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Why are aid projects less effective in the Pacific?

Terence Wood, Sabit Otor and Matthew Dornan

Abstract

On average, appraisals find aid projects to be less effective in the Pacific than elsewhere in the developing world. In this study, we use a new multi-donor dataset to study why aid projects are less effective in the region. We find the clearest impediments to effectiveness in the Pacific are remoteness and small population size. The relatively politically free nature of many Pacific states also appears to be associated with lower project effectiveness. The impact of remoteness and population makes sense—both traits make aid logistics harder. Our study is not the first to find aid is less effective in freer countries, yet the finding for the Pacific is puzzling, a matter we take up in the discussion section of the paper. We also study which types of projects are least likely to work in the Pacific. In doing this we are impeded by data constraints. However, we find clear evidence that humanitarian projects tend to be less effective in the Pacific than in other countries.

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1. Introduction

Aid to the Pacific is increasing. Aid from OECD donors increased by 32% between 2014 and 2018,[1] and new donors such as China are taking an active interest in the region.[2] Yet existing analysis of aid project data strongly suggests aid projects are less effective in the Pacific than elsewhere in the developing world (Feeny & Vuong 2017; Wood et al. 2020). Given the rise of aid to the Pacific, it is important to learn why this is the case.

In this paper, we engage in a detailed empirical attempt at explaining lower aid project effectiveness in the Pacific. To do this we use a large, purpose-built dataset of aid project appraisals. We use causal mediation analysis to study which variables from the existing quantitative literature on the effectiveness of aid projects, as well as work on constraints to development in the Pacific, serve as likely explanators of why aid projects are less effective in the region. Our central finding is that the remoteness and small populations of many Pacific countries appear to be the main constraint on aid effectiveness in the region. Higher average civil and political liberties appear to impede project effectiveness too. We find governance to be better on average in Pacific countries and that, were it not for this, aid projects would be less successful still in the region.

The first finding is unsurprising. Not only does the remoteness of many Pacific countries produce direct impediments to delivering aid effectively, but remoteness and small populations are impediments on development more generally, and it is likely harder to make aid work in countries where general progress is slow. The second finding—the relationship between greater civil and political freedoms and worse aid outcomes—is harder to explain. As we detail in the Discussion section, we think it very likely it is not freedom per se that impedes aid effectiveness in the Pacific, but rather the patronage-oriented nature of democracy in many Pacific states.

[1] See OECD.stat, 'Aid (ODA) disbursements to countries and regions [DAC2a]', https://stats.oecd.org/Index.aspx?datasetcode=TABLE2A.

[2] Lowy Institute Pacific Aid Map, https://pacificaidmap.lowyinstitute.org/.

The paper also aims to aid donor practice by studying which project traits, including size, duration and sector, have differing effects in the Pacific compared to the rest of the developing world. We were hampered in this work by limited information on project specifics. However, we found no evidence that the effect of project size and duration on aid effectiveness differed in the Pacific from other developing countries. When we studied sector, we found that humanitarian projects were notably less effective in the Pacific, on average, than they were elsewhere.

This paper contributes by being one of the first-ever papers to analyse the effectiveness of aid projects in the Pacific, and the first paper to offer an explanation of why aid projects work less well in the region.

The paper proceeds as follows. First, we review the relevant literature. Second, we explain our data and methods. Then we present results—starting with examining why aid projects are less effective in the Pacific, before moving to which types of project traits influence projects in different ways in the Pacific. Finally, we conclude with discussions of the substantive significance of our findings, alongside suggestions for future research.

2. Literature

2.1 Quantitative analysis of aid project effectiveness

Our study speaks to a small but growing body of research that has sought to derive insights into factors contributing to the effectiveness of aid projects using effectiveness scores taken from donors' appraisals of their projects. Such endeavours have been limited by data availability: specifically, they require publicly available aid effectiveness scores from aid projects. For some years the World Bank was the only donor to make this type of data available. In 2017 the Asian Development Bank (ADB) added to the store of available material when it released similar data in an apparently one-off release. The store of available data was further increased when Professor Dan Honig released a dataset created for his book *Navigation by Judgement* (Honig 2018). In addition to World Bank and ADB data, the Honig dataset included information on six other donors. In early 2020, data on Australian Aid Program projects was made available (Wood et al. 2020).

Existing analysis of project effectiveness data has focused on two types of project traits: those associated with individual aid projects, and those associated with the countries projects are run in.

Standard project traits included in analysis are project size, duration and sector. A fair conclusion would be that where these traits have been studied, findings have been mixed. No clear consensus has emerged, for example, that certain sectors are more likely to succeed (Bulman et al. 2017; Denizer et al. 2013; Feeny & Vuong 2017; Wood et al. 2020). At least two studies have found projects that were longer in duration were less favourably appraised on average, although other studies have failed to find a relationship (Denizer et al. 2013; Feeny & Vuong 2017; Wood et al. 2020). Similarly, one influential study of World Bank projects found larger projects to be less successful, yet the opposite finding emerged from analysis of Australian data (Denizer et al. 2013; Wood et al. 2020).

Study of country-level factors has tended to produce clearer findings. Economic growth is often found to be positively associated with success. And, although the relationship is more ambiguous, levels of recipient GDP have also been found to be associated with success in some papers (Bulman et al. 2017; Denizer et al. 2013; Feeny & Vuong 2017; Kilby 2000; Wood et al. 2020). Generally, when it has been studied, better governance has been found to be positively associated with project success. However, the relationship between political and civil freedoms, and success is more mixed. Some studies have found a positive relationship, others have found no relationship or even a negative relationship. Negative relationships have tended to be most pronounced in studies focused on the Asia-Pacific region (Bulman et al. 2017; Denizer et al. 2013; Feeny & Vuong 2017; Honig et al. 2019; Isham et al. 1997).

2.2 Project effectiveness in the Pacific

Historically, the bulk of quantitative work on aid effectiveness in the Pacific has examined the relationship between aggregate aid flows and development outcomes (for example, Feeny 2005; Feeny & McGillivray 2010; Pavlov & Sugden 2006). This body of work has focused on whether aid works or not in the Pacific, and has not examined whether aid effectiveness in the Pacific is different from the rest of the world, or why this might be the case.

Unlike studies of the impact of aggregate aid flows, the difference in aid effectiveness between the Pacific and the rest of the developing world has been included in three recent studies focused on the effectiveness of aid projects. All three studies have found aid projects in the Pacific are less effective on average than projects in the rest of the developing world (Feeny & Vuong 2017; Wood & Otor 2019; Wood et al. 2020). While this finding is clear, no existing study has sought to empirically examine why it exists.

Interestingly, the conclusion from quantitative research about lower aid effectiveness in the Pacific appears to reflect the beliefs of some aid workers based on their practical experience (for example, Hunt 2020). A similar finding also emerges from analysis of Australian Aid Program country-level data assessing the extent to which country objectives have been met (Howes et al. 2020).

Although existing studies have not sought to explain why aid is less effective in the Pacific, other work, including academic analysis and work from aid agencies, has sought to explain the particular development challenges facing the region. One obvious set of challenges stems from the remoteness and small populations of many Pacific countries.[3] These traits have been shown to increase vulnerability, and impede development (Briguglio 1995; Guillaumont 2010; Winters & Martins 2004; World Bank 2017). It is easy to see how the same traits might reduce aid effectiveness. Remoteness and smallness could impede project logistics: it is harder to deliver material and personnel to remote locations; and the pool of local support is smaller in small countries. The World Bank found its lending costs per dollar lent are approximately 16 times higher in the Pacific (Independent Evaluation Group 2015, p. 17). And Denizer et al. (2013, p. 298-299) provide suggestive evidence that higher project management costs lead to worse project performance in World Bank projects. Remoteness and smallness may also impede aid in other ways too: remote locations may benefit less from the same type of aid, as challenges associated with remoteness and small scale undermine the impacts of interventions that would be successful in other contexts.

[3] Population has only been included in one study of aid project effectiveness that we are aware of (Feeny & Vuong 2017). However, this paper failed to find evidence of a consistent population effect.

3. Data and methods

The data for the primary outcome in our study—project effectiveness—all come from aid project assessments. Not all donors provide a numeric value to represent the effectiveness of their projects. And not all donors that do, make these values public. However, data are now in the public domain for the following donors: the Australian Government Aid Program; the World Bank; the ADB; the UK's Department for International Development (DFID); Deutsche Gesellschaft für Internationale Zusammenarbeit (GiZ), the German government's development agency; KfW, the German government's development bank; the International Fund for Agricultural Development (a UN institution; hereafter IFAD); Japan International Cooperation Agency (the Japanese government aid program; hereafter JICA); and The Global Fund to Fight AIDS, Tuberculosis and Malaria (hereafter GFATM or Global Fund). The data are global, coming from throughout the developing world, including projects in the Pacific as well as many projects from other regions. Following standard practice, Pacific countries are defined in our analysis as aid-recipient islands situated in the Pacific Ocean. Reflecting our definition and those countries for which there are available data, the Pacific countries used in our analysis are: Cook Islands, Federated States of Micronesia, Fiji, Kiribati, Marshall Islands, Nauru, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu. Effectiveness is measured as the extent to which the project was effective in meeting its original goals. In the data we work with, following Honig (2018) we use effectiveness scores standardised to a six-point scale (with one being the worst possible score and six the best). For a full discussion of effectiveness scores and their distributions among different donors, see Wood et. al. (2020).

In our work we gathered data on the World Bank and ADB data directly from the organisations' websites. All other donors were sourced from the dataset compiled by Honig (2018). The one exception to this was Australian data, which were recently made available by the Australian Government Aid Program.[4] Donor project assessment data is

[4] Australian data can be found in the datafile at: http://doi.org/10.6084/m9.figshare.11678118; World Bank data can be accessed here: https://finances.worldbank.org/Other/IEG-World-Bank-Project-Performance-Ratings/rq9d-pctf; ADB data can be accessed here: https://www.adb.org/sites/default/files/evaluation-document/214201/files/2017-aer-rating-database.xlsx; Honig's dataset can be accessed here: https://danhonig.info/.

usually accompanied by information on some project specifics such as size, duration and sector. Where it was not, in some instances we were able to match project assessment data with project specifics from other donor data sources. Unfortunately, it was not possible to gather data on a large suite of project specifics; however, we were able to gather data on a core set of important traits.

One obvious concern with project assessment data of the sort we have used is their potential subjectivity. Many donors have internal processes in place for double-checking project appraisals (for example, final aid quality assessments are independently double-checked in the Australian Aid Program, and sent for revision if they are deemed inaccurate). Also, studies that have compared internal appraisal scores with those from independent external evaluators have tended to find little evidence of inflated appraisal scores (Denizer et al. 2013). Most importantly for our work, our analytical leverage does not come from absolute appraisal scores. Rather, it stems from the relative differences in appraisal scores (scores being lower in the Pacific, for example, than they are elsewhere). Unless there is a reason to think some subjective bias shapes relative differences, inference involving them is still valid. One obvious potential source of bias stems from differences between donors: some donors may be more lenient on their projects than others. These may also be donors that do less work in certain regions or certain sectors, in which case inference will be biased. Another potential source of bias is that donor lenience in appraisals may change over time, which would also be an issue if donors simultaneously changed focus over the same time period. Fortunately, these are issues that can be largely accounted for by including donor and project completion date fixed effects in regression models. We do this in all analysis throughout this paper.

In our final dataset we complemented project-level data with data on the recipient countries the projects were delivered in. To do this we drew on World Bank World Development Indicator data on recipient economic and demographic indicators, World Bank government effectiveness data, Freedom House data on political and civil freedoms (hereafter referred to as 'freedom'), and CEPII data for remoteness.[5] CEPII data are

[5] World Bank Development Indicator data come from: https://databank.worldbank.org/reports.aspx?source=world-development-indicators. Governance data come from: https://databank.worldbank.org/source/worldwide-governance-indicators. Freedom House data come from: https://acrowinghen.com/data/. CEPII data come from: http://www.cepii.fr/CEPII/en/bdd_modele/bdd_modele.asp.

standard in trade analysis. They measure the distance between the largest cities in two countries, with distance being weighted by the size of each city *viz a viz* each country's total population (Mayer & Zignago 2011). Following standard practice, we turned these data into a single value for every country in each year the data covered. This value was calculated as the mean distance of each country from every other country on Earth, with country distances weighted by the size of country economies. Once again, this is a standard measure (Bacchetta et al. 2010). The dataset and approach are often used in analysis of remoteness and the Pacific (for example, Horscroft 2014; World Bank 2017).

For each country-level variable of interest, we obtained the value of the variable at the start of each aid project and also an average across projects' lifespans. (For example, if a project ran in Fiji from 2000 to 2005, for GDP per capita, we used Fiji's GDP per capita in 2000 and also calculated mean GDP per capita in Fiji from 2000 to 2005.) In our subsequent analysis, we used the variable from the start of the aid project if there was any risk of reverse causality (the effectiveness of aid projects influencing the variable), otherwise (for variables such as remoteness) we took the average value from across the lifespan of the project.

Although some aid project effectiveness data from the World Bank span as far back as the 1960s, our analysis is restricted to projects that were assessed from 1996 onwards owing to unavailability of some country-level variables from earlier periods. This is unproblematic as our interest is in contemporary issues of aid effectiveness.[6] Note that, for consistency's sake, in all our work—whether bivariate or including multiple controls—we restrict analysis to the same time periods and only to observations for which all variables are present. Table 1 provides basic summary statistics for our data. Table 2 shows the total number of analysed projects by donor.

[6] The Pacific effect, it should be noted, does not only exist in our restricted post-1996 dataset: it can be found clearly in the full dataset of all years too.

Table 1: Summary statistics

Variable	Mean	Std Dev	Min	Max
Project effectiveness rating (1-6)	4.25	1.06	1.00	6.00
Real GDP per capita growth at start of project	3.64	6.20	-34.90	92.12
GDP per capita at start of project (ln)	8.22	0.86	6.13	10.76
Remoteness (000kms) (average over project)	8.75	1.52	5.68	12.68
Population (ln) (average over project)	17.13	2.01	9.15	21.04
Governance (start of project)	-0.52	0.51	-1.90	1.36
Freedom (start of project)	7.81	3.15	2.00	14.00
In Pacific	0.03	0.18	0.00	1.00
Total number of projects	8062			
Number of recipient countries	148			

Notes: All projects assessed are from 1996 or more recent. "In Pacific" is a dummy variable coded 1 if the country is an aid recipient in the Pacific region. The Pacific countries in our sample are: Cook Islands, Federated States of Micronesia, Fiji, Kiribati, Marshall Islands, Nauru, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu, and Vanuatu.

Table 2: Project breakdown by donor

Donor	Projects
Australian aid program (Australia)	429
Asian Development Bank	751
Department for International Development (UK)	1,676
The Global Fund to Fight AIDS, Tuberculosis and Malaria	101
GiZ (The German government development agency)	109
KfW (German government development bank)	342
International Fund for Agricultural Development	25
Japan International Cooperation Agency	501
The World Bank	4,128

Notes: all data are from Honig (2019), except data for the World Bank and Asian Development Bank, which are from those organisations' websites, and Australia, which were provided data to the authors in 2019

We undertook our central analysis using causal mediation analysis. This is a standard approach for estimating the extent to which the effect of one variable on another is mediated by other variables (Imai et al. 2010). In this case, we sought to estimate the extent to which the Pacific effect on aid effectiveness is mediated by each of the set of variables detailed in Table 1. These potential mediators were chosen either because they have been shown to impact project effectiveness in existing studies, or—as is the case with remoteness and population—there is strong reason to suspect they may be a constraint on aid effectiveness in the Pacific because of their broader impacts on the region.

We analysed our results in three ways. First, because it provides an easy visual sense of the impact of the mediating variables that may explain why projects are less effective in

the Pacific, we produced two tables. One table shows whether the potential mediating variables differ between the Pacific and elsewhere. The other table shows the cumulative impact of each of the potential mediators in a regression model in which aid effectiveness is the dependent variable and in which the impact of the Pacific is controlled for. A sense of the extent to which each variable mediates or explains why aid is less effective in the Pacific can be gained from the change in the Pacific coefficient as each variable is added. Our second form of analysis was more systematic. In it, we used seemingly unrelated regressions to generate coefficients that combined estimates of the variation in potential mediating variables between the Pacific and elsewhere, and estimates of the variables' impact on the effect of the Pacific on aid effectiveness. Using seemingly unrelated regressions allowed us to estimate how much of the Pacific's effect on aid effectiveness was mediated through each of the variables we were interested in. It also allowed us to consistently estimate standard errors and measures of the statistical significance of each mediator's impact on the Pacific effect (Baron & Kenny 1986; Preacher & Hayes 2008; VanderWeele 2016).

Our third approach, which we report on in Appendix 1, involved using the Karlson, Holm, and Breen (KHB) method, a new means of testing for causal mediation (Karlson & Holm 2011; Kohler et al. 2011). The KHB approach serves as a useful robustness test: it can be used with clustered standard errors and it can be used in models in which the dependent variable is not treated as continuous (Kohler et al. 2011; Smith et al. 2019). As we show, results from the KHB approach were effectively identical to the results presented in the main body of the text.

In all of our analysis, in addition to using donor and recipient fixed effects, we controlled for a suite of project-level variables—project size, sector and duration—which could plausibly explain the Pacific effect if they differed on average between the Pacific and the rest of the developing world.

As a further robustness test, in Appendix 1 we also show that results do not change substantively in more parsimonious models that include only key country traits and which, in one case, drop project-level controls.

In the final portion of our analysis, we used OLS regressions with interaction terms in the models to study which project traits appear to have differing impacts in the Pacific from the rest of the developing world.

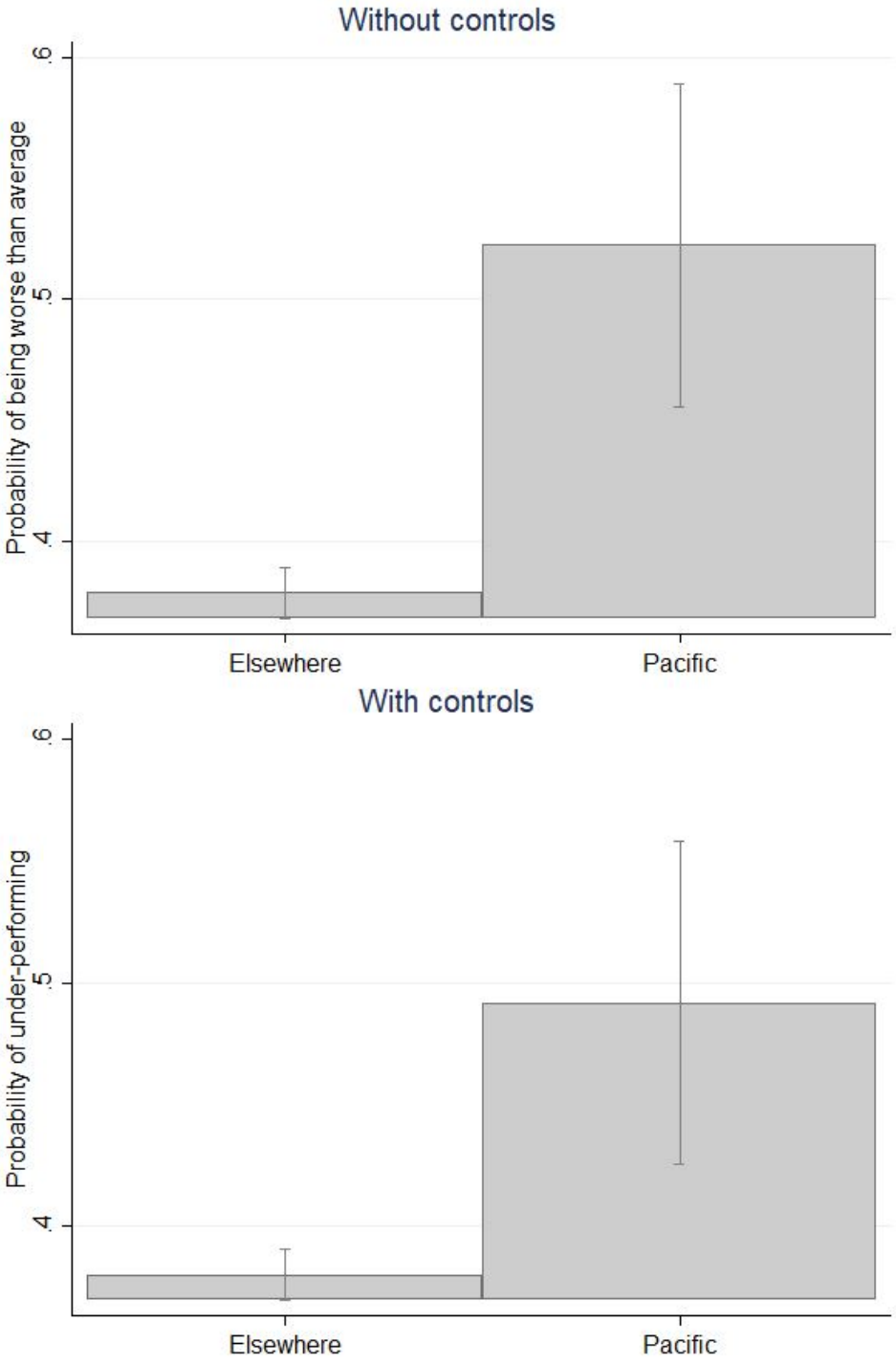
4. Results

Figure 1 compares project effectiveness between the Pacific and the rest of the developing world. As we noted above, different aid donors may be more or less lenient on their projects, and donors may become more or less lenient over time. As stated, in our formal analysis we account for this issue using fixed effects. However, to offer a simple visual means of demonstrating difference in project effectiveness, which accounts for these issues, we generated a binary variable that indicated whether a project had performed below its donor's average in the year it was assessed in. The relationship between this binary and the Pacific was then estimated using a logistic regression. The resulting average probability that a project will be below donor average is shown for the Pacific and elsewhere in Figure 1. The first panel in the regression is a simple comparison, the second panel comes from a regression model in which project traits such as size and sector are controlled for.

The predicted probability of under-performance in the Pacific is more than 10 percentage points higher in both panels. Projects in the Pacific are certainly not guaranteed to fail, but they are much more likely to under-perform than projects in the rest of the developing world.

In Table 3 we step back from the Pacific and simply regress all of the potential mediators used in subsequent analysis against aid effectiveness. Although all of the project-level controls, as well as donor and completion year fixed effects are included, no Pacific variable is included. The purpose of this regression is simply to see if the variables we will ultimately use as mediators are associated with project effectiveness in our sample in a manner we might expect based on the literature that informed our variable selection. This regression model is OLS (as are all others in the main text of the paper unless otherwise stated).

Figure 1: Probability of underperforming, Pacific projects and elsewhere



Notes: data come from 1996 and thereafter. Data are from all donors with projects in the Pacific. Values are predicted probabilities of projects performing worse than the donor's mean project in that year. Predicted probabilities come from logistic regressions. In the second panel, regressions are run with project traits controlled for.

Table 3: Global relationship between variables and aid effectiveness

	Appraised effectiveness score
Governance (initial)	0.29***
	(0.04)
Freedom (initial)	-0.03***
	(0.01)
Growth (initial)	0.01**
	(0.00)
GDP per capita (initial; ln)	0.02
	(0.02)
Remoteness (thousands)	-0.04***
	(0.01)
Population (ln)	0.02***
	(0.01)
Donor FE	Yes
Completion FE	Yes
Sector FE	Yes
Size control	Yes
Duration control	Yes
r2	0.14
N	8062

Clustered standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$
Notes: estimates come from an OLS regression with clustered standard errors. The unit of analysis is the individual project. The dependent variable is the project effectiveness score. Project traits are controlled for. Donor and completion year fixed effects are included in the model.

The relationships that emerge from the regression model are broadly in line with expectations based on other work. Governance is positively related to aid effectiveness. Freedom is negatively related—a finding that fits with at least some of the existing literature. Growth is positively related, once again in line with existing work. The coefficient for GDP per capita is positive, although not statistically significant, a finding that is reasonably consistent with existing work. In line with work on development in the Pacific, remoteness is negatively associated with effectiveness and population positively associated.

In Table 4 we return to the issue of aid effectiveness in the Pacific. In it, we compare whether the variables of interest differ on average between the Pacific region and elsewhere. The values in the table show the mean score for each variable averaged across projects. Averages are provided for projects run outside of the Pacific and projects inside the Pacific. Averages are compared in the column 'Difference'.

Table 4: Key variables in the Pacific and elsewhere

	Non-Pacific mean	Pacific mean	Difference
Governance	-0.532	-0.141	0.391***
	(0.006)	(0.026)	
Freedom	7.710	10.707	2.998***
	(0.035)	(0.129)	
Growth	3.719	1.261	-2.458***
	(0.071)	(0.267)	
GDP Per capita (ln)	8.222	8.139	-0.083
	(0.010)	(0.027)	
Remoteness	8.657	11.566	2.909***
	(0.016)	(0.034)	
Population	17.274	13.020	-4.254***
	(0.021)	(0.115)	

Standard errors in parentheses
P-values from t-test of means
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

The table shows that, on average, the countries of the Pacific are better governed and freer than the rest of the developing world (at least as captured in standard measures). Economic growth is lower in Pacific countries. GDP per capita is also lower if anything, although the difference is not statistically significant. As would be expected, Pacific countries are more remote on average and have smaller populations.

Tables 3 and 4 alone provide some cause to suspect our variables of interest may be part of the reason why aid projects are less effective in the Pacific. With the exception of GDP per capita, each of these variables was associated with aid effectiveness in Table 3. As Table 4 shows, with the exception of GDP per capita, each of these variables differs between the Pacific and the rest of the developing world.

In Table 5 we continue investigations into whether the variables of interest help explain the Pacific effect. The table presents the results of a series of regressions in which aid project effectiveness is the dependent variable and projects are the unit of analysis. In each of these regressions, we control for a range of project traits as well as including donor and completion year fixed effects. The first independent variable in each regression is a dummy variable for the Pacific. It represents the 'Pacific effect': the extent to which aid project effectiveness differs between the Pacific and elsewhere. The first regression contains the Pacific (alongside project controls and fixed effects) as the sole independent variable. In each subsequent regression, potential mediating variables are added one at a time.

It is instructive, as these variables are added, to examine the change in the coefficient for the Pacific dummy. Any variable that clearly shifts the coefficient for the Pacific dummy is a likely mediator. Formally, this approach is often referred to as the difference method. While it is not the end point of our analysis, it can be used as a means of measuring mediation, and has simple intuitive appeal (VanderWeele 2016).

Table 5: Aid effectiveness, the Pacific dummy and added variables

	Pacific	Governance	Freedom	Growth	GDP	Remote	Pop
Pacific	-0.15**	-0.23***	-0.18***	-0.16**	-0.14**	-0.07	0.02
	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.07)	(0.07)
Governance (initial)		0.14***	0.31***	0.30***	0.27***	0.28***	0.29***
		(0.03)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Freedom (initial)			-0.04***	-0.04***	-0.04***	-0.03***	-0.03***
			(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Growth (initial)				0.01**	0.01**	0.01**	0.01**
				(0.00)	(0.00)	(0.00)	(0.00)
GDP per capita (initial; ln)					0.04**	0.03	0.02
					(0.02)	(0.02)	(0.02)
Remoteness						-0.03***	-0.04***
						(0.01)	(0.01)
Population							0.02***
							(0.01)
Donor FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Completion FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sector FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Size control	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Duration control	Yes	Yes	Yes	Yes	Yes	Yes	Yes
r2	0.12	0.13	0.13	0.14	0.14	0.14	0.14
N	8062	8062	8062	8062	8062	8062	8062

Clustered standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$
Notes: estimates come from OLS regressions with clustered standard errors. The unit of analysis is the individual project. The dependent variable is the project effectiveness score. Project traits are controlled for in all models. Donor and completion year fixed effects are included in all models.

First, when governance is added, the Pacific coefficient actually becomes larger (that is, its difference from zero becomes greater). This suggests governance is a moderating variable: because good governance boosts aid effectiveness, and because governance is better in the Pacific, the finding indicates the negative effect of the Pacific on aid effectiveness would actually be greater were it not for the positive influence of comparatively good governance. Adding the freedom variable reduces the magnitude of the Pacific effect considerably. Growth and GDP also reduce the magnitude but their impact is small. Remoteness, on the

other hand, has a substantial impact, and for the first time the coefficient of the Pacific's effect on aid effectiveness ceases to be statistically significant. When population is included, the coefficient for the Pacific changes substantially again, actually becoming positive albeit not statistically significantly different from zero.

Informally, the fact the Pacific coefficient is effectively zero at the end of the analysis suggests the negative effect of the Pacific on aid effectiveness is completely mediated by these variables. The coefficients for all the variables except GDP per capita are statistically significant in the final model, implying that all variables play a role of some sort in explaining the Pacific effect. This is, at least, what investigations thus far suggest. More complex approaches to testing causal mediation were pioneered in the 1980s (Baron & Kenny 1986) and have been refined in a range of ways since (Imai et al. 2010; VanderWeele 2016). It is the approach of Baron and Kenny (1986) that we draw upon now. The approach is modified so that we can estimate the relative effects of individual mediators with correctly calculated standard errors, which allows us to test the hypothesis that each individual variable is a mediator (Preacher & Hayes 2008). To do this, we use seemingly unrelated regressions (Imai et al. 2010; Preacher & Hayes 2008; Statistical Consulting Group 2015). The results of our analysis can be found in Table 6.

Table 6: Results of main mediation analysis

Total effect	-0.150
Mediated effect	-0.166
Remaining direct effect	0.016

Mediator	**Effect**	**Std Err**	**p-value**
Governance	0.15	0.02	0.00
Freedom	-0.11	0.02	0.00
Growth	-0.02	0.01	0.00
GDP (ln)	0.00	0.00	0.25
Remoteness	-0.10	0.02	0.00
Population (ln)	-0.09	0.03	0.00

Notes: estimates come from seemingly unrelated (OLS) regressions. Standard errors are not clustered. The unit of analysis is the individual project. The dependent variable is the project effectiveness score treated as a continuous variable. Project traits are controlled for. Donor and completion year fixed effects are used. The top panel shows the combined impact of all the mediators on the Pacific effect. The lower panel shows the impact of individual mediators.

The first portion of the table shows the original Pacific effect (the negative impact of the Pacific on aid project effectiveness). It shows the reduction in effect associated with the

combined mediator values, and it shows the remaining Pacific effect. As in the analysis shown in Table 5, Table 6 shows the mediators more than fully account for the Pacific effect. In other words, were it not for the traits we have studied, aid would possibly be slightly *more* effective in the Pacific than in the rest of the world.

The second portion Table 6 is devoted to the individual mediating effects of each of the mediators. (The effect sizes in the table can be interpreted as the extent to which they change the coefficient for the Pacific.) As in Table 5, governance's effect is in the opposite direction: were it not for better than average governance in the Pacific, aid would be less effective still in the region. Growth has a small, statistically significant, role in mediating the Pacific effect. The impact of GDP per capita is effectively zero. Freedom is a large part of the explanation as to why aid is less effective in the Pacific. Taken together, remoteness and population serve as larger constraints still: isolation and small population sizes appear to take a particularly heavy toll on aid effectiveness in the Pacific.

There are two potential methodological shortcomings in the analysis in Table 6: first standard errors are not clustered and, second, the regression models are OLS regressions and aid effectiveness is treated as a continuous variable. This is in line with the existing literature. However, in Appendix 1, results of KHB models that allow standard errors to be clustered and the dependent variable to be treated as ordinal are presented. Results are substantively very similar to those presented in Table 6. Appendix 1 also contains further robustness tests in the form of more parsimonious regression models. Once again results are substantively the same.

In the final section of this paper, with a view to aid practice, we examine the extent to which available project traits are associated with better or worse aid effectiveness in the Pacific compared to the rest of the developing world. The purpose of this work is not to explain the Pacific effect. Rather, it is to show donors which project choices may be potentially problematic in the region. The number of traits we could study is limited, owing to limited available information comparable across donors. However, we were able to test whether project size and duration have a different impact in the Pacific. We were also able to compare whether effectiveness differs in different sectors when the Pacific is compared with the rest of the developing world. Results are shown in Table 7.

Table 7: Regression with interactions

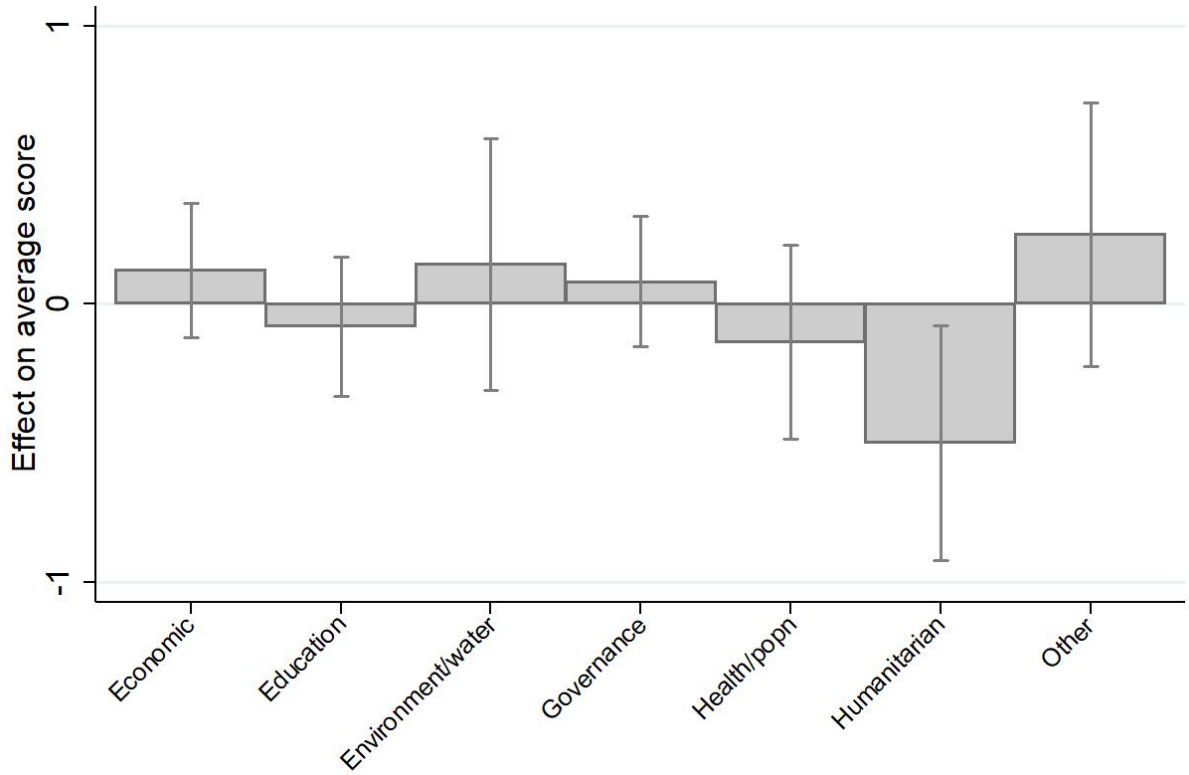
	Basic	Country controls
In Pacific	-0.15	-0.24
	(0.73)	(0.74)
Sector (economic omitted)		
Education	0.05	0.07*
	(0.04)	(0.04)
Environment/water	-0.06	-0.09**
	(0.04)	(0.04)
Governance	-0.19***	-0.15***
	(0.04)	(0.04)
Health/population	-0.01	0.02
	(0.04)	(0.04)
Humanitarian	0.30***	0.36***
	(0.06)	(0.06)
Other	0.04	0.06
	(0.04)	(0.04)
Duration of project (days)	-0.00**	-0.00***
	(0.00)	(0.00)
Project size ($ natural log)	0.08***	0.06***
	(0.01)	(0.01)
Pacific # Education	-0.18	-0.20
	(0.16)	(0.16)
Pacific # Environment/water	0.02	0.02
	(0.26)	(0.24)
Pacific # Governance	-0.01	-0.04
	(0.16)	(0.16)
Pacific # Health/population	-0.24	-0.26
	(0.21)	(0.22)
Pacific # Humanitarian	-0.55**	-0.62***
	(0.22)	(0.22)
Pacific # Other	0.14	0.13
	(0.29)	(0.29)
Pacific # duration of project	-0.00	-0.00
	(0.00)	(0.00)
Pacific # project size	0.01	0.03
	(0.04)	(0.05)
Remoteness		-0.04***
		(0.01)
Population (ln)		0.02***
		(0.01)
Growth		0.01**
		(0.00)
GDP per capita (ln)		0.02
		(0.02)
Governance		0.29***
		(0.04)
Freedom		-0.03***
		(0.01)
Donor FE	Yes	Yes
Completion FE	Yes	Yes
r2	0.12	0.14
N	8062	8062

Notes: estimates from OLS regressions with clustered standard errors in parentheses. The dependent variable is the project effectiveness score. Donor and completion year fixed effects are included in all models

Two regression models are presented in the table: one in which regressions are run without country-level variables as controls, one in which country-level variables are added as controls. The interaction terms in the models demonstrate whether the project traits in the models are associated with different levels of effectiveness in the Pacific and elsewhere.

Although project duration and size have some impact on aid effectiveness more generally, neither appears to have a differing impact on project effectiveness in the Pacific compared to the rest of the developing world. Indeed, the only variable for which any of the interaction terms is significant, is sector, and in particular humanitarian emergency work. For ease of interpretation, a margins plot showing the difference between the Pacific and elsewhere for all sectors is provided (Figure 2).

Figure 2: Differing sectoral performance in the Pacific compared with elsewhere



Notes: The figure shows the predicted marginal effect of the difference in average performance between the Pacific and elsewhere for each sector. Estimates stem from the regression results shown in Table 7.

As the point estimates and confidence intervals show, no other sector's performance differs between the Pacific and elsewhere in a manner that is statistically significant or in any way substantively meaningful. However, humanitarian projects do perform worse, in a manner that is statistically significant. Questions can be raised about the substantive

magnitude of this difference though. It is less than one point on the six-point scale used by donors when they appraise effectiveness. However, donor appraisals tend to cluster narrowly as donors are reluctant to award very high or low effectiveness scores to projects (Wood et al. 2020). As a result, the magnitude of differences such as that associated with humanitarian work in the Pacific may well be understated in regression models such as ours. It is likely the substantive magnitude of the finding is large enough to be of note. The finding is also important given the vulnerability of the Pacific to climate-related emergencies such as tropical storms, as well as the risk posed to some Pacific countries by earthquakes, volcanoes and tsunamis. Given remoteness and the challenges posed by geography, it is easy to imagine why the Pacific would be a challenging region for humanitarian responses. Nevertheless, the Pacific is clearly a region where humanitarian work needs to be as effective as possible.

One note needs to be added to the findings of this section. Multi-collinearity was high in the regressions with interaction terms. While this cannot be a source of the finding related to humanitarian projects, it could plausibly be a source of the absence of findings associated with project size or duration. In an attempt to tackle issues of collinearity we reran regressions without completion year fixed effects. This reduced collinearity substantially but did not change results for size or duration.[7]

5. Discussion

As authors who have some practical experience with Pacific aid, the findings in this paper that surprised us most were those to do with the role of governance and freedom. Both findings were empirically consistent: governance is associated with greater aid effectiveness, and governance is better, on average, in the Pacific; freedom tends to be associated with worse aid outcomes, and political and civil liberties are greater, on average, in the Pacific. Yet conceptually, the findings were not what we had anticipated at the start of this study.

[7] Specifically, the mean variance inflation factor across variables in the full model was 51.15. Without year fixed effects it was 14.05.

Possibly, in the case of governance, this is because two of us have focused a lot on Solomon Islands and Papua New Guinea, countries with notable governance issues. Along these lines, when we modified our analysis to compare aid effectiveness in these two countries alone with the rest of the developing world, governance ceased to play the role it played in broader analysis. Although Papua New Guinea and Solomon Islands loom large in the minds of some who work in the region, the Pacific is diverse, and much of it—on the basis of standard governance indicators—is quite well governed compared to many developing countries.

Governance throughout the Pacific has often been viewed as a weakness by aid analysts. Compared to Denmark this is true, but many Pacific countries are not particularly poorly governed by developing country standards, and certainly not so poorly governed as to render the effective delivery of aid impossible.

The freedom finding is consistent with other work on aid project effectiveness (for example, Feeny & Vuong 2017), but it is hard to see why civil and political liberties themselves would be an impediment to aid success. Although we cannot be certain on the basis of analysis in this paper, we think a likely explanation for the freedom finding is that this variable is tapping into something else: quite possibly the patronage-oriented nature of politics in many Pacific democracies (Duncan & Hassall 2011). Pacific countries are largely democratic, and liberties are not formally constrained, but the associated political culture of patronage could quite possibly impede aid effectiveness. There is evidence from other aid studies that clientelist politics reduces aid effectiveness (Cruz & Keefer 2015; Wright 2010). There is also some evidence of politicians in developing countries being able to divert aid flows in politically advantageous ways (Briggs 2014). Given this, it seems very plausible that the patronage-oriented nature of democracies of the Pacific may be the actual impediment to aid effectiveness, rather than liberties per se.

This point speaks to an area for building on our work in future research. Our study is the first to have focused on explaining problems of aid project effectiveness in the Pacific using quantitative methods. It is also the first study to have used causal mediation analysis in studying aid effectiveness at the project level. As with all observational studies, including all existing work on aid project effectiveness, our findings could be biased by omitted variables. All of the variables we studied were included with a clear justification based on existing findings or other relevant work. We did not exclude any

variables which had been found to be relevant in other work, that we could obtain data for, and which might plausibly explain the Pacific effect. We also added fixed effects and project-level controls to our models. However, it may still be the case that key variables were missing from our analysis. These could include variables related to the nature of democratic politics. Testing the effects of these variables will be a task for future work, although the absence of small island states from most potentially useful political datasets will pose a major challenge. It may well be the case that the most fruitful avenue of future study into challenges to aid effectiveness in the Pacific will involve different methods. Regardless of the approach, better research in this area will require quality data. Donor willingness to put such data in the public domain will be important.

There is also scope for additional work studying interactions between the Pacific and other project-level variables. As we have noted, analysis in our paper was limited by the availability of project traits of potential interest. Gathering more data would not be easy as it would have to be gathered for a range of donors. Still, it may be possible and would have the potential benefit of providing additional practical learnings for donors.

For the time being, there are still lessons for aid practice that can be drawn from our work. While it may seem like a counsel of despair to have discovered that the main impediments to aid effectiveness in the Pacific are either traits that cannot be changed (remoteness and population) or traits that we would not want to change (the presence of freedoms), useful takeaways can still be pointed to. In particular, the Pacific is a difficult region to give aid effectively in, and existing constraints cannot be easily shifted. Donors can, however, adapt their practice. Successful adaptation is not likely to involve changes in sectoral focus or project size or duration, but rather working in a manner appropriate to giving aid in difficult circumstances. More investment in contextual expertise will likely help, as will more investment in gold standard evaluations so donors can learn from the specific challenges confronting their work in the Pacific. Robust impact evaluations in the Pacific have been limited to date, with there being only a handful to which the authors can point. Donors should also make sure they focus their aid on actually helping the Pacific, rather than being distracted by other issues such as geostrategic competition, which have been shown elsewhere to undermine aid effectiveness (Dijkstra 2018; Dreher et al. 2016). Giving aid well is hard enough without having mixed motives.

Rates of development progress are low in much of the Pacific. The countries of the region will need aid for a long time to come. Aid can work in the Pacific. But making aid more effective in the region will be a challenge—one that requires donors to make real efforts to adapt to context.

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Appendix 1: Robustness tests

The following two tables present the results of mediation analysis using the KHB technique. The first reports on an OLS regression with clustered standard errors; the second reports on an ordered logistic regression with clustered standard errors. Because the ordered logistic regression reports results as logits, the coefficients appear to be of different magnitude. However, the size of the coefficients relative to each other is very similar to findings in our in other analysis. This is also true of sign and statistical significance.

OLS (clustered standard errors)		
Pacific effect		
Without mediators	-0.150	
With mediators	0.016	
Difference	-0.166	
Effect of individual mediators		
Mediator	Effect	Clustered SE
Growth	-0.020	0.010
GDP	-0.003	0.003
Remote	-0.098	0.027
Population	-0.092	0.034
Governance	0.154	0.027
Freedom	-0.106	0.023

Notes: estimates from KHB models. Standard errors are clustered. The unit of analysis is the individual project. The dependent variable is the project effectiveness score treated as a continuous variable. Project traits are controlled for. Donor and completion year fixed effects are used. The top panel shows the combined impact of all mediators on the Pacific effect. The lower panel shows the impact of individual mediators.

Ordered logistic (clustered standard errors)		
Pacific effect		
Without mediators	-0.359	
With mediators	0.010	
Difference	-0.369	
Effect of individual mediators		
Mediator	Effect	Clustered SE
Growth	-0.029	0.017
GDP	-0.011	0.007
Remote	-0.189	0.049
Population	-0.209	0.065
Governance	0.266	0.049
Freedom	-0.195	0.043

Notes: estimates from KHB models. Standard errors are clustered. The unit of analysis is the individual project. The dependent variable is the project effectiveness score treated as an ordinal variable. Project traits are controlled for. Donor and completion year fixed effects are used. The top panel shows the combined impact of all mediators on the Pacific effect. The lower panel shows the impact of individual mediators.

The following two tables present regression results from more parsimonious versions of the regressions shown in the body of the text. In the first, growth and GDP per capita are dropped from the regression model. In the second, project controls and completion year fixed effects are dropped.

OLS – Growth and GDP dropped

Pacific effect		
Without mediators	-0.150	
With mediators	0.013	
Difference	-0.163	
Effect of individual mediators		
Mediator	Effect	Clustered SE
Remote	-0.114	0.025
Population	-0.104	0.034
Governance	0.167	0.027
Freedom	-0.113	0.023

Notes: estimates are from KHB models. Standard errors are clustered. The unit of analysis is the individual project. The dependent variable is the project effectiveness score treated as a continuous variable. Project traits are controlled for. Donor and completion year fixed effects are used. The top panel shows the combined impact of all mediators on the Pacific effect. The lower panel shows the impact of individual mediators.

OLS – All project controls (except donor FE) dropped

Pacific effect		
Without mediators	-0.270	
With mediators	-0.003	
Difference	-0.267	
Effect of individual mediators		
Mediator	Effect	Clustered SE
Growth	-0.011	0.010
GDP	-0.008	0.005
Remote	-0.102	0.027
Population	-0.185	0.036
Governance	0.148	0.027
Freedom	-0.109	0.024

Notes: estimates are from KHB models. Standard errors are clustered. The unit of analysis is the individual project. The dependent variable is the project effectiveness score treated as a continuous variable. Project traits are controlled for. Donor and completion year fixed effects are used. The top panel shows the combined impact of all mediators on the Pacific effect. The lower panel shows the impact of individual mediators.