

Quantifying The Pacific Economy

Methodology Report

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IDI Disclaimer

Access to the data used in this study was provided by Stats NZ under conditions designed to give effect to the security and confidentiality provisions of the Data and Statistics Act 2022. The results presented in this study are the work of the author, not Stats NZ or individual data suppliers.

These results are not official statistics. They have been created for research purposes from the Integrated Data Infrastructure (IDI) and Longitudinal Business Database (LBD) which are carefully managed by Stats NZ. For more information about the IDI and LBD please visit

<https://www.stats.govt.nz/integrated-data>.

The results are based in part on tax data supplied by Inland Revenue to Stats NZ under the Tax Administration Act 1994 for statistical purposes. Any discussion of data limitations or weaknesses is in the context of using the IDI for statistical purposes and is not related to the data’s ability to support Inland Revenue’s core operational requirements.



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1. Introduction

The *Quantifying the Pacific Economy* Dashboard is the second iteration of a series of insights about Pacific businesses and workers, commissioned by Auckland Council's Economic Development Pacific team in the Economic Development Office and supported by funding from MBIE. The dashboard follows a previously published report *Quantifying the Pacific Economy* [1] and allows for interactive exploration of updated data about the Pacific economy in Aotearoa, across a number of dimensions. It follows previous research on the Pacific economy and Pacific business owners, by The NZ Treasury, The Ministry for Pacific Peoples and the Ministry for Women [2] [3]. Data in *Quantifying the Pacific Economy* is presented both nationally and focused on the Auckland Region. This recognises Tāmaki Makaurau Auckland as the home of the majority of Aotearoa's Pacific peoples.

Quantifying the Pacific Economy identifies, counts, and describes Pacific owned businesses, Pacific sole traders, and significant employers of Pacific peoples. This report provides technical information to support people in understanding and interpreting the data presented in the *Quantifying the Pacific Economy* dashboard. It describes the data sources, definitions, and analytic methods that underlie the dashboard - including key features like the use of Permanent Enterprise Numbers (PENTs) to improve the accuracy of business counts.

The methods used in *Quantifying the Pacific Economy* build on approaches developed for *Te Matapaeroa 2021: Data on the Māori Economy* [4], with specific adaptations to suit the context of Pacific businesses.

The data in *Quantifying the Pacific Economy* highlights Tāmaki Makaurau Auckland as the heart of the Pacific economy in Aotearoa New Zealand. Around half of all Pacific businesses and close to two-thirds of significant employers of Pacific peoples are located in Tāmaki Makaurau Auckland. With more than 60% of New Zealand's Pacific population living in Auckland, the region is not only home to a vibrant Pacific community but also a significant, and growing, contributor to Pacific economic activity nationwide.

2. Data Sources

Integrated Data Infrastructure and Longitudinal Business Database

The data used in *Quantifying the Pacific Economy* is sourced from Stats NZ's Integrated Data Infrastructure (IDI) and Longitudinal Business Database (LBD).

The IDI is a large research database holding de-identified microdata about people and households in Aotearoa New Zealand. The IDI contains longitudinal data on most individuals in Aotearoa spanning education, health, income, tax, and more. Similarly, the LBD is a large



research database holding de-identified microdata about businesses. It is a collection of business administrative data – mainly tax data collected by Te Tari Taake - Inland Revenue (IR), and data from various business surveys. The research paper by Jones, et al. provides more details on the IDI and LBD and how it is being used [5].

By linking the IDI and LBD databases, we can link businesses, owners, and employees making it possible to characterize businesses as being Pacific owned (or Pacific sole traders) and as significant employers of Pacific peoples. Figure 1 illustrates the types of data available in the IDI and LBD and how the two databases are linked through tax data.

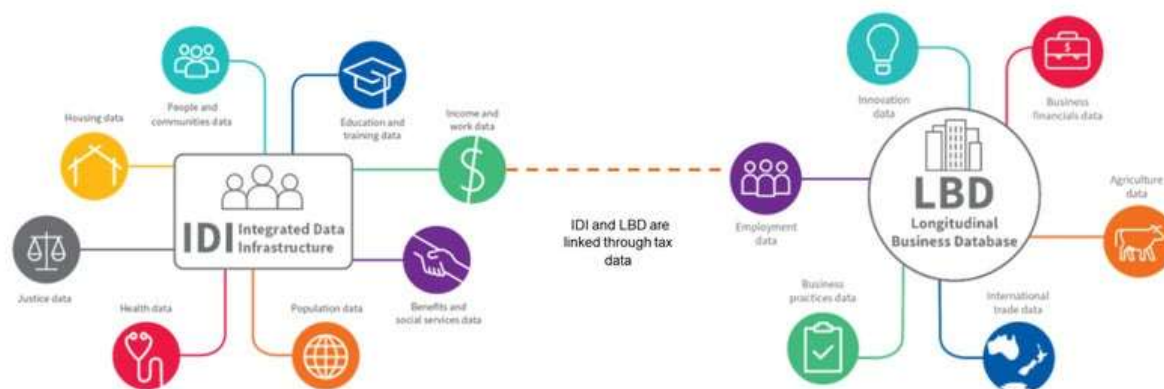


Figure 1: Schematic showing the types of data in the IDI and LBD databases and how they are linked through tax data. Image reproduced from [5].

Quantifying the Pacific Economy - data sources

Quantifying The Pacific Economy uses tables from the following IDI and LBD sources:

- Longitudinal Business Frame (LBF) – to identify location of activity, industry of operation, and economic significance of businesses.
- IR’s Employer Monthly Schedule (EMS) – to identify paid employees of businesses.
- IR’s IR7P (Partnership Income Returns), IR4S (Shareholder Income Returns), IR3 (Self-employed Income Returns) – to identify business owners and sole traders.
- Stats NZ Derived Personal Details – to gather ethnicity, gender, and migration generation information on owners and employees.

3. Defining Business

A business is an organisation or entity actively operating within Aotearoa New Zealand engaged in commercial, industrial, or professional activities. Common types include limited liability companies¹, partnerships², and sole traders. In *Quantifying the Pacific Economy*, we

¹ A company is an entity that is legally separate from the people who own and run the company. It is legislated under the Companies Act 1993.

² A partnership is when two or more people (partners) form a business, with a partnership agreement setting out how they will share profits, debts, and work. A Partnership is legislated under the Partnership Law Act 2019.



distinguish between Businesses with Owners (BwOs), Sole Traders (STs), and Businesses with Employees. We do this by first building a base population of business entities before further classifying them and then restricting our reporting to those businesses that are “live, private-for-profit, and economically significant”. Establishing the base population of businesses relies on being able to uniquely and consistently identify businesses across time.

3.1 Uniquely Identifying Business

Businesses in the LBD are assigned an *Enterprise Number* or ENT. These are intended to be unique identifiers that allow linking of business records across data tables. ENTs provide an effective way to link information about a business’s ownership status, economic activity (such as sales and GST payments), and location(s) at a point in time. However, over time, some businesses can end up with multiple ENTs for a variety of reasons. These are often related to changes in the legal status of a firm. For example, a sole trader may decide to incorporate their business while retaining the same employees and operating at the same location. This can result in “broken” ENTs which can lead to double counting of businesses and misleading information about the entry and exit of firms, making longitudinal analysis difficult and inaccurate.

In *Quantifying the Pacific Economy*, we follow the example of *Te Matapaeroa 2021* [6] and use the methodology of Fabling and Maré [7], [8] to “repair” broken ENTs by generating *Permanent Enterprise Numbers* or PENTs. While *Te Matapaeroa 2021* used the Fabling and Maré Labour and Productivity tables in the LBD to provide a stable base population of PENTs, we implement the Fabling and Maré methodology in code. This allows us to create equivalent tables “on the fly” from underlying LBD source data. This approach ensures that our list of PENTs closely aligns with the original, but with the added advantage of not being dependent on third-party tables, allowing analysis to be easily updated immediately following each LBD data refresh.

Comparing accuracy of business counts across approaches

Te Matapaeroa 2021 made use of the 202210 release of the Fabling and Maré productivity tables. Comparing the results of our methodology with those of *Te Matapaeroa 2021*, using the same 202210 IDI/LBD data release, shows differences of less than 1% for the business populations considered³. This indicates that where equivalent metrics are reported, they can be fairly and accurately compared between the *Quantifying the Pacific Economy*, *Te Matapaeroa 2021*, and other reports or analysis that use the same methodology or data tables.

³ The 1% difference is predominantly due to updates to the underlying data release between the publication of *Te Matapaeroa 2021* and the date of this analysis.



3.2 Defining Types of Businesses

In *Quantifying the Pacific Economy*, we only report on businesses that are:

- **Live (active or currently trading):** Businesses are deemed to be non-live or inactive if they do not have any income, employment, or sale in the financial year of interest. A business that is categorised as live in one financial year may be categorised as non-live in other years.
- **Private-for-profit (pfp):** We exclude businesses that are not private-for-profit. Examples include Māori authorities, government organisations, embassies, government, and charities.
- **Economically significant:** For the purposes of business demography, Stats NZ classifies a business as economically significant⁴ if it meets any one of the following criteria:
 - Annual expenses or sales (subject to GST) of more than \$30,000; or
 - 12 month rolling mean employee count of greater than three; or
 - Part of a group of businesses; or
 - Registered for GST and involved in agriculture or forestry; or
 - More than \$40,000 of income recorded in the IR10 annual tax return (this includes some units in residential property leasing and rental).

To quantify “Pacific business” in Aotearoa we distinguish between Businesses with Owners (BwOs), Sole Traders (STs), and Businesses with Employees. When reporting on total Pacific businesses we combine businesses with Pacific owners (Pacific BwOs) and Pacific sole traders (Pacific STs) as a single population of Pacific businesses. We do not include businesses that are significant employers of Pacific peoples in the count of total Pacific businesses as they may not be Pacific owned or led.

Businesses with (Pacific) Owners

A business is an entity where the employer and employee(s) are distinct legal entities. Classifying a business as Pacific-owned is complex, especially for companies and partnerships. Companies are owned by shareholders who may or may not work in the business as proprietors, and they have directors who run the business but need not own it. Both shareholders and directors can receive wages or salaries

To identify Pacific-owned businesses we restrict the population of businesses to those with at least one identifiable owner, where that owner has Pacific ethnicity. We identify *female owned Pacific business* as BwOs with one or more identifiable female Pacific owner(s). Similarly first-generation migrant owned businesses are those BwOs with one or more owner(s) being a first-generation migrant.

⁴ [Economically significant enterprise - Stats NZ DataInfo+](#)



Our criteria for BWOs means that we exclude businesses that are owned by other businesses or entities since in these cases it is not possible to tell if the business has a Pacific owner. We also exclude businesses where the owner is inactive, or non-working, as the LBD only includes information about active business owners. These active business owners are often referred to as *working proprietors*⁵.

Jaffe and Chappell [9], describe a *working proprietor* as an individual who:

- pays themselves in the Employer Monthly Schedule (EMS) - i.e. the payer and payee identifiers are the same;
- reports self-employment income in an IR3 tax form;
- reports a share of partnership income in an IR7P tax form;
- or is a company owner receiving payment in the IR4S tax form.

(Pacific) Sole Traders

A *sole trader* is a business enterprise where the enterprise is considered as an extension of the owner and is not a separate legal entity. They can be identified in tax data as those individuals who have IR3 income but do not have IR4S or IR7P income. If that individual has Pacific ethnicity, they are classified as a Pacific sole trader.

If IR data is the only criteria used to classify sole traders it can result in including a wide range of business activity, from one-off contracts and “side-gigs”, through to an individual’s main employment and source of income.

In *Quantifying the Pacific Economy*, we are interested in “established” sole traders – those that also exist on the Stats NZ Business Register (BR). This follows the method of classifying sole traders that was adopted in *Te Matapaeroa 2021* [6]. Stats NZ assigns a sole trader legal entity status if they meet at any of the *economic significance* criteria, shared with businesses with owners. Meeting one or more of these criteria leads to a sole trader being “birthed” onto the BR. This means that they are legally required to report on their location of business and to classify their industry type – two important pieces of data for understanding an enterprise.

Despite what their name might suggest, sole traders can have employees.

Businesses with Employees and Significant Employers of Pacific Peoples.

The Employer Monthly Schedule (EMS) table in the IDI provides information of payments from employers to employees. Using this we can define a base population of all enterprises that have one or more employee. *Businesses with employees* can have any ownership type, including businesses where there is no identifiable owner.

⁵ A working proprietor is where one person both owns and operates the business.



A business is classified as a *significant employer of Pacific peoples* if 50% or more of its employees are of Pacific ethnicity.

Significant employers of Pacific peoples do not need to be Pacific-owned – the base population of businesses is all live, private-for-profit, economically significant businesses, regardless of ownership.

4. Demographics of business owners and employees

Identifying ethnicity and sex/gender

We use Census data for individuals to identify the ethnicity of business owners and workers. We assign ethnicity as “total ethnicity” – that is, individuals can belong to more than one ethnic group. If any one of those ethnic groups is Pacific, then that individual counts as Pacific in our data. We assign ethnicity information to individuals at both level one (e.g. Pacific Peoples) and level two (e.g. Samoan, Tongan, etc) classifications. Individuals are assigned sex/gender from the Stats NZ *person_detail* table which uses prioritised demographic information for an individual across data collections in the IDI⁶. The sex/gender code is populated with the 'most common' sex or gender code from the highest ranked data sources.

Identifying first-generation migrants

Pacific peoples in New Zealand include a significant proportion of people who are first-generation migrants. We use data from Census 2023 to identify those business owners and sole traders whose country of birth is not New Zealand. An individual’s country of birth need not match their ethnicity. For example, a business owner in New Zealand who was born in Canada and had their ethnicity recorded as Samoan would be identified as a first-generation Pacific migrant business owner.

Industry classification and location

We report on industry classification of businesses and sole traders using the Australian and New Zealand Industrial Classification⁷ (ANZSIC06) codes at the top-level “Division”

⁶ For details, see

https://idisearch.terourou.org/collections/IDI_Derived_Population_data?v=variable&id=snz_sex_gender_code&d_id=data.personal_details

⁷ See 1292.0 - Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 (Revision 1.0) for details



classification level. We also report on the location of businesses, by region for national level reporting and by local board area for Auckland level reporting.

Both the location and the industry classification of an enterprise can change over time. Enterprises can also have more than one geographic unit, each with its own distinct Permanent Business Number (PBN)⁸. The PBNs of such enterprises may have different industry classifications at different physical locations. If an enterprise consists of multiple PBNs, we assign a “primary industry” and “primary geographic location” to an enterprise by using the location and industry classification of the constituent PBNs with the highest mean monthly number of employees in the reference tax year.

⁸ E.g. a business may have multiple factories or warehouses in different locations, each with a unique PBN, all linked to the same PENT.



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