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Assessing the Drivers of Economic Growth Models in Pacific Island Countries

Masato Abe, Eiichiro Takinami and Asim Kafle[1]

Abstract

This study explores the relationship between economic growth and the key components commonly included in various economic growth models for Pacific islands. Specifically, this paper, utilizing random effects models on panel data, assesses the impact on economic growth of: (i) government expenditure; (ii) foreign direct investment (FDI) inflows; (iii) tourism receipt; (iv) fisheries production; (v) remittances; and (vi) foreign aid. We find that among these six components, government expenditure, tourism receipts and remittances are significantly associated with generating economic growth. Based on the result, the paper provides recommendations on how government policies could be effectively designed to promote economic development in the Pacific island countries.

JEL Classification Codes: C33; O47
Keywords: Economic growth; FDI; Fisheries; Foreign aid; Government expenditure; Pacific island country; Remittance; Tourism

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Corresponding author: Masato Abe, abem@un.org

[1] Masato Abe is the Economist of the United Nations Multi-Country Office for Micronesia, Kolonia, Pohnpei, Federated States of Micronesia. Eiichiro Takinami is an Associate Expert at the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP), Bangkok, Thailand. Asim Kafle is a Research Associate at the Governance Lab, Kathmandu, Nepal. The authors appreciate institutional support provided by the United Nations Volunteers. The authors' special thanks go to Alexander Sarin for his contributions to this study's initial conceptual development. Nick Freeman edited the entire manuscript. The opinions outlined in this paper are the authors' responsibility and should not be considered as reflecting the views or carrying the endorsement of the United Nations. Any errors are the responsibility of the authors.

1. Introduction

Since Bertram and Watters (1985) introduced MIRAB, an economic model focused on the Pacific islands, in the mid-1980s, scholars have introduced a variety of economic models (e.g., TOURAB, SITEs and PROFIT) to explain the economic situation of the Pacific island countries (PICs). These models have been used to guide policymakers and development partners in implementing economic agendas to address the distinct challenges faced by the region. However, there has been a lack of empirical studies that quantitatively examine the relationship between these models and economic growth. Besides research by Umemura (2020), studies have tended to focus on just one or a few factors and have not encompassed all the factors cited in the scholarly growth models. As a result, the policies pursued may not have been optimal for socio-economic growth in the PICs. In the past two decades, the region has fallen short of economic growth compared to the growth in Asia and the Pacific.[2] Over the past decade, economic and social development goals set out under the United Nations-led SAMOA Pathways 2014-2023 and Sustainable Development Goals (SDGs) have fallen short of expectations for the PICs (Gay and Reid 2025).

To address these challenges, this study explores the relationship between economic growth and all six key components commonly included in economic growth models for PICs. Specifically, it assesses the impact of: (i) government expenditure; (ii) foreign direct investment (FDI) inflows; (iii) tourism receipt; (iv) fisheries production; (v) remittance; and (vi) foreign aid or official development assistance (ODA), using random effects models on panel data. This study aims to identify key economic drivers that facilitate growth and discuss how government policies could be better configured to promote economic development in the PICs.

2. Literature Review

The earliest and most oft-recounted economic development model for the Pacific islands is MIRAB, proposed in the mid-1980s, which has four main components: [mi]gration, [r]emittance, foreign [a]id and public [b]ureaucracy (Abe and Freeman 2024a; Tisdell 2016). The MIRAB model contested the traditional growth paradigms for the PICs at the time, which predominantly emphasized export-led and private sector-driven growth, often advocated by contemporary development agencies (Bertram 1999). In the 1990s, the TOURAB ([tou]rism, [r]emittance, [a]id and [b]ureaucracy) model was proposed, which focused on inbound tourism-oriented activities, building on the components defined under the MIRAB model (Abe and Freeman 2024a; Tisdell 2016). From the 2000s to the 2010s, additional models were introduced: the FFAB model ([f]und, [f]ish royalty, [a]id and [b]ureaucracy) focusing on utilizing sovereign wealth funds and the fisheries industry to generate revenue; and the ROT ([r]emittance, [O]DA and [t]ourism), the SITEs (small island tourism economies) and the PROFIT (people, resources, overseas management, finance and transport)), all expanding on the foundational elements of the MIRAB model (Abe and Freeman 2024a; Kakazu 2019; Tisdell 2016). More recently, strategies promoting the "Blue Economy" concept have gained attention from PIC governments and agencies for their alignment with the SDGs and socio-environmental emphasis (PIFS 2022). In this vein, the "BlueEARTH" model aims to foster socio-economic development while simultaneously protecting oceanic and maritime environments, biodiversity and resources. The model integrates

[2] From 2000 to 2024, the average GDP growth in the PICs was at 2 per cent, compared to 4.8 per cent in the wider Asia-Pacific region, calculated by authors from the World Development Indicators (WDI) data (World Bank 2025).

the concept of the blue economy as well as incorporating the key aspects of the previous models. The "BlueEARTH" model emphasizes components that serve as critical income sources to enhance resilience against external shocks, such as the recent COVID-19 pandemic and war-led supply chain disruption and inflation (Abe and Freeman 2024a). Table 1 summarizes the key focus areas of various development models for the PICs discussed in this section.

Table 1: Development models for the Pacific island countries

	Scholar(s) (published year)	Key Focus Components						◎: Income Generating Components
		Migration	Remittance	Aid	Bureaucracy	Tourism	Fisheries	Others
MIRAB [MI]gration,[R]emittance [A]id [B]ureaucracy	Bertram and Watters (1985, 1986)	○	◎	◎	○			
TOURAB [TOU]rism [R]emittance [A]id [B]ureaucracy	Guthunz and von Krosigh (1996)		◎	◎	○	◎		
FFAB [F]und [F]ish royalty [A]id [B]ureaucracy	Kazama (2002)			◎	○		◎	Sovereign funds
ROT [R]emittance [O]DA [T]ourism	Kakazu (2019)		◎	◎		◎		
SITEs [S]mall (warm-water) [I]sland [T]ourist [E]conomies	McElroy (2006) Oberst and McElroy (2007)					◎		
PROFIT [P]eople (migration) [R]esources [O]verseas management (diplomacy) [FI]nance [T]ransport	Baldacchino (2006)	○						
BlueEARTH [Blue] Economy [E]ducation Foreign [A]id [R]emittance [T]ourism [H]ealth	Abe and Freeman (2024a)	○	◎	◎	◎	◎	◎	Education, Health

Source: The authors.

Recognizing the earlier scholarly models, multilateral development agencies have proposed a few economic development strategies for the PICs to realize their growth opportunities. For example, the International Monetary Fund (IMF) has proposed the "PIC development strategy" based on the theory of comparative advantage. This strategy acknowledges the diversity of the PICs' economic structures and endowments and emphasizes the exploitation of their comparative advantages in trade patterns and performance, such as abundant natural resources (e.g., minerals, hydrocarbon, fisheries and forestry) and tourism resources (Chen *et al.* 2014). The United Nations Conference on Trade and Development (UNCTAD 2022) has broadly categorized the PICs in terms of: (i) agriculture-led development; (ii) manufacturing-led industrialization; (iii) extraction-led development; (iv) service-led development; and (v) "blue economy". The United Nations' trade organization argues that the PICs can follow one or more of the development strategies that best fit with their own specific geographic and demographic endowment structures (UNCTAD 2022). Based on economic foundations and revenue sources, the World Bank groups the nine comparatively smaller PICs into two sub-groups: tourism-remittance-led countries and sovereign rent-led countries; the former generate nearly 41 per cent of GDP from tourism and remittances while the latter benefit from sovereign rents such as fishing license revenues, which account for about 30 per cent of the GDP (World Bank 2024). The World Bank emphasizes the vulnerability of both these groups due to their reliance on a few undiversified income sources and implies the need for tailored economic strategies to build economic resilience.

Kumar and Stauvermann (2021) conducted a country-specific empirical analysis to assess the impact of tourism as well as FDI, remittances and financial development on economic growth (GDP per capita) in five PICs –Fiji, Samoa, Solomon Islands, Tonga and Vanuatu — using the auto-

regressive distributed lag (ARDL) model. Their findings indicated that tourism, measured in tourism visitors' arrival, had a positive impact on GDP per capita in all five countries.

Jayaraman *et al.* (2011a) also investigated the impact of remittances on the growth of GDP per capita in Samoa and Tonga from 1981 to 2008, also using the ARDL approach. The study found that remittances positively impacted GDP per capita in both countries, with inward remittances increasing liquidity in the banking system, thereby enhancing credit to the private sector. In a similar but different study, Jayaraman *et al.* (2011b) conducted an empirical study on Fiji, analyzing the long-term growth effects of remittances to GDP per capita over the period from 1979 to 2008 using an augmented Solow model approach. The findings also revealed that inward remittances had a positive impact on GDP per capita.

Feeny *et al.* (2014) analyzed the effects of FDI on the economic growth of seven PICs (Fiji, Kiribati, Papua New Guinea, Samoa, Solomon Islands, Tonga and Vanuatu) from 1971 to 2010 using empirical modeling. Their findings suggested that although the impact of FDI on the PICs is less pronounced compared to other host countries, it still contributed to an increase in GDP per capita.

Narayan *et al.* (2010) conducted a panel data analysis to examine the impact of tourism on economic growth in four Pacific Island countries –Fiji, Tonga, Solomon Islands and Papua New Guinea—from 1988 to 2004. Utilizing Pedroni's panel cointegration tests, they established a long-run relationship between GDP and tourism revenues.

Umemura (2020) empirically analyzed the relationship between all components in two of the models –MIRAB and ROT—to economic growth. The study conducted a quantitative empirical analysis of nine PICs (Federated States of Micronesia, Kiribati, Marshall Islands, Palau, Samoa, Solomon Islands, Tonga and Vanuatu) from 1995 to 2017 using panel and multiple regression analyses. The study revealed that components of these two models provided some explanatory significance about GDP per capita over the years. It also found that ODA and tourism revenue were significant factors affecting GDP per capita. This study also acknowledged the variability in factors influenced across different countries due to variations in population and economic size, ocean areas, natural resource endowments and historical and geopolitical influences.

Whereas Umemura (2020) successfully examined the contributions of the two development models (i.e., MIRAB and ROT) and various key components to economic development, past literature remains insufficient in comprehensively assessing all key components across different models and limiting the number of countries evaluated in the PICs. While these models and strategies have contributed to the discourse on development in the PICs, there has still been a limited number of empirical assessments that examine and quantitatively validate the relationship of the model components in driving economic growth. In fact, past empirical studies in the PICs have focused on one or a few components of the models in one or a smaller subset of PICs.

3. Theoretical Framework

An empirical model is built to assess the drivers of economic growth in the Pacific islands by using a standard Cobb–Douglas production function that incorporates nontraditional inputs—government expenditure, FDI inflows, tourism receipt, fisheries production, remittances and

foreign aid—to capture the multifaceted determinants of economic output. We use these non-traditional inputs because they serve as a substitute for the traditional inputs of labour and capital in the PICs.

The Cobb-Douglas production function represents output as a product of input raised to constant elasticities, thereby reflecting the responsiveness of output to proportional changes in each factor. In our model, we extend the standard framework by including not only domestic factors such as government expenditure (G) but also external and sector-specific variables, namely foreign direct investments (FDI), tourism (T), fisheries (F), remittances (R) and foreign aid (A).

$$Y = F(G, FDI, T, F, R, A) \quad (1)$$

We include these six variables as they are considered to play a critical role in economic development and are featured in various economic growth models, as summarized in Table 1. Government expenditure or the role of government has been a key component since Bertram and Watters' paper that first introduced the MIRAB model and articulated the importance of the government sector as the primary source of employment and economic development (Bertram and Watters, 1985). While attracting FDI has been limited in many of the PICs, policymakers and international development agencies have been keen to stimulate growth by bringing in capital and technology through increased FDI inflows. Tourism and fisheries are two major industries in many PICs that generate employment for thousands of workers. The PICs are heavily reliant on external capital such as remittances from nationals working overseas and ODA from development partners. In 2024, remittance inflows were equivalent to 10 per cent of the PICs' GDP, as compared to the world average of 0.8 per cent, and they have been growing at 8.8 per cent on average in the past decade (World Bank 2025). For foreign aid, eleven of the world's most aid-dependent countries are located in the Pacific (Wood and Nicholls 2021).

4. Data

We analyze a panel dataset consisting of ten countries in the Pacific and spanning years from 2001 to 2023. The ten nations in this study are: Fiji, Kiribati, Marshall Islands, Federated States of Micronesia, Palau, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu. Papua New Guinea has been excluded due to its comparatively large population size, with about three times the combined population of the rest of the PICs. The Cook Islands, Nauru and Niue were excluded due to a greater paucity of available data. The data are sourced mainly from the World Bank's World Development Indicators (WDI) complemented by data from the United Nations Trade and Development (UNCTAD). Table 2 provides their descriptive statistics with specific sources.

Table 2: Descriptive statistics

Variables	N	Mean	SD	Median	Max	Min	Sources
GDP per capita	229	3974.13	3175.79	718.83	16762.57	718.83	World Bank (2025)
Government expenditure (General government final consumption expenditure per capita)	227	1974.12	1718.31	112.76	8543.80	112.76	World Bank (2024)
FDI (Foreign direct	230	196.83	1840.38	-19100.13	7350.37	-19100.13	UNCTAD (2025)

investment inward flow per capita)							
Tourism receipt (International tourism number of arrivals per capita)	179	0.96	1.65	.01	9.12	0.00	World Bank (2025)
Fisheries production (Total fisheries production per capita in tons)	219	452.96	635.01	11.37	4281.63	11.37	World Bank (2025)
Remittances (Remittances received per capita)	214	375.87	406.62	0	2430.70	0.00	World Bank (2025)
ODA (Net ODA received per capita)	220	906.92	967.21	30.81	6361.09	30.82	World Bank (2025)

Notes: Government expenditure, FDI, fisheries production and remittances have been calculated on a per capita basis by dividing each data by the country's population, which is also sourced from the World Bank (2025). We used current US dollars for most variables as it provides a consistent basis for comparison across different countries and periods and with each data.

The correlation matrix presented in table 3 for the ten combined countries indicates minimal concerns regarding multicollinearity among the independent variables. Most variables show low to moderate correlations, with no significant interdependencies that could bias the estimates.

Table 3: Correlation matrix (all ten PIC countries combined)

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) GDP per capita	1.000						
(2) Government expenditure	0.392***	1.000					
(3) FDI	0.050	0.112	1.000				
(4) Tourism receipt	0.340***	0.133*	0.069	1.000			
(5) Fisheries production	0.113*	-0.057	-0.018	0.181**	1.000		
(6) Remittances	0.049	0.042	-0.019	-0.026	-0.044	1.000	
(7) ODA	0.036	0.074	0.043	-0.050	-0.054	0.089	1.000

*** p<0.01, ** p<0.05, * p<0.1

5. Empirical Models

Based on the above theoretical model (1), we can empirically estimate the production function using the following equation:

$$GDP_{it} = \beta_0 + \beta_1 G_{it} + \beta_2 FDI_{it} + \beta_3 T_{it} + \beta_4 F_{it} + \beta_5 R_{it} + \beta_6 A_{it} + u_{it} \quad (2)$$

In this model, G_{it} represents general government final consumption expenditure per capita, or government expenditure. FDI_{it} represents foreign direct investment inward flow per capita, or FDI. T_{it} indicates international tourism number of arrivals per capita, or tourism receipt. F_{it} refers to total fisheries production per capita (in tons), or fisheries production. R_{it} represents remittances

received per capita, or remittances. A_{it} represents net ODA received per capita, or ODA. The dependent variable GDP_{it} represents GDP per capita, for any country i at time t.

To robustly test these relationships, we employed a logged difference model. In the model, for each variable, we calculated the relative change from one period to the next by taking the ratio of the current period's value to its preceding (lagged) value, (i.e., the first difference of each variable). We then applied natural logarithm transformation to stabilize the variable fluctuation. This ensured that we compared the rate of change across economies. It provided a more homogeneous comparison between the ten countries.

Generalized panel data model

We slightly revised the normal panel data model to account for both the fixed effects and random effects. So, we estimated the equation using both of the specifications.

$$ln\Delta GDP_{it} = c_0 + ln\Delta G_{it} + ln\Delta FDI_{it+} ln\Delta T_{it} + ln\Delta F_{it} + ln\Delta R_{it} + ln\Delta A_{it} + e_{it} \quad (3)$$

Fixed effects model

First, we employed a fixed effects model to account for potential unobserved heterogeneity that could vary across entities but remain constant over time. This model allowed us to control all time-invariant characteristics of each country, thus focusing solely on the within-unit variation over time. The specification is particularly useful for removing the influence of any omitted variable bias that is constant within each unit across the study period.

In the fixed effects model the constant term (α_{i_t}) captured all the unobserved, time-invariant characteristics while the error term (e_{it}) captured all the random deviations from the model for unit i at time t.

Random effects model

Additionally, we employed the random effects model specification. The specification sits on the assumption that the individual-specific effects are random and uncorrelated with the regressors across all periods. The random effects model allows for efficiency gains by considering both within-unit and between-unit variations and is less costly in terms of degrees of freedom compared to the fixed effects model.

In the random effects model the constant term (α_{it}) represents the common intercept for all units, while the error term (u_{it}) captures the random effects which is unique for each unit i and assumed to be uncorrelated with the regressors across all time periods. It captures individual-specific variability not explained by the model.

The random effects model assumes the individual effects are uncorrelated with other regressors and thus:

E (Xu) = 0

The Hausman test is employed to determine the applicability of these two methods. Should this test indicate the presence of correlation, a fixed effects model may be considered to control for time-invariant characteristics.

6. Results

Table 4 shows the regression results. Alongside the random effects (column 2) and fixed effects model (column 3), we also included an OLS model (column 1). The OLS model has time and country-fixed effects and is modeled in such a way that it mimics a panel data model. However, we are aware that the results from the OLS model cannot be reasonably inferred in the same way we interpret the results from models specifically designed for panel data estimation.

Table 4: Regression results

Variables	(1) OLS	(2) Random Effects	(3) Fixed Effects
Government expenditure	0.152***	0.211***	0.208***
	(0.0408)	(0.0467)	(0.0438)
FDI	-0.00156	0.00371	0.00347
	(0.00453)	(0.00506)	(0.00483)
Tourism receipt	0.0385	0.0708***	0.0708***
	(0.0329)	(0.0188)	(0.0174)
Fisheries production	-0.00477	0.0179	0.0160
	(0.0176)	(0.0200)	(0.0190)
Remittances	0.0412	0.0567**	0.0592**
	(0.0253)	(0.0282)	(0.0269)
ODA	-0.0211	-0.0153	-0.0133
	(0.0140)	(0.0160)	(0.0153)
Constant	0.0408	0.0262***	0.0262***
	(0.0339)	(0.00681)	(0.00655)
Hauman test		1.02	
Observations	126	126	126
R-squared	0.629	0.317	0.317
Adjusted *R*-squared	0.496	0.318	0.318

Notes: Standard errors in parentheses; ***, ** and * mean significance at <0.01, <0.05 and 0.10. ld stands for the natural logarithm of first differences.

The Hausman test with a result of 1.02, indicates that there is no significant difference between the random effects model (model 2) and the fixed effects model (model 3). However, we are

using the random effects model (model 2) because it provides a more robust estimation than the fixed effects model.

Model 2 demonstrates that the coefficients of government expenditure (G) and tourism receipt (T) are significant at a one per cent level, and remittances (R) are significant at a five per cent level. Among the three variables, government expenditure (G) has the largest positive impact on changes to GDP per capita; a one per cent increase in government expenditure is associated with an average GDP per capita increase of 0.2 per cent, holding other variables constant. Tourism receipt (T) and remittances received (R) have a similar level of impact; a one per cent increase in the number of tourist arrivals and remittances received is associated with an average GDP per capita increase of 0.07 per cent and 0.05 per cent, respectively, holding other variables constant. In contrast, FDI, total fisheries production (F), and foreign aid (A) did not exhibit a significant relationship.

7. Discussions and Policy Implications

Government expenditure emerged as a statistically significant factor for economic growth. Its sheer size, which averaged nearly a quarter of GDP in 2022 in the PICs,[3] and being a direct component of GDP explains the largest coefficient among the three statistically significant variables (two others are tourism and remittance). The provision of government expenditure is mainly used to fund the government bureaucracy leading to the multiplier effects through civil servants' salaries and infrastructure development, which dominate the PIC markets, although the "import leakage" from these effects is typically quite high. So, the multiplier effects may not be archived as much as desired (Abe and Freeman 2024b). The result may also be driven by the significant role played by state-owned enterprises (SOEs) in these economies, which run on government expenditure. In many PICs, SOEs have provided essential public services, such as utilities and public transport, and in some PICs, provide retail, wholesale, tourism and banking services, which the private sector usually operates in many other countries (ADB 2006; Browne 2006). With an increased government expenditure to GDP ratio over the past two decades,[4] public expenditure towards various public services and SOEs has been on an upward trajectory, which had a larger impact on the changes in GDP among other factors.

Tourism receipt was also positively associated with increasing the GDP. The relatively faster pace of growth in the number of tourists seemed to drive this impact. From 2001 to 2019, a year before the outbreaking of the COVID-19 pandemic, the aggregate number of inbound tourists grew from 0.7 to 1.7 million in the ten PICs[5]; this average annual growth rate of about 5 per cent surpassed the GDP growth, which averaged 2.4 per cent in the same period.[6] The increase in tourism revenue will have influenced other service exports and probably stimulated both private and public investment in developing infrastructure, including accommodations, transportation and hospitality facilities. Many PICs have been able to create and include tourism promotion strategies in their respective national development plans (Everett *et al.* 2018). The challenge is to put the policies into practice and the PICs need to commit to the implementation of their

[3] Calculated by the authors from the WDI data (World Bank 2025).

[4] Government expenditure as a percentage of GDP increased from 21.0 per cent during 2000-2009 to 22.4 per cent in 2010-2019 and further to 25.2 per cent between 2020 and 2023. Calculated by the authors based on the World Bank (2025).

[5] Calculated by the authors based on the World Bank (2025).

[6] Ibid.

development plans, which may include upgrading tourism-related infrastructure, training local workforce and enhancing logistics connectivity, such as additional air routes.

Remittance inflows also showed a positive relationship with economic growth. Similar to government expenditure, remittance inflows make up a large portion of the GDP equating to about 12.8 per cent of the PICs' GDP in 2023.[7] Over the past two decades that this study examined, the remittances received as a proportion to GDP in the PICs have been steadily growing from 6.3 per cent (average of 2000-2009) to 7.2 per cent (average of 2010-2019) and ultimately 10.7 per cent (average of 2020-2024)[8]. In the PICs, remittances generally stimulate essential private consumption, such as food, clothing, housing, education, healthcare and automobiles/boats (Browne 2006). However, remittances used for investment in the productive sector remain low (ILO 2019). As we found positive impacts of remittances, policymakers and financial institutions could further collaborate to bring down the remittance transaction costs (UNECE, no date). Remittance costs in some PICs are among the highest in the world; for instance, in the Australia and Tonga corridor, the average cost per transaction stood at 9.3 per cent of money transfers in 2021 (Collins 2023).

FDI inflows were not a significant contributor, possibly due to the relatively nascent private sector in the PIC economies (Abe and Freeman 2024b). The pervasive dominance and monopoly of government services and SOEs in the PICs have crowded out the private sector's activities (Holden, 2005). Consequently, the private sector may find itself limited to operating in unprofitable markets, which suppresses entrepreneurship and hampers the growth of private enterprises. This situation makes it challenging to leverage FDI inflows to create businesses and materialize opportunities to increase revenues and create jobs.

Although the PICs possess one of the largest exclusive economic zones (EEZs) in the world, fisheries production was also not significantly linked to economic growth, which may prompt the consideration of promoting domestic value addition in the fisheries sector and the diversification of industries that could drive growth in the Pacific. Fisheries production's statistical insignificance may also be due to the existence of illegal, unreported and unregulated (IUU) fishing, which reduces the fishery revenues in the PICs while pushing down the official data below actual volumes. Although comprehensive data is lacking, the estimated total annual volume of IUU fishing for tuna alone in the PICs was 192,186 metric tons[9], with an equivalent ex-vessel value of $333 million, from 2017 to 2019 period (MRAG Asia Pacific 2021).

ODA remains a critical source of funding for government expenditure in the PICs and plays a key role in shaping fiscal policy (Dayant *et al.* 2023)[10]. Therefore, maintaining adequate levels of aid is essential but the more recent trend of declining ODA remains an issue as the PICs experienced the largest drop in official development finances in 2022 due to the shrinkage of COVID-19 support programmes (Dayant *et al.* 2024). However, ODA did not exhibit a direct relationship with GDP growth. It could be understood that the ODA is part of the government expenditure,

[7] Ibid.

[8] Ibid.

[9] The average annual total fisheries production in ten PICs was 463,393 metric tons between 2017 and 2019. Calculated by the authors based on the World Bank (2025).

[10] This point is based on the Lowy Institute's "Pacific Aid Map", which complies with project-based aid inflows (Dayant *et al.* 2023). Therefore, the dataset shows some discrepancies with the traditional balance-of-payment-based aid flows (World Bank 2025).

which must offset the positive effect of ODA on economic growth. This issue could also be due to the sourced ODA data only covering OECD countries and excluding the Global South donors, such as China, Taiwan Province of China, Saudi Arabia, Qatar and India. In particular, China is the third largest source of development finance to the PICs, after Australia and the Asian Development Bank, disbursing 3.9 billion USD between 2008 and 2021 (Dayant *et al.* 2023)[11]. While integrating these sources is desired, the currently available database is the most comprehensive (World Bank 2025).

Given the significance and particularly large impact of government expenditure on GDP growth, policymakers may benefit from focusing public spending allocation more efficiently and strategically on sectors with comparative advantages such as tourism, fisheries and agriculture, which vary by country. Countries with abundant tourism resources should consider ramping up efforts to further promote the tourism sector, with an eye to increasing revenue. For instance, governments could direct more expenditure to restore transportation routes, accommodations and other hospitality facilities that were damaged due to the impact of the COVID-19 pandemic; governments could also step in to restore plans for air routes that were suspended during the pandemic. Remittance also shows the potential to enhance domestic economic development through human resource development and proper engagement with the neighbouring countries' labour markets. FDI inflows were not found to be a significant factor, providing greater opportunities for FDI inflows to be linked to strengthening the private sector through capacity building, sectoral investment and financing, technology transfer and public-private partnerships. Similarly, ODA continues to be crucial for the PICs' future development, constituting a large portion of PICs' national budgets.

8. Conclusions

We focused on empirically examining whether the key factors which various development models and strategies (e.g., MIRAB, ROT and BlueEARTH) have proposed contribute to economic growth in the PICs. Given that previous studies, as summarized in the literature review, are limited, the present study contributes by empirically assessing these key elements' impacts on the PICs' economic growth. We found that three of them – government expenditure, tourism and remittances—have positive relationships with enhancing economic growth. Among these, government expenditure had the largest impact, possibly due to the dominant presence of the public sector in the PICs, which controls the economies and the labour markets.

Further studies could assess the determinants of economic growth in each country or group, based on criteria suggested by IMF, UNCTAD or the World Bank, considering similar economic bases and using a longer time period and more comprehensive dataset. FDI data could be substituted with alternatives such as greenfield investment data (e.g., fDi Markets[12]). Data for fisheries production could be analyzed by using export figures of respective countries. While this study utilized ODA data derived from traditional development partners (World Bank, 2025), future research could seek to include development loans and grants from non-traditional donors, as geo-strategic competition increases financing in various forms from countries like China among others (Abe and Freeman 2024b).

[11] Ibid.

[12] Visit: https://www.fdimarkets.com/.

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