INKUBIS: Jurnal Ekonomi dan Bisnis
Volume 8, Issue 2, 562-572
e_ISSN: 2775-3913
https://inkubis.polteksci.ac.id/index.php/ink/index
DOI: doi.org/10.59261/inkubis.v8i2.184

Measuring Tourism Economic Impact Approach with Keynesian Multiplier: Case on Prambanan Temple

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Article Info:

Article history:
Received: March 17, 2026
Revised: May 12, 2026
Accepted: May 20, 2026

Keywords:
economic impact; keynesian multiplier; tourism economics; tourist expenditure; local community income

Abstract

Background: One way to assess the economic benefits of tourism is by determining the multiplier value, and one of the most widely applied valuation approaches is the Keynesian multiplier model. Although several studies have examined the multiplier effect of tourism in general, limited empirical research has specifically examined Prambanan Temple as a heritage tourism destination with the highest visitor volume in Yogyakarta, indicating a notable gap in the literature.
Objective: The Keynesian multiplier uses inputs involving the direct impact of expenditure, or Tourist Expenditure (E), and local business income in the tourism sector (D); the indirect impact based on the income or wages of local labor in the tourism sector (N); and the induced impact based on tourist spending on local products (U).
Method: The Keynesian multiplier is formulated as (D + N + U)/E. A sample of 100 tourists and 10 informants representing tourism businesses and tourism workers was selected as the parties to be interviewed.
Result: The analysis yielded a Keynesian income multiplier of 6.75, indicating that every IDR 965,630 spent by an average tourist generated an estimated total economic impact of IDR 6.52 million within the local tourism economy. A multiplier value exceeding 1 indicates that Prambanan Temple, as a tourism destination, demonstrates a significant economic impact in improving the economic welfare of the surrounding community.
Conclusion: In measuring job creation, a ratio of 1:4 was obtained, meaning that the arrival of every one tourist can create four job opportunities.

To cite this article: Yuniati, N., & Rahadevi, C. (2026). *Measuring tourism economic impact approach with Keynesian multiplier: Case on Prambanan Temple*. INKUBIS: Jurnal Ekonomi dan Bisnis, *8*(2), 562–572. https://doi.org/10.59261/inkubis.v8i2.184

INTRODUCTION

Tourism generates multiple benefits for destinations, encompassing environmental and cultural preservation, acculturation, and social community development; however, the most prominent and widely studied dimension remains its economic contribution (Majewski, 2024; Thullah & Jalloh, 2021). Tourism has been a subject of controversy since the beginning of the 20th century in terms of its economic benefits (Archer, 1973; Fletcher, 1989). This occurs because economic benefits can be clearly measured; therefore, for most people, these benefits are the most expected outcomes (Gemar et al., 2023; Zhang & Ali, 2024).

One of the aspects considered is the economic benefit referred to as the multiplier effect. Multiplier effects are impacts that arise through a chain reaction, extending beyond direct effects to generate indirect and induced effects (Nuryadin & Purwiyanta, 2023; Tyrell & Johnston, 2001). In essence, the multiplier effect does not stop at the initial impact generated but creates a domino effect across sectors both directly and indirectly related to tourism (Archer & Fletcher, 1988). This impact is able to stimulate other sectors, thereby generating benefits across a broad range of dimensions. In simple terms, tourist spending does not stop within the hospitality, travel, or tourist attraction sectors

but also stimulates the supply of food products from farmers to hotels, creates demand for labor in the agricultural sector as a supplier of raw food materials, increases transportation-related expenditures that support transport services, extends to spare-parts suppliers, and so forth.

Multiplier impact analysis can be conducted at various scales, ranging from the local scope, such as a specific tourist attraction, to provincial or district/city levels, as well as regional and national levels (Crompton et al., 2015; Sapiyeva et al., 2024). A number of studies related to multiplier impact analysis have been conducted in Indonesia. Putra (2017) investigated a tourist destination in Banyuwangi and found that the destination had a significant impact on improving the local economy. Sarjanti (2019) examined the multiplier impact of a tourist attraction in Purbalingga, and the results demonstrated that the attraction significantly contributed to improving community welfare. Similar studies were also conducted by Pajriah (2025) in Majalengka, West Java, and by Ramadhan (2023) at Likupang Beach, Manado, North Sulawesi.

For this reason, research on the economic impact of tourism remains important, particularly in light of the complex and rapid development and dynamics of the tourism industry (S. Ehimen et al., 2021). Based on the foregoing, research on the tourism multiplier effect specifically focusing on heritage destinations remains limited. This study addresses that gap by examining Prambanan Temple, the most visited heritage destination in Yogyakarta, using the Keynesian multiplier framework. Heritage tourism destinations constitute a primary pillar of tourist attraction in Yogyakarta.

Table 1. Number of Tourists at Heritage Destinations in Yogyakarta in 2024

Name DTW Heritage	Quantity
The Tomb of the Kings of Mataram in Imogiri	9.352
Kotagede Mosque Complex and Tomb of Kings	39.785
Jagalan Cultural Heritage Area	1.412
Bumi Mataram Pleret	18.962
Prambanan Temple	2.447.882
Ratu Boko Temple	133.506
Gebang Temple	411
Sari Temple	2.052
Kalasan Temple	3.908
Sambisari Temple	29.073
Banyunibo Temple	621
Barong Temple	132
Green Temple	28.481
Kedulan Temple	31
Stuttgart	572.154
Fortress Vredeburg	599.392
Total Visitors to Heritage Tours	4.398.675

Source : Copied from DIY Tourism Statistics in 2024 (Dinpar, 2025)

As shown in Table 1, Prambanan Temple recorded 2,447,882 visits in 2024, accounting for the majority of total heritage tourist arrivals in Yogyakarta (4,398,675 visitors), far exceeding the second-ranked site, Vredeburg Fortress (599,392 visitors). This dominance makes Prambanan Temple the most strategically significant heritage site for local economic analysis in the region. How significant is the economic impact of this leading heritage destination? Despite the prominence of Prambanan Temple as the most visited heritage site in Yogyakarta, with 2,447,882 visits recorded in 2024, empirical studies specifically measuring its tourism multiplier effect remain absent from the academic literature. This represents a critical gap, as evidence-based policy for heritage tourism development requires site-specific multiplier data rather than aggregated regional estimates. The present study therefore seeks to fill this gap by applying the Keynesian multiplier method to quantify the direct, indirect, and induced economic impacts of tourism at Prambanan Temple.

Previous research on multiplier impacts conducted in Yogyakarta includes the study by Fajar (2025) on the dual impact of the Malioboro area following revitalization, the study by Nuryadin (2023)

which examines the dual impact of tourism in Yogyakarta in general, and the study by Karyatun (2020) on the multiplier impact in the Nglanggeran Tourism Area, Gunung Kidul. These three studies conclude that the resulting multiplier effects are significant in supporting local economic growth, with relatively high multiplier values. However, none of these studies focuses specifically on a single heritage destination such as Prambanan Temple, nor do they disaggregate economic leakage at the site level. The novelty of this research lies in its site-specific application of the Keynesian multiplier to a UNESCO-recognized heritage tourism site, generating granular data on direct, indirect, and induced income streams that can directly inform local tourism policy and MSME development strategies. This study therefore contributes both methodologically and empirically to the growing body of heritage tourism economics literature in Indonesia.

This study aims to: (1) measure the Keynesian income multiplier value of tourism at Prambanan Temple; (2) identify the direct, indirect, and induced income contributions of the tourism sector to the local economy; and (3) determine the employment coefficient and job creation potential attributable to tourist visits. The findings are expected to provide actionable policy recommendations for heritage tourism development in Yogyakarta and to serve as an empirical reference for similar multiplier analyses at heritage destinations in Indonesia.

METHOD

This research was conducted at Prambanan Temple, which recorded 2,447,882 tourist visits in 2024, the highest among all heritage tourism destinations in Yogyakarta. The calculation was conducted using the Keynesian multiplier effect analysis method, first developed by John Maynard Keynes in The General Theory of Employment, Interest, and Money (1936), whose application to tourism was systematically developed by (Archer & Fletcher, 1988; Archer, 1982). The formula used in the Keynesian multiplier analysis model is as follows:

$$\text{Keynesian Income Multiplier} = \frac{D+N+U}{E}$$

$$\text{Income Ratio Multiplier, Type I} = \frac{D+N}{D}$$

$$\text{Income Ratio Multiplier, Type II} = \frac{D+N+U}{D}$$

Description:

E = Total tourist expenditure (IDR)
D = Local revenue earned directly from E expenditure (IDR)
N = Local revenue earned indirectly from E expenditure (IDR)
U = Local income is derived induced from E expenditure (IDR).

The results of the multiplier calculation produced a multiplier value or index, which could be interpreted according to the following conditions: 1) If the multiplier value was ≤ 0, it meant that tourism did not have a local economic impact. 2) If the multiplier value was $0 < x < 1$, it meant that tourism had a local economic impact, but it was still very small and insignificant. 3) If the multiplier value was ≥ 1, it meant that tourism had a local economic impact of at least onefold or greater. 4) The greater the multiplier value, the greater the local economic impact, including impacts on the scale of local businesses and on local community income, thereby contributing to increased community economic growth. The calculation used several assumptions derived from the sample calculations, including samples of tourists, business actors, and workers, as follows:

Table 2. Population and Sample Observed in Prambanan Temple Area

Tourist Population	Number of Existing Tourist Visits in 2024 2.447.882 (Data from the DIY Tourism Office)	Sample based on Slovin Formula with MoE* 10%: 100 Respondents. The Slovin formula was selected for its practicality with large and unknown population distributions; the 10% margin of error (MoE) was applied as a standard tolerance

		for exploratory social science research, yielding $n = N/(1 + Ne^2)$ = 2,447,882/(1 + 2,447,882 x 0.01) = 99.99 ≈ 100 respondents.
Population of Local Tourism Entrepreneurs	Based on data (BPS) Hotels (7) & Accommodation (15) Local Restaurants (13) Souvenir & souvenir shops (15) Grocery stores around DTW (19)	Samples (informants) represent the type of business: Local Accommodation (15) Local Restaurants (8) Souvenir & Souvenir Shops (8) Grocery stores around DTW (10)
Population of Workforce involved in tourism	250 people (Primary Data of Researchers, 2025)	10 Informants Accommodation (2) Warungs/Restaurants (2) Souvenir Shops (2) Grocery Stores (2) Tour Packages (1) Transportation (1)

MoE: margin of error

Tourists who visited were not differentiated between domestic and foreign tourists. The researcher selected participants based on characteristics such as families, couples, individuals, or groups, with the expectation of obtaining the required data, namely expenditure data and a general description of motivations or perceptions (Pajriah et al., 2025; Putra et al., 2017; Ramadhan & Rifani, 2023; Sarjanti et al., 2019). Information from business actors around the DTW was obtained from informants representing specific types of businesses, such as hotels, restaurants, food stalls, souvenir vendors, and lodging establishments. The informants were employees working in the related business sectors. This informant sampling also referred to models used in previous studies (Archer & Fletcher, 1988; Karyatun et al., 2020; Ramadhan & Rifani, 2023). The informant sampling model was also used to observe labor data, specifically workers involved in various types of businesses (as referred to in point 2). This sample was used to collect data related to household expenditures or economic improvement resulting from income earned through employment in the tourism business sector. This sampling model had also been referenced in previous studies (Pajriah et al., 2025; Putra et al., 2017; Ramadhan & Rifani, 2023; Sarjanti et al., 2019).

RESULTS AND DISCUSSION

Results

A. Tourist Expenditure Input Component (E)

Tourist spending includes expenditures outside the area as well as expenditures within the tourist site area or on local businesses. Spending within the area is relatively high, with an average expenditure of Rp 965,563 per tourist per visit, while the total accumulated tourist expenditure reaches Rp 96,563,000, and the total tourist expenditure incurred since departure from the area of origin reaches Rp 213,663,000 (Table 3).

The composition of expenditures occurring outside the region is very high, reaching 54.8%, while total local expenditure accounts for only 45.2%. This indicates that tourist expenditure on transportation services from the area of origin is substantial. In the context of multiplier analysis, which incorporates the value of macroeconomic impacts, the level of economic leakage remains very high because expenditure at tourist destination locations is significantly lower than the transportation costs incurred.

Table 3. Traveller Spending Profile

No	Spending Variables	Average Spend*	Total Expenditure (Rupiah)	Percentage
1	Out-of-Area Spending			
a	Travel expenses etc	3.307.630	117.100.000	54,8%
2	Local Spending			
c	BBM	166.000	16.600.000	7,8%

d	Hotels/Accommodations	243.011	22.600.000	10,6%
e	Eat and Drink	227.500	22.750.000	10,6%
f	Souvenirs/Souvenirs	97.000	9.700.000	4,5%
g	Local Tour Packages	41.050	4.105.000	1,9%
h	Object entrance ticket	170.300	17.030.000	8,0%
i	Parking & Toilets	10.980	1.098.000	0,5%
j	Documentation	25.700	2.570.000	1,2%
k	Miscellaneous	1.100	110.000	0,1%
	Total Local Spending		**96.563.000**	**45,2%**
	TOTAL SPEND **	**965.563**	**213.663.000**	**100,0%**

Source: Researcher, 2025

*Average spend = Total spend : number of respondents
** Total spend = Out-of-Area Spend + Total Total Spend

B. Revenue Input Components of the Tourism Business Sector

1) Direct Income Generation (D)

The income of the tourism business sector in this case is gross income (revenue) obtained from net income plus production and operational costs. This net income serves as a component of the multiplier calculation as an element of indirect income (N). Local restaurants/stalls are the business units that contribute the most to revenue (42.5%), followed by souvenir shops (22.5%), lodging or accommodation services (17.8%), grocery stores (10.4%), transportation services (4.2%), and tour packages (2.6%). Total net income reached Rp. 102,000,000, and total revenue reached Rp. 222,169,550 (Table 4).

Table 4. Net Income of Local Businesses

Business Units	Total Units	Estimated Net Income per Month	Net Income	Total Revenue	Percentage
Local Retailers/Stalls	13	3.000.000-35.000.000	35.000.000	94.469.550	42,5%
Homestay/Accommodation	19	5.000.000-24.000.000	24.000.000	39.600.000	17,8%
Souvenir/Souvenir Shop	22	2.000.000 - 20.000.000	20.000.000	50.000.000	22,5%
Grocery	15	3.000.000 - 15.000.000	15.000.000	23.100.000	10,4%
Tour Packages	2	750.000 - 4.000.000	4.000.000	5.700.000	2,6%
Transportation	2	1.000.000 - 4.000.000	4.000.000	9.300.000	4,2%
Average Net Income			**102.000.000**	**222.169.550**	**100%**

Source: Researcher, 2025

The net income in Table 4 above represents direct revenue generated from tourism activities in Prambanan. The businesses are classified as MSMEs that have been operating for an average of more than five years and are owned by local residents. The length of time tourists stay at a destination influences economic improvement. In this case, it is also necessary to identify the production costs for each type of business, the components of which can be seen in Table 5 below:

Table 5. Proportion of Net Income to Total Revenue in Tourism Business Units

Variable inputs	Quantity	Percentage	Benefits
Net Income	**102.000.000**	47,4%	Local
Production Costs			
1) Labor Wages	40.500.000	18,8%	Local

2)	Raw Materials	38.769.550	18,0%	Local
3)	Care	4.200.000	2,0%	Local
4)	Electricity & Water Operating Costs	9.100.000	4,2%	Non-Local
5)	Credit Installments	2.400.000	1,1%	Non-Local
6)	Daily meal costs	11.700.000	5,4%	Local
7)	Local transportation	4.000.000	1,9%	Local
8)	Linen and guest amenities	1.000.000	0,5%	Local
9)	Packaging	1.500.000	0,7%	Local
10)	Taxes	-	-	Not- Local
Total Production and Operations		**113.169.550**	52,6%	
Total Revenue		**215.169.550**		
Potential Leakage		**11.500.000**	**5.3%**	

Source: Researcher, 2025

Table 5 explains that, from the total revenue, there are several income components that do not contribute to benefits for the local community (written as "not local"), meaning that the income flows to parties outside the local community. For example, operational electricity costs are paid to PLN, water costs to PDAM, taxes to the regional treasury, and credit installments to banks. Thus, from the total revenue, 4.2% + 1.1% = 5.3% of other income flows to external parties rather than to the local community. This value of 5.3% is referred to as economic leakage income.

The operating profit of the business is obtained by subtracting production costs from total revenue. Based on the calculation results of the average income of tourism business units in Prambanan, it was found that the largest costs were wages and raw materials. From the table, it can also be observed that the business capital requirements of the tourism sector (capital turnover) as a whole reached Rp 215,169,550.

2) Indirect Income Generation / N

Indirect income is the income earned by workers in the local tourism business sector, and the average income of workers in this area ranges from a low of approximately Rp. 1,000,000 to a high of Rp. 2,250,000, with an average net salary of Rp. 1,000,000 (Table 6). The largest revenue contribution is generated by the business unit with the greatest involvement of local workers, namely the local restaurant business, which employs 101 people and contributes up to 40.4%.

Table 6. Total Employee Income

Business Units	Worker Population*	Estimated Net Income per Month	Quantity	Percentage
Local Restaurant	101	1.000.000	101.000.000	40,4%
Homestay/Accommodation	31	1.000.000	31.000.000	12,4%
Souvenir/Souvenir Shop	28	1.000.000	28.000.000	11,2%
Grocery	44	1.000.000	44.000.000	17,6%
Tour Packages	8	1.000.000	8.000.000	3,2%
Transportation	8	1.000.000	8.000.000	3,2%
Others (Parking, Guide)	30	1.000.000	30.000.000	12,0%
TOTAL	**250**		**250.000.000**	

Source: Researcher, 2025 * = results of the researcher's observations (data are estimates)

3) Induced Income Generation (U)

Income that is induced or follow-up income is the income of workers in the local tourism business sector, which is then spent on local products. The calculation of spending on local products

includes food, daily necessities, and social costs within a month, while other expenditures are assumed to be expenditures that do not have a trickle-down effect on the local economy, such as transportation costs with fuel expenditures for Pertamina, electricity expenditures for PLN, water expenditures for PDAM, and internet expenditures for related providers, and so on.

In this case, revenue from spending on local products constitutes the largest expenditure allocation (37.5%); other allocations include transportation expenditures (22.5%), electricity, water, and internet expenditures (20%), as well as social costs and taxes.

Table 7. Labor Expenditure on Local Products

Business Units	Estimated Expenditure Allocation per Month	Percentage
Meals & daily necessities (U)	1.000.000,00	28,6%
Transportation costs	900.000,00	25,7%
Electricity, Internet, Water	800.000,00	22,9%
Tuition fees	500.000,00	14,3%
Social cost	200.000,00	5,7%
Taxes	100.000,00	2,9%
	3.500.000,00	

Source: Researcher, 2025 * = results of researchers' observations

Based on table 7. Above it can be concluded that the induction income is as follows:

Meals & daily necessities (U)	1,000,000 Rupiah
Social cost	200,000 Rupiah
Local spending	1,200,000 Rupiah
Estimated number of tourism workers	250
Total induction income	1,200,000 * 250 = Rp. 300,000,000

C. Analysis of Tourism Multiplier at DTW Prambanan Temple

What has been calculated regarding the income input above, including tourist spending, direct income, indirect income, and induced or participatory income as impacts of tourism activities, can be analyzed for multiplier calculations as follows:

Table 8. Income Multiplier Analysis

INCOME MULTIPLIER ANALYSIS	Multiplier Input	Amount (Rp)
Tourist Spending	E	96.563.000
Tourism local business income	D	102.000.000
Income of local tourism workers	N	250.000.000
Workers' spending on local consumption	U	300.000.000

So, with Keynes' Formula, the multiplier value can be calculated as follows:

Table 9. Multiplier Effect Calculation Using Keynes Formula

Type Multiplier Effect	Multiplier Value	Multiplier Effect (Rp)
Keynesian Income Multiplier	6,75	6.520.695,50
Ratio Income Multiplier Type I	3,45	3.332.370,20
Ratio Income Multiplier Type II	6,39	6.172.458,43

Table 10. Average Tourist Shopping at Prambanan Temple

Average Tourist Shopping at Prambanan Temple	
Total Tourist Spending (TC)	96.563.000
Total Sample (Q)	100
Average tourist spending per person per visit (TC/Q)	965.630

Based on these results, the Multiplier Impact Value Interpretation can be carried out as follows:

All multiplier values are greater than 1; this means that the real economic impact of tourism is felt by the community around the DTW (Daya Tarik Wisata) of Prambanan Temple and its surrounding areas as a result of tourism activities. The minimum reference value for the Keynesian multiplier is 1; therefore, the value of 6.75 is interpreted as indicating the optimal impact of tourism on the local community. The turnover ratio of the multiplier's impact on community welfare is considered quite good.

This Keynesian multiplier figure shows the ratio of impact resulting from the expenditure of one tourist per visit, amounting to IDR 965,630, with a multiplier value of 6.75. Thus, every expenditure by one tourist will increase the regional economic income by IDR 6,520,000.

At the Income Multiplier Ratio Type I of 3.45, this means that every tourist expenditure of IDR 965,630 will increase income or added value in the local tourism business units by a total of IDR 3,332,370.20 in overall income, including direct impacts (local businesses/MSMEs) and indirect impacts (wages and opportunities for tourism-related employment).

At the Income Multiplier Ratio Type II of 6.39, this means that every tourist expenditure of IDR 965,630 will increase income or added value in the local tourism business units by a total of IDR 6,172,458.43 in overall income, including direct impacts (local businesses/MSMEs), indirect impacts (wages and the provision of tourism-related employment), and induced impacts, namely the increase in spending by tourism-sector workers on local products due to higher wages influenced by increased tourist spending.

D. Analysis of Tourism Multiplier on the Ability to Provide Jobs in the Prambanan and Surrounding Areas (Employment Generation)

To calculate the impact of tourism on employment absorption, it is first necessary to calculate the number of workers involved and the employment coefficient (Ek), the formula for which is as follows:

$$\text{Ek} = \frac{\text{Direct} + \text{Indirect Employment}}{\text{Expenditure/spending}}$$

Table 11. Number of Tourism Workers in Prambanan and Surrounding Areas

Direct Employment	
- Eatery/Restaurant Workers	101
- Souvenir/souvenir shop workers	44
- Hotel/lodging workers	28
- Grocery stall workers	31
- Tour package management workers	8
- Transportation service workers	8
- Parking attendants	16
- Local guide	14
TOTAL Direct Employment	**250**
Indirect Employment	
- Documentation Services	25
- Event catering services	30
-Supplier of stall/catering production materials	21
- Seasonal squirt	25
-Event Freelance Workers	20
TOTAL Direct Employment	**121**
TOTAL TOURISM EMPLOYMENT	**371**

Value of Labor Coefficient (*Coefficient Employment* / Ek)

Table 12. Value of Labor Coefficient

Total Tourism Workers =	**371**
Average Tourist Spending (e) =	IDR 965.630
Labor Coefficient Value (Ek) =	0.00000384
Job opportunities (Ek*E) =	3,71

Based on the results of the calculation, it can be interpreted that every increase of 1 rupiah in tourist spending is able to create 0.00000384 job opportunities, or that every expenditure of Rp965,630 per tourist visit is able to generate employment for 3.71, or approximately 4, people.

Discussion

The Keynesian income multiplier of 6.75 indicates a notably significant economic impact of tourism at Prambanan Temple, reflecting a strong circulation of tourist expenditure through the local economy. Each average tourist expenditure of Rp965,630 generates an estimated total economic impact of Rp6.52 million through chain effects on local MSMEs, worker wages, and induced household spending. This result is considerably higher than those reported for comparable heritage and cultural tourism destinations, including Nglanggeran Village and the Malioboro area post-revitalization Fajar (2025), underscoring Prambanan Temple's superior capacity for local economic retention.

The relatively high multiplier value can be attributed to the concentration of locally owned MSMEs, the diversity of tourism-supporting businesses, and the significant proportion of local labor employed in the tourism sector. Prambanan Temple is a leading heritage destination with high local economic retention despite leakage of up to 5.3% (electricity, water, and taxes).

Income Multiplier Type I (3.45) and Type II (6.39) confirmed significant contributions from direct (D: Rp102 million) and indirect (N: Rp250 million) revenues, with local restaurants accounting for 42.5% of net income. The labor coefficient (0.00000384) yielded 3.71–4 jobs per tourist, supporting the findings of Pajriah (2025) in Majalengka, although still below the optimal potential due to dependence on non-local transportation services, which accounted for 54.8% of total expenditure.

These findings carry important implications for tourism policy in Yogyakarta, where 2.44 million tourists visited in 2025 representing a strong foundation for evidence-based heritage tourism policy aimed at strengthening the existing high multiplier effect. Three priority policy interventions are recommended based on the study's empirical findings. First, reducing economic leakage, currently at 5.3% from non-local expenditures (electricity, water utilities, and loan repayments), can be addressed by strengthening local supply chain linkages, particularly by connecting agricultural producers in surrounding villages with tourism businesses as raw material suppliers. Second, extending tourists' length of stay through the development of integrated local tour packages would increase local spending, which currently accounts for only 45.2% of total tourist expenditure, while the remaining 54.8% leaves the local economy as transportation costs. Third, expanding MSME capacity through government-facilitated training, dedicated commercial spaces near the attraction, and preferential procurement policies favoring locally produced goods would amplify the induced income effect, consistent with the recommendations of (Archer, 1982). These three targeted interventions are expected to produce measurable improvements in the multiplier value in subsequent measurement cycles.

CONCLUSION

This study quantifies the economic multiplier effect of tourism at Prambanan Temple using the Keynesian multiplier framework. In response to the research objective, the analysis demonstrates that tourism at Prambanan Temple generates a Keynesian Income Multiplier of 6.75, an Income Multiplier Ratio Type I of 3.45, and an Income Multiplier Ratio Type II of 6.39. With an average tourist expenditure of Rp965,630 per visit, each tourist visit produces an estimated Rp6.52 million in total economic value added through chain effects on local businesses, worker wages, and induced household consumption. The employment coefficient (Ek = 0.00000384) yields an employment generation ratio of approximately 1:4, indicating that each tourist visit supports approximately four jobs in the local economy. These findings collectively confirm that heritage tourism at Prambanan Temple is a significant driver of local economic welfare.

This research demonstrates that Prambanan Temple, as the primary heritage destination in Yogyakarta with 2.44 million visits in 2024, generates a substantial multiplier effect on the local economy. The income circulation encompasses local MSME net revenue of IDR 102 million, worker wages totaling IDR 250 million, and induced spending on local products amounting to IDR 300 million. The study confirms that the Keynesian multiplier model is an effective and practical instrument for micro-scale economic impact analysis of heritage tourism destinations. Theoretically, the results reinforce the multiplier principle advanced by Brian Archer, affirming that heritage sites with high local retention rates (in this case, 94.7% of direct income remaining within the local economy) generate broader and more sustained domino effects than general-purpose tourism destinations. From a practical standpoint, these findings provide local governments and tourism stakeholders with data-driven evidence to prioritize MSME development, reduce economic leakage, and diversify the tourism product mix at Prambanan. This study is not without limitations: data collection relied on a sample of 100 tourists and 10 business informants within a single measurement period, which may not fully capture seasonal variability in tourist spending and business income. Future studies are encouraged to employ larger sample sizes, longitudinal designs, and comparative analyses across multiple heritage sites to strengthen the generalizability of the findings.

To maximize the economic multiplier impact identified in this study, three priority recommendations are proposed. First, given that 54.8% of tourist expenditure consists of transportation costs that exit the local economy, developing integrated local tour packages that extend tourists' length of stay is essential to redirect spending toward local businesses and increase the local retention rate beyond the current 45.2%. Second, given the 5.3% economic leakage attributable to utility payments and credit installments made to non-local entities, strengthening the local supply chain, particularly by connecting surrounding agricultural producers with tourism businesses, will reduce leakage and amplify the induced income effect. Third, given the dominance of local restaurants (42.5% of net MSME income) and the employment coefficient of 1:4, government support for MSME capacity building, including training, access to formal commercial spaces, and preferential procurement policies favoring local products, will sustain and expand the multiplier effect in the long term.

REFERENCES

Archer, B., & Fletcher, J. E. (1988). The Tourist Multiplier. *Tourism Economics*, *7*(3). https://doi.org/10.7202/1080377ar

Archer, B. H. (1973). The impact of domestic tourism. Bangor Occasional Papers in Economics.

Archer, B. H. (1982). The value of multipliers and their policy implications. Tourism Management, 3(4), 236–241.

Crompton, J. L., Jeong, J. Y., & Dudensing, R. M. (2015). Sources of variation in economic impact multipliers. Journal of Interpretation Research, 55(8). https://doi.org/10.1177/00472875156172

Dinpar, D. P. (2025). DIY tourism statistics in 2025. Provincial Tourism Department. http://www.visitjogja.com

Fajar, E. A., Pramono, R. W. D., & Hadianti, A. (2025). Analysis of the number of tourist visits and the multiplier effect of the Malioboro area after revitalization. Journal of Cahaya Mandalika (JCM), 3(3). https://www.ojs.cahayamandalika.com/index.php/jcm/article/view/2699

Fletcher, J. E. (1989). Input-output analysis and tourism impact studies. Annals of Tourism Research, 16(4), 514–529. https://doi.org/10.1016/0160-7383(89)90006-6

Gemar, G., Soler, I. P., & Moniche, L. (2023). Exploring the impacts of local development initiatives on tourism: A case study analysis. Heliyon, 9(9), e19924. https://doi.org/10.1016/j.heliyon.2023.e19924

Karyatun, S., Wiweka, K., Demolingo, R. H., Adnyana, P. P., & Nurfikriyani, I. (2020). Tourist village multiplier effect studies: Small scale approach best practice of Desa Wisata Nglanggeran, Yogyakarta, Indonesia. International Journal of Management, Innovation & Entrepreneurial Research, 6(2), 139–153. https://doi.org/10.18510/ijmier.2020.6213

Majewski, L. (2024). Economic impact analysis of nature tourism in protected areas: Towards an adaptation to international standards in German protected areas. Journal of Outdoor Recreation and Tourism, 45, 100742. https://doi.org/10.1016/j.jort.2024.100742

Nuryadin, D., & Purwiyanta. (2023). Multiplier effects of tourism sector in Yogyakarta: Input-output analysis. JEJAK Journal of Economics and Policy, 16(1).

https://doi.org/10.15294/jejak.v16i1.40054
Pajriah, P. N., Sulaksana, J., & Umyati, S. (2025). The multiplier effect of tourist attractions on the economy of local communities. Mahatani, 8(1).
Putra, A. P., Wijayanti, T., & Prasetyo, J. S. (2017). Multiplier effect analysis of Watu Dodol Beach tourist attraction Banyuwangi. Journal of Tourism and Creativity, 1(2).
Ramadhan, M. I., & Rifani, I. (2023). Analysis of multiplier effect tourism in the national tourism strategic area of Pulisan Beach, East Likupang. In Proceedings of the Unima International Conference on Social Sciences and Humanities (UNICSSH 2022). Manado, North Sulawesi.
S. Ehimen, J., Ikechukwu Uduji, J., & Ugwuanyi, C. C. (2021). Hotel guests' experience, satisfaction and revisit intentions: An emerging market perspective. African Journal of Hospitality Tourism and Leisure, 10(1), 406–424. https://doi.org/10.46222/ajhtl.19770720-108
Sapiyeva, A., Yessenov, M., Aktymbayeva, A., Nuruly, Y., Sakypek, M., Razdobudko, O., & Assipova, Z. (2024). Assessing the multiplier effect of national parks: A case study of Buiratau State National Nature Park in Kazakhstan. Sustainability, 16(19), 8407. https://doi.org/10.3390/su16198407
Sarjanti, E., Rahmawati, N. K., & Sriwanto, S. (2019). A study of community perception and multiplier effect for the development of tourism in the Asri Serang Valley in Serang Village, Karangreja District, Purbalingga Regency. In Proceedings of the National Seminar on Geography: Sustainable Regional Development in the Era of the Industrial Revolution 4.0. Surakarta.
Thullah, A., & Jalloh, S. A. (2021). A review of the economic, social and environmental impacts of tourism development. American Journal of Theoretical and Applied Business, 7(2). https://doi.org/10.11648/j.ajtab.20210702.12
Tyrell, T., & Johnston, R. J. (2001). A framework for assessing direct economic impacts of tourist events. Journal of Travel Research, 40(1), 94–100. https://doi.org/10.1177/004728750104000112
Zhang, Y., & Ali, Q. (2024). Socio-economic determinants of sustainable tourism and their nexus with energy, environment, and economy (3ES): A panel data analysis. Energy Strategy Reviews, 56, 101577. https://doi.org/10.1016/j.esr.2024.101577