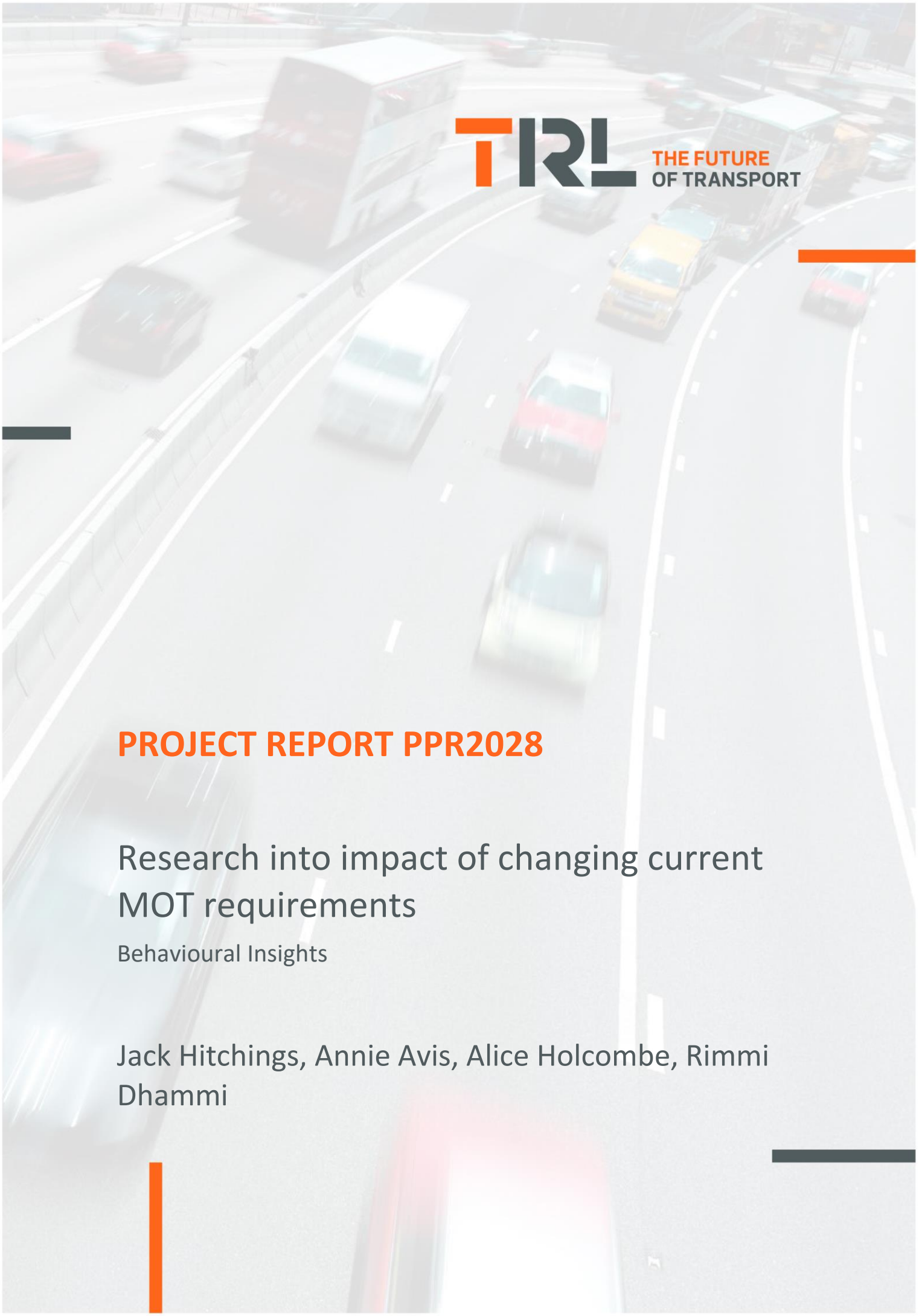

THE FUTURE OF TRANSPORT

PROJECT REPORT PPR2028

Research into impact of changing current MOT requirements

Behavioural Insights

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Disclaimer

Executive summary

This report details the work and findings of the behavioural insights investigation undertaken as part of a wider project investigating the impact of making changes to the current MOT system in the UK. The overall aim of this work was to provide evidence on specific topics relating to possible changes to the current MOT for light vehicles to ensure that it is kept up to date with developing technologies and best practice. The focus of the behavioural insights work was to investigate both the behavioural and attitudinal response of motorists to changes to MOT scheduling, as well as to understand how motorists respond to vehicle malfunction warnings.

Specifically, the underlying research questions for this investigation were:

- How would vehicle keepers respond to a change in MOT test frequency in terms of maintaining the roadworthiness of their vehicle?
- How do vehicle keepers respond to automated warning messages (i.e. malfunction indicator lights) in terms of maintaining the roadworthiness of their vehicle?

The behavioural insights work consisted of three tasks:

1. A semi-systematic evidence review to identify best practice in light of vehicle technical inspections, in which 17 papers were reviewed in depth.
2. A public survey of 499 vehicle owners from across the UK, which gathered data on respondents' attitudes towards the MOT system and their vehicle maintenance behaviours.
3. A series of four focus group sessions, covering different participant age and vehicle age groups, to further explore the topics covered in the survey task.

Attitudes towards MOT test frequency

From across the survey and focus group tasks, it was clear that many people rely on an MOT as a check of their vehicle's overall health. The regular scheduling of an MOT therefore acts as a consistent opportunity to undertake necessary vehicle maintenance. Though some respondents liked the idea of reducing the frequency of the MOT to two years to avoid the associated financial and time requirements, the overall preference appeared to lean more towards maintaining annual MOT testing. Many respondents believed that if the frequency of the MOT were to be reduced, that it would have a negative impact on overall road safety due to a reduction in overall vehicle safety standards.

This belief is supported by findings drawn from the evidence review which suggests that less time between regular vehicle inspections is associated with fewer vehicle faults and fault-based incidents on the roads.

With regards to the timing of the first MOT, more people accepted the idea of delaying this until a vehicle is four years old (rather than three). This was largely based on the belief that newer cars are more robust and less susceptible to faults. However, many people still had concerns over the potential impact this could have on safety, believing that even new vehicles can develop faults depending on how they are driven. This point is also supported

by the evidence review (as well as findings drawn from data analysis conducted as part of the wider programme of this research project), which shows that safety-critical items – namely brakes and tyres – are prone to considerable wear during the first few years of a vehicle's lifespan. Evidence from Belgium also suggests that having an annual MOT from the point of a vehicle's manufacture is "more than justified" for minimising negative outcomes associated with vehicle faults (e.g. collisions, emissions, etc.).

Taken together, these findings suggest that any change to the current MOT system in the UK that reduces or delays the frequency of MOT testing would not be well-received by the majority of the public and likely have a negative impact on overall vehicle safety.

Attitudes towards vehicle maintenance

From across the three research tasks, it appears that public understanding of different vehicle warning messages is generally poor. The same can be said of vehicle maintenance behaviours, with many not performing regular checks of their vehicle unless triggered by an MOT or the need to take a long journey.

In the event of a malfunction indicator light appearing on a vehicle's dashboard, most of the survey sample reported that they would address it either immediately or as soon as possible. However, findings from the survey and focus group tasks show that this decision is likely to be influenced by the severity of the fault, the potential costs associated with getting it resolved, and whether it is near the time of an MOT or service, which may make some choose to continue driving the vehicle despite the fault.

If the MOT frequency was to be reduced, some focus group participants claimed they would take on more responsibility for checking and maintaining their vehicle. However, there were also some who admitted that they would be unlikely to take on this responsibility, which suggests that they would accept that their vehicle would go unchecked between MOTs and potentially risk safety. This latter group presents an obvious concern and must be considered if any changes are to be made regarding the frequency of the MOT.

Notes on the findings

Some caveats must be acknowledged when considering the findings drawn in this report. First of which is that there were notable limitations within the literature included in the evidence review. In particular, the studies relating to vehicle maintenance were all produced by organisations that likely have a vested interest in the outcomes of the research. It is possible that these groups could be biasing results to overrepresent reported fault rates and driver understanding of faults in an effort to raise more business. In addition, these studies lacked sufficient detail on their methods meaning that the approach taken could not be properly assessed.

It must also be highlighted that the approach used in the survey and focus group tasks meant that the responses given by respondents are self-assessments of their own ability. Although steps were taken in the design of the survey and topic guide to mitigate any risk of bias, participants' ability to accurately assess their own ability can still be criticised. As such, the results from any self-assessment questions may not quite reflect reality.

Lastly, the focus groups were designed to provide richer and more in-depth data to support that drawn from the survey. The smaller sample used within the focus groups means that participant attitudes may not reflect that of the wider population. However, based on how the focus groups findings align with those from the survey task (which had a far larger sample), this is not believed to have been the case – or at the very least, has not had a significant impact on the overall findings.

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1 Introduction

Vehicle Periodic Technical Inspection (PTI), known as the MOT (Ministry of Transport) test in the UK, was introduced in 1960 for older cars. Since the 1970s and until Brexit, minimum requirements for the MOT were set by EU legislation, the most recent being Directive 2014/45/EU and associated Regulation (EU) 2019/621.

During the period since the introduction of the MOT, motor vehicles have evolved considerably. In particular, there have been numerous safety improvements with new Advanced Driver Assistance Systems (ADAS), technological improvements for exhaust emissions, and increased warnings of problems to drivers through the use of systems to alert drivers to issues, such as malfunction indicator lights (MILs). New failure modes have also been introduced to vehicles which allow for them to be driven safely during a critical fault.

This safety improvement is expected to continue through the further development and implementation of connected and automated vehicles. In addition, the introduction of new vehicle types such as hybrid and electric vehicles are set to change the on-road fleet profile significantly over the next 5-10 years. New technology systems mean there are many more vehicle components liable to malfunction which in turn creates potential safety or environmental issues.

Given these changes, and the changes in the ownership model towards more vehicle leasing, the DfT Motoring and Freight Team is now assessing the need to update MOT regulations to ensure the future roadworthiness of light vehicles. A key consideration of this will be to assess the timing and frequency of the MOT, as well as the content of the technical inspection.

For reference, the current system requires a vehicle's first MOT to be undertaken at three years after the vehicle's manufacture date and then annually thereafter (3-1-1-1). Proposed changes to the current system involve delaying the date of a vehicle's first MOT and reducing the frequency of subsequent MOTs (e.g. 4-2-2-2).

Overall, this project aims to identify, gather, and develop sound evidence on specific topics where changes to the current MOT for light vehicles (passenger cars and vans with a total weight of 3500kg or less) should be considered to ensure that it is fit for purpose for the future; in other words, to ensure testing processes are kept up to date with developing technologies and best practice whilst remaining cost-effective.

The focus this work was two-fold; first, to investigate the behavioural and attitudinal response of motorists to changes to MOT scheduling, and second to understand how motorists respond to vehicle malfunction warnings. Specifically, the underlying research questions for this work were:

- How would vehicle keepers respond to a change in MOT test frequency in terms of maintaining the roadworthiness of their vehicle?
- How do vehicle keepers respond to automated warning messages (i.e. MILs) in terms of maintaining the roadworthiness of their vehicle?

These questions bring with them a range of relevant sub-questions, which were explored over the course of this work:

1. Test frequency
    a) What, if any, relationship exists between the MOT and vehicle maintenance?
    b) How do vehicle keepers respond to MOT advisories (recommendations for maintenance)? In particular, how quickly do they attend to them?
    c) How do vehicle keepers respond to vehicle defects between MOTs? In particular, how quickly do they attend to them?
    d) How might a person's financial circumstances influence these decisions?
2. Automated warning messages
    a) How well, if at all, do vehicle keepers understand the meaning of automated warning messages?
    b) How quickly, if at all, do vehicle keepers respond to automated warning messages?
    c) How do vehicle keepers respond to vehicle faults with cars that have limited automated systems?

This work consisted of three behavioural insight tasks:

- A semi-systematic evidence review to identify international best practice in light vehicle technical inspections; see section 2.
- A survey of the UK public's attitudes and perceptions towards vehicle maintenance and the MOT system; see section 3.
- A series of focus groups with members of the UK public to further explore the topics explored within the prior survey task; see section 4.

Each of these tasks which make up this behavioural insights study are discussed in turn over the subsequent sections of this report, including a summary of the methods and findings. Summary boxes are included at the beginning of individual subsections to highlight key findings. The report then concludes with a discussion of overall findings and conclusions in relation to the set of questions detailed above. Supplementary information, including further details on the methodologies used and additional findings, are also included in the appendix.

2 Task 1: Evidence review

The evidence review was undertaken to explore the international literature surrounding the MOT test. Specifically, it sought to identify and understand any literature that provided relevant evidence on the set of questions listed in the previous section. Findings drawn from the reviewed evidence have allowed for insights into the best practice which can be applied in relation to MOT frequency and timing, as well as understanding motorists' understanding of and response to malfunction indicator lights (MILs). These findings helped to shape the design of the survey used within the subsequent behavioural insights task.

It is worth noting at this stage that, in the context of the current work, the MOT test refers to the periodic vehicle technical inspection (PTI) that is applied within the UK. The UK is the only country to refer to PTIs as 'MOTs'. Across the reviewed literature discussed in this report, terms such as 'periodic vehicle inspection' and 'motor vehicle inspection' were used. The term MOT will be used within this report to maintain consistency with the wider project, even when referring to literature from other regions where this term was not used. In addition, the term 'Malfunction Indicator Light' (MIL) will be used as a generic descriptor when referring to automated warning messages, including both those which are presented as symbols and those that are presented as text.

2.1 Method

The evidence review took a semi-systematic approach consisting of three parts:

1. Literature search using a defined set of search terms drawn from the research questions.
2. Assessment of identified literature using a defined set of inclusion criteria.
3. In-depth review of the most relevant and high-quality literature.

This approach allowed for a critical appraisal and synthesis of evidence across the breadth of topics outlined in section 1. Following the search and assessment process, 17 individual pieces of literature were included in the in-depth review stage. This included 11 papers relating to the topic of MOTs and six papers relating to the topic of MILs. Conclusions relating to the research questions were drawn where possible from each text for discussion within this report. For further details on the method undertaken to conduct the evidence review, please see Appendix A.

2.2 Findings

MOT safety outcomes and the impact of timing and frequency

Key findings:

- Having an MOT system helps to reduce the overall number of vehicle faults and faulted-based incidents.
- Broadly, it appears that shorter periods of time (e.g. less than one year) between vehicle inspections is associated with fewer vehicle faults and fault-based

incidents; similarly, longer periods of time (e.g. over one year) appear associated with a greater number of vehicle faults and fault-based incidents.

- Vehicles appear liable to faults (particularly tyre-based faults) even in the initial years of a vehicle's lifespan.

Most of the literature that was identified on the topic of MOTs focused more on the overall impact that an MOT system had on safety outcomes rather than the specific impacts of MOT timing and frequency. This evidence was not specifically searched for but emerged regardless of the searches' focus on MOT timing and its relationship with vehicle maintenance behaviours.

Some studies have demonstrated the positive impact that an MOT system can have on reducing the number of vehicle faults and – consequently – the number of collisions attributed to vehicle faults. This relationship appears true across different countries and jurisdictions. For instance, Schulz and Scheler (2019) found that the accident rate dropped by around 40% in Costa Rica following the introduction of their MOT system in 2002. Using data from before and after the implementation of the MOT system, they confirmed that this reduction was directly attributed to the MOT system. Their model estimated that in the year 2015, over 34,000 accidents, over 13,000 injuries, and 175 fatalities were avoided because of the MOT system that was in place. The same authors used a similar approach when aiming to achieve a similar objective in an earlier study focused on Turkey (Schulz & Scheler, 2016). Here, there was an estimated reduction of over 82,000 traffic accidents in the year 2008 due to the introduction of the MOT system.

Given the nature of studies that utilise data across longitudinal timeframes, there is the potential for confounding factors to impact on the reliability of data. This could include other interventions occurring alongside the implementation of MOT systems. For example, Schulz and Scheler (2019) note that Costa Rica also introduced a new seat belt law in 2004 that contributed to a reduction in fatalities. This could confound the data regarding the introduction of the MOT system. However, the analyses Schulz and Scheler applied effectively accounted for known confounding variables (such as the 2004 seat belt law) to determine the impact that the MOT system had in isolation, giving considerable weight to their findings.

Murphy et al. (2018) conducted an extensive study of the economic and safety impacts of MOTs in Texas. This included reviews of different MOT systems both internationally and across different US states, cost-benefit analyses, and assessments of public attitudes through surveys, interviews, and workshops. Across the US, states that had an MOT system in place were found to have fewer vehicles on the road with faults. Given the contribution that vehicle faults have in the number of road crashes (estimates ranging from 3% (Cuerden, Edwards & Pittman, 2011) up to 19% (Rechnitzer, Haworth & Kowadlo, 2000) for developed countries), it is clear, based on Murphy et al.'s (2018) findings and the evidence detailed previously (Schulz & Scheler, 2016; 2019), that locations without an MOT system that show a greater number of vehicles with faults, also show a greater number of vehicle fault-based incidents.

Murphy et al. (2018) also found that crashes involving vehicles with faults were twice as likely to result in a fatality compared to crashes involving vehicles with no defects. That is to say that not only do vehicle faults increase the likelihood of crashes, but they also lead to worse outcomes. However, this relationship may be explained by older vehicles being more likely to have faults while being built to less stringent safety standards; so it is not necessarily the vehicle fault that causes the fatality.

With regards to the frequency of MOT tests, few studies were identified which explored this topic. Keall and Newstead (2013) evaluated the safety effects of New Zealand's MOT system. Vehicles in New Zealand are required to be inspected every year up until six years since manufacture, moving to a biannual (every six months) inspection thereafter. Keall and Newstead investigated whether there was an improvement in safety outcomes associated with this increase in inspections. Using a series of modelling techniques across a collection of crash, licensing, and vehicle inspection data, it was estimated that the biannual inspections decreased crash rates by 8%, with a corresponding decrease in vehicle faults by 13.5%. It is unclear whether this decrease in crash rates can be wholly attributed to vehicle faults being rectified, or if it arises – at least partially – from vehicles being more likely to be scrapped as they become more expensive to maintain.

Of note, Keall and Newstead's (2013) study detail the average number of faults identified per inspection by vehicle age and fault type (see Figure 1). It can be seen from their data that tyre-related faults increase steeply until a vehicle is around four years old, at which point the number of these faults plateau. Comparatively, faults related to lights, brakes, and steering increase more steadily as the vehicle ages. This would suggest that there is a continuous need for inspection, even during the initial years of a vehicle's lifecycle.

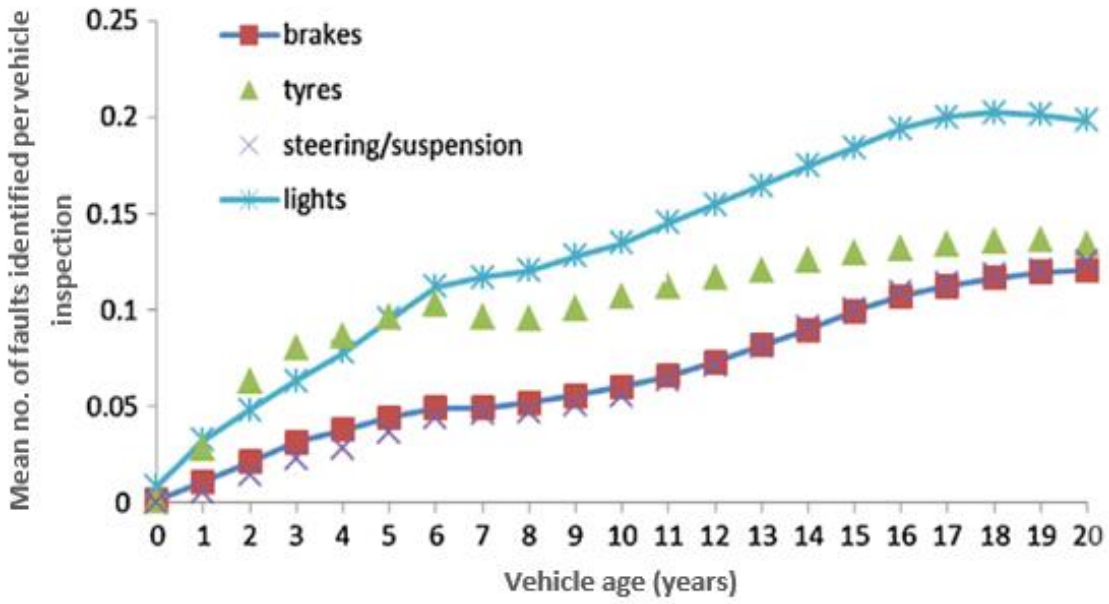

Figure 1: Mean number of faults identified per Warrant of Fitness (WoF) inspection by the age of the vehicle and class of fault identified: only vehicles sold new in New Zealand (as shown in Keall & Newstead, 2013)

Martín-delosReyes et al. (2021) conducted a systematic evidence review to explore the effect of MOTs on road crashes and injuries, compared to less exposure to MOTs and no exposure. Six key articles were identified and reviewed (including the study by Keall and Newstead (2013)); this demonstrates that the lack of evidence identified within the current review is not a unique occurrence. Some of the findings which were drawn out from the literature in Martín-delosReyes et al.'s (2021) review included:

- a 9.1% reduction in crash rates involving vehicles between five and ten years old that had an MOT compared to those that did not (Schroer & Peiton, 1978);
- a significant and positive correlation between weeks since last inspection and crash rates (White, 1985);
- a significant and positive correlation between having no MOT certificate and crash involvement (Blows et al., 2003); and
- the number of vehicle inspections being associated with a greater reduction in vehicle faults, and faults being associated with higher crash rates (Christensen & Elvik, 2007).

Though the studies covered in Martín-delosReyes et al.'s (2021) review are not without their limitations (for one, some of the studies are considerably dated and may no longer be relevant or reflective of the present day), together they do highlight the apparent link between more regular vehicle inspections and reductions in collisions. This finding also appears to be true when considering heavy vehicles (those with a mass of 4.5 tons or more), as found in Assemi and Hickman's (2018) study in Queensland, Australia, as well as Elvik's (2023) study in Norway. The latter of which found – based on recent data – that a 20% increase in the number of inspections is associated with a 4-6% reduction in the number of accidents. Relatedly, a 20% decrease in the number of inspections is associated with a 5-8% increase in accidents.

One final study worth noting here is that conducted by Schulz, Kichiniawy, and Weitz (2015). Focused on Belgium, they investigated what the impact would be of changing the timing of N1 category vehicles' (vehicles used for the carriage of goods and not exceeding 3.5 tonnes) first MOT from one year since manufacture to four years. Using an in-depth cost-benefit analysis, they demonstrated that the 1-1-1-1 inspection cycle is "more than justified" and that a 4-1-1-1 inspection cycle – which was being considered at the time of their study – would only lead to more collisions, fatalities, injuries, congestion (as a result of vehicle accidents), and emissions.

The vast majority of literature on this subject gives focus to the safety outcomes associated with collisions as a result of having an MOT system in place. However, it is also important to consider the role that MOTs play in managing vehicle emissions. Faults and defects can also occur in emission treatment systems, such as a vehicle's catalytic converter or diesel particulate filter (DPF), the result of which could impact on public health through poorer air quality. Some research has explored this topic (e.g. Nakamoto & Kagawa, 2018) and stated the importance of having an MOT system in combatting emissions. Though this was not a focus of the search for literature, the example study provided was found and the point it raises should be considered in any discussion regarding MOT policy changes.

The accuracy of the figures presented by the studies discussed here can be criticised somewhat for failing to account for potential confounding factors and missing data. Though the method used by Schulz & Scheler (2019) effectively removed confounding variables from their analyses, it cannot be ascertained whether the same can be said of other studies discussed here.

Furthermore, the accuracy of the datasets used in these studies is reliant on those reporting on the nature of these accidents. An accident deemed to be the result of a vehicle fault may have had another more contributory factor but was nevertheless categorised as being caused by a vehicle fault. On the other hand, there is also the possibility that the reverse is true. Murphy et al. (2018) note worn bald tyres to be the most prevalent type of defect related to fatal crashes yet worn bald tyres are reportedly not often detected by law enforcement officers (as has been found by analysing the types of defects that law enforcement officers believe have or may have contributed to a crash). Care must be taken on how such data are used and the interpretation that may be applied when completing, for example, an incident report form.

The potential for missing data is also likely. Some faults will be much easier to detect and identify at the roadside than others. For instance, a flat tyre is arguably easier to identify compared to a fault with the braking system. As such, the former would be more likely to get logged on a STATS19 form while the latter would not, even if found later by a forensic vehicle examiner. Considering the potential for these limitations means that the figures raised here may not be wholly accurate. However, based on the evidence that is discussed here there remains a demonstrable relationship that exists between MOT systems and reductions in vehicle fault-based accidents.

Understanding and response to MILs

Key findings:

- Generally, motorists' understanding of MILs and the consequences of not acting on them appears poor.
- Evidence from the US suggests that motorists' have limited knowledge of performing basic vehicle maintenance (e.g. changing tyres, replacing fluids).
- The costs required for maintenance and repairs has been reported as a leading factor for why motorists' delay or ignore vehicle maintenance needs.

Most of the literature that was identified within this review on the topic of people's understanding of and response to MILs did not come from academic sources. Instead, evidence was mostly grey literature conducted by and published on corporate websites.

Of the academic papers that were found, one gave focus to advanced warning systems (such as AEB and forward collision warnings) as opposed to automated warning messages regarding vehicle malfunctions (i.e. MILs) and so was deemed not relevant. The other paper (Green, 1996), though quite dated and with a limited sample (107 respondents spread unevenly across three research tasks), did provide some worthwhile conclusions.

The study used a survey to assess people's preference for how vehicle maintenance messaging was presented via a MIL. Green (1996) found that instruction-based messages were preferred over status-based messages. For instance, a vehicle warning which states "add brake fluid" is better understood for clearly indicating the required maintenance and is preferred to a warning that merely indicates an issue with the braking system. This was based on an earlier finding by Green (1984; as cited in Green, 1996) that showed people's general understanding of vehicle warnings to be poor and many drivers being unaware of what normal vehicle parameters are (e.g. not knowing what engine temperatures were normal or associated with overheating).

Though the work by Green (1996) is now over 25 years old, these findings appear to still hold true to this day. A study published by Stellantis&You in 2021[1] found that only 21% of drivers in the UK were able to identify basic vehicle warnings lights such as 'low tyre pressure'. This study estimated that 654,000 drivers within the UK could be regularly ignoring MILs. Furthermore, around a fifth of respondents were unaware that choosing to ignore vehicle faults could be breaking the law or could invalidate insurance policies. Taken together, these findings suggest that overall understanding of MILs and the consequences of not acting on them is poor.

A survey of 2,000 Americans conducted by Cooper Tires (as reported in an article published by New York Times in 2018[2]), which sought to understand the current state of motorists' knowledge of car maintenance, demonstrated that many people do not know how to perform basic maintenance tasks. Over a third of respondents stated they did not know how to fix a flat tyre, almost half were not confident they could replace their car's oil, and over 40% were unable to correctly identify a car's engine when presented with an image (note that due to the lack of details on the method used, it is unclear how complex this task was or whether it was a suitable assessment of individual's vehicle maintenance knowledge). A further finding showed that 68% of the sample's vehicles may be on the road with at least one fault. It is unclear what the nature of these faults were so these faults could be very minor and not impacting on the safety of the vehicle, but could suggest that there are some motorists who are operating unsafe and faulty vehicles.

A similar survey conducted by UnitedTires in 2021[3] identified the most neglected car maintenance tasks among American motorists. Cracked windshields were found to be the most commonly ignored issue, with over 40% of the 1,200-person sample neglecting the issue for 30 or more days. Other leading issues which were found to be commonly neglected included misaligned wheels (35% of respondents), the need for an oil change (31%), and worn tyres (27%).

Both the study by Cooper Tires and that by Stellantis&You found that around a third of individuals choose to ignore or neglect MILs and vehicle maintenance needs for fear of the costs that may be involved with resolving them. Similarly, the study by UnitedTires reported

[1] https://www.stellantisandyou.co.uk/news-hub/how-well-do-know-your-dashboard-warning-lights

[2] https://nypost.com/2018/06/15/most-americans-have-no-idea-whats-going-on-under-the-hood/

[3] https://www.utires.com/articles/car-maintenance-confessions/#lc-2

over 50% of individuals delayed vehicle repairs because they could not afford the required maintenance. It does not require a stretch of the imagination to picture a scenario where an individual who is struggling to get by month to month and reliant on their vehicle for travel is reluctant to address a vehicle fault if they believed it could financially cripple them.

Another UK-based survey conducted by Solera Vehicle Solutions in 2018[4] which also investigated how people respond to MILs gave specific focus to response times. In a sample of 1,000 motorists from across major UK cities, it was found that the average time it takes for a UK motorist to resolve an issue with a MIL is around 8.3 days. This is slightly shorter among men (7.8 days) and slightly longer among women (8.9 days). Additionally, this study estimated that nearly 78,000 UK motorists would not do anything to resolve an issue raised by a MIL. Older age groups (>55 years old) were found to respond quicker (around 6.4 days) than younger age groups (18-24 years old; 10.6 days). This may be explained by the older age groups likely having more experience with and understanding of how to address vehicle faults, as well as potentially having more time and money to deal with the issues.

It is necessary to highlight that the nature of these grey literature articles provides little to no detail on the study methods used. This includes a lack of information on the design of the surveys and their questions, details of the samples or approaches taken for recruitment, and how the data were analysed. Though the evidence does certainly suggest that people generally have a relatively poor understanding of MILs and vehicle maintenance, given these missing details, it should be questioned whether this level of understanding is as poor as it has been reported. There is also arguably room to suggest that the companies that have provided this evidence have a vested interest in presenting these findings in such a way that may generate media attention and potential business.

A further point to consider when interpreting these findings is that evidence drawn from other countries may not be wholly applicable to the UK. Driving environments can differ considerably between different locations. Specifically, the studies conducted by Cooper Tires and UnitedTires were both undertaken in the US. The nature of American roads, vehicles, and driving behaviours cannot be taken as a representation for that in the UK. As such, findings drawn from these articles are likely not reflective of behaviours and attitudes present in the UK. Ideally, a dedicated and objective research study which utilises a large sample from across the UK would be conducted to get a true understanding of vehicle maintenance behaviours and understanding of MILs in the UK.

2.3 Discussion

The primary objectives of this review were to understand how MOT test frequency and timing impacts on motorists' vehicle maintenance behaviours, and also how motorists respond to MILs in terms of vehicle maintenance. Little literature was identified which directly answered these research questions.

Of the evidence that was identified and reviewed, there were considerable limitations throughout that have been highlighted that warrant consideration when interpreting the

[4] https://www.hpi.co.uk/content/campaigns/how-long-do-you-leave-your-dashboard-lights-on/

studies' findings. It is possible that reported effects and response rates are an overestimation in many instances. Despite these limitations, there are two main conclusions that can reasonably be drawn. Firstly, is that more regular MOTs appear to be associated with fewer vehicles on the road with faults and consequently fewer road traffic accidents which can be attributed to a vehicle fault. And secondly, people generally have a relatively poor understanding of MILs and do not typically respond immediately to resolving any vehicle maintenance issues.

Some supplementary findings were also drawn out from this evidence review. This included how worn bald tyres appear to be the most common fault associated with fault-based vehicle collisions (Murphy et al., 2018), which might suggest a need for MOTs (or other maintenance-focused interventions) to give greater attention to this element of vehicle maintenance. Also, the perceived costs associated with vehicle maintenance and repairs has been found to deter vehicle owners from acting on MILs. This issue may be overcome by giving motorists greater awareness and understanding of such costs or implementing schemes which can provide financial support to individuals to help cover these costs. However, these solutions are not 'quick fixes' and the feasibility of such options lie outside the scope of the current work.

The link between the primary findings would appear clear. As people do not typically have a good understanding or response to vehicle faults, MOTs therefore become a driving factor in leading vehicle owners to maintain their vehicle. If MOTs are more regular, this triggers more regular maintenance and therefore reduces the risk of vehicle-fault-based accidents and associated injuries. Unfortunately, there is yet to be any robust evidence to truly demonstrate this relationship, as the research discussed here only allows for conjecture.

There is therefore ample opportunity for further research to seek to fill this research gap, as well as overcome the limitations of past research. The survey and focus group tasks detailed in the subsequent section take an important step towards addressing this gap.

3 Task 2: Public survey

Building on the findings drawn from the evidence review, this task involved a survey of the UK public to understand behavioural and attitudinal responses to a changed MOT system and automated warning messages. In particular, the survey was intended to better answer the list of questions outlined in section 1 and overcome the gaps present in the findings from the evidence review.

Without any real-world changes to the MOT system, an assessment of actual behaviour change is not possible. As such, the purpose of the survey was to explore people's likely behaviour if changes to the MOT system are to be implemented in the future. This approach is based on the Theory of Planned Behaviour (Ajzen, 1991), which suggests that attitudes and social norms impact on a person's intentions, and eventually their behaviour.

3.1 Method

The survey (Appendix C) consisted of six sections designed to collect details on the following: vehicle ownership; travel behaviours; attitudes towards vehicle maintenance; attitudes towards the MOT; vehicle maintenance and the MOT; and demographics. This aimed to answer the questions listed in section 1 and address the research gaps identified from the evidence review. Data was specifically collected on vehicle ownership and demographics to allow for comparisons between different groups.

The online recruitment platform, Prolific, was used to allow for the rapid recruitment of a sample of survey respondents that were nationally representative of the UK based on age and gender. In total, 750 individuals were recruited and completed a set of filter questions to identify those who currently drive and are responsible for a vehicle that requires MOT testing. This process of using filter questions to identify those who drive and are responsible for a vehicle's MOT was required as the Prolific platform did not have these as in-built screener questions that could be factored into the recruitment of a nationally representative sample. Of those who completed the filter questions, 499 met the criteria to undertake the full survey.

The Prolific platform was purposely used as it allowed for the recruitment of a sample that is nationally representative based on age and gender. This was indeed the case for those that completed the initial filter questions. However, only those who met the eligibility criteria (i.e. those who currently drive and are responsible for a vehicle that requires MOT testing) were able to complete the full survey. In short, the final survey sample has been extracted from a larger pool of respondents that is nationally representative based on age and gender, and in doing so some of the representativeness of the data has been lost. Further details on the participant sample and how representative it is of the UK based on age and gender is covered in Appendix D.1.

Most of the survey data, being quantitative, was analysed using appropriate statistical methods. Significance tests were conducted where appropriate to determine whether observed differences between groups were statistically significant. If a result is statistically significant, it means that the observed difference is likely to be real and attributable to something other than chance. The specific characteristics that were explored through significance tests included: participant age, employment status, and household income, and

vehicle age and mileage. These were explored as they were felt to be the characteristics most likely to show an observable effect and/or provide the most valuable insight.

Responses to the few free-text questions included in the survey were analysed to draw out common themes. Due to the nature of the qualitative data, it is not possible to accurately quantify findings. Instead, findings have been described in general terms around how common a particular theme was within participant responses. Quotes that best capture these themes have been included throughout the findings section. Further details on the approach to the analysis and the overall approach taken to conducting the public survey task are detailed in Appendix B.

3.2 Findings

The main findings from the survey analysis have been drawn out and structured around the following two themes, which reflect the primary research questions:

- **Attitudes towards MOT timing and frequency** – covering the data relating to respondents' preferred MOT timing and frequency, and feelings towards any changes to the current timing and frequency.
- **Maintenance behaviours and their relationship with the MOT** – covering the data relating to respondents' servicing and maintenance behaviours and how this might change under a changed MOT system.

All additional survey analysis and findings are detailed in Appendix D, including details surrounding the sample, their vehicle ownership, and travel behaviours.

Attitudes towards MOT timing and frequency

Key findings:

- Attitudes are mixed towards requiring MOTs for vehicles less than four years old; many believe that newer vehicles are less likely to develop faults in this time, while many others recognise that even new vehicles can develop faults.
- 78% of survey respondents showed a preference for requiring an MOT annually compared to every two years.
- 92% of survey respondents agreed that the MOT system helps to prevent the use of unsafe and/or polluting vehicles on public roads.
- The change to the MOT most requested by survey respondents was to give greater focus to main failure items, reported by 72% of the sample.
- Respondent attitudes were mixed over the idea of reducing the MOT frequency; with some feeling satisfied over the potential cost and time savings, and others showing concerns for the negative impact this would have on safety.

One of the changes being considered for the MOT system in the UK is a delay to a vehicle's first MOT, which currently occurs three years after the manufacture date for most vehicles. Survey respondents were asked whether they believe that vehicles less than four years old

should be required to have an MOT (Figure 2). Opinions on this appear mixed. Slightly more people agreed that vehicles should still require an MOT if they are less than four years old (46%), compared to those who felt it should not be required (39%).

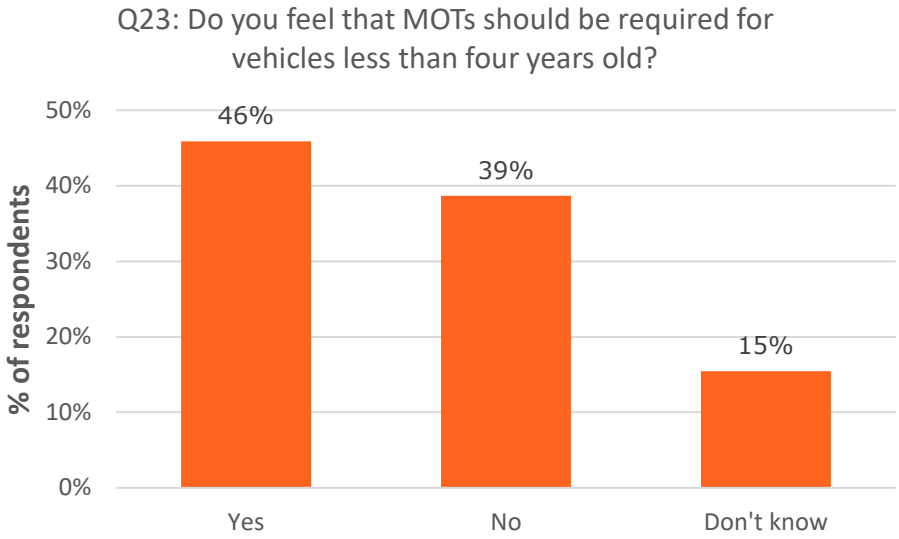

Figure 2: Proportions of the survey sample that believe the MOT should and should not be required for vehicles less than four years old

Further insight on this point is provided in Figure 3. Here, respondents were asked for their preference on MOT timing and frequency. They were presented with a range of options covering both the timing of the first MOT (after four years, after three years, and from the point of the vehicle's manufacture) and frequency of the MOT (annually, or every two years).

Most respondents selected one of the options that included an annual MOT (80%), with one fifth selecting an option with MOTs required every two years (20%). Among the latter group, the options that were selected the least were those requiring an earlier initial MOT – first MOT at three years (4%) and MOTs from the year of the vehicle's manufacture (3%). This suggests that there is a small group of people that would prefer less frequent and delayed MOTs.

The opposite trend appears when looking at those who selected an option with an annual MOT. Here, the most popular response was that of our current MOT system (first MOT at three years and then annually thereafter; 36%), suggesting that many people are happy with the current system and do not want any change in the frequency or timing. The second most popular response was one that increased the frequency of the MOT, requiring it from the point of the vehicle's manufacture (27%). This shows that a quarter of the sample liked the idea of MOTs being required more frequently.

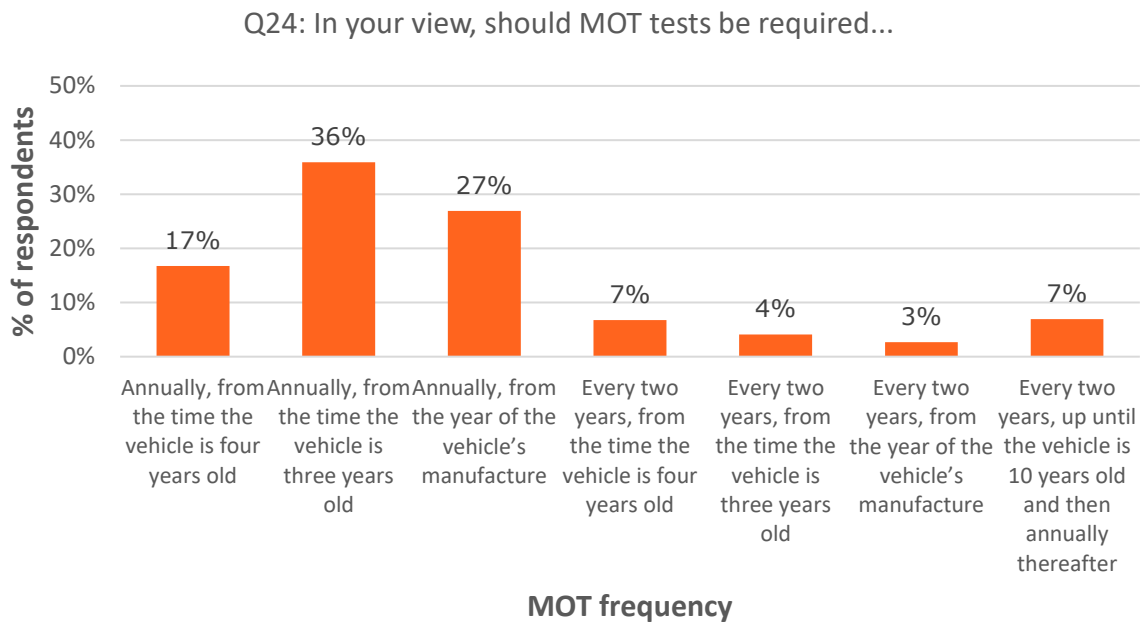

Figure 3: Survey sample response rates to different MOT frequency options

Respondents were asked to briefly explain why they selected the option that they did. Their explanations can be loosely separated into two groups.

The first group, which makes up the majority, were those who responded with 'annually' either from the time the vehicle is three years old or from its manufacture date. Their reasoning being based on the understanding that the MOT is a necessary test for ensuring the safety of vehicles on the road, and the current MOT system appears sufficient in achieving this.

> *"Current MOT and frequency seem to be doing the job it was intended to do. No system is perfect, and I doubt that increasing the frequency of the test would make a significant difference." – Respondent who responded with 'Annually, from the time the vehicle is three years old'.*

> *"Annual MOTs are essential to ensure the vehicle's road worthiness." – Respondent who selected 'Annually, from the time the vehicle is three years old'.*

Many respondents in this group also recognised that even new cars can develop faults, justifying a rationale for an earlier first MOT date.

> *"Cars can have faults at any time, even brand-new cars." – Respondent who selected 'Annually, from the year of the vehicle's manufacture'.*

The minority group, those who preferred less frequent MOTs or later first MOT, felt that MOTs are too frequent – particularly when considering the improved standards of modern vehicles.

> *"4 years is soon enough for a new car and things are rarely found and so every two years is sufficient." – Respondent who selected 'Every two years, from the time the vehicle is four years old'.*

Some also raised issues with the costs and time required of having an annual MOT to justify less frequent MOTs.

> *"Annually is too frequent, costs money & time for very little annual wear." – Respondent who responded with 'Every two years, from the time the vehicle is three years old'.*

However, it should be recognised that those in the minority group do not appear to consider the role that the MOT plays in maintaining road-safe vehicles (despite most of the sample agreeing that the MOT helps to keep unsafe and polluting vehicles off of roads; see Figure 4 below). Instead, these responses suggest that many people simply find the MOT to be an inconvenience and would rather not have to deal with it every year; however, it is unclear whether this is truly the case.

Figure 4 shows that almost the entire survey sample agreed or strongly agreed that the current MOT system helps prevent the use of unsafe and polluting vehicles on public roads (92%). Only 2% of respondents did not agree that the MOT provided these benefits, two of whom strongly disagreed. Broadly speaking, this finding would suggest that people recognise the role that the MOT plays and that it is a necessary measure in helping to maintain road safety.

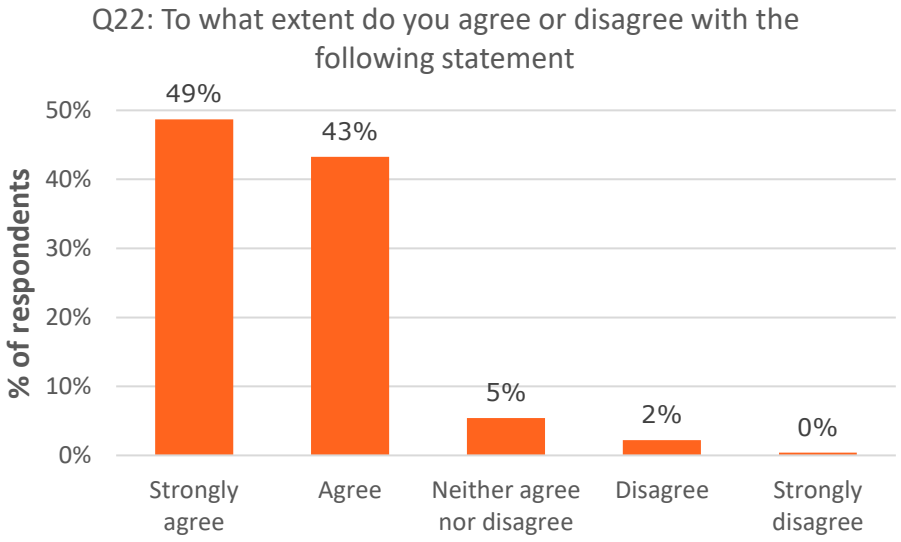

Figure 4: Extent to which the survey sample agreed or disagreed with the following statement: 'The MOT helps to prevent the use of unsafe and/or polluting vehicles on public roads'

Survey respondents were asked what changes they would make to the MOT test. They were presented with a list of options which are shown in Table 1, along with the percentage of respondents that selected that option. Note that respondents could select multiple options, so the total percentage of respondents shown in the right-hand column exceeds 100%.

Table 1: Response rates to the presented changes to the MOT

Desired change to the MOT	% of respondents
Greater focus on testing the main failure items (brakes and tyres)	72
Greater focus on testing in-vehicle safety technologies (e.g. autonomous braking systems)	39
Greater focus on testing emission control technology	36
Redefining the minimum standards for vehicle advisories	22
Greater focus on testing noise emissions	13
Greater focus on testing of window tinting	11
Other	2
Don't know	19

Respondents were then asked to briefly explain why they made the choices that they made (if any). Explanations largely highlighted the importance of focusing on vehicle components that are critical to safety – those that could result in fatal consequences if they were to fail. This applied to main safety items as well as in-vehicle safety technologies.

> *"It would make sense to give a greater focus to the most important aspects of a cars function."*
>
> *"The core and main features that are very high risk to the core parts of a car e.g., the engine and brakes should be tested over aesthetics such as window tinting."*

Some even raised concerns that the current MOT system is not keeping up-to-date with advances in vehicle technology. It is worth noting that the current programme of work on the MOT system is intended to help in modernising the MOT system to account for these technological developments.

> *"More technologies are being introduced to cars and vehicles, with such increasing complexity I believe checks should be more comprehensive and frequent."*
>
> *"I am not sure the MOT is keeping up with the new technology."*

Concerns over the climate crisis and the recent emissions scandals were also raised among the sample as justification for giving more attention to emissions testing. This is another element which is intended to be addressed by the current programme of work.

> *"Reducing emissions is crucial for the fight against climate change."*
>
> *"To be fair I don't know to what extent the current testing goes into but the scandal from few years ago on emissions still leaves a bad taste."*

Though not selected by many respondents, frustrations were raised over 'boy racer' type vehicles as justification for giving more attention to testing noise emissions and window tinting. Given the reputation of this demographic, being associated with high-risk and criminal driving behaviour, it is understandable why some would look to the MOT as a means of clamping down on this kind of behaviour.

"Noisy vehicles are a particular problem in urban environments and the current MOT fails to address the problem. Window tinting affects the ability of the car driver to properly observe on the road but also causes problems for the police and other road users to observe what other drivers are doing. The MOT does not seem to have defined criteria for noise or window tinting."

Lastly, there was a mix of opinions reported regarding the current standard of the MOT, with some commenting that they are satisfied with the current system while others felt that certain advisories and minors could be recategorized.

"Some advisories should be made mandatory."

"Some of the advisories can be quite major faults and they should be corrected when identified."

Figure 5 shows how satisfied and unsatisfied respondents would be if the MOT frequency was to be reduced. Opinions are split, though more respondents stated that they would be unsatisfied with this (44%) compared to those who would be satisfied (34%). One fifth of the sample did not feel strongly in either direction (20%).

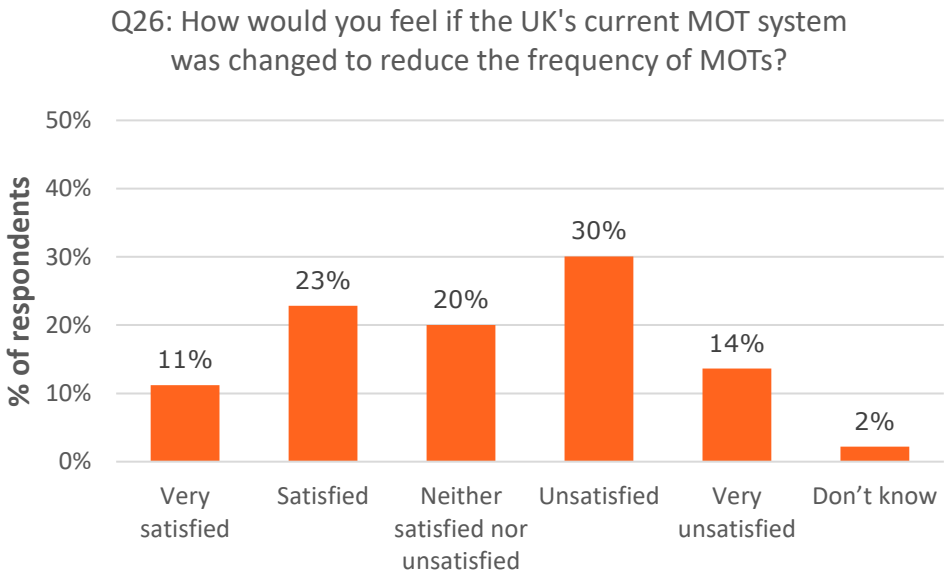

Figure 5: Satisfaction levels for if the MOT frequency was to be reduced

Respondents were asked to briefly explain why they selected the option that they did. Explanations are similar to those given to the previous question, so again can be loosely split into two groups.

The first group captures those who felt unsatisfied with the idea of an MOT system with reduced frequency largely highlighted the concerns that it would negatively impact vehicle safety. Specifically, it was understood by some that reducing the frequency of MOTs may risk some vehicles going with an unrecognised fault for up to two years.

"A car can deteriorate a lot in one year let alone two years, faults need picking up as quickly as possible." – Respondent who selected 'Unsatisfied'.

"Faults that cause risk to other road users and the driver of the car would increase and go uncorrected with a 2-year regime." – Respondent who selected 'Very unsatisfied'.

Response from those who would be satisfied with a reduced MOT frequency show that people like the idea of a reduced frequency for the financial savings, and the stress associated with any unplanned maintenance costs. Some even recognised that this would likely have a negative impact on vehicle safety.

"It would certainly relieve some financial strain but ultimately lead to a drop on vehicle safety standards." – Respondent who selected 'Satisfied'.

"It would be helpful in terms of costs, but I would like to know if my car is safe more often than every two years." – Respondent who selected 'Neither satisfied nor unsatisfied'.

Though opinions were mixed towards the idea of an MOT system with a reduced frequency (Figure 5), most people in the sample generally believed that the safety standards of vehicles would drop if MOTs were less frequent (69%; Figure 6). Only 8% of the sample believed that vehicle safety standards would improve if MOT frequency was reduced. However, a little over one fifth of the sample did not feel it would affect vehicle safety standards (22%).

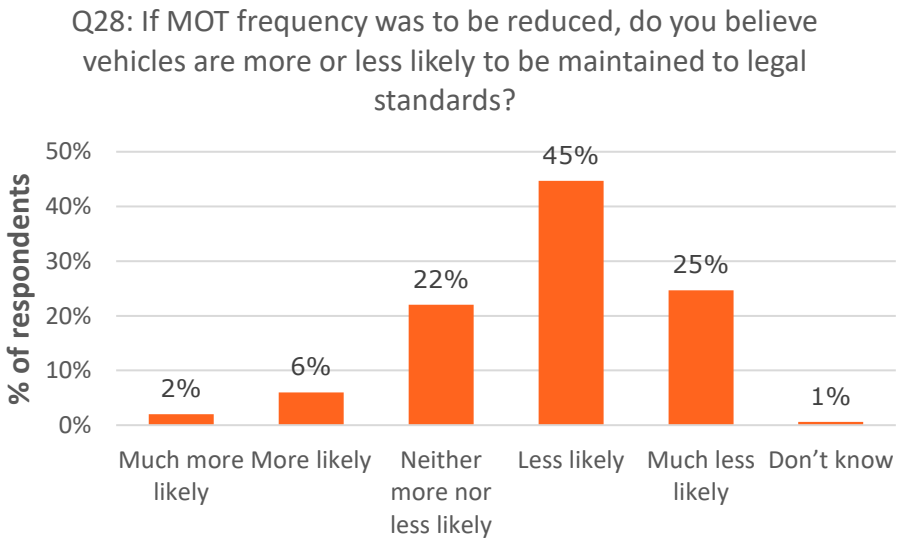

Figure 6: Survey sample's ratings of the likelihood of vehicles being maintained to legal standards under an MOT system with reduced frequency

Maintenance behaviours and their relationship with the MOT

Key findings:

- Participants typically reported regularly checking their vehicle's tyre pressure and tyre wear; though reported a greater level of confidence in checking the former.
- Most of the survey respondents (67%) align their vehicle service with their MOT, suggesting the MOT is often used as a trigger point for undertaking regular vehicle maintenance.
- Most of the survey respondents (70%) reported that they would maintain regular vehicle servicing if the MOT frequency was to be reduced; with older age groups (>55 years old) and newer vehicle owners (vehicle age <3 years old) being more likely to report maintaining regular servicing.
- Over half of the sample (57%) reported that they would address a malfunction indicator light (MIL) either immediately or as soon as possible, with the remaining sample potentially leaving a MIL to go unaddressed for an "unsafe" period of time.
- Older age groups (>45 years old) would appear more likely to find out what a MIL means before deciding how to act on it.
- Most respondents reported that they would address MOT advisories (66%) and minors (73%) either immediately or within 1-2 weeks.

Regards performing vehicle checks, respondents were asked how often they check their vehicle's tyre pressure (Figure 7) and wear (Figure 8). Comparing the results to both questions it can be seen that they follow a very similar trend, with the majority of respondents reporting that they regularly check their vehicle's tyre pressure (57%) and tyre wear (48%).

When performing a Kendall Tau test, there was found to be a statistically significant difference between age groups on tyre pressure (p-value < 0.001) and tyre wear (p-value < 0.001) checking behaviours, though the effect size is defined as weak in both cases (tyre pressure = 0.13; tyre wear = 0.18). Due to the nature of the data and the statistical test that was able to be conducted on it, it is not possible to identify exactly where the significant differences lie between specific age groups. However, the pattern of data suggests that vehicle checks are more common among older groups compared to younger age groups.

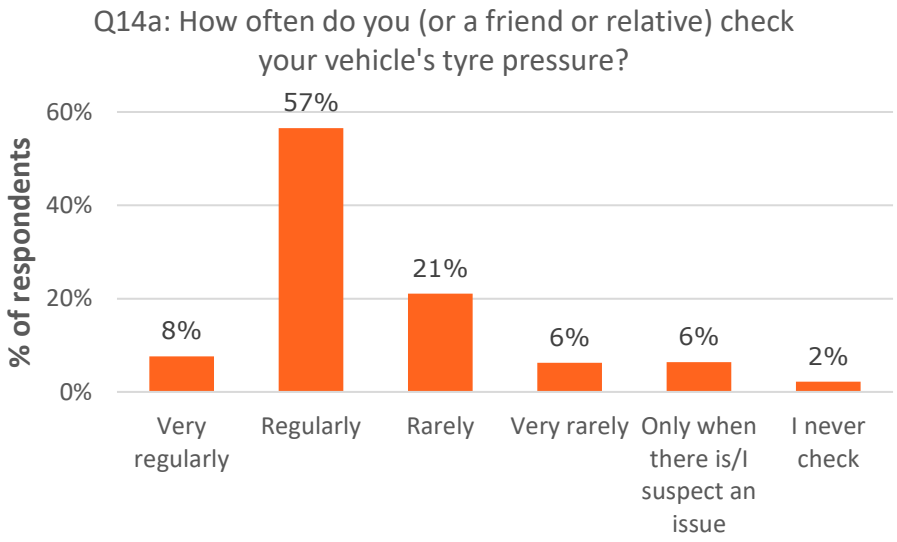

Figure 7: Regularity of checking tyre pressure among the survey sample

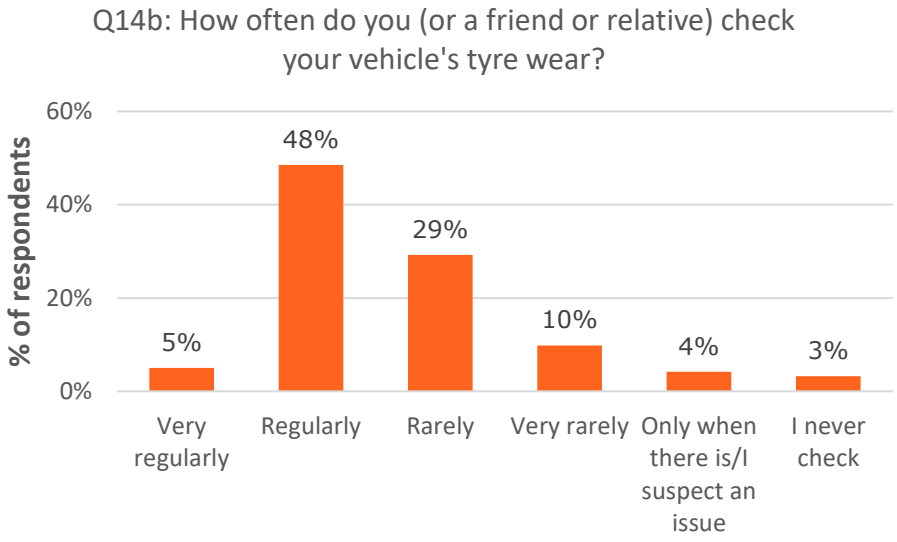

Figure 8: Regularity of checking tyre wear among the survey sample

It is worth noting that checks of tyre pressure were reported as more regular than tyre wear, likely because a check of tyre pressure can be done with a quick glance at the vehicle's wheels. The prevalence of tyre pressure monitoring systems, which are now mandatory in modern cars, also means people will be made more aware of issues with pressure compared to wear. In addition, a check of a vehicle's tyre wear may require a greater level of knowledge around tyres and minimum tread limits, and would require a tyre depth gauge which are not typically available at fuel stations, unlike pressure gauges.

This latter point is supported by the difference shown between Figure 9 and Figure 10. Here we can see that more respondents reported being 'very confident' in their ability to check tyre pressure (50%) compared to tyre wear (35%). Furthermore, more people reported

being ‘somewhat confident’, ‘neither confident nor unconfident’ and ‘somewhat unconfident’ when asked about tyre wear when compared to tyre pressure.

When performing a Kendall Tau test, there was found to be a statistically significant difference between age groups on confidence in checking tyre pressure (p-value < 0.001) and tyre wear (p-value < 0.001), though the effect size is defined as weak in both cases (tyre pressure = 0.18; tyre wear = 0.18).

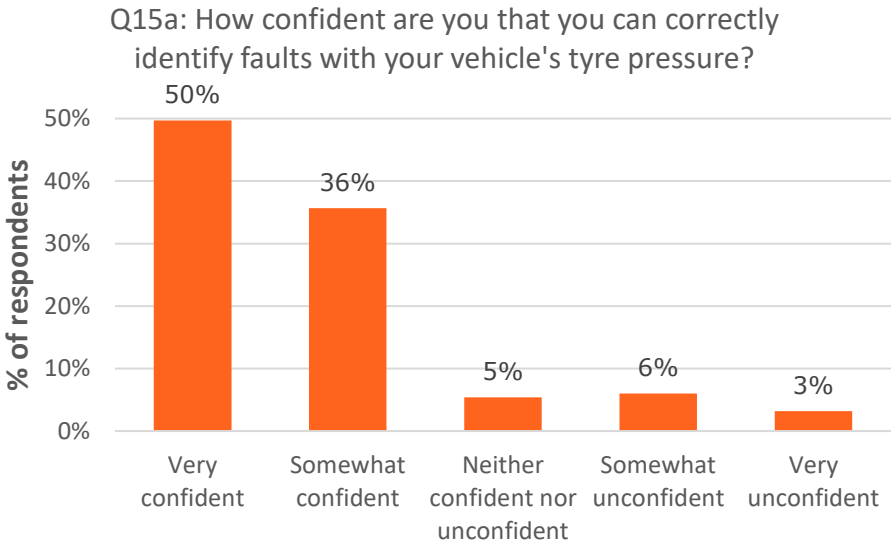

Figure 9: Respondents' reported confidence in their ability to check their vehicle’s tyre pressure

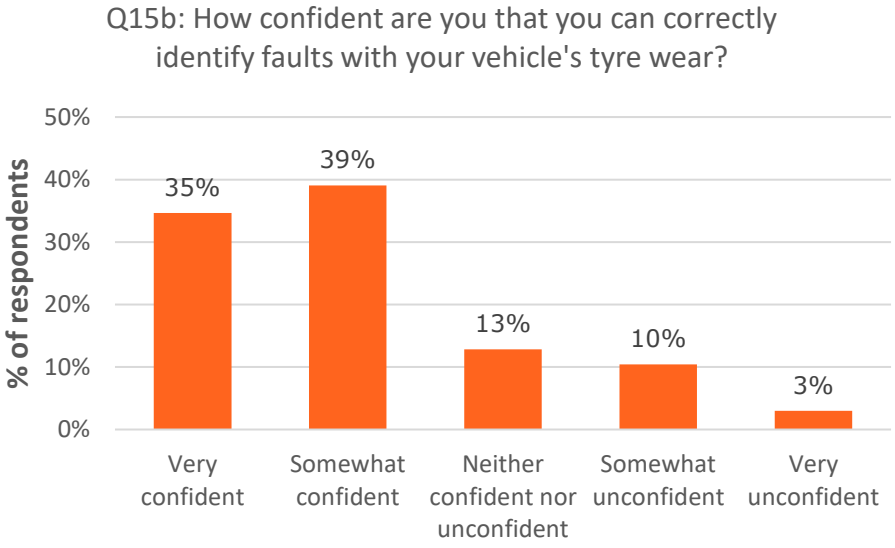

Figure 10: Respondents' reported confidence in their ability to check their vehicle's tyre wear

Respondents were also asked when they typically get their vehicle serviced in relation to their MOT (Figure 11). Many reported getting their vehicle serviced either at the same time as their MOT (43%) or just prior to getting their MOT (24%). This suggests that many people may use the MOT as a trigger point for undertaking regular vehicle maintenance.

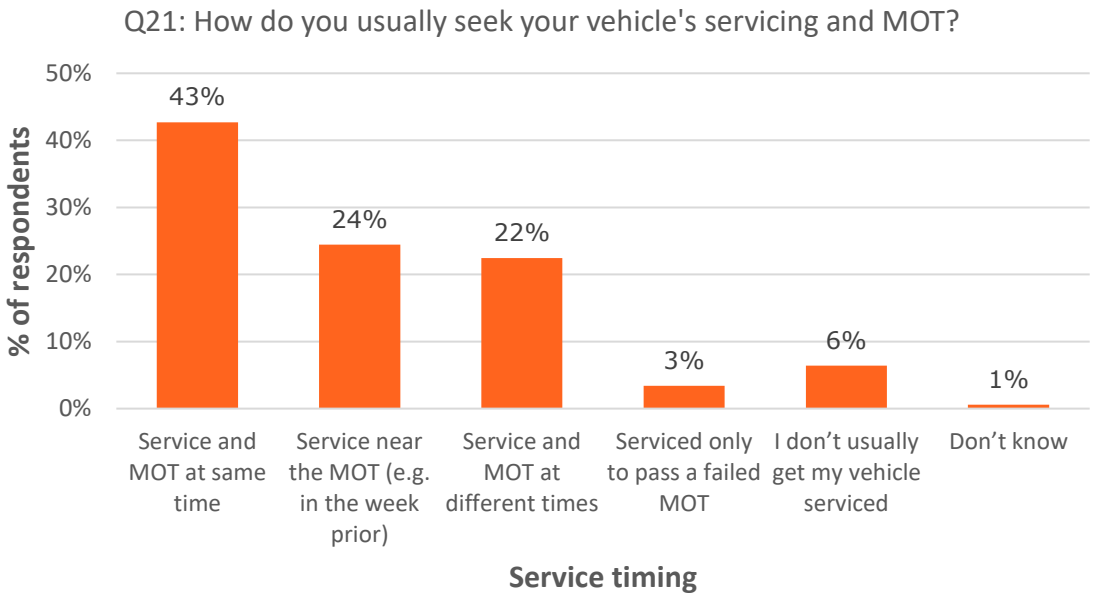

Figure 11: Responses rates for when survey respondents typically have their vehicle serviced

A series of chi-square tests were conducted on these data to assess comparisons between different groups. Statistically significant differences were found when comparing between:

- age groups (p-value = 0.003; moderate effect size of 0.15).
- income groups (p-value = 0.02); strong effect size of 0.19).
- vehicle age groups (p-value < 0.001; strong effect size of 0.17).
- vehicle mileage groups (p-value < 0.001; strong effect size of 0.17).

Due to the nature of the chi-square test and the available data, it is not possible to determine exactly how the groups differ (for example, if older people are more or less likely than younger people to get their vehicle serviced at the same time as their MOT). It has only been possible to determine that statistically significant differences exist within the demographic groups listed above.

Figure 12 shows respondents' reported likelihood of maintaining regular vehicle servicing under an MOT system with reduced frequency. Most reported that they would be either very likely (45%) or likely (25%) to maintain regular servicing. This is compared to the minority of people who reported being either very unlikely (3%) or unlikely (13%) to continue servicing their vehicle under a reduced MOT frequency.

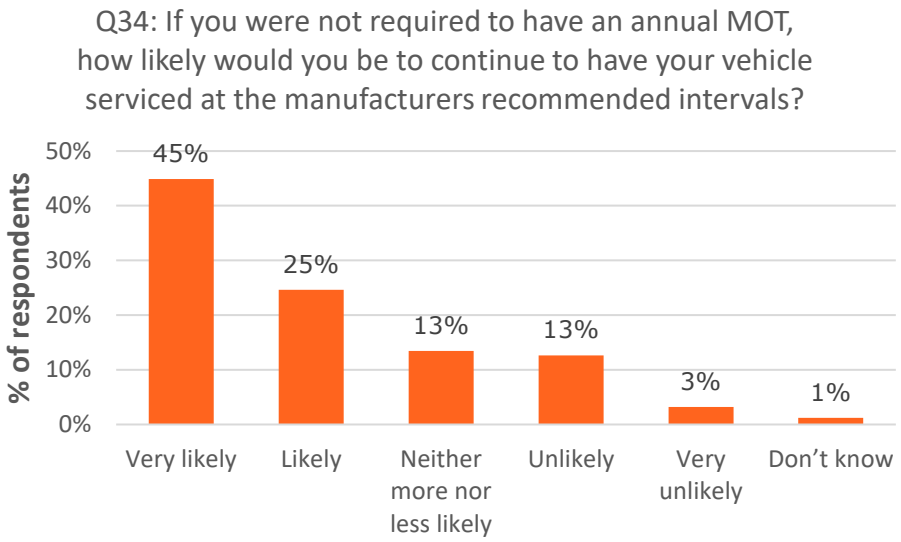

Figure 12: Respondents' reported likelihood of maintaining regular vehicle servicing if the MOT frequency was to be reduced

Figure 13 shows the same data compared by age group. When performing a Kendall Tau test, a significant difference was found between age group on respondents' likelihood to continue regular vehicle servicing even if the MOT frequency was to be reduced (p-value < 0.001), though the effect size is defined as weak (0.19). Compared to younger age groups, older age groups (>55 years old) show a greater portion of respondents reporting that they would be very likely to maintain regular vehicle servicing if the MOT frequency was reduced.

No significant differences were found when comparing the same data between different employment groups, or income groups.

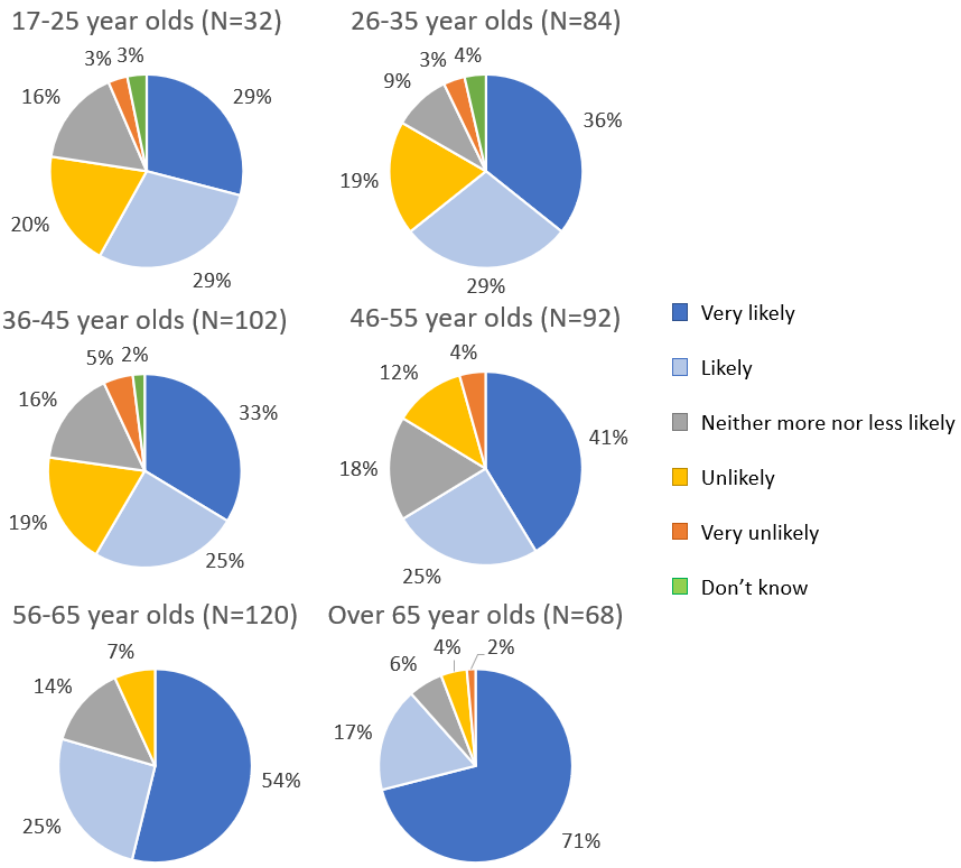

Figure 13: Respondents' reported likelihood of maintaining regular vehicle servicing if the MOT frequency was to be reduced compared by age group

Figure 14 also shows the same data, this time compared by vehicle age group. When performing a Kendall Tau test, a significant difference was found (p-value < 0.001), though the effect size is defined as weak (0.14). The difference was also found to be significant when comparing between vehicle mileage (p-value = 0.008), though the effect size is defined as very weak (0.09). The spread of data suggests that those with newer vehicles are more likely to maintain regular servicing.

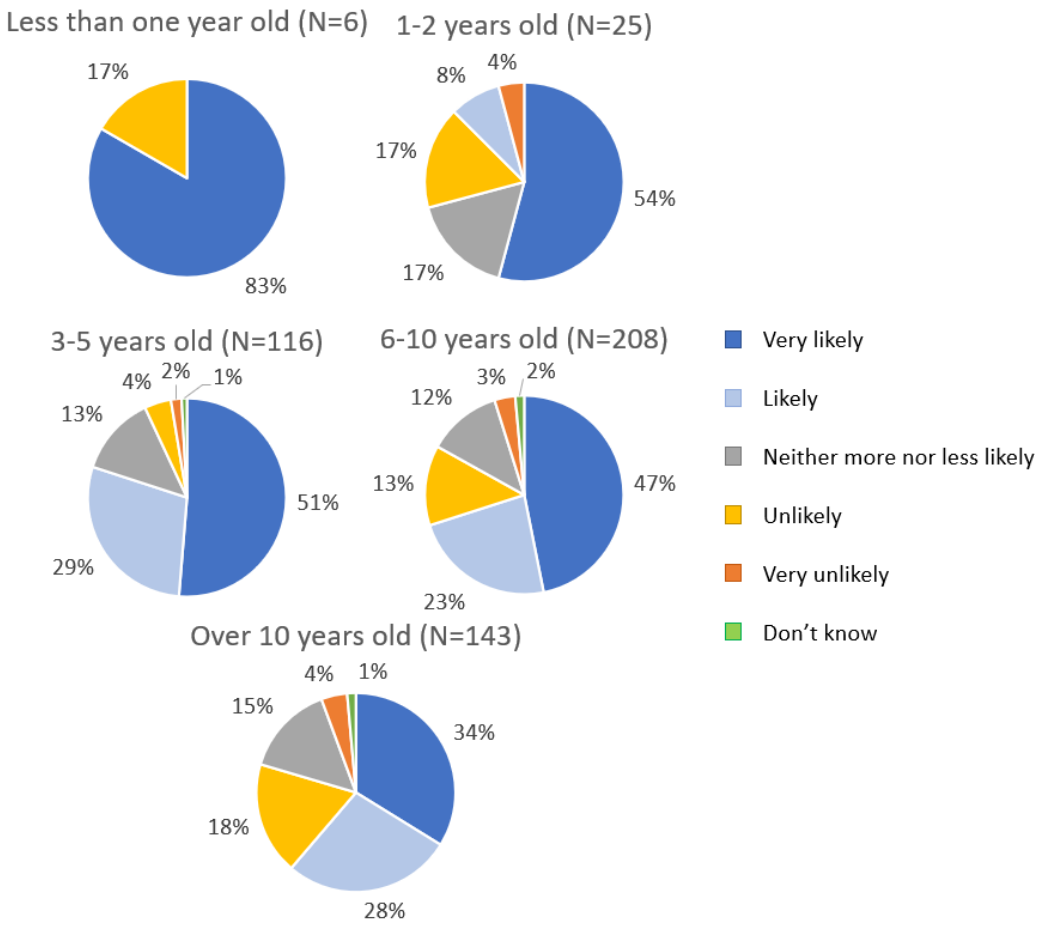

Figure 14: Respondents' reported likelihood of maintaining regular vehicle servicing if the MOT frequency was to be reduced compared by vehicle age group

Figure 15 shows how respondents reported they would respond when presented with a MIL on their dashboard. It was specified that the fault associated with the MIL did not affect the control of the vehicle, nor had any associated visual (e.g. smoke) or audible (e.g. rattling) problems. The options presented to respondents can be categorised into "safe" responses (the three leftmost columns of Figure 15), and "unsafe" responses (the three rightmost columns of Figure 15). In this context, "safe" refers to an option in which the vehicle fault is addressed quickly, while "unsafe" refers to an option in which addressing the fault is delayed (approximate timings were presented to participants alongside each response option, which can be seen in Appendix C).

Most respondents (59%) opted for a "safe" option, suggesting that this majority group would aim to address the fault in no longer than a day. Regards the "unsafe" options, the most common response overall was to continue using the vehicle aiming to resolve it reasonably quickly (i.e. by the end of the week; 30%). Taken at face value, this would suggest that there are many people who willingly choose to operate a vehicle with a known fault, potentially causing further damage to their vehicle and posing a road safety risk.

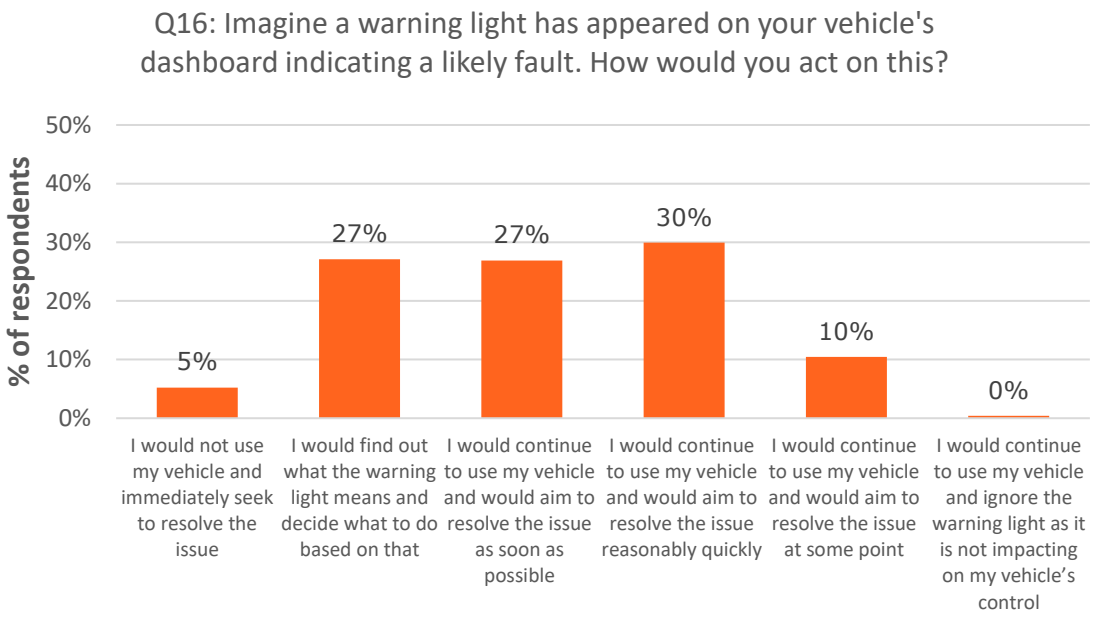

Figure 15: Respondents' reported response to having a MIL appear on their dashboard

Figure 16 shows the respondents' reported response to having a MIL appear on their dashboard compared by age group. When performing a Kendall Tau test, there was found to be a statistically significant difference between age groups on the response to a MIL (*p*-value = 0.04), though the effect size is defined as very weak (0.08). Compared to younger age groups, older age groups (>45 years old) show the greatest portion of individuals who would reportedly find out what the warning light means before acting on it.

No significant differences were found when compared between different vehicle age groups, nor vehicle mileage groups.

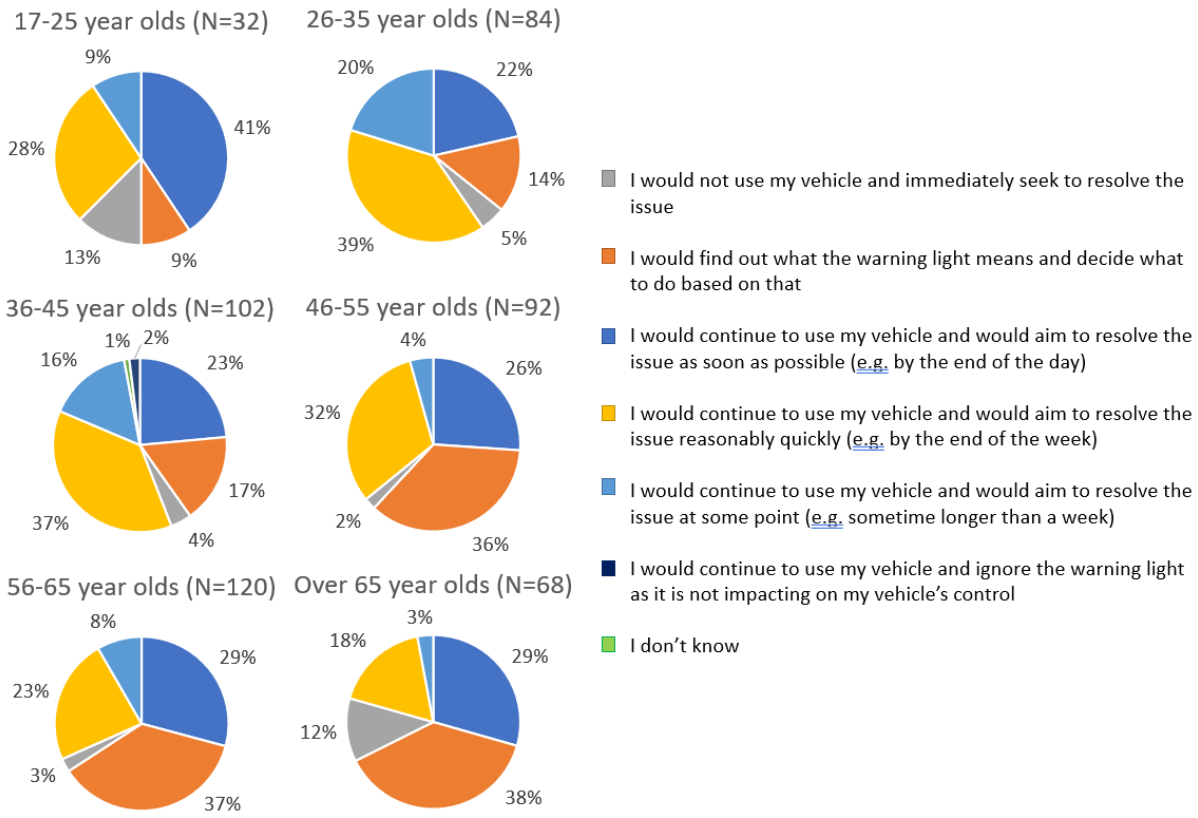

Figure 16: Respondents' reported response to having a MIL appear on their dashboard compared by age group

Figure 17 and Figure 18 show respondents' reported response time to addressing advisories and minors that are raised from an MOT, respectively. Advisories are not set in legislation and refer to component faults that are not currently defective (and therefore do not warrant failing an MOT test) but show sufficient wear to suggest that the component will need to be repaired/replaced before long. Minors are set in legislation and refer to vehicle defects that are not severe enough to fail the test, but should be repaired soon[5]. Both figures show very similar trends. Respondents most commonly reported that they would immediately address advisories (37%) and minors (39%). If not immediately, then it was likely that they would address advisories (29%) and minors (34%) within 1-2 weeks. Few people would leave advisories (4%) and minors (3%) for up to a year, with fewer reporting that they would not address them at all (Advisories – 1%; Minors – 2%).

[5] https://www.gov.uk/government/publications/mot-changes-from-may-2018-guidance-for-mot-testers/other-important-information-for-mot-testers

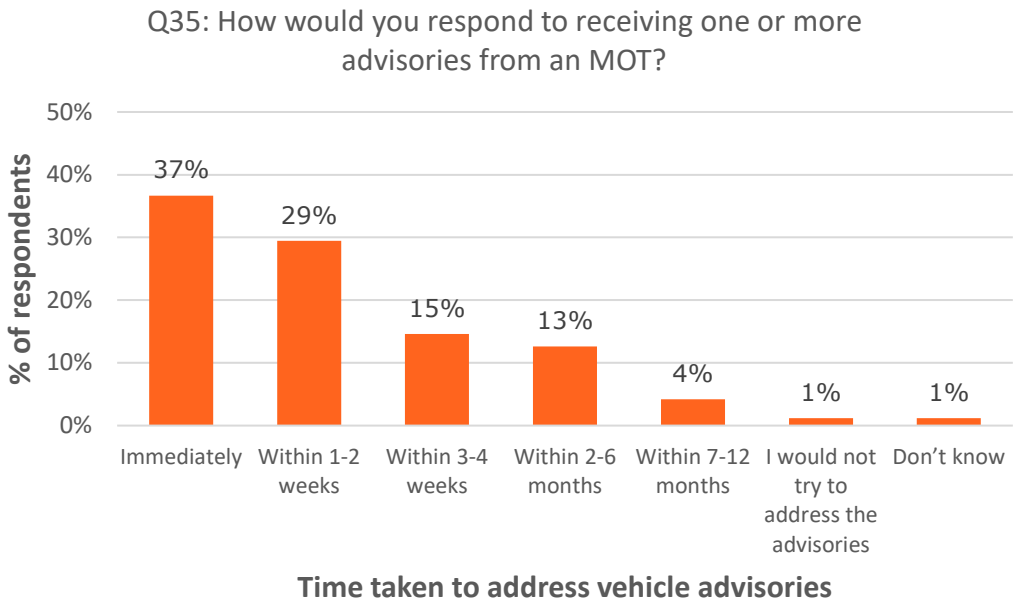

Figure 17: Respondents' reported response time to addressing one or more advisories from an MOT

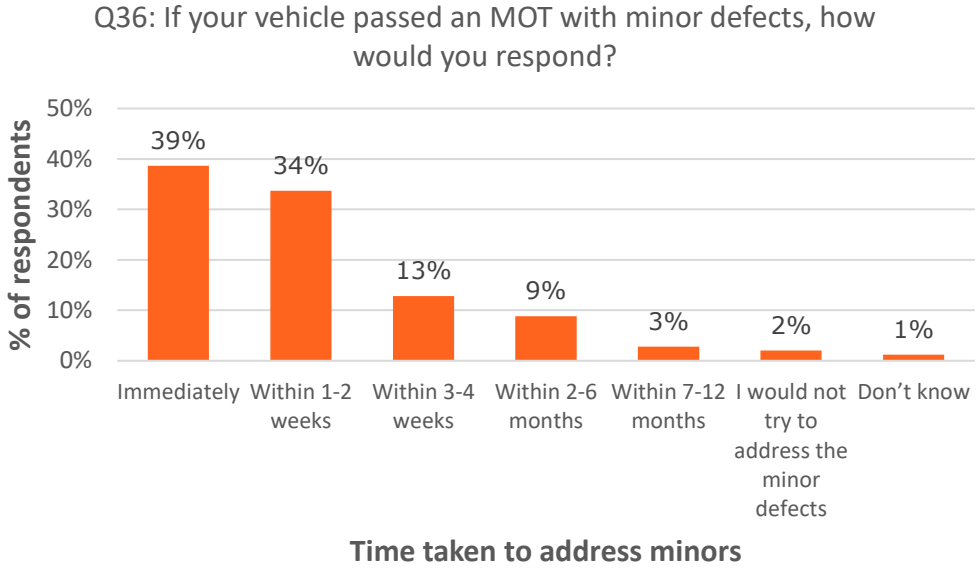

Figure 18: Respondents' reported response time to addressing one or more minors from an MOT

Kendall Tau and Kruskal-Wallis tests were conducted on these data as appropriate to assess the difference between different groups. With regards to age group (p-value < 0.001), employment status (p-value < 0.001), and household income (p-value = 0.02), differences were only found to be statistically significant in relation to the time taken to address minors. With regards to vehicle age group (p-value = 0.001) and vehicle mileage (p-value = 0.02), the

reverse is true as differences were found to only be statistically significant on the time taken to address advisories. However, the effect sizes for all of the above ranged between weak and very weak (0.01-0.19).

3.3 Discussion

There are a few key findings that can be drawn from the survey results. One of the focus areas of the survey was to assess how people would feel about a change to MOT frequency and timing. Though there was no leading consensus among the survey sample, it would appear that – generally speaking – most people would be against reducing the frequency of the MOT for concerns around safety. Where people would like the MOT frequency to be reduced, their reasons appear to largely be based on a preference for avoiding the hassle associated with it (e.g. costs, time requirement) without much consideration for the wider impact on vehicle safety.

With regards to the timing of the first MOT, opinions appear mixed with some believing that new cars are not in need of an MOT within the first few years of a car's lifespan, and others believing that even new cars are susceptible to faults. This latter point has been supported by the other work packages of this wider programme of research, showing that safety critical items – namely brakes and tyres – can need maintenance within a vehicle's initial years. Greater focus on assessing the most safety critical items such as these was also highlighted as the most preferred change to the MOT.

Regarding vehicle maintenance, respondents largely reported that they do perform regular vehicle checks, have a reasonably good understanding of vehicle warning lights, and typically address vehicle faults in a reasonable time. However, it cannot be ignored that there is a group of individuals who appear to not actively maintain their vehicle, show poor understanding of vehicle warnings, as well as a willingness to neglect vehicle faults. Based on the analysis conducted here, this group would appear to consist of younger motorists and those with older vehicles (though the limitations of this study's analysis must be acknowledged when interpreting this finding). This group should therefore be given consideration when proposing any changes to the frequency of the MOT, as they could present a potential safety risk if they are neglecting their vehicles.

It must also be highlighted that the approach used in the survey meant that the responses given by respondents are self-assessments of their own ability. Although steps were taken in the design of the survey and topic guide to mitigate any risk of bias, participants' ability to accurately assess their own ability can still be criticised. As such, the results from any self-assessment questions may not quite reflect reality. A more objective assessment of people's vehicle maintenance behaviours would allow for more robust findings to be drawn, though the logistics of conducting such an investigation would be difficult.

The findings drawn here have been explored further within the subsequent focus group task.

4 Task 3: Focus groups

The third and final task of the behavioural insights work was a series of focus groups conducted to allow for a more detailed exploration of the findings drawn from the survey. Focus groups allow for interactions to happen between multiple participants, generating a deeper discussion and allowing for richer insight compared to the individual responses collected by the survey. Findings drawn from the focus group discussion can therefore help to better understand the survey data.

4.1 Method

Four online focus group sessions were conducted between the 5th and 9th of June 2023 with members of the UK public. Each session lasted approximately 90 minutes. The focus groups were designed to gain an in-depth understanding of the UK public's vehicle maintenance behaviours and attitudes towards the current and potential future MOT testing system, beyond that captured by the survey task.

A total of 21 participants across four sample groups took part in the sessions. This included: four young people (aged 18-30 years), five older people (aged over 50 years), seven new vehicle owners (vehicle age less than four years old), and five old vehicle owners (vehicle age over 10 years old).

Data collected from the focus group sessions were analysed to draw out common themes present in participant responses. Themes were compared across the sample groups to identify if and where behaviours and attitudes varied based on the age of the participants or the age of their vehicles. Key themes and findings were discussed within the research team to reach a consensus on the final themes. Further details on the approach taken to conduct the focus groups is provided in Appendix E.

4.2 Findings

The findings drawn from the focus groups are presented in the subsections below, structured around the sections of the topic guide. A brief summary of the demographics of participants in each focus group session is also provided.

Demographics

In total, 21 participants took part in the online focus groups.

- Focus group 1 consisted of participants with vehicles aged between 1 and 4 years old. Seven participants attended this session (4 females and 3 males).
- Focus group 2 consisted of participants aged 50 and over. Five participants attended this session (4 females and 1 male).
- Focus group 3 consisted of participants with vehicles aged over 10 years. Five participants attended this session (2 females and 3 males).
- Focus group 4 consisted of participants aged between 17 and 30. Four participants attended this session (2 females and 2 males).

Vehicle maintenance behaviours

Key findings:

- Focus group participants who reported being less knowledgeable about vehicles relied on MOTs, services, and car diagnostic systems to understand the health of their vehicle.
- Overall, participants reported being generally confident doing basic checks of fluids, lights, and tyres, or knew someone that could help them.
- Most participants were aware of red malfunction indicator lights (MILs), though showed less awareness of the penalties you could receive for driving an unsafe vehicle.
- Participants' current finances, the perceived severity of a vehicle issue, and the distance to a trusted garage were raised as the main reasons for delaying vehicle maintenance.

Vehicle maintenance check frequency:

Many participants reported relying on MOTs and services to pick up on issues with their vehicle. Those with newer cars also said that they rely on their vehicle's systems alerting them of specific faults (e.g. tyre pressure), rather than performing checks themselves. Across all focus groups, almost all participants reported doing checks on their vehicle before a long journey, suggesting this may act as a trigger point for vehicle maintenance for many. Among those that reported regularly checking their vehicle, their focus was on oil and washer fluid levels as well as tyre pressure and wear.

> *"I have to say that I largely rely upon the fact that my car will let me know if anything's not right."* – Group 1 participant (vehicle age of between 1 and 4 years)

> *"I do occasionally go on long journeys down to Devon and I would make sure the oil and the water, and the tyre pressures were reasonable."* – Group 2 participant (aged 50 years and over)

Vehicle maintenance check confidence:

Older participants tended to be more confident due to having more driving experience or having owned a particular vehicle for a long time. Those with less confidence still felt they could check the basics, such as fluid levels, tyre wear, and lights. However, there were some maintenance checks, such as assessing tyre wear, that participants were less confident in being able to accurately assess so would rather leave it to a professional to check.

For those that had no confidence in their own ability, they typically waited until a scheduled MOT or service rather than undertaking regular vehicle maintenance checks themselves. Ultimately, most participants felt that if they were unsure about something they knew someone who they could ask or would search online for support with any issues.

> *"Yeah, I would say I was really confident, and I've got people I can ask if I was unsure about something."* – Group 1 participant (vehicle age of between 1 and 4 years)

Response to vehicle maintenance issues:

Participants reported often relying on other people to support with vehicle maintenance issues. This was most common among the female participants who typically showed reliance on their dad or husband. Where a person was not available to support, participants would tend to turn to online sources (e.g. web forums) for basic issues (such as fluid levels or tyre pressure) or take their vehicle to a garage if it was not a fix that they could do themselves.

> *"My granddad was a mechanic, so there's even a little bit of knowledge there and if not, my local mechanic lives along the road and I just text and say, 'Oh my God it's making a funny noise'"* – Group 4 participant (aged 17-30 years)

If a vehicle had an issue mid-journey, the length of the journey, the nature of the issue, and the distance from their home or a garage were reported to influence a participant's response. If the issue was not believed to be serious, participants felt they would likely carry on driving despite the fault.

> *"Yeah, I would probably finish that journey and then then look into getting it fixed"* – Group 1 participant (vehicle age of between 1 and 4 years*)*

If a MIL also had an auditory (e.g. rattling) or visual (e.g. smoke) symptom associated with it, or if the issue was affecting the control of the vehicle, participants reported being more likely to address the issue immediately.

> *"It depends if the light is like combined with like the steering feeling funny or a noise or something that kind of magnifies that and you know that there probably is a serious problem."* – Group 1 participant (vehicle age of between 1 and 4 years)

Familiarity with different MILs:

Focus group participants were shown the MILs displayed in Figure 19 and asked to state which ones they were familiar with. The 'engine oil warning light', 'engine management light', 'anti-lock brake system warning light', and the 'brake warning light' were the ones that participants were most familiar with. The 'diesel particulate filter (DPF) warning light', 'exhaust particulate filter warning light', 'electronic stability problem warning light', and 'brake pad warning light' were the ones that participants had least familiarity with.

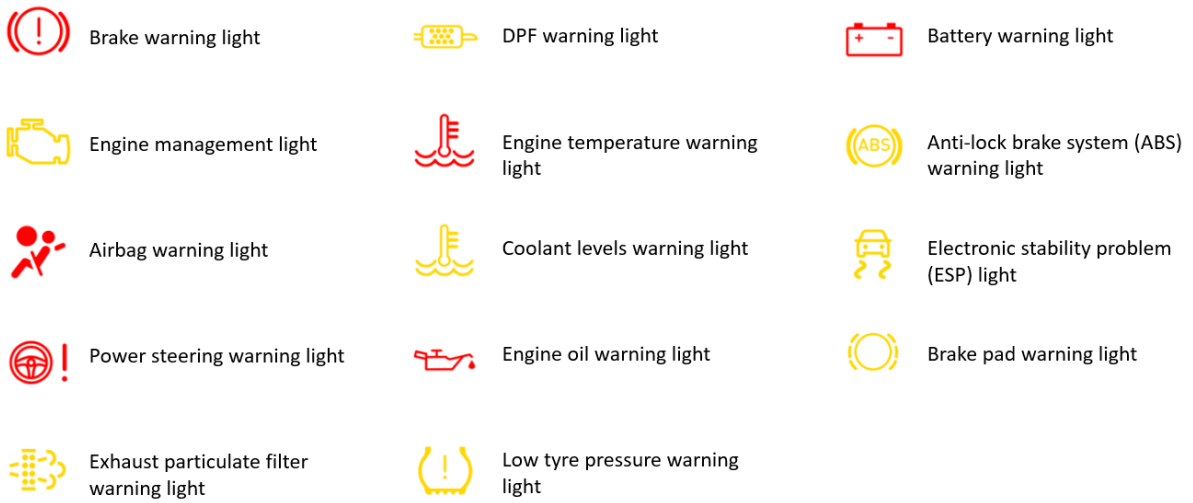

Figure 19: List of various Malfunction Indicator Lights (MILs) presented to participants for discussion

It was generally agreed that the red warning lights are likely to be the most urgent and suggests that you should stop the vehicle; in particular, issues relating to the vehicle's brakes, engine, air bags, and oil were judged to be the most critical.

> *"Red is obviously a serious warning for any of these. You'd be quite alarmed if you saw them on your dashboard"* – Group 3 participant (vehicle age over 10 years)

Only one participant across all focus groups showed an awareness of the penalties you could receive for driving a faulty vehicle. Participants discussed and agreed that it would be difficult to enforce this unless the vehicle was showing clear signs of a fault.

> *"Oh, I wasn't aware you could be fined. I was aware that your car can't proceed through an MOT with a warning light on your dashboard."* – Group 3 participant (vehicle age of over 10 years)

Factors that would delay resolving a vehicle maintenance issue:

Among the focus group participants, the cost of maintenance or repairs was the most commonly reported factor that would likely delay getting a vehicle issue resolved. If a participant believed the maintenance would be costly, but did not feel the issue needed immediate attention, they felt they would wait until the problem worsens or are better able to afford to costs.

> *"If the price of fixing it is costing more than my car, obviously I'm going to have to rethink and if it's something that can wait until I've got paid."* – Group 3 participant (vehicle age of over 10 years)

Other factors that would delay addressing a vehicle issue raised by participants included whether they were nearing the time of their vehicle MOT or service, whether it was a known issue already, and whether they believed the issue would resolve itself.

> *"If I knew it was coming up close to my MOT, I would leave it and just get it all done at the one time."* – Group 3 participant (vehicle age of over 10 years)

Reported trust in garages:

Most participants felt they had no reason to distrust their local garage or mechanic, often because it was someone they knew personally or had a reportedly good reputation. One participant even stated that they had never considered not trusting their mechanic and the outcomes of an MOT test and service.

> *"I trust mine. It is a local garage, and they have a good reputation to uphold."* – Group 2 participant (aged 50 years and over)

However, there were a few participants that did raise some concerns. Specifically, it was raised that some independent garages may be less regulated, and mechanics may take advantage of drivers who lack vehicle knowledge to charge them for unnecessary repairs.

> *"I used to go to independent garages but noticed that they rushed through the MOT because they want to get things done quickly. I feel more confident going to branch garages rather than independent places."* – Group 3 participant (vehicle age of over 10 years)

Views on the current MOT testing system

Key findings:

- Participants generally believed that the MOT prevents unsafe vehicles on the road, but not necessarily the number of polluting vehicles.
- Participants, particularly older vehicle owners, reported relying on the MOT as a check of their vehicle's health.
- Although most participants felt the MOT to be reasonably priced, concerns were raised around the standardisation of the process (i.e. consistency between garages).

The MOT's role in vehicle safety:

Participants agreed that the MOT helps to prevent the use of unsafe vehicles on the road. It was felt that the test involves lots of maintenance checks, particularly of safety-critical components (e.g. brakes, tyres), and can pick up on faults that the average person might not be aware of. Participants felt that the test provides reassurance that their vehicle is safe. The MOT was therefore believed to be the most failsafe way of identifying faulty vehicles, playing an important part in overall road safety.

> *"It's the most fail-safe way, really, of ensuring that the majority of unsafe defects and faults and polluting cars are caught."* – Group 1 participant (vehicle age of between 1 and 4 years)

However, views differed on whether the MOT helps in managing polluting vehicles. It was raised by some that older (and likely far more polluting) vehicles, such as classic vehicles and vehicles made before EU type approval rule changes, are actually exempt from MOT and emissions testing. Participants also questioned the standard of government guidelines around emissions testing, and whether ambiguity in these rules means there is inconsistency in the results of these tests. Ultimately, participants felt that the MOT test cannot improve the technology of a vehicle, particularly older vehicles, so had doubts around the test's ability to reduce the number of polluting vehicles on roads.

> *"Older vehicles are more polluting and there's only so much they can do."* – Group 4 participant (aged 17-30 years old)

Reliance on the MOT:

Across all groups, it was felt that people typically rely on the MOT as a check of vehicle safety, particularly among those of have poor knowledge of vehicle maintenance.

> *"I totally rely on it, unless you know about cars yourself it is what you rely on"* – Group 2 participant (aged 50 and over)

However, a small number of participants felt that the MOT is not a thorough enough assessment of the vehicle, focusing mainly on safety-critical elements, and so should not be solely relied on. Among these individuals, vehicle servicing was felt to be more useful measure of a vehicle's overall health.

> *"If you have an older car (over 10 years), an MOT isn't always the best gauge. For example, I've clocked over 80,000 miles, there are more things likely to go wrong."* –
>
> *"Servicing is more of an extended package and thorough check. MOT is more for safety, but service is performance [sic] and looking after the car rather than a legal requirement."* – Group 4 participant (aged 17-30 years old)

Issues with the current MOT system:

Participants felt the main issue with the current MOT system was a perception that the test is not consistent between different test centres. It was questioned how MOT centres get approved to run tests, and whether this is regulated. A few participants also reported experiences with inconsistent pricing of getting their vehicle MOT tested, which was felt to impact on their trust in garages if they should be performing a standard set of tests.

> *"You could go to Halfords and they can charge you. I don't know £35 for an MOT, but then if you go down the road they can charge you 60, like this should be just a standard right?"* – Group 3 participant (vehicle age of over 10 years)

Expanding on the point of trust, some groups concluded that dedicated MOT test centres may be the most trustworthy and likely to be impartial. This is compared to other garages that may try to take advantage of a person's lack of vehicle knowledge to sell more of their own maintenance services.

Nothing was raised among the groups to suggest that the MOT test was missing any content, and it was generally felt to cover all necessary vehicle checks.

Views on a potential changes MOT testing system

The last section of the focus groups looked at participants' views on a potential changed MOT system. Participants were presented with a hypothetical change in the MOT system to make it less frequent, being "first MOT at four years and every two years thereafter".

Key findings:

- Overall, participants were relatively comfortable with the MOT test not being mandatory for new cars until they are four years old, but most participants had concerns around the frequency after that point.
- Participants generally agreed that if the MOT test to be required every two years, it should only be up until a certain age (10 years was suggested), then annually thereafter.
- Most participants claimed they would check their vehicle more if MOT tests were less frequent.
- Participants across all focus groups agreed that vehicles would be less likely to be maintained to safe standards if the MOT test was less frequent.
- Participants typically felt that, compared to a vehicle's age, its mileage is a better gauge for when an MOT should be required.

Less frequent MOTs:

Many participants across all groups agreed that they would be comfortable with having the first MOT at four years, instead of three years. This was felt to be a reasonable timeframe as newer vehicles have in-built systems to recognise and warn of any issues.

> *"Would be ok with that – I think a lot of new cars have got good warranty and not every car needs to be MOT'd after 3 years."* – Group 2 participant (aged 50 years old and over)

However, many participants had concerns with the idea of reducing the frequency of the MOT test to every two years, fearing that it would negatively impact on safety. Participants highlighted that the MOT test not only reassures them of the safety of their own vehicle, but other motorists' as well.

> *"I wouldn't feel reassured about my own car and other people's cars if it was every two years. If the MOT was every two years, there should be regulations around*

making services mandatory every year." – Group 2 participant (aged 50 years old and over)

It was suggested that two years may be suitable for some newer vehicles up until the vehicle reached a certain age, before then requiring an annual MOT. However, it should be recognised that some participants still had concerns over the safety issues that a two-yearly MOT may cause.

"I would agree with two years for newer cars up to a certain age, and then annually for older cars." – Group 2 participant (aged 50 years old and over)

It was also raised that an MOT system that requires vehicles to be tested based their mileage may be more effective, with all groups highlighting that a vehicle's wear is determined by how it is driven.

"Mileage may be a fairer reflection of when an MOT should occur." – Group 3 participant (vehicle age of over 10 years)

Applying the same system to all vehicles:

Participants' opinions on this matter were mixed. Some felt that the MOT test should be performing the same checks on all vehicles. However, others felt that a 'one size fits all' approach to the MOT is not appropriate given the how vehicle's differ in model, age, and how they have been driven.

"One system doesn't fit all; I think there should be a sliding scale or adaption for different age of cars" – Group 2 participant (aged 50 years old and over)

One topic that was raised in all of the focus groups was the regulation of classic cars (a topic not considered or prompted by the researchers). Currently, vehicle owners do not need to get an MOT or pay road tax on vehicles registered over 40 years ago. Participants did not agree with this, particularly those in the two vehicle age focus groups (Group 1 and Group 3), who highlighted that classic cars should require the same testing as every other vehicle.

"If classic car drivers want to be on the road, they should be exposed to the same processes we are." – Group 3 participant (vehicle age of over 10 years)

Vehicle maintenance under a less frequent MOT:

Most participants claimed they would take more responsibility in performing vehicle safety checks in the absence of an annual MOT. However, a small group of participants admitted that they would be unlikely to start doing their own vehicle maintenance and would still wait until an MOT or service. Notably, a few participants stated they would alternate between getting an MOT and service each year, if MOTs were only required every other year. This approach was felt to give participants that regular reassurance they want around their vehicle's health.

"If they did MOT every 2 years, I would alternate the services to be in between those years." – Group 2 participant (aged 50 and over)

Overall though, participants strongly believed that vehicles would be less likely to be maintained to safe standards if the MOT frequency was to be reduced. Specifically, it was felt that less frequent MOT testing would lead to more cars being on the road that were unsafe and unroadworthy. Some even raised concerns that it might open up more opportunity for negligent motorists to get away without an up-to-date MOT certificate.

> *"it would be status quo, those who think they would get away with it will do it"* – Group 3 participant (vehicle age of over 10 years)

4.3 Discussion

The aim of the focus groups was to gain an in-depth understanding of the public's vehicle maintenance behaviours, their attitudes towards the current MOT system, and opinions on a potential changed MOT system with reduced frequency. Overall, discussions from all four focus groups sessions were fruitful, providing valuable information to the research questions.

The information collected from these focus groups aligns with that of the previous survey task. In short, participants showed a mix of attitudes towards an MOT system with reduced frequency, though the preference seems to lie more on the current system than a changed one. This being based on how many people use the MOT as a trigger point for undertaking regular maintenance on their vehicle. Without the MOT, these people would miss the reassurance it provides them on the safety and overall health of their vehicle.

Furthermore, it was felt by those in the group sessions that most people would not take on the responsibility of performing their own vehicle safety checks or maintenance in the absence of an annual MOT. However, data from the survey (Figure 12) and thoughts from focus group participants suggest that motorists may become more reliant on regular vehicle servicing as a way of getting some reassurance that their vehicle is safe.

When discussing issues that people have with the current MOT system, it is worth noting that these also aligned with what was raised during the survey task. However, here it was possible to draw out more detail on what issues are most and least concerning to drivers – at least among those within the focus groups. Specifically, the consistency of testing between different garages appeared to be the leading issue, with the associated costs and trust in garages being of lesser concern. Generally speaking though, it appeared that most people in the focus groups were reasonably happy with the current MOT, with the overall attitude seeming to reflect that it is fit for purpose. It is possible that these points may not have been raised at all if participants were not asked directly to think of issues they had with the current MOT system.

One point to note when considering these findings is that the participants who attended the focus group sessions did so voluntarily. It is therefore possible that some of the attendees took part in these sessions because they had a particular interest in the topic and therefore their attitudes may not reflect that of the wider population. However, based on how the focus groups findings align with those from the survey task (which had a far larger sample), this is not believed to have been the case – or at the very least, has not had a significant impact on the overall findings.

5 Conclusions

This report has detailed the three tasks that have made up the behavioural insights work of the wider programme of research investigating potential changes to the MOT system used in the UK. This behavioural investigation has had to primary purposes: the first was to understand how vehicle keepers would respond to a change in MOT test frequency in terms of maintaining the roadworthiness of their vehicle, and the second was to understand how vehicle keepers typically respond to automated warning messages (i.e. malfunction indicator lights) in terms of maintaining the roadworthiness of their vehicle.

In section 1 of this report, a set of questions was listed which this work sought to answer. To explore these questions, a review of international evidence, a UK-wide public survey, and a series of focus groups with members of the UK public were undertaken. The findings drawn from these three tasks have allowed for rich, evidence-based conclusions to be drawn, summarised as follows:

Test frequency

What relationship exists between the MOT and vehicle maintenance?

Many people in the UK reportedly rely on an MOT as a check of their vehicle's overall health, with many taking the regular scheduling of an MOT as an opportunity to undergo a service and address vehicle maintenance needs. Although some respondents claimed they would adapt their behaviour to undertake more vehicle maintenance themselves to ensure the upkeep of their vehicle, reducing the frequency of the MOT could lead to some neglecting their vehicle for the periods between MOT tests. This group could therefore present a road safety risk by driving potentially faulty and dangerous vehicles on the road.

How do vehicle keepers respond to MOT advisories?

Providing the cost of addressing any advisories is manageable within a person's financial means, findings from the survey suggest that many people would quickly address vehicle maintenance needs following an MOT. This applies to advisories, minors, and other maintenance needs. However, it is inevitable that there would still be some who choose to ignore vehicle faults that could present a road safety risk.

How do vehicle keepers respond to vehicle defects between MOTs?

As shown by the survey and focus group findings, a person's response appears to be heavily influenced by the severity of the fault. For severe faults, it seems that most would seek to address these immediately. If they felt they did not have the knowledge or understanding to address the fault themselves then they would likely look to take the vehicle to a garage at the earliest opportunity or refer to someone they trusted to provide insight on the problem (e.g. a mechanically-minded friend or family member). With regards to minor faults, many people appear likely to assess whether they could hold off on addressing the problem to better suit their current needs; for example, if an MOT or service was scheduled in the upcoming weeks.

How might the economic climate influence these decisions?

Although the tasks undertaken as part of this research did not give great focus to this point, the cost of vehicle maintenance, repairs, and servicing was raised as a concerning factor within the survey and focus group samples. This was also found by the previous research conducted by Stellantis&You and UnitedTires discussed in the evidence review. The impact that the 'cost of living' crisis is having on the lives of many cannot be understated; the effect of which extends to one's ability to afford vehicle maintenance. As suggested by past research and some of our study participants, it would appear that many individuals worry about the outcomes of a vehicle MOT in case it results in significant maintenance and repair costs that go beyond one's financial means. This being understood, it stands to reason that the current economic climate likely plays a significant role in a person deciding whether to perform necessary vehicle maintenance.

Automated warning messages

How well do vehicle keepers understand the meaning of automated warning messages?

Findings from the survey and focus group tasks suggest that – broadly speaking – many people appear to recognise the meaning behind different MILs. Where a person does not fully understand a specific warning message, it is often still recognised that the appearance of a MIL likely means there is something wrong with the vehicle and so would typically take steps to investigate it – even if that is simply a matter of asking someone else to investigate the problem. The colour-coding of different messages is also generally understood with red being correctly understood to be a major fault and thus needing more immediate attention.

How quickly do vehicle keepers respond to automated warning messages?

As mentioned previously, the speed in which someone responds to a fault will likely be based on a person's judgement of the severity of the problem, as shown by findings drawn from the survey and focus group tasks. This judgement could be based on the colour of the warning message (as mentioned above, a red message is understood to be more severe than an amber message), whether it is impacting the vehicle's control, or if there are any audible or visual symptoms associated with the fault (e.g. smoke, rattling noise, etc.). Some appear to take the approach that if the vehicle is still driving as normal, then they would continue driving until they reach their destination before investigating further.

How do vehicle keepers respond to vehicle faults with cars that have limited automated systems?

Findings drawn from the survey and focus groups appear to show that people often rely on in-vehicle systems that automatically warn of a fault (e.g. tyre pressure monitors) to know if a problem with their vehicle has arisen. Some people from the focus groups reported that they only perform vehicle checks when needed, such as prior to a long journey. If the vehicle does not offer a prompt to investigate a potential issue, then maintenance checks are not likely to be undertaken believing that the vehicle must be functioning normally. There would

therefore appear to be some reliance on these systems among those who have experience with vehicles that feature them.

Considering the findings from across all three research tasks together, reducing the frequency of the MOT is likely to have a negative impact on the roadworthiness of many vehicles and not be particularly well-received by the public. This is supported by the international evidence around periodic vehicle technical inspections which demonstrates that locations with less frequent MOTs have poorer road safety records. In short, the more regular the MOT then the greater the reduction in collisions. However, it must be recognised that there comes a point when the safety benefit begins to be outweighed by the cost of enforcing more regular MOTs. It therefore means a balance must be identified for an optimal structure for MOT timing. This point should therefore be borne in mind should any potential changes to the frequency of the MOT be considered.

It is slightly more challenging to reach as firm a conclusion with regards to the timing of the first MOT. The UK currently requires this three years after a vehicle's manufacture date for most vehicles. Many people hold the belief that modern vehicles are more robust and do not require an MOT at such an early stage, believing the first MOT could be delayed until four or even five years after manufacture. However, it is recognised that a vehicle's health is reliant on how it is driven. Safety-critical components (namely brakes and tyres) are still susceptible to significant wear during the early years of a vehicle's lifespan, particularly when accruing many miles. With this in mind, it would appear illogical to postpone the timing of the first MOT if it prevents an opportunity to assess such safety-critical components.

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Appendix A Task 1: Evidence review – Detailed method

The evidence review took a semi-systematic approach consisting of three parts:

1. Literature search using a defined set of search terms drawn from the research questions.
2. Assessment of identified literature using a defined set of inclusion criteria.
3. In-depth review of the most relevant and high-quality literature.

This three-part approach allowed for a critical appraisal and synthesis of evidence across the breadth of topics outlined in section 1. The following subsections detail each of these parts in turn.

A.1 Literature search

A list of search terms directly related to the research questions and sub-questions was generated, shown in Table 2. These are separated by terms relating to MOT test frequency and malfunction indicator lights (MILs). As noted previously, 'MOT' is a term used exclusively in the UK, so alternative terms such as 'vehicle inspection' were also used in the search of literature to better capture international evidence.

Table 2: Search terms

1st Level		2nd Level		3rd Level
MOT frequency	AND	Maintenance	AND	Response
MOT test frequency		Upkeep		Reaction
MOT timing		Care		Action
MOT test timing		Service		Impact
MOT occurrence		Repair		Outcome
MOT test occurrence		Advisory		Effect
Vehicle inspection		Defect		Rate
Periodic vehicle inspection		Issue		Influence
Vehicle technical inspection		Problem		
PTI		Pass		
		Fail		
		Economy		
		Market		
Automated warning message		Response		Speed
Automated warning alert		Reaction		Rate
		Maintenance		Time

Vehicle warning message		Upkeep		Damage
Vehicle warning alert		Repair		Fail
MIL		MOT		Pass
		Understand		

The search terms were applied systematically within relevant research databases (namely, Google Scholar, TRID[6], and Science Direct) as Boolean search expressions. Multiple searches were conducted within each database through an iterative process, wherein search terms were tested individually and in combination with each other to identify which terms generated relevant results. Searches were also conducted in Google in an effort to identify any relevant grey literature that was unlikely to appear within searches of academic databases. This ensured that the search was as effective and thorough as possible at drawing out appropriate literature.

The search for literature quickly demonstrated that current evidence suitable for answering the specific research questions is minimal. Evidence on these topics appeared to provide greater focus on the impact that MOT systems have on safety outcomes rather than the specifics of how this impacts vehicle maintenance behaviours. In addition, many papers on the topic of MOTs proved to be significantly dated with search results showing evidence up to 50 years old. Search filters were applied to remove exceptionally dated evidence from the search results. Twenty-eight papers were identified at this stage and carried forward for assessment against the inclusion criteria.

Following the delivery of the evidence review at an interim stage of this project, an additional study was identified (published after that initial delivery, hence not being identified during the original search for evidence). This study (Elvik, 2023) was judged to be of relevance and subsequently incorporated into the evidence review delivered as part of the current report making the final total number of identified sources 29.

A.2 Assessment of quality and relevance

The 29 papers were assessed on the inclusion criteria shown in Table 3. This process ensured that only literature of the highest quality and relevance were taken forward for full-text review.

[6] The Transport Research International Documentation Database covers a million records of references to books, technical reports, conference proceedings, and journal articles within the field of transport research.

Table 3: Inclusion criteria

	Score = 1	Score = 2	Score = 3
Relevance	Not relevant to the objectives of the project	Some indirect relevance to the objectives of the review	Directly relevant to the objectives of the review (e.g. research which evaluates the impact of MOT test frequency on motorists' response to advisories)
Quality	Non-scientific article (e.g. online source, newspaper, or magazine article)	Evidence review / case study investigation	Randomised controlled trial / before-after comparison of real-world data
Timeliness	Published over 10 years ago	Published between 5-10 years ago	Published within the past 5 years

Papers needed to score a minimum of eight to be considered for full-text review. In other words, papers were excluded if they scored either:

- One on any of the factors, or
- Less than three on two or more factors.

Full versions of eight papers could not be retrieved either due to being unavailable online or not being in English. Four of the remaining papers did not score sufficiently high to warrant a full-text review; however, these were later assessed to ensure that no worthwhile findings were omitted.

Few papers were identified relating to people's understanding and response to MILs, and most of those were grey literature sourced from corporate sites that did not provide much or any details around study methods. As such, it was not always possible to do a full assessment of a study's quality. This being the case, it was decided that all identified papers on the topic of MILs were to be taken forward for full-text review as applying the scoring criteria would have removed every paper on this topic.

This point should therefore be acknowledged when considering the findings drawn on the topic of MILs. That is that these studies were unable to be assessed on the quality of their method (e.g. approach to and details of sampling) and therefore may have unidentified limitations which impact their results.

A.3 In-depth review of evidence

Following scoring on the inclusion criteria, 17 of the original 29 papers were shortlisted for full-text review. This included 11 papers relating to the topic of MOTs and six papers relating to the topic of MILs. The full-text review was undertaken using a spreadsheet approach,

with each text occupying a row and paper details (including high-level summaries of study purposes, methods, and findings) recorded in columns. Conclusions relating to the research questions were drawn where possible from each text for discussion within this report.

Appendix B Task 2: Public survey – Detailed method

The following subsections summarise the details of the approach taken to conduct the survey. Specifically, the survey design (B.1), sampling approach (B.2), and the approach taken to analysing the data (B.3) are discussed in turn. Findings from the survey are discussed in the following section (3.2).

B.1 Survey design

The survey that was provided to respondents is shown in. It includes six main sections, detailed as follows:

- **Vehicle ownership** – Gathered information on the type of vehicle an individual was responsible for, the ownership model, age and mileage of the vehicle, and estimated worth of the vehicle.
- **Travel behaviours** – Gathered information on an individual's driving experience and typical journeys.
- **Attitudes towards vehicle maintenance** – Gathered information on an individual's knowledge, understanding, and response to malfunction indicator lights (MILs) and vehicle maintenance needs, as well as regular vehicle maintenance behaviour.
- **Attitudes towards the MOT** – Gathered information on individuals' attitudes and perceptions of the current MOT system, as well as a changed MOT system with reduced frequency.
- **Vehicle maintenance and the MOT** – Gathered information on how individuals' vehicle maintenance behaviours may change under a changed MOT system with reduced frequency.
- **Demographics** – Gathered basic respondent information, including age, gender, race, employment status and income.

Relevant information regarding the purpose of the survey, ethical considerations, and respondent consent were also provided at the beginning of the survey.

These survey sections and the questions included therein (43 in total) were designed to answer the questions listed in section 1 and address research gaps identified from the evidence review. Collecting data around vehicle ownership and demographics allowed for comparisons to be made between different groups.

B.2 Sampling

The finalised survey was created online using the survey platform Smart Survey and hosted on the recruitment platform, Prolific. This platform allowed for the rapid recruitment of a large sample of respondents within the UK, that is nationally representative based on age and gender. In total, a nationally representative sample of 750 individuals from across the UK were recruited from Prolific. These 750 individuals completed pre-screener questions to identify those that met the following criteria:

- Drive a vehicle that requires MOT testing.

- Are responsible for ensuring the vehicle has an MOT.

Of the 750 respondents who completed the pre-screener questions, 499 were eligible to complete the full survey. The Prolific platform was purposely used as it allowed for the recruitment of a representative sample. This was indeed the case for those that completed the initial filter questions. However, only those who met the eligibility criteria were able to complete the full survey. In short, the final survey sample has been extracted from a larger nationally representative pool of respondents, and in doing so some of the representativeness of the data has been lost. Though this point should be borne in mind, it is not believed to have had a significant impact on the results drawn in this report. Further details on the representativeness of the sample are provided in section D.1.

B.3 Approach to analysis

The majority of the survey data, being quantitative, was analysed using appropriate statistical methods, detailed in section B.3.1. Qualitative data was analysed separately, detailed in section B.3.2.

B.3.1 Quantitative analysis

Given the wealth of data that was collected by the survey, there were ample routes that could be taken to explore it. It was therefore decided to give focus to only a select few factors in the statistical analysis. Specifically, focus was given to exploring the following:

- The impact of driver age on vehicle maintenance behaviours and understanding of MILs.
- The impacts of driver age, employment status, and household income on vehicle servicing behaviours.
- The impacts of vehicle age and vehicle mileage on vehicle servicing behaviours.

These focus areas were chosen as they were felt to offer the greatest insight into considerations that should be made if the frequency of the MOT is to be reduced.

A variety of statistical tests were conducted on the data. The specific tests that were used to analyse the data were chosen based on the data type of the independent and dependent variables. These are outlined in Table 4.

Table 4: Statistical test chosen for each combination of data type

Independent variable data type	Dependent variable data type	Statistical test
Nominal	Nominal	Chi-squared test of independence
Nominal	Ordinal	Cochran-Armitage trend test
Ordinal	Nominal	Kruskal-Wallis
Ordinal	Ordinal	Kendall Tau

A test of the representativeness of the data was also conducted. This information is presented at the end of section D.1. The statistical tests chosen and the results of the analysis were reviewed by one of TRL's expert statisticians.

It is necessary to highlight that no power analysis was conducted for this survey task. Power analysis is used prior to undertaking a research study to determine what sample size would be required to detect a statistically significant difference between groups. Though the final sample of 499 respondents is arguably quite considerable, no power analysis was carried out to determine what an appropriate sample size for this analysis should be. Although statistically significant findings have been found, the size of the effect may not reflect that of reality due to the sample size.

As a final note, given the large number of statistical outputs that were generated (many of which were found to not be statistically significant), the decision was made to not present graphs and charts for all tests. Instead, graphs are only presented where they were judged to be worthwhile in supporting the presentation of findings.

B.3.2 Qualitative analysis

Qualitative data from the free-text responses were extracted from the raw survey data file and analysed via a thematic coding process in a separate Excel spreadsheet. Research team members analysed the data separately generating key themes for each question based on common responses provided by respondents. Relevant quotes were extracted from the data and recorded alongside key themes to allow for some degree of understanding which themes were more common than others. Following individual analysis, the team regrouped to discuss and reach an agreement on the generated themes. This process of group discussion helped to overcome the subjective interpretation that is often associated with qualitative analysis approaches.

Due to the large amount of free-text response data that was collected, the nature of the language used in participant responses, and the level of interpretation required by researchers to understand the data, it is not possible to accurately quantify the qualitative data. However, such data is not intended to be quantified, instead being used to draw out further insights into the nature of why participants have responded the way they have. The qualitative data has therefore been described in general terms around how common a particular theme was within participant responses.

Appendix C Task 2: Public survey questions

C.1 Introduction

1) Title of Study: Attitudes towards MOTs and vehicle maintenance

You are being invited to take part in a research study. Before you decide whether or not you wish to take part, it is important that you understand why the research is being done and what it will involve. Please read this information carefully and discuss it with others if you wish. Take time to decide whether or not you wish to take part. If you do decide to take part, you will be asked to sign a consent form. However, you are free to withdraw at any time, without giving any reason.

2) What is the purpose of the research study?

The current UK MOT system has been in place for over sixty years. The MOT test is a test of a vehicle's safety, roadworthiness, and exhaust emissions. The test is required annually for vehicles over three years old. . This work has been commissioned by the Department for Transport (DfT), a ministerial department focused on supporting the transport network in the UK. DfT are using the current project to understand attitudes towards the MOT system in the UK, as well as behaviours in relation to vehicle maintenance. The findings of this work will contribute to ongoing discussions around changes to the MOT test.

3) Why have I been chosen?

You have been invited to participate as you fit the following criteria:

- You are aged 17 or over
- You drive a vehicle
- You live in the UK
- You are responsible for getting an MOT for your vehicle

4) What will happen if I choose to take part? What do I have to do?

You will be asked to complete a questionnaire that will take about 15 minutes.

You will be asked about yourself, your vehicle ownership and behaviours and attitudes around vehicle maintenance and the MOT system in the UK.

Most questions will be multiple choice. There will also be a few optional questions that require you to type responses into text boxes.

5) What information will be sought from me and why is the collection of this information relevant for achieving the research project's objectives?

The survey will collect information on your vehicle ownership, travel behaviours, attitudes towards vehicle maintenance and the MOT test. Demographic information will also be collected (for example, age, gender, household income). You will be asked to provide your postcode for the purpose of categorising the types of roads you live near. Any data collected will not be used for any other purpose than this research study or shared with any third parties. Your ethnicity will be collected to understand the socio-demographic makeup of the

people who complete the survey. Such demographic data will only be used to allow for comparisons between different groups, and will not be used to analyse individual responses.

Data from the survey will be stored for three months following the conclusion of the project, and then the data will be deleted.

6) What are the possible benefits of taking part?

You will be involved in contributing to transport research. Your contribution may influence future road vehicle safety and environmental standards. You will also be compensated £2 through Prolific for completing the survey.

7) What are the possible disadvantages and risks of taking part?

There are no risks or adverse effects anticipated as a result of this study for participants, researchers or other members of the public.

8) Will my taking part in this project be kept confidential?

Your answers will be collated with responses from other participants and reported as summary data, meaning that you will not be individually identifiable in the findings or any reports. You will answer the survey using your Prolific ID number. If you request for your data to be withdrawn, you will need to give your ID number to TRL using the contact details below.

TRL's privacy notice can be found here.

9) What will happen to the results of the research?

The findings from the study will be analysed and reported to the Department for Transport in the form of a project report. Research data will be presented as summaries and individuals will not be identifiable.

10) Ethical review of the study

This study has been reviewed and approved by TRL's Research Ethics Committee.

Should you have any questions or require any additional information, please contact:

Jack Hitchings: jhitchings@trl.co.uk

Thank you for taking part in this research.

C.2 Consent

1. Please answer the following statements

	Please put Y or N against each statement	Yes	No
1	I have read and understood the information above and have had the opportunity to ask questions by emailing jhitchings@trl.co.uk		[Exclude]
2	I understand that my participation is voluntary and that I am free to withdraw at any time without giving a reason, by closing the survey		[Exclude]
3	I am aware that I can request that my data be deleted by emailing jhitchings@trl.co.uk		[Exclude]
4	I give my consent to participate in this survey		[Exclude]

C.3 Vehicle ownership

If you drive or are responsible for multiple vehicles, please answer the following questions in relation to your primary vehicle (i.e. the vehicle you use most often).

2. What type of vehicle do you drive that requires MOT testing?

- Petrol car
- Diesel car
- Fully-electric car
- Hybrid car
- Van
- Motorcycle
- Other: _____

3. Which of the following applies to your vehicle that requires MOT testing?

- I purchased the vehicle new
- I purchased the vehicle pre-owned
- I am paying for the vehicle via a finance scheme wherein I will own the vehicle at the end of the contract period, which includes regular maintenance activities (vehicle service, MOT)
- I am paying for the vehicle via a finance scheme wherein I will own the vehicle at the end of the contract period, which *does not* include regular maintenance activities (vehicle service, MOT)
- The vehicle is on a finance scheme wherein I will *not* own the vehicle at the end of the contract period, which includes regular maintenance activities (vehicle service, MOT)
- The vehicle is on a finance scheme wherein I will *not* own the vehicle at the end of the contract period, which *does not* include regular maintenance activities (vehicle service, MOT)
- It is a company-owned vehicle
- None of the above

4. What is the age of your vehicle?

- Less than one year old
- 1-2 years old
- 3-5 years old
- 6-10 years old

- Over 10 years old
- Don't know

5. **What is the current mileage of your vehicle?**

- Less than 1,000 miles
- 1,000-4,999 miles
- 5,000-9,999 miles
- 10,000-24,999 miles
- 25,000-49,999 miles
- 50,000-100,000 miles
- Over 100,000 miles
- Don't know

6. **Roughly how much do you think your vehicle is currently worth?**

- Less than £1,000
- £1,000-£4,999
- £5,000-£9,999
- £10,000-£24,999
- £25,000-£49,999
- £50,000-£74,999
- £75,000-£100,000
- Over £100,000
- Prefer not to say
- Don't know

C.4 Travel behaviours

7. **How long have you been driving for?**

- 0-2 years
- 2-5 years
- 6-10 years
- 11-20 years
- 21-30 years
- 31-40 years

- More than 40 years
- Don't know

8. Approximately, how many miles does your vehicle do each year?

- Less than 500 miles
- 500-999 miles
- 1,000-2,499 miles
- 2,500-4,999 miles
- 5,000-9,999 miles
- 10,000-15,000 miles
- Over 15,000 miles
- Don't know

9. How would you rate your own ability to track your vehicle's total mileage?

- Very good
- Good
- Neither good nor poor
- Poor
- Very poor

10. What types of journeys do you typically use your vehicle for? Please select all that apply.

- Work/business (not including commuting)
- Commuting to and from work/university
- Leisure/socialising
- Running errands/shopping
- Transporting people (e.g. school run)
- Other: _____

11. How far do you normally have to travel to a garage for any vehicle maintenance, including MOTs and services?

- Less than 5 miles
- 5-9 miles

- 10-14 miles
- 15-19 miles
- 20-24 miles
- 25-30 miles
- Over 30 miles
- Don't know

C.5 Attitudes to vehicle maintenance

12. Does your vehicle currently have an unresolved mechanical fault or defect? For example, a worn tyre, worn brake pads, cracked windscreen, or a lit warning light (e.g. 'check engine').

- Yes, my vehicle currently has *more than one* unresolved fault
- Yes, my vehicle currently has one unresolved fault
- No, my vehicle does not currently have an unresolved fault
- Don't know
- Prefer not to say

13. [If yes to the previous question] What kind of fault(s) does your vehicle currently have? Please select all that apply.

- Worn tyre(s) (i.e. close to or below minimum tread requirement)
- Worn brake pad(s) (i.e. close to or below minimum thickness)
- Misaligned wheels (i.e. tracking out resulting in vehicle pulling slightly to the side)
- Cracked windscreen
- Overdue oil change
- Low fluids
- Engine fault
- Fault with vehicle lights (e.g. headlight, brake light, indicator)
- Other: _____
- Don't know
- Prefer not to say

14. How often do you (or a friend or relative) check your vehicle's…

	Very regularly	Regularly	Rarely	Very rarely	I never check	Only when there is/I suspect an issue
… tyre pressure?	☐	☐	☐	☐	☐	☐
… tyre wear?	☐	☐	☐	☐	☐	☐
… fluid levels?	☐	☐	☐	☐	☐	☐
… lights (headlights, brake lights, indicators)?	☐	☐	☐	☐	☐	☐

15. How confident are you that you can correctly identify faults with your vehicle's…

	Very confident	Somewhat confident	A little confident	Not at all confident
… tyre pressure?	☐	☐	☐	☐
… tyre wear?	☐	☐	☐	☐
… fluid levels?	☐	☐	☐	☐
… lights (headlights, brake lights, indicators)?	☐	☐	☐	☐

16. Imagine a warning light has appeared on your vehicle's dashboard indicating a likely fault. The fault does not affect the control of your vehicle, and has no associated visual (e.g. smoke) or audible (e.g. rattling) problems. How would you act on this?

- I would not use my vehicle and immediately seek to resolve the issue
- I would continue to use my vehicle and would aim to resolve the issue as soon as possible (e.g. by the end of the day)
- I would continue to use my vehicle and would aim to resolve the issue reasonably quickly (e.g. by the end of the week)
- I would continue to use my vehicle and would aim to resolve the issue at some point (e.g. sometime longer than a week)
- I would continue to use my vehicle and ignore the warning light as it is not impacting on my vehicle's control
- I would find out what the warning light means and decide what to do based on that
- Don't know

17. Which of the following vehicle issues, if any, do you feel are most urgent (i.e. you would respond to in the shortest time)? Please select all that apply.

- Cracked windshield
- Wheels out of alignment
- Overdue oil change
- Bald or worn-out tyres
- Check engine light on
- Brakes not working as well as the should
- Noise from the engine or wheels
- Slow leak in tyre
- No/low windscreen washer fluid
- Headlight/brake light/indicator light out
- Other: _____
- Don't know
- I do not feel that any of these issues require urgent attention

18. What factors, if any, would delay your response time in getting a vehicle fault resolved? Please select all that apply.

- Availability of facilities (e.g. garages) that can conduct necessary repairs
- Knowing where to go to get an issue resolved
- Lack of time – too busy to take car to a garage
- Costs of repairs
- Length of repairs – I cannot risk being without my vehicle for that long

- I feel no rush in getting vehicle faults resolved, especially if it's not affecting the vehicle's performance
- Anxiety
- Other: _____
- Don't know

19. How much, if anything, would you say you know about your legal obligation to maintain your vehicle to roadworthy standards?

- A great deal
- A fair amount
- Just a little
- Aware of, but know nothing about it
- Never heard of it
- Don't know

20. How would you rate your understanding of the meaning of different vehicle warning messages, such as those pictured?

- Very good
- Good
- Neither good nor poor
- Poor
- Very poor
- Don't know

C.6 Attitudes towards MOTs

The MOT test is a test of a vehicle's safety, roadworthiness, and exhaust emissions. The test is required annually for vehicles over three years old.

21. How do you usually seek your vehicle's servicing and MOT?

- My vehicle gets serviced as it nears the time of its MOT (e.g. in the week prior to its MOT date)
- My vehicle gets serviced and its MOT at the same time (i.e. scheduled on the same day)
- My vehicle gets serviced and its MOT at different times (i.e. my vehicle gets serviced in line with manufacturer's recommendations, but this does not align with the timing of the MOT)

- My vehicle only gets serviced if needed to pass a failed MOT
- I don't usually get my vehicle serviced
- Don't know

22. To what extent do you agree or disagree with the following statement: '*The MOT helps to prevent the use of unsafe and/or polluting vehicles on public roads*'.

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

23. Do you feel that MOTs should be required for vehicles less than four years old?

- Yes
- No
- Don't know

24. In your view, should MOT tests be required…

- Annually, from the year of the vehicle's manufacture
- Annually, from the time the vehicle is three years old
- Annually, from the time the vehicle is four years old
- Every two years, from the year of the vehicle's manufacture
- Every two years, from the time the vehicle is three years old
- Every two years, from the time the vehicle is four years old
- Every two years, up until the vehicle is 10 years old and then annually thereafter
- Other: _____

25. Please provide a short explanation for your answer.

- _____

26. How would you feel if the UK's current MOT system was changed to reduce the frequency of MOTs? For example, moving from a system that required MOTs to be conducted annually to one that required MOTs to be conducted every two years.

- Very satisfied

- Satisfied
- Neither satisfied nor unsatisfied
- Unsatisfied
- Very unsatisfied
- Don't know

27. Please provide a short explanation for your answer.

- _____

28. If MOT frequency was to be reduced, do you believe vehicles are more or less likely to be maintained to legal standards?

- Much more likely
- More likely
- Neither more nor less likely
- More unlikely
- Much more unlikely
- Don't know

29. Do you believe that an MOT system based on vehicle mileage would be more or less effective than the current MOT system based on timing? For example, rather than requiring an MOT every year, your vehicle would require an MOT every 10,000 miles.

- Much more effective
- More effective
- Neither more nor less effective
- Less effective
- Much less effective

30. How satisfied or unsatisfied are you with how the current MOT system impacts…

	Very satisfied	Satisfied	Neither satisfied nor unsatisfied	Unsatisfied	Very unsatisfied	I don't believe the current MOT system has an impact on this
… road safety?	☐	☐	☐	☐	☐	☐

… environmental conditions?	☐	☐	☐	☐	☐	☐
… vehicle breakdowns?	☐	☐	☐	☐	☐	☐
… vehicle crime?	☐	☐	☐	☐	☐	☐
… insurance costs?	☐	☐	☐	☐	☐	☐

31. Which of the following changes, if any, do you think should be made to the content of the current MOT test? Please select all that apply.

- ○ Greater focus on testing the main failure items (brakes and tyres)
- ○ Greater focus on testing in-vehicle safety technologies (e.g. autonomous braking systems)
- ○ Greater focus on testing emission control technology
- ○ Greater focus on testing noise emissions
- ○ Greater focus on testing of window tinting
- ○ Redefining the minimum standards for vehicle advisories
- ○ Other: _____
- ○ Don't know

32. Please explain your answer.

- ○ _____

33. What issues, if any, do you have with the current MOT testing system?

- ○ _____

C.7 Vehicle maintenance and the MOT

34. If you were not required to have an annual MOT, how likely would you be to continue to have your vehicle serviced at the manufacturers recommended intervals (this is often annually)?

- ○ Very likely
- ○ Likely
- ○ Neither more nor less likely
- ○ Unlikely
- ○ Very unlikely

- Don't know

35. How would you respond to receiving one or more advisories (e.g., tyre worn close to legal minimum, brake pads worn close to minimum thickness) from an MOT?

- I would address the advisories immediately
- I would address the advisories within 1-2 weeks
- I would address the advisories within 3-4 weeks
- I would address the advisories within 2-6 months
- I would address the advisories within 7-12 months
- I would not try to address the advisories
- Don't know

36. If your vehicle passed an MOT with minor defects (e.g., one of two bulbs for read numberplate failed), how would you respond?

- I would address the minor defects immediately
- I would address the minor defects within 1-2 weeks
- I would address the minor defects within 3-4 weeks
- I would address the minor defects within 2-6 months
- I would address the minor defects within 7-12 months
- I would not try to address the minor defects
- Don't know

37. If your vehicle required a variety of maintenance, only some of which was required to pass the MOT, how would you undertake this maintenance?

- I would address all maintenance needs, both those that were necessary to pass the MOT and those that were not
- I would only address the maintenance needs required to pass the MOT
- Don't know

C.8 Demographics

38. How do you define your gender?

- Male
- Female
- Transgender

- Non-binary
- Prefer not to say
- Prefer to self-describe:

39. How old are you?

- 17-25
- 26-35
- 36-45
- 46-55
- 56-65
- Over 65
- Prefer not to say

40. What is your ethnicity?

- Asian – Bangladeshi
- Asian – Chinese
- Asian – Indian
- Asian – Pakistani
- Asian – Any other Asian background
- Mixed – White and Asian
- Mixed – White and Black African
- Mixed – White and Black Caribbean
- Mixed – Any other mixed group
- White – Gypsy/Roma
- White – Irish
- White – Traveller of Irish Heritage
- White – White British
- White – Any other White background
- Any other ethnic group
- Rather not say

41. What is your postcode? This is only to categorise the types of roads respondents live near. This personal data will not be used for any other purpose, or shared with any third parties.

- _____

42. What is your current employment status?

- Full-time employed
- Part-time employed
- Student
- Not currently working (e.g. retired, homemaker, job-seeking)
- Other
- Prefer not to say

43. Which of the following categories best represents your total annual household income?

- Less than £10,000
- £10,000-£19,999
- £20,000-£29,999
- £30,000-£39,999
- £40,000-£49,999
- £50,000-£59,999
- £60,000-£69,999
- £70,000-£79,999
- £80,000-£89,999
- £90,000-£99,999
- £100,000-£149,999
- £150,000 or more
- Prefer not to say

Appendix D Task 2: Public survey – Additional analysis and findings

The findings from the survey analysis presented in this section are structured as follows:

- **Respondent sample** – covering the demographic information and representativeness of the sample (section D.1).
- **Vehicle ownership and travel behaviours** – covering the trends in data from the survey sections of the same name (section D.2).
- **Attitudes towards the current and hypothetical MOT system** – covering the data relating to how the sample feels about the current MOT system and their opinions on a changed MOT system with reduced frequency (section D.3).
- **Vehicle maintenance and servicing** – covering the data relating to the sample's maintenance and servicing behaviours, including the statistical analysis on how these differ by age, employment status, household income, vehicle age, and vehicle mileage (section D.4).

D.1 Respondent sample

As noted in section 3.1 and Appendix B, 499 individuals completed the full survey. These are roughly evenly split between females (52%) and males (49%). All respondents in the final sample selected either the male or female option, with none defining themselves as transgender, non-binary, or other self-described gender.

A comparison was made between the survey sample and recent census data from 2021[7]. As can be seen in Table 5, the survey sample was a near perfect representation of the wider UK population.

Table 5: Representativeness of sample by gender

	Census data (%)	Survey sample (%)
Male	48.5	48.5
Female	51.5	51.5

The same cannot be said when it comes to age representation, which is shown in Table 6. Here we can see that the 26-35 age group (17%) and 46-55 age group (18%) within the survey sample are reasonably close to representativeness of the population; however, other age groups are not. Both the youngest (17-25; 6%) and oldest (over 65; 14%) age groups are underrepresented in the survey sample, while the 36-45 (20%) and 56-65 (24%) age groups are overrepresented. Unfortunately, due to the approach required of recruitment (detailed in sections 3.1 and Appendix B) the final sample was not found to be truly nationally representative on age.

[7] https://www.ons.gov.uk/census

Table 6: Representativeness of sample by age

	Census data (%)	Survey sample (%)
17-25	14.2	6.4
26-35	16.3	16.8
36-45	15.7	20.4
46-55	16.1	18.4
56-65	15.2	24.0
Over 65	22.5	13.6

The vast majority of the sample are White British (83%). 6% of individuals are from other White backgrounds (including White Irish). All other ethnic groups had less than 12 responses each, while six individuals preferred not to give an answer. These details are presented in Figure 20.

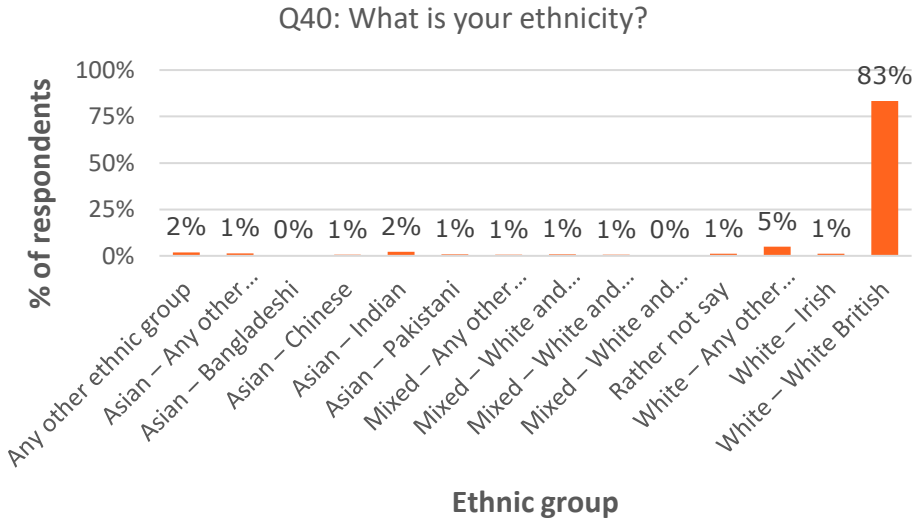

Figure 20: Ethnic diversity of the survey sample

The last demographic characteristic that was collected was individuals' total annual household income (Figure 21). The majority of the sample (67%) are earning less than £70,000, with the largest group overall earning between £20,000-£29,999 (18%). The rest of the sample (22%) are earning £70,000 or more. Those earning the least (less than £10,000; 2%) and the most (£150,000 or more; 2%) were the smallest groups. 7% of respondents preferred not to state their total annual household income.

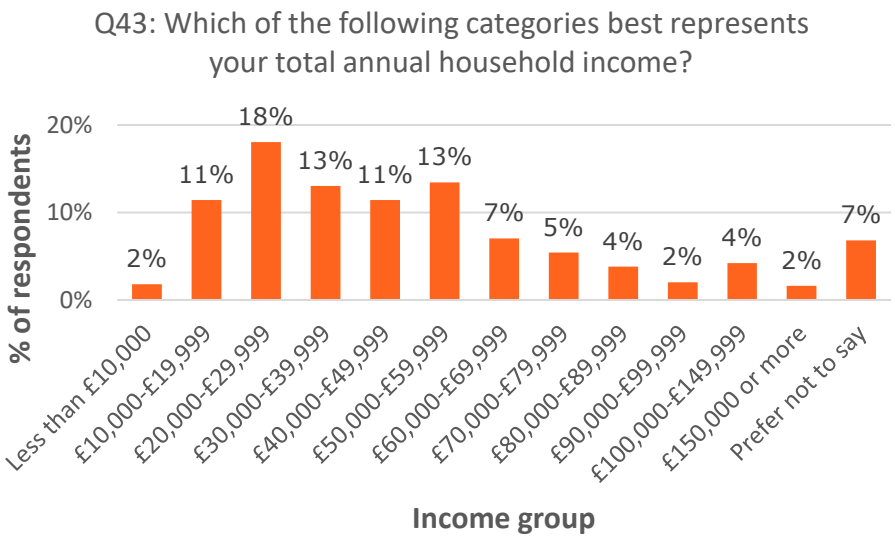

Figure 21: Total annual household income of the survey sample

D.2 Vehicle ownership and travel behaviours

For reference, respondents were asked to answer these questions only in relation to their primary vehicle to overcome any confusion that may arise among individuals who own multiple vehicles. As shown in Figure 22, the majority of respondents own a petrol car (67%). The second most common vehicle type is diesel car (27%), and a small group of respondents own a hybrid car (5%). For the other vehicle types – van, electric car, and motorcycle – fewer than five respondents in each group stated owning one.

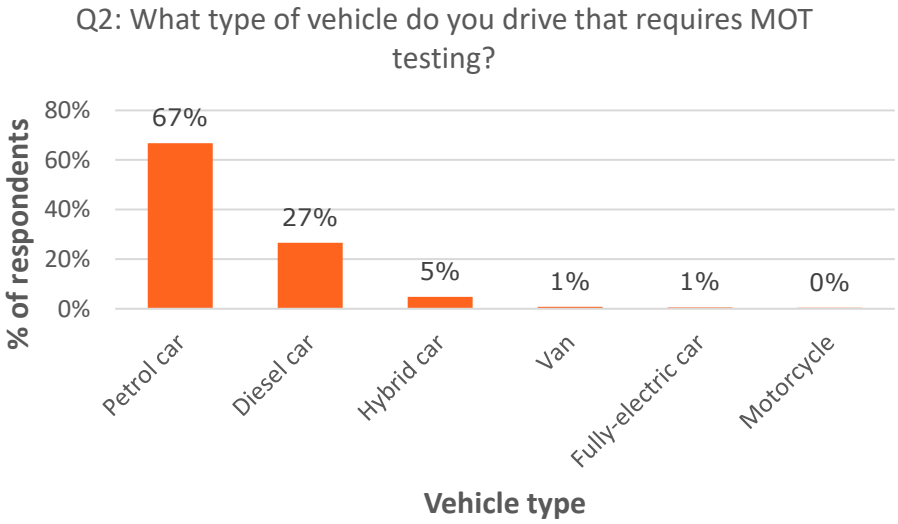

Figure 22: Vehicle types owned by the survey sample

Table 7 presents the ownership models of the vehicles owned by the survey sample. The vast majority of which purchased their vehicle pre-owned (70%). 18% of respondents purchased their vehicle new. Aside from one individual who had a company-owned vehicle,

the remaining respondents owned their vehicle via a finance scheme (11%). Nine respondents stated that their vehicle did not fall into any of the ownership model options given.

Table 7: Ownership models of the survey sample's vehicles

Ownership Model	% of respondents
Pre-owned vehicle	70
New vehicle	18
I am paying for the vehicle via a finance scheme wherein I will own the vehicle at the end of the contract period, which does not include regular maintenance activities (vehicle service, MOT)	4
I am paying for the vehicle via a finance scheme wherein I will own the vehicle at the end of the contract period, which includes regular maintenance activities (vehicle service, MOT)	3
The vehicle is on a finance scheme wherein I will not own the vehicle at the end of the contract period, which does not include regular maintenance activities (vehicle service, MOT)	2
The vehicle is on a finance scheme wherein I will not own the vehicle at the end of the contract period, which includes regular maintenance activities (vehicle service, MOT)	2
Company-owned vehicle	<1
None of the above	2

With regards to the age of respondents' vehicles, the spread of responses is shown in Figure 23. It can be seen that few respondents own a vehicle less than one year old (1%), with the largest proportion of respondents owning 6-10 year old vehicles (42%). One respondent stated that they did not know the age of their vehicle.

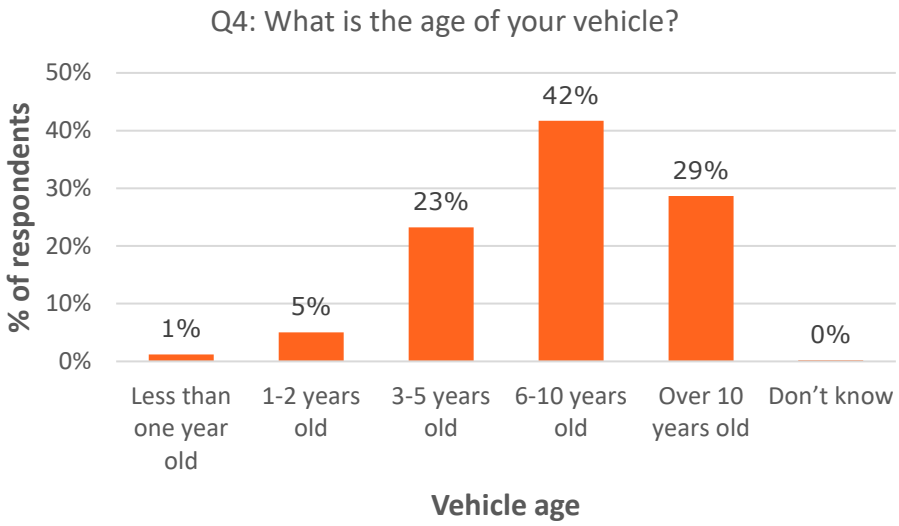

Figure 23: Age of survey sample's vehicles

Respondents' vehicle mileage (Figure 24) shows a similar pattern to that of their vehicles' age. Marginally more people overall have a mileage of 50,000 miles or less (48%), compared to those who have a mileage of between 50,000-100,000 miles (37%) – though this is the largest single response group.

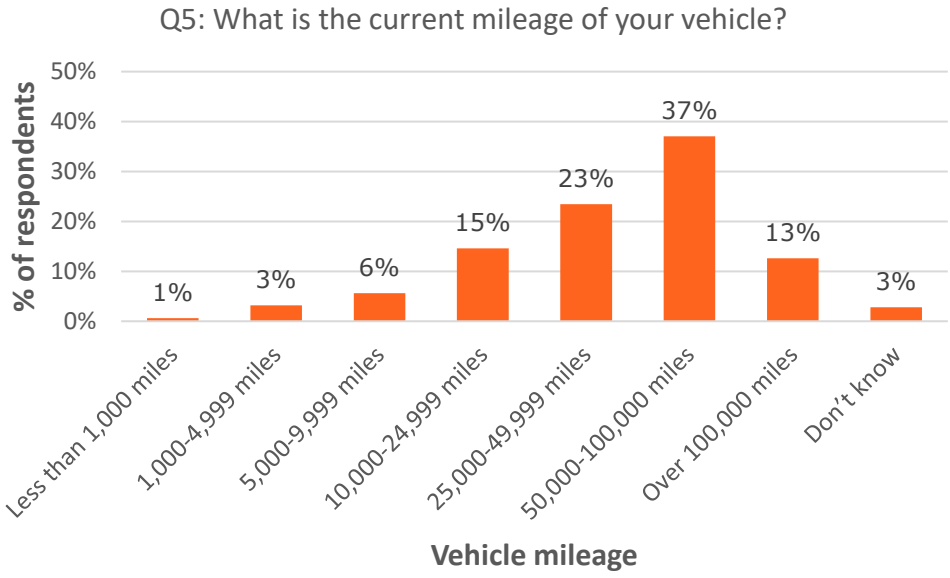

Figure 24: Mileage of survey sample's vehicles

The annual mileage of respondents' vehicles (Figure 25) shows a similar trend to the vehicles' total mileage. Few respondents reported having an annual mileage of less than 500 (1%), while the largest single group of respondents were those who had an annual mileage of 5,000-9,999 (41%).

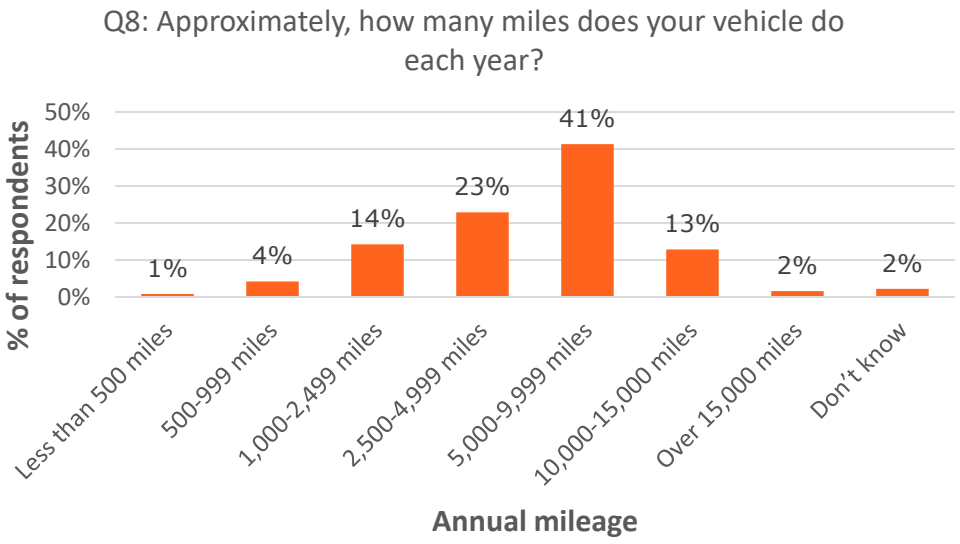

Figure 25: Annual mileage of survey samples' vehicles

Respondents were asked how they would rate their own ability to track their vehicle's mileage (i.e. not relying on reading the vehicle's in-built odometer). As shown in Figure 26, most people (80%) rated themselves as having either a good or very good ability to track their vehicle's mileage. Only 5% of respondents said they had a poor or very poor ability. 14% of respondents said their ability was neither good nor poor.

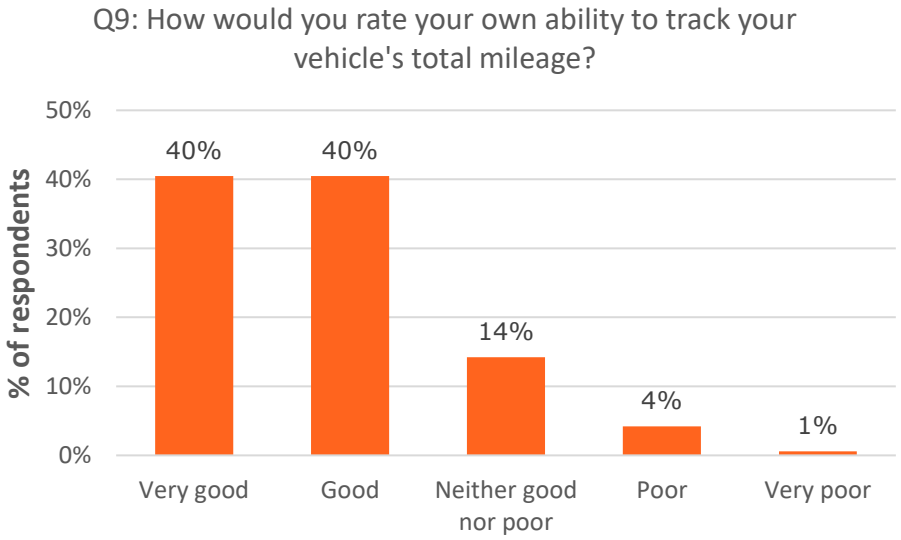

Figure 26: Self-rating of ability to track vehicle's total mileage

This finding suggests that, if an MOT system based on vehicle mileage was to be introduced, most people would be able to track their own mileage and therefore monitor when an MOT is required. However, it is important to recognise that these are self-assessed ratings and respondents are likely to have overestimated their own ability. Furthermore, it is important

to recognise that there is still a portion of the population who would likely not be able to adequately monitor their vehicle's mileage to know when an MOT would be required. These points would need to be considered if serious consideration is given to introducing an MOT system based on mileage, as methods may need to be introduced to overcome these issues.

Figure 27 shows the estimated worth that respondents gave to their vehicles. The pattern loosely shows a trend counter to that seen for vehicles' age and mileage – as would be expected. The highest vehicle worth category (£25,000-£49,999), which would likely reflect those with the lowest mileage, shows the smallest portion of responses (3%). The vehicle worth category with the largest proportion of responses (£1,000-£4,999; 36%) therefore likely mirrors those with a vehicle mileage of 50,000 or more. No respondent estimated their vehicle to be worth £50,000 or more, and 1% of respondents said they did not know the estimated worth of their vehicle.

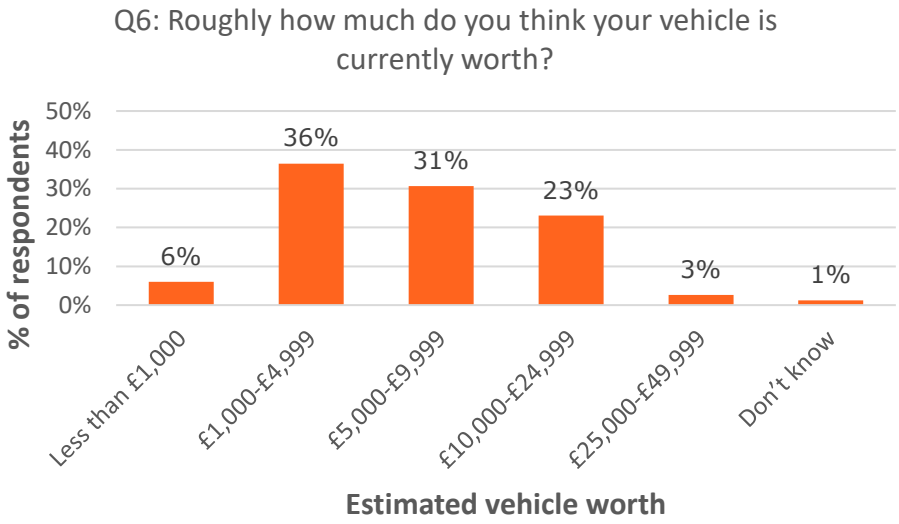

Figure 27: Estimated worth of the survey samples' vehicles

The majority of respondents have been driving for over 10 years (79%). The shortest (0-2 years) and longest (More than 40 years) response options show the smallest and largest proportion of responses respectively.

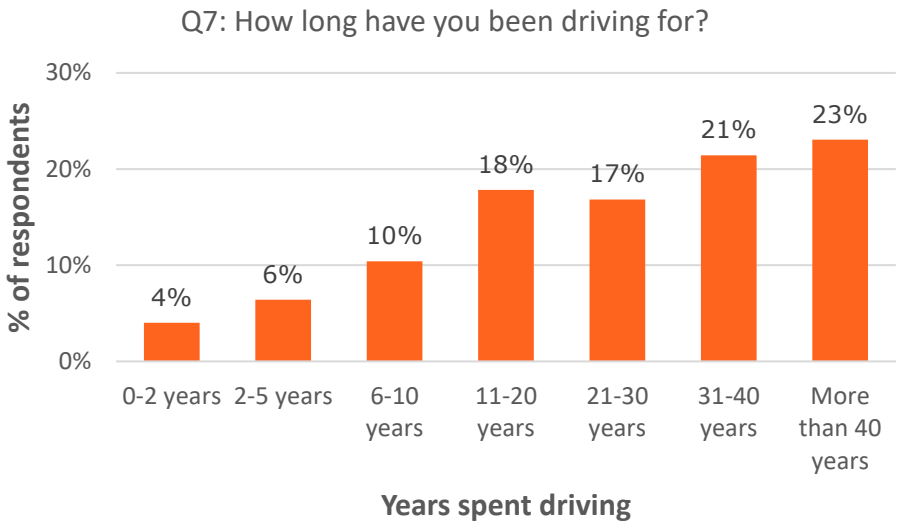

Figure 28: Reported years spent driving among the survey sample

Most respondents (89%) reported where they live as being either less than 10 miles from a garage where they would take their vehicle for any vehicle maintenance, including MOT and service. Few respondents (11%) reported living 10 or more miles from a garage. Only one person stated that they did not know how far they were from a garage. This data is presented in Figure 29.

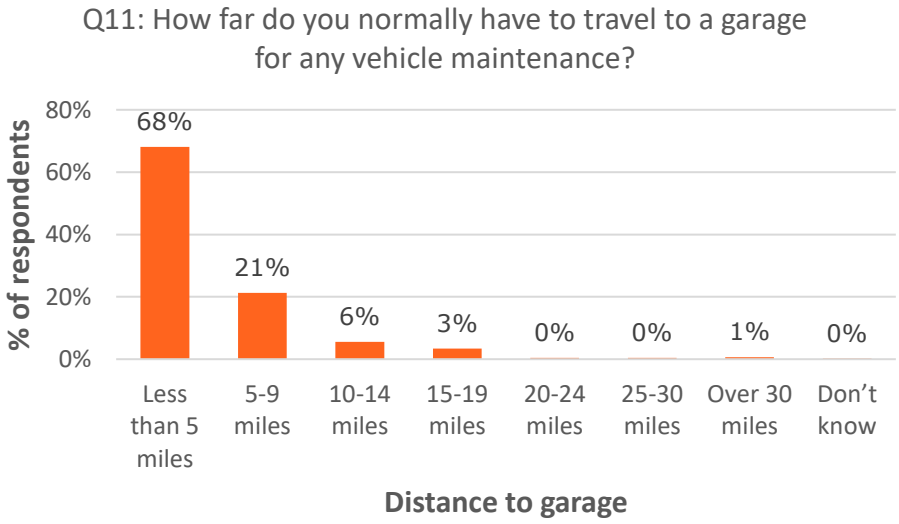

Figure 29: Distance required to travel to a garage by survey sample respondents

D.3 Attitudes towards the current and hypothetical MOT system

When asked whether an MOT system based on mileage would be more effective than one based on timing (Figure 30), the sample's opinions were mixed though leant slightly more

towards thinking it would be more effective. Specifically, 43% of respondents felt it would be more effective while 25% felt it would be less effective. It is worth noting that a third of the sample (32%) felt it would be neither more nor less effective, suggesting that there are many who are satisfied with the current MOT system.

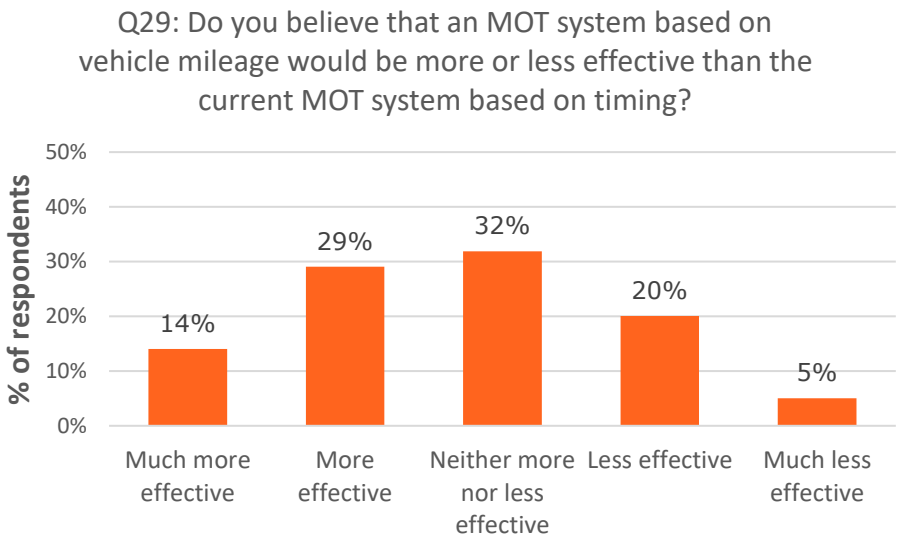

Figure 30: Survey sample's ratings of how effective an MOT system based on mileage would be compared to the current system based on timing

The last point of discussion on respondents' attitudes towards the MOTs is around the issues that people have with the current system. The survey asked an open question to respondents to state any problems they had with the MOT system in the UK. Responses were analysed thematically, meaning common themes present in responses have been drawn out.

Due to the variety of responses given and the interpretation required of the research team to analyse results, it is not possible to accurately quantify the main responses. However, a general impression of how common a theme was among responses has been drawn.

Specifically, the most common themes focused on:

- **Cost** – Many respondents felt that the cost of the test was too high, particularly when no problems are identified, creating the perception of an unnecessary test.

  "I feel the MOT should cost half price if the car passes. It would encourage car owners to keep their car in better condition."

- **Inconsistency and trust** – Many respondents believe garages to give inconsistent test results (e.g. an issue raised in one MOT test is not raised again in the next) or take advantage of people to charge them for unnecessary work.

  "Advisories which are there one year and not present the next even though you have not had them repaired."

  "I think it is open to abuse with garages inflating problems to get money for repairs."

Additional themes were drawn around people not having enough awareness of when they are due an MOT, the difficulty of booking an MOT test, the strictness of the assessment criteria applied during the MOT test (both too strict and not strict enough), as well as some stating that the test is too frequent. These themes were fairly common among participant responses though notably less common than those above.

It is also worth noting that themes were also drawn around the enforcement of MOT testing, reconsidering the MOT requirements for vehicles of a certain age/mileage, as well as the stress associated with getting an MOT; however, these were even less common than those mentioned in the paragraph above.

Based on the findings drawn above, it appears that there is a variety of different issues that people have with the current MOT system. Most points raised by the survey sample fall out of scope of the current investigation and so little further insight can be drawn around these points.

However, it is worth highlighting that test frequency was not a theme deemed to be of particularly great importance among the survey sample. The perceived problems of cost and trust in garages were by and large the most common problems raised by respondents. It also cannot be discounted that the comments made on MOT frequency here were only made as a result of there being several earlier questions in the survey around the topic of MOT frequency. This may have planted the idea in some respondents' minds that MOT frequency is a particular problem when this may not have been an idea they would have had naturally.

D.4 Vehicle maintenance and servicing

Respondents were asked whether their vehicle currently had any unresolved faults (Figure 31). Most respondents did not have an unresolved fault with their vehicle (84%), though around one sixth of respondents reported having at least one vehicle fault (15%). Six respondents stated that they did not know whether their vehicle had a fault or not.

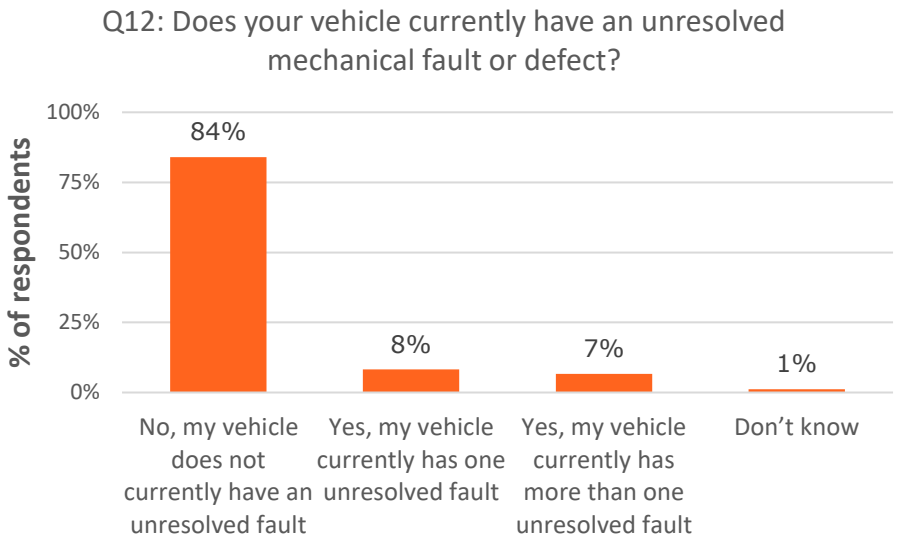

Figure 31: Portions of survey respondents with and without unresolved vehicle faults

When asked to specify the nature of their vehicle's fault(s), respondents were presented with a list of different fault types to select from. These are shown in Table 8, along with the percentage of respondents who selected each option. Note that people could select more than one vehicle fault.

Table 8: Types of fault present in respondent vehicles

Type of unresolved vehicle fault	% of respondents
Other	7
Worn tyre(s) (i.e. close to or below minimum tread requirement)	3
Engine fault	3
Fault with vehicle lights (e.g. headlight, brake light, indicator)	3
Overdue oil change	2
Worn brake pad(s) (i.e. close to or below minimum thickness)	2
Misaligned wheels (i.e. tracking out resulting in vehicle pulling slightly to the side)	1
Cracked windscreen	<0.5
Low fluids	<0.5
Prefer not to say	<0.5

With regards to those who selected the 'Other' option, the nature of specified faults largely fell into one of the four following categories: electrical faults (e.g. central locking, windows, air-con/heaters, parking sensors), issues with seatbelt (e.g. chewed), punctures and leaks, or broken mirrors.

Respondents appear to have a good awareness of their legal obligation to maintain their vehicle to roadworthy standards (Figure 32). Most of the sample reported knowing at least a fair amount (70%) about this legal obligation. Only one respondent had no awareness of this.

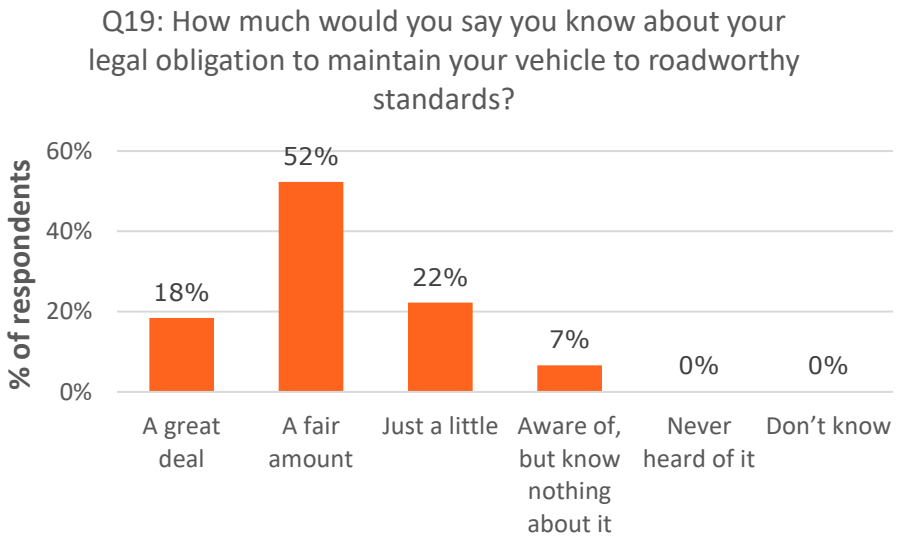

Figure 32: Respondents' reported awareness of their legal obligation to maintain their vehicle to roadworthy standards

When performing a Kendall Tau test, there was found to be a statistically significant difference between age groups on one's awareness of their legal obligation to maintain their vehicle to roadworthy standards (*p*-value = 0.01), though the effect size is defined as very weak (0.08). The trend in responses suggests that those aged 56 and older have a greater understanding of this legal obligation, as shown in Figure 33.

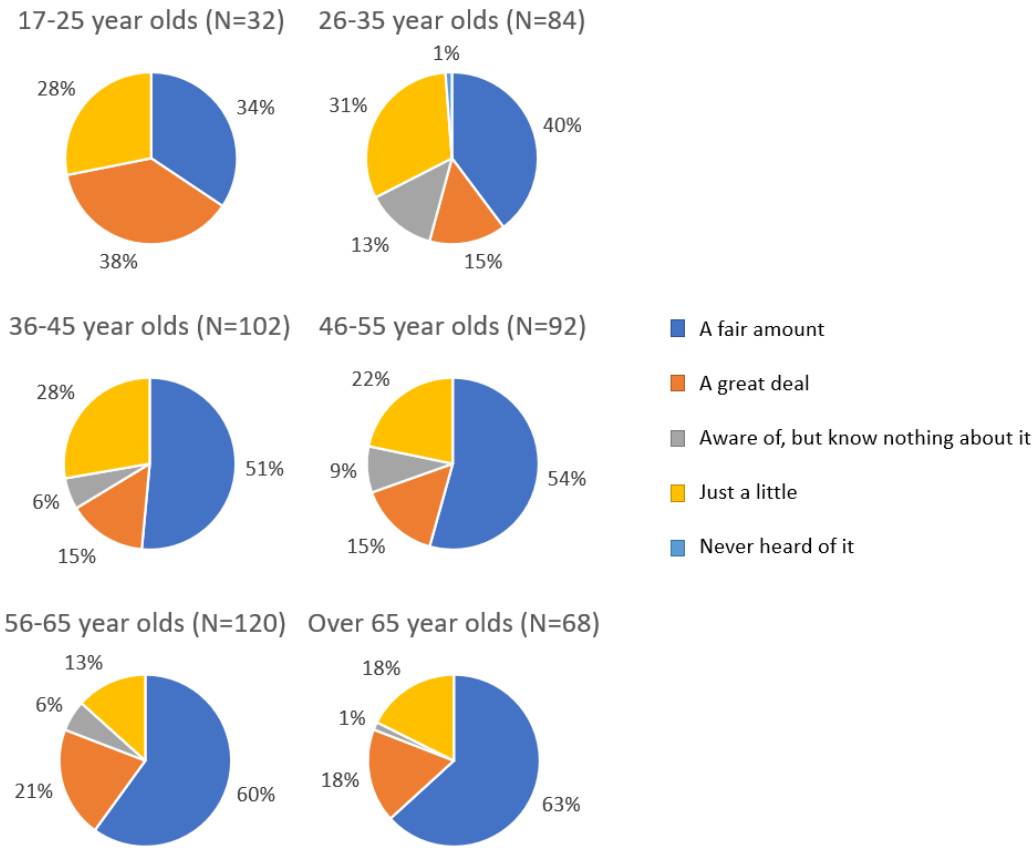

Figure 33: Respondents' reported awareness of their legal obligation to maintain their vehicle to roadworthy standards compared by age group

Respondents were asked which vehicle faults they considered to be most urgent (i.e. that they would seek to address in the shortest time). They were presented with a list of different vehicle faults, shown in Table 9 alongside the percentage of respondents who selected that option. Note that as respondents could select more than one option, the total exceeds 100%. In addition, Cochran-Armitage trend tests were conducted to assess the differences between age groups. The results of these tests are also included in Table 9.

Table 9: Number of respondents that rated each fault type as urgent, including statistical test results showing difference between age groups

Vehicle fault	% of respondents	Difference between age group (*p*-value)
Brakes not working as well as they should	89	Significant (<0.001)
Bald or worn-out tyres	87	Significant (<0.001)
Noise from the engine or wheels	74	Not significant (0.13)
Check engine light on	72	Not significant (0.17)
Cracked windshield	63	Not significant (0.79)
Headlight/brake light/indicator light out	61	Significant (<0.001)
Wheels out of alignment	51	Not significant (0.3)
Slow leak in tyre	39	Significant (<0.001)
No/low windscreen washer fluid	32	Significant (<0.001)
Overdue oil change	22	Not significant (0.9)
Other	<0.5	Sample too small
I do not feel that any of these issues require urgent attention	1	Sample too small

The items in Table 9 have been ordered by the fault type that was selected most often to the one selected least often. This allows for some interpretation of what people judge to be the most urgent issues compared to least urgent. It is worth noting that issues relating to brakes and tyres were ranked as most urgent, suggesting that people recognise these components to be the most important for maintain vehicle safety. In addition, the two respondents who selected the 'Other' option both specified that they felt that all the listed issues would rank as urgent.

With regards to differences between vehicle age groups, only the 'Check engine light on' fault was found to be statistically significant (*p*-value = 0.02), and with regards vehicle mileage, the only significant difference was found for the 'wheels out of alignment' fault (*p*-value = 0.02).

Respondents were also asked what factors (if any) would delay their response time in getting a vehicle fault resolved. The items that are listed in Table 10, along with the percentage of respondents that selected that item. Note that as respondents could select more than one item, the total exceeds 100%.

Table 10: Factors that would delay response time in getting a vehicle fault resolved

Vehicle fault	% of respondents	Cochran-Armitage result (*p*-value)
Costs of repairs	48	Significant (<0.001)
Availability of facilities (e.g. garages) that can conduct necessary repairs	45	Not significant (0.42)
Lack of time – too busy to take car to a garage	30	Significant (<0.001)
Nothing would delay my response time in getting a vehicle fault resolved	24	Significant (<0.001)
Length of repairs – I cannot risk being without my vehicle for that long	18	Significant (<0.001
Knowing where to go to get an issue resolved	14	Not significant (0.34)
Anxiety	7	Not significant (0.13)
Other	1	Sample too small
I feel no rush in getting vehicle faults resolved, especially if it's not affecting the vehicle's performance	4	Not significant (0.18)

As per the previous table, items have been ordered to show the items most commonly selected. The cost of repairs and availability of facilities appear to be the leading factors that would delay a person's response in getting a vehicle fault addressed. It is worth noting that all significant results reported in Table 10 were found to have a strong to very strong effect size (ranging between 0.4 and 0.9). Of those that selected the 'Other' option, most indicated that it would depend on the nature and severity of the fault, along with the availability of the parts to do the repair.

With regards to respondents' understanding of different warning messages, the sample largely rated themselves as having a good or very good understanding of MILs (67%). Many people said they had neither a good nor poor understanding of different MILs (24%), while few rated themselves as having a poor or very poor understanding (9%).

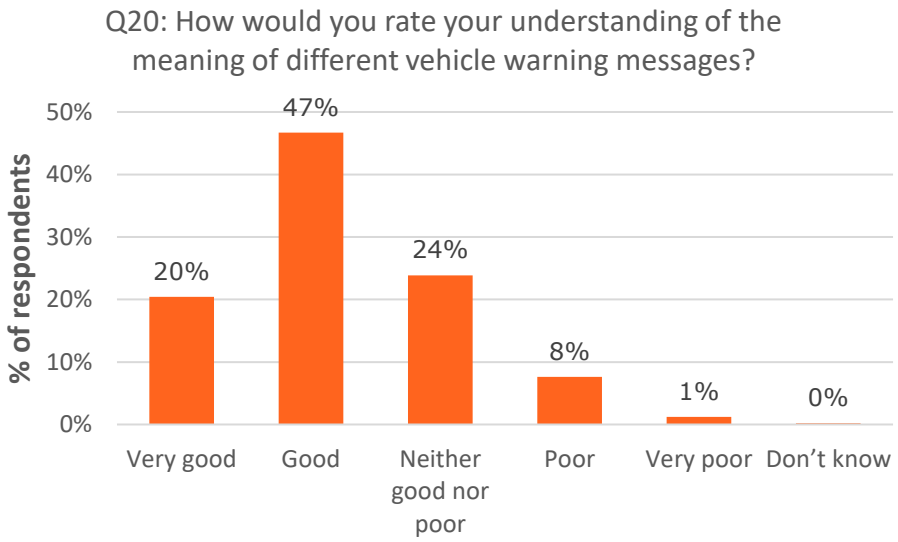

Figure 34: Respondents' self-ratings of their understanding of different MILs

Figure 35 shows the same data compared by age group. When performing a Kendall Tau test, a significant difference was found between the different age groups on respondents' understanding of different MILs (*p*-value = 0.03), though the effect size is defined as very weak (0.08).

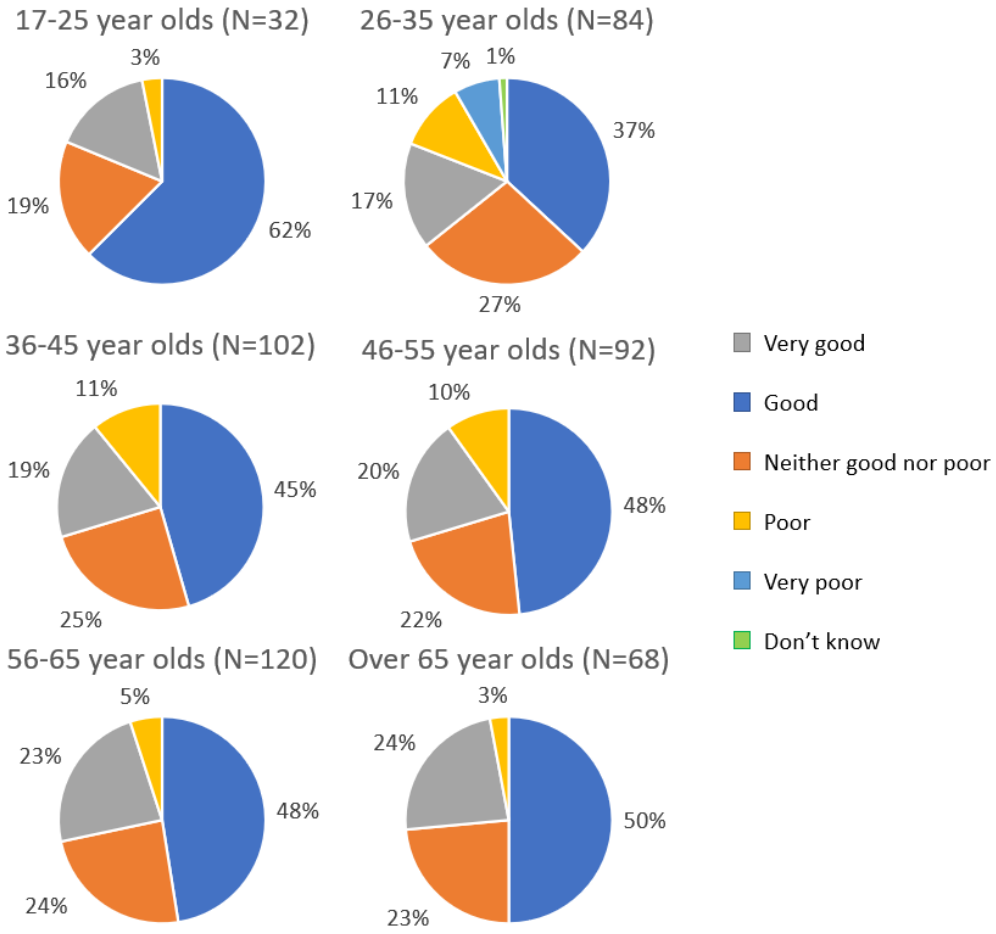

Figure 35: Respondents' self-ratings of their understanding of different MILs compared by age group

With regards to addressing other vehicle maintenance needs (Figure 36), the majority of the sample reported that they would address all points of maintenance (69%), even those not required to pass an MOT. 26% of individuals stated that they would only address vehicle maintenance needs that were required to pass an MOT.

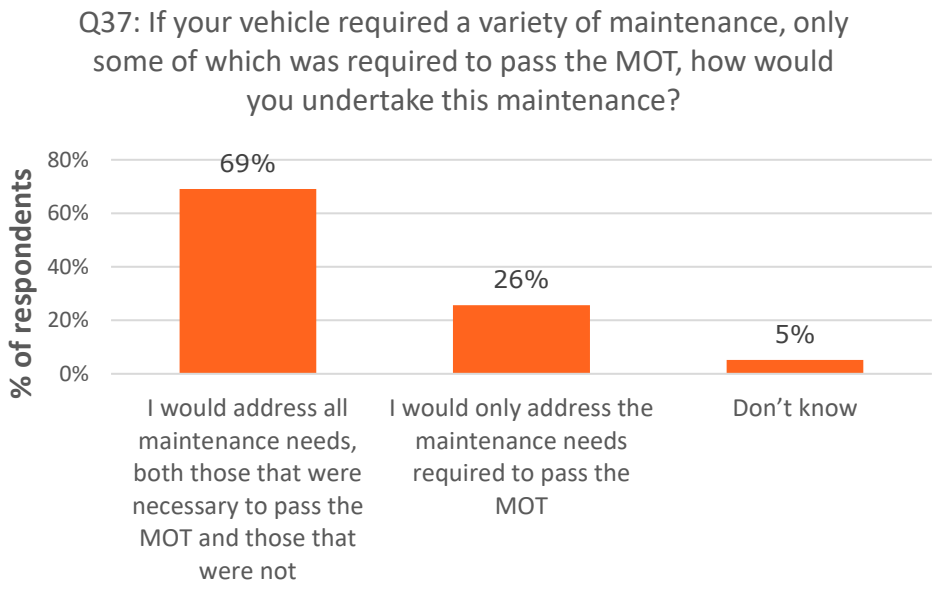

Figure 36: Respondents' reported response to addressing vehicle maintenance needs, only some of which being required to pass an MOT

Cochran-Armitage and Chi-square tests were conducted on these data as appropriate to assess the difference between different groups. With regards to age group (p-value < 0.001) and vehicle age group (p-value = 0.002), the difference was found to be statistically significant, and the effect sizes were defined as strong in both cases (0.6-0.7).

The difference between employment status was also found to be significant (p-value = 0.04), though the effect size is only moderate in this case (0.14). The differences for household income (p-value = 0.24) and vehicle mileage (p-value = 0.07) were not found to be statistically significant.

Due to the nature of the data and the statistical tests that were able to be conducted on it, it is not possible to identify exactly where the significant differences lie between specific driver age, vehicle age, and employment groups. However, the pattern of data suggests that all maintenance needs are more likely to be addressed among older age groups, older vehicle owners, and those who are in full-time employment and retired.

Appendix E Task 3: Focus groups – Detailed method

Four focus group sessions were conducted between the 5th and 9th of June 2023 with members of the UK public. Sessions were conducted online via Microsoft Teams, with each session lasted approximately 90 minutes. The focus groups were designed to gain an in-depth understanding of the UK public's vehicle maintenance behaviours and attitudes towards the current and potential future MOT testing system beyond that which was captured by the survey task. The following subsections provide the details on how these focus group sessions were conducted.

E.1 Topic guide design

A topic guide, presented in Appendix F, was developed in alignment with the key research questions. It consisted of three main sections:

- **Vehicle maintenance** – To explore people's understanding and response to malfunction indicator lights (MILs) and wider vehicle maintenance behaviours.
- **The current MOT system** – To explore people's experiences with getting their vehicle MOT and attitudes towards the current MOT system.
- **A changed MOT system** – To explore people's attitudes and behaviours in response to a hypothetical MOT system with a reduced frequency.

As the focus groups were largely intended to provide a richer insight into the topics explored within the survey, select questions were adapted from the survey for the three sections outlined above.

E.2 Sampling

Four sample groups were defined to allow for comparative analysis between specific groups to take place. Specifically, these groups were:

- Young people (aged 18-30 years)
- Older people (aged over 50 years)
- New car owners (vehicle age less than four years old)
- Old car owners (vehicle age over 10 years old)

These groups were chosen to allow for comparisons to be drawn between the two participant age groups and the two vehicle age groups to understand how attitudes differ. Participant age and vehicle age (also acting as a proxy for vehicle mileage) were believed to be two factors most likely to affect vehicle maintenance behaviours and attitudes towards a changed MOT system.

Participants were recruited for the focus group sessions using a targeted Facebook advertisement set up by TRL. As well as falling into one of the above sample categories, participants also had to meet the following criteria to be eligible to take part in one of the focus group sessions:

- Be a resident of the UK.

- Own a vehicle that requires MOT testing.
- Are responsible for the maintenance of the vehicle.

A link to a filter survey created on the Smart Survey platform was embedded in the Facebook advertisement which allowed participants to register their interest and for the researchers to determine eligibility and manually filter participants into a sample group. Eligible participants were sent an email with the information sheet and the opportunity to schedule their availability. Participants were asked to give their availability between two dates and times and to complete and return the consent form. A total of 21 participants were recruited and involved in the focus group sessions: four young people, five older people, seven new vehicle owners, and five old vehicle owners.

E.3 Approach to analysis

Supporting researchers took notes during each focus group to capture key points around each section of the topic guide. The focus groups were also recorded and transcribed, with participants' permission, to allow for further details to be drawn following the sessions. Insights from the focus groups were thematically analysed using the same approach taken for the analysing the free-text responses in the survey (see section B.3.2). In brief, focus group data was assessed to draw out common themes present in participant responses. Key themes were recorded alongside relevant participant quotes in Microsoft Excel. Comparative analysis across sample groups took place to contrast input between each sample group to see if behaviours and attitudes varied based on the age of the participants or the age of their vehicles. Key themes and findings were then discussed within the research team to reach a consensus on the final themes.

Appendix F Task 3: Focus group topic guide

Intro

The broad purpose of this group discussion is to understand public attitudes towards the current MOT system and vehicle maintenance behaviours.

We anticipate the discussion to last around 90 minutes.

With your permission we will record the session. Recordings will only be used to support with notetaking. These will not be shared with anyone outside of the project team and will be deleted at the end of the project.

Any quotes we use from these discussions will be completely anonymised. There will be no way to link any quotes to a specific individual.

You are free to leave the call at any point without giving a reason.

Section	Objective and key questions

Introduction
5 mins
	Objective: To build rapport and get to know the group.
	• Introductions
	  ○ What is your name?
	  ○ What do you drive? (vehicle model, age)
	• Overview of the session

Vehicle maintenance
25 mins
	Objective: Explore people's understanding and response to MILs and wider vehicle maintenance behaviours
	• How often do you perform maintenance checks of your vehicles, such as tyre wear, brakes, lights, etc.?
	  ○ How confident are you in performing such vehicle checks?
	  ○ What prompts you to perform vehicle checks?
	  ○ If you identify any sort of maintenance issues, how do you respond to these?
	  ○ Prompts: time taken to address, reasons for delay, trust with garages
	• How many of these different MILs are you familiar with? Can you tell me what each means? [Show image of example MILs on screen]
	  ○ Which vehicle issues would you rate as the most critical – i.e. those that warrant immediate attention?
	  ○ How quickly would you try to address these kinds of issues?
	  ○ What factors would delay you in dealing with these issues?

	○ Are you aware that you can be fined for using a vehicle with a lit MIL (specifically, red ones indicating a major fault)?
The current MOT system 30 mins	*Objective: Explore people's experiences with getting their vehicle MOT and attitudes towards the current MOT system* • Detail the current system to ensure attendees understanding ○ "first MOT at 3 years then annually thereafter" • To what extent do you agree or disagree with the following statement: 'The MOT helps to prevent the use of unsafe and/or polluting vehicles on public roads'. ○ Why do you feel this way? Why not? ○ What aspects of the current system do you feel contributes to this? [probe for specifics] • How much do you rely on this as a check of your vehicle's health? • Do you have any specific issues with the current MOT system? ○ Prompts: cost, trust, frequency, ease ○ What problems does this issue create for you? ○ How would you want this issue addressed?
Break 5 mins	
A changed MOT system 25 mins	*Objective: Explore people's attitudes and behaviours in response to an MOT system with a reduced frequency* • Detail the hypothetical MOT system ○ "for example, first MOT at 4 years and every two years thereafter" • How would you feel about less frequent MOTs? ○ Why? ○ What alternate frequency/system would you prefer? ○ Prompts: regular checks of priority items (brakes, tyres) but less regular for lower priority items, , tiered MOT system (what would this be based on? Mileage? Vehicle age?) • Do you feel that these changes/system(s) should apply to every vehicle? • Do you think you would perform regular vehicle maintenance/checks with less frequent MOTs? ○ Why? Why not?

	• If MOTs were less frequent, do you believe that vehicles would overall be more or less likely to be maintained to legal standards?

Debrief
5-10 mins
	Objective: Summarise key points covered and provide additional detail on purpose of this work
	• Discussed the current MOT system, impact of changing the MOT system, and vehicle maintenance behaviours
	  ○ Highlight any key talking points raised
	  ○ Ask if there are any final points anyone wants to add on anything that's been covered
	• Detail how the findings of this work will be used
	  ○ We will explore key themes raised from these group discussions; these will be incorporated into a larger report which will feed into the ongoing discussion around changes to the MOT system
	  ○ Any final questions on anything?

Research into impact of changing current MOT requirements

This report details the work and findings of the behavioural insights investigation undertaken as part of a wider project investigating the impact of making changes to the current MOT system in the UK. The overall aim of this work was to provide evidence on specific topics relating to possible changes to the current MOT for light vehicles to ensure that it is kept up to date with developing technologies and best practice. The focus of this behavioural insights work was to investigate both the behavioural and attitudinal response of motorists to changes to MOT scheduling, as well as to understand how motorists respond to vehicle malfunction warning indicators.

A semi-systematic evidence review, a public survey of 499 vehicle owners from across the UK, and a series of four focus groups were conducted as part of this study. Findings drawn from across these research tasks suggest that any change to the current MOT system in the UK that reduces or delays the frequency of MOT testing would not be well-received by the majority of the public and likely have a negative impact on overall vehicle safety. If the MOT frequency was to be reduced, some claim they would take on more responsibility for checking and maintaining their vehicle. However, others admit that they would be unlikely to take on this responsibility, which suggests that they would accept that their vehicle would go unchecked between MOTs and potentially risking safety. This latter group presents an obvious concern and must be considered if any changes are to be made regarding the frequency of the MOT.

Other titles from this subject area

PPR565 Effect of vehicle defects in road accidents. Cuerden R W, Edwards M J & Pittman M B. 2011.

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