

Research Article

Does Financial Inclusion Influence Tourism Performance? An Empirical Study in Indonesia

Ris Yuwono Yudo Nugroho^{1*}, Mochamad Reza Adiyanto², and Shaba Nada Faizza¹

¹Department of Economics, Faculty of Economics and Business, Universitas Trunojoyo Madura, Indonesia

²Department of Management, Faculty of Economics and Business, Universitas Trunojoyo Madura, Indonesia

ORCID

Ris Yuwono Yudo Nugroho: <http://orcid.org/0000-0003-1271-0467>

Abstract.

This article highlights the significant role that financial services play in enhancing economic growth, particularly in the context of tourism, which is a vital contributor to the Indonesian economy. The study reveals that while the tourism sector has shown resilience and recovery post-COVID-19, with domestic tourist trips surpassing pre-pandemic levels, there remains a critical gap in the literature regarding the interplay between tourism and financial inclusion. This research employs a quantitative methodology and employs a dynamic panel method to conduct an analysis of data gathered from 33 provinces between the years 2019 and 2023. In addition to concentrating on important factors like the utilisation of electronic money and the proportion of third-party funds that contribute to GDP, we will also be looking at regional macroeconomic data, namely per capita income and economic growth. The results of this research indicate that there is a considerable connection between the use of e-money, which is a component of the digital payment system, and the impact of macroeconomic factors on the expansion of domestic tourism.

Keywords: financial inclusion, tourism development, dynamic panel

1. Introduction

Through existing financial services such as payments, savings accounts, and credit, financial inclusion has become the foundation for development. Account ownership, whether with a bank, regulated institution, or mobile money service provider, enables the owner to safely and affordably store, send, and receive money for daily needs. On the other hand, people without accounts must manage their money through informal mechanisms such as cash, which are less secure, less reliable, and even more expensive than formal methods. According to the Global Financial Index 2021 data, digital payments in developing countries increased from 35 percent in 2014 to 57 percent. The second meeting of the Global Partnership for Financial Inclusion (GPFI), held in 2022 under the

Corresponding Author: Ris Yuwono Yudo Nugroho; email: ris.nugroho@trunojoyo.ac.id

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G20 Indonesia presidency, discussed, among other things, members' commitment to seize opportunities in the increasingly crucial digital era in order to close gaps created by global challenges amid economic recovery. The GPFI emphasises improving digital literacy and consumer protection principles to promote financial and economic inclusion (1).

Among the financial inclusion indicators issued by Bank Indonesia are the number of third-party fund accounts per 1,000 adult population, the amount of electronic money per 1,000 adult population, and the number of electronic money accounts registered with digital financial institution agents. The highest DPK accounts in the last seven years will be in 2022. Since 2017, electronic money has increased significantly with the implementation of electronic money to pay tolls or e-tolls. With Indonesia's widespread use of electronic wallets and financial technology, development is accelerating. The number of registered electronic money accounts peaked in 2019 and fell during COVID-19 (2).

According to Shi et al. (3), tourism is one sector that benefits from expanding financial inclusion. Financial inclusion enables tourism companies and entrepreneurs to access formal finance, increasing the capital required for tourism businesses. The expansion of financial inclusion can make it easier for people to access products and services, including when making payments. Financial products that combine online standardisation and regional customisation can provide more convenient payment methods and more efficient work processes (4), while digital finance can improve tourism resource allocation efficiency (5). According to the Ministry of Tourism & Creative Economy (6), in Indonesia, the tourism sector contributed 3.3 percent to GDP, employing approximately 12 percent of the workforce.

Let us look at the number of tourist trips made by Indonesian residents from their usual place of residence to tourist attractions or visiting other districts/cities. There has been a fluctuation in the number of tourist trips in Indonesia over the last four years. This was caused by the Covid-19 pandemic, of course. Figure 1 shows that there were 720 million tourist trips prior to the 2019 pandemic. During the pandemic, it plummeted to 524 million trips in 2020. Following the pandemic, there was an increase to 613 million, indicating that Indonesia's tourism travel conditions have improved. Domestic tourist trips will increase to 734 million in 2022, which is already higher than the period prior to the 2019 pandemic. In 2023, it will increase again to around 825 million trips.

When analysing domestic tourist trips by province in Indonesia, it will be interesting to see how fluctuations progress.

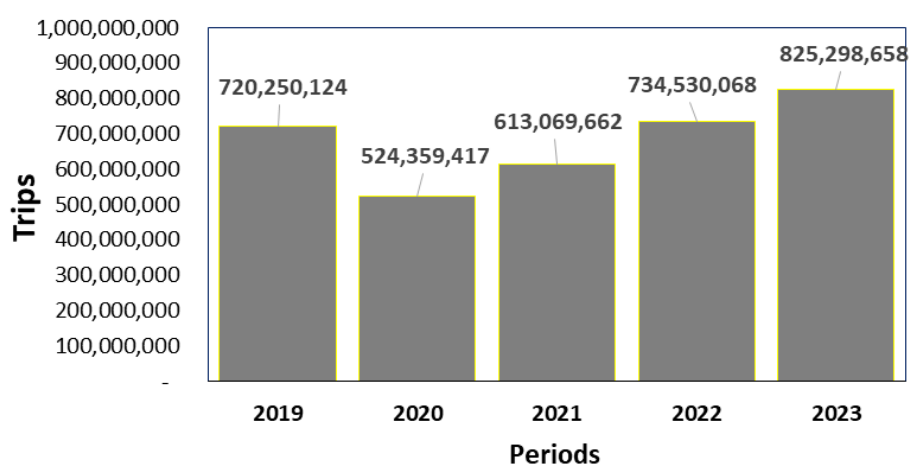


Figure 1: Progress of the number of domestic tourism trips 2019-2023.

There is a dearth of literature that theoretically or empirically explores the impact of financial inclusion on tourism development through the lens of macroeconomic studies. This will be discussed in the following articles. According to Gopalan and Khalid (7), increasing financial inclusion facilitates greater access to and use of financial services. It provides the necessary financial infrastructure for households to save more while reducing borrowing constraints. Second, financial inclusion can encourage entrepreneurship by making capital more accessible. As a result, encouraging business growth and fostering an entrepreneurial culture in the tourism sector can increase the supply of travel and tourism services. Third, financial inclusion has been shown to reduce overall macroeconomic volatility, potentially increasing tourism demand.

Islamic et al.(8), explain that the relationship between financial inclusion and tourism development can be achieved through various means, the first of which is access to funding institutions. Bank-based financial inclusion is a factor that enables financial inclusion in developing countries where banking accounts for the majority of the financial system. Second, there has been an explosion in the use of mobile payment systems over the last ten years. Mobile phones have become such an integral part of people's daily lives that they have also become integral to how people travel. Third, increased financial inclusion will increase a country's official savings, encouraging overall and sectoral growth. One of the interesting pieces of literature that can be used as a model and reference for empirical studies is research by Shi et al.(9) .The study discusses financial inclusion in supporting tourism development, using several aspects of tourism and

juxtaposing it with aspects of financial inclusion with several macroeconomic aspects, including per capita income. Several macroeconomics and financial inclusion aspects will be adjusted according to data availability and analysis needs.

In Indonesian literature, there has been no recent research that examines the influence of financial inclusion on tourism development. Panggabean and Sipahutar's research (9), discusses the role of the tourism sector in economic growth. Ridho's research (10), focuses on the relationship between tourism business and financial inclusion, while Mujiatun et al. (11), examines the accessibility of business actors within the tourism ecosystem. Only Marinda's research (12), with time series data states that the hypothesis of growth based on tourism is not proven, but tourism is based on growth. This is an important point in the need for research that discusses the direct relationship between the tourism sector and financial inclusion in macroeconomics view.

2. Methods

A quantitative approach is used in this research. Secondary data from 33 Indonesian provinces is presented annually for this research objective. Tourism trips (Symbol: *ln trip*) is the dependent variable. By definition, a tourism trip is a traveling or journey undertaken by Indonesian residents from their usual place of residence to a place outside their daily environment in the geographical area of Indonesia voluntarily for less than 12 months and not work (obtaining wages or salary from residents in the destination) or school regularly. Places outside the daily environment include Traveling to tourist attractions, visiting other districts or cities, and staying for a minimum of 6 hours. Data is available in trip units, where the *ln* process is calculated.

According to the Central Bank of Indonesia, financial inclusion is a condition in which every individual enjoys the right to have access to a wide range of quality financial services in a timely, convenient, clear manner at an affordable cost as a way of respecting, protecting, upholding and promoting personal dignity as well as enhancing economic and financial capability. According to Bank Indonesia, several components are indicators of financial inclusion. Two of them are used as independent variables, namely the amount of electronic money per 1000 residents per province (*ln em1000*) and the proportion of party funds to the current price GDP of each province (*tpf*). The variable of the amount of electronic money is presented in the form of card units, which in its calculation is carried out by the *ln* process. This variable is also an indicator of

digital financial inclusion in each province. In contrast, the *tpf* variable is presented as a percentage and simultaneously describes each province's financial development.

The third independent variable is per capita income (*lnpi*). This variable comes from the constant price GDP of each province divided by the population; this indicator is generally an indicator of the level of public welfare in each province, with initial data presented in rupiah, then the *ln* process is carried out. The GDP growth rate (*rg*) is the fourth independent variable. The growth rate is the percentage increase in GDP at constant prices based on expenditure (2010 = 100) over the previous year. The GDP at constant prices measures the added value of goods and services using the prices in effect in a given year as the base year. Grdp at constant prices calculates regional real economic growth from year to year or growth unaffected by price changes. The four variables are briefly shown in table 1 below.

TABLE 1: Variables and data sources.

Indicator	Variabel	Unit	Source
Tourism performance (Tourism trips)	<i>lntrip</i>	<i>ln</i>	BPS (Statistics Indonesia)
Financial inclusion (Electronic Money/1000 Penddk)	<i>lnem1000</i>	<i>ln</i>	BI (Central Bank of Indonesia)
Third party funds of commercial banks/grdp current price	<i>tpf</i>	%	OJK (Financial Services Authority)
Percapita regional income	<i>lnpi</i>	<i>ln</i>	BPS (Statistics Indonesia)
Growth grdp rate	<i>rg</i>	%	BPS (Statistics Indonesia)

The analysis uses data from 33 provinces in Indonesia for the period 2019-2023 as annual data. One province that is not included in the analysis is North Kalimantan. The technical analysis uses the dynamic panel method because in this study are: (1) variations in tourism trips are influenced by conditions in the previous period, as well as other conditions; (2) avoiding reverse causality, (3) the use of dynamic panel data, commonly used to overcome endogeneity problems (13).

The dynamic panel model estimation that will be used refers to the models from Baltagi (14), Shi et al. (3), and Gopalan and Kalid (7). To accommodate empirical analysis and dynamic panel data, the following is the research model estimation:

$$lntrip_{i,t} = \alpha + \beta_1 lntrip_{i,t-1} + \beta_2 lem1000_{i,t} + \beta_3 tpf_{i,t} + \beta_4 lnpi_{i,t} + \beta_5 rg_{i,t} + \lambda_t + \eta_i + \varepsilon_{i,t}$$

Equation 1 --Tourism Trips dan Financial Inclusion Equation

Description, *lntrip_{i,t}* is the variable of tourist travel in province *i* in period *t*; *lntrip_{i,t-1}* is the variable of tourist travel in province *i* in period *t-1* (previous period); *lem1000_{i,t}* is the variable of financial inclusion through electronic money per 1000 people in province *i* in

period t ; $tpf_{i,t}$ is the variable of financial inclusion through the proportion of third party funds in province i in period t ; $lnpi_{i,t}$ is the variable of per capita income in province i in period t ; $rg_{i,t}$ is the variable of economic growth in province i in period t ; α is a constant; β_1 to β_9 are the parameter coefficients of each variable, λ_t is the constant time effect, η_i is the province-specific effect; dan $\varepsilon_{i,t}$ is the error factor (disturbance). The expected coefficient estimates $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5 > 0$.

The First Difference General Method Moment (FD-GMM) and System Difference General Method Moment (SYS-GMM) estimation methods consist of one-step and two-step models. The two-step model is a more efficient and robust standard error against heteroscedasticity and autocorrelation (13). Three criteria for determining the best GMM model: (1) Valid instrument if there is no correlation between the instrument variable and the error component. (2) Consistency is checked using the autocorrelation test to determine the consistency of the estimation results. (3) No bias between the Fixed Effect Method (FEM) estimator and the Pooled Least Square (PLS) estimator. The stages carried out the first is the dynamic panel model specification test. Estimation is carried out using the FD-GMM method; then the instrument validity test is carried out using the Sargan test, and the instrument consistency test is used using the Arellano Bond test. In the second stage, if the test results do not obtain an unbiased estimator and a valid and consistent instrument in the FD-GMM method, it will be continued using the SYS-GMM method (14). The consistency of the SYS-GMM estimator is also assessed by two specification tests, namely the Sargan test and the Arellano Bond test on AR(2). The third stage is the unbiasedness test, namely by comparing it with FEM & PLS, with unbiasedness being met if the FDGMM coefficient is between FEM & PLS.

3. Result and Discussions

The following is a summary of the description of the data used in the study. The data shows the average value of each variable, standard deviation, maximum and minimum values, and the number of observations. The panel data looks balanced. It covers data from 2019 to 2023, as many as 33 provinces, so the number of observations is 165 (Table 2).

The raw data shows that tourist trips during the analysis year from domestic tourist origins were dominated by provinces in Java, especially East Java, West Java and Central Java. There are interesting data findings related to the development of the data, that the impact of the pandemic after 2019, until 2022, only 9 provinces have

TABLE 2: Descriptive statistic.

Variable	Obs	Mean	Std. Dev.	Min	Max
prov	165	17.00	9.55	1	33
year	165	2021	1.42	2019	2023
Intrip	165	15.68	1.53	12.49	19.14
Inem1000	165	5.17	1.29	2.82	10.94
tpf	165	26.49	20.07	9.05	137.18
Inpi	165	17.41	0.53	16.36	19.07
rg	165	3.75	4.23	-15.74	22.90

returned to the same as in 2019. Six of them are provinces in Java and 3 in Sulawesi (South Sulawesi, Southeast Sulawesi, and West Sulawesi), while the other 24 provinces have not returned to the conditions in 2019 (Figure 2).

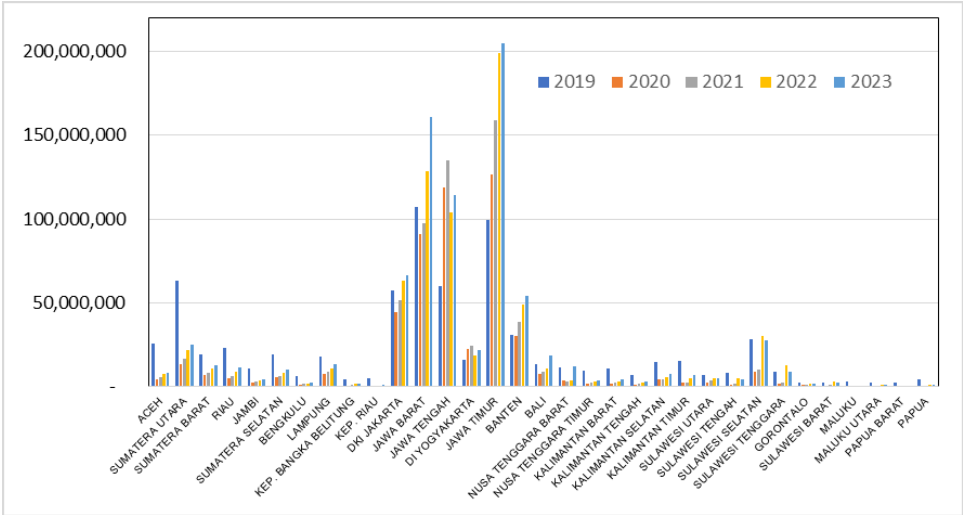


Figure 2: Number of provincial tourism trips 2019-2023.

The main objective of the study was to determine the effect of financial inclusion, third-party funds, per capita income, and regional economic growth on tourism in Indonesia. Table 3 below shows the result of the research model estimation.

The model estimation produces the best model in the first difference GMM model. After conducting the instrument validity test using the Sargan test, it produces $\chi^2(8) = 7.524133$, with $\text{Prob} > \chi^2 = 0.4813$. The test results show that the probability is more than 5 percent, so it fails to reject hypothesis 0, meaning the instrument is valid and the model is specified correctly. Second, conducting a consistency test of the instrument used using the Arellano Bond test shows that AR2 is insignificant, so the model is free from serial correlation with the error term. Unbiasedness test by comparing fdgmm,

TABLE 3: Estimation Result of FDGMM Model.

Intrip	Coef.	Std. Err.	z	P>z	[95% Conf.	Interval]
<i>Intrip L1.</i>	0.40195	0.05930	6.78	0.00	0.29	0.52
<i>Inem1000</i>	0.65185	0.09837	6.63	0.00	0.46	0.84
<i>tpf</i>	-0.00379	0.00264	-1.43	0.15	-0.01	0.00
<i>Inpi</i>	1.39946	0.47983	2.92	0.00	0.46	2.34
<i>rg</i>	0.02418	0.01158	2.09	0.04	0.00	0.05
<i>_cons</i>	18.58991	7.50178	-2.48	0.01	-33.29	-3.89

sysgmm with fem and pls. Unbiasedness is met with the fdgmm coefficient number (0.401) being between fem (0.067) and pls (0.897) and from the significance of the variables and the suitability with the hypothesis, the fdgmm model is the best (Table 4).

TABLE 4: Unbiased Test.

Variable	fem	fdgmm	sysgmm	pls
<i>Intrip L1.</i>	0.06708626	0.40194853***	0.53306665***	0.89673376***
<i>Inem1000</i>	0.27085592**	0.65184646***	0.80294827***	0.58301254***
<i>tpf</i>	-0.00800848	-0.00378556	-0.00227473	-0.01583369***
<i>Inpi</i>	2.2990475***	1.3994617**	0.64089767	-0.40753478***
<i>rg</i>	0.02157081	0.02418474*	0.03328381	0.06546903***
<i>_cons</i>	-26.896302**	-18.589909*	-8.5334617	5.6625073**
N	132	99	99	132

legend: *p<0.05; ** p<0.01; *** p<0.001

Four of the five explanatory variables in the model are significant and align with the initial hypothesis, while only one variable is not significant in the opposite direction. Third-party funds are an insignificant variable, while previous-period tourism visits, electronic money, per capita income, and economic growth are the five variables. Tourism trips from the previous period have a substantial impact, with a value of 0.40195. This indicates that a one percent increase in tourism trips from the previous year will result in a 0.40 percent increase in current tourism trips. This suggests that in accordance with the findings of research conducted by Gopalan and Khalid (7), Islam et al.(8)(3), Marinda (12), Panggabean and Sipahutar (15), and Fahrul (10), it is necessary to continually make efforts to manage short-term and long-term tourism.

The number of electronic money cards per thousand population significantly positively affects tourism trips in Indonesia, with a value of 0.6518, significant with a positive direction, meaning that every 1 () percent increase in electronic cards will increase

tourism trips by 0.6518 percent. In addition to being an indicator of financial inclusion, electronic money data is also an indicator of the development of digital financial inclusion by providing benefits of convenience, security, and efficiency in transactions and increasing accessibility. These empirical results are in line with research by Kunt et al. (1), He and Song (4), and Wang et al. (5)

According to Bank Indonesia, The second variable that is also an indicator of financial inclusion is the amount of third party funds to regional GDP. If the first variable significantly affects tourist trips, this second variable is not significant. This insignificance can be caused by bank credit distribution generally directed more towards productive sectors such as industry and trade. Another thing can be caused by credit accessibility for tourism industry players is often still limited. Many small business players in the tourism sector have difficulty getting loans due to strict requirements or lack of collateral. They can hinder the growth of the tourism sector even though third party funds increase.

Macroeconomic variables that are control variables, namely per capita income and economic growth, both significantly positively influence tourism in Indonesia. Per capita income is certainly related to the ability of tourists to spend on non-primary needs such as tourism; tourists with higher incomes tend to spend more money on accommodation, food, entertainment, and other activities. In addition, when there is a change in the production structure with increasing per capita income, the demand for tourism services also increases. This encourages industry players to invest more in developing tourism products and services. Likewise with economic growth, increasing economic growth will spur an increase in the quality of life and will tend to plan tourism; in addition, economic growth also encourages investment and infrastructure that supports the tourism sector, such as highways, hotels, and other recreational facilities. Several studies support the results of this study, such as Shi et al.. (3), Gopalan and Khalid (7), and Islam et al. (8).

4. Conclusions

Before the COVID-19 pandemic, Indonesia experienced significant tourism travel, which declined drastically during the pandemic. The study findings show that while some provinces have recovered from the impact of the pandemic on tourism, many have not, highlighting the need for targeted interventions to support the recovery and growth of the tourism sector. The study concludes that financial inclusion significantly impacts tourism performance in Indonesia. The analysis reveals that increased access to financial

services—such as savings accounts, credit facilities, and digital payment systems—directly correlates with growth in domestic tourism travel. Furthermore, the study underscores the importance of digital payment systems, which have become integral to the modern travel experience, making transactions more efficient and secure. Conducive macroeconomic conditions have also had a positive impact on increasing tourism trips.

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