ORANGA TAMARIKI
Ministry for Children

New Zealand Government

Transition Support Service

Early outcomes findings for the first cohorts

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These results are not official statistics. They have been created for research purposes from the Integrated Data Infrastructure (IDI) which is carefully managed by Stats NZ. For more information about the IDI, 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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Summary

On 1 July 2019, Oranga Tamariki–Ministry for Children launched the *Transitions Support Service*, a voluntary service aimed at assisting care leavers with their transition out of care, and into independence as adults. The following report focuses on one of the service's main components - the *Transition Support Worker* (*TW*) - examining its effect over the adulthood outcomes of participating rangatahi.

Under the *TW* component, rangatahi[1] are referred to a transition worker, who proactively builds a relationship with them, supporting them to build positive relationships with their family, whānau, hapū, iwi, and wider community, as well as with other (financial and non-financial) needs. During the first three years of the service (by June 2022), a total of 1,767 rangatahi have been referred to a transition worker.

This study examines several labour market, health, education, justice, and mobility related outcomes for rangatahi who were referred to *TW*, comparing them to rangatahi who had not been referred during their 19th year (i.e., from their 18th birthday to just before turning 19). Data from 4,242 care-experienced rangatahi who were aged between 16 and 20 when the service came into effect was collected, with impacts on outcomes isolated from all other confounding factors by applying an Instrumental Variable approach (IV).

In terms of observable characteristics, rangatahi eligible for the component (i.e., compared with those ineligible) on average were:

- born at a later date
- had recorded longer periods under Care and Protection (C&P) placements (especially during adolescence)
- had a larger number of C&P related interactions
- had somewhat less involvement with Youth Justice (YJ) services.

No significant differences in education, health or justice experiences were identified between eligible and ineligible rangatahi. Overall, the greater involvement of eligible rangatahi with the C&P system is in-line with *TW* eligibility criteria (i.e., those targeted by the component).

When comparing the characteristics of *eligible* rangatahi who were referred, with those who were not referred to *TW*, the data suggests that referred rangatahi:

- entered and left placements at a slightly older age
- were more likely to be in placement towards the age of 18
- had a greater number of interactions with Oranga Tamariki (C&P and YJ)
- more likely to record less favourable health and educational experiences by age 16.

The IV results suggested that by the age of 19, referred rangatahi recorded more favourable justice sector outcomes, as reflected by most specifications showing lower likelihood to record Prison/Remanding Correction sentences, Prison/Remanding *or* Community Service Correction sentences, and under some specifications, also lower likelihood to record Police Offending events.

[1] Throughout this report rangatahi refers to young people of all ethnicities.

In addition, a number of specifications also indicated that referred rangatahi recorded lower likelihood to record Emergency Department (ED) admissions, to receive benefit income (3 fewer months on average), and a lower likelihood to record a *vulnerably transient* status. Furthermore, while referred rangatahi were estimated in some specification to have a lower likelihood of being issued a Learners driver's licence, they were found to be more likely to be issued a Restricted licence, and on average, earn Wages and Salary (W&S) income for additional 2.5 months.

These results were largely repeated when examining the outcomes for rangatahi Māori, possibly since they account for about two thirds of the overall study population. On the other hand, these findings were not repeated when focusing on Pacific Peoples, though this group recorded large employment outcomes (7 additional months receiving W&S income, and additional $20,000 NZD from Wages and Salary income).[2]

Overall, the magnitude of the IV estimates were in most cases larger than when using an alternative approach (Ordinary Least Squares which is assumed to be less robust), and often pointing in an opposite direction. This may reflect the IV model correcting a bias not accounted for under the Ordinary Least Squares approach. In addition, the magnitude of the IV estimates were greater when focusing on rangatahi who were referred to *TW* by the age of 18 than by the age of 19 (in an alternative specification). This difference may reflect benefits from engaging with transition workers for a longer period (and from a younger age).

In terms of other outcomes, while not statistically significant and cannot be considered as benefits of the *TW* component, point-estimates across various specifications consistently pointed in the 'right direction', in the sense that the interpretation of the impact could be seen as positive.

We suggest replicating the study in the future. Revisiting this study in the future provides a number of benefits:

- a larger sample to analyse which in turn may offset potential limitations of the IV approach
- Increase the share of rangatahi in the study population that engaged with the *TW* component in periods following the set-up and early establishment period
- explore adulthood outcomes beyond the 19th year (e.g., by the age of 25), with these older age estimates likely to be more suitable for any Value for Money assessment/Cost Benefit Analysis
- opportunity to apply different methodological approaches

Combined, these will in turn improve our understanding of the efficacy of *TW* and the *Transitions Support Service* more generally.

[2] Possibly due to the (relatively) small number of participants identified as Pacific Peoples.

Introduction

New Zealanders who spent at least some of their childhood or adolescence in state care (care-experienced) are some of the most vulnerable in New Zealand, reflected by their disproportionately greater likelihood to experience long-term adverse outcomes (Atwool, 2010; Crichton et al., 2015; McLeod et al., 2015; Ball et al., 2016; Tumen et al., 2016).[3]

While it is common for rangatahi to gradually transition towards independence,[4] and to receive support (emotional and/or financial) from parents/family for long periods after leaving their family home, the transition out of care and into independence for many care-experienced rangatahi begins at an earlier age,[5] and in a far more abrupt fashion (Keller et al, 2007; OECD, 2022). Additionally, care-experienced rangatahi are more likely to carry childhood traumas, have little financial or social support, and move into inadequate housing (Ministry of Social Development, 2016).

On 1 July 2019, Oranga Tamariki launched the *Transitions Support Service (TSS)*, following a review of the New Zealand Care and Protection system (Ministry of Social Development, 2016) that found that existing support to rangatahi who *aged out* of care (Krinsky, 2010) was far more limited in New Zealand than in other OECD jurisdictions.[6]

The *TSS* is a voluntary service, aimed at supporting care leavers with their transition out of care, and into independence as adults.[7] The service rolled-out over a four-year period with an allocated budget of $153.85m (New Zealand Government, 2020).

This report examines the effects the *TSS* had on (early) adulthood outcomes of participants, specifically focusing on the effects from one of the service's main components (or support mechanism) – *Transition Support Worker* (or *TW*).

This component is selected due to its substantial and active nature, which in turn, is hypothesised to lead to noticeable positive impacts on rangatahi outcomes. Note that while the *Entitlement to Remain or Return* (ETRR) component (a different *TSS* component) can also be described as active, the low ETRR up-take during the study period (About 6%)

[3] Disparities in outcomes are also observed in other countries. For related international evidence, see Barth (1990), Cook et al. (1991), Buehler et al. (2000), Collins (2001), Courtney et al. (2001), Leslie et al. (2005), George et al. (2002), Dworsky (2005), Donkoh et al. (2006), Courtney & Dworsky (2007), Macomber et al. (2008), Courtney et al. (2006, 2010, 2011), Bruskas (2008), Tonmyr et al. (2011), Gypen et al. (2017), Dunnigan, et al. (2017), Doyle et al. (2018), and Rome & Raskin (2019).

[4] For example, data for 30 OECD countries between 2017 and 2019 showed that on average, over 40% of young people aged 20-29 were living with their parents (OECD, 2022).

[5] A 2018 review of policy and legislation across 36 countries (including 13 OECD members) found that support in two-thirds of countries was stopped at the age of 18 and younger (Strahl et al., 2021).

[6] At that time, post-care support was not offered to care leavers in New Zealand. This compared with post-care support until the age of 21 in Ireland, 21-25 in Australia (varies on the state), 24 in England/Wales (for youth in education, training, or employment), and 26 Scotland (New Zealand Government, 2015). For a comparison of post-care interventions in a selection of OECD jurisdictions, see Table A2, Appendix A.

[7] More specifically, the goals of the *TSS* include improving the life skills rangatahi need to thrive as adults, ensuring they felt listened to (and better understood), have a safe and stable living arrangements, recover from trauma, trust the adults in their lives, engage with their family, whānau, cultural, and community groups, and increase their participation in education, training, employment, or volunteering. In addition, since the majority of care-experienced rangatahi identify as Māori, specific Mana Tamaiti objectives aimed at reducing disparities in outcomes (and experiences) for tamariki and rangatahi Māori, and their whānau were included. For more information, see the intervention logic for the *TSS* in Figure A1, Appendix A.

meant that detecting any impacts using quantitative methods is far less likely, and therefore it is not examined.

Findings from this report may inform policy makers regarding the effectiveness of this service, as well as contribute to the small international literature studying the impacts of similar interventions using quantitative methods.

Background

Since the service was introduced on 1 July 2019, *TSS*-eligible rangatahi can receive support from as young as 15 until the age of 24 (inclusive). The upper age of entitlement to the *TSS* varies by 'component'. Ideally, support will start while rangatahi are still in care (ages 15 up to 17), where social workers collaborate with rangatahi on their Transition Plan for when they leave care.[8] From the time when they leave care and up to the age of 20, transition workers actively respond to rangatahi needs, and as adults (aged 21-24), support for becoming and remaining independent is available via the Oranga Tamariki National Advice and Assistance line.

The TSS operates via three main components: *Transition Support Worker (TW), Entitlement to Remain or Return (ETRR), and Advice and Assistance (AA).* In this section, the nature of, eligibility criteria,[9] and findings related to the *TW* will be outlined. For a description regarding the other two components, see Appendix B.

In the *TW* component, eligible rangatahi are contacted by Oranga Tamariki, and asked whether they would like to participate in this component. If they agree, they are referred to a local transition worker from one of the 70 partners that are available nationwide.[10] Once referred, the transition worker proactively builds a relationship with the rangatahi, identifies their support needs, and collaborates with the rangatahi to achieve them. This may include establishing (and/or maintaining) positive relationships with their family, whānau, hapū, iwi, and/or wider community (where they wish to do so), as well as other financial and non-financial needs such as ensuring safe and stable living arrangement, and financial assistance. If a referral was not made (e.g., rangatahi declined participation), Oranga Tamariki will periodically contact the rangatahi to check whether any support is needed.

Note that not all care-experienced rangatahi are *TW* eligible. To be eligible for this component, they must:

- Be between the ages of 15 and 20 (*Age* criterion, inclusive),
- Spend (i.e., record) at least 90 consecutive days in care between the age of 14 years and 9 months, and 18 years (*Days* criterion), [11] and
- Have an open legal proceeding since 1 July 2019 (*Open* criterion).

[8] This includes assessing the needs of rangatahi (including life skills), ensuring contact details are updated, assigning a dedicated transition worker to build a relationship with the rangatahi alongside their social worker, and to engage with relevant key people and agencies to agree on how to meet the rangatahi transition needs.
[9] For the complete eligibility criteria, see Table B1 in Appendix B.
[10] Based on numbers captured on 30 June 2022 (Malatest International, 2023).
[11] In addition, across all components, custody spells are joined into a single spell if they occurred 28 days or less apart. Youth Justice custody spells are joined if they occurred one day apart or less. This follows a general business practice in Oranga Tamariki for counting custody spell duration.

Since the *Open* criterion requires that the latest custody order (or YJ intervention) ended no earlier than 1 July 2019 (i.e., when the service came into effect),[12] rangatahi who met all other criteria, but ended their engagement with Oranga Tamariki prior to this date were not eligible. This criterion is more likely to exclude rangatahi that would otherwise be eligible, but who were aged 18 or above in July 2019 since legal open proceedings *typically* end by the time rangatahi turn 18. However, the policy allows Oranga Tamariki to refer ineligible rangatahi to a *TW* on a case-by-case basis (this will be discussed in more detail in the next sections).

Table 1 presents a snapshot for each June year between 2019 and 2022, showing for each year the number of *TSS* eligible rangatahi (i.e., for any component), number *TW* eligible rangatahi, and number (and share) of *TW* eligible rangatahi who were referred to a transition worker. When the service first came into effect, 7% of the 1,673 *TW* eligible rangatahi were referred to a transition worker, and the recorded referral rates increased with every year, peaking at 61% in 2022.

Table 1 – TSS cohort, TW cohort, and TW referrals by June years

June year	**2019**	**2020**	**2021**	**2022**
Total *TSS* cohort	5,736	5,531	5,324	5,206
Total *TW* eligible	1,673	2,066	2,372	2,713
Total referred to a transition worker	112	654	1,251	1,653
Share of TW eligible rangatahi referred	7%	32%	53%	61%

Source: Oranga Tamariki (2022). **Notes**: This table shows for every June year, the number of *TSS* eligible rangatahi, number of *TW* eligible rangatahi, and the number and share of eligible rangatahi referred to a *TW*. Each year shows numbers across the previous 12 months, and therefore values across years are not mutually exclusive.

Potential explanations as to why eligible rangatahi were not referred can be grouped into those relating to the rangatahi, process, and site-level readiness. At the rangatahi levels, this less-than-universal referral rate may reflect situations where rangatahi are still young and/or still in care and hence are still supported by their Oranga Tamariki social workers, and because rangatahi were not interested in this component (participation is voluntary). In terms of process quality, less-than-universal rates may reflect incomplete preparatory activities, and/or inability for Oranga Tamariki to contact eligible rangatahi. For example, a 2020 study found that only 43% of eligible rangatahi completed a Transition Plan (Malatest International, 2021), which includes updating the contact details that are required for making referrals.[13] Similarly, 46% of the 2020 "Just Sayin'" survey respondents that were still in care (and 40% of those who left care) recalled someone talking with them and/or working out a plan with them for when leaving care (Malatest International, 2021).[14] Finally, referral rates may have been affected (especially in early stages of the roll-out) by frontline staff in some sites not being aware of this component, sites facing resource constrains e.g., staff turnover, unfilled vacancies, lack of clear referral pathways e.g., assigning a site lead worker for service coordination, and lack of local *TW* partner organisations to make the referral to (Malatest international, 2021). Potentially related, a June 2021 snapshot showed large variation in

[12] This includes any YJ custody orders or interventions, and/or a sub-set of C&P orders. For more information about the sub-set of C&P orders, see Table B1.
[13] Of 272 cases reviewed, 35% had evidence that their full entitlements had been explained to the rangatahi.
[14] In the 2022 survey, the rate of those recalling related conversations increased to 56% for those in care, and to 51% for those who had left care.

referral rates across locations, with referral rates being as low as 38% in the East Coast region to as much as 73% in the Canterbury region (Malatest International, 2021).

By June 2022, 3,256 rangatahi were or had been eligible for a *TW*, with 1,767 of these referred (54% of all eligible).[15] In addition, 228 rangatahi declined referral (13%). Note the decline category includes those who declined a referral but could have possibility agreed to referred at a later date. Finally, an additional 126 *ineligible* rangatahi were referred to a *TW.* Internal data suggests that ineligible-and-referred rangatahi were typically eligible for other *TSS* components (11%, 30%, and 58% were eligible for the *AA*, *ETRR*, and both components, respectively).

In terms of engagement, 42% of the 2022 "Just Sayin'" survey respondents reported that they saw their transition worker fortnightly, weekly, or more than weekly (Malatest International, 2023), while 32% saw them once or every few months, 19% only when requested, 3% once or twice a year, and 5% never. Overall, 83% of respondents reported that their transition worker understood what support they needed when leaving care.[16] In terms of disengagement, 38% of those no longer engaged with a *TW* responded that they did not need their help, 23% because they said that they did not get the help they needed or did not like their transition worker, and 21% since they moved to a different area (i.e., without Oranga Tamariki assigning a new *TW*).

In terms of international evidence, while growing, the number of studies examining the effectiveness of similar interventions using robust quantitative methods remains small, a concern raised in reviews of existing literature (e.g., Dworsky et al., 2012; Greeson et al., 2020; Mendes and Rogers, 2020; Gunawardena et al., 2021).[17]

Greeson et al. (2020) reviewed 79 (U.S. based) transition-related interventions, finding that only 10 were evaluated with sufficient rigour to establish a causal link between the interventions and the observed outcomes.[18] Overall, while the studied interventions varied in scope, size, and location, as a group, improvements in outcomes were reported both by the end of the intervention period, and during a follow up period (e.g., 6 months, one-year post-intervention). These included improvements in the areas of education (e.g., post-secondary study, test-scores), labour market (employment, earnings), access to safe and affordable housing, help accessing (and managing) physical and mental health, and reunifying (and remaining) with family. Overall, these findings are encouraging, especially given the small size of most interventions reviewed (e.g., under 100 participants), making the detection of such changes using quantitative methods less likely.

Gunawardena et al. (2021) systematically reviewed 30 studies evaluating 8 U.S. transition-related interventions. As a group, the interventions were found to improve employment outcomes and housing stability and reduce legal system involvement and mental health problems. However, no improvements were detected for educational attainment and social

[15] This number is greater than that presented in Table 1, since it combines information from three years, while each year in the table captures totals for a given year (i.e., information from the previous 12 months).
[16] Similar shares responded that their transition worker helped making things better, that their transition worker did what they say they would do, were there when they needed them, and felt that they could talk to them about their worries.
[17] For a review of related studies using all evaluative methods, see Agnihotri et al (2022).
[18] The robustness of the of evaluations was assessed using the California Evidence-Based Clearinghouse for Child Welfare's Scientific Rating Scale. The interventions that were identified as evaluated with sufficient rigour were My Life (Portland), Steps-to-Success (Florida), Self-Determined Career Development Model, YVLifeSet (Tennessee), North Carolina Independent Living Program, The Better Future Project, Child Focused Recruitment - Wendy's Wonderful Kids (18 states), Family Finding (San Fran, California, Wisconsin), CORE Program, Family Alternatives (Minneapolis, Minnesota), and On the Way Home (Nebraska). Note that the review focused on findings from intervention that were evaluated using Randomised Control Trials. Less frequently, potentially less robust quasi-experimental methods such as Propensity Score Matching (PSM), were included in the review.

support, and no effects were detected from the mentorship, educational, and art/mindfulness-based interventions examined.

The small number of existing (robust) quantitative-based evaluations does not reflect lack of interest by the research community. Rather, interventions on care-experience rangatahi are often designed (and/or rolled-out) without considering how data can be collected, or how outcomes could be robustly measured, leading to far less reliable estimates on efficacy, or indeed a lack of evaluation at all. For example, Huang et al. (2022) evaluated the effects of the Independent Living Service on the homelessness and incarceration outcomes at ages 19 to 21 for care-experienced young adults. To overcome the lack of a pre-designed (robust) control group, Huang et al. (2022) applied a Propensity Score Matching (PSM) approach to construct such group (i.e., to capture a counterfactual). The results of the evaluation suggested that youth who left foster care at an older age, and who received academic support and financial assistance services, were *less* likely to be incarcerated, but *more* likely to experience homelessness. However, due to the methodology used, these effects may not reliably be attributed to this intervention, rather than (at least partially) reflecting (unobserved) differences between participants and those matched (i.e., control group).

Study design

Data and sample

All data for the analysis are sourced from Statistics New Zealand's Integrated Data Infrastructure (IDI).[19] The IDI holds and links data regarding individual interaction with different government agencies (e.g., Inland Revenue, Ministry of Education, Ministry of Health, Department of Corrections) and from surveys (e.g., Household Labour Force Survey).

The study population is derived from information supplied by Oranga Tamariki to the IDI. Specifically, the *Eligibility* table provides a 30 November 2022 eligibility status snapshot (including which *TW* criterion were met, if any). From this table, 4,242 care-experienced rangatahi were selected for this study. These rangatahi were linked to the IDI's spine, had a personal identity confirmed, had valid birth details (year and month), gender recorded,[20] were aged between 16 and 20 when the *TSS* came into effect (i.e., met the *Age* criterion), and recorded *one* day or more in care between the ages of 14 and 9 months and 17 (inclusive).[21] Note that this data included both *TSS* eligible and ineligible rangatahi.

Table 2 presents the distribution of the study population by eligibility criteria. The table shows that about 30% (1,266) met all criteria, and therefore were *TW* eligible. The largest sub-group however comprises of those who only met the *Days* criterion (37%, 1,554),

[19] For more information about the IDI, see: https://www.stats.govt.nz/integrated-data/integrated-data-infrastructure

[20] These restrictions are included in order to ensure that rangatahi are consistently linked across the various sources within the IDI.

[21] And only from the sub-set of the custody orders that used to assess whether the *TW Days* eligibility criterion was met.

followed by 29% (1,236) of who didn't meet the *Days* or *Open* criteria, and a small share of rangatahi (4%, 186) who only met the *Open* criterion.[22]

Table 2 - Distribution of target population by criteria

Group	Age	Days	Open	Rangatahi	Share
None	Y	N	N	1,236	0.291
Days	Y	Y	N	1,554	0.366
Open	Y	N	Y	186	0.044
Eligible	Y	Y	Y	1,266	0.298
Total	**-**	**-**	**-**	**4,242**	**1**

Source: Stats NZ (2023). **Notes**: The table presents the count and share of rangatahi from the study population. The figures in the table are based on values that were randomly rounded to the base of 3.

Table 3 presents a number of eligibility and referral statistics. The first column shows the age of the eligible rangatahi from the study population, when the service came into effect. Of the 1,266 *TW* eligible rangatahi, 70% were aged 16 or 17, about one quarter were aged 18-19, and 4.5% were aged 20. In comparison, ineligible rangatahi (2,976, not included in table) were relatively older, with 30% aged 20, 44% aged 18-19, and 27% aged 16-17.[23] The lower share of rangatahi aged 18 or above amongst all ineligibles (largely) reflects their lower likelihood to meet the *Open* criterion.[24]

The *Action* table in the IDI provides *TSS*-related actions, including referral to the different *TSS* components (*TW*, *ETRR*), and key dates. Information from this table is used in Table 3 when presenting the share of rangatahi (eligible or ineligible) by the age they recorded their first *TW* referral. Overall, 63% of the eligible rangatahi recorded a referral (at any point) to the *TW* component. Of the *TW* eligible rangatahi who were referred, most (64%) recorded their first referral at ages 16-17, over one fifth while aged 18, and nearly 15% at ages 19-20.

On the other hand, a far smaller share of ineligible rangatahi were referred to a *TW* (3%). Of those, their first referral seems to occur at a much older age, nearly three quarters while aged 19-20, 16% while aged 18, 10% while aged 17, and none while aged 16. Discussions with the *TSS* policy team confirms that the legislation allows frontline staff a level of discretion on a case-by-case basis to refer ineligible rangatahi to this component. Therefore, it is more likely that the 3% ineligible referred reflects this feature in the legislation, rather than policy non-compliance, or measurement errors (e.g., false positives).

[22] The study population includes 437 fewer eligible rangatahi than in Table 1, reflecting the exclusion of rangatahi who were aged 15 when the service came into effect, and due to exclusion of a small number of unmatched observations in the IDI.

[23] When comparing the eligible and ineligible sub-groups, rangatahi only meeting the *Open* criterion were much younger (as expected since most interventions end by the age of 18) with over 70% aged 16, and 30% 17. In comparison, the share of rangatahi increased by age for those who met the *Days* criterion or didn't meet any these criteria. For the *Days* sub-group, shares increased from 5% for those who were aged 16 to 35% for those who were aged 20, while these increased from 14% to 26% for rangatahi who met neither criterion.

[24] For example, of all ineligibles, about one fifth met the *Open* criterion, compared with nearly two thirds who met the *Days* criterion.

Finally, 17% of the eligible rangatahi recorded a decline record.[25] Of those, about one half recorded their first decline between the ages of 17 and 18, and 44% between the age of 19 and 20 (only 6% while aged 16). Of ineligibles, only 15 (0.5%), with decline numbers being too small to report by age.[26]

Table 3 - Share of rangatahi by age on 1 July 2019 (eligible), and first age recording a referral (by eligibility status)

Age	Age on 1 July 2019 (eligible)	First age referred	
		Eligible	Ineligible
16	0.387	0.133	0.000
17	0.321	0.508	0.097
18	0.126	0.212	0.161
19	0.121	0.072	0.323
20	0.045	0.076	0.419

Source: Stats NZ (2023). **Notes**: Shares are based on counts that were randomly rounded to the base of 3.

Estimation

To estimate the impacts of the *TW* component on rangatahi outcomes, a *naïve* approach may be to compare the difference in adulthood outcomes between rangatahi who were referred to *TW* (and therefore engaged with this component for some period), with those who were not referred, and after controlling for their observable characteristics:

$$Y_{ido} = \alpha + Ref_{ido}'\beta_r + Days_{id}'\beta_d + Open_{io}'\beta_o + (Days_{id}' * Open_{io}')\beta_{do} + X_i'\lambda + \varepsilon_{ido}$$

In this model, Y represents the 19th year outcome (i.e., from their 18th birthday and until they turn 19, exclusive) for rangatahi *i* from days in care group *d*, and open proceeding group *o.* Next, α captures the mean outcome for rangatahi who only met the *Age* criterion and were not referred. *Days* and *Open* are dummy variables equal to 1 if rangatahi also met the *Days* and *Open* criteria (respectively, zero otherwise), and are *TW* eligible if met both $(Days_{id}' * Open_{io}')$. Next, X is a matrix of individual level characteristics, and ε is an error term. Finally, Ref is a dummy variable equal to 1 if the rangatahi was referred to a *TW* by their 18th birthday (zero otherwise).

In this equation, β_r is the coefficient of interest, capturing the difference in mean outcomes for rangatahi who were referred to a *TW* relatively to those who were not, and after controlling for all other (observable) characteristics.[27]

Under this approach, β_r will be biased and inconsistent if any unobserved outcome-related characteristics are also correlated with being referred to a *TW*. For example, if rangatahi who *agreed* to be referred to a *TW* are more motivated and are more likely to record more favourable outcomes regardless of participating in this service (i.e., since they are more motivated), then the estimated effects captured by this model (β_r) will overstate the actual benefits of this component (since motivation is not captured by *X*). In contrast, if rangatahi who *agreed* to be referred were for some unobserved reason were less likely to record better outcomes (e.g., greater likelihood to have high and complex needs, disabilities, or with less

[25] Note that this share is greater than that recorded using Oranga Tamariki operational data (13%). This difference is due to rangatahi not included in the study population due to missing data (e.g., gender, date of birth), differences in period observed, and the exclusion of 15-year-olds in the study population.
[26] 77% of the eligible rangatahi who recorded a referral and/or a decline, only recorded a referral, while 8% only recorded a decline. Of ineligibles recording one or both actions, 88% only recorded a referral, and 11% recorded a referral and a decline. Therefore, this suggest that rangatahi who recorded a decline did so before engaging with a transition worker.
[27] All specifications in the analysis include heteroskedastic robust standard errors.

of a financial or social support network), then any estimated impacts of the *TW* on outcomes will be understated.

To address this potential bias, this analysis adopts an Instrumental Variable (IV) approach. IV is commonly used in situations when an experimental design (e.g., Randomised Control Trial) is not feasible, such as in the case of the *TSS*. Intuitively, IV induces changes in the explanatory variable of interest (i.e., referred to *TW*), but has no independent effect on the dependent variable (Y). Therefore, if the IV assumptions hold, the causal effect of *TW* referrals on adulthood outcomes will be estimated independently to the effects of any (unobserved) confounding factors (Angrist & Pischke, 2009).

For this, a Two-Stage Least Square (2SLS) is applied, with *TW* eligibility as the instrument for *TW* referrals. In the first stage of this approach, the relationship between eligibility and referral (along all other control variables) is estimated by:

$$Ref_{ido} = \alpha + Eligible'_{ido}\gamma_e + Days'_d\gamma_d + Open'_o\gamma_o + X_{ido}{}'\delta + \omega_{ido}$$

Where γ_e estimates the effect *TW* eligibility has on being referred (i.e., likelihood of being referred, conditional on being eligible), after controlling for all other factors (which follow the same interpretation as in the naïve equation). Note that the interaction between *Days* and *Open* from the naïve equation is not included here since it is the same as the instrument ($Eligible$). Following estimation, an instrumented version (i.e., assumed to be uncorrelated to the error term) is computed ($\widehat{Ref}_{ido}$), and used in the second stage to estimate the impacts of the *TW* component on outcomes (*Y*):

$$Y_{ido} = \alpha + \widehat{Ref}_{ido}{}'\widehat{\beta_r} + Days_{id}{}'\beta_d + Open_{io}{}'\beta_o + X_{ido}{}'\lambda + v_{ido}$$

In this second stage model, $\widehat{\beta_r}$ captures the estimated effect of *TW* referrals on outcomes, with all other variables having the same interpretation as in previous models.

For the IV approach to capture the *causal* effect of this component on outcomes, two assumptions must hold, relevance and exclusion restriction. The relevance assumption requires the instrument (*TW* eligibility) to be correlated to the variable of interest (*TW* referral).[28] This assumption is tested as part of the first stage, and formally assessed by examining the contribution the instrumented variable had on the if of the model (as measured by its partial R^2 and F-Statistic).

Table 4 summarises the finding from the IV first stage, and the F-Statistic results reject the null hypothesis of a weak instrument, hence supporting the relevance assumption.[29] In terms of magnitude, *TW* eligible rangatahi were 41 percentage points (pp) more likely to be referred to the *TW* component by the age of 18 (significant at the 1% level).

Table 4 - First stage test results

Coefficient (γ_e)	R^2	Adjusted R^2	Partial-R^2	F-statistic
0.412***	0.483	0.471	0.072	364.461***

Source: Stats NZ (2023). **Notes**: This table presents the findings from the two-stage least square's first stage. * - significance at the 10% level, ** - significance at the 5% level, *** - significance at the 1% level.

[28] $Cov(eligible_{ido}, Ref_{ido}) \neq 0$

[29] When testing the first stage when using referrals by the age of 19, the coefficient of TW eligible is again (51pp, significant at the 1% level), and the F-Statistics is large and significant (459, significant at the 1% level).

The exclusion restriction assumption, on the other hand, cannot be formally tested and can only be conceptually/theoretically justified. In the context of this analysis, this assumption requires that conditional on $Open$, $Days$, and X, *TW* eligibility status only affects outcomes *only* by referring rangatahi to a *TW*.[30]

To explore whether this assumption holds in more detail, recall that all rangatahi in the study population met the *Age* criterion, with *TW* eligible rangatahi meeting **both** the *Days*, and *Open* criteria. Therefore, compared with rangatahi who met the (*Age* and) *Days* criteria, eligible rangatahi **also** met the *Open* criterion, and therefore were more likely to be younger and/or remained in care until an older age, and/or left care more recently. If these differences affect outcomes (i.e., regardless of whether the service came into effect or not), then the exclusion restriction assumption will be violated, and $\widehat{\beta_r}$ will be (positively or negatively) biased. Similarly, compared with rangatahi who only met the (*Age* and) *Open* criterion, eligible rangatahi **also** remained in care for a longer period, which again, may be directly correlated with outcomes (i.e., duration in care may be correlated with differentiated outcomes). Finally, compared with rangatahi who only met the *Age* criterion, TW eligible rangatahi may have experienced different outcomes even in the absence of this component as they spent more time in care *and* were more likely to be younger and/or remained in care until an older age, and/or left care more recently.

To minimise the risk of violating this assumption, matrix *X* includes variables that attempt to capture the potential impacts these differences may have on outcomes. These terms (variables) include an interaction term between meeting the *Days* criterion and latest age leaving placement (as a set of dummy variables indicating age in years), between meeting the *Days* criterion and age when *TSS* came into effect (as a set of dummy variables), and between meeting the *Open* criterion and the total number of months in placement from birth to 18. For similar reasons, the model also includes controls such as the total number of months rangatahi were in placement from birth to 18, first age entering a placement, last age leaving a placement, whether rangatahi were in placement at specific age milestones (e.g., 16, 17 and 11 months), a set of dummies indicating rangatahi age when the *TSS* came into effect (year/quarter fixed effects) are included for the same purpose. Given the positive relationship between *TW* eligibility and referral to the service (Table 4), the direction and magnitude of the bias will depend on the direction and magnitude of the (residual) correlation between *TW* eligibility and outcomes.[31]

Finally, the model will be estimated using different specifications, with each including a larger number of control variables (from *X*), and a number of restrictions to the study population. In addition to estimating the outcomes across the entire study population, they are also estimated separately for rangatahi Māori and Pacific.[32]

Outcome and control variables

Outcome variables (*Y*)

Outcome variables in this analysis are informed by the longer-term goals of the *TSS* intervention logic (Figure A1., Appendix A) that can be reliably measurable in the IDI. When direct measures cannot be constructed, proxy indicators are used instead (if possible). The list of outcome variables will be discussed next, with the full list given in more detail in Table

[30] $Cov(eligible_{ido}, \varepsilon_{ido} | Days, Open, X) = 0$

[31] That is, if eligible rangatahi would record more favourable outcomes if this component was not available, then the benefits from the *TW* component will be overstated. On the other hand, if their outcomes would have been less favourable, then the benefits from the *TW* component will be understated.

[32] Note that since ethnicity was defined using a total response method, rangatahi that identify both as Māori and Pacific Peoples will be included in both specifications.

C1 within Appendix C. As previously discussed, data coverage limitations mean that adulthood outcomes are only measured throughout the age of 18. For simplicity, outcome indicators are largely constructed as dummy variables, and equal to one if the rangatahi recorded one or more interactions at this age (e.g., recording income from employment for one or more months). However, a small number of outcomes are measured as quantity (e.g., number of months receiving income from employment).

Labour market

In the area of labour market, engagement with employment is proxied by whether rangatahi recorded at least one month of income from Wages and Salary (W&S) income, the number of months receiving such income, whether they recorded at least one month receiving a main benefit income,[33] the number of months receiving such income, whether they recorded at least one month with a Not in Education, Employment, and Training (NEET) status, and at least 6 months recording a NEET status (mostly NEET as a 12-month period is examined).[34]

Health

In the area of health, the goal of improving health outcomes (physical and mental) in the intervention logic is proxied by whether rangatahi recorded any Emergency Department (ED) admissions, and any Mental Health and/or Substance Abuse service use (MHSU).

Education

In the area of education, improving educational achievements is proxied by whether rangatahi gained different levels of NZQA educational qualifications (e.g., any, level 2 or above, level 4 or above), and recorded any enrolment spells in tertiary education (only from public tertiary providers).

Justice

In the area of Justice, reducing involvement with the Justice sector is proxied by whether rangatahi recorded one or more Police offence events, any Community Service correction sentences, and any Prison/Remand correction sentences.

Mobility

To assess whether more stable living arrangements were achieved, the analysis examines whether rangatahi were *vulnerably transient* following the approach in Jiang et al. (2017). Briefly, *vulnerably transient* rangatahi are defined as those who over a period of three years changed their residential address 3 or more times, moved to more deprived neighbourhoods, or changed addresses within the top 30% most deprived neighbourhoods.[35] Here, the measure is adjusted to capture whether this status was recorded during their 19th year (i.e., over one year). In addition, data from NZTA is used to assess whether rangatahi were issued a Learners, Restricted, or Full driver's licence (between the ages of 16 and 18, inclusive).

In addition, many of these outcomes were also in-line with the desires expressed by young people in the "Just Sayin'" surveys. For example, over half of the 2022 survey (56%) wanted to be issued a driver's licence (56%), and nearly one quarter wanted to enrol into training (Malatest International, 2023).

[33] This is used as a proxy for unemployment, which is stated as one area the *TSS* attempts address. Unemployment cannot be measured for the entire study population since the term unemployment can only be derived only from survey data (Household Labour Force Survey). Note the unemployment and benefit receipt are conceptually different (Stats NZ ,2022).
[34] For a similar approach for measuring NEET using administrative data sources, see Apatov (2019).
[35] Area level deprivation is captured using the New Zealand Index of Deprivation 2018 (Atkinson et al., 2019).

Control variables (*X*)

These variables are used to control for any differences in observable characteristics amongst rangatahi that may be correlated with adulthood outcomes. In addition to the variables that identify whether rangatahi met specific eligibility criteria (e.g., *Days*), *X* includes variables that capture demographic (e.g., gender, ethnicity, parenting status, birth year/quarter) and geographic (regional council of residents at age, local area [meshblock] deprivation level) characteristics, as well as childhood/adolescent interactions with the education (e.g., school interventions due to exclusion, expulsion, or truancy, highest secondary education qualification, school decile), health (PAH/ASH, MHSU, ED admissions, diagnosis of chronic condition), child protection (e.g., any/number of Oranga Tamariki related interactions), and the justice (e.g., Police offending events) systems.

While most control variables are measured *by* the rangatahi 16th birthday, residential address (at the meshblock level) and school decile are measured *at* their 16th birthday. In addition, a smaller number of variables also capture experiences by, or at their 18th birthday.[36] For the full list of control variables used in this study are presented in Table C1 within Appendix C.

Note that the 16th birthday cut-off date was used as this is the youngest age rangatahi from the study population could have been when the *TSS* came into effect. However, some care and placement related data extends to their 18th birthday to account for the possibility of differentiated outcomes that were due to younger rangatahi potentially remaining in placement for an additional year (until the age of 18, rather than 17 for older cohort) since they were more likely to be affected by the *Raising the Age* legislative change than older cohorts (introduced in April 2017).[37]

Limitations

In addition to the limitations discussed so far, data related limitations include the use of administrative records to proxy for outcomes, which may not accurately capture the true benefits of the component. Data linking errors and missing information could affect the sample size, and captured outcomes, which in turn, may bias the results.[38] In addition, given that the control variable (largely) captures interaction until the age of 16, while adulthood outcomes are measured at ages 18-19, then if any unobserved outcome-correlated experiences occurred at ages 16-17 in a *systematically* different manner between the treatment and control groups (and correlate with *TW* eligibility status), then the estimates will be biased. Related to this, even if unbiased, assessing whether the goals of the *TW* component have been met by interpreting the estimates could be challenging or misleading. For example, determining whether an estimate suggesting an increase in mental health service on the one hand may reflect greater awareness of existing services and/or desire to address mental health related issues, or on the other hand, a deterioration in the mental health status of rangatahi. Therefore, any interpretation of the estimates should be done with caution.

In terms of coverage, since adulthood outcome data is only available for the first *TSS* cohorts, and at a relatively young age (19th year), benefits that materialised later at older

[36] Furthermore, X also includes variables that measure whether rangatahi had a residential address, deprivation scores, school decile, whether they were linked in the IDI to Ministry of Education and Health data, and whether they were mostly overseas during their 19th year. These are included to control for the fact that if not linked, all related outcomes will appear as 0 (i.e., no interaction) due to missing data.
[37] Raising the age of care was a legislative change that increased the 'upper age of care' from 17 to 18 and came into effect since April 2017. For more information, see Apatov (2022).
[38] If these errors occur randomly, then the impact will be to bias the estimates towards zero. If non-random, the estimates may be positively or negatively biased.

ages, and/or for more recent cohorts, will not be detected in this analysis. Next, while this analysis focuses on the outcomes resulting from the *TW* component, the study's methodology may also capture impacts from the two other components.[39]

Regarding the IV approach, a common limitation for this approach is that 2SLS tends to be less efficient (i.e., larger standard error than under OLS), which in turn, could result in not detecting significant impacts on outcomes (Wooldridge, 2010). Finally, the impacts of the *TW* will only be estimated for a sub-group of rangatahi that were referred to the *TW* only because they were eligible (compliers). This type of estimate is commonly known as the Local Average Treatment Effect (LATE) and may not be generalisable to all rangatahi (Imbens & Angrist, 1994).[40]

Results

Descriptive Statistics

Table 5 groups the mean characteristics of rangatahi by the number of *TW* eligibility criteria met. The rightmost column in the table (labelled *DiD*) quantifies the estimated difference in outcomes between the eligible and ineligible rangatahi using the following equation:

$$x_{ido} = \alpha + Eligible'_{ido}\beta_e + Days'_{ido}\beta_D + Open'_{ido}\beta_o + v_{ido}$$

Where x represents a given characteristic (i.e., from matrix X) for rangatahi *i* from *Days* group *d* and *Open* group *o*. All other variables have the same interpretation as in previous equations. In this equation, β_e captures the difference in mean characteristics for each x for *TW* eligible rangatahi compared with the other groups.[41]

The table shows that eligible rangatahi have a (20pp) greater share of females and are overall younger (about one year younger than rangatahi from the *None* and *Days* sub-groups, and about one year older than the *Open* sub-group). Within all groups, nearly two thirds of rangatahi were identified as Māori, about one fifth as Pacific Peoples, and of rangatahi resided in the 20% most deprived areas turned 16 (as captured by the 2018 NZDep index).[42]

Across all characteristics in the table, those associated with placement history reveal the greatest differences between the eligible and ineligible rangatahi. On average, *TW* eligible rangatahi spent far greater periods in C&P/YJ placement during their childhood and adolescence (5 years and 9 months on average). In comparison, the group with the closest number of days to those eligible in terms of total placement spell duration were those who (only) met the *Days* criterion, at under three and a half years. The remaining other two sub-groups show drastically different experiences, with placement spells totalling (on average)

[39] All *TW* eligible rangatahi are also eligible for the *AA* component by definition. In addition, data to 30 June 2022 suggests that 46% of the *TW* eligible rangatahi were also *ETRR* eligible. Data to *December* 202,2 suggests that 2.7% of all *TW* eligible rangatahi (at any point) were referred to the *ETRR*.
[40] Broadly, rangatahi can be grouped to four conceptual groups. First, *always takers* are those who would always be referred, independent of being eligibility. Second, *never takers* are those who will never be referred (i.e., regardless of eligibility). Third, *compliers* are those who would be referred if eligible, and not referred if ineligible. Fourth, *defiers* are those who will be referred ineligible, and not referred if eligible. The IV approach only estimates the impact of the TW on the outcomes of *compliers*.
[41] Stars indicate the difference's level of statistical significance (* - 10%; ** - 5%; *** - 1%).
[42] Based on meshblock level score, the smallest geographic unit for which data is reported by Statistics New Zealand (Statistics New Zealand, 2016).

less than 6 months. Furthermore, *TW* eligible rangatahi (on average) recorded their first entry to placement 1.5–3 years younger than ineligible rangatahi. Related to this, *TW* eligible rangatahi were significantly more likely to be in placement at every age milestone (e.g., age 15, 17 and 11 month), where the difference in shares increase with age (varying from about 20pp more at 13 to 35pp at the age of 17 and 11 months).[43]

Overall, since the *TW* component targets rangatahi with substantial care experience at adolescence, it is not surprising that the eligible group recorded more extensive periods in placement overall, and during adolescence specifically. In addition, the greater share of *TW* eligible rangatahi recording placement spells between the ages of 15 and 17 (inclusive) is also in-line with the *Raising the Age of Care (RAC)* legislative change. As previously noted, *RAC* came into effect in April 2017, enabling rangatahi to remain an additional year in placement (until 18). Operational data suggest that *RAC* (effectively) targets rangatahi with prolonged placement spells from the age of 15. Since *TW* eligible rangatahi all meet the *Days* criterion (which also targets spells from the age of 15), they were more likely to be affected by *RAC* than rangatahi from the *None* and *Open* sub-groups. In addition, since *TW* eligible rangatahi are younger than rangatahi who only met the *Days* criterion, they were more likely to be affected by *RAC* since a greater share would have been younger than 18 when *RAC* came into effect.

In terms of other Oranga Tamariki interactions, *TW* eligible rangatahi recorded a greater number (3) of C&P Reports of Concern, statutory assessments (2), and Family Group Conference (FGC) referrals (0.5). On the other hand, despite the 'raw' difference in YJ interactions shown in the table, no significant difference was recorded, as well as no differences in term of recording Police offence events. On the other hand, additional YJ measures (not included in the table) show that *TW* eligible rangatahi were 21pp less likely to record any YJ placement spell, and remained in YJ placement for a *shorter* period (about one month less on average).[44] Finally, eligible rangatahi were 9pp more likely to record a Mental Health and/or Substance Abuse (MHSU) service usage event by the age of 16, with no other (statistically significant) differences in health or education outcomes detected.

Overall, the table suggests that most observable differences between eligible and ineligible rangatahi were related to their history with Oranga Tamariki, in line with the characteristics the *TW* component targets. Eligible rangatahi (especially during adolescence) had greater involvement with care and protection services, while ineligible rangatahi had greater involvement with YJ services. In terms of characteristics not related to Oranga Tamariki, most differences between the groups were small, and not statistically significant.

[43] Note that all milestones used in the table were all statistically significant, and followed the same pattern as (i.e., differences in shares increase with age).
[44] However in terms of duration, *TW* eligible rangatahi spent on average 72 days in YJ placement, with only the *Days* sub-group recording a longer period (89 days).

Table 5 – Mean characteristic by eligibility status

	Raw means				DiD
Characteristic (*x*)	**None**	**Open**	**Days**	**Eligible**	β_e
Count of rangatahi	1,236	186	1,554	1,266	-
Demographics					
Age when TSS came into effect	18.29	16.53	18.74	17.09	-0.304***
Any children by age 16	0.015	0.000	0.017	0.017	-0.005
Females	0.325	0.161	0.398	0.438	0.199***
Māori ethnicity	0.658	0.661	0.635	0.640	-0.003
Pacific Peoples ethnicity	0.216	0.226	0.183	0.178	-0.018
Deprivation score	1,152	1,145	1,130	1,119	9.61
Oranga Tamariki related variables (0-17, Inclusive)					
Months in care	4.5	5.34	40.97	69.18	27.8***
First age in placement (years)	12.3	12.66	10.09	8.35	-2.72***
Last age in placement (years)	14.11	14.58	15.42	16.56	0.039
In placement at age					
13	0.029	0.000	0.280	0.467	0.200***
14	0.027	0.000	0.365	0.540	0.185***
15	0.036	0.000	0.469	0.618	0.164***
16	0.051	0.000	0.434	0.647	0.246***
17	0.032	0.048	0.357	0.637	0.252***
17 and 11 months	0.000	0.048	0.079	0.481	0.351***
Number of (C&P) ROCs	7.983	6.790	10.232	11.99	3.03***
Number of (YJ) ROCs	3.434	2.242	3.122	2.33	0.429
Number of (C&P) Assessments	4.155	3.081	5.685	6.62	2.04***
Number of (C&P) FGCs	1.078	1.048	2.535	3.05	0.555***
Number of (YJ) FGCs	2.704	1.823	2.450	1.86	0.309
Justice					
Any police offending events	0.813	0.710	0.641	0.547	0.003
Health					
Any ED hospital admissions	0.784	0.855	0.747	0.773	-0.036
Any (PAH/ASH) hospitalisations	0.481	0.435	0.475	0.493	0.055
Any chronic condition diagnosis	0.046	0.048	0.054	0.040	-0.028
Any MHSU service usage events	0.818	0.694	0.786	0.744	0.089**
Education					
Had any secondary school qualification	0.053	0.097	0.081	0.100	-0.024
Total (distinct) schools enrolled	5.988	5.887	6.357	6.419	0.226
Secondary school decile	2.012	2	2.448	2.763	0.341
Any School interventions	0.896	0.839	0.784	0.725	-0.004
Left school by the age of 16	0.083	0.032	0.039	0.031	0.031*

Source: Stats NZ (2023). **Notes:** Figures are based on randomly rounded values to the base of 3. * - significance at the 10% level, ** - significance at the 5% level, *** - significance at the 1% level. Across all groups, 99-100% of rangatahi were linked to MOH data, and 95-98% to MOE data.

Table 6 presents rangatahi mean characteristics by their eligibility status, and by whether they were (ever) referred to a *TW*. For each group (i.e., eligible, ineligible), column *Diff* presents the differences in means between those referred and not referred to a *TW*, and whether the difference was statistically significant using a two-way T-Test. Starting with ineligible rangatahi, those referred were 8pp more likely to meet the *Open* criterion, and over 18pp the *Days* criterion, suggesting that exceptions to the eligibility criteria made by Oranga Tamariki frontline staff more commonly occurred for rangatahi who met at least some criteria. In terms of demographic, ineligible rangatahi who were referred to a *TW* were

younger, more likely to be female, and less likely to be Pacific Peoples (no differences in terms of Māori ethnicity and area deprivation levels). Focusing on Oranga Tamariki related interactions, referred ineligible rangatahi recorded on average longer periods in placements (in-line with the greater share of referred rangatahi meeting the *Days* criterion), left care at an older age and were more likely to be in placement at the age of 17 and 11 months (in-line with the greater share that met the *Open* criterion).[45] On the other hand, no differences in terms of education, justice, or health experiences were recorded.

Focusing on *TW* eligible rangatahi, aside from on average being younger, those referred to a *TW* recorded similar demographic characteristics to those not referred. In terms of placement history, referred rangatahi recorded an overall *shorter* period in placement, were less likely to be in placement at the age of 13 (or younger, not included in the table), but were *more* likely to be in placement at 17 and 11, leave care at an older age, and record a greater number of (C&P and YJ) Reports of Concern, and (YJ) FGC referrals. Despite their greater YJ involvement, referred rangatahi were not significantly more likely to record a Police offending (57% compared with 52% for those not referred).[46] In terms of health and education characteristics, referred-eligible rangatahi were 8pp more likely to record Emergency Department (ED) hospital admissions (80% compared with 73%), 6pp more likely to record Mental Health and/or Substance Abuse (MHSU) service usage events (77% compared with 71%), enrolled to 0.4 more (distinct) primary and/or secondary schools (6.6 compared with 6.2), and enrolled to a school with a slightly lower decile when turned 16 (2.6 compared with 3).

Overall, the table suggests that rangatahi that were referred to the *TW* component were younger, and had greater involvement with Oranga Tamariki, especially towards adulthood. Of those eligible, referred rangatahi may have also recorded less preferable education and health experiences, speculatively suggesting negative selection in the component (on average).

[45] While not statistically different, a lower share of referred rangatahi recorded one or more days in record YJ placement, and *longer* duration of YJ placement spells (not included in table).
[46] In addition, *TW* eligible rangatahi who were referred were significantly more likely to record YJ placements (30% compared with 23%), as well as longer total duration in such placements (87 days compared with 30).

Table 6 – Mean characteristics by TW eligibility and referral status

	Ineligible			Eligible		
Referred	**No**	**Yes**	**Diff**	**No**	**Yes**	**Diff**
Rangatahi count	2,919	60	-	528	735	-
Characteristic (*x*)						
Met Open criterion	0.062	0.150	0.088***	1	1	-
Met Days criterion	0.518	0.700	0.182***	1	1	-
Demographics						
Age when TSS came into effect	18.42	17.10	-1.32***	18.006	16.506	-1.5***
Any children by age 16	0.016	0.000	-0.016	0.011	0.020	0.009
Females	0.350	0.450	0.1**	0.443	0.437	-0.006
Māori ethnicity	0.646	0.600	-0.046	0.659	0.629	-0.03
Pacific Peoples ethnicity	0.202	0.000	-0.202**	0.170	0.184	0.014
Deprivation score	1139	1122	-17.2	1114	1127	13.3*
Oranga Tamariki related variables (0-17. Incl.)						
Months in care	23.37	33.30	9.92**	74.16	65.88	-8.27***
First age in placement (years)	11.17	10.60	-0.569	7.92	8.69	0.769**
Last age in placement (years)	14.80	15.25	0.448***	16.28	16.83	0.548***
In placement at age						
13	0.159	0.150	-0.009	0.500	0.441	-0.059**
14	0.202	0.250	0.048	0.568	0.522	-0.046
15	0.260	0.300	0.04	0.631	0.612	-0.019
16	0.247	0.350	0.103*	0.648	0.649	0.001
17	0.201	0.250	0.049	0.614	0.657	0.043*
17 and 11 months	0.043	0.150	0.107***	0.347	0.576	0.229***
Number of (C&P) ROCs	9.05	10.10	1.04	11.47	12.41	0.935**
Number of (YJ) ROCs	3.19	3.15	-0.043	1.94	2.62	0.686**
Number of (C&P) Assessments	4.88	5.15	0.273	6.51	6.74	0.229
Number of (C&P) FGCs	1.83	2.20	0.372	2.97	3.12	0.155
Number of (YJ) FGCs	2.51	2.90	0.394	1.59	2.06	0.476**
Justice						
Any police offending events	0.718	0.650	-0.068	0.523	0.567	0.044
Health						
Any ED hospital admissions	0.768	0.750	-0.018	0.727	0.804	0.077***
Any (PAH/ASH) hospitalisations	0.476	0.400	-0.076	0.489	0.498	0.009
Any chronic condition diagnosis	0.052	0.000	-0.052	0.040	0.041	0.001
Any MHSU service usage events	0.793	0.750	-0.043	0.710	0.771	0.061**
Education						
Had any secondary school qualification	0.07	0.1	0.03	0.114	0.086	-0.028*
Total (distinct) schools enrolled	6.165	6.3	0.135	6.210	6.596	0.386**
Secondary school decile	2.226	2.8	0.574	3.023	2.588	-0.435***
Any School interventions	0.836	0.75	-0.086*	0.71	0.739	0.029
Left school by the age of 16	0.058	0.000	-0.058	0.034	0.029	-0.005

Source: Stats NZ (2023). **Notes:** Figures are based on randomly rounded values to the base of 3 and results derived from less than six rangatahi were set to zero. [+] Due to suspensions, expulsions, exclusions, or truancy. * - significance at the 10% level, ** - significance at the 5% level, *** - significance at the 1% level.

Instrumental Variable (IV) results

Table 7 summarises the IV regression results for the entire study population.[47] The structure of Table 7 is as follows:

- *Column 1* presents the estimated effects of the *TW* on referred rangatahi, when only including for time-invariant control variables, and variables capturing characteristics experienced by (or at) the rangatahi 16th birthday.
- *Column 2* introduced additional control variables (i.e., from *X*) that capture experiences by the 18th birthday.[48]
- *Column 3* also includes an interaction term between the regional council of residence (at 16th birthday) and rangatahi age dummies (in years). This term is included to control for regional trends that may have affected outcomes such as geographical heterogeneity from the Covid19 outbreak, and regional/time variations in site or *TW* partner readiness and quality of service.
- *Column 4* includes all the controls discussed so far, but replaces the dichotomous *Days* dummy variable (including when this term is used as part of an interaction term) with a continuous variable that captures the longest continuous C&P/YJ spell each rangatahi recorded between the age of 14 and 9 months and 18. When preparing the data for this analysis, this variable was used to determine whether rangatahi met the *Days* criterion. This (continuous) term is included to better capture potential effects on outcomes from recording different lengths of spell, rather than averaging impacts of continuous duration to meeting (or not meeting) the 90-day threshold.
- *Column 5* repeats the specification from column 4, but restricts the study population to only include rangatahi who recorded continuous custody spells that lasted 7 days or longer.
- Finally, *column 6* increases this restriction to only include rangatahi who recorded continuous spells lasting 30 days or longer.

Note that the final two specifications are examined since it is possible that rangatahi who only recorded very short continuous spells may not be suitable for comparing outcomes. In more detail, the study population under the 5th and 6th specifications reduced by 12% and 24%, respectively. All the now excluded rangatahi are from the *None* and *Open* sub-groups (i.e., those who didn't meet the *Days* criterion). For these sub-groups, their size reduced by 32% to 72% (depending on sub-group and specification). As a result, while it is possible that the results from these models are more reliable since they have closer (observed) similarity in terms of spell length (i.e., closer to comparing 'apples with apples'), it is also possible that the reductions in the size of these sub-groups may lead to (wrongly) not detecting actual effects from the component.

Starting with labour market outcomes, the point-estimates (regardless of significance level) suggest greater participation in the labour market. Across all specifications, the point estimates relating to employment were positive, while those related to receiving benefit income and recording a NEET status were negative. In addition, the 1st and 5th specifications estimate statistically significant improvements in employment outcomes. For example, column 5 estimates that referred rangatahi (on average) received W&S income for nearly 2.5 additional months, and benefit incomes for 3 fewer months.

In terms of health outcomes, the point estimates suggest a reduced likelihood to record ED admissions, with a statistically significant decrease amongst rangatahi who met the 7-day rule (column 5). Under this specification, referred rangatahi were 33pp less likely to record

[47] For additional specifications, see Table C2, Appendix C.

[48] This includes the set of interaction terms that are used to support the excludability restriction assumption.

any ED admissions, or by about 11% less than the overall mean.[49] In addition, column 1 suggests a reduction in the likelihood of referred rangatahi to record any MHSU events, though this specification is expected to be the least reliable, and is included in the table as a baseline.

In terms of Justice related outcomes, all point-estimates suggest reduced likelihood of recording Police offending events, or correction sentencing, though most estimates are not statistically significant. However, columns 1 and 3 show a statistically significant reduction (by about 32% from overall mean) in the likelihood that referred rangatahi recorded Police offending events, while columns 1-4 find a statistically significant reduction in their likelihood to record Prison/Remand correction sentences (between 4 and 10%).[50]

In terms of mobility, specifications 4 and 5 identified a statistically significant greater likelihood for referred rangatahi to be issued a *Restricted* driver licence (20-22pp, or 3% greater than the overall mean), though the restricted specifications (columns 5-6) also estimated a *reduced* likelihood (for referred rangatahi) for these rangatahi to be issued a *Learners* driver licence. Finally, column 6 suggests that referred rangatahi were about 16% less likely to record a *vulnerably transient* status.

[49] Derived from multiplying the percentage point change by the share of rangatahi recording this outcome. Note that this calculation is only done for context providing purposes, and should not be interpreted as the exact impact of the *TW* component.
[50] When examining correction sentences for either Prison/Remand or Community Service (i.e., combined), specifications 1-5 identify statistically significant reductions (Table C2).

Table 7 –IV regression results, outcomes at the age of 18, all rangatahi

	(1)	(2)	(3)	(4)	(5)	(6)
Labour Market						
W&S income (any)	0.14	0.473	0.544	0.184	0.207	0.089
W&S income (months)	**1.717****	4.977	5.376	1.801*	**2.46****	1.931
Benefit income (any)	**-0.261*****	-0.593	-0.605	-0.072	-0.255*	-0.244
Benefit income (months)	**-3.174*****	-4.391	-4.962	-1.353	**-3.042****	-1.876
NEET (any)	-0.044	-0.167	-0.177	-0.09	-0.05	-0.119
Mostly NEET	-0.04	0.127	0.037	-0.012	-0.066	-0
Health						
ED admissions	-0.136	-0.572	-0.582	-0.262*	**-0.327****	-0.301
MHSU events	**-0.238****	-0.804*	-0.845*	-0.25*	-0.205	-0.264
Education						
Tertiary enrolments (any)	0.077	0.627	0.548	0.184	0.184	0.158
Highest qualification (any)	0.021	-0.075	-0.182	-0.089	0.025	0.075
Highest qualification (L.2+)	0.136*	0.347	0.214	0.067	0.033	0.082
Highest qualification (L.4+)	-0.006	-0.115	-0.088	-0.02	-0.043	-0.04
Justice						
Police offending events	**-0.237****	-0.824*	**-0.925****	-0.244*	-0.097	-0.116
Community Work sentences	-0.019	-0.149	-0.137	-0.031	-0.061	0.031
Prison/Remand sentences	**-0.282*****	**-0.712****	**-0.701****	**-0.258****	-0.208	-0.17
Mobility						
DL: Learners	-0.179*	-0.783*	-0.832*	-0.254*	**-0.418*****	**-0.476****
DL: Restricted	**0.149****	0.486*	0.506*	**0.197****	**0.217****	0.21*
DL: Full	0.006	-0.106	-0.099	-0.025	-0.046	-0.038
Vulnerably transient	-0.031	-0.316	-0.245	-0.035	-0.128	**-0.438****
Min. days in C&P/YJ care	1	1	1	1	7	30
Observations	4,242	4,242	4,242	4,242	3,726	3,243
X – Until age 16	Y	Y	Y	Y	Y	Y
X – Until age 18	N	Y	Y	Y	Y	Y
Regional trends	N	N	Y	Y	Y	Y
Continuous Days criterion	N	N	N	Y	Y	Y

Source: Stats NZ (2023). **Notes**: The table presents the IV regression estimated effects of the *TW* on rangatahi outcomes at the age of 18. * - significance at the 10% level, ** - significance at the 5% level, *** - significance at the 1% level. Observation counts were randomly rounded to the base of 3.

Table 8 presents the findings from the IV specifications for rangatahi Māori. The table shows results for when including all controls by the age of 18 (column 1), when including regional trends (column 2), when using a continuous *Days* variation (column 3), and when restricting the study population as in Table 7 (columns 4-5).

The table shows that as for the entire study population, referred rangatahi were less likely (about 8% less) to record Prison/Remand sentences, and 2% more likely to be issued a Restricted drives licence. Similarly, to the overall study population, referred rangatahi Māori were also less likely to record Prison/Remand or Community Work sentence (i.e., when combined into a single measure).[51] On the other hand, all specifications identified a lower likelihood for referred rangatahi to be issued a Learners drivers licence (21% less). In addition, some specifications suggest that referred rangatahi were less likely to record ED admission (15% less; columns 3-5), and MHSU events (16%, column 3).

[51] Table C3.

Table 8 - IV regression results, outcomes at the age 18, rangatahi Māori

	(1)	(2)	(3)	(4)	(5)
Labour Market					
W&S income (any)	0.975	0.969	0.276	0.297	0.26
W&S income (months)	3.128	2.976	0.417	1.46	0.857
Benefit income (any)	-0.253	-0.148	0.119	-0.077	-0.066
Benefit income (months)	-2.42	-2.425	-0.252	-1.218	0.152
NEET (any)	0.532	0.549	0.183	0.246	0.175
Mostly NEET	0.558	0.529	0.243	0.245	0.255
Health					
ED admissions	-0.976	-1.105	**-0.435****	**-0.547****	**-0.681****
MHSU events	-1.335*	-1.331*	**-0.433****	-0.254	-0.436
Education					
Tertiary enrolments (any)	1.081	1.034	0.176	0.171	0.189
Highest qualification (any)	-0.304	-0.433	-0.152	-0.101	-0.094
Highest qualification (L.2+)	-0.062	-0.151	0.011	-0.09	-0.155
Highest qualification (L.4+)	-0.205	-0.185	-0.042	-0.094*	-0.114
Justice					
Police offending events	-1.388*	**-1.477****	-0.356*	-0.211	-0.206
Community Service sentences	-0.233	-0.2	-0.04	-0.081	0.068
Prison/Remand sentences	**-1.379****	**-1.296****	**-0.444*****	**-0.453****	-0.397*
Mobility					
DL: Learners	**-1.816****	**-1.862****	**-0.381****	**-0.463****	**-0.573****
DL: Restricted	0.51	0.468	**0.215****	**0.295*****	**0.368*****
DL: Full	-0.051	-0.071	0	0.015	0.018
Vulnerably transient	-0.207	-0.136	-0.101	-0.071	-0.401
Min. days in C&P/YJ care	1	1	1	7	30
Observations	2,733	2,733	2,733	2,415	2,082
Regional trends	N	Y	Y	Y	Y
Continuous Days criterion	N	N	Y	Y	Y

Source: Stats NZ (2023). **Notes**: The table presents the IV regression estimated effects of the *TW* on rangatahi Māori outcomes at the age of 18. * - significance at the 10% level, ** - significance at the 5% level, *** - significance at the 1% level. Observation counts were randomly rounded to the base of 3.

Finally, Table 9 summaries the findings for Pacific Peoples rangatahi, repeating the same format as in Table 8 (in terms of specifications). While most point-estimates are the same direction as found for the overall study population and for rangatahi Māori, the only statistically significant result for Pacific Peoples was in terms of employment. These referred rangatahi on average received 7 additional months of W&S income, and (not included in this table) a total increase in W&S income by $20,000NZD. Taken at face value, the impact of the *TW* on Pacific Peoples employment outcomes was relatively greater.[52]

[52] It is possible that the lack of significant findings in other areas reflects the relatively smaller size of this group, reducing the likelihood of finding impacts using this method.

Table 9 - IV regression results, outcomes at the age 18, Pacific Peoples rangatahi

	(1)	(2)	(3)	(4)	(5)
Labour Market					
W&S income (any)	0.508	0.116	0.202	-0.002	-0.47
W&S income (months)	14.461	12.23	**7.126****	5.53*	3.613
Benefit income (any)	-1.273	-1.218	-0.205	-0.446	-0.903*
Benefit income (months)	-7.333	-4.181	-2.833	-5.803*	-7.368
NEET (any)	-1.36	-1.002	-0.476	-0.371	-0.429
Mostly NEET	0.853	0.525	-0.235	-0.227	0.164
Health					
ED admissions	-1.592	-1.564	-0.563	-0.617	-0.156
PAH/ASH events	-0.173	-0.119	-0.162	-0.299*	-0.397
MHSU events	-0.691	-0.807	-0.01	-0.191	-0.52
Education					
Tertiary enrolments (any)	0.033	-0.221	-0.056	-0.102	-0.343
Highest qualification (any)	0.416	-0.053	-0.545	-0.37	-0.509
Highest qualification (L.2+)	0.016	-0.49	-0.369	-0.355	-0.166
Highest qualification (L.4+)	0.334	0.291	0.005	0.098	0.202*
Justice					
Police offending events	-0.367	-0.338	0.073	0.576	0.016
Correction sentences (any)	-1.535	-1.099	-0.623*	-0.301	0.002
Community Service sentences	-0.157	-0.19	-0.244	-0.161	0.064
Prison/Remand sentences	-0.851	-0.803	-0.449	-0.124	-0.258
Mobility					
DL: Learners	-0.083	-0.08	-0.007	-0.549	-0.886
DL: Restricted	2.228*	1.667	0.302*	0.317*	0.355*
DL: Full	0.142	0.145	0.076	0.076	0.072
Vulnerably transient	-0.646	-0.38	0.237	0.27	-0.231
Min. days in C&P/YJ care	1	1	1	7	30
Observations	819	819	819	717	597
Regional trends	N	Y	Y	Y	Y
Continuous Days criterion	N	N	N	Y	Y

Source: Stats NZ (2023). **Notes**: The table presents the IV regression estimated effects of the *TW* on Pacific Peoples rangatahi outcomes at the age of 18. * - significance at the 10% level, ** - significance at the 5% level, *** - significance at the 1% level. Observation counts were randomly rounded to the base of 3.

Overall, the results suggest that the *TW* component provides some improvements in outcomes for the referred rangatahi during their 19th year. By main ethnic group, the findings for rangatahi Māori were more similar to the overall study population than for Pacific Peoples, likely due to Māori accounting for about two thirds of the population.

Compared to the naïve model (OLS, Table C2) the results from the IV models are relatively larger, and often pointing in the opposite direction. This change in direction may indicate that the IV corrects for a bias not addressed under the naïve approach. Furthermore, the IV estimates are stronger than when compared (e.g., Table C2) to when using referrals by age 19 as the treatment variables. This may indicate a stronger effect on outcomes amongst rangatahi who were referred to the component at a younger age, and (potentially) engaged with transition workers for longer periods (Malatest, 2023). Finally, while many estimates from the IV models are not statistically significant, their direction is consistently pointing in the 'right direction', in the sense that the outcomes may be more easily interpreted as improvements.

Discussion

While this study examined a relatively short period of time, the findings from the IV specifications have suggested some promising improvements to rangatahi outcomes following referral to the *TW* component. These include a lower likelihood to interact with the Justice sector, greater likelihood to be issued a (Restricted) drivers' licence, increased participation in the labour market, and reduced Emergency Department (ED) admissions. While these results were also observed when considering rangatahi Māori, they were not observed for Pacific Peoples. However, Pacific Peoples rangatahi recorded relatively stronger (positive) change in terms of employment outcomes.

While other outcomes were not precisely estimated, they consistently pointed in the 'right direction', in a sense that they were suggestive of positive change. An optimistic interpretation of these (statistically insignificant) estimates includes the possibility that the *TW* component is making a positive difference, but observing a statistically significant difference may only occur at an older age. Related to this, it is possible that the short period of time and limited age for measuring may result in outcomes not being detected due to the tendency of IV models to produce inefficient (i.e., relatively large) standard errors, leading to a type II error (false negatives/not identifying effects).

On the other hand, a pessimistic interpretation of these findings may include the possibility that the relevance assumption required for estimating the component's *causal* effect was not met, and therefore, all estimates captured correlations, rather than the component's causal effect. In addition, it may also be possible that the outcomes estimated to be (statistically) significant are due to the large number of outcome variables examined leading to a type I error (false positives/wrongly identifying effects).

While understanding which of these explanations (optimistic, pessimistic) is more accurate is beyond the scope of this study, some of these concerns may be better understood if the analysis was repeated in a number of years. By revisiting this study the number of observations will be larger, mitigating the tendency of the IV models to produce inefficient standard errors. In addition, repeating the analysis with a larger sample size will allow examination of outcomes over a longer period, which in turn, reduces the portion of the study population that was referred to the service while it was still being set-up and rolled-out (i.e., when Oranga Tamariki staff and their transition partners were still learning how to efficiently run the service), and through unusual events such as COVID19 outbreak (i.e., in periods closer to business as usual). Finally, using a longer study period could be used to examine outcomes later in adulthood (e.g., at the age of 20, 24) when a number of outcomes have had time to develop, especially in the education and employment arenas.

Unfortunately, increasing the size of the study population will not address the possibility that the IV approach was not correctly applied. Therefore, without the ability to verify the excludability assumption, the risk of biased estimates remains. If alternative instruments are not found, future re-examination of this analysis could test the effects of the *TW* by using different methodologies. For example, utilising the 90 days criterion (i.e., *Days*) via a Regression Discontinuity Design to compare the adulthood outcomes of rangatahi who met the *Age* and *Open* criteria, and were just above or just below this 90-day threshold.

Combined, future examination could provide a fuller, and potentially more robust, understanding regarding the effectiveness of the *TW* component in improving adulthood outcomes specifically, and the *Transition Support Service* more generally. Finally, while this

study's estimates could be used to examine the costs and benefits of the *TW* (e.g., in a Cost Benefit Analysis framework), we recommend that any such assessments be made only after outcomes at older ages (e.g., mid-20s) are estimated, to ensure that any impacts that may take longer to materialise are considered.

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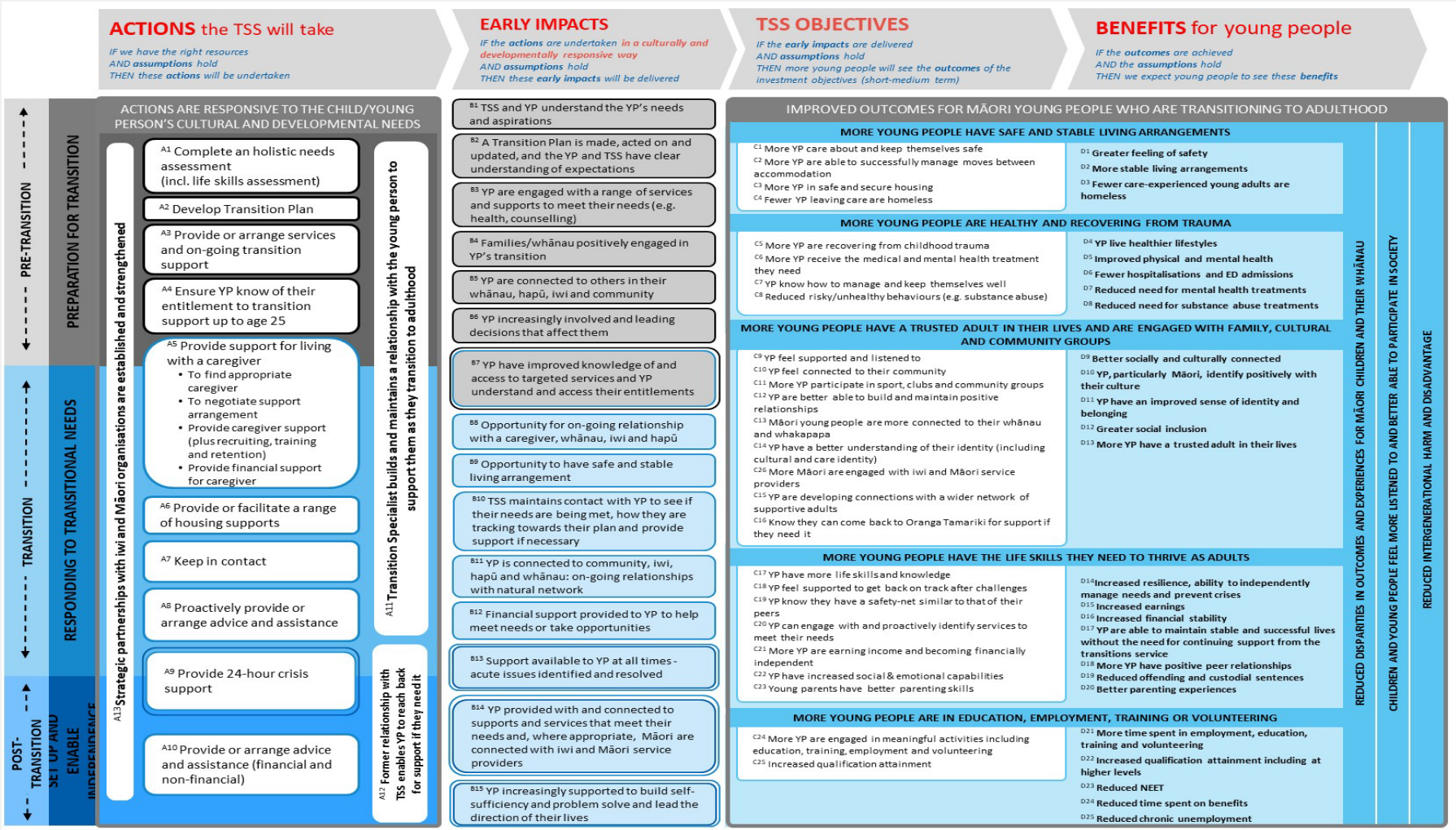
Appendix A

Figure A1 - Transition Support Service Intervention Logic



Source: Oranga Tamariki (2023)

Table A2 – Types of post-care arrangements in a selection of OECD countries

Country	Upper age (inclusive)	Detail	Eligibility criteria
Australia	20-24 (varies by state/territory), or until completed education (Northern territory)	Option to remain in care until age 18-20 (varies by state); aftercare support to age 24 (in some states)	From age 18 to 20-24 (varies by state), or until completed education (in some territories)
Austria	20 (limited aftercare)	Aftercare support and option of remaining in care (varies by state)	Discretion of the social worker
Canada	Manitoba and Ontario (20); Yukon (26)	Aftercare support (all 3); option ot remain in care (Manitoba)	Varies by state
Chile	Until 31 December of the year they turn 24	In alternative care programmes and education	In education
Colombia	24, or until completion education; ages 25 and beyond if has disability status	Aftercare support and option to remain in care	In accordance with the provisions of the Colombian law
Costa Rica	-	Aftercare support including supported housing	A life project, criteria according to abilities and characteristics
Czech Republic	25	Aftercare support and option to remain in care	Young adults leaving alternative care and if not remain in institutional care
Denmark	22	Aftercare support and option to remain in care	If deemed necessary
Finland	24	Aftercare support and option to remain in care	Based on assessment of need
France	20	Aftercare support (in some departments) and option to remain in care	In education, medical treatment, or seeking employment and/or accommodation
Hungary	29	Aftercare support and option to remain in care	Up to age 23 if in education and 24 if in higher education, or until termination of student status, and no later than age 29
Iceland	19	Aftercare support and option to remain in care	Individual consent
Ireland	22	Aftercare support	Based on assessment at age 21, with support to age 22 or end of academic year in which turned 23 (to complete education)
Israel	20	(Limited) aftercare support	In education, or subject to a treatment plan
Italy	20	Aftercare support and option to remain in care	Discretion of judicial authority
Japan	UP to end of March following 22nd birthday	Aftercare support and option to remain in care	Discretion of local government

Country	Upper age (inclusive)	Detail	Eligibility criteria
Latvia	Until end of academic year	Aftercare support and option to remain in care	In education
Lithuania	20	Aftercare support and option to remain in care	Based on assessment of need; if in education or with a disability status
Netherlands	22	Aftercare support and option to remain in care	Be in foster care or treatment family home and for aftercare support meet criteria for continuation arrangements
New Zealand	24	Aftercare support (20-24) and option to remain in care (20)	Varies by support channel
Norway	24	Aftercare support and option to remain in care	Individual consent
Poland	24	Aftercare support and option to remain in care	In education/training
Portugal	20-24	Aftercare support and option to remain in care	Up to 24 if in education
Slovenia	25	Aftercare support and option to remain in care	In education or unable to work/live independently due to disability status
Spain	Up to 1.5 years	Aftercare support and option to remain in care	Based on assessment of need
Sweden	20	Aftercare support and option to remain in care	Complete education (typically)
Turkey	24	Remain in care/state dormitory	24 if in education and 20 if having a profession
England /Wales	20	Aftercare support and remaining in foster care (excl. residential care)	In Foster Care and no criteria for aftercare support
Scotland	20-25	Aftercare support and the option to remain in care	Leave care after 16th birthday can remain in care until age 20
United States	20 (34 states and 9 Tribal Nationals)	Remain in foster care (some states)	Varies by state, but typically must meet education/employment requirement or if having a medical condition

Source: OECD Policy Questionnaire on Care Leavers (2020). **Notes**: summarised information from original table, some key aspects omitted for brevity.

Appendix B

This section outlines the nature, eligibility criteria, and related evidence regarding the Assistance and Advice (AA) and Entitlement to Remain and Return (ETRR) components.

AA is available from the age of 15 to 24, in which rangatahi and transition workers can contact Oranga Tamariki for support (including financial assistance).[53] To be eligible, rangatahi must be aged between 15 and 24 (*Age* criterion, inclusive), and spend (i.e., record) at least 90 consecutive days in care between the age of 14 and 9 months, and 18 (*Days* criterion). Note that *Days* criterion for the AA is identical to that of the *TW* component.

By 30 June 2022, 8,448 rangatahi were (at some point) eligible to receive the *AA* component (Oranga Tamariki, 2022), with the National Contact Centre receiving 19,500 related calls (Oranga Tamariki, 2022). During the roll-out period, the number of calls to the Contact Centre has increased. At a monthly basis, the numbers increased from 180 calls per-month in 2019 (July to December), 367 in 2020, 825 in 2021, and 686 in 2022 (Oranga Tamariki, 2022). In the period March 2020 to June 2022, between 83 and 577 distinct financial assistance payments were made quarterly to rangatahi with the average value varying from $280 to $592.[54, 55, 56]

The *ETRR* is available from ages 18 to 20, providing rangatahi the opportunity to remain with (or return to) their caregiver, or be assigned an alternative caregiver. To be eligible for this component, rangatahi must spend at least 90 (consecutive) days under C&P care orders between the age of 14 and 9 months, and 18 (*Days* criterion), be aged between 18 and 20 (*Age* criterion, inclusive), and turn 18 after 1 July 2019 (*Birthday* criterion).

Note that the *ETRR Days* criterion is different to that from the other two components, as only C&P custody orders are counted towards this criterion. That is, rangatahi who recorded 90 (consecutive) days or more only under YJ orders, or through a combination of C&P and YJ orders are ineligible. In addition, the *Birthday* criterion means that when the service came into effect, some rangatahi were excluded, even though they would have been eligible in more recent periods.

Take-up of *ETRR* was far lower than anticipated. By 30 June 2022, of the 1,435 ETRR-eligible rangatahi, only 67 took up this entitlement (4.7%).[57] A possible explanation for some of the low take-up may be low awareness regarding the availability of this component among

[53] This component was introduced earlier, in July 2016 for (eligible) rangatahi leaving care, and until the age of 20 (inclusive).
[54] In the 2022 "Just Sayin'" survey, 72% of respondents knew how to contact Oranga Tamariki for support, and 27% called the Oranga Tamariki Support line. A similar share of respondents not knowing how to get support from Oranga Tamariki (Malatest International, 2023).
[55] During this period, 64% of payments were related travel (38%), accommodation (17%), or education (11%). Combined, the share of payments made for these purposes has fallen from 82% in March 2020 to 53% in June 2022 (Oranga Tamariki, 2022).
[56] Note these values are likely to understate the overall financial support to rangatahi, since rangatahi could receive this support from their transition workers (i.e., if eligible), which not be captured by Oranga Tamariki. For example, in the 2021/22 financial year, Oranga Tamariki provided $925,811 in financial assistance funding to TSS partners (Malatest International, 2023).
[57] In terms of accommodation, 51% of the 2022 "Just Sayin'" survey reported living with whanau/foster family, 27% with partner or friends, 17% on their own (home/flat), 6% living rough (garage, care, motel, etc.), 4% in a group residence, 3% in a school hostel or university, and 5% somewhere else (Malatest International, 2023).

social workers and transition workers.[58] In addition, the 2020 "Just Sayin'" survey (Malatest International, 2021), which collected information for the first year of the roll-out, found that only 12% of the respondents knew about this component (awareness has increased to 53% in the 2022 survey). In addition, this may also reflect the desires of eligible rangatahi, who prefer to live independently.

Table B1 – Detailed TSS eligibility criterion

Criterion	Entitlement to Remain or Return (ETRR)	Transition Support Worker (TW)	Advice and Assistance	Notes
Days	Recorded 90 or more consecutive days in care in the following Care and Protection and Youth Justice orders **Care and protection custodies**: S101, S102, S1102A, S139, S140, S78, S141, COC031PLC, S2381F, S781A, S781AW, S781AWO, S78W, S78WO **Youth Justice custodies**: S235CP, S235YJ, S236, S2381D, S2381E, S3074, S311S283, S173, S174, S175(1A), S34A, S235, S1424B, S142A			End dates of Care and Protection orders changed to rangatahi 18th birthday if ended at an older age. Spells are combined if the later began 28 days after the previous ended for Care and Protection orders, and 1 day for Youth Justice orders. Court outcome 'without charge' are excluded. Orders must be in a legal custody, and spells most be one day or longer. Not Family or Non-Kin in favour of type code. Not in custody type C0C031PLC and in *other* favour type code. All other in favour type code must be with an organisation. **ETRR** – at least 90 consecutive days were from Care and Protection orders
Age	From 18 to 21 (exclusive)	From 15 to 21 (exclusive)	From 15 to 25 (exclusive)	
***TSS* start date**	Rangatahi must have been under the age of 18 on 1 July 2019 (*Birthday*)	Rangatahi must have had an open legal proceeding since 1 July 2019 (*Open*)	-	Open legal proceedings are recorded as the end date of any Youth Justice orders or interventions (or full assessment) phase. Only include a subset of Care and Protection order (listed in *Days* criterion) as well as orders S91, S1102B, and S86. 28/1-day rule is used for counting spells (as in criterion *Days*)

[58] *ETRR* is introduced to rangatahi by their social workers, and they were reported to have low awareness that this component existed in the phases of the TSS roll-out (Malatest International, 2021).

Appendix C

Table C1 – Outcome and control variables, description and sources

Description	Source	Table/s	Notes
Outcome variables			
Health			
Recorded any Mental Health or Substance Abuse Events (MHSU)	moh_clean	moh_primhd_team_code, pub_fund_hosp_discharges_event, pub_fund_hosp_discharges_diag, pharmaceutical, moh_dim_form_pack_subsidy_code, lab_claims	Definition as in Oranga Tamariki Child Wellbeing Model
Recorded any Potentially Avoidable/Ambulatory Sensitive (PAH/ASH) hospitalisation events		pub_fund_hosp_discharges_event, pub_fund_hosp_discharges_diagm	Definition as in Oranga Tamariki Child Wellbeing Model
Recorded any ED admissions events		nnpac	Excludes follow-up appointments, where person didn't attend, or didn't wait
Labour Market			
Number of months recording Wages and Salary (W&S) income	data	Income_cal_yr	W&S and WHP income sources
Total W&S income earned		Income_cal_yr	Monthly income from W&S and WHP
Recorded any main benefit spells		Income_cal_yr	
Number of months on main benefit spell		Income_cal_yr	Derived from total days on main benefit spell variable
Total main benefit income earned		Income_cal_yr	Ben income source
Recorded any months as Not in Education, Employment, or Training (NEET)	data,Ir_clean, msd_clean, cor_clean, moe_clean, overseas_spells	data, ir_clean, moe_clean, cor_clean	Monthly measure of not in education, employment, overseas, prison/remand, or community service sentence.
Number of months Not in Education, Employment, or Training (NEET)		data, ir_clean, moe_clean, cor_clean	
Recorded half or more months within age range as NEET		data, ir_clean, moe_clean, cor_clean	Derived from total number of months recorded NEET
Justice			
Recorded any police offending events	pol_clean	post_count_offenders	
Recorded any community service sentences; recorded any prison/remand sentences	cor_clean	ov_major_mgmt_periods	Community service (com_det, cw, com_prog, com_serv_oth_com), and Prison/remand (prison, remand).

Education			
Recorded any, any NZQF level 2 or above, or any NZQAF level 4 or above educational qualification	moe_clean, cen_clean, data	census_individual_2018, census_individual_2013, student_qualification, completion, tec_it_learner, apc	Collecting up to NZQF level 10; ignoring overseas secondary school qualification.
Recorded any tertiary education enrolment spells	moe_clean	enrolment, tec_it_leaner, targeted_training	The enrolment table does not include cancellations/withdrawals. Withdrawals from training are not observable.
Mobility			
Issued a driver's licence (learners, restricted, full)	nzta_clean	dlr_historic	Ages 16-18 (inclusive). Ignore issuing if not already achieved at lower level, or if issued before minimum age attainable.
Vulnerably transient status	data, metadata	address_notification; DepIndex2018_MB2018	Definition as Jiang et al. (2017), but examined over 12-month period
Parenting (outcome for the child of rangatahi)			
Births (any)	data	personal_details	
Reports of Concern (any)	data; cyf_clean	personal_details, Intakes_events, intakes_details	Care and Protection only
Statutory assessments (any)		personal_details, cyf_investgtns_events, cyf_investgtns_details	Care and Protection only
Family Group Conference (FGC) referrals (any)		personal_details, cyf_ev_cli_fgc_cys, cyf_dt_clli_fgc_cys_d	Care and Protection only
Any placements		personal_details, cyf_placements_event, cyf_placements_details	Care and Protection only
Control variables (by age 16 unless stated otherwise)			
Demographic/geographic			
Birth year/quarter	data	personal_details	Used for birth year/quarter fixed effects
Any children		personal_details	
Age when *TSS* came into effect		personal_details	In years
Female		personal_details	snz_gender_code=2
Ethnicity (Māori; Pacific Peoples)		personal_details	Based on snz_ethnicity_grp indicators (=1). Ethnicities are mutually inclusive
Regional Council of residence		address_notification	At 16th birthday; used as regional council fixed effects
Missing regional council of residence		address_notification	Dummy
Residential Meshblock score/percentile		address_notification	At 16th birthday. Based on the 2018 NZDEP index
Missing residential Meshblock score/percentile		address_notification	

Education			
Number of school enrolled	moe_clean	student_enrol	Total number of distinct primary and secondary educational providers by 16th birthday
Highest secondary qualification		student_qualification	NZQF levels 1-3 only.
School decile		student_enrol	At 16th birthday. If enrolled to more than one, use the school with greatest decile score
Missing school decile		student_enrol	Dummy variable
Any/number of suspensions, expulsions, stand-down, or truancy related interventions		student_intervention	Intervention code 7-9, 31
Left school due to suspensions, expulsions, stand-down.		student_leavers	Prior to age 16.
Linked to education data tables	security	concordance	Dummy variable
Health			
Recorded any Potentially Avoidable or Ambulatory Sensitive (PAH/ASH) events	moh_clean	pub_fund_hosp_discharges_event, pub_fund_hosp_discharges_diag	As in Oranga Tamariki Child Wellbeing model
Recorded any chronic condition diagnosis events		chronic_condition	moh_chr_first_incidnt_date is used to capture date
Recorded any/total Mental Health and/or Substance Abuse (MHSU) events		moh_primhd_team_code, pub_fund_hosp_discharges_event, pub_fund_hosp_discharges_diag, pharmaceutical, moh_dim_form_pack_subsidy_code, lab_claims	Defined as in the Oranga Tamariki Child Wellbeing model
Recorded any Emergency Department admissions		nnpac	
Linked to health data tables	security	concordance	Dummy variable
Oranga Tamariki (Care and protection system)			
Any/total C&P/YJ Reports of Concern events	cyf_clean	cyf_intakes_events, cfi_intakes_detailes	Restricted to C&P/YJ business areas
Any/total C&P/YJ Assessments by age 16		cyf_investgtns_events, cyf_investgtns_details	Restricted to C&P/YJ business areas
Any/total C&P/YJ Family Group Conferences referrals		cyf_ev_cli_fgc_cys, cyf_dt_clli_fgc_cys_d	Restricted to C&P/YJ business area
First age entering placement		cyf_placements_events, cyf_placement_detailes	Age in years. Restricted to C&P/YJ business areas. Return home and regular payment placements are excluded.
Oldest age leaving placement		cyf_placements_events, cyf_placement_detailes	Age in years. Restricted to C&P/YJ business areas. Return home and regular payment placements are excluded.
Total time in C&P/YJ placements		cyf_placements_events, cyf_placement_detailes	In months from birth until 17 (inclusive). Restricted to C&P/YJ business areas. Return home and regular payment placements are excluded.

Recorded one or more days in YJ placements		cyf_placements_events, cyf_placement_detailes	Until age 17 (inclusive). Restricted to YJ placements. Return home and regular payment placements are excluded.
Total time in placement YJ placements		cyf_placements_events, cyf_placement_detailes	Until age 17 (inclusive). Restricted to YJ placements. Return home and regular payment placements are excluded.
Placement at the age of 10, 11, 12, 13, 14, 15, 15 and 6 months, 16, 16 and 6 months, 16 and 9 months, 16 and 11 months, 17, 17 and 6 months, and 17 and 11 months		cyf_placements_events, cyf_placement_detailes	C&P/YJ business areas, excluding return home and regular payment placement types
Justice			
Police offending events	pol_clean	post_count_offenders	
Other			
Open	cyf_clean	eligibility	Dummy set to unity if criterion met
Days		eligibility	Dummy set to unity if criterion met
TW eligible		eligibility	Dummy set to unity if criterion met.
Longest C&P/YJ continuous spell		eligiblity	Between ages 17.45 and 18; only spells counted towards the assessment of the *Days* criterion
Referred to a Transition worker by the age of 18; 19		action	Dummy set to unity if action REFTRAN occurred by relevant age
Mostly overseas at age 18	data	personal_overseas_spells	Dummy equals one if spent more than 182 days overseas between at the age of 18

Source: Stats NZ (2023). **Notes:** This table details the data sources used to create the outcome and control variables for the analysis.

Table C2 - Regression results: all rangatahi

	OLS						IV					
	Referred by age 18			Referred by age 19			Referred by age 18			Referred by age 19		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Labour Market												
W&S income (any)	0.028	-0.003	-0.006	0.025	-0.004	-0.003	0.048	0.14	0.473	0.037	0.114	0.316
W&S income (months)	0.13	-0.029	-0.121	-0.108	-0.253	-0.387	0.999	1.717**	4.977	0.772	1.403**	3.325
W&S income (total)	272	-630	-977	-554	-1389**	-1989***	786	3897*	9928	607	3183*	6632
Benefit income (any)	0.062***	0.033	0.069**	0.058**	0.002	0.035	-0.161	-0.261***	-0.593	-0.124	-0.213***	-0.396
Benefit income (months)	0.46*	-0.105	0.381	0.563**	-0.328	0.161	-1.924*	-3.174***	-4.391	-1.487*	-2.593***	-2.933
Benefit income (total)	1378***	137	533	1471***	-10.71	412	-1049	-2093**	-1298	-810	-1709**	-867
NEET (any)	0.025	-0.054***	-0.066***	0.035**	-0.046**	-0.055**	-0.015	-0.044	-0.167	-0.012	-0.036	-0.111
NEET (months)	0.656***	-0.476*	-0.421	0.843***	-0.386	-0.226	0.824	-0.019	1.359	0.637	-0.015	0.908
Mostly NEET	0.049*	-0.059**	-0.045	0.079***	-0.036	-0.005	0.033	-0.04	0.127	0.026	-0.033	0.085
Health												
ED admissions	-0.012	0.003	-0.012	0.009	0.012	0.001	-0.047	-0.136	-0.572	-0.036	-0.111	-0.382
MHSU events	-0.017	0.024	0.014	0.022	0.06**	0.048	-0.205*	-0.238**	-0.804*	-0.158*	-0.194**	-0.537*
Education												
Tertiary enrolments (any)	-0.026	0.036	0.058*	-0.009	0.034	0.051*	0.147	0.077	0.627	0.114	0.063	0.419
Educational qualification (any)	-0.064**	0.005	-0.004	-0.079***	-0.032	-0.056*	0.129	0.021	-0.075	0.099	0.017	-0.05
Educational qualification (L.2+)	-0.088***	-0.034	-0.044	-0.076***	-0.036	-0.053*	0.261**	0.136*	0.347	0.202**	0.111*	0.232
Educational qualification (L.4+)	-0.001	-0.002	-0.007	0.003	0.001	-0.001	-0.005	-0.006	-0.115	-0.004	-0.005	-0.077
Justice												
Police offending events	-0.041	-0.033	-0.038	-0.012	-0.011	-0.015	-0.311***	-0.237**	-0.824*	-0.24***	-0.193**	-0.55*
Correction sentences (any)	-0.064***	0.037*	0.03	-0.06***	0.046**	0.037*	-0.4***	-0.301***	-1.148***	-0.309***	-0.246***	-0.767***
Community Service sentences	-0.023***	0.001	0.00	-0.024***	0.004	0.004	-0.039	-0.019	-0.149	-0.03	-0.015	-0.099
Prison/Remand sentences	-0.045**	0.002	0.008	-0.039**	0.019	0.027	-0.373***	-0.282***	-0.712**	-0.288***	-0.23***	-0.476**
Mobility												
DL: Learners	0.042	-0.022	-0.02	0.044*	-0.013	-0.005	-0.338***	-0.179*	-0.783*	-0.261***	-0.146*	-0.523*
DL: Restricted	0.011	-0.006	-0.026	0	-0.016	-0.036	0.131*	0.149**	0.486*	0.101*	0.122**	0.325*

DL: Full	-0.01	-0.011	-0.008	-0.019**	-0.02**	-0.018**	0.004	0.006	-0.106	0.003	0.005	-0.071
Vulnerably transient	-0.018	0.022	0.01	-0.001	0.029	0.021	0.14	-0.031	-0.316	0.108	-0.025	-0.211
Parenting (child outcomes)												
Any children	0.011	0.004	0.006	0.017	0.002	-0.006	0.124	0.075	0.029	0.096	0.062	0.02
ROCs (child)	0.008	0.01	0.007	0.014	0.008	0.005	0.082	0.025	-0.188	0.063	0.02	-0.126
Assessment (child)	0.008	0.008	0.008	0.018	0.012	0.012	0.071	0.027	-0.069	0.055	0.022	-0.046
FGC referrals (child)	0.012	0.016	0.013	0.011	0.009	0.002	0.105***	0.054**	0.077	0.081***	0.044**	0.052
C&P placement (child)	-0.005	-0.003	-0.007	0.004	0.004	0.001	0.041*	0.013	-0.032	0.031*	0.01	-0.021
Observations	4,242	4,242	4,242	4,242	4,242	4,242	4,242	4,242	4,242	4,242	4,242	4,242
X – Until age 16	N	Y	Y	N	Y	Y	N	Y	Y	N	Y	Y
X – Until age 18	N	N	Y	N	N	Y	N	N	Y	N	N	Y

Source: Stats NZ (2023). **Notes:** The table presents the effects of the *TW* on outcomes by the age of 19 (or between ages 18 to 19) using OLS and IV specifications. * - significance at the 10% level, ** - significance at the 5% level, *** - significance at the 1% level.

Table C3 – Instrumental Variable (IV) regression results: Māori, and Pacific People rangatahi.

	Māori						Pacific Peoples					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Labour Market												
W&S income (any)	0.616	0.975	0.969	0.276	0.297	0.26	0.346	0.508	0.116	0.202	-0.002	-0.47
W&S income (months)	1.978	3.128	2.976	0.417	1.46	0.857	9.853	14.461	12.23	7.126**	5.53*	3.613
W&S income (total)	667	1055	-434	-289	2360	159	14667	21525	20447	20865**	17246*	10146
Benefit income (any)	-0.16	-0.253	-0.148	0.119	-0.077	-0.066	-0.867	-1.273	-1.218	-0.205	-0.446	-0.903*
Benefit income (months)	-1.53	-2.42	-2.425	-0.252	-1.218	0.152	-4.996	-7.333	-4.181	-2.833	-5.803*	-7.368
Benefit income (total)	1359	2150	1727	1690	914	1977	1093	1605	3182	449	-2834	-4227
NEET (any)	0.336	0.532	0.549	0.183	0.246	0.175	-0.926	-1.36	-1.002	-0.476	-0.371	-0.429
NEET (months)	3.478	5.502	5.177	2.287	2.922	2.302	4.007	5.881	5.234	-0.983	0.132	1.332
Mostly NEET	0.353	0.558	0.529	0.243	0.245	0.255	0.581	0.853	0.525	-0.235	-0.227	0.164
Health												
ED admissions	-0.617	-0.976	-1.105	-0.435**	-0.547**	-0.681**	-1.084	-1.592	-1.564	-0.563	-0.617	-0.156
MHSU events	-0.844*	-1.335*	-1.331*	-0.433**	-0.254	-0.436	-0.471	-0.691	-0.807	-0.01	-0.191	-0.52
Education												
Tertiary enrolments (any)	0.683*	1.081	1.034	0.176	0.171	0.189	0.022	0.033	-0.221	-0.056	-0.102	-0.343
Highest qualification (any)	-0.192	-0.304	-0.433	-0.152	-0.101	-0.094	0.283	0.416	-0.053	-0.545	-0.37	-0.509
Highest qualification (L.2+)	-0.039	-0.062	-0.151	0.011	-0.09	-0.155	0.011	0.016	-0.49	-0.369	-0.355	-0.166
Highest qualification (L.4+)	-0.13	-0.205	-0.185	-0.042	-0.094*	-0.114	0.228	0.334	0.291	0.005	0.098	0.202*
Justice												
Police offending events	-0.877*	-1.388*	-1.477**	-0.356*	-0.211	-0.206	-0.25	-0.367	-0.338	0.073	0.576	0.016
Correction sentences (any)	-1.299***	-2.055***	-2.013***	-0.581***	-0.596***	-0.352	-1.046	-1.535	-1.099	-0.623*	-0.301	0.002
Community Service sentences	-0.147	-0.233	-0.2	-0.04	-0.081	0.068	-0.107	-0.157	-0.19	-0.244	-0.161	0.064
Prison/Remand sentences	-0.872**	-1.379**	-1.296**	-0.444***	-0.453**	-0.397*	-0.58	-0.851	-0.803	-0.449	-0.124	-0.258
Mobility												
DL: Learners	-1.148**	-1.816**	-1.862**	-0.381**	-0.463**	-0.573**	-0.056	-0.083	-0.08	-0.007	-0.549	-0.886
DL: Restricted	0.322	0.51	0.468	0.215**	0.295***	0.368***	1.518**	2.228*	1.667	0.302*	0.317*	0.355*
DL: Full	-0.032	-0.051	-0.071	0	0.015	0.018	0.097	0.142	0.145	0.076	0.076	0.072
Vulnerably transient	-0.131	-0.207	-0.136	-0.101	-0.071	-0.401	-0.44	-0.646	-0.38	0.237	0.27	-0.231

Parenting (child outcomes)												
Any children	-0.06	-0.094	-0.155	0.13	0.081	0.25	-0.891	-1.307	-1.282	-0.255	-0.341	0.071
ROCs (child)	-0.286	-0.453	-0.461	0.059	0.041	0.26**	-0.707	-1.038	-0.781	0.057	-0.061	0.339
Assessment (child)	-0.192	-0.304	-0.326	0.064	0.035	0.231*	-0.561	-0.823	-0.473	0.138	0.111	0.505*
FGC referrals (child)	0.107	0.169	0.14	0.091	0.105	0.106	-0.032	-0.047	0.138	0.141	0.16	0.382*
C&P placement (child)	-0.044	-0.069	-0.106	-0.015	-0.005	0.028	0.094	0.138	0.297	0.084	0.114	0.257
Observations	2,733	2,733	2,733	2,733	2,415	2,082	819	819	819	819	717	597
Referral by age	19	18	18	18	18	18	19	18	18	18	18	18
X – Until age 16	Y	Y	Y	N	Y	Y	N	Y	Y	N	Y	Y
X – Until age 18	Y	N	Y	N	N	Y	N	N	Y	N	N	Y

Source: Stats NZ (2023). **Notes:** The table presents the effects of the *TW* on outcomes by the age of 19 (or between ages 18 to 19) using IV specifications for rangatahi Māori and Pacific Peoples. * - significance at the 10% level, ** - significance at the 5% level, *** - significance at the 1% level.

Table C4 – Mean outcomes by group

Ethnic group	All	Māori	Pacific Peoples
Labour Market			
W&S income (any)	0.513	0.489	0.524
W&S income (months)	2.934	2.587	2.927
W&S income (total)	5796.7	4961.3	5869.9
Benefit income (any)	0.694	0.718	0.608
Benefit income (months)	5.693	5.919	4.956
Benefit income (total)	5537.7	5705.5	4753.8
NEET (any)	0.810	0.821	0.788
NEET (months)	6.018	6.090	5.850
Mostly NEET	0.472	0.477	0.451
Health			
ED admissions	0.339	0.341	0.289
PAH/ASH events	0.019	0.021	0.022
MHSU events	0.379	0.361	0.319
Education			
Tertiary enrolments (any)	0.685	0.696	0.652
Educational qualification (any)	0.494	0.482	0.447
Educational qualification (L.2+)	0.383	0.377	0.344
Educational qualification (L.4+)	0.025	0.023	0.018
Justice			
Any Police offending events	0.351	0.380	0.315
Any Community Service sentences	0.05	0.057	0.037
Any Prison/Remand sentences	0.146	0.175	0.165
Mobility			
DL: Learners	0.557	0.555	0.513
DL: Restricted	0.131	0.100	0.088
DL: Full	0.018	0.013	0.007
Vulnerably transient	0.368	0.389	0.267
Parenting			
Any children	0.154	0.177	0.187
ROCs (child)	0.093	0.102	0.103
Assessment (child)	0.079	0.087	0.088
FGC referrals (child)	0.042	0.046	0.040
C&P placement (child)	0.021	0.024	0.022
Observations	4,242	2,733	819

Source: Stats NZ (2023). **Notes:** The table presents the mean outcomes for the entire study population, and by ethnic group. Outcomes are during rangatahi 18th year. Figures are based on randomly rounded values to the base of 3 and results derived from less than six rangatahi were set to zero.

Table C5 - Mean outcomes by number of TW eligibility criteria met

Sub-group	None	Days	Open	Eligible
Labour Market				
W&S income (any)	0.532	0.502	0.516	0.509
W&S income (months)	2.985	2.863	2.774	2.995
W&S income (total)	5946.2	5559.0	6067.8	5902.7
Benefit income (any)	0.67	0.681	0.774	0.723
Benefit income (months)	5.566	5.429	6.903	5.967
Benefit income (total)	5227.1	5033.8	6927.3	6255.4
NEET (any)	0.794	0.774	0.887	0.858
NEET (months)	5.871	5.458	6.903	6.723
Mostly NEET	0.456	0.419	0.565	0.54
Health				
ED admissions	0.330	0.336	0.355	0.348
PAH/ASH events	0.022	0.017	0.000	0.024
MHSU events	0.359	0.369	0.468	0.398
Education				
Tertiary enrolments (any)	0.697	0.720	0.565	0.649
Educational qualification (any)	0.422	0.529	0.387	0.540
Educational qualification (L.2+)	0.320	0.419	0.226	0.424
Educational qualification (L.4+)	0.019	0.033	0.000	0.024
Justice				
Any Police offending events	0.4	0.326	0.5	0.31
Any Community Service sentences	0.063	0.069	0	0.019
Any Prison/Remand sentences	0.133	0.172	0.21	0.118
Mobility				
DL: Learners	0.507	0.566	0.645	0.581
DL: Restricted	0.107	0.129	0.081	0.164
DL: Full	0.007	0.021	0	0.026
Vulnerably transient	0.354	0.376	0.306	0.379
Parenting				
Any children	0.197	0.153	0.113	0.123
ROCs (child)	0.104	0.095	0.065	0.088
Assessment (child)	0.083	0.077	0.048	0.081
FGC referrals (child)	0.041	0.041	0	0.052
C&P placement (child)	0.022	0.021	0	0.024

Source: Stats NZ (2023). **Notes:** The table presents the mean outcomes at age 18 for rangatahi by number of TW eligibility criteria met. Figures are based on randomly rounded values to the base of 3 and results derived from less than six rangatahi were set to zero.

Table C6 - Mean outcomes by eligibility and referral status

	Ineligible		Eligible	
Referred	**No**	**Yes**	**No**	**Yes**
Labour Market				
W&S income (any)	0.517	0.45	0.523	0.502
W&S income (months)	2.9	2.1	3.3	2.8
W&S income (total)	5781.6	4004.6	6759.5	5311.3
Benefit income (any)	0.680	0.750	0.688	0.751
Benefit income (months)	5.6	6.3	5.6	6.3
Benefit income (total)	5192.1	6932.0	5423.2	6878.7
NEET (any)	0.788	0.800	0.830	0.878
NEET (months)	5.686	7.100	6.165	7.151
Mostly NEET	0.441	0.550	0.489	0.580
Health				
ED admissions	0.333	0.40	0.34	0.35
PAH/ASH events	0.018	0.00	0.02	0.02
MHSU events	0.368	0.50	0.37	0.42
Education				
Tertiary enrolments (any)	0.703	0.6	0.665	0.641
Educational qualification (any)	0.478	0.3	0.597	0.502
Educational qualification (L.2+)	0.368	0.25	0.483	0.38
Educational qualification (L.4+)	0.026	0	0.023	0.024
Justice				
Any Police offending events	0.369	0.3	0.29	0.322
Any Community Service sentences	0.065	0	0.028	0.008
Any Prison/Remand sentences	0.159	0.15	0.114	0.122
Mobility				
DL: Learners	0.548	0.500	0.545	0.608
DL: Restricted	0.118	0.100	0.182	0.151
DL: Full	0.015	0	0.04	0.016
Vulnerably transient	0.362	0.4	0.381	0.38
Parenting				
Any children	0.166	0.25	0.119	0.127
ROCs (child)	0.096	0.15	0.08	0.09
Assessment (child)	0.077	0.15	0.074	0.086
FGC referrals (child)	0.04	0	0.045	0.053
C&P placement (child)	0.022	0	0.017	0.029

Source: Stats NZ (2023). **Notes:** The table presents the mean outcomes for the entire study population by eligibility and referral status. Outcomes are during rangatahi 18th year. Figures are based on randomly rounded values to the base of 3 and results derived from less than six rangatahi were set to zero.