

Vocational qualification supply, demand, and returns: the case of the Australia Pacific Training Coalition

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Motivation

The problem ⇒ “skills shortages”, where the demand for a particular type of work exceeds their supply in the labour market.

Potential solution ⇒ increasing the supply of qualifications perceived to be in demand through the VET system. *Is this a good response?*

⇒ Most shortages are often dealt with through the normal operation of the labour market: varying wages, conditions, and own skill acquisition

⇒ Not straightforward for a planner to match supply to demand.

⇒ Genuine shortages may not actually exist in the first place.

This paper ⇒ examines graduate employment outcomes from a large supply side TVET intervention in the Pacific, and asks whether people with technical qualifications tend to be better off in the long run.

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What we do

1. Use Graduate Tracer Survey (GTS) data collected by the Australia Pacific Training Coalition (APTC) since 2009 to empirically characterise trends and patterns in graduate employment outcomes.
2. Use national survey data (HIES) to assess whether technical certificate holders, on average, tend to earn more than people with other levels and types of education in Pacific countries.

Four key findings

1. Employment outcomes for APTC graduates appear to be worsening over time with increasing supply and the changing composition
 - Demand seems somewhat weak and in decline
2. Different qualifications correspond to very different employment outcomes in terms of paid jobs, suggesting limited matching
 - Especially Stage 1 vs. Stage 2 graduates
3. Women more likely to not be in paid work after completing their study, 25-44 year are more likely, and employment outcomes vary considerably across countries (e.g., Samoa best, and Fiji worst).
4. Technical certificate holders, on average, earn less than someone who has completed grade 12
 - Pattern appears to hold across several Pacific countries

Rest of this talk

- What is the Australia Pacific Training Coalition?
- Data and empirical approach
- Results on APTC employment outcomes
- Results on the returns to vocational education

What is the Australia Pacific Training Coalition?

- Australia's "flagship" TVET investment in the Pacific: established in 2007, pre-tertiary, pre-uni level.
- Goal: producing a "more skilled, inclusive and productive workforce which enhances Pacific prosperity".
- EOPO 1: graduates have improved employment outcomes
- Granted 12,151 qualifications by 2018: 43 different types of qualifications, across nine Pacific countries.
- Interesting case study particularly because of weak domestic demand in most of these countries, and the importance of migration opportunities as a result

APTC data: graduate tracer surveys (GTS)

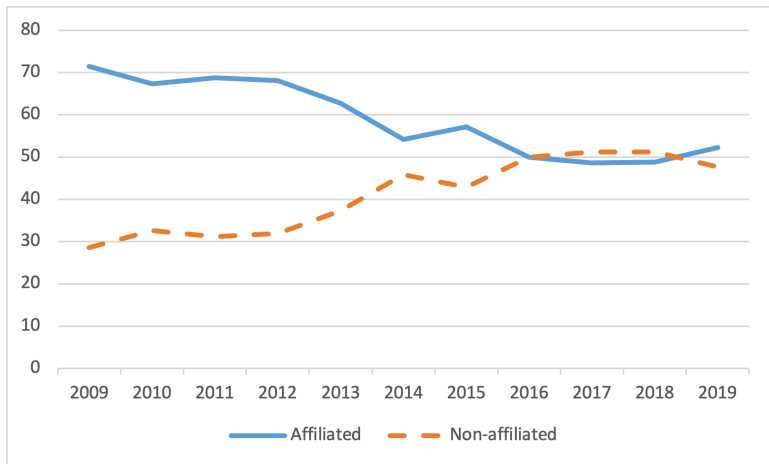
- Collected by APTC from former students who graduated at least six months prior to each survey, gathering feedback from graduates on employment status, qualifications, and countries of origin
- GTSs have been conducted annually since 2009. Methods for collecting data include email, postal services, personal interviews by visit, personal interviews by phone, and online
- Low response rate: 2017 had a very high response rate of 91 percent, but the average response is around 50 percent
- Harmonize and merge GTS data across all years (2009–19), and then categorise qualifications into different industry sectors
- Focus on non-affiliated graduates, not affiliated graduates who return to their previous employer: better indicator of vocational skills, employer demands, and APTCs graduate placement record

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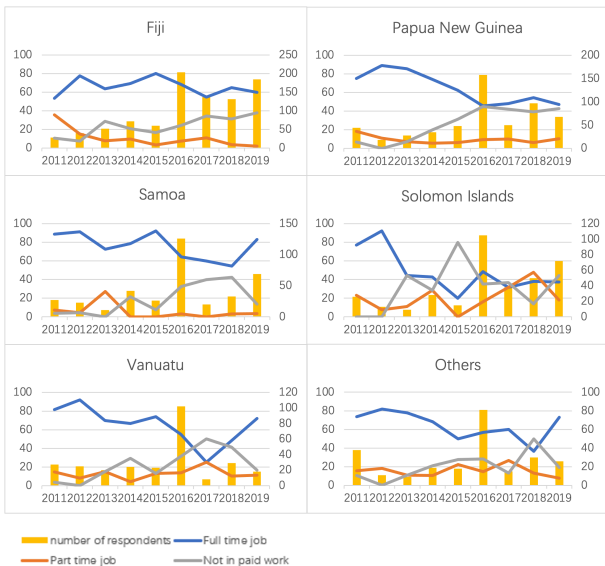
Descriptive statistics

A smaller share of affiliated students over time



Descriptive statistics

Large differences across countries and over time



Estimating equation

$$y_{i,t} = \beta \text{Stage}_{i,t} + \delta \text{GTSYear}_t + \lambda X_{i,t} + \mu Z_{i,t} + \epsilon_i \quad (1)$$

$y_{i,t}$ is a binary variable equal to one if individual i in survey year t has (a) full-time employment, or (b) is not in paid work (i.e., is unemployed)

$\text{Stage}_{i,t}$ = whether the graduate completed a Stage 1 qualification

$\text{GTSYear}_{t,i}$ = year respondent i takes the survey (c.f., completes qual)

$X_{i,t}$ includes country of origin, gender, and age

$Z_{i,t}$ includes other potential controls and $\epsilon_{i,t}$ is a robust error term.

Some examples of interpretations.

If Stage 1 = 1, graduate is on average X percentage points more likely to be employed than other graduates with the same characteristics.

The coefficient on GTS-Year reports the percentage change in employment from graduating one year later.

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Results

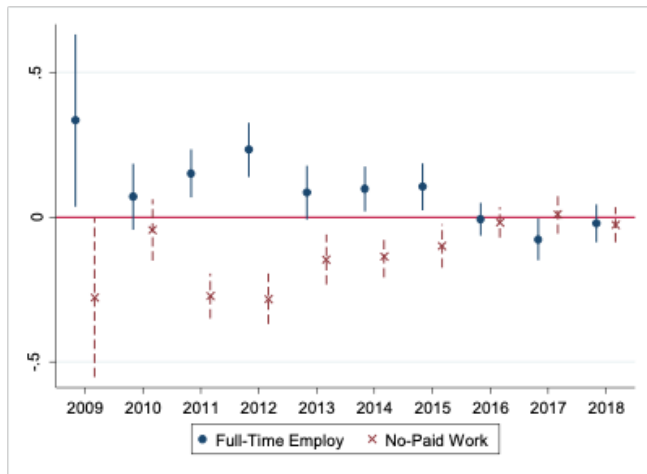
Stage 1 quals perform better; downward trend overall

	1	2	3	4
GTS-Year	-0.027*** (0.004)	-0.021*** (0.004)	-0.022*** (0.004)	-0.024*** (0.004)
Stage 1		0.181*** -0.024	0.188*** -0.024	0.208*** -0.037
Country FE	No	No	Yes	Yes
Sector FE	No	No	No	Yes
N	2,790	2,790	2,790	2,790

Outcome is whether in full time employment at the time of the survey. Similar patterns are observed for no work, adding part-timers in, doing it in three year intervals, or doing it by year

Overall results

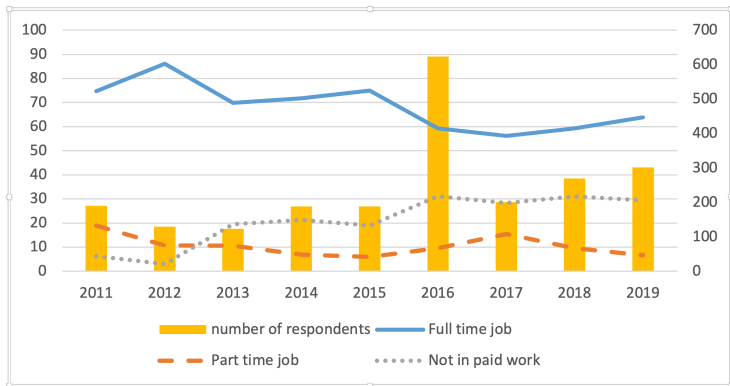
Downward trend in whether graduates gain full time employment



These are year-specific effects holding else (country, qual, etc.) constant.

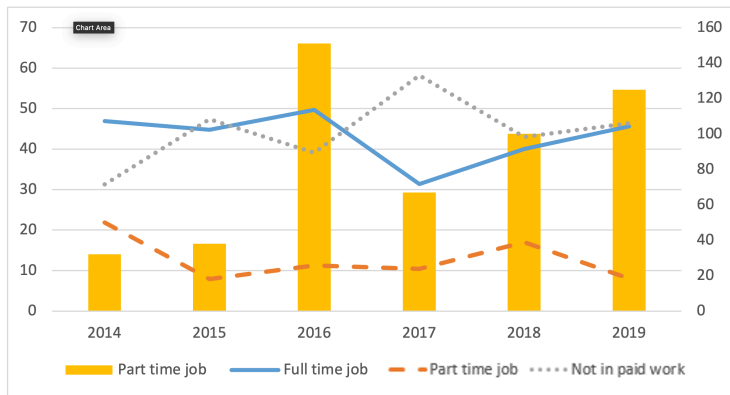
Results by sector

Stage One placements declined since around 2012



Results by sector

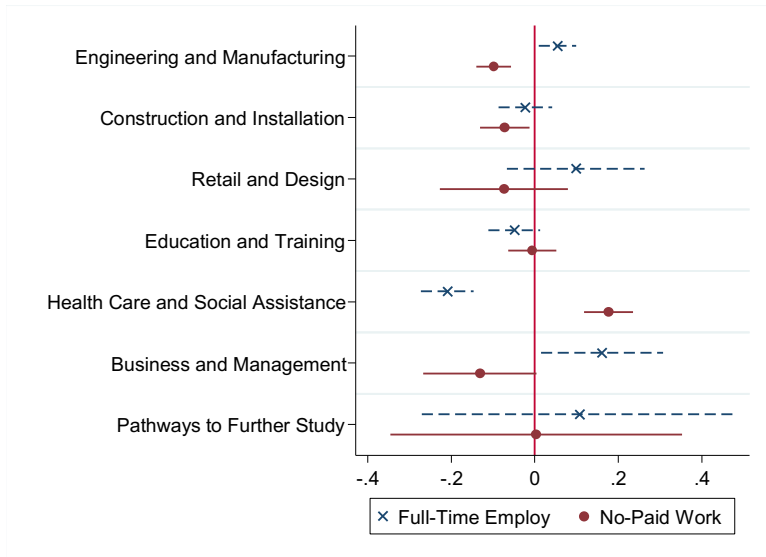
Stage Two placement rates are consistently lower than level one



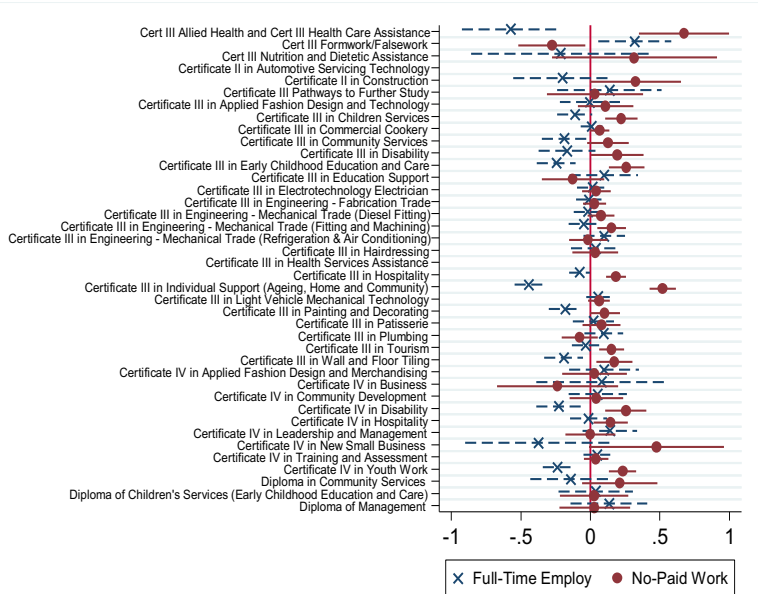
Note that there are also many fewer stage 1 graduates in all years, although increasing steadily over time. 2016 was an outlier in term of respondents.

Results by sector

Health care and social assistance do particularly poorly



Results by sector



Results by gender

	1	2	3	4	5	6
Female	-0.130***	-0.059*	-0.055*	-0.087***	-0.059*	-0.054
	-0.029	-0.031	-0.031	-0.031	-0.035	-0.035
Stage1		0.190***	0.188***	0.183***	0.236***	0.239***
		-0.034	-0.034	-0.034	-0.077	-0.078
Year FE	No	No	Yes	Yes	Yes	Yes
Country FE	No	No	No	Yes	Yes	Yes
Sector FE	No	No	No	No	Yes	Yes
Age FE	No	No	No	No	No	Yes
Observations	1247	1247	1247	1247	1247	1247

Outcome is whether in full time employment at the time of the survey. Similar patterns are observed for no work and adding part-timers in.

For age, we find that placements are generally better for graduates 25–44 are much more likely to not be in no work than the other cohorts, but no statistically discernible difference for full time employment.

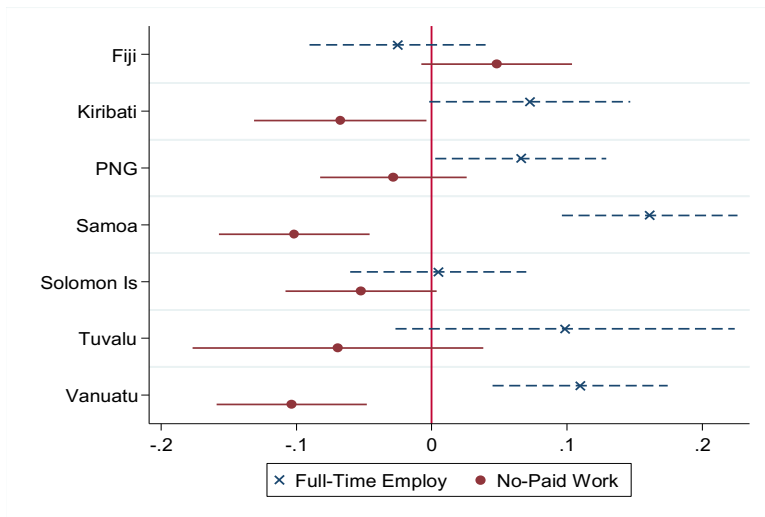
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Does country matter much?



Samples are from Non-affiliated graduates from Fiji, Kiribati, PNG, Samoa, Solomon Island, Tuvalu, Vanuatu and Tonga. The number of respondents from these countries exceed 50. Fixed effects of year and sector. The baseline country is Tonga.

Returns to vocational training

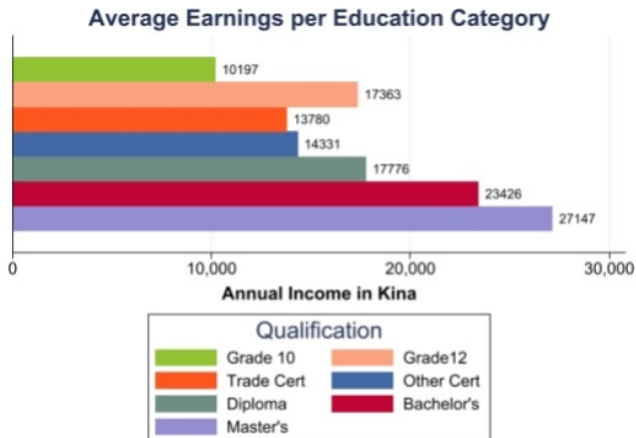
- If many graduates are not getting jobs now, should they still expect to be much better off in the long run?
- What does the average person holding a vocational certificate at the same level of an APTC graduate earn and consume? Does a certificate holder earn more than someone without one?
- These questions are crucial for thinking about whether increasing the supply of vocational qualifications is likely to increase the well-being of graduates and contribute to broader prosperity.
- Examine income by qualification using national Household Income and Expenditure Surveys, as most graduates place domestically
- Preliminary results for Papua New Guinea, Kiribati, and Tonga suggest that technical and vocational certificate holders earn about as much as or less than those with grade 12

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Returns to vocational training

Papua New Guinea example



Summary

What we did. Use APTC graduate tracer surveys and national household survey data to examine patterns and trends in graduate placement, and the earnings of certificate holders.

What we found. Found evidence of overall declining graduate placements, suggesting weak demand. Significant heterogeneity across qualifications, countries, and other dimensions, suggesting quite poor matching. Returns to TVET qualifications in the Pacific tend to be very low.

Potential implications. Question the notion of skills shortages in the region. Caution against supply side interventions not carefully aligned with demand. Suggest re-focusing on basic education, where the returns may be higher.

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