

**FIA TRANSFORMATION GRANT
DISTRACTED DRIVING – SMARTPHONE USE PROJECT**

YOUNG NEW ZEALAND DRIVERS – ADDENDUM 2 TO FINAL REPORT FOR FIA

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1. ADDENDUM 2

AN ANALYSIS OF YOUNG NEW ZEALAND DRIVERS

In 2018, the Australian Automobile Association (AAA) partnered with the New Zealand Automobile Association (NZAA) and successfully applied for a Fédération Internationale de l'Automobile (FIA) Road Safety Transformation Grant to enable it to commission research to build an evidence-based toolkit of intervention resources aimed at reducing young drivers' in-vehicle mobile phone use. The AAA then commissioned the Centre for Accident Research and Road Safety – Queensland (CARRS-Q) at the Queensland University of Technology in Brisbane, Australia, to investigate smartphone use while driving.

While the original research design was focused on collecting data from young Australian drivers (aged 17-25 years), during the study its scope expanded to include the collection of data from:

- drivers in Australia aged 26 years and over
- drivers in New Zealand aged 17-25 years
- drivers in New Zealand aged 26 years and over.

In mid-2020, CARRS-Q provided the AAA with three comprehensive technical academic reports covering three streams of distracted driving research. These reports are available from the AAA website.

The final report was prepared for the FIA as part of the AAA's reporting obligations under the Transformation Grant scheme (Australian Automobile Association, 2020). Its focus was young Australian drivers and how the research and the broader body of literature informed the development of the toolkit of intervention resources.

This analysis draws on the CARRS-Q reports and focuses on young New Zealand drivers (17-25 years).

2. RESEARCH STREAM #1 How and why young New Zealand drivers use smartphones

2.1 PREVALENCE OF SMARTPHONE USE WHILE DRIVING

This research has identified that less than half of the young drivers reported engaging in three of the four general distracted driving behaviours (Table 1). Breaking usage down, in a typical week close to 60% of young drivers (58.8%) say they hold their phones to look at them (which is illegal in New Zealand) and 46.1% of young drivers say they use a cradle (device to hold the smartphone) while driving (which is legal in New Zealand). Fewer say they use voice commands (23.3%) to engage with their phones and fewer again say they use vehicle controls such as steering wheel buttons (17.7%) to engage with their phones.

Table 1. Young New Zealand drivers' engagement in four general distracted driving behaviours

General Distracted Driving Behaviour (in a typical week)	Percentage of Young Drivers
Looked at screen of a smartphone held in hand while driving	58.8%

Looked at screen of a smartphone kept in a cradle / phone holder while driving	46.1%
Used voice commands (e.g. Siri) to control phone while driving	23.3%
Used vehicle controls (e.g. steering wheel buttons) and/or a head-up display to control phone while driving	17.7%

Table 2 shows the ways young New Zealand drivers use their phones in hand-held mode. The research shows that usage is across the three types of engagement (call/text/message, social media, entertainment/relaxation), with the highest being entertainment / relaxation apps. All three types of engagement increase when young drivers are in stop-start traffic or stopped at traffic lights. This suggests young drivers are moderating their behaviour and this could be related to some form of risk assessment.

Table 2. Young New Zealand drivers' engagement with three types of phone use while driving using hand-held mode

Behaviour	Percentage of Young Drivers Who Use in Moving Traffic	Percentage of Young Drivers Who Use in Stop-Start Traffic or at Traffic Lights
Call / Text / Message	65.4%	78.5%
Use social media	29.9%	41.1%
Use entertainment / relaxation apps	74.8%	77.6%

Table 3 shows when young New Zealand drivers engage with six specific distracted driving behaviours. It deepens our understanding of when they engage with their phones. Except for participating in a chat via video and watching videos, all other forms of mobile engagement while driving are much more pronounced when young drivers are stopped.

Table 3. Young New Zealand drivers' engagement in six specific distracted driving behaviours

Specific Distracted Driving Behaviour	Percentage of Young Drivers Who Use in Moving Traffic	Percentage of Young Drivers Who Use in Stop-Start Traffic or at Traffic Lights
Created a post on social media	6.2%	11.7%
Scrolled through a social newsfeed	10.5%	17.8%
Participated in a chat (one to one or group)	22.8%	35.2%
Participated in a chat via video (one to one or group)	8.8%	9.9%
Watched videos	11.0%	11.1%
Used a photo messaging app	21.7%	25.8%

Table 4 shows when young drivers engage with different apps on their phone.

Music apps are the most commonly used apps both in moving and stop-start traffic or when stopped at traffic lights. Except for video streaming apps, use increases in stop-start traffic or when stopped at traffic lights, with the most marked increase in texting only apps.

Table 4. Young New Zealand drivers' engagement with five types of phone apps while driving

Type of Apps	Percentage of Young Drivers Who Use in Moving Traffic	Percentage of Young Drivers Who Use in Stop-Start Traffic or at Traffic Lights
Texting only apps (e.g. Viber, iMessage, FB messenger, WhatsApp, and WeChat) or email apps	17.8%	40.7%
Picture or content sharing social media (e.g. Facebook, Instagram, Tumblr, or Snapchat)	14.2%	17.2%
Music apps (e.g. Apple music, Spotify, Pandora, Shazam) or podcasts or audiobooks	46.0%	50.3%
Video streaming (e.g. YouTube, Netflix, Stan)	10.5%	10.5%
Driving apps (e.g. Waze or others)	24.8%	27.6%

2.2 Theoretical Context

To date research into mobile phone use while driving has largely focused on “traditional” use, e.g. calling and texting, and the psychosocial factors motivating such behaviours. Several theories and related concepts have been used to explore the factors that influence smartphone use while driving, including the Theory of Planned Behaviour (TPB).

In addition to the TPB, other theories and related constructs used to study mobile phone distracted driving and that have been used in this research are:

- cognitive capture – the concept that when an individual becomes overly focussed on a secondary task (e.g., their smartphone), meaning they are not cognitively present with their primary task (e.g. driving)
- risky driving history – measured through the Behaviour of Young Novice Drivers (Transient Violations Sub-Scale)
- problematic smartphone use in general life – measured through the Mobile Phone Problem Use Scale.

The TPB and the three additional constructs are discussed in detail in the CARRS-Q reports and summarised in the final FIA report. The glossary explains the terms specifically used in this addendum.

2.3 KEY INFLUENCING FACTORS

Of the two driving scenarios, using a smartphone while driving a moving vehicle is considered more dangerous (Oviedo-Trespalacios, Haque, King, & Washington, 2019). This is the primary focus of this next level of analysis.

The survey results indicate that young New Zealand drivers’ intention to use their smartphones while driving a moving vehicle is a very good predictor of their actual use. This is true for each of the three types of in-vehicle smartphone use. This means, at a policy and practice level, that strategies

need to focus on breaking the nexus between young drivers' intention to use their smartphones while driving and their actual use. To do that, we need to understand what factors are the most influential (the most statistically significant) in how young drivers form their intentions to use their smartphones while driving. We can then target messaging / resources around those factors. We also need to understand other factors that are also good (and statistically significant) predictors of young drivers' actual in-vehicle smartphone use. For maximum effect, priority should be given to interventions aimed at (1) all three types of in-vehicle smartphone use, (2) those with the largest statistical significance, and (3) good indicators of actual use.

One factor influences the intention to undertake all three three types of smartphone use while driving: moral norm. Those factors that influence some but not all three types of actual smartphone use while driving that also require attention are: descriptive norm (parents and guardians as well as friends and peers) and subjective norm (because of the strength of their statistical significance on influencing intentions); engagement with transient driving violations (as measured by the Behaviour of Young Novice Drivers Scale, because of the strength of its statistical significance on actual use of social media); and cognitive capture (because of the strength of its statistical significance on intentions to call / text / message and use social media).

The following three figures highlight the relative importance of the most statistically significant factors influencing young New Zealand drivers' smartphone use in this study. They show the complexity and the interplay of factors that influence young drivers' engagement with their smartphones.

Figure 1. Most significant factors influencing young New Zealand drivers' use of entertainment / relaxation apps while driving

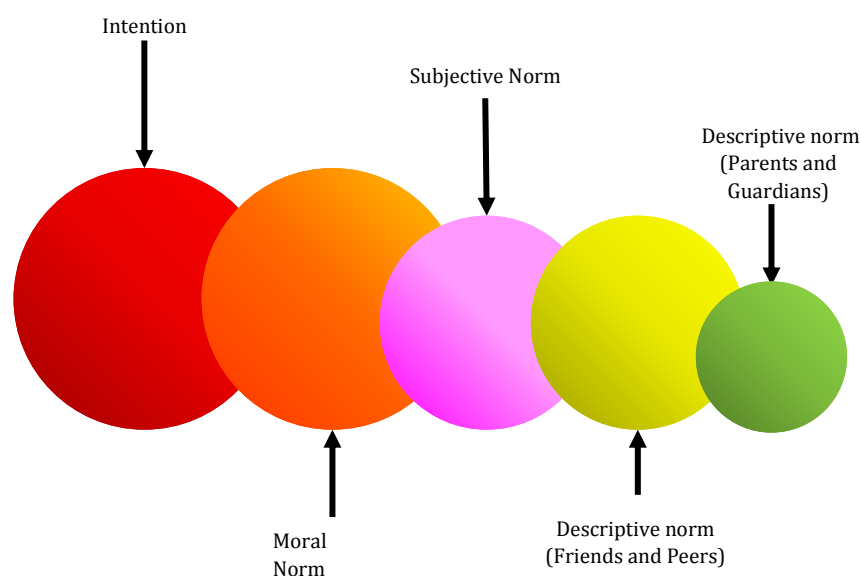


Figure 2. Most significant factors influencing young New Zealand drivers calling, texting and messaging while driving

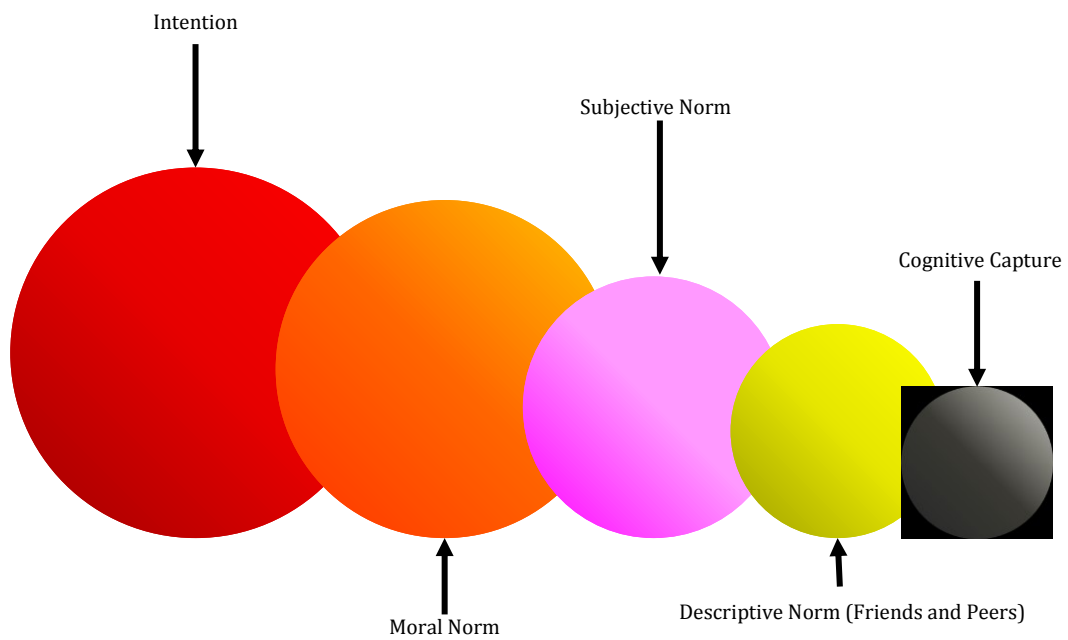
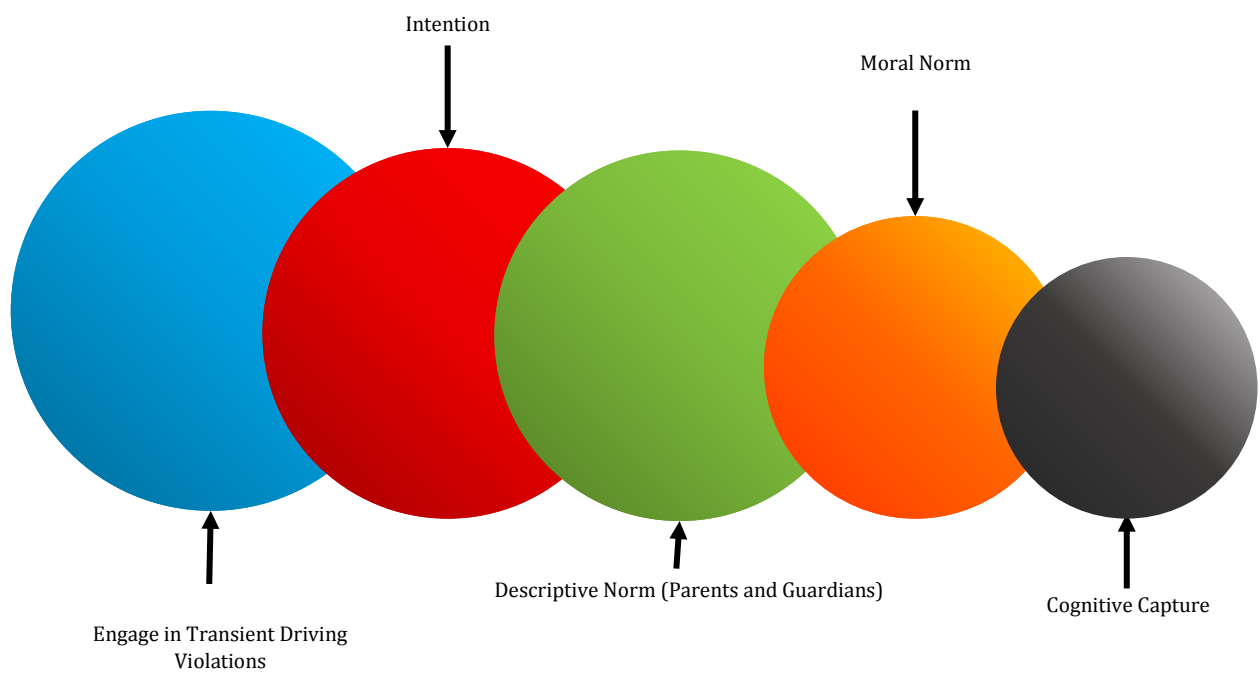


Figure 3. Most significant factors influencing young New Zealand drivers' use of social media while driving



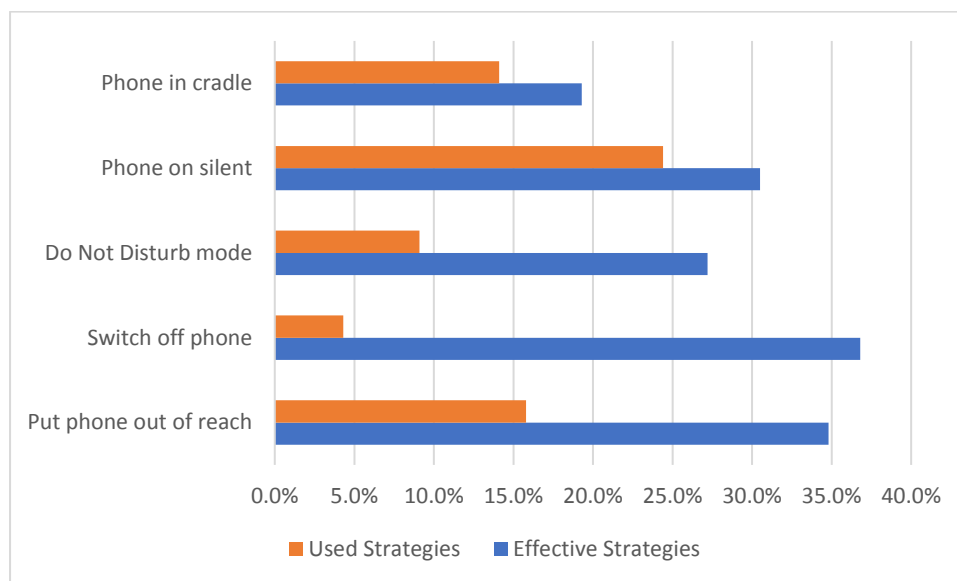
2.4 STRATEGIES USED TO REDUCE IN-VEHICLE SMARTPHONE USE

Encouragingly, most young New Zealand drivers in this study (84.8%) have tried to reduce their in-vehicle smartphone use. However, as the study shows, the strategies they use are not always ones they find effective. Comparing the strategies that young drivers have tried with the strategies young drivers believe are effective shows a marked disconnect. Not enough young drivers are using the strategies they believe will be most effective.

Table 5 Strategies most used compared with most effective strategies

Behaviour	Personally Used the Most	Believe Most Effective
Place phone out of reach	15.8%	34.8%
Switch off phone before driving	4.3%	36.8%
Put phone on silent / vibrate mode before driving	24.4%	30.5%
Phone in cradle	14.1%	19.3%
Activate "Do Not Disturb" mode	9.1%	27.2%

Figure 4: Strategies used compared with effective strategies



This opens the space for us to think very differently about how to tackle the problem. We need to engage young drivers and help them find strategies that they will (a) use and (b) find effective.

3. REFERENCES

- Australian Automobile Association. (2020). *Overview of Distracted Driving Research Project - Technical Summary*. Canberra, ACT: Australian Automobile Association.
- Oviedo-Trespalacios, O., Haque, M. M., King, M., & Washington, S. (2019). "Mate! I'm running 10 min late": An investigation into the self-regulation of mobile phone tasks while driving. *Accident Analysis and Prevention*, 122, 134-142.