Edelweiss Applied Science and Technology
ISSN: 2576-8484
Vol. 9, No. 9, 1309-1323
2025
Publisher: Learning Gate
DOI: 10.55214/2576-8484.v9i9.10131

Penta-helix collaboration, tourism development, and community welfare: A case study of Alas Kedaton, Tabanan

Putu Krisna Adwitya Sanjaya[1*], Made Kembar Sri Budhi[2], Ida Bagus Putu Purbadharmaja[3], I Nyoman Mahaendra Yasa[4]
[1,2,3,4]Faculty of Economics and Business Udayana University, Bali, Indonesia; krisnasanjaya@unud.ac.id (P.K.A.S.).

Abstract: This study aims to analyze the influence of penta-helix elements and tourism development performance on community welfare at the Alas Kedaton Tourist Attraction in Kukuh Village, Tabanan. A mixed-method approach with an explanatory sequential design was employed, beginning with a survey of 148 residents from 12 traditional hamlets, followed by in-depth interviews and focus group discussions with 10 key stakeholders. Data analysis was conducted using a quantitative descriptive approach and Structural Equation Modeling with Partial Least Squares software. The findings reveal a significant influence of government, private sector, community, academic, and media roles on tourism development performance. The study also finds a significant influence of these five roles and tourism development performance on community welfare. Furthermore, tourism development performance is identified as a mediating variable in the relationship between penta-helix elements and community welfare. The practical implication of this research emphasizes the importance of synergy among penta-helix elements to enhance tourism development performance and improve community welfare. Therefore, it is essential for internal stakeholders to foster and strengthen penta-helix collaboration as a strategy to accelerate the recovery of the Alas Kedaton Tourist Attraction and achieve community prosperity.

Keywords: *Community welfare, Penta-helix, Stakeholders, Tourism.*

1. Introduction

Community welfare refers to a condition that reflects the standard of living of a population [1]. It is the sum of the choices available to individuals and the freedom to choose among them [2]. Welfare reaches its highest level when people can read, have adequate food, and exercise their right to vote. Tourism, as a driver of global economic growth, plays a vital role in improving human quality of life worldwide, including in less developed countries [3]. The sector contributes significantly to foreign exchange earnings, economic growth, job creation, and poverty alleviation [4].

Research by Egbali, et al. [5] and Syahadat [6] emphasizes that the primary goal of tourism development is to foster economic and social progress in tourist destinations. In many developed countries, rural tourism villages serve as important economic engines for rural regions [7]. Positive effects of tourism include increased income, job opportunities, and new economic resources for local communities; a reduction in social disparities; preservation of regional populations and diversity; revitalization of local culture; enhancement of national pride and self-confidence; and conservation of natural and cultural resources [8]. However, tourism can also have negative effects, such as local price inflation, decreased community participation due to being preoccupied with tourism activities, and environmental damage from the construction of accommodation facilities [9].

Bali Province is widely recognized as both a national and international tourism benchmark, often described as a world-class destination [10]. Tourism is the province's main economic sector, yet the COVID-19 pandemic severely disrupted its performance targets [11]. In 2020, both domestic and

History: Received: 30 July 2025; Revised: 18 August 2025; Accepted: 22 August 2025; Published: 22 September 2025
* Correspondence: krisnasanjaya@unud.ac.id

international tourist arrivals dropped sharply. As shown in Figure 1, domestic arrivals contracted by 56.41 percent in 2020 and a further 6.41 percent in 2021. International arrivals declined by 99 percent, from 1,069,473 visitors in 2020 to only 51 in 2021. Tourist numbers began to recover in 2022, with international arrivals growing by 144.61 percent and domestic arrivals by 22.67 percent in 2023. In 2024, arrivals continued to increase, although at a slower pace, with growth of 20.10 percent for international tourists and 2.46 percent for domestic tourists.

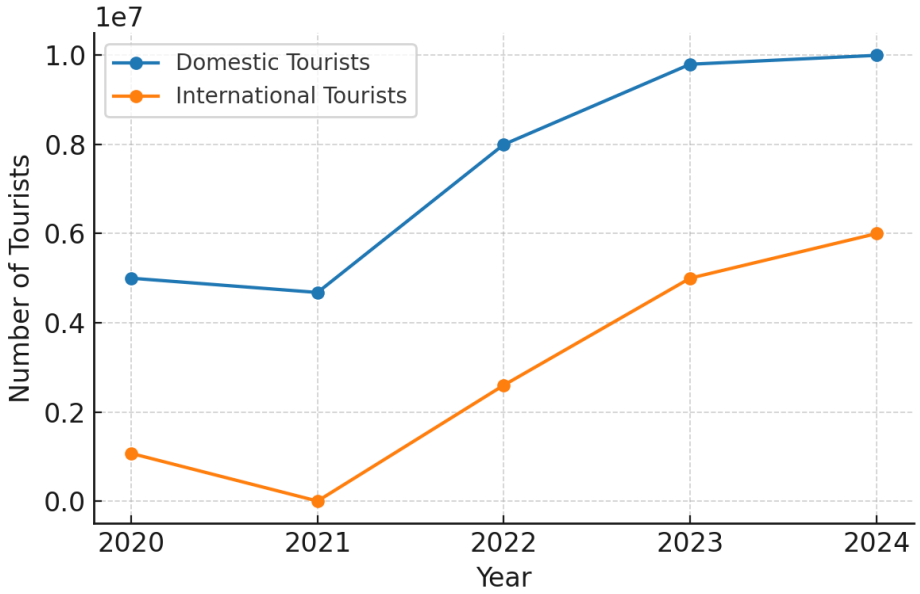

Figure 1.
Tourist Arrivals in Bali (2020-2024).

Kukuh Village has been designated as a tourist village. Before the pandemic, the Alas Kedaton Tourist Attraction significantly contributed to local welfare. Tourism revenue was used to fund religious ceremonies at 58 temples in the village, provide infrastructure support to temple caretakers, offer assistance to elderly residents who could no longer work, supply food and healthcare for the monkeys inhabiting the Alas Kedaton Forest, and award scholarships to high-achieving students. These contributions indicate that, prior to the pandemic, Kukuh Village enjoyed relatively high welfare levels, with minimal unemployment and poverty.

The COVID-19 pandemic forced the temporary closure of Kukuh Village, sharply reducing tourist visits and directly affecting the livelihoods of resident's dependent on tourism. Many local businesses, such as food stalls, souvenir shops, and other tourism-related services, experienced reduced operating hours or early closures due to the lack of visitors, resulting in significant income losses.

Strategically located along Bali's "golden triangle" route, which connects Ulun Danu Beratan, Bedugul Botanical Garden, and Tanah Lot, Alas Kedaton nevertheless receives far fewer visitors than these other destinations. In 2023, domestic visitation rates were 16.28 percent for Ulun Danu Beratan, 22.70 percent for Bedugul Botanical Garden, 60.52 percent for Tanah Lot, and only 0.50 percent for Alas Kedaton. For international tourists, the respective shares were 25.42 percent, 2.18 percent, 70.32 percent, and 2.08 percent [12]. This disparity reflects unequal tourism-driven welfare benefits among local communities.

Given tourism's previous contributions to community welfare, it is critical that all stakeholders, including the government, the private sector, local communities, customary villages, academia, and media, work collaboratively to restore and enhance tourism development [13]. The penta-helix model,

Edelweiss Applied Science and Technology
ISSN: 2576-8484
Vol. 9, No. 9: 1309-1323, 2025
DOI: 10.55214/2576-8484.v9i9.10131

which integrates these five stakeholder groups, offers a strategic framework for fostering such synergy. Strengthened collaboration among these actors is expected to boost both tourism performance and community welfare in Kukuh Village. This study aims to examine the influence of penta-helix elements on tourism development and, in turn, on community welfare. The findings are intended to serve as a reference for policymakers and stakeholders in designing development plans and regulations to improve welfare in Kukuh Tourism Village, Marga District, Tabanan Regency.

2. Literature Review

2.1. Welfare Theory

Community welfare refers to a condition that reflects the living standards of the population [14]. According to Wilson and Wilson [2] community welfare is the sum of the options available to individuals and the freedom to choose among them. Welfare reaches its highest level when people are able to read, have access to sufficient food, and can exercise their right to vote. Chambers and Echenique [15] describe community welfare as a measure of the outcomes of societal development in achieving a better quality of life. This includes improving capabilities and ensuring equitable distribution of basic needs such as food, housing, healthcare, and protection. It also involves raising living standards, increasing income levels, expanding access to education, enhancing awareness of cultural and humanitarian values, broadening the economic scale, and providing social options for individuals and nations.

Welfare can be understood as the fulfillment of all individual needs, whether social, material, or spiritual, as well as the sense of security gained through interactions free from external pressure. It encompasses the satisfaction of basic human needs such as clothing, food, and shelter, as well as other necessities including education, healthcare, social interaction, and the ability to engage in spiritual activities according to one's beliefs. Welfare also implies a state of security and happiness experienced by individuals in carrying out their activities, free from anxiety about future conditions.

2.2. Tourism Theory

In modern terms, tourism is a phenomenon of contemporary life that arises from the need for health, a change of environment, a conscious appreciation of natural beauty, and the enjoyment of the natural world. It is also driven by increased interaction between nations and social classes as a result of the expansion of trade and the advancement of transportation systems [16]. Tourism has increasingly been recognized as a driver of economic growth and as a source of employment opportunities in many developing countries. In several African nations, tourism has been shown to contribute to poverty reduction [4].

However, the success of tourism sector development largely depends on the role of government policies that actively establish regulations to guide tourism growth [17]. Key elements of tourism include travel undertaken by individuals or groups from their place of residence to another location on a temporary basis. The purpose of such travel is to seek recreation, personal development, or to learn about the unique attractions of the destination. During their stay, tourists do not earn income from the location visited; rather, they participate as consumers [18].

2.3. Penta-Helix Concept

The penta-helix concept in Indonesia began to develop in 2016 through the initiative of the Minister of Tourism, Arief Yahya, with the GBCAM synergy framework, which stands for government, business, community, academia, and media. These five elements were later formalized as one of the models for tourism development [19]. This concept was established in the Regulation of the Minister of Tourism of the Republic of Indonesia Number 14 of 2016 on Guidelines for Sustainable Tourism Destinations. The penta-helix model illustrates the integration and collaboration of these five key stakeholders.

Edelweiss Applied Science and Technology
ISSN: 2576-8484
Vol. 9, No. 9: 1309-1323, 2025
DOI: 10.55214/2576-8484.v9i9.10131

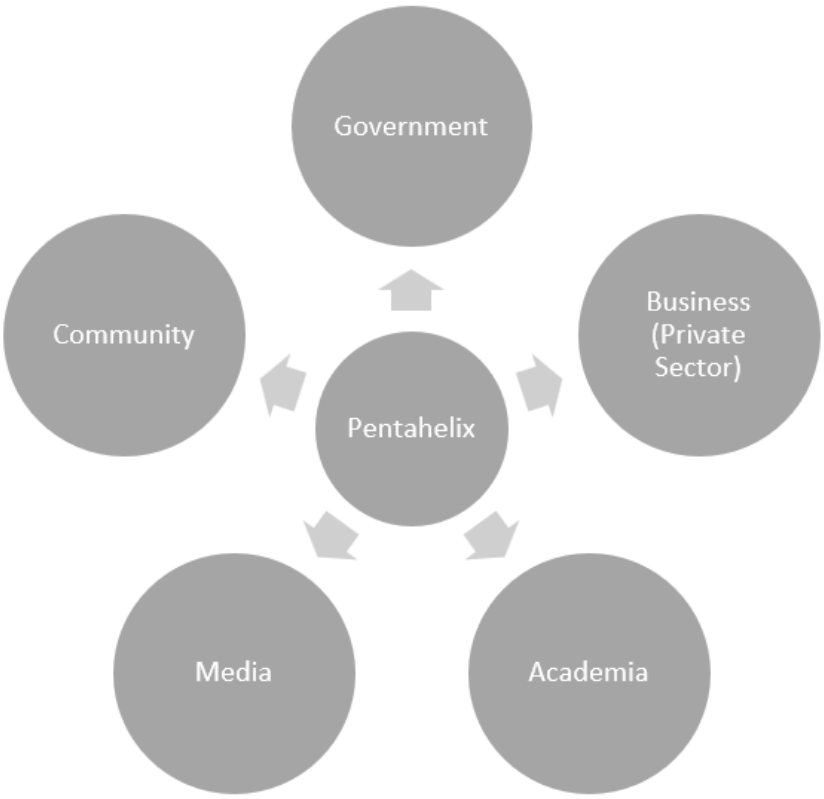

Figure 2.
Pentahelix Model.

According to Afandi, et al. [20] the penta-helix model serves as a reference for fostering synergy among relevant institutions to work together as effectively as possible to achieve common objectives. Penta-helix collaboration plays an important role in supporting shared innovation goals and contributes to the socio-economic advancement of a region.

The government acts as both regulator and controller, holding authority and responsibility in developing tourism destinations [21]. This role includes activities such as planning, implementation, monitoring, control, promotion, budget allocation, licensing, program creation, legislation, knowledge development, public innovation policies, support for innovation networks, and public-private partnerships. The business sector serves as an enabler by providing infrastructure and supporting changes in human resources through collaborative governance, as well as functioning as a budget promoter by contributing added value or financial resources to support tourism sector development. Academia plays the role of concept developer, which includes standardizing processes, certifying, and improving human resource skills [22]. Academia also serves as a knowledge source, applying relevant concepts and the latest theories to enhance competitiveness in the targeted sector. Media functions as an expander by supporting publicity, promotion, and brand image building. It is a highly influential element in tourism development, particularly in the modern era where technology and media dominate, shaping public discourse and generating significant impacts on tourism [23]. The community acts as an accelerator, consisting of groups that share similar interests and are directly relevant to the business being developed [24].

Edelweiss Applied Science and Technology
ISSN: 2576-8484
Vol. 9, No. 9: 1309-1323, 2025
DOI: 10.55214/2576-8484.v9i9.10131

3. Method

3.1. Research Location

The research was conducted in Kukuh Tourism Village, Tabanan Regency. This location was selected based on several considerations. Kukuh Tourism Village has significant potential as it lies on a connecting route between major tourist attractions such as Lake Beratan, Bedugul, and Tanah Lot. The village offers unique natural resources, high accessibility, and adequate tourism facilities. Its residents have positioned themselves as aware and knowledgeable actors, shaped by ideas and initiatives that have emerged and evolved within the community. The village community demonstrates independence in managing tourism resources, as reflected in their active participation in decision-making. Moreover, the community has already benefited from tourism resource management in the area.

The focus of the research is the Alas Kedaton Tourist Attraction. This site was chosen because of the high level of community engagement in tourism management after the pandemic and the relatively slow pace of tourism recovery compared to other tourist attractions in Tabanan.

3.2. Scope of the Research

The population of this study comprises residents of Kukuh Village in Marga District, totaling 5,712 individuals from 1,166 households across twelve traditional hamlets *(banjar adat)*. Based on this, the target population for the research is the 1,166 households. The sample was drawn using probability sampling, ensuring that each population member had an equal chance of being selected. The sampling process followed a proportional sampling method, with the number of respondents from each hamlet determined according to its proportion within the population. The selection of respondents within each proportionate group was carried out through purposive sampling, which involves intentionally selecting individuals who meet predetermined criteria. The criteria for inclusion were residence in Kukuh Village, active involvement in tourism activities, and familiarity with tourism conditions in Kukuh Tourism Village.

3.3. Identification of Research Variables

The study includes two types of variables: exogenous and endogenous. Exogenous variables, also known as independent variables, are those that influence other variables. Endogenous variables, also referred to as dependent variables, are influenced by other variables within the model. Based on the conceptual framework, this study includes seven variables. The five exogenous variables are Government Role (X1), Private Sector Role (X2), Community Role (X3), Academic Role (X4), and Media Role (X5). The mediating variable is Tourism Development Performance (Y1). The endogenous variable is Community Welfare (Y2). The constructs and indicators for each variable are presented in Table 1.

Edelweiss Applied Science and Technology
ISSN: 2576-8484
Vol. 9, No. 9: 1309-1323, 2025
DOI: 10.55214/2576-8484.v9i9.10131

Table 1.
Operational Variables.

No.	Variable Name	Indicators
1	Government Role (X1)	X1.1 Regulator
		X1.2 Driver of initiatives
		X1.3 Facilitator
		X1.4 Oversight and monitoring
2	Private Sector Role (X2)	X2.1 Provider of tourism products and services
		X2.2 Innovator
		X2.3 Financial contributor
		X2.4 Provider of tourism amenities
3	Community Role (X3)	X3.1 Environmental conservation
		X3.2 Development of creative products
		X3.3 Maintenance of security and order
		X3.4 Social cohesion and unity
4	Academic Role (X4)	X4.1 Knowledge transfer
		X4.2 Motivation and capacity building
		X4.3 Concept development
		X4.4 Provision of skilled workforce
5	Media Role (X5)	X5.1 Communication linkage
		X5.2 Marketing platform
		X5.3 Social interaction platform
6	Tourism Development Performance (Y1)	Y1.1 Growth in employment opportunities
		Y1.2 Increase in tourist arrivals
		Y1.3 Productivity
		Y1.4 Timeliness
		Y1.5 Improved service quality
7	Community Welfare (Y2)	Y2.1 Income
		Y2.2 Fulfillment of basic needs
		Y2.3 Physical health
		Y2.4 Higher educational attainment
		Y2.5 Savings ownership

3.4. Data Analysis Techniques

This study employed Structural Equation Modeling (SEM) using the Partial Least Squares (PLS) component-based approach to address the first, second, and third research questions. The PLS-SEM analysis, which includes the measurement of the path diagram, was conducted to identify the relationships between various variables and their respective indicators.

The first step in the data analysis involved designing the structural model (inner model) and the measurement model (outer model). The structural or inner model represents the correlations between latent variables based on substantive theory. The design of the structural model is guided by the research questions or hypotheses formulated in the study. The measurement or outer model defines the correlations between groups of indicators and the corresponding latent variables. The measurement model design specifies the nature of the indicators for each latent variable.

The analysis process consisted of three main stages. First, the structural and measurement models were designed. The structural model illustrates the correlations among latent variables based on established theory, while the measurement model defines the relationships between indicator groups and each latent variable.

Second, the model was evaluated using the goodness of fit (GoF) index. This evaluation aimed to validate the structural model as a whole. The GoF index serves as a single measure to validate the combined performance of the measurement model and the structural model. In Smart PLS analysis, this evaluation involves two key stages, namely the assessment of the measurement model and the structural model.

Edelweiss Applied Science and Technology
ISSN: 2576-8484
Vol. 9, No. 9: 1309-1323, 2025
DOI: 10.55214/2576-8484.v9i9.10131

Third, hypothesis and mediation testing were conducted. Hypothesis testing in Smart PLS involved evaluating the inner model by examining the magnitude of the structural path coefficients and the t-statistics obtained through the bootstrapping method. In addition to presenting direct effects, PLS also provides output on indirect effects among the research variables. Mediation testing was carried out to examine the mediating role of specific variables in the model.

4. Analysis

This study applied a two-stage approach to assess the model before hypothesis testing, aiming to verify the validity and reliability of the research model. The first stage involved analyzing convergent validity, followed by an assessment of discriminant validity.

4.1. Measurement Model

The outer model test was conducted to ensure that the research indicators were suitable for their role in measuring the research variables. A model is considered valid if it meets the following criteria: (1) All indicator loadings must exceed 0.50; (2) The Composite Reliability (CR) must exceed 0.80; (3) The Average Variance Extracted (AVE) for each construct must be greater than 0.50.

Table 2.
Measurement Model Results.

Construct	Indicator	Outer Loading	Composite Reliability	AVE
Role of Government (X1)	X1.1	0.958	0.937	0.842
	X1.2	0.911		
	X1.3	0.902		
	X1.4	0.899		
Role of Private Sector (X2)	X2.1	0.828	0.877	0.732
	X2.2	0.841		
	X2.3	0.836		
	X2.4	0.915		
Role of Community (X3)	X3.1	0.752	0.738	0.562
	X3.2	0.697		
	X3.3	0.849		
	X3.4	0.736		
Role of Academia (X4)	X4.1	0.744	0.796	0.593
	X4.2	0.820		
	X4.3	0.783		
	X4.4	0.730		
Role of Media (X5)	X5.1	0.692	0.728	0.604
	X5.2	0.749		
	X5.3	0.878		
Tourism Development Performance (Y1)	Y1.1	0.850	0.880	0.689
	Y1.2	0.913		
	Y1.3	0.877		
	Y1.4	0.883		
	Y1.5	0.585		
Community Welfare (Y2)	Y2.1	0.569	0.796	0.569
	Y2.2	0.517		
	Y2.3	0.858		
	Y2.4	0.875		
	Y2.5	0.889		

Based on Table 2, all outer loading values exceed 0.50, ranging from 0.517 to 0.958, which falls within the recommended threshold. The Composite Reliability (CR) values range from 0.729 to 0.937, all above 0.70, indicating that each construct demonstrates good internal consistency. The Average

Edelweiss Applied Science and Technology
ISSN: 2576-8484
Vol. 9, No. 9: 1309-1323, 2025
DOI: 10.55214/2576-8484.v9i9.10131

Variance Extracted (AVE) values are also above 0.50, ranging from 0.562 to 0.842. These results indicate that the measurement model in this study possesses good convergent validity.

To evaluate discriminant validity, the cross-loading values of each indicator must be higher for its associated construct than for other constructs. The cross-loading results for the indicators in relation to the constructs of Role of Government (X1), Role of Private Sector (X2), Role of Community (X3), Role of Academia (X4), Role of Media (X5), Tourism Development Performance (Y1), and Community Welfare (Y2) are presented in Table 3.

Table 3.
Cross-Loading of Indicators with Their Respective Constructs.

Indicator	Gov.	Private Sec.	Community	Academia	Media	Tourism Perf.	Welfare
X1.1	0.958	0.476	0.445	0.477	0.433	0.416	0.327
X1.2	0.911	0.359	0.426	0.498	0.374	0.372	0.401
X1.3	0.902	0.409	0.413	0.445	0.389	0.358	0.350
X1.4	0.899	0.401	0.406	0.495	0.424	0.431	0.298
X2.1	0.454	0.828	0.460	0.492	0.396	0.358	0.349
X2.2	0.390	0.841	0.469	0.380	0.326	0.384	0.350
X2.3	0.306	0.836	0.534	0.371	0.202	0.302	0.442
X2.4	0.387	0.915	0.619	0.472	0.379	0.389	0.425
X3.1	0.366	0.251	0.725	0.372	0.333	0.487	0.496
X3.2	0.396	0.381	0.679	0.481	0.369	0.415	0.462
X3.3	0.373	0.509	0.849	0.417	0.286	0.458	0.778
X3.4	0.262	0.254	0.736	0.302	0.249	0.350	0.661
X4.1	0.396	0.272	0.204	0.744	0.635	0.355	0.153
X4.2	0.450	0.339	0.267	0.820	0.765	0.379	0.215
X4.3	0.438	0.434	0.311	0.783	0.708	0.347	0.229
X4.4	0.351	0.430	0.594	0.730	0.368	0.512	0.623
X5.1	0.402	0.283	0.266	0.679	0.692	0.279	0.125
X5.2	0.453	0.423	0.326	0.799	0.749	0.363	0.241
X5.3	0.294	0.259	0.347	0.485	0.878	0.776	0.412
Y1.1	0.322	0.335	0.332	0.370	0.585	0.850	0.369
Y1.2	0.358	0.405	0.523	0.488	0.594	0.913	0.554
Y1.3	0.370	0.428	0.430	0.411	0.550	0.877	0.463
Y1.4	0.328	0.284	0.359	0.515	0.787	0.883	0.420
Y1.5	0.389	0.272	0.671	0.466	0.377	0.585	0.583
Y2.1	0.266	0.328	0.410	0.457	0.437	0.475	0.569
Y2.2	0.222	0.328	0.324	0.317	0.290	0.367	0.517
Y2.3	0.297	0.348	0.743	0.340	0.245	0.469	0.858
Y2.4	0.328	0.408	0.808	0.380	0.280	0.480	0.875
Y2.5	0.304	0.347	0.632	0.393	0.304	0.451	0.889

The results indicate that discriminant validity is satisfied, as each indicator has a higher cross-loading value with its own construct compared to other constructs. For example, the loading factor of X1.1 for the Role of Government construct is 0.958, which is higher than its loadings on the Role of Private Sector (0.476), Role of Community (0.445), Role of Academia (0.477), Role of Media (0.433), Tourism Development Performance (0.416), and Community Welfare (0.327). This confirms that the indicators distinctly measure their intended constructs.

4.2. Structural Measurement

The structural model focuses on the hypothesized correlations or paths between latent variables. The results of the inner model testing are presented in Figure 2.

Edelweiss Applied Science and Technology
ISSN: 2576-8484
Vol. 9, No. 9: 1309-1323, 2025
DOI: 10.55214/2576-8484.v9i9.10131

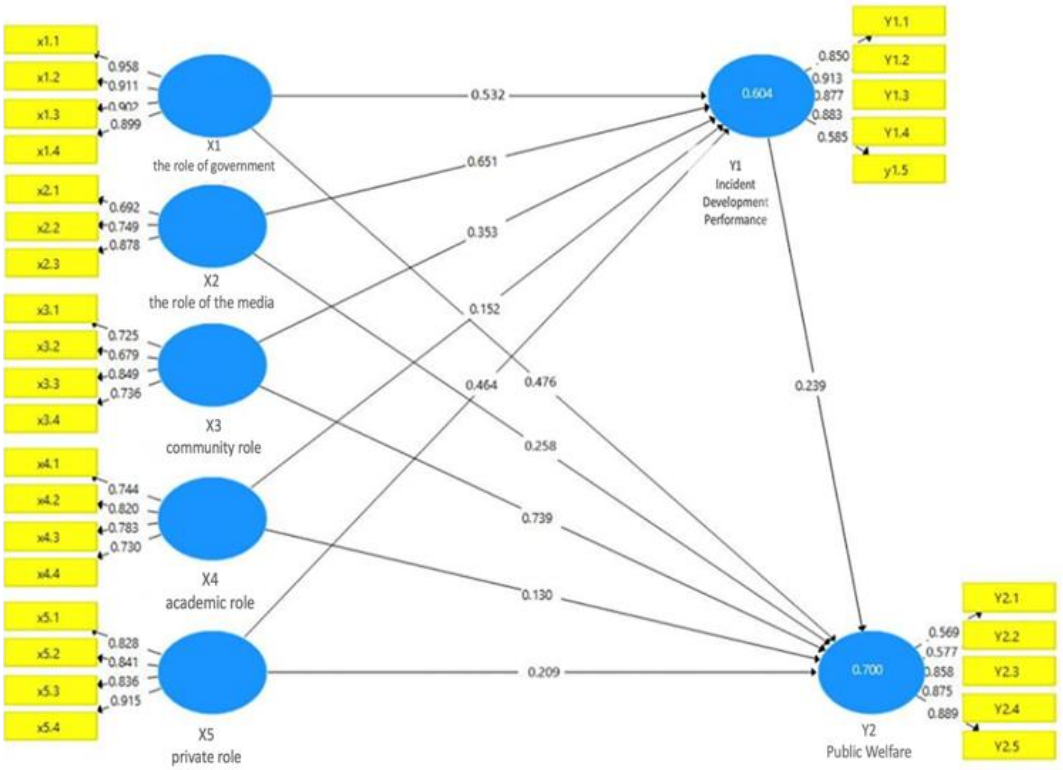

Figure 3.
Structural Model.

The coefficient of determination (R^2) was calculated using all R^2 values in the model. The R^2 for Tourism Development Performance is 0.604, indicating that 60.4 percent of the variance in tourism development performance is explained by the roles of government, private sector, community, academia, and media, with the remaining variance explained by other factors. The R^2 for Community Welfare is 0.700, showing that 70.0 percent of its variance is explained by the roles of government, private sector, community, academia, media, and tourism development performance, while the rest is accounted for by other variables.

According to Haji-Othman, et al. [25] a coefficient of determination is generally considered high if it is 0.20 or above. In this model, the average R^2 value is 0.652, which exceeds 0.20, indicating strong explanatory power. The Goodness of Fit (GoF) index is presented in Table 4.

Table 4.
Goodness of Fit (GoF) Index.

Variable	Communality	R^2
Government Role	0.842	–
Private Sector Role	0.732	–
Community Role	0.562	–
Academic Role	0.593	–
Media Role	0.604	–
Tourism Development Performance	0.689	0.604
Community Welfare	0.569	0.700
Total	4.591	1.304
Average	0.656	0.652
GoF Index	0.653	–

Note: Communality values are derived from AVE. Source: Processed data, 2025.

Edelweiss Applied Science and Technology
ISSN: 2576-8484
Vol. 9, No. 9: 1309-1323, 2025
DOI: 10.55214/2576-8484.v9i9.10131

The GoF index for this research model is 0.653, indicating that the structural model explaining the relationships between variables has a good predictive capability.

The analysis of direct, indirect, and total effects provides insight into the relationships among the latent variables in the study, namely the roles of government, private sector, community, academia, media, tourism development performance, and community welfare. Direct effects are indicated by the coefficients of single-headed arrows in the model. Table 5 presents the results of the path coefficients for the direct relationships.

Table 5.
Path Coefficients (Direct Effects).

Relationship	Coef.	St. Dev.	t-Stat.	p-Value	Note
Government → Tourism Dev. Perf.	0.532	0.119	4.485	0.000	Significant
Private Sector → Tourism Dev. Perf.	0.464	0.118	3.942	0.004	Significant
Community → Tourism Dev. Perf.	0.353	0.079	4.640	0.000	Significant
Academic → Tourism Dev. Perf.	0.152	0.061	2.479	0.017	Significant
Media → Tourism Dev. Perf.	0.651	0.135	4.804	0.000	Significant
Government → Welfare	0.476	0.098	4.880	0.000	Significant
Private Sector → Welfare	0.209	0.096	2.189	0.032	Significant
Community → Welfare	0.739	0.092	8.132	0.000	Significant
Academic → Welfare	0.130	0.056	2.299	0.021	Significant
Media → Welfare	0.258	0.120	2.154	0.024	Significant
Tourism Dev. Perf. → Welfare	0.239	0.056	4.306	0.001	Significant

The results in Table 5 demonstrate that all hypothesized direct relationships are statistically significant, as indicated by p-values below the 0.05 threshold and t-statistics exceeding 1.96. For the effect on tourism development performance (Y1), government role ($\beta = 0.532$, $p < 0.001$), private sector role ($\beta = 0.464$, $p = 0.004$), community role ($\beta = 0.353$, $p < 0.001$), academic role ($\beta = 0.152$, $p = 0.017$), and media role ($\beta = 0.651$, $p < 0.001$) all exert significant positive influences. These results suggest that the active involvement of all five stakeholder groups enhances the quality and effectiveness of tourism development initiatives.

In the case of community welfare (Y2), government role ($\beta = 0.476$, $p < 0.001$), private sector role ($\beta = 0.209$, $p = 0.032$), community role ($\beta = 0.739$, $p < 0.001$), academic role ($\beta = 0.130$, $p = 0.021$), and media role ($\beta = 0.258$, $p = 0.024$) all show significant positive impacts. Furthermore, tourism development performance itself has a significant positive relationship with community welfare ($\beta = 0.239$, $p = 0.001$), highlighting its mediating position in linking stakeholder roles to broader socio-economic benefits. The strong path coefficients, particularly for community role and government role, indicate that these stakeholders play a more substantial part in driving community welfare outcomes compared to others.

Table 6.
Indirect Effects.

Relationship	Coef.	St. dev.	t-stat.	p-Value	Note
Government → Tourism Dev. Perf. → Welfare	0.127	0.045	3.899	0.001	Sig.
Private Sector → Tourism Dev. Perf. → Welfare	0.110	0.047	3.252	0.007	Sig.
Community → Tourism Dev. Perf. → Welfare	0.084	0.041	2.852	0.015	Sig.
Academic → Tourism Dev. Perf. → Welfare	0.036	0.022	2.253	0.042	Sig.
Media Role → Tourism Dev. Perf. → Welfare	0.155	0.095	2.262	0.034	Sig.

The indirect effect results in Table 6 confirm the mediating role of tourism development performance in the relationship between stakeholder roles and community welfare. All five stakeholder groups exert significant indirect influences on community welfare through tourism development

Edelweiss Applied Science and Technology
ISSN: 2576-8484
Vol. 9, No. 9: 1309-1323, 2025
DOI: 10.55214/2576-8484.v9i9.10131

performance, with the largest mediation effect observed for the media role ($\beta = 0.155$, $p = 0.034$) and government role ($\beta = 0.127$, $p = 0.001$). This finding suggests that part of the positive impact of stakeholder involvement on community welfare operates by first improving tourism development performance, which in turn elevates socio-economic conditions.

The statistical significance across all mediation paths supports the theoretical assumption that tourism development serves as a crucial mechanism translating multi-stakeholder engagement into tangible community benefits. This aligns with stakeholder theory, which posits that collaborative participation among diverse actors enhances the overall capacity of tourism destinations to deliver sustainable and inclusive outcomes.

5. Discussion

5.1. The Influence of Penta-Helix Elements on Tourism Development Performance

The government holds responsibility for creating policy frameworks, regulations, and standards that support the growth of the tourism sector. Support from stakeholders in implementing and aligning with government policies is essential [26]. One of the key stakeholders is the private sector, whose role is crucial in the development of tourism amenities. However, the availability of amenities alone is insufficient; active participation from the local community in the tourist attractions being developed is also necessary. The community's role must be accompanied by adequate human resource capabilities. Through the involvement of academics, communities can enhance their capacities through training programs organized by academic institutions. Such training initiatives can improve the skills of tourism practitioners, which in turn positively affects the quality of services provided. Media acts as an expander by playing an important role in promoting tourism through publicity and in shaping brand image [27]. Media can be considered an influential factor in tourism development because it dominates public discourse, meaning that issues raised by media outlets can significantly influence perceptions and generate positive effects in the tourism sector [28].

5.2. Penta-Helix Elements and Tourism Development Performance on Community Welfare

The roles of the government, private sector, community, academics, and media, along with tourism development performance, have a positive and significant effect on community welfare in the Alas Kedaton Tourist Attraction located in Kukuh Tourism Village, Tabanan Regency. When regulations are designed in a participatory manner and in favor of local stakeholders, tourism can truly become a sector that improves community welfare, preserves local culture, and supports sustainable development [29]. Well-planned, participatory, and sustainable amenity development results in improved service quality, higher tourist satisfaction, and ultimately increased income for communities living near tourist destinations [30]. When communities are actively involved and given the opportunity to innovate, local potential can be transformed into an economic strength that boosts community welfare and contributes to the overall growth of the tourism sector. When the role of academics, combining scientific approaches with field practices, is integrated, tourism development can be carried out in a targeted and sustainable manner, ultimately enhancing the welfare of tourism practitioners themselves [31]. Social interactions among tourism actors fostered through media create trust and interest, which eventually lead to increased tourist visits and economic transactions [32]. This increase in visits not only contributes to state revenue through foreign exchange and taxes but also provides direct economic benefits to local communities, particularly tourism practitioners.

5.3. Mediating Role of Tourism Development Performance

The roles of the government, private sector, community, academics, and media affect community welfare through tourism development performance in the Alas Kedaton Tourist Attraction in Kukuh Tourism Village, Tabanan Regency. When regulations are formulated in a participatory, transparent, and locally inclusive manner, the results can be clearly observed in the form of increased tourist arrivals

Edelweiss Applied Science and Technology
ISSN: 2576-8484
Vol. 9, No. 9: 1309-1323, 2025
DOI: 10.55214/2576-8484.v9i9.10131

and improved community welfare. The involvement of the private sector in providing tourism amenities not only meets visitor needs but also serves as a driver of the local economy by creating job opportunities and increasing the income of tourism practitioners [33]. Synergistic collaboration among the government, private sector, and community is essential to ensure that incoming investments truly support inclusive and sustainable regional economic development [34]. The presence of creative communities also generates new employment opportunities, encourages skills regeneration, and strengthens the competitiveness of destinations in both national and international tourism markets. Empowering communities as primary producers in the creative tourism economy is a strategic step toward achieving inclusive and welfare-oriented tourism [35].

Tourism is one of the leading sectors that makes a significant contribution to both national and regional economies [36]. One of the main indicators of success in this sector is the increase in tourist arrivals, both domestic and international [37]. This increase not only impacts state revenue through foreign exchange and taxes but also provides direct economic benefits to local communities, particularly tourism practitioners [38]. Local communities engaged in tourism, such as homestay owners, tour guides, souvenir vendors, food stall operators, local artists, and artisans, are among those who benefit the most from rising tourist numbers [39]. Each tourist brings potential spending that directly flows to various local businesses. The higher the number of tourists, the greater the economic circulation at the local level, creating business opportunities, jobs, and increased income and welfare for the community. Furthermore, the increase in tourist visits motivates communities to enhance service quality, innovate products, and expand market reach through digital media. This momentum contributes to the growth of a creative economy based on local wisdom, strengthening the economic resilience of communities beyond the agricultural sector [40].

In the case of the Alas Kedaton Tourist Attraction, the growth in tourist arrivals is directly proportional to the increase in community income. Tourists visiting the area do not only enjoy the natural attractions and the presence of hundreds of free-roaming monkeys but also purchase local souvenirs, sample traditional cuisine, use local guide services, and take advantage of other local facilities. Community members involved in artisan groups and micro, small, and medium enterprises (MSMEs) directly earn income from these activities. Therefore, the increase in tourist visits has a clear and significant impact on improving community income [41].

6. Conclusion

The findings of this study lead to several key conclusions. The proposed hypotheses as a whole are supported, with results indicating positive and significant effects across all tested relationships. The roles of the government, private sector, community, academics, and media positively and significantly influence tourism development performance at the Alas Kedaton Tourist Attraction in Kukuh Tourism Village, Tabanan. Furthermore, these same roles, along with tourism development performance, have a positive and significant impact on community welfare in the same location. The results also confirm that the roles of the government, private sector, community, academics, and media influence community welfare through the mediating effect of tourism development performance.

An additional finding reveals that the role of stakeholders, particularly the private sector, remains suboptimal due to the local responsibilities that must be upheld by the community. This is closely related to the fact that the Alas Kedaton Tourist Attraction is a *pelaba* (supporting area) of Pura Kahyangan Kedaton, considered a sacred asset of the traditional village that must be preserved in terms of sanctity, cleanliness, and sustainability. According to local beliefs, it is the community that bears the primary responsibility for any consequences, both in the physical (*sekala*) and spiritual (*niskala*) realms. This belief forms the foundational knowledge that guides the community's approach in responding to existing social realities.

Edelweiss Applied Science and Technology
ISSN: 2576-8484
Vol. 9, No. 9: 1309-1323, 2025
DOI: 10.55214/2576-8484.v9i9.10131

Institutional Review Board Statement:

The author affirms that this manuscript is the result of honest, accurate, and transparent research. No important material from the study has been omitted, and any deviations from the original research plan have been clearly explained. This study has adhered to all academic ethical practices throughout the research and writing process.

Transparency:

The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

Acknowledgements:

The author wishes to express sincere gratitude to the Faculty of Economics and Business, Universitas Udayana, for its academic guidance, constructive feedback, and continuous support during the course of this research. Special thanks are also extended to all tourism development stakeholders in Tabanan Regency, community leaders, the Tabanan Regency Government, the Regional House of Representatives of Tabanan, the Kukuh Village Government, the Bendesa Adat, and tourism practitioners in Kukuh Tourism Village, Marga District, Tabanan Regency, for their assistance, cooperation, and willingness to share valuable insights and field data.

References

[1] D. Reck and A. Seibold, *The welfare economics of reference dependence*. Cambridge: National Bureau of Economic Research, 2023.

[2] T. Wilson and D. Wilson, *The political economy of the welfare state*. London: Routledge, 2021.

[3] W. P. Sari, N. Pandrianto, S. Azeharie, G. G. Sukendro, and L. Irena, "The existence of tourism and local culture: A study of the TALC tourism model in Bali," *Revista de Gestão Social e Ambiental*, vol. 18, no. 11, pp. 1-18, 2024.

[4] P. Xuanming, T. A. M. Dossou, K. P. Dossou, and A. S. Alinsato, "The impact of tourism development on social welfare in Africa: Quantile regression analysis," *Current Issues in Tourism*, vol. 27, no. 7, pp. 1159-1172, 2024. https://doi.org/10.1080/13683500.2023.2214351

[5] N. Egbali, A. Nosrat, and S. Pour, "Investigation challenges and guidelines development of rural tourism–A case study of rural semnan province," *South Asian Journal of Tourism and Heritage*, vol. 3, no. 2, pp. 61-75, 2010.

[6] R. M. Syahadat, "Review of visual and cultural landscapes conservation in tourism development: Case study of wakatobi regency, Southeast Sulawesi Province," *Jurnal Infrastruktur*, vol. 7, no. 2, pp. 103-110, 2021.

[7] S. Pickel-Chevalier, "The integrated touristic villages: An Indonesian model of sustainable tourism? ," *Tour Geogr*, vol. 23, no. 3, pp. 623-647, 2021. https://doi.org/10.1080/14616688.2019.1600006

[8] S. Sanaqulov, "The political economy of tourism development," *Nordic_Press Nordic Studies in Academic Research*, vol. 3, no. 0003, 2024.

[9] M. Rasyid, N. I. N. Makhfudhah, J. P. Cahyono, and A. Kristina, "Impact of tourism on poverty reduction: Strategies to achieve sustainable development goals through local community participation," *Journal of Lifestyle and SDGs Review*, vol. 5, no. 2, p. e02959, 2025. https://doi.org/10.47172/2965-730X.SDGsReview.v5.n02.pe02959

[10] I. B. G. K. Putra, "Sanur special economic zone as milestone of future quality tourism in Bali," *Bali Tourism Journal*, vol. 6, no. 3, pp. 62-65, 2022. https://doi.org/10.36675/btj.v6i3.84

[11] A. A. G. O. Wisnumurti, "Tourism recovery policy post corona virus disease outbreak 2019 (COVID-19) in Bali Province," *Kasetsart Journal of Social Sciences*, vol. 44, no. 2, pp. 573–584-573–584, 2023.

[12] Badan Pusat Statistik, "Bali province in numbers," Badan Pusat Statistik Provinsi Bali, 2024. https://bali.bps.go.id/id/publication/2024/02/28/98fe74bb8f73f0d1c2cdda7a/provinsi-bali-dalam-angka-2024.html

[13] M. E. Nasir, A. Sabur, and L. Sutanto, "The influence of the synergy of pentahelix elements and compensation on the welfare of hotels's employees during the covid–19 pandemic in the city of Makassar," *Journal La Bisecoman*, vol. 5, no. 1, pp. 70-80, 2024.

[14] E. Mariani, "Economics rationality in the world of Amartya Sen," *Qeios*, 2023. https://doi.org/10.32388/H08D4L

[15] C. P. Chambers and F. Echenique, "Empirical welfare economics," *Theoretical Economics*, vol. 20, no. 3, pp. 911-939, 2025.
[16] R. Utama *et al.*, "New normal acceleration strategy for Bali tourism destination recovery with E-tourism and special health protocol for the tourism sector," *Technium Social Sciences Journal*, vol. 10, p. 156, 2020.
[17] T. A. Prajnawrdhi, "Tourism in the new normal era: A perspective of Bali tourism actors," *International Journal of Innovation, Creativity and Change, Special Edition: COVID-19 Life Beyond*, pp. 57-70, 2020.
[18] A. Alcalá-Ordóñez and V. Segarra, "Tourism and economic development: A literature review to highlight main empirical findings," *Tourism Economics*, vol. 31, no. 1, pp. 76-103, 2025.
[19] M. K. S. Budhi, N. P. N. E. Lestari, and N. N. R. Suasih, "The recovery of the tourism industry in Bali province through the penta-helix collaboration strategy in the new normal era," *Geo Journal of Tourism and Geosites*, vol. 40, no. 1, pp. 167-174, 2022.
[20] H. Afandi, N. W. I. Rahayu, and A. Rokhim, "Community empowerment design through the pentahelix model in tourism development," *The Es Economics and Entrepreneurship*, vol. 2, no. 03, pp. 217-229, 2024.
[21] C. M. R. Bulilan, "From governing to selling tourism: Changing role of local government in the tourism development of Bohol, Philippines," *Southeast Asian Studies*, vol. 10, no. 2, pp. 273-293, 2021.
[22] D. Amaro, A. M. Caldeira, and C. Seabra, "Exploring higher education mobility through the lens of academic tourism: Portugal as a study case," *Sustainability*, vol. 16, no. 4, p. 1359, 2024.
[23] H. Azwar, M. H. Hanafiah, A. Abd Ghani, M. Azinuddin, and N. S. M. Shariffuddin, "Community-based tourism (CBT) moving forward: Penta helix development strategy through community local wisdom empowerment," *Planning Malaysia*, vol. 21, 2023.
[24] I. Nugraha, I. Parma, M. Agustina, and P. Hutnaleontina, "The role of government and community participation in realizing sustainable tourism development in Tihingan Village, Bali, Indonesia," *Journal of Infrastructure, Policy and Development*, vol. 8, no. 8, p. 4621, 2024.
[25] Y. Haji-Othman, M. S. Yusuff, and M. N. M. Hussain, "Data analysis using partial least squares structural equation modeling (PLS-SEM) in conducting quantitative research," *International Journal of Academic Research in Business and Social Sciences*, vol. 14, no. 10, pp. 2380-2388, 2024.
[26] F. Bridoux and J. Stoelhorst, "Stakeholder theory, strategy, and organization: Past, present, and future," *Strategic Organization*, vol. 20, no. 4, pp. 797-809, 2022.
[27] Z. A. Hamid, P. Kunasekaran, and M. Alam, "The role of social capital and social media in tourism development towards the wellbeing of the mah meri community in Carey Island, Malaysia," *Pertanika Journal of Social Sciences & Humanities*, vol. 33, 2025.
[28] S. Afren, "The role of digital marketing promoting tourism business. A study of use of the social media in prompting travel," *World Journal of Advanced Research and Reviews*, vol. 21, no. 01, pp. 272-287, 2024.
[29] I. P. Astawa, "Strategies and policies for the acceleration of Bali tourism recovery," *E-Journal of Tourism*, p. 8, 2022.
[30] R. Januar, "Implementation and challenges of sustainable tourism programs in Bali," *Bali Tourism Journal*, vol. 8, no. 2, pp. 33-37, 2024. https://doi.org/10.36675/btj.v8i2.109
[31] I. N. Sunarta, I. N. S. Arida, I. M. Adikampana, S. Nugroho, and N. M. S. Wijaya, "Tri ning danu sustainable tourism destination model in bedugul tourism area, Bali," *Best Practices: Synchronizing The Corporate Culture With The Spirit of Innovation, Sustainability, and Good Governance*, p. 92, 2025.
[32] C. Shekhar, "Sustainable tourism development: Balancing economic growth and environmental conservation," in "Available at SSRN 4901174," 2024. https://ssrn.com/abstract=4901174
[33] T. Shimizu and H. Okamoto, "Tourism infrastructure and the environment: How does environmental regulation affect welfare, tourism industry, and domestic wage inequality?," *The Japanese Economic Review*, vol. 75, no. 1, pp. 147-179, 2024. https://doi.org/10.1007/s42973-021-00109-4
[34] H. Suyatna, P. Indroyono, T. K. Yuda, and R. S. M. Firdaus, "How community-based tourism improves community welfare? A practical case study of 'Governing the Commons' in rural Nglanggeran, Indonesia," *The International Journal of Community and Social Development*, vol. 6, no. 1, pp. 77-96, 2024. https://doi.org/10.1177/25166026241228717
[35] A. Mandić, H. Séraphin, and M. Vuković, "Engaging stakeholders in cultural tourism Living Labs: A pathway to innovation, sustainability, and resilience," *Technology in Society*, vol. 79, p. 102742, 2024. https://doi.org/10.1016/j.techsoc.2024.102742
[36] W. T. Hardianto, M. M. Sumartono, and F. Wijaya, "PentaHelix synergy on tourism development in Batu, East Java," *International Journal of Innovation, Creativity and Change*, vol. 10, no. 6, pp. 137-149, 2019.
[37] J. M. Cheer, D. Lapointe, M. Mostafanezhad, and T. Jamal, "Global tourism in crisis: Conceptual frameworks for research and practice," *Journal of Tourism Futures*, vol. 7, no. 3, pp. 278-294, 2021. https://doi.org/10.1108/JTF-09-2021-227
[38] R. H. Demolinggo, D. Damanik, K. Wiweka, and P. P. Adnyana, "Sustainable tourist villages management based on Javanese local wisdom 'Memayu Hayuning Bawono'best practice of Desa Wisata Pentingsari, Yogyakarta," *International Journal of Tourism & Hospitality Reviews*, vol. 7, no. 2, pp. 41-53, 2020. https://doi.org/10.18510/ijthr.2020.725

[39] R. Purwono, M. A. Esquivias, L. Sugiharti, and O. Rojas, "Tourism destination performance and competitiveness: The impact on revenues, jobs, the economy, and growth," *Journal of Tourism and Services*, vol. 15, no. 28, pp. 161-187, 2024.

[40] M. Nainggolan, I. W. Ardika, I. K. Ardhana, and I. K. Setiawan, "Pentahelix model application for tourism development strategy," *International Journal of Linguistics, Literature and Culture*, vol. 6, no. 2, pp. 12-18, 2020.

[41] Y. Yasir, Y. Firzal, A. Sulistyani, and C. Yesicha, "Penta helix communication model through community based tourism (CBT) for tourism village development in Koto Sentajo, Riau, Indonesia," *Geo Journal of Tourism and Geosites*, vol. 37, no. 3, pp. 851-860, 2021.

Edelweiss Applied Science and Technology
ISSN: 2576-8484
Vol. 9, No. 9: 1309-1323, 2025
DOI: 10.55214/2576-8484.v9i9.10131