findings to develop training curricula based on actual needs and field data.

Furthermore, findings from the Importance Performance Analysis (IPA) provide priority direction for policy implementation. Indicators in Quadrant II, i.e., those with high importance but low performance, can be the focus of improvement through budget allocation and specific interventions, such as improving the quality of life for business actors and enhancing the performance of tourist destinations. Meanwhile, indicators in Quadrant I should be maintained and used as benchmarks for other regions. Therefore, this approach allows policymakers to segment strategies based on their urgency and impact on the tourism sector.

As a further contribution, the results of this study open up the possibility of implementing a data-driven performance evaluation system called PARIS (Performance Analysis and Recommendation for Integrated Strategy). The use of PARIS will enable evidence-based policymaking, which can increase the accountability and effectiveness of public interventions in the tourism sector. This system can be used as an evidence-based decision-making tool to assess the performance of tourism destinations and develop targeted policy recommendations. With the integration of data mining technology, local governments can monitor the dynamics of the tourism sector regularly and adaptively.

5. Conclusion

Overall, the application of the results of this study provides a strategic framework that can be applied by various stakeholders, from local governments and SMEs to training and educational institutions. The resulting model and findings can be used as a guide in formulating data-driven policies, improving the effectiveness of intervention programs, and ensuring that tourism sector development is not only economically competitive but also socially and environmentally sustainable. Thus, these findings are not only relevant to the East Java context but also have the potential to be replicated in other regions in Indonesia, with adjustments to local characteristics as the basis for strategic decision-making in strengthening the national tourism industry.

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