

## MULTIPLIER EFFECT OF THE EDUCATION AND ECONOMY IN CENTER POINT OF INDONESIA AREA

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### ABSTRACT

Infrastructure development was one of the key components in the success of a nation's overall and educational growth, including the tourism sector. This study focuses on analyzing the economic and educational impact of developing the Center Point of Indonesia (CPI) area in Makassar City, South Sulawesi, which has become a prominent tourism destination. A mixed-methods approach with a concurrent triangulation design was employed to measure the direct, indirect, and induced economic and educational impacts of tourism activities within the CPI area. The findings indicated that the development of CPI had a significant economic impact on the surrounding community, including increased business revenues, job creation, and a reduction in poverty levels. Apart from that, the development of CPI as a multifunctional area is impacting education, especially community economic education. The Multiplier Effect analysis, using the Keynesian Income Multiplier method, revealed that every 1 rupiah of tourist expenditure generated a direct economic impact of 19,81 rupiah on the local economy. The Type I Income Multiplier Ratio of 1,062 reflected an increase in the incomes of business owners and workers, while the Type II Income Multiplier Ratio of 1,092 demonstrated its influence on local household consumption. This indicates that the impact of multifunctional infrastructure development has an impact on the economic education of society.

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## 1. INTRODUCTION

Infrastructure development has been one of the essential components determining the success of a nation's development (Prus & Sikora, 2021; Hai et al., 2022). Its role as an economic driver promotes the growth of related sectors through a multiplier effect, ultimately creating new job opportunities and making a significant contribution to the Gross Domestic Product (Chidakel et al., 2021; Ferreira et al., 2022). The multiplier effect is the outcome of increased demand in a particular sector, which broadly influences economic activities. The multiplier effect refers to the ratio between the

increase or decrease in national income and the increase or decrease in aggregate expenditure (Dupor & Guerrero, 2017). Additionally, the multiplier effect is a process that indicates how national income changes due to variations in aggregate expenditure. In other words, the multiplier effect is expansive in scale, where one activity can influence the outcome of another, leading to impacts on other activities, especially community economic education (Lukoseviciute et al., 2022).

The multiplier effect has a wide-reaching impact, wherein one activity continuously influences others (Chenault et al., 2016; Murphy et al., 2021). The most commonly observed functions of the multiplier effect include its impact on investment, government expenditure, taxation, subsidies, and education. Investments, whether initiated by the government or in collaboration with the private sector, produce a significant multiplier effect on income growth, local consumption, and employment absorption (Hidayat et al., 2024). The Center Point of Indonesia (CPI) is a reclaimed coastal area west of Makassar City, serving as a flagship tourism destination in South Sulawesi (Nasruddin et al., 2023; Maulana et al., 2023). Spanning 157 hectares, CPI integrates modern residences, commercial centers, and public facilities such as the 99-Dome Mosque, parks, and a state guest house. This development, formalized through Makassar City Regional Regulation No. 4 of 2015, has been designated as an Integrated Global Business Centre. Its strategic location, paired with the stunning panorama of the Makassar Strait, has made CPI a favorite destination for education for both domestic and international tourists.

The Center Point of Indonesia offers various attractions, including the uniquely designed 99-Dome Mosque, accommodating 13,000 worshippers; the Lego-Lego culinary area serving Makassar's signature dishes; and the Sunset Quay, a popular spot for enjoying sunsets. The area also features open spaces for activities such as jogging, yoga, and cycling and hosts a weekly Car-Free Day every Sunday, allowing visitors to enjoy a vehicle-free environment. As well as educational facilities for the community, this area is also prepared.

Beyond its recreational appeal, CPI has had a significant economic impact. The influx of tourists has created opportunities for small businesses, ranging from food stalls and accommodations to rental services. These activities support the local community in increasing their income and creating new job opportunities. CPI also contributes to the local revenue (regional original revenue or PAD) and attracts investments through the development of modern, integrated facilities. This area has become a symbol of the city's progress, advancing not only the tourism sector but also the local economy as a whole.

The development of the Center Point of Indonesia in Makassar aims to increase tourist visits, both domestic and international, foster a conducive investment climate, and support economic welfare and local revenue. With the high influx of visitors, business opportunities around the tourist area have expanded, encouraging the creation of new jobs and positively impacting the local economy. We can categorize the economic and educational impacts generated by tourism activities in CPI into three types: direct, indirect, and induced impacts. Direct impacts arise from tourist expenditures on services such as restaurants, accommodations, and local transportation,

which have an impact on economic education. The businesses receiving these expenditures require additional inputs from other sectors, creating indirect impacts. Additionally, the income earned by local workers in these sectors stimulates induced impacts through spending on household needs within the local area, such as food, transportation, and housing, thus strengthening the local economic cycle and economic education of local communities.

This research aims to measure the extent of the economic and educational impact resulting from community activities in the CPI area. This is crucial for helping the government and area managers evaluate the success of CPI development in terms of economic and educational growth, job creation, and the equitable distribution of economic and educational benefits at the local community level.

## 2. METHOD

The research was conducted in the Center Point of Indonesia area in Makassar City, South Sulawesi, using a mixed methods approach with a concurrent triangulation design. This design was chosen because the goals of concurrent triangulation align with the objectives of the study, which aim to gain a more comprehensive understanding of the research problem by collecting complementary quantitative and qualitative data.

The study employed a purposive sampling technique to select respondents based on specific relevant characteristics. The respondents included 100 tourists aged at least 15 years, along with 30 respondents from business units and 30 from local workers. The sample size adheres to the recommendations of [Grafström & Schelin \(2014\)](#); [Hennink & Kaiser \(2022\)](#) to ensure the results are both representative and relevant.

We calculated the economic and educational impact using multiplier effect models, such as the Keynesian Income Multiplier and the Ratio Income Multiplier. The multiplier values reflect the extent to which the tourism site contributes to the local economy and education, with a value of  $\geq 1$  indicating a significant impact. Tourist expenditures can enhance local incomes directly, indirectly, and through induced effects while also fostering investment, job creation, and regional economic and educational growth. We can measure the impacts mathematically as follows:

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

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

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

The following is a map of the center point of Indonesia which is the location of the research presented in Figure 1.



**Figure 1.** Center Point of Indonesia

### 3. RESULTS AND DISCUSSION

The impacts arising from activities in the Center Point of Indonesia area are diverse and include improvements in local infrastructure, reductions in unemployment through workforce absorption, and decreases in poverty levels due to increased income among affected community groups.

Beyond the economic benefits to the local population, the area's varied tourism potential significantly supports Makassar City's regional economy. This tourism development creates new opportunities for businesses and strengthens the city's position as a key economic hub, fostering sustainable growth for the community and the region, as well as community economic education.

#### *Direct Economic and Educational Impact of the CPI Area*

**Table 1.** Direct Economic and Educational Impact of the CPI Area

Type of Business	Number of Business Units	Average Income/Month (Rp/Month)	Direct Economic and Educational Impact (b*c) (Rp/Month)
Cafe	15	40.000.000	600.000.000
Retail Business	6	25.000.000	150.000.000
Educational facilities	10	50.000.000	250.000.000
Restaurant	5	65.000.000	325.000.000
Total			1.325.000.000.

#### *Indirect Economic and Educational Impact of the CPI Area*

The indirect economic and educational impact of visitor activities can be observed through the expenditures of business unit owners within the Center Point of Indonesia area.

**Table 2.** Indirect Economic and Educational Impact of the CPI Area

Type of Business	Average Worker Income / Month (IDR/Month)	Business Unit Expenditure (IDR/Month)	Indirect Economic and Educational Impact (b*c) (Rp/Month)
Cafe	2.800.000	43.000.000	45.800.000
Retail Business	2.200,000	31.000.000	33.200.000
Educational facilities	2.500.000	42.000.000	46.000.000
Restaurant	3.200,000	64.000.000	67.200.000
Total	10.700.000	180.000.000	192.200.000.

***Further Economic and Educational Impacts in the CPI Area***

Further or induced economic impacts refer to economic effects beyond direct and indirect impacts. These impacts arise from the additional income earned by local workers from the business units where they are employed.

Table 3. Further Economic and Educational Impacts in the CPI Area

Worker Expenditures	Average Worker Expenditure (IDR/Month)	Proportion (%)
Consumption	1.500.000	69,89%
Daily Needs	150.000	6,98%
Transportation	146.000	6,82%
Educational	250.000	11,65%
Other Expenses	100,000	4,66%
Total	2.146.000	100%

***Multiplier Effect Analysis***

In the Multiplier Effect Analysis study, the Keynesian Income Multiplier method is used. It consists of: (1) the value derived from the direct impact of visitor expenditures, (2) the Type I Income Multiplier Ratio, which represents the value obtained from the indirect impact of visitor expenditures, and (3) the Type II Income Multiplier Ratio, which represents the value derived from the induced impact (META, 2001). The analysis can be seen below.

$$\begin{aligned}
 \text{Keynesian Income Multiplier} &= \frac{D+N+U}{E} \\
 &= \frac{1.325.000.000+82.000.000+40.800.000}{73.050.000} \\
 &= \mathbf{19,81} \\
 \text{Ratio Income Multiplier Type I} &= \frac{D+N}{D} \\
 &= \frac{1.325.000.000+ 82.000.000}{1.325.000.000} \\
 &= \mathbf{1,062}
 \end{aligned}$$

$$\text{Ratio Income Multiplier Tipe II} = \frac{D+N+U}{D} = \frac{1.325.000.000+82.000.000+40.800.000}{1.325.000.000} = 1,092$$

### Discussion

Based on the calculations above, the economic and educational impact of monetary flows within the Center Point of Indonesia (CPI) area is highly significant. According to the Keynesian Income Multiplier calculations, every one-rupiah increase in visitor expenditure results in a direct impact of 19.81 rupiah on the local economy.

Moreover, the Type I Income Multiplier Ratio is 1,062, indicating that every one-unit increase in business owners' revenue leads to an increase of 1,062 in the income of business owners and workers. Furthermore, the Type II Income Multiplier Ratio is 2.4, which means that every one-unit increase in business revenue results in an increase of 1,092 units in the income of business owners, workers, and worker expenditures in the CPI area.

The economic and educational impact of the CPI area's development has significantly contributed to the local community's economic growth (Surya et al., 2020; Mappatoba et al., 2023). Transactions between visitors and businesses have created positive economic movements and had a positive impact on the local community's economic education.

These findings align with the research conducted by Yulianti (2020), which revealed that tourism development at Tanjung Setia Beach significantly impacted the welfare of the local community. Small business opportunities in the tourism sector, such as culinary services, accommodations, laundry services, surf shops, souvenir shops, general stores, and motorcycle and guide rentals, have increased household incomes and fulfilled family needs, including education and healthcare.

Putra et al. (2017) study on the Multiplier Effect Analysis of Watu Dodol Beach in Banyuwangi found that tourists, business people, and workers all thought the beach was in moderate to good condition, except for some issues with how it was managed as a tourist spot. Tourists, business actors, and workers at Watu Dodol Beach expressed a strong desire for special attention from the local government to address these issues. The research findings also highlighted that Watu Dodol Beach provides tangible economic impacts for the surrounding community, including direct, indirect, and induced effects.

## 4. CONCLUSION

Three aspects allow us to view the economic and educational impacts generated by visitor activities in the Center Point of Indonesia (CPI) area. The direct impact is seen in the increase in business unit revenues around the area, where each tourist expenditure directly

affects the increase in monthly business profits. The indirect impact is observed in the rise of community income, particularly among the workforce, which encourages labor absorption and reduces unemployment rates in Makassar City. The induced impact occurs through the spending of workers' salaries or wages, which are used for consumption and other needs, thus creating a broader economic circulation within the community. These three impacts demonstrate that educational and tourism activities in CPI contribute significantly to the local economy and especially to the economic education of local communities.

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