

Alex Hynd
n10871209
DVB311
Research Report

Word Count
4306



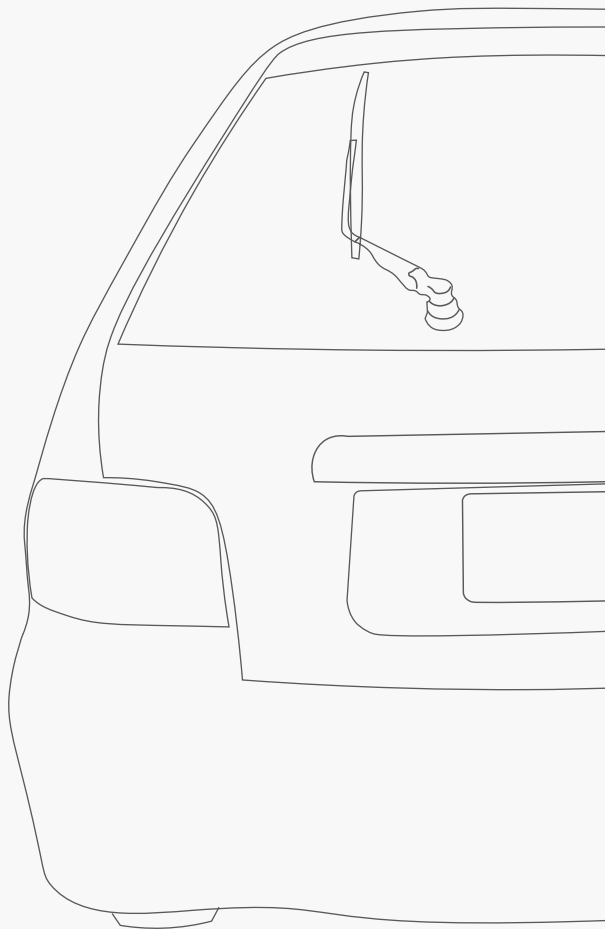
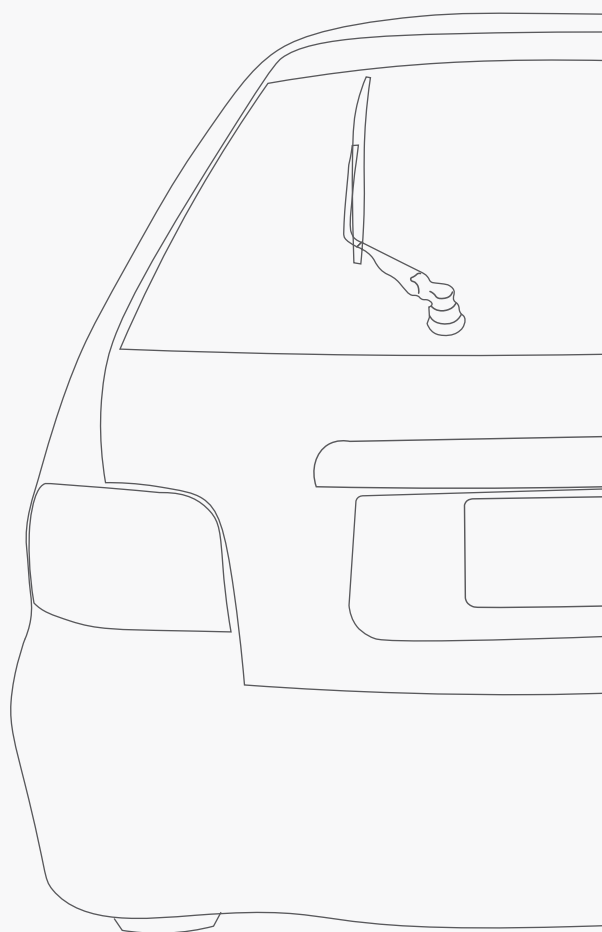


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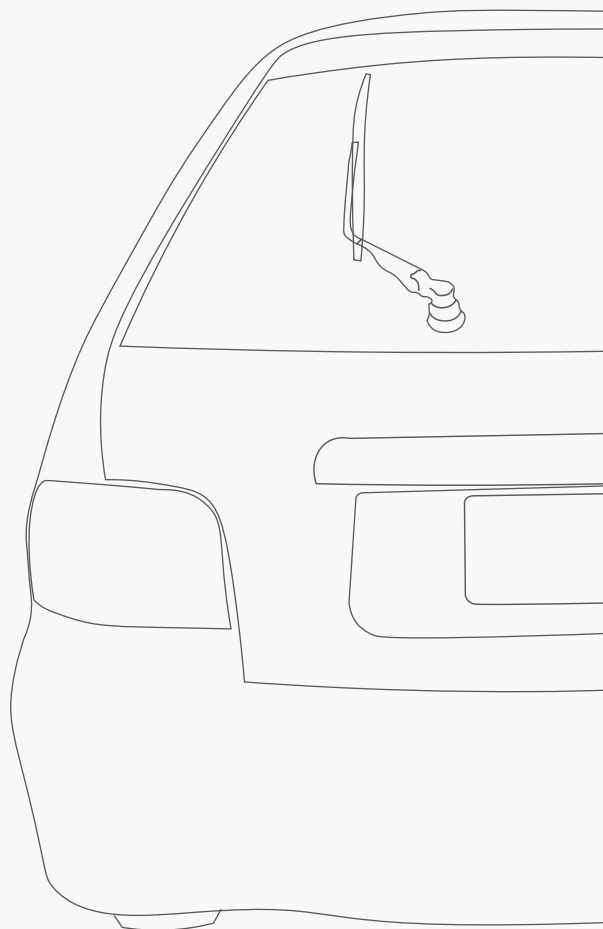
Executive Summary

Tailgating is an issue most drivers have faced. Whether it is on a highway, a school zone or in a car park, it is a problem that is one of the biggest pet peeves of drivers. Causing emotional stress and possibly resulting in rear end crashes.

This research paper will layout the problems of tailgating, the results of tailgating and the research that shows the need for a smart device to help curb tailgating in our community.

Noted in the paper is the current benchmarking of products that exist in the market to help conquer tailgating plus information relating to the inevitably event of a rear end collisions.

It will also note what is the current government involvement and initiatives. What the future could look like, recognizing the potential opportunities that exist in this market and finally what all these findings mean.



Statements

Authenticity Statement

This is to certify that to the best of my knowledge, the content of this report is my own work. This report has not been submitted for any subject or for other purposes. I certify that the intellectual content of this report is the product of my own work and that all the assistance received in preparing this report and sources have been acknowledged.

Your name: Alexander Hynd

Student number: n10871209

Date: 07/09/2025

AI Use Statement

I have utilised Generative AI in this report. I used ChatGPT to help with spelling and grammar.

Your name: Alexander Hynd

Student number: n10871209

Date: 07/09/2025

Introduction

“It was a bumper to bumper, slow moving traffic at around roundabout, we took off. I lost concentration. I looked that way. I looked back. Everyone had stopped. I slammed on my brakes, but I made contact with the car in front who pushed into the car in front.”

Kelly Gardiner recounting her accident while 29 week pregnant with twin boys coming home from work. 23/Aug/2025 interview. pg 10 of transcript.

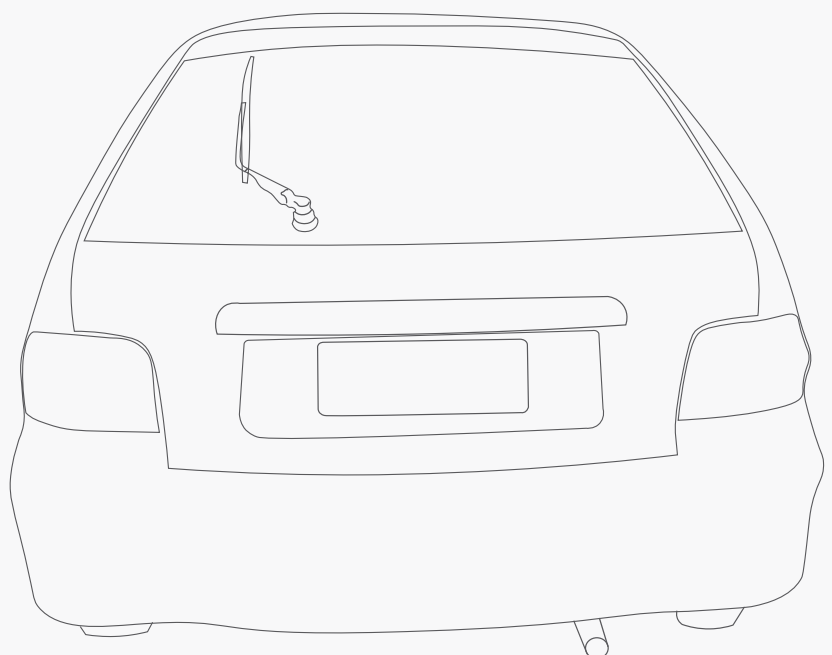
How close is too close? This report aims to look at the need for an anti-tailgating device using the modern technology now available.

Explained throughout this research report is the current state of driving in the greater Brisbane area using quantitative research in relation to tailgating with emphasis on showing problem areas, times, speeds, surveying of Brisbane driver to get real world feedback. It will also utilise qualitative research in interviewing industry experts and victim of road incidents to provide a comprehensive view of the issues.

This report will focus on the current safety options in the market including the benchmarking of current new vehicles, highlighting sensor-based driving which is now an everyday occurrence and potential option for communication between drivers.

It will then show the gaps in the market such as cost of new products and aftermarket parts. Highlighting possible design areas that could be focused on for a anti-tailgating device.

Concluding with analysis of these finding with a discussion points and final design implications that could affect the creation of said anti-tailgating device. By reducing the incidence of tailgating, we could look to improve safety and emotional comfort on our roads.





Our first step is backgrounding the current information available through current research and information relating to tailgating. First outline the rules and fines regarding tailgating, what the current government is doing to help prevent tailgating, probable cause of tailgating, how different driving conditions can affect tailgating and finally the emotional response to tailgating.

RULES AND FINES

The Qld government uses rules and fines to discourage tailgating and their website states that.

“You should drive at least 2 seconds behind the vehicle
in front during ideal conditions”

(Roads, C. O. S. O. Q. O. A. M. (2015, April 13))

Now this is purely for ideal driving condition and it goes on to say that an extra second should be added for things like road condition, whether condition and whether the car in front is towing a trailer.

Unfortunately if you fail to maintain this gap you are tailgating and the fine for following too close to the car in front in Qld is \$233 and 2 points on your license.

(Roads, C. O. S. O. Q. O. A. M. (2025, July 1))

Safe following distance			
Description of offence	Legislation	Points	Fine
Failing to keep a safe distance when overtaking a vehicle	Queensland Road Rules – Section 144	2	\$233
Following too closely to the vehicle in front	Queensland Road Rules – Section 126	1	\$389
Driver of a long vehicle following too closely to another long vehicle	Queensland Road Rules – Section 127(1)	1	\$389

Figure 1: Queensland Fine and point system chart taken from the government website. (Transport and Main Roads chart. (2025, July 1)).

Though this does not seem to be a very enforce road rule and I have yet to meet anyone who has been charged with the offence. As such, more intervention is needed beyond current laws to reduce tailgating.

QLD GOVERNMENT

The Qld government itself has many schemes in place to help with traffic issue. Most being part of the Queensland road safety strategy 2023-2031 with a goal of zero road deaths by 2050 within this plan there is the 2022-24 Queensland road safety plan. (Queensland Road Safety. (2022, June 7)).

Notable parts of this plan is the “hold the red”. Using new camera technology to hold red lights longer if an incident is flag in the system. The “tailgate awareness monitors” trialling across the state and the “black spot” reporting scheme to help everyday citizen report problem areas. This is a positive, but does not proactively impact drivers, instead assisting after an incident has occurred.

PROBABLE CAUSE

A 2022 study done by CARR-Q at QUT noted that tailgating is an understudied section of road accident research. Noting “younger drivers are overrepresented in road crash fatalities” (Nicolls, M., Truelove, V., & Watson-Brown, N. (2022))

It goes on to note in the study that people who are good at internal regulation don't tend to engage in dangerous behaviour as opposed to people that use external factors to regulate, such as notable police presence in areas. Furthermore during the test group there was no noted difference in age and gender. Seemingly the mitigating factor is the person's ability to regulate themselves. Meaning the younger male could be more represented as they have issue regulating themselves at a younger age and mature slower. (Nicolls, M., Truelove, V., & Watson-Brown, N. (2022))

A study conducted in 2011 called “Assessing drivers' Tailgating behaviour and the



effects of Advisory signs in Mitigating tailgating” has some interesting points on tailgating behaviour. (Wang, J. & Song, M., (2011)

Most notably that when the test group was surveyed the result suggest....

“It did not appear that a serious tailgating problem even existed”
Wang, J. & Song, M., (2011)

this showed that people believed they were in the right. From this we can deduce that people can believe they are right and even fall into the “not aware” area when driving. It goes on to note that the adding of some form of signage helped people to maintain a suitable distance.

This distance will of course need to change with higher speed and driving conditions and a general rule does exist but with the unpredictable nature of our world a general rule may not be enough. With this information, it is clear causes of tailgating are varied and understudied, however there is still probable positive impact in increased awareness of the issue in reducing incidence

The chart here was taken off “your key to driving safe” publication portal on the

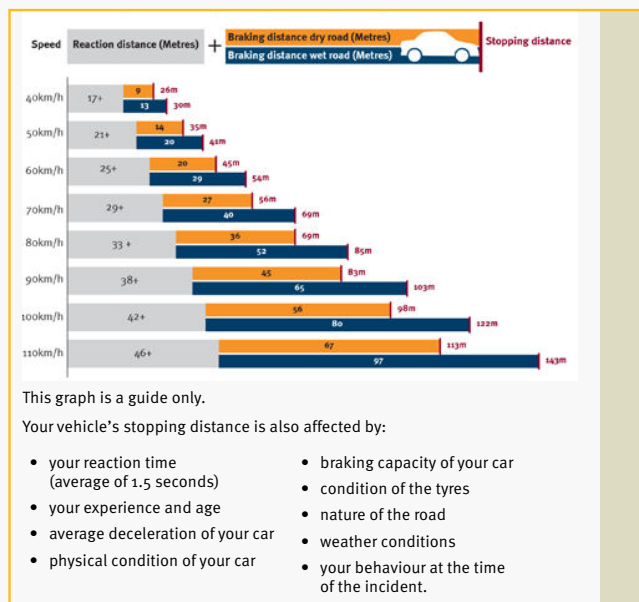


Fig 2: Department of transport and main roads. (2021, January 19)

same time identifying that during the survey 49.7% were observed tailgating. Concluding again that through these studies people believe they are being safe while at the same time actually tailgating.

This highlights the need for objective indicators of a ‘safe’ distance, as human judgment is faulty.

The effect of tailgating goes beyond the risk to life as ABC news related with an article

CONDITIONS

Queensland government website”
Showing the increasing distance that needs to be maintained to keep a safe distance.

A 2017 study on Qld driver prevalence and perceptions stated that rear end collisions.

“accounted for 21% of police-reported collisions and 36% of claims in the state’s compulsory third party scheme over 2000-2010” Rakotonirainy, A., Demmel, S.,

Watson, A., Haque, Md. M., Fleiter, J.J., Watson, B. C., & Washington, S. (2017).

This study also notes that “most drivers believed that they were keeping a safe distance” while at the



EMOTIONAL

titled “Tailgating is stressful and dangerous”, noting that being tailgated “is one of the most stressful driving experiences” [ABC News. \(2022, February 16\).](#)

Even the signals in cars are becoming to overwhelming with a bell curve point occurring. The annual Victorian self-driving and electric car survey from Eastlink of 5700 people shows a downtake in drivers wanting safety assistance functions in their vehicles. [\(LATEST RESULTS: Annual Victorian Self-Driving & Electric Car Survey. \(2025, April 2nd \)](#)

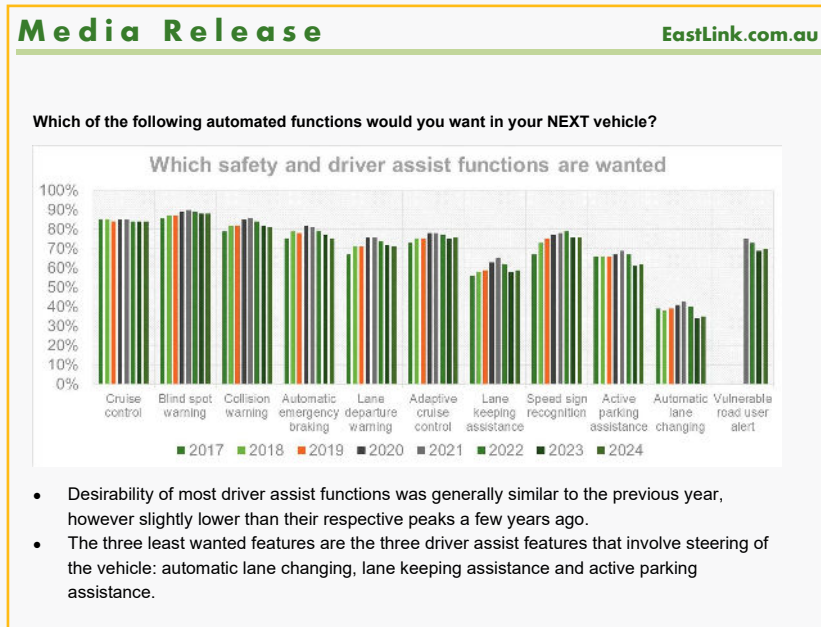


Fig 3: Eastlink survey chart

Drivers of modern cars can also be starting to develop alarm fatigue. As shown in 2015 study of hospital staff in an ICU. Alarms are designed to produce cognitive stress but overtime alarm fatigue could form and lead to desensitiation of the person from alarms, leading to delayed or inadequate responses.

[\(Ruskin, K, Hueske-Kraus, D. Alarm fatigue: impacts on patient safety. Curr Opin Anaesthesiol. \(2015\)](#)

Showing there is a precedence out there that highlights drivers could start to ignoring the very sensors put there to help them. With new car sensors creating fatigue, a demand for road user alerts noted, and a second hand market devoid of any direct tailgating related sensors, there is a demonstrated gap for novel devices to decrease the incidences and consequences of tailgating. To explore this gap, we need to benchmark what is currently on the market to identify product gaps.

Benchmarking

With no real direct anti-tailgating device on the market we must look at what could be used. Starting with what safety features that are in cars both new and old, the cost of these safety features. Original Equipment Manufacturer or OEM and aftermarket and finally what signage could be used to inform other drivers that they may be tailgating.

SAFETY FEATURES

Using the KIA brand as the example with data taken from ANCAP rating website shown in Fig 4 shows that the new more expensive car have more safety features, but the Australasian New Car Assessment Program (ANCAP) rating for a KIA is still high showing an increased technology required for the car to achieve a 5 star safety rating.

[Search for car safety ratings | ANCAP Safety Reports. \(2025\)](#)

The newer electric models boasting AEB (Autonomous Emergency braking), LSL (Lane assist), Monitoring of the driver by way of a on fatigue camera and finally SAS (speed assistance system). Fig 3 shows the AEB system drops off features from 2021 with no 'back over system' or 'junctions support in standard models'. Showing that the "new" full supporting systems have only been on car for 5 years. This is problematic for the second hand car market pre-2020 which will rely on aftermarket solutions

COST NEW CAR

If we are to look at the sensors in these vehicles that could be used to detect the closeness of another car, such as the parking sensor we would be paying \$124.23 for an ultrasonic sensor according to Ebay for an OEM part.

[Genuine Parking Assist Ultrasonic Sensor 99310BE100AHV for Kia EV9 | EBay Australia. \(2025\)](#)

This price is to replace one of these sensors on a Kia EV9 which typically have 8 to 10 sensors per modern car.

COST AFTERMARKET

An aftermarket set up for 4 ultra sonic sensors with audible and light display can be bought from Autobarn for \$110.49 meaning a saving of \$386.43 if we compare 4 to 4 sensors in price. This is not comparing fitment time of drilling holes in your bumper and running cables into the main cabin.

[AutoBarn limited. \(2025, September\)](#)



Figure 4: Chart of safety feature in the KIA models. taken from AnCAP rating

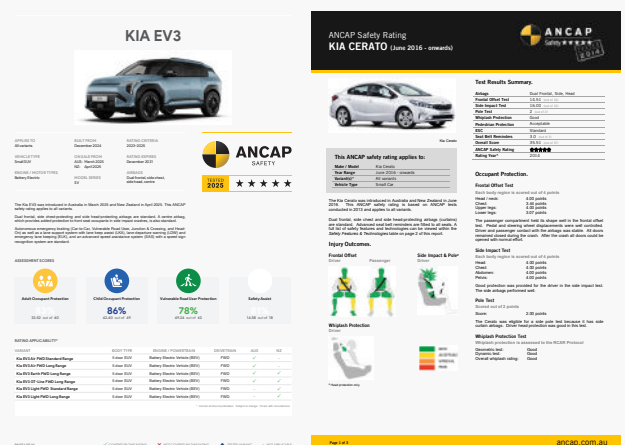


Figure 5 and 6: ANCAP safety rating for the KIA EV3 and KIA Cerato taken from the ANCAP rating website.

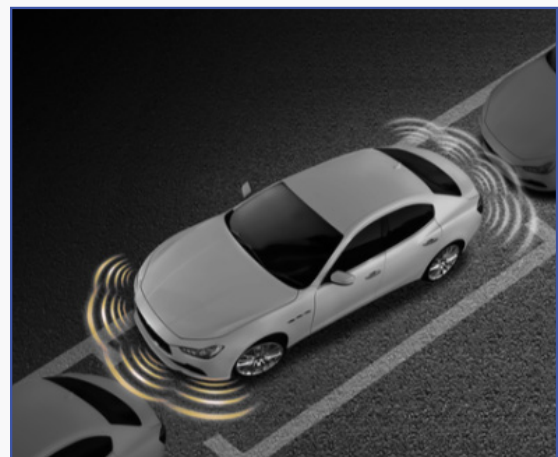


Figure 7: Car displaying parking sensor activation.



DISPLAY TO DRIVERS

As an alternative to bumper sensors we can look at something to signal or display to other drivers we can look at a few options.

For example, to indicate to other drivers to be patient and avoid pressuring the driver, you can indicate your level of experience. To Display L and P plates you can buy a holder that fits to your license plate for \$18.99 from supercheap.

[SCA L and P Plate Holder - Standard, 2 pack. \(2025\).](#)

For LED sign that could be put in a rear window the options are many as most of the large online seller sell these.

Ali express can send you a 16x32 LED car rear window moving message display for \$15.55.

[Bluetooth USB LED Strip Car rear window. \(2025\)](#)

Amazon will send it to you for \$51.99 and of course Ebay comes in at \$56.90 all programable from an app of your phone with multiple colours and flashing display.

CONCLUSION From all this we can see there are some amazing safety option available with newer vehicle that help prevent to result of tailgating. But the aftermarket options for cheaper pre-2020 cars are sorely lacking. Aftermarket options that could be impaction may be at a price point difficult for many drivers. Given the road data shows the impact on younger, experienced drivers, who often buy second hand cars, there needs to be more solutions to reduce the incidence of tailgating.

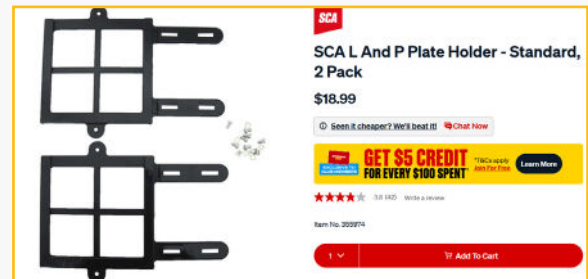
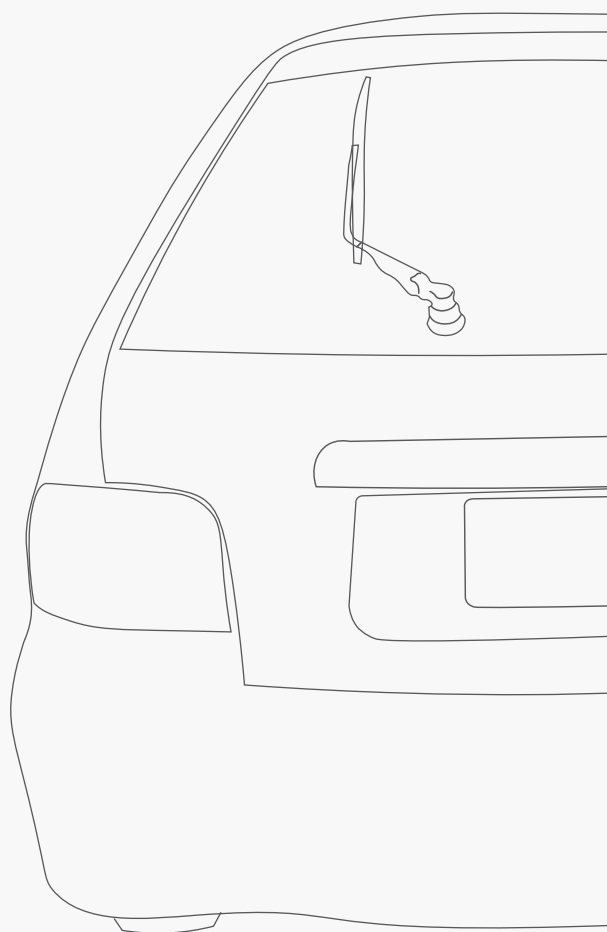


Fig 8. L plate displays



Fig 9. Rear display LED



Section 2

Research

pg 12

Analysis and Findings

pg 14



The research in this report is split into two section quantitative and qualitative.

QUANTITATIVE

The quantitative research looks at the data of rear end crashes which is the end result of tailgating as previously mentioned in this report. This data has the potential to have many key features that can help in relation to designing an anti-tailgating device.

Showing the time of day, week, month and even the suburbs affected by the end result of tailgating being rear end collisions. This could be key information required for people, product and governments in design this device.

The data is readily available from the Queensland governments operational portal [Transport and Main Roads. \(2024, June 30\)](#)

I had to download the information into excel form and then sort using pivot tables to help analysis. I chose to use the most complete and up to date data of 2022-2023, as the 2024 data is cut of mid-year and looking at all the data from 2001 to 2024 was overwhelming.

Adding a survey with 20 easy questions such as "have you ever been tailgated and if so, what was your response" allowed me to get a data with direct tailgating related question.

30 of my co-workers helped fill out the survey and because they are mostly blue collar workers I chose to keep the survey short and easy to fill out. Using google doc's allow me get a quick response time up-to-date feedback directly from drivers on Qld roads.

QUALITATIVE

Data though can only tell you so much and so adding qualitative research we get to see firsthand experiences and emotional responses to tailgating and the final outcome of rear end crashes.

I had the opportunity to interview a recent rear end accident victim in Candidate 1 a mid 30th father of two who accident on the 30/06/2025. By transcribing and analysis the interview for key points and personal responses we get to see a personal take on things.

Figure 10: Downloaded Excel sheet of crash information for QLD from 2001-2024

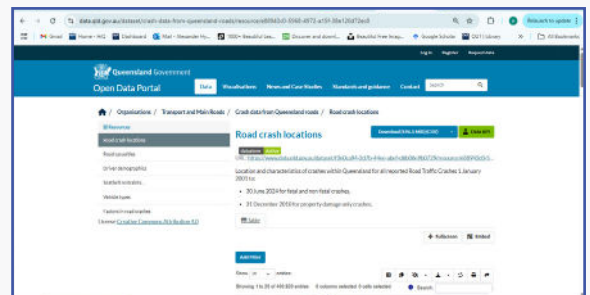
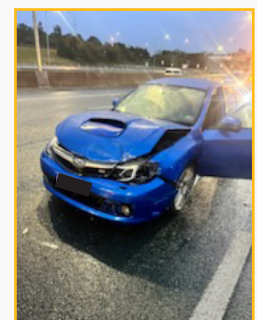


Figure 11: Downloaded site for crash information for QLD from 2001-2024

Figure 12: Examples of the Questions asked via google docs.



Figure 13 and 14: Photo of Candidate 1 and his vehicle.





QUALITATIVE

Complemented by in field experts of Canidiate 2 and Canidiate 3 a married couple in their late 30 with 3 kids under 10. 2 being a CTP (compulsory third party) para-legal and 3 being lead mechanical engineer at NACO both bringing their own expertise during their joint interview.

I chose to interview them together as not only do they have their own personal experience and expertise but as a married couple with three children under 10 they offer another layer of information. Just like Candiate 1 transcribing their collective interview for key points.

Overall information from both the qualitative and quantitative data and research will help inform for a anti-tailgating device.

The Analysis and Findings I have broken down into their sections. Following the above flow with the result of the crash data, then the results of the survey with finally the analysis of the interviews with my key people.

QUANTITVE CRASH DATA.

Starting with the crash data show here from 2001-2024 showing a notable drop in 2011. This with the combined benchmarking above leads up to believe that cars and the roads are getting safer at least in the confines of rear crash data in the Brisbane Area.

Looking at the collum graphs you can see that Thursday in 2022 was the highest day of rear end collision with Wednesday and Friday taking over for 2023 showing that the end of the work week being the worst time to be on the road.

Particularly at 8am in the morning and 3pm to 5pm in the evening. Again, giving insight to suggest the school times and work hours affecting people driving abilities.

For the months have a more erraatc flow with October being the worst month on the road for 2022 and March taking the prize for 2023.

Finally looking at the data from 2023 only

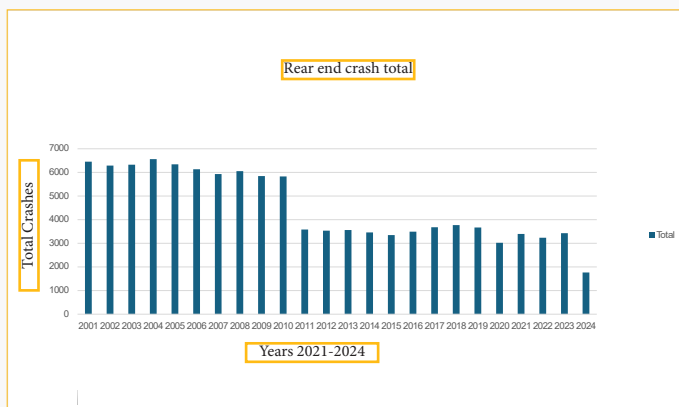


Fig 15. Rear end crash total 2021-2024

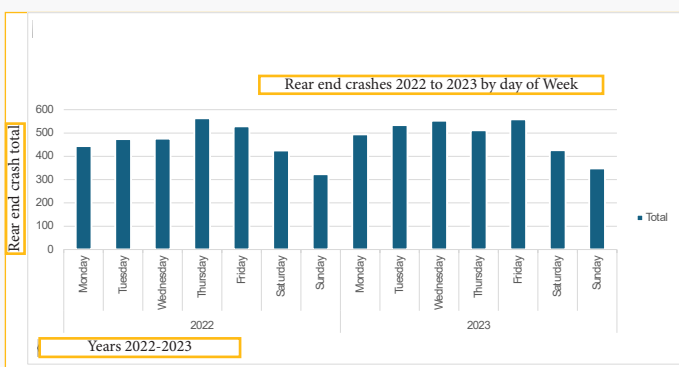


Fig 16. Rear end crash total 2022-2023 days of week



Fig 17. Rear end crash total by month

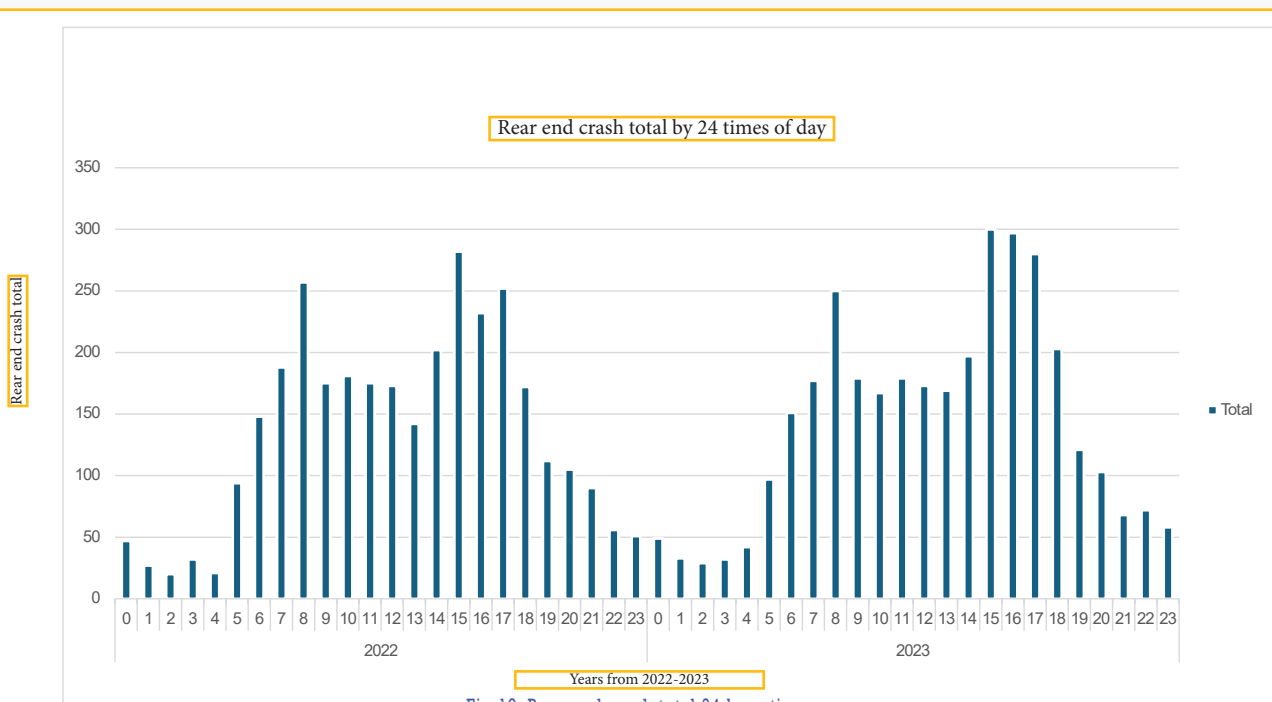
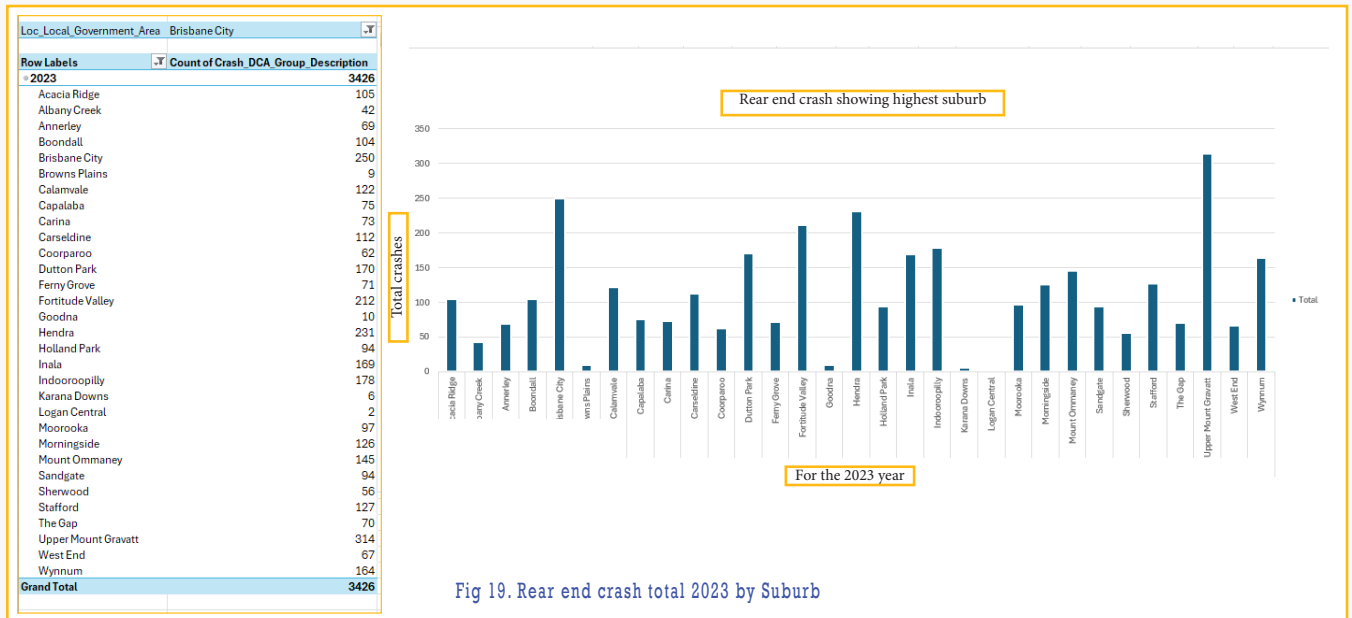


Fig 18. Rear end crash total 24 hour time



QUANTITVE CRASH DATA.

we see that the biggest offending suburbs are Upper Mount Gravatt and Brisbane City and going ever further we can use the longitude and latitude to be plotted into a google map and mark the locations to give a much better



visual.
Showing the key information that the veins (highways) of a city with the merging on and off and intersections seems to be the worst places for rear end collisions. This is crucial to understanding when crashes are occurring, as many in built up areas are linked to tailgating as a preceding event.

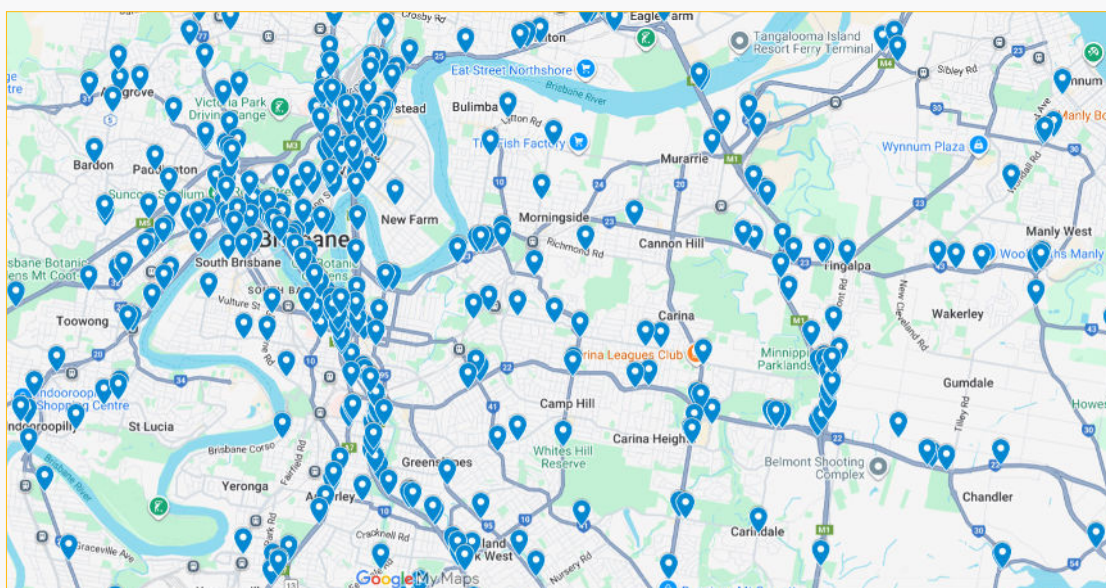


Figure 20: This chart was created using the longitude and latitude information taken from crash register on the Queensland Government website



QUALITATIVE SURVEY DATA

Moving onto the survey data with an age group of mixed people from 21+ to 50+ with mainly male responses.

I saw only 10% of people responding have a car that is a 2025 model. It then drops off to be models of 2021 to 2002 vehicles.

In asking about people feeling on tailgating with a 1-5 scale with 5 being the most hated, an overwhelmed 50% going with a 5. Leaving on one person being unfazed.

When asked "what did you do to response to someone tailgating" 9 (30%) responses had "brake checked" in some way. 7 (23.3%) people responded in simply moving out of the way with notably some of the brake check responses having being caveated with "when I was younger" showing the changing of driving style over time.

40% of people surveyed would like to be informed of tailgating through a light response rather than that of a noise.

People rushing and impatient were considered to be the main responses to "why people tailgate" with 56.7% of people believe that driving is not getting safer despite the contraction of rear crashes falling from 2011 onwards as shown above.

Only 10% of the sample group believe that if a device existed people would adhere to it and 46.7% would like that device to come as an optional extra, but 36.7% would be willing to install it themselves.

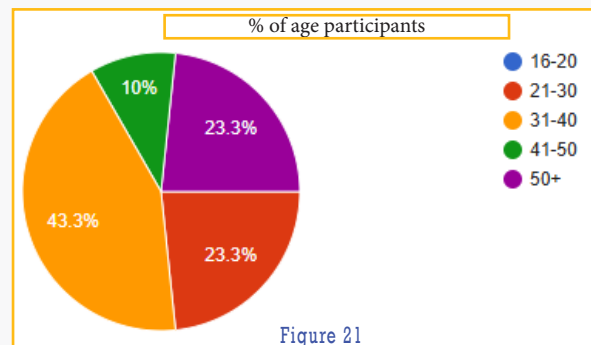


Figure 21

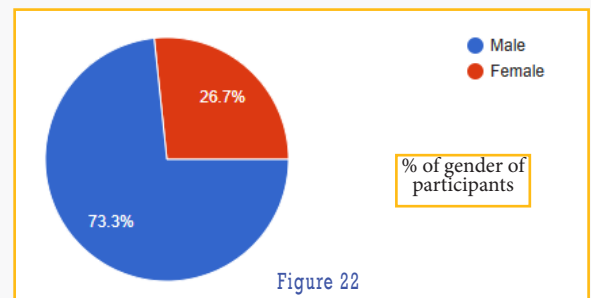


Figure 22

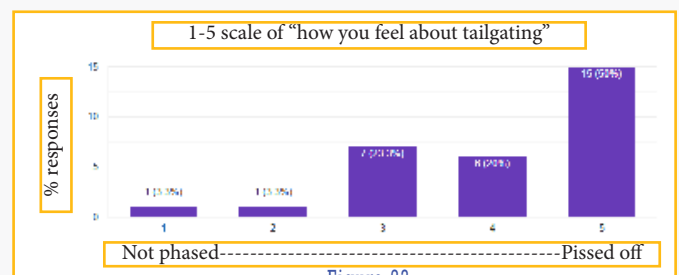


Figure 23

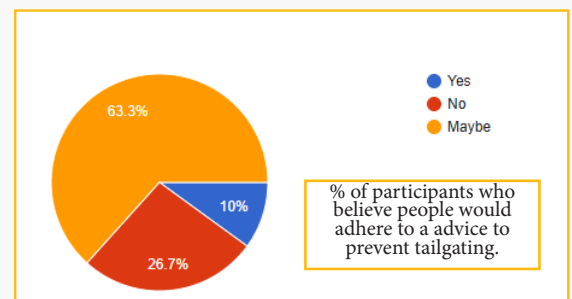


Figure 24

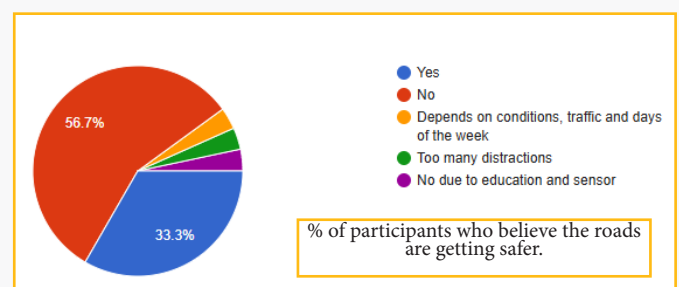


Figure 25

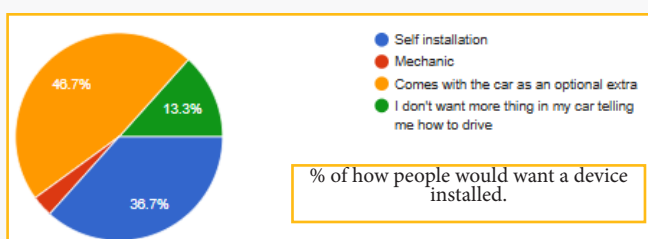


Figure 26

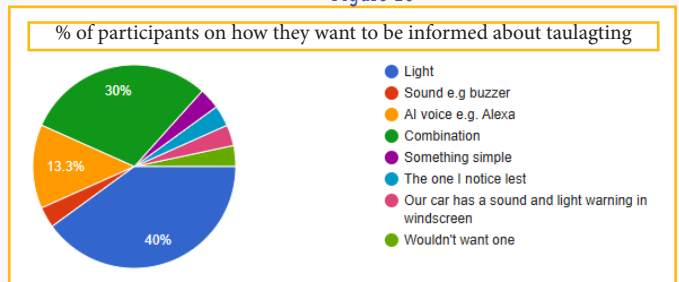


Figure 27



QUALITATIVE INTERVIEW WITH CANDIATE 1

My interview with he was very enlightening with first finding he was the cause of the rear end collision on his drive to work.

The incident happening early at 06:15 on the Gateway motorway and as he noted "it was a merging lane onto Nudgee road" and "I was watching the merging traffic and not the car in front of me." Showing again the changing condition played a factor.

My biggest take-away came from he admitting his driving style changed after the insistent and now he says. "Yeah, I now leave more room and back-up. This gap then gets filled by someone and I then leave more room which causes the guy behind me to tailgate"

QUALITATIVE INTERVIEW WITH CANDIATE 2 AND 3

Both Candidates also shared that their driving style changed after their car accidents.

Candidate 2 with a company car at low speed on her way home from work having to pay for four cars and Tom on his motorbike being hit by a young male driver.

She (CTP paralegal) noted early in the interview that in her experience "I have never seen a Tesla claim" in her 8 months.

Both Candidates also noted they believe "there should be a separate license for people who only learnt to drive in autonomous cars". showing the changing of the time with both Candidates still believing the kids should learn in manual cars to better understand the vehicle showing a lack of trust for all the sensors.

Candidate 2 and 3 also noted the sensor can be frustrating in their new DMAX at times but do help, with Candidate 2 pointing out that the sound can be the same for the sensors and at lights can be frustrating if it randomly goes off. Tom believes we have hit the point of sensor starting to annoy people and can see us going over the bell curve.

All Candidates had some amazing insight to possible help shape a product going forwards.

The sum of this qualitative and quantitative data indicates crashes are occurring at busy times in built up metropolitan areas. With tailgating going hand in hand with metro driving, and qualitative data supporting this as a common experiencing, these findings suggest that despite increased new car sensors, government regulation, and general awareness, tailgating and subsequent car crashes are an ongoing problem.

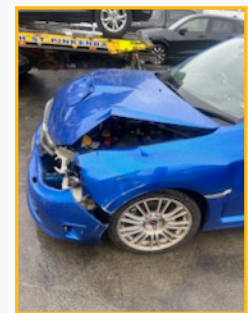
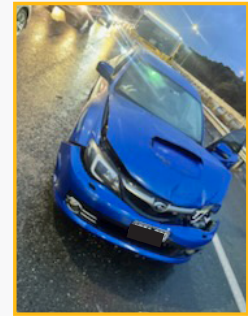
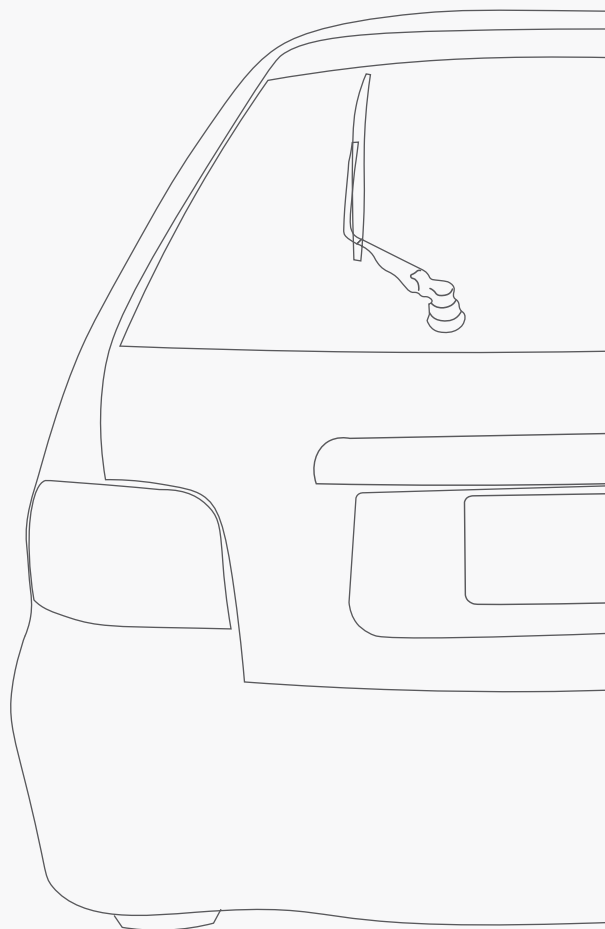


Fig28-30 :Cris Nowasad vehicle.



Section 3

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What does it all mean? All this research shows some interesting trends. Cars are getting safer with Kelly (CTP paralegal) noting previously in this report she has never seen a Tesla claim” but my sample group seem to think that the roads as a whole are not getting safer.

This qualitative feedback is contraindicated as the data that the data has shown that rear end collision have decreased from 2001 to 2023 with a notable drop in 2011, so even if crashes are reducing, the fear and emotional anxiety of driving is spiking.

Cars themselves have more signals as shown from the benchmarking of KIA vehicles but in doing so have started hitting the top of the bell curve of annoy people as Tom and Kelly mentioned in their interview on a whole and they can find all the sensor “overwhelming” leading to potential “alarm fatigue” as shown in the study of nurses in emergency care and the Annual Victorian Self-Driving & Electric Car Survey from east link.

The government has plans in place with the goal of zero death or serious injury by 2050 with black spot information, high risk areas and engagement in tailgating space. Meaning that they would be for such a product or a partnership to help to reach their ambitious goal.

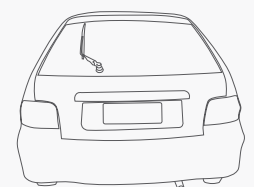
On the people front they do admit to tailgating in the background survey research, but also believe they are doing the right thing on the road. Despite the fact that both the background research and the surveys show they actually do not consistently keep a 2 second distance and have multiple answer for this. It is notably that the distant marker tends (chevrons) do stay with people. Again, this highlights the human error in judgment, and a need for more objective feedback to the driver.

They general consensus of “why people tailgate” is people rushing and general impatient with the background research suggesting that people do response to signage. This is backed by my quantitative analysis showing increased crashes in built up, busier times of road use.

The link to tailgating being similar drug addiction and obesity and although younger males being the larger affected group the data suggests it is not age or gender based and more based to people ability to self regulate from exterior factors. These drivers also tend to have a budget for pre-2020 cars, sorely lacking the sensor technology of a 5 star ANCAP 2025 KIA.

The research also show the reaction time of people and how that can be affected by outside factors, with the introduction of autonomous braking being a needed requirement. Even from factory now. Unfortunately the benchmarking shows it not existing in vehicles 2021 and down, with notable drop off to nothing short of ABS in 2009.

The benchmarking also revealed there are some interesting options available on the market, but with the introduction of Temu, Amazon and Ebay will always force the seller to have a competitive price. At the same time people engagement in fitting thing themselves is lacking and would prefer such an option to come from the dealership but are open to the idea.





Where does this leave the design implications?

I believe that with the step forwards in car development and sensors, cameras and AI technology that the need for a tailgating device is required.....with a focus on later model older cars. A aftermarket tailgating prevention device will have a shelf life as car become more advanced. My analysis would suggest the market to aim for would be second hand car market with emphasis on a easy to fit.

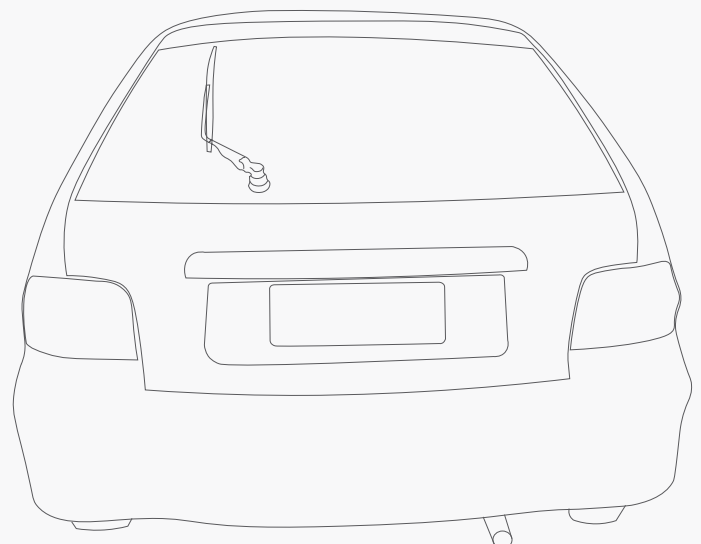
The government requirement for motor vehicle through Australian Design Rules requirements will most certain restrict what can be done in this space with restrictions around cables being run, certain light colours used (blue and red are out) and locations on the vehicle itself. Even the police will of course be something to look at with fine's being applied for obstructions in windows down to the officers interperation of the law.

This could however prove a strength, as a suitable device with a police tick of approval would significantly boost market desirability. Police often run campaigns to reduce road toll and incidents, and an appropriately designed after market anti-tailgating device could be fruitful.

As discussed the Temu, Amazon and Ebay markets all suggest that the price will have to be kept down for an after market product to be competitive. Under \$100 cost would be the goal so low manufacturing cost would be a must along with easy fitment. Though if the product is safety related we could see it become compulsory. Set and forget style with a self contained design and limited parts would be preferred.

Notably the research also suggests that people can get alarm fatigue as previously discussed above and are more responsive to the idea of a lighting reaction rather than another noise in the vehicle. Showing a need for something more subtle in it's suggestive ability. If it is a constant warning then we could see the product ignored or not full fill its requirement.

Finally an appeal to all age groups would be ideal, with the younger male demographic flagging as causing more injuries but no gender or age bias shown for tailgating.





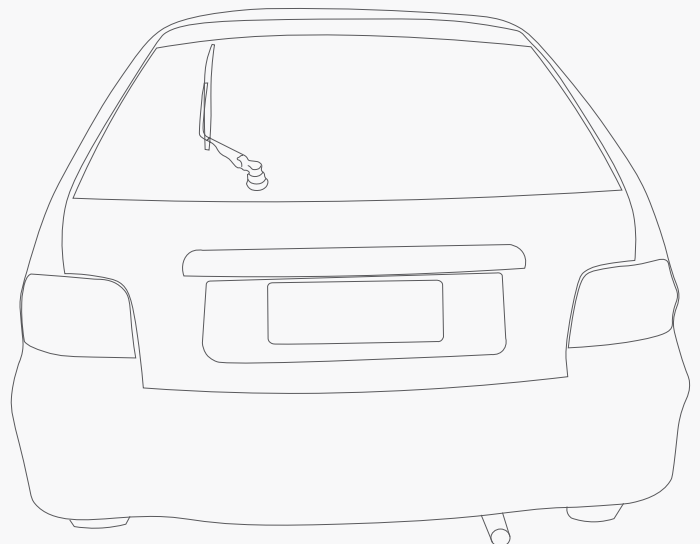
In Conclusion this report aimed to show a a gap in the market for a robust after market anti-tailgating device aimed at improving road safety in pre-2020 second hand cars.

I believe that through the background research highlighting not only fines in place for such an act but also showing the Qld government is putting time and money into such road issues, while at the same time highlighting in the report that there are other elements to tailgating including the emotional stress it can cause. I feel safe in saying there is a need.

The benchmarking noted that modern cars are getting safer and smarter while increasing costs will prevent people from being able to access this market sooner, but still there is a noticeable benefit of making such products accessible to all classes of cars.

The research shows people would be open to the idea, particularly if it is safety related, and brand/government endorsed.

There are clear restrictions around such a product, but I believe that this report has concluded that there is a clear need for such a product in the secondhand market at the very least.



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PICTURES

Fig 1. Transport and Main Roads chart. (2025, July 1). Queensland safety fines and demerit points. Queensland Government Transport. <https://www.qld.gov.au/transport/safety/fines/demerit/points#safefollowingdistance>

Fig 2. Braking chart (2025). Transport and Main Roads.. Publications Qld. <https://www.publications.qld.gov.au/ckan-publications-attachments-prod/resources/f389b260-2675-4863-a23d-0b6627fd9fdf/your-keys-to-driving-in-queensland-safe-road-use.pdf?ETag=7a333edf95a9c4163b0800251d7ccf80>

Fig 3. LATEST RESULTS: Annual Victorian Self-Driving & Electric Car Survey. (2025, April 2nd). <https://www.eastlink.com.au/news-media/latest-results-annual-victorian-self-driving-electric-car-survey>

Fig 4. Self made chart taken from the ANCAP downloadable safety information.

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Fig 5. ANCAP PDF for KIA cars. PDF located in Apendix

Fig 6. ANCAP PDF for KIA cars. PDF located in Apendix

Fig 7. Car sensor activations taken from

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Fig 8. L plate displays of the supercheap website.

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Fig 9. Rear display LED screen.

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Fig 10. Evidence of the Downloaded Data of crash information from Qld 2001-2024

<https://www.data.qld.gov.au/dataset/crash-data-from-queensland-roads/resource/e88943c0-5968-4972-a15f-38e120d72ec0>

PICTURES

- Fig 11. Crash data website <https://www.data.qld.gov.au/dataset/crash-data-from-queensland-roads/resource/e88943c0-5968-4972-a15f-38e120d72ec0>
- Fig 12.
- Fig 13. Photo provided of Chris Nowosad taken by author of this paper
- Fig 14. Photo provided by Chris Nowosad from car accident.
- Fig 15. Rear end crash total 2001-2024 self created
- Fig 16. Rear end crash total 2022-2023 days of week self created.
- Fig 17. Rear end crash total 2022-2023 by month self created
- Fig 18. Crash data 2022-2023 24 hour time self created
- Fig 19. Rear end crash total 2023 by Suburb self created
- Fig 20. Chart was created using the longitude and latitude information taken from crash register on the Queensland Government website
- Fig 21 to 27 charts made with from data gathered with my surveys shown in appendix
- Fig 28 to 30 Crash pictured provided by Chris Nowosad.