 

**Effectiveness of driver licensing programmes funded by the Ministry of Social Development**

Evaluation report

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# Executive summary

In this report, we examined the effectiveness of driver licensing programmes funded by the Ministry of Social Development (MSD) in 2014 and 2015. These programmes are aimed at helping clients progress through the stages of the New Zealand driver licensing system. This project was commissioned by the Driver Licensing Working Group[[1]](#footnote-1).

We measured the impact of the programmes on a range of participants’ outcomes. The short-term goal is obtaining a full driver licence, while longer-term goals include outcomes in income, employment, and time spent not receiving a main benefit or employment assistance. We also look at long-term impact on education and justice (including criminal offending and contact with the corrections system) as secondary outcomes. The term impact refers to the difference in outcomes between the participants and a matched comparison group. We estimated impact using a quasi-experimental design involving propensity score matching.

## Driver licensing programmes helped participants gain a full licence

We estimated the effectiveness of the programmes by comparing outcomes of the participants with the outcomes of a matched group of people that did not take part. In the short-term, the programmes aim to support progression through the stages of driver licensing. After 18 months, 30 percent of participants held a full licence[[2]](#footnote-2) compared to 17 percent of the comparison group.

## Driver licensing programmes had a positive impact on employment and earnings

We examined a range of outcomes including employment, time spent not receiving a main benefit or employment assistance, and income. The important caveat to remember is that while we can establish impacts on these outcomes separately, we are not able to infer a causal link between the short-term outcome of obtaining a driver licence and these outcomes.

We found that the programmes increased the time participants spent in employment and their net income. Table 1 summarises employment, income, and welfare findings, as well as the impact of programmes on achieving a full licence.

Other outcomes included education and outcomes related to the justice system. The programmes did not have an impact on these outcomes. Please refer to Table 3 for further details.

#### Table 1 - Summary of observed impacts

|  |  |
| --- | --- |
| Average cumulative impact on participants relative to the comparison group | Direction of impact |
| Participants spent 20 additional days in employment (while off benefit) over a 18 month period | Positive |
| Participants earned $3,000 more from employment over a 18 month period  | Positive |
| Participants spent equal time[[3]](#footnote-3) not receiving a main benefit or employment assistance over a 18 month period | Neutral |
| An additional 13 percentage points of participants held a full licence after a 18 month period | Positive |

*The average impact is measured with reference to a comparison group constructed from propensity score matching.*

# Driver licensing programmes

MSD contracts external providers to fund and train its clients to progress through the New Zealand Transport Authority’s Graduated Driver Licence System (GDLS). The system has three stages, starting with obtaining a learner’s licence, a restricted licence and ending with a full licence.

There are a wide range of providers (including driving schools and charitable trusts), and they offer a variety of GDLS-related activities to clients, such as, helping people obtain forklift licences or helping them to progress from a learner’s to restricted licence. Throughout this report, we refer to this group of activities as ‘driver licensing programmes’. These programmes help MSD clients at various stages to progress through the GDLS. Holding a driver licence has important social and economic benefits. It helps people access work and education opportunities, access goods and services, and connect with friends and family.

# Findings

In this section, we provide more detail on the impact of the driver licensing programmes on participants’ outcomes. These outcomes include driver licence stage progression, employment, income, independence of the welfare assistance, justice, and education. We concentrate our discussion on findings that were statistically significant. See Table 3 for details on all the impact results that we tracked.

In this analysis, we looked at approximately 1,400 MSD clients who took part in these programmes between 2014 and 2015[[4]](#footnote-4). We tracked their outcomes from the time they started participating in the driver licensing programmes until the end of the observation period in June 2017. This means we tracked clients’ outcomes for an 18-month to three-year period, depending on when they started on a programme.

## The programmes helped participants progress through the GDLS

To track the effect of the programmes on progress through the GDLS, we compared the percentage of participants and the comparison group at each licence stage (see Table 2). People are required to hold a licence at each stage for a minimum period of time before they can progress to the next one[[5]](#footnote-5).

Both the participants and the comparison group had a similar percentage of people at each licence stage at the start of the programmes[[6]](#footnote-6). Overall, the comparison group showed limited movement between licence stages. In contrast, the proportion of participants with a learner’s licence decreased over time as they progressed through a restricted licence to a full licence. The largest increase of participants obtaining a full licence happened within the first six months, with slower growth continuing over time.

#### Table 2 - Percentage of participant and comparison groups at each licence stage

|  |
| --- |
| Programme participants |
| Snapshot at months since starting on the programme | Percentage with a full licence | Percentage with a restricted licence | Percentage with a learner’s licence | Total percentage with any licence |
| 6 | 24% | 27% | 39% | 90% |
| 12 | 26% | 29% | 36% | 91% |
| 18 | 30% | 29% | 31% | 90% |
| **Comparison group** |
| Snapshot at months since their profile date | Percentage with a full licence | Percentage with a restricted licence | Percentage with a learner’s licence | Total percentage with any licence |
| 6 | 14% | 24% | 37% | 75% |
| 12 | 15% | 24% | 37% | 76% |
| 18 | 17% | 25% | 35% | 77% |

Table 3 shows driver licence outcomes using another measure, the total days spent in each licence stage cumulatively until the end of the 18 month observation period. Table 3 also allows us to look at the days spent in each licence stage separately for private vehicles (cars and motorcycles) versus commercial vehicles (eg heavier vehicles).

At the end of the 18 month observation period, participants spent an additional 24 days holding a full licence for commercial vehicles, and an additional 65 days holding a full licence for private vehicles relative to the comparison group. Participants also spent an additional 22 days holding a restricted licence for private vehicles relative to the comparison group. There is no result available for restricted licences for commercial vehicles because we did not observe licences of this class in the dataset for this sample of MSD clients.

## Participants were more likely to be employed, although some participants were still receiving welfare assistance

After 18 months, participants spent an average of 40 additional days in employment relative to the comparison group. 20 of those days were while participants did not receive a main benefit or employment assistance. Participants also earned $3,000 more on average across the 18 month period. The effect on employment outcomes was observed as early as five months after starting the programmes.

Participants and the comparison group spent the same amount of time receiving a main benefit or employment assistance, and both groups received $18,900 in benefits on average, over 18 months. This suggests that a proportion of participants were likely to be receiving some form of income support while participating in the programmes. The similarity in income support receipt can in part be explained by the increased time spent in employment by participants while remaining on main benefit (20 days after 18 months). Because people on income support can earn some income from employment before their income support payments are abated, we can have both an increase in employment and total income without a corresponding decrease in income support assistance.

## The programmes had no impact on participants’ education outcomes

Education outcomes in this analysis include, qualifications (following National Qualifications Framework definitions) held by participants and the amount of time spent participating in tertiary education. We theorised that having a driver licence may help people access education. However, there was no significant evidence that MSD-funded programmes increased participation in education.

## The programmes had no impact on the justice outcomes of the participants

We looked at the offending rate and duration of time spent in the Department of Corrections systems. We did not observe any significant difference between participants and the comparison group for justice outcomes. Both groups showed similar rates of offending and time spent in the corrections system.

It should be noted that the offending rate excluded offences which could be dealt with by issuing an infringement notice. We could not tell if there was an impact on traffic offences of low severity, such as exceeding the speed limit or driving without a valid licence.

## Impact results and participant outcome values

Table 3 shows all the impact results and participant outcomes organised by type of outcome. Results show a cumulative sum across the time period (since starting the driver licensing programme) as listed in the **Year** column.

The column labelled **Participants’ outcomes** shows the average value for the participant group, for a particular outcome summed over the number of years in the **Year** column. Meanwhile, the **Impact** column shows the difference between the outcomes for the participants and the comparison group over the same time period.

Both the **Participants’ outcomes** and **Impact** columns show the point estimate and the 95 percent confidence interval. For example, participants held a full private licence for an average of 146 days across a 1.5 year period, with a 95 percent confidence interval of between 131 and 161 days.

####

#### Table 3 - Participants' outcomes and impact results by type of outcome

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Type of outcome** | **Outcome** | **Year** | **Participants' outcomes** | **Impact** | **Unit** |
| Driver licence | Full commercial licence | 1.5 | 32±8\* | 24±9\* | days |
|  | Full private licence | 1.5 | 146±15\* | 65±20\* | days |
|  | Learner's commercial licence | 1.5 | 6±3 | 2±4 | days |
|  | Learner's private licence | 1.5 | 185±15 | -10±23 | days |
|  | Restricted private licence | 1.5 | 151±14\* | 22±21\* | days |
| Earnings | Income tax paid | 1.5 | 3,900±130\* | 500±200\* | dollars (nominal) |
|  | Net total income | 1.5 | 32,300±780\* | 2,900±1,200\* | dollars (nominal) |
|  | Income from employment | 1.5 | 13,000±960\* | 3,000±1,400\* | dollars (nominal) |
|  | Income from welfare payments | 1.5 | 18,900±660 | 0±990 | dollars (nominal) |
| Education | % achieved NQF2 | 1.6 | 51±3 | 1±5 | % of people |
|  | % achieved NQF3 | 1.6 | 35±3 | -1±5 | % of people |
|  | % achieved NQF4 | 1.6 | 18±3 | -1±4 | % of people |
|  | Any participation in education | 1.5 | 120±13 | 10±19 | days |
|  | Participation in NQF level 4 or higher | 1.5 | 36±8 | -10±14 | days |
|  | Participation while off main benefit | 1.5 | 60±10 | 10±14 | days |
| Employment | Any time in employment | 1.5 | 210±12\* | 40±17\* | days |
|  | Employment while off welfare | 1.5 | 120±10\* | 20±14\* | days |
|  | Employment while on welfare | 1.5 | 91±8\* | 20±11\* | days |
| Justice | Offending rate | 1.5 | 0.48±0.08 | -0.10±0.10 | count |
|  | Offending rate (serious offences) | 1.5 | 0.02±0.02 | 0.00±0.03 | count  |
|  | Time spent in any corrections service | 1.5 | 25±4 | -5±8 | days |
|  | Time spent in prison | 1.5 | 2±1 | -2±2 | days |
| Welfare | Time spent not receiving main benefit or employment assistance[[7]](#footnote-7) | 1.5 | 170±11 | 0±16 | days |

*Nominal refers to dollar values that have not been inflated or discounted. Statistically significant impact results at an alpha level of 0.05 are marked by an asterisk (\*).* *The unit ‘% of people’ refers to percentage points (for example 50% minus 40% is 10 percentage points)*

# Limitations of the analysis

## We do not have complete information about the licence type or the licence stage that participants were trying to obtain for all programmes

From the administrative data, we know that some participants were working toward achieving a licence for commercial vehicles, such as taxis or forklifts, instead of a licence for private cars or motorcycles. However, this information was unreliable for some participation events (for example, the description of the programme did not specify the licence stage or class). Therefore, we grouped and analysed all programme participation events together, regardless of the type of programme.

We also know that some programmes are aimed to help participants achieve a learner’s licence instead of a full licence. We do not have full information for all participation events, and so have chosen to analyse all the programmes together as one group.

## We did not match the comparison group based on the length of time spent in a driver licence stage before starting the programmes

It is possible that participants who spent a long time in the same licence stage prior to starting the programme may have different characteristics to participants who spent less time. While we did not include this factor when identifying the current comparison group, we plan to include it if further analysis is done in the future.

## We do not know the impacts of the programmes on different types of participants

Due to the small sample size of the participant cohort, we have limited information about the effects of programmes on different types of participants (for example, male participants versus female participants). For example, we could not see if there was a difference in impacts between participants of different ethnicities.

## We observed a pre-existing difference in time spent receiving assistance from welfare between the participants and the comparison group

We checked for pre-existing differences between the participants and the comparison group for each outcome in order to identify if any differences had an effect on the impact of the driver licensing programmes. We are cautious about measuring the programmes’ effect on time spent receiving assistance from welfare (Work and Income) because the comparison group spent slightly more time receiving assistance compared to the participants before starting the programmes.

Starting six months before and continuing up to the programme start date, the comparison group spent an average 1.5 additional days per month on welfare assistance. With improvements to our propensity matching methodology, we intend to minimise this difference in future versions of this analysis.

## We may not have accounted for all unobserved variables that influence participation

The robustness of propensity score matching depends on the assumption that by modelling the probability of participation based on observed variables, we also control for the effect of unobserved variables that influence participation. However, there is a risk that we may not have fully accounted for these unobserved variables such as the motivation and confidence of participants.

# Driver licensing programme participation cost

Each time a client participated in a driver licensing programme in 2015, it cost MSD an average of $724. This value is in the highest 50 percent of costs when compared with costs of other employment assistance programmes in that year.

Table 4 shows the estimated total cost of running the programme for calendar years 2014 and 2015. The number of participants and cost decreased from 2014 to 2015. At this stage, we are unsure of the reasons for the reduced average cost per start. The analysis of the 2014-2015 cohort was limited to one participation event per participant, however, the total number of participant starts exceeds 1,400.

#### Table 4 - Average cost per start in 2014 and 2015

|  |  |  |  |
| --- | --- | --- | --- |
| Calendar year | Total estimated nominal cost | Number of participant starts | Average nominal cost per start |
| 2014 | $942,066 | 789 | $1,194 |
| 2015 | $532,140 | 735 | $724 |

# Future work

MSD is currently analysing the cost effectiveness of employment assistance programmes, including the drivers licensing programmes. The first phase of this work focuses on producing return-on-investment results based on welfare costs (for example, the costs to MSD alone). This will be followed by return-on-investment results that will also include other societal costs, such as costs to the justice system.

# Actionable insights

We consider that these programmes are promising: in the short-term, they help participants progress through the stages of the GDLS. We also observed an improvement in the income and employment outcomes of participants. However, the participants do not spend more time off main benefit or employment assistance. While there is a positive correlation between obtaining a full driver licence and income and employment outcomes, we cannot say one directly causes the other.

It could be useful to conduct research into what motivates participants to obtain a driver licence. One possibility is that companies require job applicants to hold a current driver licence, even though the job itself does not involve any driving.

Decision-makers could consider looking at the outcomes of these participants in the future when more time has elapsed, allowing us to observe the full impact of these programmes.

# Appendix 1: Summary of methods

This section summarises the impact methods and how we estimated the effectiveness of the driver licensing programmes.

## How participants of driver licensing programmes were identified in the administrative data

The MSD Contracts team identified a list of contracts where programmes were intended to assist MSD clients attain a driver licence. These contracts had unique identifier numbers which could be referenced in MSD individual-level employment assistance participation data. Using these identifiers, we were able to link these contracts back to individual participation periods in driver licensing programmes. As a check, we looked at service providers to see if they were plausible vendors for driver licensing programmes (such as driving schools).

## Estimating the effectiveness of the programme

We estimated programme effectiveness by using a counterfactual design. The term counterfactual refers to the question: what would have happened to participants if they did not participate in the driver licensing programmes? By this definition, it is not possible to observe the counterfactual outcomes from the participants themselves.

Therefore, we use a propensity score matching technique to identify a comparison group of non-participants who have the same (or similar) characteristics as the participants (ie amount of assistance received from the welfare system, driver licence status, age, gender and education level). For example, if 10 percent of the participants had a restricted licence, then a similar proportion should exist in the comparison group.

By comparing outcomes of the participants and the comparison non-participants using administrative data in the Statistics New Zealand Integrated Data Infrastructure (IDI), we can estimate the effectiveness (or impact) of the driver licensing programmes.

We are confident about the majority of the estimated impacts for the outcomes given in this report, except for the outcome of receiving a main benefit or employment assistance. This exception is discussed further in the Limitations of the analysis section.

1. The working group comprises of senior officials from agencies that have responsibilities for driver licensing programmes and outcomes. [↑](#footnote-ref-1)
2. This includes any licence class, eg car licence or motorcycle licence. [↑](#footnote-ref-2)
3. This finding has to be interpreted with caution as there was a small pre-existing difference between the time that participants and the comparison group spent receiving a main benefit or employment assistance. See the Limitations of the analysis section. [↑](#footnote-ref-3)
4. From the administrative data, we consider that these programmes have been in operation since the early 2000s. However, we only report on the 2014 and 2015 cohort years as this was the scope of the commissioned work. See Appendix 1: Summary of methods. [↑](#footnote-ref-4)
5. To give context to the findings in Table 2; drivers under 25 years of age must hold a restricted licence for at least 18 months (or 12 months if they completed an advanced driving course) before being able to apply for a full licence. Drivers aged 25 and over have to hold a licence for at least six months (or three months if they completed an advanced driving course). Those who have a learner’s licence must hold it for a minimum of six months before applying for a restricted licence. This information was sourced in March 2018. [↑](#footnote-ref-5)
6. There were approximately 10 percent of participants with a full licence at the start of the programme. This is partially explained by participants who had a full licence for cars but were working toward obtaining a full licence of another class. In the current analysis, we did not distinguish between licence classes. For example, a person who was holding a full licence for cars but was working toward a full licence for a heavy vehicle would appear to have already achieved the short-term goal of achieving a full licence. See the Limitations of the analysis section. [↑](#footnote-ref-6)
7. There was a pre-existing difference in time spent receiving a main benefit or employment assistance between the participants and comparison group. See the Limitations of the analysis section for a discussion. [↑](#footnote-ref-7)