



Car buyer survey: From 'mpg paradox' to 'mpg mirage'

**How car purchasers are missing a trick
when choosing new and used cars**

**Dr Jillian Anable (Aberdeen University), Dr Ben Lane
(Ecolane Limited) and Dr Nick Banks (Sustain)**

**Research conducted on behalf of the
Low Carbon Vehicle Partnership**

**Final Report
November 2008**

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1 Executive summary

This car buyer survey, conducted through in-depth interviews with recent car purchasers, shows that despite the emerging shifts taking place in the UK car market, the 'mpg' paradox still prevails – but it has changed in nature. Although, there is now strong evidence that car choice is changing in response to rising fuel costs, this research finds that it is not the fuel economy metric itself which is conceptually driving behaviour; it is simply the cost to fill up the tank that has instigated the change; hence the 'mpg mirage'.

The main implication for policy is that communicating fuel economy information (in terms of 'miles-per-gallon' or equivalent) is not the most effective metric with which to influence the car purchasing process and promote the adoption of smaller and/or lower carbon cars. While the information is necessary, it is not sufficient to bring about significant behavioural change or to help accelerate the changes already taking place. A more effective metric would be to provide (up-to-date) fuel costs for each particular car, and/or the potential financial savings that could be gained by choosing the vehicle considered as best-in-class.

This research therefore recommends that more precise fuel cost information is provided to car-buyers to enable them to compare fuel costs of different cars. Although the annual absolute fuel cost is shown on the existing car label, it is not updated to reflect the latest fuel costs, nor is it the most prominent figure presented. The key issue here is that, as fuel costs change over the longer-term, regularly updated fuel cost data is required to properly inform the consumer of the potential financial savings offered by the lower carbon models (or the financial penalties associated more polluting cars); out-of-date fuel prices are likely to underestimate the magnitude of the comparisons.

The survey also clearly shows that the performance of the previously owned car is commonly used as the primary benchmark on which to base an assessment of the new car's fuel economy, CO₂ emissions and/or road tax credentials. This is a new aspect to the 'mpg paradox' and has implications where the previous car was old or had poor fuel economy. The survey identified this a key limitation in the decision-making process; if consumers predominantly have previously owned vehicles in mind, they are unlikely to appreciate the full range of possibilities that exist to maximise the fuel-efficiency of their next car purchase, and are unlikely to be aware of 'best-in-class' performance.

This research therefore supports the provision of up-to-date fuel cost information for each specific model; preferably on the vehicle, or nearby in the vehicle showroom.¹ This information should be updated as fuel prices change – possibly through the provision of a web-based tool. Furthermore, the fuel cost information as recommended should include best-in-class fuel costs to provide consumers with a relevant benchmark for fuel cost comparisons. The findings suggests that the used-car market would also benefit from the same information.

While it is recognised that forthcoming legislation (such as the 'first year' Vehicle Excise Duty (VED) tax rates from 2010) is likely lead to a behaviour shift in car purchasing patterns, it is clear that (in the first two quarters of 2008) the cost of fuel has been driving the increased sales in smaller cars with improved fuel economy. That said, this research finds that it is the consumer's 'cost experience' of paying for fuel, as opposed to the 'mpg' metric *per se*, which is the main driver of new buying behaviour. Therefore, by providing more precise fuel cost information on a per model basis, this research suggests that it may be possible to amplify emerging behavioural and market shifts to maximise financial gains for the consumer, and reduce vehicle carbon emissions to the greatest extent.

¹ There is already some anecdotal evidence that the fuel cost data on the existing car label is the most used information by consumers. LowCVP, *personal communication*, 2008.

The survey also highlights the influence of social factors which have key roles in the construction of car buyers' social and personal identity, and shows that symbolic aspects of car purchase and ownership can powerfully frame and constrain the range of choices considered. Symbolic factors in car choice, therefore, have a role in understanding the 'mpg paradox' because symbolic aspects can override the more 'rational' calculations of relative fuel-efficiency or even the utility of the vehicle. Paradoxically, the purchase of smaller classes of vehicle may be particularly influenced by consideration of symbolic aspects because relative fuel-efficiency within these classes is already taken for granted. It is also the case that fuel-efficiency or a vehicle's CO₂ emissions also take on symbolic associations *of themselves* and so are also used in the process of identity and lifestyle construction.

Furthermore, it is notable that the survey finds that no single brand is associated with fuel-efficiency. This contrasts with other aspects of the car which are conventionally used as decision-making criteria (e.g. reliability is usually associated with Volkswagen, safety with Volvo, and BMW with quality). The fuel-efficiency niche seems to be as yet unclaimed although a number of respondents do mention the Prius (rather than Toyota) or the Smart car (rather than Mercedes) in this respect. With rising fuel prices this seems to offer an opportunity for car manufacturers to position themselves as a provider of fuel-efficient vehicles.

In summary, it seems that for most car buyers, the notion of fuel-efficiency remains a relatively weak element in the process of social or personal identity construction and fuel-efficient and low carbon vehicles are not, as yet, associated with aspirational or high status values. Moreover, the notion of a 'low carbon car' seems indistinct and is generally associated with a small car. As smaller cars are generally considered to be inferior (high functional value, low comfort level), low carbon cars are similarly categorised as products that respondents must reluctantly accept. Improving the image and status of fuel-efficient and low carbon cars is therefore a key issue that has yet to be addressed. For this reason, this survey recommends that further research on the symbolic aspects of low carbon cars be conducted to more fully understand consumer choice in this developing market.

1.1 Key findings

- Until recently, car purchasers would generally say that fuel economy was important, but not reflect this in their car choice (the 'mpg paradox'). However, many are now talking about fuel economy *and* choosing more fuel-efficient cars.
- This research shows the 'mpg paradox' still exists – but it has changed in nature. Whilst there is now strong evidence the car market is changing in response to rising fuel costs, this research finds that it is not the fuel economy metric itself which is conceptually driving behaviour. Although car buyers still refer to fuel economy (in terms of 'miles-per-gallon' or equivalent) it is simply the cost to fill up the tank that has instigated the change; hence the 'mpg mirage'.
- The research confirms that carbon emissions and environmental awareness generally have no influence on car choice. Motorists are aware of carbon emissions only in so far as it is tied to VED ('road tax'). Furthermore, motorists generally think of their road tax in terms of annual cost, and few can give the correct band (or CO₂ emissions) for their recently purchased car.
- The speed with which fuel prices increased in the first two quarters of 2008 means that (in the context of a faltering economy) consumers are less prepared to discount future fuel costs and absorb any fuel cost increases. The research suggests individuals are increasingly reaching their maximum personal weekly, monthly or annual fuel cost thresholds. This goes some way towards explaining why there has recently been a step-change in car-buying behaviour towards smaller, more efficient cars.

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- The research concludes, therefore, that fuel economy is not the most helpful metric to aid consumers decision making when buying a new or used car. It is rarely used by motorists to calculate future costs or to systematically compare different cars in terms of their fuel economy. Instead, motorists are using over-simplistic rules of thumb to benchmark 'good' and 'bad' cars.
- In particular, car buyers use their previous car as their main benchmark for fuel economy and will settle for cars with an 'mpg' figure which is only a slight improvement on their last one. For road tax, the majority of car buyers are content to simply pay the same as their previous car.
- The research suggests that car buyers who are interested in reducing their fuel costs may be 'missing a trick' in their choice of car, as most believe that the only route to better fuel economy is through a smaller car, a new car, or switching to diesel. While this is generally a move in the right direction, there is little awareness of the additional benefits to be gained from 'best-in-class' comparisons.
- The main implication for policy is that communicating fuel economy information is not significantly assisting the switch to smaller, lower carbon cars. While the information is necessary, it is not sufficient to bring about behavioural change.
- This research recommends that new information is provided to car-buyers to enable them to compare fuel costs of different cars. Instead of the annual absolute fuel costs (as shown on the existing new car fuel economy label), a better metric would be the potential (updated) fuel cost saving of switching to the 'best-in-class'. This information should ideally be updated as available models and fuel prices change and could be provided using a web-based tool also available at the point of sale. This information should also be available to buyers of second-hand vehicles.
- The survey also shows that symbolic aspects of car purchase and ownership can powerfully frame and constrain the range of choices considered. In particular, the survey finds that no single brand is associated (by consumers) with fuel-efficiency. The fuel-efficiency niche seems to be as yet unclaimed – with rising fuel prices this seems to offer an opportunity for car manufacturers to position themselves as a provider of fuel-efficient vehicles.
- This research notes that improving the image and status of fuel-efficient and low carbon cars is a key issue that has yet to be addressed. For this reason, this survey recommends further research on the symbolic aspects of low carbon cars to more fully understand consumer choice in this developing market.

1.2 Project objectives

Following a previous evidence review of car buyer attitudes to low carbon passenger cars,² in April 2008 the Low Carbon Vehicle Partnership commissioned new collaborative research by Aberdeen University, Ecolane Transport Consultancy and Sustain to further investigate the influence of fuel economy (as perceived by consumers) on patterns of car purchase.

Several existing studies report that, although car purchasers *claim* fuel economy to be an important factor when choosing a new car, most do not actually prioritise fuel economy when finally deciding on which car to buy. This research therefore set out to investigate the prevalence of this reported mismatch between attitudes and behaviour in both the new and the used private car markets.

Shifts in the UK car market during the first two quarters of 2008, including increasing sales in smaller segments and reducing CO₂ emissions,^{3,4} suggest that increases in fuel prices and possibly a heightened environmental awareness are having an influence on patterns of car purchase. This research, therefore, also aimed to understand more fully how rapidly increasing fuel prices may be leading consumers to change behaviour.

1.3 Research context

Previous research reveals the most important factors that influence car purchase are: 'reliability', 'safety', 'purchase price', 'running costs' / 'fuel economy', and 'comfort'. In contrast, 'environment', vehicle 'emissions', 'alternative fuels' and 'road tax' (circulation tax) are generally reported among the least important factors in operation during car purchase.^{5,6,7,8,9}

Although it is already well established that environmental issues are not sufficient in themselves to significantly promote mass-market sales of fuel-efficient and low carbon cars, fuel economy (commonly referred to as 'miles per gallon' or 'mpg') is reported by consumers to be a medium to high priority when making a car purchase.¹⁰

However, this previous research on car purchasing behaviour identified the '**mpg paradox**': that although 'mpg' is *reported* by car buyers as a key decision factor, in real-world purchasing decisions, less weight is given to fuel consumption information than other factors.

Several reasons have been proposed to explain this paradox; these include:

- Buyers assume similar 'mpg' for all cars within a class;

² Car Buyer Research Report: Consumer attitudes to low carbon and fuel-efficient passenger cars. Final Report, Low Carbon Vehicle Partnership, March 2005.

³ Society of Motor Manufacturers and Traders, 2008. URL:

http://www.smmmt.co.uk/news/DetailedArticle_pop.cfm?login=1andarticleid=17573andprintfriendly=1

⁴ Society of Motor Manufacturers and Traders, 2008. URL: <http://www.smmmt.co.uk/articles/article.cfm?articleid=17708>

⁵ Assessing the Impact of Graduated Vehicle Excise Duty: Quantitative Report. Department for Transport. MORI, 2003.

⁶ Raimund, W. and Fickl, S. (1999) Energy Efficiency of Passenger Cars: Labelling and its Impacts on Fuel-efficiency and CO₂-Reduction. Report prepared for the Austrian Energy Agency.

⁷ Johansson-Stenman, O. and Martinsson, P. (2005) Honestly, why are you driving a BMW? Journal of Economic Behaviour and Organization vol. 60 pp129-146.

⁸ Whelan, G., Page, M., Chen, H. and Daly, A. (2000) Factors influencing buyers' decisions when purchasing new cars Final Report. The Department of the Environment, Transport and the Regions, London.

⁹ Post Wave: 'Act on CO₂' car purchasing campaign awareness and communication: campaign launch. BMRB, October 2007.

¹⁰ Car Buyer Research Report: Consumer attitudes to low carbon and fuel-efficient passenger cars. Final Report, Low Carbon Vehicle Partnership, March 2005.

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- Buyers assume that new cars are more fuel-efficient than older models;
- Buyers believe that improving 'mpg' compromises performance and safety;
- Costs are too complex to compute (mpg and p/litre → p/mile);
- Private motorists use a high private discount rate;
- Buyers have little confidence in published fuel economy data.

The importance of the 'mpg paradox' is that if fuel-efficient cars are to be promoted, how consumers respond to the issue of fuel economy needs to be understood in more detail than is presently the case. Furthermore, while CO₂-based vehicle taxation (road tax) is increasingly being used to promote fuel-efficient and low carbon cars, there is only limited evidence about consumers' response to these carbon-based price signals – even the number of UK motorists who correctly know their car's CO₂ emissions is not well established.

In addition, the majority of previous surveys have not been specifically designed to investigate the role of fuel economy or CO₂ emissions throughout the car purchasing process. Studies often rely on closed-question type surveys that fail to investigate pre-purchasing attitudes or compare reported attitudes with actual purchasing behaviour. For example, a recent study on behalf of the Department for Transport relies solely on stated preference techniques to ascertain which factors are most important in influencing car purchase decisions.¹¹ There is now a great deal of evidence to support the position that these methodological approaches are limited in their ability to reveal the influence of consumer attitudes on actual behaviour in the real-world.¹²

While it is the case that a significant shift occurred in the UK car market towards smaller, more fuel-efficient cars in the first half of 2008,¹³ it is not clear how consumer attitudes have been modified, or how this attitudinal shift is working through (psychologically or socially) to new patterns of car buying behaviour. Although fuel price is undoubtedly one of the main drivers of the recent market change, there is little understanding of precisely how car buyers respond attitudinally to higher fuel prices and fuel costs, how the issue of a car's fuel economy is conceptualised (if at all), or of how car purchase priorities are changed.

Furthermore, given UK policy that strengthens the link between circulation taxes and CO₂ emissions (rather than to fuel economy *per se*) through graduated Vehicle Excise Duty, together with recent shifts in public awareness about the links between individual behaviour and climate change, the relative importance of fuel and carbon-based price signals is unclear. For instance, it remains unknown how these parallel signals are being conceptualised by consumers – it may be the case that, while being mutually reinforcing, the two metrics are becoming more distinct from each other in car buyers' minds.

This research project therefore aimed to establish more detail about the role of fuel economy and CO₂ emissions throughout the car-buying process by interviewing UK consumers who have recently purchased a new or used car. In the light of recent market shifts, the objective was also to understand in more detail how rising fuel prices influence consumer attitudes and lead to an increase in demand for smaller and/or lower carbon cars.

¹¹ Cambridge Econometrics (2008) Demand for cars and their attributes. A final report for the Department for Transport, January 2008. Final report.

¹² Anable, J, B Lane and T Kelay. Evidence review of attitudes to climate change and travel behaviour, Department for Transport, 2006.

¹³ Society of Motor Manufacturers and Traders, 2008. URL: <http://www.smmmt.co.uk/articles/article.cfm?articleid=17708>

2 Methodology

The method of data collection used for this research involved conducting a series of in-depth one-to-one interviews with individuals who had recently bought a used or new car (within the previous three months) for (primarily) private use. Interviewees were asked to discuss in detail the reasons for purchasing a particular car including: the criteria, motives and methods used to choose their car; their understanding of fuel economy and CO₂ emissions; their attitudes and knowledge of the environmental impact of road transport; and their understanding of the link between these issues and the running costs of their vehicle.

2.1 Interview design

Adopting the research recommendations of a previous evidence review,¹⁴ the research method was reflective and 'deliberative' – which meant that, while the interviews were structured using an interview guide, the discussion could be led to a large degree by the interviewee depending on what issues were considered most relevant by participants. While the sample size was relatively small (the target sample size was 30), the qualitative and deliberative approach was chosen for its proven ability to provide an in-depth insight of the consumer decision-making process.

While the majority of studies in this field are usually satisfied to record what consumers *report*, one of the central aims of this project was to be able to discriminate between what issues car buyers said were important in their purchasing decisions, and what issues they actually acted on – a crucial distinction that is at the centre of the arguments proposed and tested by this study.

The researchers aimed to use the discussions to investigate the *narrative* as related by the interviewees relating to their most recent experience of buying a car. The interviews were therefore designed to be semi-structured to allow (and encourage) open two-way conversation between the researcher and interviewee. In this respect the method employed was closer to one used by journalists or social historians than the approach more normally associated with automotive market research.

The one-to-one semi-structured interview also had the advantage over the use of focus groups by offering privacy to individuals and removing 'peer pressure' and the group consensus effect. This increased the chances of eliciting a more honest account by each individual. However, a number of caveats often associated with this type of research remain – namely, the possibility of response bias (the tendency to give socially responsible answers to the interviewer) and the problems of asking car buyers' to recall their decision making process some time after the event. Nevertheless, these limitations aside, the research team considered that these interviews represented a more grounded and in-depth understanding than a pure questionnaire survey could deliver.

It should be stressed here that the qualitative methods employed were chosen to investigate the attitudes of consumers during the car purchasing process, where 'attitudes' were taken to include any conceptual, emotional, social or cultural factors found to influence vehicle choice. Instead of establishing national trends (as a quantitative survey would have done), this research was focused more on what happens 'in people's minds' when buying a car. The appropriateness of a qualitative approach in this context was that, if the study could demonstrate important attitudinal-behavioural issues and capture a broad range of these, it would be likely that these would be shared by the majority of consumers.

¹⁴ Anable, J, B Lane and T Kelay. Evidence review of attitudes to climate change and travel behaviour, Department for Transport, 2006.

2.2 Discussion guide

A copy of the Interview Discussion Guide in full is included in Appendix 2.

In order to explore the participants' car choice, the interview included questions concerning the most and least important factors that influence car purchase (as reported by consumers), with ample discussion space being given to participants to describe as much of their personal decision-making process as they wished. In order to ensure that all the research questions were addressed, the interview discussion was structured as follows:

Introduction

- Introduction of interviewer and survey followed by short tick-box style questions about make and model of car purchased and general reasons for making car purchase at that time.

Section A – Warm-up

- General questions about why and how participant bought this particular car at this time, previously owned cars and other cars in household.

Section B – The car purchasing process

- Open discussion about the pre-purchase research conducted by the interviewee, what information sources were consulted and what kinds of information gathered; short discussion about the purchased car's most important physical attributes; short discussion on car advertising – interviewee shown three adverts and asked what these adverts are saying to consumer, what kind of person would buy these cars and what is the participants emotional response.

Section C – The car choice

- More detailed discussion about the purchased car's most important physical attributes such as vehicle size, comfort, reliability, safety, purchase price and running costs; discussion about how consideration of any of the relevant factors may have changed during the car buying process; short discussion about the purchase experience (dealer or a private).

Section D1 – Running costs

- Discussion about the concepts of fuel economy and/or fuel-efficiency, the interviewees knowledge and perception regarding the fuel economy of the car purchased, and how it compares with other models; discussion about car's running costs, how they are considered and compared (if at all), and the link between car running costs and fuel economy.

Section D2 – The environment

- Discussion about the main environmental features (or otherwise) of the car purchased; exploration of what 'environment' means/symbolises to the consumer; specific focus on interviewees knowledge/attitudes regarding the CO₂ emissions of the car purchased, the link between car running costs and CO₂ emissions, and what factors would have persuaded the participant to buy a more fuel-efficient/better mpg/lower CO₂/smaller/alternative fuel car.

Section E – Vehicle Excise Duty (VED) and energy labels

- Discussion about interviewee's knowledge of graduated VED; car's current and future VED band and annual cost; information sources; the vehicle energy label; and whether VED incentives were important in car purchase.

Section F – Close and de-brief

- After disclosing the survey objectives, the interviewer invites interviewee to make any other comments about recent car purchase or transport issues for input to the study.

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Pre-interview, interviewers made contact with participants to ascertain basic details about the car purchased – this included the vehicle's registration mark. Using a CarweB web-based look-up tool, this was used to check the precise model purchased and the vehicle's fuel economy and emissions. This information was not shared with interviewee until an appropriate point of the interview during Section E (see above).

Interviews typically lasted 1 hour 15 minutes duration. All interviews were conducted at home or office locations as chosen by each participant, and the discussions were recorded and transcribed in full for later (anonymous) analysis. In return for participating in the project, survey interviewees received a Marks and Spenser voucher worth £25.

2.3 Survey sample

Potential interview participants were contacted through local dealerships, using a web-based flyer and (where necessary) by leafleting 2008 plated cars. Interviewees were initially sought in Bristol, London, and Aberdeen – these being the locations covered by the three collaborating research organisations. Contacts with prospective participants was first made in April 2008 and, due to the difficulty of finding suitable participants who had recently purchased a car, continued throughout the project. In finding interviewees for the project, effort was made to check that, as far as was possible, the survey sample reasonably reflected the UK car market demographic.

In all, 32 interviews were conducted between May and September 2008, four of which were subsequently excluded from the study as the cars purchased were registered before 1st March 2001, a cut-off date chosen by the researchers due to changes in the vehicle taxation system on that date. Almost half of the sample of 28 had purchased a new car (including some pre-registered and demonstrator vehicles), and the remainder had purchased a used car (since 2001). The final sample used for the study comprised 13 new and 15 used car purchases – see Table 1.

Table 1 New and used car buyer survey samples

	Bristol	London	Aberdeen	Total
New car	4	0	5	13
New car pre-reg/ demo	1	1	2	
Used car (post 2001)	5	5	5	15
Total	10	6	12	28

Although UK new and used cars sales are currently in the ratio of approximately 1:3, the sample split was considered appropriate for the survey to provide qualitative attitudinal data for the new and used sectors irrespective of absolute sales volumes. In the project design, London was included with the aim of capturing any additional effects of the Congestion Charge on awareness and importance attached to attributes such as fuel type, fuel economy and vehicle CO₂ emissions.

Reflecting national trends, the survey sample consisted of approximately equal numbers of male and female car buyers. Of the car buyers in the samples, 75% intended to use their newly purchased cars for personal use only with the rest being for both personal and private use combined (none for business use only). The average annual mileage for new and used car buyers was 9,250 miles (close to the national average) and 7,925 miles respectively.

Analysing the car buyers' age profiles, while most of the car buyer age groups were present, the new car buyers were over represented in the 17-44 year age groups, and not represented at all in the 65+ age group – see Figure 1. Although new car buyers in the 45-64 age range did reflect the increasing importance of the growing older car buyer market, the sample's lack of consumers in the 'retired' age group should be noted.

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In the used car buyer sample, again most of the car buyer age groups were present, and were reasonably represented in the two most significant age categories (covering 25-44 years). However, the used car buyers were significantly over represented in the 45-54 year age group, under-represented in the 55+ age groups, and not represented at all in the 17-24 year category – see Figure 2. The omission of the youngest age group in this sample should also be noted.

Figure 1 Age profile of new car buyer sample¹⁵

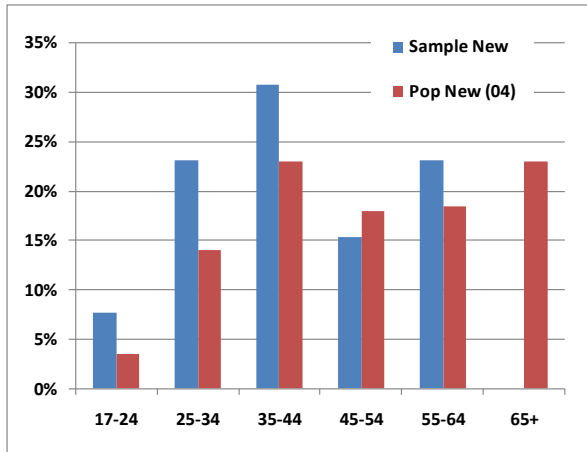
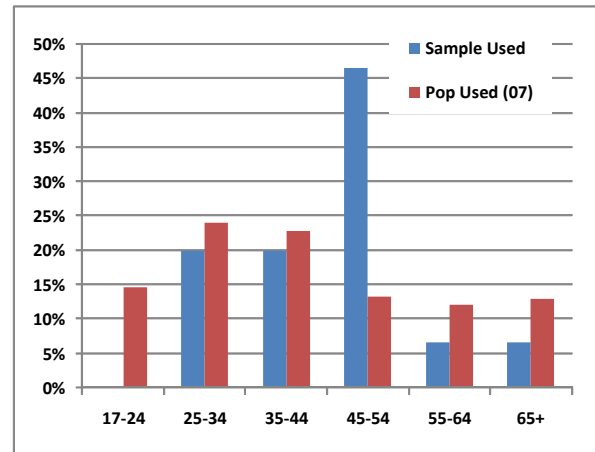
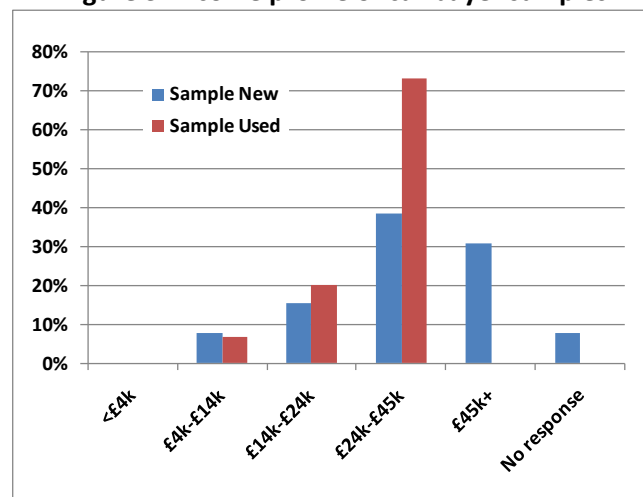


Figure 2 Age profile of used car buyer sample¹⁶



Analysing the car buyers' income profiles, the range of annual income levels for the new car buyer sample is larger than for the used car sample, extending to the £45k+ category. Although both income samples peak in the £24k-£45k income group, the average income for the new car sample exceeds the value for the used car sample due to the former sample's larger proportion of higher income groups – see Figure 3.

Figure 3 Income profile of car buyer samples



Analysing the vehicles purchased in the research samples, the new car sample only includes cars in the 'super-mini' and lower medium segments. While the smaller car classes are the only segments showing any increase in demand during the first two quarters of 2008, it should be noted that the new car sample is significantly over-represented in the super-mini class, reasonably reflects sales in the 'lower medium' segment, but fails to include any other vehicle class – see Figure 4.

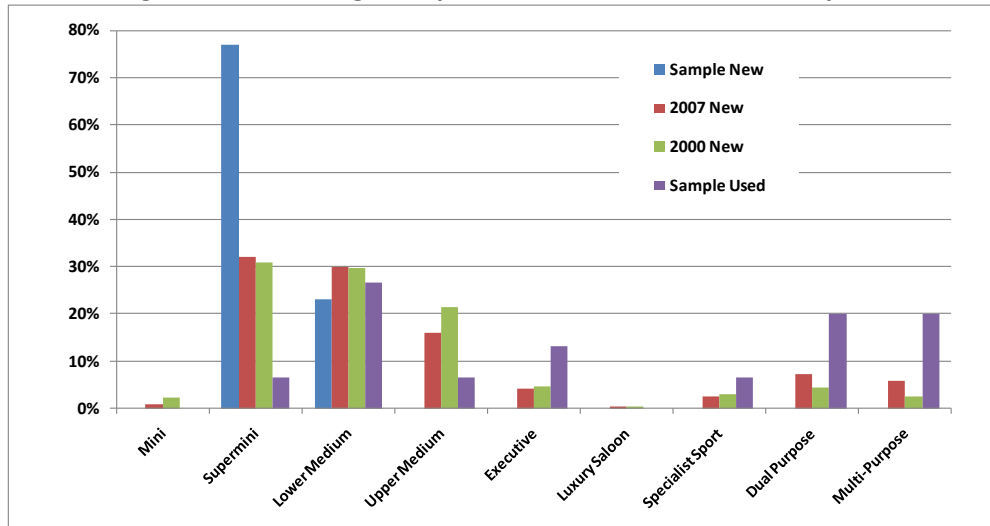
¹⁵ Reference data: The Demographic Structure of UK Car Markets, HWB Management Brief 3/6/6, HWB International, 2005.

¹⁶ Reference data: The Used Car Market Report 2008 – A Report by BCA. Centre for Automotive Management, University of Buckingham Business School, 2008.

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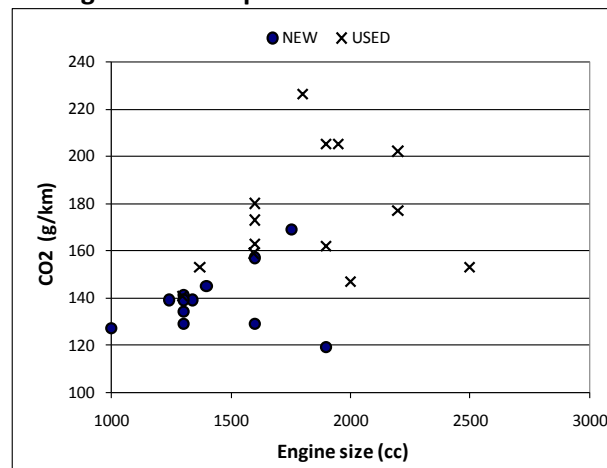
In contrast, the used car sample show a greater range of classes covered which more accurately reflect the UK used car market. Using 2007 and 2000 new car sales data for comparison, it is likely that the used car sample is under-represented in the 'super-mini' and 'upper medium' classes, and over-represented in the executive 'dual purpose' and 'multi-purpose' vehicle segments – see Fig. 4.

Figure 4 Vehicle segment profile of new and used car samples¹⁷



Reflecting the differences in the vehicle segments represented in each of the two sub-samples, the vehicles in the new car sample have an average engine size (displacement) and test CO₂ emissions of 1465cc and 139 g/km respectively; this compares with 1835 cc and 175 g/km for the used car sample – see Figure 5. Other measured attributes of the new/used car samples include average age: 0.1/4.5 years; average mileage: 1,650/55,100 miles; and average purchase price: £11,830/£6,770.

Figure 5 Engine size comparison of new and used car samples



One other important sample variable to note is fuel price. Fortuitously, the research was conducted during a period of rapid fuel price increases. From May to July 2008, during which the majority of interviews were conducted, petrol and diesel prices rose to peaks of around 120 pence and 133 pence per litre respectively; an increase of around 24% (petrol) and 37% (diesel) over the 12 months to July. Given the scale and rapidity of these fuel price increases, it is likely that fuel price influenced some of the car purchases surveyed more strongly than would have been the case had the study been conducted 12 months previously.

¹⁷ New Car CO₂ Report 2008, Society of Motor Manufacturers and Traders (SMMT), 2008; UK New Car Registrations by CO₂ Performance – Report on the 2005 Market, Society of Motor Manufacturers and Traders (SMMT), 2006.

3 Survey results

This section describes the main results from the structured discussions with 28 participants. All quotes shown are taken from the interview transcripts and are attributed using participants' initials with the following vehicle information: make and model, fuel type, new/ used, combined fuel economy (mpg), the car's official CO₂ emissions, and its Vehicle Excise Duty band (2008 banding).¹⁸ In the survey results detailed below, all interviewees have been quoted at least once in the following analysis.

3.1 The car buying process

3.1.1 Motives for buying a car at this time

The sample reported a large number of reasons for purchasing a new or used car at this time. Of the 28 interviewed, saving money was mentioned 8 times, previous car being too old/ un-repairable (6 times), previous car written off/ accident (3), reliability issues (3) safety issues (3), life change (3), and change in family size (3). Other issues (such as change in work location, downsizing, visiting friends) were mentioned less frequently, as was reducing environmental impact, which was mentioned only by one participant as one reason for buying a new car. Typical responses were:

I was keen to get rid of my 4x4 and whilst I was doing that to get something more economical. [NU, Citroen Zara Picasso, Diesel, Used, 51.4, 147, C]

Because it [last car] was cream-crackered, beyond serviceable repair, cost-effective repair as I said. [SH, Land Rover Discovery, Petrol, Used, 49.6, 153, D]

Fairly new family and with, my wife insisted that she have a dog so we've got a golden retriever, and we've got two kids, the eldest being two and a half. So the Audi 80 wasn't quite big enough to go back to her parents in the Cotswolds. [TC, VW Touran, Diesel, Used, 47.1, 162, D]

My last one, sorry, was a right-off, and I decided to get a new model which was a bit bigger, and a bigger engine size. [SW, VW Golf, Petrol, Used, 38.2, 173, E]

It's the first time I've been able to afford one basically... And because, obviously, my fiancé, she's got a sort of more practical car so I thought I'd get one a bit more impractical, I've always wanted a fun type of car. [JH, Audi TT, Petrol, Used, 30.8, 226, F]

3.1.2 Most important features required for the new/used car

The survey broadly confirmed previous research regarding the key factors that influence car choice. In response to being asked to name the five most important attributes of the car purchased, the sample of 28 mentioned: vehicle size (mentioned 18 times – majority larger size), running costs/ fuel economy (16 – new:used split 7:9), reliability (13), style/ image/ status (13), safety (10), purchase price (6), and comfort (6). All other issues (such as performance, fuel type, features) were mentioned less frequently. In particular, only one interviewee spontaneously named low CO₂ emissions as an important factor in their top five attributes. Typical comments were:

Space remained the priority and continued to be the priority. [TH, Ford Mondeo, Petrol, Used, 35.3, 192, F]

I bought that because it seemed a reasonable price – reasonable mileage and because my son, well, its got seven seats. We've got two dogs and there's space at the back with the seats and also I transport my Son's motorbike and his pushbike and stuff. A car for me is a functional thing, it's not a status symbol. [TR, Vauxhall Zafira, Petrol, Used, 35.8, 180, E]

¹⁸ Participants' and vehicle details are shown in brackets after quotes as follows: [Interviewee's initials, Make and Model, Fuel Type, New/Used, Combined 'mpg', Official CO₂, VED band].

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I wanted a smaller car, I wanted one that was easy to get parked and wasn't too expensive on road tax.... Maybe over and above, you know the look of the car, or the colour, cause at the end of the day most cars have got similar things in them... [MB, Ford Focus, Petrol, Used, 42.1, 159, D]

I've got is the, the cheapest model to run, like you get 49 miles per gallon, you've got the lowest car tax band and a good insurance group, etcetera. So there you go, that's the reason, they're the reasons [for buying the car]. [TC, VW Touran, Diesel, Used, 47.1, 162, D]

I really did want a car that was going to cost very little to run, because, you know, petrol, at the time we bought it, petrol was, on a daily basis, going up. You know, certainly on a weekly basis it was going up a penny or two. You remember it went up, it's gone up hugely. [AD, Toyota Yaris, Petrol, New, 52.3, 127, C]

Well, safety I think was the first concern, for my little one, you know, with the airbags and everything [SW, VW Golf, Petrol, Used, 38.2, 173, E]

Safe, that's the first thing, safety aspects, it's a, it's a big car; it's a four door saloon ... I mean, the bottom line with me, it comes back to economy really, at this, at this moment in time, in my life, it's, it's economy. I couldn't care less about looks, or this, that, and the other, yet there's a certain reliability that you want. [ES, Mercedes C2-20, Diesel, Used, 42.2, 177, E]

I think from an image point of view, I think it's an attractive looking car. From a performance point of view, it does exactly what I want... Also, it's got to be comfortable – I feel ok about owning it. [RBB, Land-Rover Freelander, Diesel, Used, 37.2, 205, F]

So there was looks, there was my budget, there was the consumption, there was the practicability with the seats. [NU, Citroen Zara Picasso, Diesel, Used, 51.4, 147, C]

Comfort's pretty important. You know, you, you... If you have a, a car that you're going to sit in for more than five miles, you want it to be comfortable. Or I certainly want it to be comfortable. I wouldn't have touched an uncomfortable car with a barge pole. [JW, Saab 9.5, Diesel, Used, 37.2, 202, F]

3.1.3 Pre-purchase information sought by car buyers

It was clear from the interviews that participants had, in most cases, put a great deal of effort and time into researching information about a particular or range of models that they were considering to purchase. Although not a surprise given the current literature on the subject, use of the World-Wide Web was the most popular source of information with 25 out of the 28 car buyers using the Internet at least once. Particularly popular websites mentioned include: WhichCar?, WhatCar?, Parker's Guide, and AutoTrader. Other widely used sources of information included: friends and family (15), dealerships (10) and test drives (8) were also considered very useful by many in the sample:

Roughly I [calculated costs], yes, when I was going on the Internet, working out the prices, I wrote it all down and had a big, ah, say, a notepad, ... and then it still came down to, like, ooh, I'm going to buy that car; still an impulse, kind of thing, really, in the end, but I still researched a lot. [SY, Ford Fiesta, Petrol, New, 47.1, 139, C]

Two, three months, something like that. I don't, I take my time on research. I mean when, when the, when the vehicle was there in front of me and I'm happy enough with the look and it drove okay and all the rest of it, then the decision was quite instantaneous, but, um, at that, at that point, you know, when we went to Car Giant we already knew we were looking at VW Tourans. But it took two to three months before we, we whittled it down to, that's the car we want, you know. There was a lot of arguing, there was a lot of in-fighting. [TC, VW Touran, Diesel, Used, 47.1, 162, D]

I mean, rest assured that I probably visited every site under the name of the car. So, but its more Which? I pay a subscription to, to Which?, on a month to month basis, and yeah, so most of my research for everything goes first via them. [ES, Mercedes C2-20, Diesel, Used, 42.2, 177, E]

No. I did. I did, I mean, I had the brochure. And I looked at all the Focus range, from the 1.6 turbo diesel to the 1.6 petrol right up to the...and they look at them all, and have a comparison ...to my one now ... and that was a few miles less than the one I bought. [GR, Ford Focus Sport, Petrol, New, 39.8, 169, E]

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I have done all that in the past. I went through the whole bit, Which? Guides and whatever, automobile books and library van and I suppose I've done a wee bit of research and at the end of the day I don't think it makes a blind bit of difference when you're buying a second hand car. I find that it really doesn't matter, it's the car itself, the car will either work and be fine for you or you could spend months and years planning your next car and might get a car that's never out of the garage. [MB, Ford Focus, Petrol, Used, 42.1, 159, D]

3.1.4 Changes in attitudes during the car buying process

In some cases, the participants' attitudes changed during the car buying process. While for at least 9 of the interviewees no change took place, 5 others changed their preferences for body/engine size (both ways) after reflecting in their requirements or aspirations, 4 decided to buy a new/ pre-registered car due to the advantages of having a new car (free servicing, fewer repairs), 3 changed the fuel type they were considering (petrol to and from diesel), and 2 realised that image/ style issues were of less importance than at first they had supposed.

I didn't think I'd be able to get a car this small that could, that would be this comfortable. I thought I'd have to go for a bigger car, to get the kind of comfort and the kind of boot space that this car has... So, I was pleasantly surprised to find that I didn't need to go for such a big or expensive car, to get what I wanted. [WLT, Honda Jazz, Petrol, New, 48, 134, C]

We could have gone for a nearly new, but the problem with that was, we didn't have the auto, you know; they'd just brought the auto stop-start and stuff like that in and those ones didn't have that and I was thinking that for all the difference in price and you know, we may as well get one with the, all the stuff in it. I'm just thinking when it came to reselling it as well, I mean stuff like this. [RB, BMW Mini Cooper, Petrol, New, 52.3, 129, C]

I was definitely clear it had to be cheaper on petrol ... That kind of became clearer as I was doing more research. Um... and obviously things got eliminated because of price and things got eliminated because of looks. But those were kind of always there; they were constantly sort of kept, they kind of channelled my focus. [NU, Citroen Zara Picasso, Diesel, Used, 51.4, 147, C]

3.2 The role of fuel economy

3.2.1 Knowledge and awareness of fuel economy

When asked the question 'Do you know the official 'mpg' rating of the car?' 13 out of 28 respondents gave their car's fuel economy (in miles-per-gallon) rating to within 10% accuracy of the official (combined) figure, 8 out of 27 respondents gave an answer that was in excess of 10% higher or lower than the official figure, and 6 out of 28 respondents did not know and were not able to hazard a guess at what their car's MPG rating might be:

Well, we looked in the brochures, and I can't remember [the 'mpg'] exactly, and they were giving city ones, and non city ones. And we did look at these, when we were comparing the cars... [AD, Toyota Yaris, Petrol, New, 52.3, 127, C]

34 mpg on mixed running, with the caravan it goes down to about 26... I always, I have always filled my tank & kept an eye on fuel consumption and it's just a habit. [RBB, Land-Rover Freelander, Diesel, Used, 37.2, 205, F]

And I believe the websites. If they tell me it does 49 miles to the gallon, who am I to argue? I don't bother calculating it, I don't waste my time. [TC, VW Touran, Diesel, Used, 47.1, 162, D]

Will I work it out? To be perfectly honest, I think I'd rather take their word for it than work out miles. [PK, Mazda ZT, Petrol, New, 52.3, 129, C]

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Interestingly, two participants in the sample mentioned that they actively monitored their car's fuel economy as a means of checking that the engine was running correctly (rather than for financial or environmental reasons):

I particularly did it [check the fuel economy] with this vehicle anyway, in the early stages. Simply to check out that it was doing what it should be doing. [RBB, Land-Rover Freelander, Diesel, Used, 37.2, 205, F]

3.2.2 How car buyers conceptualise fuel economy

The first point to make here is that many of the car buyers in the sample did conceptualise fuel economy in a way that was easily recognisable as being correct. A few also recognised that the fuel economy of a particular model depended on the driving conditions and/or driving style:

How many miles to the gallon it does. [PK, Mazda ZT, Petrol, New, 52.3, 129, C]

The higher the figure, the better. [PR, Audi A3 TDI, Diesel, New, 62.8, 119, B]

I have noticed obviously that I get through more petrol when I'm just city driving... [its] more economical on a longer drive. [JY, Fiat Stilo, Petrol, Used, 43.4, 153, D]

However, what is striking in reading through the transcripts of the responses to the question "What does the term 'fuel economy' mean to you?", at least 15 of the 28 participants expressed fuel economy in monetary terms – either as the cost to fill up their tank with fuel, or the average weekly or monthly fuel bill. Moreover, from the manner in which these comments are made, it is clear that this way of thinking about fuel economy was the dominant conceptualisation:

Off the top of my head I can't remember what the fuel economy was, but it is quite good because we did, when we were comparing models, it was at least as good as anything else, and certainly in terms of the way I work out fuel-efficiency is how much petrol I put, in a week, I'm managing everything I need to do on £25 worth of petrol in a week [WLT, Honda Jazz, Petrol, New, 48, 134, C]

Mpg, yeah, I looked at that when I were looking, as well. Actually, the price has gone up. When you used to only stick in £12 of diesel, and you'd had to stick £20 in, within a month or two. And it was going up. It's a big difference. You did, I did notice it. [SY, Ford Fiesta, Petrol, New, 47.1, 139, C]

Well, I suppose at the end of the day it does come down to money. I mean, fuel economy is, to me, what kind of mileage you get for your full tank of petrol, if you like. It's back to you how much does it cost you for a full tank of petrol. [JY, Fiat Stilo, Petrol, Used, 43.4, 153, D]

The A4 ...it got to the level of 70 quid a tank of fuel, for a week's running. The A3 now is almost two weeks old and it's 60 quid of fuel, something like that. [SY, Ford Fiesta, Petrol, New, 47.1, 139, C]

How much, how often I fill a tank up, and how much it costs. [GR, Ford Focus Sport, Petrol, New, 39.8, 169, E]

How much it costs, you know, how many miles you're going to get out of a car before you have to fill it up again with petrol, and obviously petrol's quite expensive... [BT, Seat Ibiza, Petrol, New, 42.8, 157, D]

It was more for the price because there are costs and how economical they are on fuel going back and forth. The Mini was really heavy, especially round Aberdeen, I think it was - £5 would only last 2 trips back and forth to work...A Peugeot - £5 would be about 4 journeys back and forth or five. [CD, Peugeot 207 Sport, Petrol, New, 46.3, 145, C]

How much it's going to cost you. You convert it. Like, you put your fuel in, and then you work [unclear] how many, how much you've got for that tank of petrol, how much it's cost you to do those miles. [M&B, Land Rover Freelander, Diesel, Used, 37.2, 205, F]

Although not as prevalent, the second most common association with fuel economy (in the sample) was with the miles that can be driven on a 'tank full' of fuel:

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Well... I mean, I can only tell it to you, this is the only way I can tell it, to you. It was costing me... by the time we changed over, it was costing me about £50 to fill the Ford Focus, and I was getting about 280 miles for that. [AD, Toyota Yaris, Petrol, New, 52.3, 127, C]

It was a case about putting £70 of fuel into the A4 [previous car], and that would last me five days, if I was lucky... and I was only getting something like 380 miles to the tank, whereas I'm now getting 550, and I knew I would get towards between 500 and 600 miles, so it just really is a rough estimate. I knew I could get more miles to the tank. [PR, Audi A3 TDI, Diesel, New, 62.8, 119, B]

Miles per gallon and that type of thing... so how far is that petrol... that tank going to last me as such. So it's a combination of saying, how many miles am I going to get out of it and then obviously how often am I going to have to fill it up and how much is that going to cost me? So it's a bit of a combination really. [TH, Ford Mondeo, Petrol, Used, 35.3, 192, F]

3.2.3 Assumption that similar cars have similar fuel economy

Following the findings of previous research (see §2.2), this survey confirmed that a common belief among car buyers is that cars within the same class (segment) have similar fuel economy. This is directly at odds with figures well publicised by SMMT that within each class, fuel economy typically varies by up to 30% (difference between best performing car in class and class average:¹⁹

Well, I think it's more... it's cost effective in comparison to the bigger car. I think all small cars are the same; I don't think it's any different... that's any different to, you know, a smaller Audi or a smaller Corsa or anything like that; I think it's a small car. A small car is a small car. [MH, Vauxhall Astra, Petrol, Used, 41.5, 163, D]

I decided on this, that I was going to buy a sports car, so I just thought, it's not going to have good fuel consumption, I wasn't comparing between sports cars because they're all going to be as bad as each other. [JH, Audi TT, Petrol, Used, 30.8, 226, F]

They're all about the same, to be honest, the Fiesta and the other ones, there about the same. [SY, Ford Fiesta, Petrol, New, 47.1, 139, C]

I suppose it's the same as any other two-litre car. I didn't do any comparisons, I didn't...I just looked at what the book, what the Ford book said... I looked at it, and thought, oh, well, that's it, it's a lot less, well, not lot a lot less, but it's less than a diesel. Ah...I never compared other models, you know ... [GR, Ford Focus Sport, Petrol, New, 39.8, 169, E]

[I knew] this car would still rank ok, it's not good, but would rank ok for its league. [KB, Honda Jazz, Petrol, New, 47.9, 139, C]

It wasn't really an issue, because I knew what I was looking at, so I knew there wasn't going to be any difference in the cars I was looking at. So it wasn't something I thought about. [HW, Toyota Yaris, Petrol, New, 47.1, 141, C]

3.2.4 Assumption that smaller and/or diesel cars have better fuel economy

Many car buyer samples also shared a common belief that smaller cars necessarily have better fuel economy than larger models:

Because it was a lower engine size it was just common sense overall that it was going to be a lot cheaper to run. [CD, Peugeot 207 Sport, Petrol, New, 46.3, 145, C]

Q: Was fuel economy really important in deciding to buy this car? R: Not this particular one, no, but I would say it's one of the reasons that dictated a smaller car, yes. [PK, Mazda ZT, Petrol, New, 52.3, 129, C]

Small cars that I've been looking at, really; I've been really out focused on just looking at them. I wouldn't mind a nice Jag, because I know they're quite nice. But they use a little bit too much petrol ...

¹⁹ New Car CO₂ Report 2008, The Society of Motor Manufacturers and Traders (SMMT), 2008.

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There's lots of cars I would've like to have had but there just a little bit too much to run. So, I had to track one down and go for a small car. [SY, Ford Fiesta, Petrol, New, 47.1, 139, C]

Q: What cars have the best fuel economy? R: Well, a smaller car I would have thought. A smaller engine size, it's not got so much work to do, has it? [JY, Fiat Stilo, Petrol, Used, 43.4, 153, D]

Obviously if you use smaller cars than ours then they're going to be more fuel-efficient. [TH, Ford Mondeo, Petrol, Used, 35.3, 192, F]

Again as identified in previous surveys, this research also confirmed that many consumers generally view diesel as having better fuel economy:

I don't know much about the other cars, but I would imagine anything that's diesel would be quite economical. [SW, VW Golf, Petrol, Used, 38.2, 173, E]

And I was looking for something a bit more economical. I wanted a good diesel because I'm generally not that fond of them and I knew that the French/German were fairly good on diesels. [NU, Citroen Zara Picasso, Diesel, Used, 51.4, 147, C]

Yeah, it's just, well actually it's not very economic like, in my old Fiesta, I could do; I could get home to Nottingham and back for about £50, whereas it costs in excess of £100 in the Yaris. But I think that's possibly to do with diesel... I never realised how much difference having a diesel made on one journey. [HW, Toyota Yaris, Petrol, New, 47.1, 141, C]

Why diesel automatic? I like automatics and I wanted to cut down my fuel consumption. [JW, Saab 9.5, Diesel, Used, 37.2, 202, F]

Yeah, originally, sort of everyone was telling me to get diesel, um, because it would be a better economy. [BT, Seat Ibiza, Petrol, New, 42.8, 157, D]

3.2.5 Relative importance car buyers give to fuel economy

The discussions with the sample revealed clear limits on the importance attributed to fuel economy when other considerations came into play. The effect was that, in most cases, even when fuel economy was considered, it only influenced the choice of car up to a certain point in the process. Several comments also suggested that the official fuel economy information was not greatly trusted, and that some participants had difficulty in utilising the fuel economy data:

I'm saving a lot of money on petrol and spending costs on it, I don't know, it feels like a breath of fresh air. Because it's nice and new and clean and neat. Definitely cheaper....[BUT] nobody would want to buy a car – an economical one, just because it's economical. I don't think. While you're spending that amount of money, you have to like driving it. I think people are more interested, especially with how things are going now, by price and looks rather than efficiency and stuff like that. [CD, Peugeot 207 Sport, Petrol, New, 46.3, 145, C]

No, I see it [mpg] simply as a way of comparing, pre-purchase, two different vehicles. If they are using the same test data, then you simply say: "Well that one's 10% better than that one." What the figure is, is immaterial to some extent. (and don't expect to get it when you drive it!) [RBB, Land-Rover Freelander, Diesel, Used, 37.2, 205, F]

Well, we looked in the brochures, and I can't remember exactly, and they were giving city ones [fuel economy figures], and non city ones. And we did look at these, when we were comparing the cars, and after a while it becomes a bit of a, sort of a nonsense [Q: Why do you say that?] ...One seemed to be a bit better than the other, for shorter drives, but... for city, but, better. At the end of the day, I felt they were all much of a muchness. That wasn't really what, what swung it, I don't think. [AD, Toyota Yaris, Petrol, New, 52.3, 127, C]

No, what did I read? The information you get in the adverts about the economy of the car, the mileage or the litres of what it takes, per gallon or per 100 kms, this piece of information is actually not accurate for when you drive it on the road. They need to get some sort of information and then put that in the information they provide. [KB, Honda Jazz, Petrol, New, 47.9, 139, C]

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Roughly I [calculated costs], yes,... and then it still come down to, like, ooh, I'm going to buy that car; still an impulse, kind of thing, really, in the end, but I still researched a lot. [SY, Ford Fiesta, Petrol, New, 47.1, 139, C]

The other thing is, this thing is always all in litres and kilometres so you've got to convert, and I... It's just too much hassle. [PK, Mazda ZT, Petrol, New, 52.3, 129, C]

There was also some evidence that the car buyers in the sample were content to settle for something that wasn't "too bad":

Yeah, I didn't look at it, but it didn't really make any difference. Yeah, I did check before I bought it, I did have a look, but like I say, it wouldn't have stopped me. Because I knew it wasn't going to shock me. I knew it wasn't going to be, you know, in the region of one of these 4X4's. [HW, Toyota Yaris, Petrol, New, 47.1, 141, C]

I'm quite happy with what we got because it, kind of, medium. ... I mean, as I say, if I was going to buy another car I would making sure it wasn't any higher than that. [JY, Fiat Stilo, Petrol, Used, 43.4, 153, D]

3.2.6 Use of previously owned car to benchmark fuel economy

In addition to the reasons that reduce the influence of 'mpg' during the car purchase (discussed previously), this research has identified a new aspect that influences the car-buying process. In at least 11 of the 21 interviews, the performance of the previously owned car was used as the primary benchmark on which to base an assessment of the new car's fuel economy credentials.

I just based it on... [the] last car we had. [JY, Fiat Stilo, Petrol, Used, 43.4, 153, D]

We knew petrol was obviously going to be a lot cheaper than the Mini [previous car], not so heavy, so didn't even think about that. We didn't have to. [CD, Peugeot 207 Sport, Petrol, New, 46.3, 145, C]

I knew within my price range, I was looking at running a car with similar fuel costs to what I'd had. [HW, Toyota Yaris, Petrol, New, 47.1, 141, C]

Um, the decision to buy a new one, um, was, you know, partly influenced by the fact that a two litre Peugeot GTI [previous car] isn't particularly good on fuel, not riding about town anyway, that's for sure. So it was to get something, um, I suppose more economical, if that makes sense. [RB, BMW Mini Cooper, Petrol, New, 52.3, 129, C]

This is a new aspect to the 'mpg' paradox and has implications where the previous car was old or has poor fuel economy and identifies a key limitation in the decision-making process; if consumers only have previous car in mind, they are unlikely to appreciate the full range of possibilities that may exist to optimise fuel-efficiency of new car purchases (i.e. they are unlikely to be aware of 'best-in-class' performance).

3.2.7 Knowledge of 'mpg' is a weak influence on car choice

Many respondents think about fuel economy during the purchasing process by considering factors such as the size of the car, its engine capacity, or its fuel type, but had no knowledge of the official 'mpg' figure. Others (13 out of 28 respondents) were able to accurately state their car's fuel economy to within 10% of the official 'combined' figure, yet only five of these respondents could be identified as having given weight to official 'mpg' figures during the decision making process.

Of these five respondents, a number used internet websites to compare and contrast mpg figures from different makes and models of vehicle:

[My partner] did a lot of research on the web about miles per gallon and insurance groups and things like this, it's all quite easily accessible nowadays. [TC, VW Touran, Diesel, Used, 47.1, 162, D]

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Um, I looked at fuel consumption for various diesels and this one had quite a good level of fuel consumption... one of the things that I used was Parker's, the website guide which you can go and you can look at various reviews on cars to see what they're like in terms of performance, fuel consumption... So I did a lot of looking at Parker's reviews. [NU, Citroen Zara Picasso, Diesel, Used, 51.4, 147, C]

Others used the Internet to access consumer reviews in order to check the accuracy of official mpg figures:

I didn't have a figure [ideal mpg] in mind, but I knew what was fairly good, and whilst I appreciated they always quote 62.9 for extra urban mileage figure, I knew that was never going to be true, and so I was interested to find out what other people had found. [PR, Audi A3 TDI, Diesel, New, 62.8, 119, B]

The experience of one respondent indicated that an awareness of 'mpg' can be an important factor in the decision to buy a new or second hand car:

But because the new ones had all this stop-start technology and new engines and stuff like that, and the sort of second-hand ones didn't, I decided for the first time in my life ever to purchase a brand new car, rather than a nearly new one rather, you know. That was my son that told me that... it makes about six or seven miles per gallon difference on a combined cycle... [RB, BMW Mini Cooper, Petrol, New, 52.3, 129, C]

3.3 The role of environmental issues

3.3.1 Car buyers continue not to be motivated by environmental issues

In accordance with previous research, this survey confirmed that (for the vast majority of car buyers) environmental issues are not important motives in purchasing a new or used car. Even though the sample is over-represented with smaller models, not one participant in the sample bought their car solely for environmental reasons:

And I really wanted a car that was economical to run. And, you know, for our own pockets, not just because the environmental impact too, because, I think, because we're older now, we're getting quite fussy about the environment. [AD, Toyota Yaris, Petrol, New, 52.3, 127, C]

It wasn't necessarily the environmental consideration that was the driver, it was again the financial side of things that was the driver on that. [WLT, Honda Jazz, Petrol, New, 48, 134, C]

I'm assuming it [the car] is not the, not the best in the world. It's a diesel and, and any emissions or fumes that you are emitting is not going to be good, so, I mean the bottom line is, you know, we make a bit too much of it in this country and for me its just a nonsense, its worrying about this, that and the other. [ES, Mercedes C2-20, Diesel, Used, 42.2, 177, E]

A lot of my friends in Bristol are very ecologically aware and work in that sort of industry as well, so I never hear the end of it, but I certainly would consider it in buying future cars but I can't say it influenced me with this one. [JH, Audi TT, Petrol, Used, 30.8, 226, F]

With respect to the environment? It's [small car] great, I think we should all have one. If we could get away with all of us having one – but there's guys like me who has to work, it has to work – you've got to justify it. [AH, Ford Ka, Petrol, Used, 47.9, 141, C]

Post-purchase, the sample was asked to comment on the environmental impact of their newly acquired car: 3 of the sample of 28 thought that their car performed well on environmental impact (2 knew the car's CO₂ emissions, 1 did not); 8 participants thought that their car's environmental performance was 'not bad' or 'average' (at least 4 of whom didn't know their car's CO₂ emissions); 6 of the sample were comfortable with their car's environmental impact given the size/ class of the vehicle concerned; 7 thought or knew that their car impact was 'bad' – of these, 2 showed evidence of being in denial about environmental issues; 2 were concerned and tried to take actions to reduce impacts; and 1 reported offsetting driving emissions by taking holidays in UK. Typical comments included:

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[My car] could be better, I know, but I don't want to think, a little bit, as I said, about the gases that come out... [SY, Ford Fiesta, Petrol, New, 47.1, 139, C]

[Referring to the newly acquired car's CO₂ emissions] It's not bad at all actually, the new [car], my tax has actually gone a bit down. [HW, Toyota Yaris, Petrol, New, 47.1, 141, C]

The one I've bought now has probably certainly more emissions than a diesel one has, hence the road tax ... Yeah, but I do my bit for the environment. [GR, Ford Focus Sport, Petrol, New, 39.8, 169, E]

I'm not a Green Warrior, I've got to say, but in saying that..., as long as it was not more polluting than any other car, than in it's kind of class, I wouldn't have bought something that was horrendous to the environment... [WLT, Honda Jazz, Petrol, New, 48, 134, C]

3.3.2 Low level of knowledge of car's CO₂ emissions

When asked the question 'Do you know your [newly acquired] car's official CO₂ emissions figures?' only 3 out of the 28 respondents were able to give their car's CO₂ emissions figures to within 10% accuracy of the official figure. One respondent gave an answer that was in excess of 10% higher or lower than the official figure, and the majority (24) did not know and were not able to guess their car's CO₂ emissions. The following comments that arose during the discussion illustrate this low level of knowledge of CO₂:

I didn't really look at them to be... quite honest. ...but then I don't know what's good, bad, or what's middle, or... I haven't a clue. I'm not interested, probably is why. If I was interested, I would, you know... [M&B, Land Rover Freelander, Diesel, Used, 37.2, 205, F]

Nah. We didn't even look into it... I'm sure they [CO₂ figures] would have been quoted at us but it wouldn't have registered on my decision process. [WLT, Honda Jazz, Petrol, New, 48, 134, C]

I don't know what my car CO₂ emissions are, but I know if it fits in with the regulations – I think it's viewed as being as more environmentally friendly. [MB, Ford Focus, Petrol, Used, 42.1, 159, D]

The interviews also revealed the prevalent associations with CO₂ emissions. During discussion of the car's environmental impact, vehicle emissions and CO₂, only 4 of the sample explicitly mentioned climate change/ global warming. Other associations mentioned included: running cost, road tax, fuel economy, engine size, fuel type (e.g. petrol higher emissions), technology (e.g. stop-start, fuel cell). Two participants associated CO₂ emissions with the MOT emissions test.

Well, the higher they are [CO₂ emissions] the more running costs you'll have, because you've got a higher road tax, basically... The nuts and bolts of it are, yeah, it probably comes down to money. [JY, Fiat Stilo, Petrol, Used, 43.4, 153, D]

...I had in my head, I don't know where from, that CO₂ emissions would be linked well, it's probably linked to a few things, but I thought engine size was a big part of it... [JH, Audi TT, Petrol, Used, 30.8, 226, F]

I definitely saw it [the CO₂ figure] before I bought the car. But I knew that cars with a 1.3 engine don't have high CO₂ emissions, compared to a lot of cars. I could get a better one, but I could get a lot worse. [HW, Toyota Yaris, Petrol, New, 47.1, 141, C]

I do have them tested regularly, some friends when I go home, have got a garage and they put it onto the machine, they put a thing on your exhaust and they tell you. Generally they're average on each car. I've never had a problem that it's too much, or its failed or anything like that, but I don't know anything else really. [CD, Peugeot 207 Sport, Petrol, New, 46.3, 145, C]

3.3.3 Vehicle size, previous and others' cars used to benchmark car CO₂ emissions

As was the case with fuel economy, many participants used the size or class of their car to self-assess the level of CO₂ emissions and/or environmental impact of their newly acquired car:

How they tax cars according to their CO₂ emissions and this car would still rank ok, it's not good, but would rank ok for its league... No, no, I just knew that it [CO₂] was within a range so that personally we

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wanted to stick with the range of the car, so we didn't go for the next sort of size car. We're in the Golf class; we're not in the Passat class. [KB, Honda Jazz, Petrol, New, 47.9, 139, C]

I assume they're not the best but not the worst, and it is a small car as well, so I assume that a smaller car would use less, or it would give out less CO₂ emissions. [WLT, Honda Jazz, Petrol, New, 48, 134, C]

Do you know what? Other figures are meaningless to me...for me it's more about engine size, that's what you think in your head if you're not technically minded with cars, then logically you think about the engine – the more it's going to spew out the other end. [MB, Ford Focus, Petrol, Used, 42.1, 159, D]

Participants also mentioned their previous car or other people's vehicles in gauging the emissions and/or environmental impact of their newly acquired car:

The old car before was throwing out a lot more. So, I think I've improved. And I know this new car will be recycled and most will be recycled now, as well, which is a big plus... It's not the best in the world but there's people driving around in [big gas guzzlers]. [SY, Ford Fiesta, Petrol, New, 47.1, 139, C]

But, it didn't form our particular consideration when we bought the car we're talking about or the family car either. It was just a case of we were aware that it wasn't any better/any worse than other cars ... but I think that if you own a car, you just have to live with that, it's not any worse than anybody else's car. [WLT, Honda Jazz, Petrol, New, 48, 134, C]

New cars were also perceived by some to be necessarily less polluting:

Well, it's kind of like a medium type car so it's... I mean... how would I think it performs on the environment? Well, it probably could be better, put it that way... If we'd had a bigger budget we might have looked at a newer car which would have less CO₂ emissions, and stuff like that [JY, Fiat Stilo, Petrol, Used, 43.4, 153, D]

I think it's [CO₂] probably about middle of the road, maybe a bit higher than the new cars [SW, VW Golf, Petrol, Used, 38.2, 173, E]

3.3.4 Reactions to being told car's official CO₂ emissions

As the majority of the sample (24 out of 28) did not know and were not able to guess their car's CO₂ emissions, toward the end of the discussion the interviewer revealed the official CO₂ emissions of the newly acquired car. A show-card was also presented to participants to allow comparison with well-known models. In most cases, the interviewees were interested to compare the figure with information previously at their disposal. While difficult to categorise, the presented figures elicited a complex set of responses ranging from mild surprise to deeply held political beliefs. These reactions indicate the strong emotional dimensions to the beliefs underlying participants' attitudes to car ownership. Comments included:

Yeah, I didn't think I was, I was completely wrong about that, I thought because the engine size was smaller than the Porsche [unclear] whatever, then it would be somewhere in the middle ... I thought because mine was only 1.8, then it would be there... Yeah, I mean, it's not particularly good news for me, it's certainly more than I thought it was going to be, so it's a bit of a surprise, but I don't think it's going to dissuade. The type of people that have the Porsche Boxter S, aren't going to be too worried about paying £200 tax I don't think. [JH, Audi TT, Petrol, Used, 30.8, 226, F]

Yeah. I probably am [surprised], I probably... because, if you look at... that's 1.6. Which is the electric? Okay. Yeah, I suppose I am, I am, I suppose, a bit surprised to discover that I'm in a band with a one point six car. [AD, Toyota Yaris, Petrol, New, 52.3, 127, C]

I have a very strong view, that the idea that I should buy a fuel-efficient car is ludicrous, because of the cost to the environment of producing a fuel-efficient car compared with my running this thing into the ground. I think that all the efforts to force people to, you know, throw away what they've got in order to buy something that's cost the Earth, literally, quote, The Earth, to make – I don't see the sense of. [RBB, Land-Rover Freelander, Diesel, Used, 37.2, 205, F]

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I think you try and make the best decision you can – something you want and you like and also trying to not, to make sure you're not making things worse in a way... Although maybe sometimes they come away with all this stuff and people look blankly at them... 'oh yeah, emissions... yeah... don't know what that means, but never-mind... I like the colour of that car'. There's more behind it than you think. [MB, Ford Focus, Petrol, Used, 42.1, 159, D]

... I tried to pick the most fuel-efficient car I could so that's all I can do really. You know, I mean, what, what, you know, why not just ban cars if that's the, that's the aim? There's no money in that, is there?... how can you talk about environmental issues when you invade Iraq, responsible for the death of possibly, you know, I hope you're, I hope you're going to be all right with this, the deaths of a million civilians and, you know, untold bombs dropped in Iraq and then you start banging on to civilians in the UK about CO₂ emissions. [TC, VW Touran, Diesel, Used, 47.1, 162, D]

3.3.5 Belief that it is not *what* you drive but *how much* you drive

Interestingly, several participants clearly believed that changing their car had a negligible impact on the environment as compared to driving less. Whilst this may indeed be true in its absolute sense, it has implications for the degree to which the environmental message can be used to encourage car choice or how any environmental messages need to be framed:

Any car has an impact, it doesn't matter how badly or how big it is or how much fuel we put in it, we still sit in the road, we're still using it. It helped a little bit but all cars are the same. [SY, Ford Fiesta, Petrol, New, 47.1, 139, C]

CO₂ emissions, cars have all, have always emitted, I suppose, CO₂ and always will. If they were going to do something about it, they should have done it many years ago, before there were so many cars on the road. [M&B, Land Rover Freelander, Diesel, Used, 37.2, 205, F]

Linked to this was a common feeling that the presence of fuel inefficient or 'gas guzzling' cars on UK roads means that almost any car purchased is considered as 'environmentally friendly':

It could be better, I know, but I don't want to think, a little bit, as I said, about the gases that comes out. It's not the best in the world but there's people driving around in big gas guzzlers... [SY, Ford Fiesta, Petrol, New, 47.1, 139, C]

Yeah, I didn't look at it [CO₂], but it didn't really make any difference. Yeah, I did check before I bought it, I did have a look, but like I say, it wouldn't have stopped me. Because I knew it wasn't going to shock me. I knew it wasn't going to be, you know, in the region of one of these 4X4's. [HW, Toyota Yaris, Petrol, New, 47.1, 141, C]

A number of participants also held the view that vehicle emissions were less important than other non-car sources of carbon (and other) emissions, and could therefore be discounted.

I'm much more concerned with the emissions of the half dozen planes that have taken off [from nearby airport] while we've been sitting here. [RBB, Land-Rover Freelander, Diesel, Used, 37.2, 205, F]

I don't remember thinking about it [environment] at all, I think it's more important just to drive less in general, and I think there's other, it sounds as though it's coming from other sources much more, I think that might be a bit more important, that's just my opinion. [JH, Audi TT, Petrol, Used, 30.8, 226, F]

.. what about computers and things like that, haven't they got emissions coming from there, you know, [laughs]. Are they going to cut down on computers? No. You know, electricity? You know, I mean, they've got to do everything, it's got to be everything, hasn't it, not just one or two things. [SW, VW Golf, Petrol, Used, 38.2, 173, E]

3.3.6 Eco-driving and offsetting behaviours²⁰

From the discussions, there was some indication that the motorists in the sample were making behavioural changes to reduce their environmental impact from driving. The main methods reported included eco-driving and avoiding unnecessary trips:

I drive like an old man ... I leave [to go back to Wales] on a Saturday morning, not on a Friday night, so I'm not sitting in traffic. ... I drive after rush hour when there's less cars about... It will take time, but, no, it's, definitely, late night, fifth gear, don't accelerate hard, stick to 70, 75 and if you have to go slower and think of the money, you have to go slower. Once upon a time I would've just thrashed it and regardless, and just run through the gears to get to 70. Now I just stick it in, just go to first, second gear, then drop to fourth, then go into fifth gear and take the overtaking out. [SY, Ford Fiesta, Petrol, New, 47.1, 139, C]

No, [the fuel economy] it's less. I mean I find that worse, it's worse, it's not as good as I thought. So this is why we try to improve our driving. [KB, Honda Jazz, Petrol, New, 47.9, 139, C]

I find myself thinking, petrol is one, diesel is about 1.40 a gallon now, or 1.40 a litre, whatever it is, and, um, I wish it was 1.40 a gallon, ah, and I think, do I need to make that trip? I don't. [TC, VW Touran, Diesel, Used, 47.1, 162, D]

Several car buyers in the sample also reported 'offsetting' behaviours which were (usually) offered during the interview as a way of excusing the choice of car purchase. For instance:

So we need a truck to tow the caravan onto site; with the kids we've got plenty of room. So we don't go off in aeroplanes... So my carbon footprint... many people say, you know, a big gas-guzzler, however when you weigh up that we don't go on aeroplanes, it's offset against that. [SH, Land Rover Discovery, Petrol, Used, 49.6, 153, D]

We use public transport. So yes, of course, psychologically, we can offset it a bit on that side. ... And we've got the caravan, so we don't go holidays abroad at the moment, so we're not flying, jetting off, so you know. Why should we be penalised then for... albeit having a .. having a larger car. So we can tow the caravan, yeah, and be supporting the, the UK economy. So really, you feel, from that point of view ... Yeah, I think we all do our own bit in our own way. Oh, she does do, yes, she does do the recycling thing. [M&B, Land Rover Freelander, Diesel, Used, 37.2, 205, F]

We felt whatever we buy is not going to be that great. What we were looking at, none of them were going to be very good that we felt we could hopefully make changes in other ways to offset, if that makes sense. So by using the train more often, by cycling, by walking. That, you know, we may possibly be only walking in the village type thing, even if it was chucking down we would walk, kind of thing. And trying to make those, saying, this is not good so we use it as least... least often as we can, if that makes sense, and trying to offset that by using other forms of transport. [TH, Ford Mondeo, Petrol, Used, 35.3, 192, F]

The one I've bought now has probably certainly more emissions than a diesel one has, hence the road tax [unclear]. Yeah, but I do my bit for the environment. [GR, Ford Focus Sport, Petrol, New, 39.8, 169, E]

3.4 The role of running costs

3.4.1 Awareness and attitudes of car running costs

This section should be read in conjunction with section 4.2.2 which found that the majority of the sample expressed fuel economy in monetary terms – either as the cost to fill up their tank with fuel, or the average weekly or monthly fuel bill.

The car buyers surveyed used a large number of metrics to conceptualise and discuss their car's running costs. While no simple categorisation of the responses is possible from the sample, the

²⁰ The survey did not attempt to corroborate participants' claims of eco-driving or offsetting behaviours to reduce the environmental impacts of driving.

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transcripts revealed a number of commonly recurring concerns. Around a fifth of the sample mentioned depreciation as a cost issue that had played a role in their car choice:

... the fact that it held its value was a very much, you know, low depreciation is a big factor as well ... [RB, BMW Mini Cooper, Petrol, New, 52.3, 129, C]

... it was a hard choice. It wasn't automatic, I didn't get out of the Mazda and think, oh it's got to be that, and in the end it was the future holding, trade-in value that made me do it. [PK, Mazda ZT, Petrol, New, 52.3, 129, C]

...I bought an AX GT before, a Citroën AX and when I come to sell that it was worth nothing. I bought it for eight and a half and I think it worked out I sold it for £1,600 in the end, after four years. And I went: I'm never going to do that again.... Within a year they were telling me, oh, you've lost four and a half grand on it, the first year. I went, oh, ouch. I didn't research it well enough. So, I wasn't going to do that again. [SY, Ford Fiesta, Petrol, New, 47.1, 139, C]

I looked at another car, a Hyundai Getz which was considerably, purchase price was considerably cheaper, but when we did look at the depreciation values and that, um the Punto and other cars that we looked at were far more secure in holding their value than the car that was considerably cheaper.. well not considerably cheaper, but noticeably cheaper to purchase in the first place. [WLT, Honda Jazz, Petrol, New, 48, 134, C]

Yeah, I looked at five year old Yaris' on Auto Trader and they were still selling for like, four and a half thousand. Whereas I looked at the Seat and they were selling at like, two and a half, three thousand. And so that was quite a big factor actually. [HW, Toyota Yaris, Petrol, New, 47.1, 141, C]

Fuel costs also factored as an important cost issue for many participants. The main observation here is that, as was found in §4.2.2, although a few in the sample did work out their fuel costs per mile basis, fuel costs were more often considered on a cost-to-fill-the-tank or a fuel spend-per-week/month/ year basis:

But so far, I've come back from Wales and I stuck £10 in and I still haven't looked, really, yet, it's still got 100 or so miles left in the thing, so, I haven't, really, got round to doing that, yet. As I said, I've only had one trip back in it from Wales. But, starting from this time, I will be clocking it. I keep the receipts and I check it out. [SY, Ford Fiesta, Petrol, New, 47.1, 139, C]

Oh, yes. I'm terrible... I certainly do spreadsheets and estimate my fuel costs, I really do. [RB, BMW Mini Cooper, Petrol, New, 52.3, 129, C]

I always, I have always filled my tank and kept an eye on fuel consumption and it's just a habit. [RBB, Land-Rover Freelander, Diesel, Used, 37.2, 205, F]

Fill up the tank; record the mileage; after, when the tank's getting empty, fill up the tank again, and record the mileage and you can work out the difference... You know, you can work out the maths to see what it is. So you know, you know it's the difference between the two mileages and the amount of petrol you've put... diesel you've put in: multiply one by the other, take away the number you first thought of and you've got fuel economy, converted say from litres into gallons and all that. I can send you the spread sheet if you like, if you want to do it. [JW, Saab 9.5, Diesel, Used, 37.2, 202, F]

That said, for the majority of participants, calculating the fuel cost-per-mile from fuel spend and mileage information, or from fuel price per litre and fuel economy figures, proved either too difficult or required too much effort to conduct:

Running costs? Ooh gosh! Um, I'm not, do you know, I've not worked it out. It's something I have to pay – maybe I'd rather not know... Will I work it out? To be perfectly honest, I think I'd rather take their word for it than work out miles. The other thing is, this thing is always all in litres and kilometres so you've got to convert, and I... It's just too much hassle. [PK, Mazda ZT, Petrol, New, 52.3, 129, C]

And because we had a set budget I didn't want to go and buy a newer car. It would have had less running costs, I have to say probably, so it would have maybe saved in the long term, but I didn't actually sit and work out how much that was going to be, you know what I mean? [JY, Fiat Stilo, Petrol, Used, 43.4, 153, D]

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I've never sat down and worked it out [cost per mile], actually have I? No, I've worked out like, my average mile to the gallon; it does work out better than I think it does, if you do it that way. [HW, Toyota Yaris, Petrol, New, 47.1, 141, C]

One other position that emerged from the interviews was that a significant number of participants were resigned to the fact that, as they had to incur car ownership and running costs, they were less interested to know the extent of those costs:

Yes. I don't record the running costs. It, it costs what it costs. [JW, Saab 9.5, Diesel, Used, 37.2, 202, F]

As far as I'm concerned it's fine, whatever the price of fuel. You just have to accept it. [AH, Ford Ka, Petrol, Used, 47.9, 141, C]

I don't really think about future ownership or operating costs, I have to say. That relies on different things really, I think. So it may change. [JY, Fiat Stilo, Petrol, Used, 43.4, 153, D]

There were of course a few car buyers for whom costs were, in any case, not an issue:

I know what I want, which is a car to get me from A to B. Price is immaterial. So long as it does the things that I really need – that's all I worry about. [TR, Vauxhall Zafira, Petrol, Used, 35.8, 180, E]

Any difference in running costs are likely to have little, or no impact on the mileage that I do. Um, the potential is, if does go up, hugely, and yes it will, but even then, it's only sort of marginal, it's not massive, any change in use. [RBB, Land-Rover Freelander, Diesel, Used, 37.2, 205, F]

3.4.2 Increasing influence of fuel price rises

The majority of interviews were conducted during the first two quarters of 2008 when a significant shift in the UK car market was occurring. This period saw increasing sales in smaller segments and reducing average new car CO₂ emissions.^{21,22} This research was able to test the most accepted hypothesis that increases in fuel prices and possibly a heightened environmental awareness were driving the changes in patterns of car purchase; and understand more fully how rapidly increasing fuel prices is leading to consumer behavioural change.

There is certainly strong evidence from the interview transcripts that the recent fuel price increases²³ were of some concern to the majority of survey participants:

Well, you know, running costs are pretty important and, you know, at that point in time fuel was a damn site cheaper. It's gone, you know, it's gone crazy since then. [TC, VW Touran, Diesel, Used, 47.1, 162, D]

... I mean there must come a point, where it gets ridiculous – well it's ridiculous already, but... But now the food bill, because I'm on my own, is actually, sometimes less than the fuel bill. It does start to worry me when I'm looking at the dial when I'm filling and thinking: Is that litres or money? God, its money! [RBB, Land-Rover Freelander, Diesel, Used, 37.2, 205, F]

Well, it's a monthly sum which I put in a budget, a nominal budget, for fuel costs. And I'm not... it used to be £300 a month but for this year it's [unclear] because the price of fuel was going up, so I probably... I've only been averaging something round about the £200s. Now, I say averaging, well, I don't, you know, if we're going away for a long run we'll do a bit more one month and less the next month. For both, for both cars I would say £200 a month, but I'm allowing £220. [RB, BMW Mini Cooper, Petrol, New, 52.3, 129, C]

Mpg, yeah, I looked at that when I were looking, as well. Actually, the price has gone up. When you used to only stick in £12 of diesel, and you'd had to stick £20 in, within a month or two. And it was going up. It's a big difference. You did, I did notice it. [SY, Ford Fiesta, Petrol, New, 47.1, 139, C]

²¹ Society of Motor Manufacturers and Traders, 2008. URL:

http://www.smmt.co.uk/news/DetailedArticle_pop.cfm?login=1andarticleid=17573andprintfriendly=1

²² Society of Motor Manufacturers and Traders, 2008. URL: <http://www.smmt.co.uk/articles/article.cfm?articleid=17708>

²³ That occurred in the first two quarters of 2008.

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What also emerged from the interviews was that, for many in the sample, a fuel cost threshold was close to being, or had already been breached; and the indications were that this was about to lead/had already led to changes in driving and/or car buying behaviours:

I was doing, what, £26 a month. Now, I'm doing, like, £40, lately, on, I think, because the price has gone up so much, near enough doubled for me... That's about my limit, I won't put no more than that in it [SY, Ford Fiesta, Petrol, New, 47.1, 139, C]

We're trying to cycle more. He's [son] on the back of it. My husband takes the train. I've been taking the train in, going up to North Bristol quite a bit, instead of driving and so it's making us think about particularly... I mean, I've always tried to be quite conscious about where am I going and what am I doing on this trip, as in, what else can I cram in on the way and save up a few jobs as such. If we're going, let's kind of go in one go. But it makes me plan a bit more because it is more hungry on petrol. Or it feels like it. And especially with the fuel prices, obviously, gone up, then it's even more so of, oh gosh. [TH, Ford Mondeo, Petrol, Used, 35.3, 192, F]

I find myself thinking, petrol is one, diesel is about 1.40 a gallon now, or 1.40 a litre, whatever it is, and, um, I wish it was 1.40 a gallon, ah, and I think, do I need to make that trip? I don't. You know, they are knocking people off the road right now and they're, you know, not going to collect as much tax. [TC, VW Touran, Diesel, Used, 47.1, 162, D]

Oh, yes, it goes up over the years as fuel goes, as the fuel price goes up. But of course, just recently, the fuel price has shot through the roof and I'm sitting down doing my yearly budget, I couldn't take that into account. But bizarrely since we got the Mini it hasn't gone up anymore, is what I'm saying, so obviously the reduction in the amount of fuel being used, because the Mini is more economical, is counteracting the price of fuel going up; well, it has so far. [RB, BMW Mini Cooper, Petrol, New, 52.3, 129, C]

3.4.3 Vehicle size and previous cars used to benchmark running costs

As was the case with fuel economy, many participants used vehicle size and/or their previous car to assess the running costs of their newly acquired car:

Small cars that I've been looking at, really; I've been really out focused on just looking at them. I wouldn't mind a nice Jag, because I know they're quite nice. But they use a little bit too much petrol. My friend's had them and my neighbour's got a Jag and it costs a lot of money to run.... There's lots of cars I would've like to have had but there just a little bit too much to run. So, I had to track one down and go for a small car. [SY, Ford Fiesta, Petrol, New, 47.1, 139, C]

So that is, obviously if I'd got the [Toyota] Aygo, I knew it would have been cheaper to run, slightly, not a lot. And fuel wise it would have been cheaper and tax wise it would have been cheaper, but it was just too small... Yeah, it's just, well actually it's not very economic like, in my old Fiesta, I could do; I could get home to Nottingham and back for about £50, whereas it costs in excess of £100 in the Yaris... [HW, Toyota Yaris, Petrol, New, 47.1, 141, C]

I knew it was going to cost more because I knew it was a bigger engine, so therefore I knew that I'd need more petrol. [SW, VW Golf, Petrol, Used, 38.2, 173, E]

3.4.4 Perception of road tax in monetary terms

Most car buyers in the sample were not able to correctly identify their car's VED (road tax) band. When asked the question 'Do you know your 'road tax' (VED band)?', only 3 out of the 28 respondents knew accurately the correct VED band for their car; 4 participants gave answers that were inaccurate or gave more than one possible banding; and 21 did not know and were not able to guess a VED band.

However, interestingly, many were able to give a reasonably accurate figure for how much annual road tax they currently pay; 10 out of the 13 respondents who mentioned the annual cost of their road tax did so to within 10% accuracy of the official figure. Of the 21 respondents who did not know

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or could not guess their car's VED band, 12 referred to 'cost'. The key finding here is that road tax (as well as fuel economy) is perceived more often as a monetary cost, rather than as a band or CO₂ emissions figure.

And also, I noticed as well, because you have to think about tax, you see, as well, if you've got a 1.9 TDI, which is a diesel, the tax on the vehicle is the same as a petrol 1.6. So that's another reason I would have got a diesel because it would have... the tax code wouldn't have gone up at all. It wouldn't have been more money. It would have been in the same bracket of what I wanted the tax in. [SW, VW Golf, Petrol, Used, 38.2, 173, E]

Well, the higher they are [the CO₂ emissions] the more running costs you'll have, because you've got a higher road tax, basically. [JY, Fiat Stilo, Petrol, Used, 43.4, 153, D]

It's not bad at all actually, the new, my tax has actually gone a bit down. No I don't [know what bracket]. I know it's one of the low ones. [HW, Toyota Yaris, Petrol, New, 47.1, 141, C]

[how much it cost to run over a distance] that was the main thing. It wasn't so much about the road tax because I had an 1800 diesel before that, that was £100 and, that was over £100 for a year, anyway, as well, so... [SY, Ford Fiesta, Petrol, New, 47.1, 139, C]

3.4.5 Current rates of road tax have limited impact on car choice

The interview responses confirmed findings that (at current levels) road tax is not considered an important factor by car buyers when making a new purchase:

It helps, but it's not a huge real factor for me, as far as I was concerned [RB, BMW Mini Cooper, Petrol, New, 52.3, 129, C]

Based over a year, it's quite negligible [GR, Ford Focus Sport, Petrol, New, 39.8, 169, E]

I mean it might have an affect on my next decision making process but actually comparing how much do you pay on a car, these differences are really not much. [KB, Honda Jazz, Petrol, New, 47.9, 139, C]

No not really, it's one of these things, if you have to do it, you have to pay it. You have to pay it, either way it's some amount of money, it's never going to be as cheap as chips. [CD, Peugeot 207 Sport, Petrol, New, 46.3, 145, C]

Q: If it had been a B or a D how would that have affected your decision? R: Well, if I had really liked the car it wouldn't have mattered. [PK, Mazda ZT, Petrol, New, 52.3, 129, C]

I'd just got my new road tax, and that was, the tax didn't cross my mind when I bought the car, but it was a lot more than I thought it was going to be, it was like £280 or something, it was over £200..... but that wasn't influencing me at all when I bought it. [JH, Audi TT, Petrol, Used, 30.8, 226, F]

As with mpg (§4.2.5), there was evidence of a tendency to settle for a car which wasn't "too bad" or at the 'high' end of the scale as far as its relative VED banding was concerned:

It would have made a difference if it had been a F instead of a C, but I knew it wouldn't be. [HW, Toyota Yaris, Petrol, New, 47.1, 141, C]

Probably wouldn't sway it too much, but I can't say I would be happy/ecstatic if it was too high. [CD, Peugeot 207 Sport, Petrol, New, 46.3, 145, C]

I mean, you know obviously I'm not going to want to buy that's going to cost me, you know, £950 or £450, there's just no ways that I would pay that amount of money in road tax. [JY, Fiat Stilo, Petrol, Used, 43.4, 153, D]

I made myself aware of what it was, in the scheme of things and in a sense was just relieved that it wasn't in the very top Gas-Guzzler one. [RBB, Land-Rover Freelander, Diesel, Used, 37.2, 205, F]

Again, the benchmark for the environmental credentials of a newly purchased car is often how it is perceived to compare with: a previously owned car, with other vehicles in the same class or with similar engine size (which are assumed to have a similar level of road tax), or with a new cars (in the

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case of used cars purchases). Either way, road tax fails to be used to sway decisions as the consumer assumes that the decision has effectively already been made.

The old car before was throwing out a lot more. So, I think I've improved. [SY, Ford Fiesta, Petrol, New, 47.1, 139, C]

I always knew that I was looking for something in the region of like, a 1.2 to a 1.4 and so I always knew that the rate tax would be within a certain boundary... I think like mentally, I know there's a link between a car that has the same size engine, will cost you a certain amount to fill up and will be in a certain rate tax bracket and will have, therefore will have the same amount of CO₂ emissions. And because I was only looking at certain cars, it wasn't something I took into account, because they were all similar. [HW, Toyota Yaris, Petrol, New, 47.1, 141, C]

Well, I wanted something that wasn't in the high, obviously, road tax. We just thought about that because the last one was... was it 100, did it come under the 135 or something like that? And this one is the same bracket of road tax. I didn't want to go any higher than what we had before. And I mean, some of the newer cars come in at even lower tax brackets since it's been changed, but of course they cost you more to buy. [JY, Fiat Stilo, Petrol, Used, 43.4, 153, D]

3.4.6 Reactions to being told car's VED band/cost

As the majority of the sample (25 out of 28) did not know their car's VED band, toward the end of the discussion the interviewee revealed to the participants the official VED band and cost of the newly acquired car. A show-card was also presented to participants to allow comparison with well-known models. While difficult to categorise, the presented information elicited a complex set of responses indicating support for and arguments against the current system of car taxation. Comments included:

Thought it'd be cheaper, but it goes up more. I think it's £66 for six months, so £120 a year, which is quite expensive for a small, little car. [SY, Ford Fiesta, Petrol, New, 47.1, 139, C]

Yes, it was 210 for my, for my tax [band F], as opposed to 400 which was G, so yes, I was right ...this is going to go up to 300 hundred and then 550. Whoa. I didn't know it was going up quite so sharply, but there we go. [JW, Saab 9.5, Diesel, Used, 37.2, 202, F]

[Responding to the tax bands] It's quite interesting, it's definitely going to change, it's something to think about more when you're buying a car, it's going to influence a lot of people on the next car they buy. [JH, Audi TT, Petrol, Used, 30.8, 226, F]

I don't know the band, no. I'll be honest with you, I don't. I don't look at that either, it is what it is.... I'm all for this you know, you know, we've all got to make a difference and someone's got to start somewhere; we've got to set the example. [ES, Mercedes C2-20, Diesel, Used, 42.2, 177, E]

Opinions were also offered by many interviewees regarding the planned changes to the car tax system due in April 2009. This issue elicited a stronger set of responses (mostly negative) than for the current tax band system:

Not so much in relation to the run-around I go about in but, in terms of the family car the 1.9 diesel, we are, although I don't know a huge amount about it, um, I'm slightly concerned that we're gonna get taxed heavily, er because of that it seems, really quite disappointed by that because we need to transport the family... It's not like an off-road Jeep or anything it's a purely functional necessity. [WR, Fiat Punto Grande, Petrol, New, 46.3, 139, C]

I don't think the government's going to get people to change, even by doing the road tax thing that they're on about, and I think it's wrong. Road tax is for your road usage, not your emissions... It's just a rip off. It's just another way of taking money from motorists. People now will start trying to avoid it, will not pay on, will really object to it, and it's going to cost the government to chase them. [M&B, Land Rover Freelander, Diesel, Used, 37.2, 205, F]

Because we pay so much in tax in this country and other things, and I mean, the fuel price is an oil tax, you know what I mean. So much of that is tax. You know, if you compare that to other countries, you know, it is really quite extortionate, I have to say. And it's kind of like, you know, they're just squeezing

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you in every way. Everything's going up because it's not just petrol of course, it's ... but you know, your heating costs and all that as well. So I have to say I'm not impressed by it. [JY, Fiat Stilo, Petrol, Used, 43.4, 153, D]

Well, what can you do? I think it's terrible, myself, but there you are. I don't dictate it, the government does. Because, I mean, they are just penalising people really for driving, aren't they? You know, they're not taking into consideration why they're driving ... I just think they think that anyone who can afford to have a car can afford to pay, you know, these increases in the road tax. [SW, VW Golf, Petrol, Used, 38.2, 173, E]

Backdating it was madness... You're trying to influence behaviour and get them to sensibly buy cars that got less CO₂, it's total sense as far as that's concerned. But backdating to people that have got older cars and can only afford older cars is just madness. They've shot themselves in the foot and it's not, you know... It's going to give, if you like, environmentalness a bad name. [RB, BMW Mini Cooper, Petrol, New, 52.3, 129, C]

Like the rest of the Country, I misread the fact that it was a retrospective type... Hence my argument that it is, sort of, almost immoral, to charge on Tax, on a vehicle... a retrospective tax. Because, having bought the car, I can't do anything about it. If it all started in 2010, then I would make sure I didn't spend and buy a Gas-Guzzler that would cost me a couple of thousand a year to Tax. But, having got it, I think it's immoral to just tax people. [RBB, Land-Rover Freelander, Diesel, Used, 37.2, 205, F]

I think that's fair, if that's polluting the system more than...I don't think anybody needs, or I don't know how many people need that kind of...a car that emits that much, it's antisocial as well, I would think. If everybody had those...then we'd be in even bigger trouble. [WLT, Honda Jazz, Petrol, New, 48, 134, C]

There was also a common opinion that the scale of the VED charge was insignificant in relation to the purchase price for many car purchasers:

If you can afford a car that's that much, my thoughts are, you can afford the tax and if you can't then you can't buy the car. [HW, Toyota Yaris, Petrol, New, 47.1, 141, C]

There again, I suppose, I feel if you can afford some of these cars, you can afford another few pound on road tax. [GR, Ford Focus Sport, Petrol, New, 39.8, 169, E]

I suppose the idea that it all fits in with the idea that if you can afford a big gas guzzling car you can afford to pay more road tax as well. I'm not sure if it will persuade people to buy smaller cars. [MB, Ford Focus, Petrol, Used, 42.1, 159, D]

I'm beginning to think that these people who have these huge, big cars they're not going to worry about that. I see, I see the people at the school who've got pots of money... And that sort of thing is not really going to put them off having the car they want. For £150... So, I think that is just meaningless. It wouldn't, it wouldn't put me off, either [AD, Toyota Yaris, Petrol, New, 52.3, 127, C]

3.4.7 Lower costs would stimulate demand for more fuel-efficient/lower CO₂ cars

There is little doubt that most participants in the study believed that, all things being equal, fuel-efficient (and low emissions) cars were a good thing:

Being first away from the lights is not important to me. If, if they, if there was a car out there that was doing 120 miles to the gallon, or 240 miles to the gallon, the, I can't see any reason why that isn't a good idea. [TC, VW Touran, Diesel, Used, 47.1, 162, D]

However, a number of reasons for not being able to purchase a fuel-efficient car were mentioned by participants during the interview. When asked 'What would have persuaded you to buy more fuel / lower CO₂ car?', the majority of participants (14 out of 20 responses to this question) mentioned the need for fuel-efficient cars to have lower costs in some form (reduced road tax, lower fuel duty, reduced capital price, and targeted financial incentives) – one interviewee specifically stated that the

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costs would have to reduce by £1000. Some also stated that significantly higher petrol and diesel costs would increase their likelihood of buying a more fuel-efficient/ low CO₂ car:²⁴

That's great if we can do that [low CO₂] but we've got a budget and that's our... and so there's only so much we can spend. So yes, there are some on the market and you think, great, but it's just not in our price range and so it kind of rules it out as such, for us, at the moment. [TH, Ford Mondeo, Petrol, Used, 35.3, 192, F]

... if I had a runabout, yes, I would be very happy to buy the most fuel-efficient car, providing its cost wasn't prohibitive compared with others. [RBB, Land-Rover Freelander, Diesel, Used, 37.2, 205, F]

Apparently they've got a new Golf sort of blue motion or something, and it's probably about £25,000 apparently. It's meant to be really low in emissions and all that, and you know, so if I could have afforded that I would have got that. [SW, VW Golf, Petrol, Used, 38.2, 173, E]

I know you get a road tax discount, like I think, I don't know if this is correct, but I think the road tax is going to be something ridiculous, like £20. Yeah or it might even be nothing with the new ones, but so essentially that would save me 100, £120 a year, but then I think, if you were to give, like tax relief on fuel, that would have a bigger impact. [HW, Toyota Yaris, Petrol, New, 47.1, 141, C]

[How much do you think it would have to have been reduced by, for you to have considered buying it?] Quite a bit. Not a little bit, quite a bit. [Can you give me a figure?] £1,000. [AD, Toyota Yaris, Petrol, New, 52.3, 127, C]

Although 4 participants specifically said they would consider purchasing a more fuel-efficient car if they were suitable and available, many in the sample gave reasons that would preclude (in the minds of the participants) the purchase of a more fuel-efficient car; these included image related issues, perceived safety concerns and the need to tow a caravan:

But, you know, I wouldn't choose a car that I didn't like just because I had good CO₂ emissions. [JW, Saab 9.5, Diesel, Used, 37.2, 202, F]

I probably could have got a more efficient car in regards to CO₂ emissions, it would have been... but the quality of the car I don't think would have been as good as the one I've got now.... I don't know, because I was looking at the... one time I did sort of look at the Vauxhall Corsa's, but the record of them with crashes and stuff wasn't as good as it was with the Golf's and that, and their emissions with the new cars from 206 and 207, especially if they were diesels, were a lot lower. [SW, VW Golf, Petrol, Used, 38.2, 173, E]

A lot of mothers will tell you now, they buy a car, especially if you've got children, for safety, because they've got children in the car, and a lot of women, if they could afford it would go for the 4 x 4s and that nice car what I saw, you know, because you know, that is their utmost safety at their utmost, you know, minds. So I think it's all wrong. [SW, VW Golf, Petrol, Used, 38.2, 173, E]

I would certainly wish to buy the most fuel-efficient car that would meet my requirements. What I don't anticipate is changing my requirements to meet the lowest emitting car, because it wouldn't even pull the trailer to the tip, let alone the caravan. And being able to do what I want of it, which in this case is pulling a heavy caravan several times a year [RBB, Land-Rover Freelander, Diesel, Used, 37.2, 205, F]

Given that many car buyers conflate fuel-efficiency with small vehicle size, several participants also cited the need for a large car as a reason that they were unable to buy a car with good fuel economy. This position was made clearer in the responses to the question 'What would have persuaded you to buy a smaller car?' The majority of participants (17 out of 20 responses to this question) stated that they required a larger car for family/ load carrying purposes (6), or were unable (as they saw it) to buy a car any smaller than their current model (4):

I'd have a Smart car if I didn't have kids. [SH, Land Rover Discovery, Petrol, Used, 49.6, 153, D]

²⁴ This implies that the car buyers in the sample don't fully appreciate that better fuel economy results in lower fuel costs; or that they assume that cars with a better fuel economy necessarily cost more.

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Smart cars. Fabulous, but hopeless for us type of thing... In the future, great, and maybe, when it's the two of us again, perfect. If we had to have two cars, then I think we would have got something... much smaller, and we would have probably gone down that road. But as we were only looking at the one car we tried to get everything into our one car if that makes sense. [TH, Ford Mondeo, Petrol, Used, 35.3, 192, F]

... obviously if I'd got the Aygo, I knew it would have been cheaper to run, slightly, not a lot. And fuel wise it would have been cheaper and tax wise it would have been cheaper, but it was just too small. [HW, Toyota Yaris, Petrol, New, 47.1, 141, C]

So often we have, we actually need the big car. We go to my parents quite a bit in Germany and we like to load the car with wine! And so this is why we have the bigger car. Also smaller cars, I mean on the highway you start to fly around like this [indicates with her arms the notion of a car moving from one side to the other]. So I mean this size is sort of what we want. [KB, Honda Jazz, Petrol, New, 47.9, 139, C]

And I'm... pushing £300 on my road tax... But, I say, it'd [small car] just be too small for me. I wouldn't like to drive 300 miles in, in one of these. [JW, Saab 9.5, Diesel, Used, 37.2, 202, F]

The survey participants were also asked during this part of the interview, 'What would have persuaded you to buy an alternatively fuelled car?' Some positive statements were made regarding the aspirations of owning a cheap green alternative fuel car and, of all the alternative fuel cars mentioned, the Prius petrol-hybrid was by far the most well known to the car buyers in the sample.

It's more that the car will run and won't break down, that's a major factor for me. If it was an alternative fuel that was just as efficient or even more efficient and economical, and there was greater economical advantages to it, then yeah! I'd quite happily plug in my car every night if it was cheaper and was easier on the planet and things. [MB, Ford Focus, Petrol, Used, 42.1, 159, D]

[The] Prius, but I think that is my first thought, that they'd probably be a bit boring, but I think that is changing now because manufacturers are realising that it's something that more and more people are thinking of and like your advert showed, it's going to be a strong selling point now, because people are more environmentally aware and because car tax is going to cost a lot of money otherwise. [JH, Audi TT, Petrol, Used, 30.8, 226, F]

However, almost all the participants who responded to this question (19 out of 20) revealed negative attitudes towards alternative fuel cars or were highly sceptical about their portrayed benefits.

I wouldn't trust it, to be honest with you. I wouldn't feel confident somehow. I don't know why. [M&B, Land Rover Freelander, Diesel, Used, 37.2, 205, F]

... Electric cars, great, you know, in principle fabulous, but not very ideal for us at this time. [TH, Ford Mondeo, Petrol, Used, 35.3, 192, F]

But the thing though that always concerns me is that you can get electric cars and stuff like this and all these Smart vehicles, but its green to plug it into the mains and charge it up but where is the electricity coming from in the first place? [WLT, Honda Jazz, Petrol, New, 48, 134, C]

Obviously you're using partial, you know, part, part, part electricity, part, um, part fossil fuel. I mean how much does the electricity cost? I don't, I, I don't know how to weigh those things up and, you know, there's a lot of cars, silly, silly looking things like G-Wiz and Smart car type things that are knocking around the city now that are congestion charge free, running on electricity. I mean there's still a, there's still highly likely to be fossil fuels burnt to power those cars in power stations. [TC, VW Touran, Diesel, Used, 47.1, 162, D]

And I also wouldn't, having an electric car seems, doesn't seem to make sense, because the electricity's got to come from a power station, well, it does come from a power station at the moment. [JH, Audi TT, Petrol, Used, 30.8, 226, F]

The most common reasons car buyers in the sample gave for not considering alternatively fuelled cars included: poor vehicle performance (range, acceleration), low availability of models and alternative fuels, perceived higher costs, and the need for more information:

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Obviously to use other fuels, they have to be readily available, or reasonably available. [GR, Ford Focus Sport, Petrol, New, 39.8, 169, E]

If they built a biomass car, or a hydrogen car, a fuel cell car, or whatever, big enough to tow the caravan, I would have looked at it. [SH, Land Rover Discovery, Petrol, Used, 49.6, 153, D]

Had there been a smaller version of the Prius, I would have been interested. [PK, Mazda ZT, Petrol, New, 52.3, 129, C]

I like the electronics. I like the idea of using the braking, which is a wasted energy, to charge up the battery, I think that's... that kind of thing is, is very attractive to me: I thought quite seriously about the Prius. But of course a new Prius would be way outside my price range, and I didn't see a second-hand one on offer. [JW, Saab 9.5, Diesel, Used, 37.2, 202, F]

An alternative...? I don't think I know enough about them to have considered it, or to consider it yet, but ... if I knew more about them, or as they become more common, I guess, I would consider it. I'm not against it. [WLT, Honda Jazz, Petrol, New, 48, 134, C]

If there's more recharging points, if I knew exactly how much it would cost. If someone gave me more information. [ES, Mercedes C2-20, Diesel, Used, 42.2, 177, E]

3.5 Social influences, advertising and information

The survey responses were examined for aspects of symbolic aspects of car purchase including issues around identity and social norms. These aspects were especially prevalent in the part of the interview which asked respondents to consider magazine adverts (taken from WhatCar? magazine) for three different vehicles: a standard Volkswagen Polo, a Volkswagen Touareg SUV, and a fuel-efficient hatchback Peugeot 308.²⁵ Respondents were encouraged to talk about the cars and any wider symbolic issues associated with car ownership.

3.5.1 Symbolism and car choice

Throughout the discussions, respondents repeatedly referred to *symbolic* dimensions of their purchase. Cars were seen as reflection of their owner's personality or as a statement of where their owners wanted to be. For example:

[Q: ... what would you say about the car you've just bought? How would you describe it, in terms of size, comfort, etc, etc?] R: It's dad's truck [Q: Yes] R: It's big, it's like dad, comfy... and it's my toy. [SH, Land Rover Discovery, Petrol, Used, 49.6, 153, D]

[Referring to the way that the Mini is marketed as a fun car rather than an economical one] It's maybe something to do with the way that they're wanting to put the brand. I mean I'm thinking to myself I know I'm a bit old to be driving a Mini... it's sort of branded as being fun, rather than this is a nice economical thing, if you like... [RB, BMW Mini Cooper, Petrol, New, 52.3, 129, C]

Just as some cars were clearly felt to match one's personality others were felt to represent less attractive aspects of other people's personalities. For example:

[Q: What was your reluctance to go with the Toyota Rav4?] R: ...It was just, I guess, in a sense, the Freelander we have was a more attractive proposition. Um, my wife said it was a 'poser's' car because it was one of these where the back end comes off. The hard-back, or whatever they called it – three-door hard-back, where you can lift the back end off and have an open top and so on, so she actually said: "you can now be a little poser!" [RB, BMW Mini Cooper, Petrol, New, 52.3, 129, C]

Or can be associated with an inappropriate gender or occupation stereotype. For example:

R: So I talked to friends about it and you know, read stuff about reviews and Auto Trader and stuff like that, and decided on the one I got in the end, even though my friends keep taking the piss out of me [Q:

²⁵ WhatCar? Magazine, July 2008; VW Touareg (pp2-3), VW Polo (p6), Peugeot 308 (p84-85).

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Why do they take the piss out of you?] R: Because it's a hairdresser's car, and they think it's more suitable for females. [JH, Audi TT, Petrol, Used, 30.8, 226, F]

3.5.2 Social influences

Symbolic aspects of purchase choice highlight the role or *normative* influences. These are the influences of those significant others - friends, family or role models.²⁶ Many respondents mentioned the importance of the opinions of others in formulating their decisions. For example,

So I just thought Golf [the car] was the next step really, because I'd heard so much about Golfs and all the girls at work, nearly all the girls who work here have got Golfs and they've been saying to me for a couple of years now, get a Golf. [SW, VW Golf, Petrol, Used, 38.2, 173, E]

I wrote off the Mazda quite early on, mainly talking to my friends, who I considered to know a lot about cars, said they wouldn't buy the Mazda [Q: Right, why was that?] R: They just didn't like it, and I came round to the idea that I preferred the look of the TT [Q: Right, okay] R: And they, you know, they used phrases like, you know, Mazda is a bit of an old man's car, that sort of thing. [JH, Audi TT, Petrol, Used, 30.8, 226, F]

... if they did like the Seat Ibiza and they did kind of a hybrid thing with that, I mean, I would potentially be interested in that, just because, you know, it's good, the environmental impact that it has, you know, I suppose it, it's not as bad as most cars, but just the style, I think, if I went and bought a Prius, I think most people would laugh [unclear] that my mates would laugh. [BT, Seat Ibiza, Petrol, New, 42.8, 157, D]

Respondents generally had quite clear views on what kind of person would own each of the car types that were presented to them in the advertisements. These views were not uniform for each car but there was nonetheless a great deal of similarity in their views.

Although it has the least distinct associations, respondents generally thought that the Polo would be bought by a younger person, probably a professional.

Um I think they are appealing to young audience talking about iPods and things... so they are obviously appealing to young drivers. I think this is for single people. You are not going to get too many golden retrievers in there... [TC, VW Touran, Diesel, Used, 47.1, 162, D]

The Peugeot was associated with similar demographic groups as the Polo, as might be expected given that they are similar types of car. However, the Peugeot's overt environmental marketing ("inspired by nature" and "CO₂ emissions from only 120gm/km") was also picked up by some. This seemed to mean that it cut across socio-demographic groups.

It's going to appeal to more politically correct types. [TC, VW Touran, Diesel, Used, 47.1, 162, D]

[Q: Okay and what sort of person do you think would buy this car?] R: Someone who is looking for something economical and which is kinder to the, um, air... lower emissions or carbon footprint whatever they call it. [SW, VW Golf, Petrol, Used, 38.2, 173, E]

The Touareg aroused the strongest responses. Ownership of this vehicle was considered the preserve of households wishing to make a powerful statement of status and relative wealth.

[Q: What do you think they are trying to portray?] R: Its [the VW Touareg] up-market, quite sophisticated, for someone older. Big. Safe. Expensive. [PR, Audi A3 TDI, Diesel, New, 62.8, 119, B]

Many respondents thought that the Touareg would be purchased by middle class parents for use on the school run rather than for any actual off-road use despite its claims that it can travel up 45 degree slopes and tow 3.5 tonnes.

²⁶ 'Subjective norm' is a key determinant of behaviour in number of models of human behaviour – such as the widely used theory of reasoned action (Fishbein and Ajzen).

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It's obviously a top of the range Volkswagen car which are notoriously expensive but then again very reliable... so there is a kind of status element within that... so its maybe someone who's more interested in safety, the school run... um reliability and status. [ES, Mercedes C2-20, Diesel, Used, 42.2, 177, E]

This aspect of the car drew extremely strong reactions from some respondents. One respondent drew a distinct contrast between his ownership of a Range Rover Freelander 4X4 which was used to tow a caravan and the acquisition of a vehicle with 4X4 capacity but which would only be used on the school run. His ownership of a 4X4 was considered legitimate whereas ownership of a Touareg was considered illegitimate because it's supposed use.

That's a Chelsea tractor, only twats buy that. That's a load of shite and they should be banned... people who want to be something they aren't. So its people with more money than sense. Its people living in Chelsea who want something bigger to take the kids to school ten yards up the road and drive it. [SH, Land Rover Discovery, Petrol, Used, 49.6, 153, D]

3.5.3 The role of advertising

While not a principal objective of this research, the study asked whether respondents thought that advertising had played a part in their decision-making. Responses were of two general types: those who acknowledged some influence and those who did not. In fact, the majority flatly denied that advertising had played a role in their decision-making. For example:

[Q: [laughs] Okay, um, were you, were you persuaded by any advertising, at all?] R: No advertising at all, no, no. [Q: You don't remember seeing a, an advert or anything for the car?] R: No, no, I'm pretty against adverts so it doesn't really matter. [SY, Ford Fiesta, Petrol, New, 47.1, 139, C]

This viewpoint often seemed to stem from the wish to be considered media savvy i.e. to be considered sufficiently sophisticated to be able to distance oneself from the devices of the advertiser and to judge the car on its merits rather than be swayed by clever marketing. Also, occasionally, the respondent gave the impression of there literally being no advertising for the car in which they were interested.

Other respondents recognised that advertising has a cumulative and quite subtle effect on our decision-making and that it is instrumental in building brand and brand awareness. For example,

[Q: Do you feel that you were persuaded by any advertising at all?] R: Um, well, I think it's, that's kind of, inbred, isn't it? Brand culture, and, we're led to believe, from a young age that Mercedes are, well, it's German, you know, I can't remember now, what was it that, Vorsprung durch technik, you know, it's German; German reliability, just like Japanese cars are supposed to be good, and, and, you know, from a young age, you just, you just grow up with it, or we certainly did. [Q: Did you feel it has a certain quality?] R: Yeah [Q: And do you, do you remember seeing any ads for this particular car, while you were...?] R: No. [ES, Mercedes C2-20, Diesel, Used, 42.2, 177, E]

3.5.4 The new car fuel economy label

Although not initially the main focus of the research, those in the survey sample were asked if they had seen the car fuel economy label at any time when buying their car. Overall, 9 of the 13 in the sample who had purchased a new car were aware of the label, as were 4 of the 15 who had bought a used vehicle. However, only 4 of the new car buyers clearly remembered seeing the car label during their latest car purchase.

That said, most comments were positive regarding the label (an example label was shown in the interview) and it was common for the label to be associated with 'white goods', the sector in which it was first used. The most common view was that the label provided useful information in an easily digestible form:

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Yes I think it's [the fuel economy label] helpful because when I had to search for stuff like this on Parkers it was a bit annoying, checking one thing then going to another page and checking another thing. So if these things are advertised with the car then it's probably helpful. [NU, Citroen Zara Picasso, Diesel, Used, 51.4, 147, C]

It [the label] is good, because I've not bought stuff like that for a long time and I don't know if I would – I think people are more interested, especially with how things are going now, by price and looks rather than efficiency and stuff like that. I would, I guess I would take it into account. [CD, Peugeot 207 Sport, Petrol, New, 46.3, 145, C]

A number of respondents mentioned that it would be useful information to compare cars within a class – i.e. once primary utility considerations had been satisfied:

Um... I'd certainly look at it, if... there was a choice. But the thing is, I don't, I don't choose by the Vehicle Excise Duty, or I don't choose by the CO₂ emissions: it's not a, a relevant thing that I consider [Q: If you were just choosing within a class, though?] If there were two the same, then I'd probably choose the one that was the lower CO₂. [JW, Saab 9.5, Diesel, Used, 37.2, 202, F]

However, when asked if the label would actually influence their car choice, participants' comments gave little indication that the label would cause a shift in class:

It's a fridge mark. Does it mean anything? No, if you are going to buy a truck you know it's not very efficient. It's fairly pointless. [SH, Land Rover Discovery, Petrol, Used, 49.6, 153, D]

Well what does a family with five kids do, I mean they basically go into a D or E class...and that looks bad [pointing at the high end of the energy label scale]. I don't know if that's really helpful. Anyway for me, it's this as well. [pointing to the VED bands] [KB, Honda Jazz, Petrol, New, 47.9, 139, C]

Maybe subliminally, I don't think it would – I don't think I would go and look and go oh that's a B Band. It maybe subconsciously register and it maybe one of the things we would use to compare and contrast. [WR, Fiat Punto Grande, Petrol, New, 46.3, 139, C]

Of particular relevance to this survey were comments regarding the information content of the label, with some participants being unclear about the figures provided. A few comments suggested that a proportion of car buyers may be confused by the inclusion of environmental, fuel economy and fuel cost information (as currently included on the fuel economy label).

At the moment I think at the moment, yeah, is, ... someone tell me, tell me how much is it going to cost, tell me what my running costs are going to be, tell me what the bottom line is. Don't tell me it's a good car, tell me what I can do with it, you know. [ES, Mercedes C2-20, Diesel, Used, 42.2, 177, E]

I think people look at cars more on economy than the actual greenness. I know it says fuel economy there [on the label], yes, and everybody wants to know about economy, but this is linked to being greener, isn't it, in your emissions, not just fuel economy. The CO₂ and it's not, not just economy so that is a misnomer. It's a con. If it was just fuel economy I would. I'd see which one was more economical... [M&B, Land Rover Freelander, Diesel, Used, 37.2, 205, F]

I think if it had been set out more plainly and clearly, yeah, yeah, it may not have changed what I bought, but it would have been a consideration. [MB, Ford Focus, Petrol, Used, 42.1, 159, D]

4 Discussion of results

This research reveals that the 'mpg paradox' – the idea that people say that fuel economy is important but do not necessarily act on this when buying a car - has changed slightly in nature, but is still very much prevalent throughout the car buying process. The shift is a result of consumers' heightened awareness of fuel costs and a reduced inclination to discount future fuel costs. The paradox remains, however, because 'mpg' itself is not systematically researched, understood, or used to compare cars in order to secure the 'best-in-class' models. The remainder of this paper crystallises the key findings from this study which help to explain the recent changes taking place in the car market and suggest strategies to accelerate the shift to lower carbon cars.

Note that this section contains fewer quotes than section 4, but repeats some of them in order to illustrate the discussion. As before, the quotes are attributed using participants' initials with the following vehicle information: make and model, fuel type, new/ used, combined fuel economy (mpg), the car's official CO₂ emissions, and its Vehicle Excise Duty band (2008 banding).²⁷

4.1 From 'Mpg paradox' to 'mpg mirage'

The survey results show that despite the emerging behavioural and market shift,²⁸ the 'mpg' paradox still prevails – but it has changed in nature. Although, there is now strong evidence that the market is changing in response to rising fuel costs, this research finds that it is not the 'mpg' metric itself which is conceptually driving behaviour; it is simply the cost to fill up the tank that has instigated the change (§4.2.2); hence the 'mpg mirage'. What is more, fuel economy considerations are still only influencing the choice of car up to a certain point in the process, after which other considerations prevail.

Off the top of my head I can't remember what the fuel economy was, but it is quite good because we did, when we were comparing models, it was at least as good as anything else, and certainly in terms of the way I work out fuel-efficiency is how much petrol I put, in a week, I'm managing everything I need to do on £25 worth of petrol in a week [WLT, Honda Jazz, Petrol, New, 48, 134, C]

A detailed analysis of participants' responses shows that the exact nature of the paradox is now much less a reflection of the 'attitude-behaviour gap' and more a reflection of the limitations in the way car buyers conceptualise fuel economy. It also captures the misplaced intentions often involved in the choice of more fuel-efficient cars.

The research concludes that the disconnect between the *reported* importance attached to fuel economy, and the actual influence of fuel economy on the purchase decision still exists (as identified by previous research) for the following reasons:

- The 'mpg' *metric* is only treated superficially in the decision making process, and in some cases performs other functions *after* the purchase (e.g. checking engine is in good condition);
- Fuel economy is understood according to the consumer's 'cost experience' of paying for fuel, as opposed to the 'mpg' metric *per se*;
- Assessments of fuel economy are most commonly made by using a previously owned car as a benchmark (whether it had good 'mpg' or not), not by comparing with best-in-class;
- Car buyers only consider a small range of behavioural options when considering a more fuel economic model – switch to a smaller car and/or switch to diesel;
- Buyers still assume a similar 'mpg' for all cars in each vehicle class;
- 'Mpg' is too complex a metric to be used to compute running costs or compare cars.

²⁷ Participants' and vehicle details are shown in brackets after quotes as follows: [Interviewee's initials, Make and Model, Fuel Type, New/Used, Combined 'mpg', Official CO₂, VED band].

²⁸ Society of Motor Manufacturers and Traders (SMMT) News Item, 'Mini segment impresses in May', 2008.

The key issue identified by this research is that 'mpg' is not the most helpful metric to aid the decision making process when buying a new or used car. It is not used by the majority of car buyers to calculate future fuel costs or to systematically compare different cars in terms of their fuel economy. Instead motorists use over-simplistic rules of thumb to benchmark 'good' and 'bad' cars. The inference is that, while some good decisions are being made (in terms of considering smaller cars), choice opportunities are being missed through over-simplification.

4.2 MPG is treated superficially

From the discussions with the car buyers in the sample, many interviewees are indeed able to accurately quote the fuel economy of their newly acquired car – almost half of participants quoted their car's mpg to within 10% accuracy of the official (combined) figure, yet only five of these respondents could be identified as having given weight to official 'mpg' figures during the decision making process (see §4.2.1 and 4.2.7). There was very little indication that people systematically compared and contrasted different makes and models on the basis of official figures.

And I believe the websites. If they tell me it does 49 miles to the gallon, who am I to argue? I don't bother calculating it, I don't waste my time. [TC, VW Touran, Diesel, Used, 47.1, 162, D]

In addition, while many interviewees rank 'running costs/ fuel economy' as the second most important factors influencing their choice of car. Nevertheless, the interviewees demonstrated clear limits to the importance attributed to fuel economy, influencing the decision until a certain point in the process when a 'benchmark' mpg figure might be reached and/or when other considerations came in to play.

Roughly I [calculated costs], yes,... and then it still come down to, like, ooh, I'm going to buy that car; still an impulse, kind of thing, really, in the end, but I still researched a lot. [SY, Ford Fiesta, Petrol, New, 47.1, 139, C]

Several comments also suggested that the official fuel economy information was not greatly trusted and that they did not expect to achieve the official figure after car purchase. Interestingly, two participants in the sample mentioned that they actively monitored their car's fuel economy as a means of checking that the engine was running correctly (rather than for financial or environmental reasons).

4.3 Fuel economy equates to 'the cost to fill the tank'

Consideration of each of the discussion transcripts in more detail reveals that only 5 interviewees (at most) actively used fuel economy in terms of 'mpg' as part of their decision-making process in buying their car (§4.2.7). This suggests that the concept of 'miles per gallon' is not a universally effective metric in changing behaviour.

It is the case that many of the car buyers in the sample do conceptualise fuel economy in a way that is easily recognisable as being correct. A few also recognise that it the fuel economy of a particular model depends on the driving conditions and/or driving style (§4.2.2). However, when asked "What does the term 'fuel economy' mean to you?", at least half of the participants distinctly express fuel economy in monetary terms – either as the cost to fill up their tank with fuel, or the average weekly or monthly fuel bill. Moreover, from the manner in which these comments are made, it is clear that this way of thinking about fuel economy is the dominant conceptualisation.

Well, I suppose at the end of the day it does come down to money. I mean, fuel economy is, to me, what kind of mileage you get for your full tank of petrol, if you like. It's back to you how much does it cost you for a full tank of petrol [JY, Fiat Stilo, Petrol, Used, 43.4, 153, D]

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This raises one key question in the light of the recent observed shift to smaller more fuel-efficient cars: why is fuel cost now motivating a sudden down-sizing in the UK car market (observed 3.6% drop in CO₂ emissions over first two-quarters of 2008)²⁹ in contrast to only a 1%-2% annual improvement during the whole of 2007?

The first part of understanding this shift in behaviour is the recognition of the finding that fuel cost (as experienced by the consumer), rather than fuel economy (as conceptualised by the retailer), is driving the purchase of smaller cars. The second issue is that consumers appear less prepared to discount future fuel costs and absorb any fuel cost increases than they have been previously.

This study is unable to directly quantify the apparent change in consumer discount rate, in order to understand why fuel costs are impacting disproportionately more now than they have in the past. Nevertheless, previous research cited by the RAC identified a threshold annual fuel cost above which people would begin to think about shifting to a more fuel-efficient/ alternatively fuelled/ smaller vehicle.³⁰ The RAC survey found that motorists were prepared to endure an increase in annual costs of (on average) around £1100 (2004) before switching to an alternative fuel or smaller engine (both of which are preferred to a smaller car).

Taking recent fuel price increases into account and adjusting for the proportion of fuel costs as a fraction of total household income, this equates to approximately £800 in current terms (2008).³¹ Given that fuel costs increased by around £400 in the six months to July (2008), together with a reduction in overall disposable income, and the media coverage potentially leading to even greater *perceived* cost increase, this research suggests that, for some motorists, this annual cost threshold has now been reached; and explains why there has recently been a step-change in car-buying behaviour towards smaller, more efficient cars.³²

I was doing, what, £26 a month. Now, I'm doing, like, £40, lately, on, I think, because the price has gone up so much, near enough doubled for me....That's about my limit, I won't put no more than that in it. [SY, Ford Fiesta, Petrol, New, 47.1, 139, C]

The finding that the most common conceptualisation of fuel economy is the 'cost to fill the tank', together with the consumer focus on monthly or weekly fuel expenditure and other payments, suggests that the best metric to provide to prospective car purchasers is fuel cost; ideally on a weekly, monthly or annual basis.

This has implications for the ways in which information might be displayed on the car 'fuel economy' label, and suggest that it may be more effective to downplay the CO₂ emissions and provide a stronger focus on the monetary savings that could be secured from alternative purchases.

... someone tell me, tell me how much is it going to cost, tell me what my running costs are going to be, tell me what the bottom line is. Don't tell me it's a good car, tell me what I can do with it, you know. [ES, Mercedes C220, Diesel, Used, 42.2, 177, E]

4.4 Simple rules of thumb to aid vehicle choice

The in-depth nature of the research uncovered elements of the *process* by which decisions were made about car choice and the rules of thumb employed to simplify and short-circuit the multitude

²⁹ Society of Motor Manufacturers and Traders, 2008. URL: <http://www.smmt.co.uk/articles/article.cfm?articleid=17708>

³⁰ Morpace survey 2004, cited by RAC Report 2004. Discussed in detail in LowCVP Car Buyer Survey 2005.

³¹ Assumptions: fuel costs as percentage of household expenditure: 3.6% in 2004; 5.9% in 2008. RPI correction used is 1.15 (mid 2004-mid 2008). Office of National Statistics, Family Spending Surveys.

³² According to AA figures, average fuel costs in 2007 were £883-£1149 (depending in fuel type), and are now £1301-£1513 (depending on fuel type). The AA, 2008. Average mileage assumed of 10,000 miles.

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of information on the various criteria involved in the decision. These rules of thumb can be classified as follows:

- The use of a previously owned car to benchmark fuel economy
- The use of a ballpark mpg figure as sufficient
- The tendency to settle for average / not too bad when it comes to relative performance on mpg, VED or CO₂
- the belief that small cars and diesel cars automatically achieve better fuel economy
- the belief that all cars in the same class have roughly the same fuel economy

The most prevalent simplification rule is the tendency to evaluate information in relation to a previously owned vehicle (§4.2.6). In at least a third of the interviews, the performance of the previously owned car is used as the primary benchmark on which to base an assessment of the new car's fuel economy and/or road tax credentials.

I just based it on... [the] last car we had [JY, Fiat Stilo, Petrol, Used, 43.4, 153, D]

This sheds new light on the 'mpg paradox' and has implications where the previous car was old or had poor fuel economy. This represents a key limitation in the decision-making process; if consumers predominantly have previously owned vehicles in mind, they are unlikely to appreciate the full range of possibilities that may exist to maximise fuel-efficiency of their next car purchases (i.e. they are unlikely to be aware of 'best-in-class' performance).

The consequence of this heuristic device is the superficial treatment of fuel economy by car buyers such that it quickly drops out of focus once an (apparently) favourable comparison to their previous car has been made and the vehicle class has been chosen. Once a ballpark 'mpg' figure has been identified near the beginning of the process, this factor is then forgotten as other factors (safety, comfort, convenience, etc) assume greater importance.

...nobody would want to buy a car – an economical one, just because it's economical. I don't think. While you're spending that amount of money, you have to like driving it. I think people are more interested, especially with how things are going now, by price and looks rather than efficiency and stuff like that [CD, Peugeot 207 Sport, Petrol, New, 46.3, 145, C]

There was also some evidence that the car buyers in the sample were content to settle for something that simply wasn't "too bad" when it comes to relative performance on mpg, VED or CO₂. In other words, it would appear that many people aim for a rough ballpark mpg figure or VED band that is not 'up the high end'. This has implications for the scope for encouraging people to strive for the best performing vehicles in their car category if they do not appear to be overly concerned by achieving a few extra miles per gallon or jumping to the next VED band.

I'm quite happy with what we got because it, kind of, medium. ... I mean, as I say, if I was going to buy another car I would making sure it wasn't any higher than that. [JY, Fiat Stilo, Petrol, Used, 43.4, 153, D]

A further set of conceptual factors that act to limit the number of options considered by car buyers seeking fuel efficiency is the tendency, as identified in previous surveys, for most car buyers to assume that the main routes to better fuel economy are either by purchasing a smaller car, or switching to diesel.

[Q: Was fuel economy really important in deciding to buy this car?] R: Not this particular one, no, but I would say it's one of the reasons that dictated a smaller car, yes. [PK, Mazda ZT, Petrol, New, 52.3, 129, C]

I don't know much about the other cars, but I would imagine anything that's diesel would be quite economical. [SW, VW Golf, Petrol, Used, 38.2, 173, E]

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These same benchmarking behaviours occur in both the new and used-car markets. In the used-car market, however, there is an additional perception that further narrows people's focus; the belief that they cannot significantly improve their fuel economy because they cannot afford to buy a new car.

If we'd had a bigger budget we might have looked at a newer car which would have less CO₂ emissions, and stuff like that [JY, Fiat Stilo, Petrol, Used, 43.4, 153, D]

The implication of this self-restricted set of behavioural responses is that the majority of car buyers are not seeking or aware of best-in-class information that might lead them to choosing a high 'mpg' car in the class they are currently in, or avoiding a poor 'mpg' car in a smaller class. Underlying this position is the assumption that all cars in the same class have roughly the same fuel economy.

It wasn't really an issue, because I knew what I was looking at, so I knew there wasn't going to be any difference in the cars I was looking at. So it wasn't something I thought about. [HW, Toyota Yaris, Petrol, New, 47.1, 141, C]

I decided on this, that I was going to buy a sports car, so I just thought, it's not going to have good fuel consumption, I wasn't comparing between sports cars because they're all going to be as bad as each other. [JH, Audi TT, Petrol, Used, 30.8, 226, F]

4.5 MPG is too complex

It was clear that some participants had difficulty in utilising fuel economy data. For many, the mpg metric is too complex and, as we have indicated above, does not map easily on to the way in which people experience their fuel costs – i.e. the cost to fill up a fuel tank or travel a certain distance. Likewise, the litres per 100 kilometre figure was not quoted by any of the participants, and whilst this figure at least reflects the fact that fuel is sold in litres, not gallons, it still does not relate to the way in which people think about fuel spend and distance – i.e. in terms of the number of times they make a journey of a certain number of miles.

The other thing is, this thing is always all in litres and kilometres so you've got to convert, and I... It's just too much hassle. [PK, Mazda ZT, Petrol, New, 52.3, 129, C]

Although not a common complaint among the sample, confusion and fatigue with the fuel consumption metrics may also be created by the fact that various figures can be presented for the same car according to the driving cycle.

And we did look at these, when we were comparing the cars, and after a while it becomes a bit of a, sort of a nonsense [Q: Why do you say that?] ...One seemed to be a bit better than the other, for shorter drives, but... for city, but, better. At the end of the day, I felt they were all much of a muchness. That wasn't really what, what swung it, I don't think. [AD, Toyota Yaris, Petrol, New, 52.3, 127, C]

While this research did not employ specific calculations in the interview questions in order to 'test' people's understanding of mpg, it is fair to say that the findings resonate with those found earlier this year in the USA³³. This research, summarised in **Appendix 1**, found the mpg metric is frequently misunderstood and can lead to inaccurate judgements. For instance, the idea that upgrading a car from 18mpg to 28mpg saves twice as much fuel for the same distance of driving as upgrading from 34mpg to 50mpg generally tends to catch people out and reflects the fact that mpg does not capture the way people generally conceptualise fuel economy.

Although out of the scope of this study, it is also worth noting that volume based performance indicators such as those tied to litres or gallons are essentially meaningless for grid-connected vehicles – e.g. what does a litre of electricity look like?³⁴ There is the potential, therefore, for this

³³ Larrick, R. and Soll, J (2008) The MPG Illusion. Policy Forum, Science Vol. 320, pp1593-1594, 20 June 2008

³⁴ WWF (2008) Plugged In. The end of the oil age. WWF, Brussels.

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complexity to increase as the vehicle fleet changes to reflect new technologies. This may suggest that the gCO₂/km metric as a proxy for fuel efficiency represents a more level playing field on which to compare vehicles. However, this measurement will also be essentially irrelevant for so called 'zero emission vehicles' which will score zero on the tank-to-wheel gCO₂/km metric but will not be guaranteed to be energy efficient.

4.6 The environment does not motivate car choice

As reported by previous studies, this survey confirms that environmental issues *per se* are not important motives in purchasing a lower carbon or more fuel-efficient car (§4.3.1); 'reducing environmental impact' is mentioned only by one participant as a motive for buying her car; and only one interviewee named low CO₂ emissions in their top five most important purchasing factors.

It wasn't necessarily the environmental consideration that was the driver, it was again the financial side of things that was the driver on that. [WLT, Honda Jazz, Petrol, New, 48, 134, C]

This holds true even for CO₂ emissions despite the link with road tax that has impacts on running costs. Indeed, very few buyers knew the official CO₂ figure of their vehicle – when asked the question 'Do you know the car's official CO₂ emissions figures?' only 3 out of 28 respondents gave their car's CO₂ emissions to within 10% accuracy of the official figure, and 24 respondents did not know and were not able to hazard a guess at what their car's CO₂ emissions figures might be (§4.3.2). Unsurprisingly, very few of the sample understood the link between CO₂ and the environment.

I didn't really look at them [CO₂ emissions] to be, to be quite honest... But then I don't know what's good, bad, or what's middle, or... I haven't a clue. I'm not interested, probably is why. If I was interested, I would, you know... [M&B, Land Rover Freelander, Diesel, Used, 37.2, 205, F]

Furthermore, while almost of the sample are aware that road tax is linked to CO₂ (through graduated Vehicle Excise Duty), most cannot correctly identify their new car's VED band – when asked the question 'Do you know your 'road tax' (VED band)?' only 3 out of 28 respondents knew accurately which band their car was in. Interestingly, of the 21 who were wrong in their estimate or unable to guess their VED, 12 talked (spontaneously) about road tax in monetary terms, and 10 of these interviewees were able to estimate their road tax to within 10% accuracy of the official figure. The key finding here is that, for the majority of car buyers, road tax (as well as fuel economy) is perceived primarily in monetary terms.

I'd just got my new road tax, and that was, the tax didn't cross my mind when I bought the car, but it was a lot more than I thought it was going to be, it was like £280 or something, it was over £200..... but that wasn't influencing me at all when I bought it. [JH, Audi TT, Petrol, Used, 30.8, 226, F]

However, given the current VED differentials, graduated VED (currently) has little impact on car choice. Indeed, only one interviewee lists lower 'road tax' *per se* as one of their top five most important purchasing factors. Although consumers generally aspire to not be in the worst road tax category, the current price differentials are certainly not persuading people to buy cars in the cheaper VED bands. Compared to the influence of fuel (and running) costs, this research shows that the current level of differentiation between road tax bands is having little or no discernable impact on purchase choice.

Probably wouldn't sway it too much, but I can't say I would be happy/ecstatic if it was too high [CD, Peugeot 207 Sport, Petrol, New, 46.3, 145, C]

Again, the common benchmark for the environmental credentials of a newly purchased car is how it compares to the previously owned car, or to other vehicles in the same class (which are assumed to have a similar level of road tax). Either way, road tax currently fails to influence car choice as the consumer assumes that the decision has effectively already been made.

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The old car before was throwing out a lot more. So, I think I've improved [SY, Ford Fiesta, Petrol, New, 47.1, 139, C]

I think like mentally, I know there's a link between a car that has the same size engine, will cost you a certain amount to fill up and will be in a certain rate tax bracket and will have, therefore will have the same amount of CO₂ emissions. And because I was only looking at certain cars, it wasn't something I took into account, because they were all similar [HW, Toyota Yaris, Petrol, New, 47.1, 141, C]

It is also worth noting that when participants are asked for their opinions of the forthcoming new car tax rates (due in April 2009), the large number of negative comments suggest a degree of hostility to the new tax system; there is an impression that car buyers are highly sensitive to possible increases in car tax for the more polluting vehicles, and less aware of the potential for tax savings offered by more fuel-efficient models. One of the issues of particular contention to those interviewed is the intention of the government to 'backdate' the system, thereby increasing the level of taxation on cars registered between 2001 and 2006:

Backdating it was madness... You're trying to influence behaviour and get them to sensibly buy cars that got less CO₂, it's total sense as far as that's concerned. But backdating to people that have got older cars and can only afford older cars is just madness. They've shot themselves in the foot and it's not, you know... It's going to give, if you like, environmentalness a bad name. [RB, BMW Mini Cooper, Petrol, New, 52.3, 129, C]

4.7 Delegation, denial and driving less

When discussing environmental issues, many survey participants exhibit signs of cognitive dissonance; as they become aware of the discrepancy between their behaviour (in this case car purchase) and their attitudes (towards the environment), some interviewees feel a need to justify their actions (to the interviewer and to themselves).

It could be better, I know, but I don't want to think, a little bit, as I said, about the gases that comes out. [SY, Ford Fiesta, Petrol, New, 47.1, 139, C]

One manifestation of dissonance is the delegation of responsibility to people who drive the most polluting vehicles. There is a relatively common feeling that the existence of highly inefficient or 'gas guzzling' cars means that almost any car that is purchased is going to be 'environmentally friendly' by comparison. This is yet another benchmarking behaviour. It is also consistent with other attitude-behaviour research which reveals that pro-environmental behaviour is often hindered by people's lack of a sense of efficacy. In other words, they tend to believe that whatever positive contribution they make as an individual is bound to be eroded by the anti-environmental actions of others.

It's not the best in the world but there's people driving around in big gas guzzlers... [SY, Ford Fiesta, Petrol, New, 47.1, 139, C]

Another way in which the problem is deflected is in relation to 'offsetting' behaviours which are perceived as a way of excusing the purchase of a more polluting car.

We use public transport. So yes, of course, psychologically, we can offset it a bit on that side. ... And we've got the caravan, so we don't go holidays abroad at the moment, so we're not flying, jetting off, so you know. Why should we be penalised then for... albeit having a... having a larger car. So we can tow the caravan, yeah, and be supporting the, the UK economy. So really, you feel, from that point of view. [M&B, Land Rover Freelander, Diesel, Used, 37.2, 205, F]

Some interviewees also express the belief that buying a fuel-efficient car has a negligible impact on the environment as compared to driving less. This does not mean that these people are *actually* driving less or necessarily intended to do so. However, it is an indication that some car buyers use this as an argument to relieve themselves of the responsibility to choose a low carbon car.

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Of course, participants may actually be using their car less and separate evidence in the UK of traffic levels in the first half of 2008 indicate that fuel price may indeed be having an impact in reducing car mileage. Whilst this is a minority view across the survey sample, it is an indication that many motorists are seeking ways to cut down on fuel use. On several occasions, interviewees volunteer information about their driving style or their tendency to use the car less in order to save fuel.

No, [the fuel economy] it's less. I mean I find that worse, it's worse, it's not as good as I thought. So this is why we try to improve our driving [KB, Honda Jazz, Petrol, New, 47.9, 139, C]

I find myself thinking, petrol is one, diesel is about 1.40 a gallon now, or 1.40 a litre, whatever it is, and, um, I wish it was 1.40 a gallon, ah, and I think, do I need to make that trip? I don't [TC, VW Touran, Diesel, Used, 47.1, 162, D]

The research concludes, therefore, that there are a variety of car buyer segments each exhibiting different behavioural responses, and only some of these responses are a direct reaction to fuel costs and the environment. Some consumers are resistant to changing their car purchase and may employ denial tactics to justify their behaviour. Another response is to pay less attention to car choice but to limit the impact of this choice on their wallet or the environment by adjusting the way they drive and possibly how much they drive.

While it is not possible in a small qualitative sample (as used by this survey) to unpick issues such as cognitive dissonance and social norms, or to produce a meaningful segmentation based on the likely behavioural and motivational combinations which exist, it is possible, however, to indicate that these issues prevail and highlight the complexity of behavioural responses which exist.

4.8 Symbolic aspects of car choice

Modern western lifestyles demand car ownership; personal mobility is a virtual necessity. Cars are also highly visible, whether moving occupants around or parked in public spaces where they can be seen by all. Consequently, cars as products can be described as a 'public necessity' as opposed to a privately consumed non essential item or 'luxury', such as a can crusher or weather station, or a 'publicly consumed luxury' such as a yacht or a set of golf clubs.

When a product is a necessity the symbolism of ownership of the product 'category' is weak. However, as a *public* necessity, the symbolism of the various brands within the category is strong (ownership of a Ford rather than a Mercedes says something about you).³⁵ This contrasts with ownership of a private luxury where ownership of the category of product has strong symbolic associations but the brand is less important, or the publicly consumed luxury where both category and brand are important signifiers.

Consequently, ownership of a particular car type or brand rather than a car *per se* is a powerful signifier or tool to be used in construction of social and personal identity. Car manufacturers obviously know this and invest a lot of resources in building their brand so that potential buyers can feel they are buying into something that is more than just a means of getting from A to B. As a result of the car's power as a symbolic signifier, car types are often associated quite distinctly with social and demographic groupings and are seen as indicative of one's value orientation and lifestyle.³⁶

Indeed, this survey's participants often make reference to the symbolic aspects of their car purchase and how the image and styling of the car is an important factor in the decision-making process.

³⁵ See Solomon, M.R. (1996) *Consumer Behaviour*. Prentice Hall International

³⁶ For example, a sample segmented by the strength of their orientations to the environment and to other people was found to have distinct brand loyalties towards different car types see Henry, W. (1976) *Cultural Values do Correlate with Consumer Behaviour*. *Journal of Marketing Research*, Vol. 13, 121-127

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[Referring to the way that the Mini is marketed as a fun car rather than an economical one] It's maybe something to do with the way that they're wanting to put the brand. I mean I'm thinking to myself I know I'm a bit old to be driving a Mini... it's sort of branded as being fun, rather than this is a nice economical thing, if you like... [RB, BMW Mini Cooper, Petrol, New, 52.3, 129, C]

The survey also reveals the role of car choice in signifying social group membership and the importance of the opinions of others whose opinion one values. In addition to asking, 'What can this car do for me?' car buyers ask, 'What does the car say about me?' Consequently, fuel-efficiency is traded off against other symbolic benefits or outright rejected if it is felt to be incompatible with the buyer's lifestyle or social identity.

R: I wrote off the Mazda quite early on, mainly talking to my friends, who I considered to know a lot about cars, said they wouldn't buy the Mazda [Q: Right, why was that?] R: They just didn't like it, and I came round to the idea that I preferred the look of the TT [Q: Right, okay] R: And they, you know, they used phrases like, you know, Mazda is a bit of an old man's car, that sort of thing. [JH, Audi TT, Petrol, Used, 30.8, 226, F]

It is also the case that fuel-efficiency or a vehicle's CO₂ emissions can also take on symbolic associations of *themselves* and so are also used in the process of identity and lifestyle construction. Should fuel-efficiency become associated with desirable social characteristics, for example, modernity or youth, then these messages would be dispersed through social networks or friends and family as described above. However, the study found no evidence that fuel-efficiency currently holds these associations.

So I just thought Golf [the car] was the next step really, because I'd heard so much about Golfs and all the girls at work, nearly all the girls who work here have got Golfs and they've been saying to me for a couple of years now, get a Golf. [SW, VW Golf, Petrol, Used, 38.2, 173, E]

... if they did like the Seat Ibiza and they did kind of a hybrid thing with that, I mean, I would potentially be interested in that, just because, you know, it's good, the environmental impact that it has, you know, I suppose it, it's not as bad as most cars, but just the style, I think, if I went and bought a Prius, I think most people would laugh [unclear] that my mates would laugh. [BT, Seat Ibiza, Petrol, New, 42.8, 157, D]

When participants are asked to respond to a series of car magazine adverts (including a VW Polo, VW Touareg and a Peugeot 308),³⁷ the relatively high fuel consumption of the Touareg is remarked on by many respondents. What is revealing is that the least efficient vehicle of the three is considered to have the highest status; its high fuel consumption is mirrored in the presumed ability of the owners to consume as they wish through being wealthy and it is presumed they have achieved a higher social status.

[Q: What do you think they are trying to portray?] R: Its [the VW Touareg] up-market, quite sophisticated, for someone older. Big. Safe. Expensive. [PR, Audi A3 TDI, Diesel, New, 62.8, 119, B]

The participants' reactions to the Volkswagen Touareg advert indicate some of the symbolic associations of more powerful, less fuel-efficient vehicles. Conversely, more fuel-efficient vehicles within conventional vehicle classes have much weaker symbolic associations. For example, respondents rarely make explicit linkages between relative fuel economy and desirable signifiers such as modernity, innovation and technological development. Instead fuel economy is generally spoken about in more prosaic terms – as an important feature of car choice required to reduce the cost of motoring.

Furthermore, it is notable that throughout the discussions no single brand is associated with fuel-efficiency. This contrasts with other aspects of the car which are conventionally used as decision-making criteria. For example reliability is usually associated with Volkswagen, safety with Volvo,

³⁷ WhatCar? Magazine, July 2008; VW Touareg (pp2-3), VW Polo (p6), Peugeot 308 (p84-85).

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BMW with quality, status with Mercedes etc. The fuel-efficiency 'niche' seems to be as yet unclaimed although a number of respondents do mention the Prius (rather than Toyota) or the Smart Car (rather than Mercedes) in this respect. With rising fuel prices this seems to offer an opportunity for car manufacturers to position themselves as a provider of fuel-efficient vehicles. BMW may have started this process with their recent 'EfficientDynamics' advertising campaign across their new model range.³⁸

Although the general importance of branding and image features prominently in the survey findings, whether or not these criteria feature as first or second order effects is complex. From this research, it might be concluded that 'image' and 'brand' are generally second order considerations for the majority of car buyers buying small or medium sized cars and that these factors are generally used to distinguish between otherwise similar vehicles within a vehicle class i.e. once primary considerations, including price, comfort, safety and other critical utility factors such as size, have been satisfied.³⁹

I was definitely clear that it had to be cheaper on petrol...That kind of became clearer as I was doing more research. And obviously things got eliminated because of price and things got eliminated because of looks. But those were kind of always there; they constantly channelled my focus. [NU, Citroen Zara Picasso, Diesel, Used, 51.4, 147, C]

It is possible, however, that the importance of considerations such as image, brand and status manifests itself differently according to the size of car being purchased. For instance, with respect to small cars, we know they are often chosen because they are cheaper to buy and run and that, in the mind of the car buyer, the smallness of the car assures its relative fuel economy. This means that once the decision to buy a 'small' car has been made and the first order criteria of price and size are satisfied, the comparison between mpg may be overlooked completely. In this case, second order criteria such as brand and symbolism play a part in distinguishing between what is otherwise seen as very similar models. Image related attributes therefore have a particularly important role to play in promoting small fuel-efficient and low carbon cars. Indeed, for some participants it is clear that even when choosing amongst small cars, looks and image were as important as fuel economy or even more so.

Nobody would want to buy a car – an economical one, just because it's economical. When you're spending that amount of money, you have to like driving it. I think people are more interested, especially with how things are going now, by price and looks rather than efficiency and stuff like that. [CD, Peugeot 207 Sport, Petrol, New, 46.3, 145, C]

With respect to medium sized cars, there is often an added layer of complexity introduced by 'utility' requirements whereby both fuel efficiency *and* other symbolic factors may be traded off for attributes such as space. With respect to larger cars, brand loyalty and symbolic factors are more likely to be *first* order factors in themselves.

In summary, symbolic factors in car choice have a role in understanding the 'mpg paradox' because symbolic aspects can override the more 'rational' calculations of relative fuel-efficiency or even the utility of the vehicle. It seems that for most car buyers, the notion of fuel-efficiency remains a relatively weak element in the process of social or personal identity construction and the ability to

³⁸ See: http://www.bmw.co.uk/bmwuk/efficient_dynamics/bc/homepage/0,,00.html?bcsource=nationaltop

³⁹ The 2008 SMMT report on CO₂ from new cars states that 'brand' and 'image' are ranked as of medium importance in car choice. This is after size, price, fuel consumption and comfort (high importance) but ahead of aspects such as the package, depreciation and vehicle emissions (low importance) (New Car CO₂ Report 2008, Society of Motor Manufacturers and Traders, 2008, Table 10, page 30). It should be noted that these rankings are based on 'stated preference' methodology. Therefore findings must be understood in the context of the responses being influenced by normative considerations – respondents answering based on an assessment of what the questioner wants to hear or out of a need to give the 'right' answer rather than giving responses which are a true reflection of thoughts and feelings. It is likely that these rankings will differ when particular sectors of the car market are assessed. For example, luxury and sports car buyers are unlikely to have price and fuel economy as first order considerations. Brand and image will be much more important for this sector.

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spend money remains more symbolically powerful than investing in the means to save it. Symbolic associations of low CO₂ emitting cars also do not seem to galvanise most respondents. Again this seems to be partly generated by the assumption that despite wide variations within each class,⁴⁰ the perception remains that cars will have very similar consumption within a vehicle segment (see §4.2.3).

Moreover, the notion of a 'low carbon car' seems indistinct and is generally associated with a small car. As smaller cars are generally considered to be a compromise – offering the functionality of relatively cheap transport without the multiple benefits of greater size and comfort, low carbon cars are similarly categorised as something that respondents must, perhaps reluctantly, accept.

We're all going to have to get used to driving smaller engines, small fuel-efficient, less toxic emission cars. Yes there is an element of that reluctantly. [PK, Mazda ZT, Petrol, New, 52.3, 129, C]

While discussions of alternatively fuelled vehicles and hybrids arouse a certain amount of interest (amongst car buyers in survey sample), this is tempered by concerns over the availability of fuel and convenience. However, it is notable that these technologies are not generally dismissed as marginal or to be associated with extreme environmental groups. This is an area that merits more research.

4.9 The fuel economy label

The research findings have implications for the form and function of the car fuel economy label. The main purpose of this research was not to inform the development of this policy tool. However, it is clear that the findings in relation to the awareness of the label, the way in which fuel economy information is conceptualised and used, and the importance attached to environmental considerations, all allow conclusions to be drawn about the most optimal ways in which information can be presented to prospective car buyers.

Of those in the sample who had purchased a new car, 9 or the 13 were aware of the label, though only 4 remember clearly seeing it during their latest car purchase. Thus, the fact that only a minority of buyers of new cars in the sample remember seeing the label during their recent car purchase in spite of the high level of use as reported by dealerships across the UK,⁴¹ suggests that the label is not registering in consumers' minds – it may be the case that it is seen by car buyers but not *noticed*. Furthermore, when asked if the label would actually influence their car choice, participants give little indication that the fuel economy label would significantly influence their choice of car.

Given the tendency of car buyers to assume that similar cars achieve similar levels of mpg or CO₂, the results from this research suggest that the label would be most useful as a way of informing customers of the variability that can exist within classes and VED bands. Indeed, a number of respondents mentioned that it includes useful information to compare cars within a class – i.e. once primary utility considerations had been satisfied.

Um... I'd certainly look at it, if... there was a choice. But the thing is, I don't, I don't choose by the Vehicle Excise Duty, or I don't choose by the CO₂ emissions: it's not a, a relevant thing that I consider [Q: If you were just choosing within a class, though?] If there were two the same, then I'd probably choose the one that was the lower CO₂. [JW, Saab 9.5, Diesel, Used, 37.2, 202, F]

Of particular relevance to this survey are comments regarding the information content of the label, with some participants being unclear about the figures provided. A few comments suggest that a proportion of car buyers are confused by the inclusion of environmental, fuel economy and fuel cost

⁴⁰ The lowest emitter of CO₂ in the super-mini class emits 30% less CO₂ than the average for the class. The figure is similar for lower medium sized cars. Society of Motor Manufacturers and Traders – New Car CO₂ Report 2008, p32, Table 11.

⁴¹ LowCVP Car Labelling Survey, 2008.

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information (as currently included on the fuel economy label). Given the finding that the fuel cost metric is a more effective signal than fuel economy in motivating behaviour, there may be good reason to amend the information content and design of the 'fuel economy' label to match more closely consumers' cognitive requirements.

At the moment I think at the moment, yeah, is, ... someone tell me, tell me how much is it going to cost, tell me what my running costs are going to be, tell me what the bottom line is. Don't tell me it's a good car, tell me what I can do with it, you know. [ES, Mercedes C2-20, Diesel, Used, 42.2, 177, E]

I know it says fuel economy there [on the label], yes, and everybody wants to know about economy, but this is linked to being greener, isn't it, in your emissions, not just fuel economy. The CO₂ and it's not, not just economy so that is a misnomer. It's a con. If it was just fuel economy I would. I'd see which one was more economical... [M&B, Land Rover Freelander, Diesel, Used, 37.2, 205, F]

Finally, the research findings indicate that the most effective information would be provided in a way which allowed car-buyers to *compare fuel costs* of different cars. Instead of the annual absolute fuel costs (as shown on the existing new car fuel economy label), a better metric would be the potential (updated) fuel cost saving of switching to the 'best-in-class'. This information should ideally be updated as available models and fuel prices change and could be provided using a web-based tool also available at the point of sale. The fact that the same conceptualisation of fuel economy and broadly the same decision making heuristics apply in the used-car market, this information would also benefit buyers of second-hand vehicles.

Appendix 1 – The 'MPG Illusion'

A recent article published in Science explains why thinking about fuel economy in miles per gallon (or 'mpg') leads motorists to underestimate the environmental benefits of switching to a fuel-efficient car.

In 'The MPG Illusion', researchers Richard Larrick and Jack Soll of Duke University (US) describe a series of thought experiments they conducted, the original intention of which was to understand how motorists compare different cars in a car-sharing scheme. Motorists were asked to say which of the following two comparisons led to the greatest saving in fuel over a set distance: (a) switching from a 10 mpg to a 20 mpg car; or (b) switching from a 25 mpg to a 50 mpg car?

To their surprise, the majority of those surveyed believed that option (b) provided the greatest fuel benefit – whereas in fact it is option (a) that leads to the greatest fuel saving. Not convinced? Do the maths... Step 1: the number of gallons the 10 mpg car uses to cover 10,000 miles is 1,000 gallons; whereas the number of gallons the 20 mpg car uses is 500 gallons; the saving of switching from 10 mpg to 20 mpg is therefore 500 gallons. Step 2: the number of gallons the 25 mpg car uses to cover 10,000 miles is 400 gallons; whereas the number of gallons the 50 mpg car uses is 200 gallons; the saving of switching from 25 mpg to 50 mpg is therefore only 200 gallons.

What Larrick and Soll realised was that, when expressed using the units of 'miles per gallon', a simple fuel use comparison became counter-intuitive and misleading. However, when the above question was posed using 'gallons per 100 miles', most participants correctly selected option (a). According to Soll: "Miles per gallon is misleading and can play tricks on our intuitions".

Thinking in 'mpg' also leads motorists to believe, mistakenly, that a 10 mpg improvement always results in the same fuel saving. What a simple mpg comparison fails to convey, however, is that the actual fuel saving depends on how good (or how poor) is the starting level of fuel economy. For example, improving a car's fuel economy from 10 mpg to 11 mpg saves as much fuel as switching from a 33 mpg to a 50 mpg car.

The researchers conclude that instead of thinking of fuel economy in terms of 'miles per gallon', motorists would make better fuel economy choices by thinking 'gallons per mile' or 'gallons per 100 miles'. In the words of Larrick: "It made us realise that low-efficiency cars really use a tonne of [fuel] and drive overall consumption and that's why even small changes in low mpg cars makes a big difference... Changing the way we express efficiency would help the car companies make clear to buyers where there are gains to be made."

According to Soll: "There are significant savings to be had by improving efficiency by even 2 or 3 mpg on inefficient cars, but because we communicate in miles per gallon, that saving is not immediately evident to consumers".

The researchers therefore suggest that, rather than using 'combined mpg', car manufacturers should publish fuel economy information in terms of gallons per miles driven (in parallel with the EU's metric unit of 'litres per 100 km'). This would, they argue, make fuel use comparisons more transparent to the average motorist.

Source: <http://www.whatgreencar.com/news-item.php?How-to-save-fuel-Think-gallons-per-mile>
Original research published as Larrick, R. and Soll, J (2008) The MPG Illusion. Policy Forum, Science Vol. 320, pp1593-1594, 20 June 2008

Appendix 2 – Interview Discussion Guide

PREAMBLE

This is research to try and find out how people go about making the purchase decision.


*There are **no right or wrong answers** and please just be as honest as you want to be.*

We are asking you to cast your mind back to when you first started thinking about buying this new car, even if it was quite some time ago.

*We expect this to last about **1 hour 15 minutes**. Is this ok? Is there a time by which you have to leave by?*

*Firstly, we would like to **tape the interview** to avoid having to scribble everything down as you speak. We will only use this to help with writing the report and all information will be anonymised and the audio files destroyed. Are you ok with this?*

*We are going to **start off with** a standard short questionnaire just to get some factual information from you, and then we will move into open ended questions which just try and get you to talk to us about how you made your decision.*

	<h2>CAR PURCHASE SURVEY 2008</h2>
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Interviewer _____ Date _____

Name of Interviewee _____ Email _____

Your new car		
1. Make _____	2. Model _____	3. Petrol / Diesel/ Other _____
4. Engine Size _____	5. Transmission (manual / automatic) _____	
6. New / Second Hand _____	7. Age / Registration _____	8. Mileage when bought _____
9. When did you buy it? _____	10. Where buy it? _____	
11. How much did it cost? _____	12. Payment Outright purchase <input type="checkbox"/> 1 Lease <input type="checkbox"/> 2 Loan (private) <input type="checkbox"/> 3 Loan (company) <input type="checkbox"/> 4 HP <input type="checkbox"/> 5 Part exchange <input type="checkbox"/> 6	13. Who did you buy this car for? Myself <input type="checkbox"/> 1 Spouse/ partner <input type="checkbox"/> 2 Household <input type="checkbox"/> 3 Other (please write) _____
14. Are you the main driver? Yes / No 14a. If no, who else will drive it? _____	15. Is it primarily for: Business <input type="checkbox"/> 1 Personal <input type="checkbox"/> 2 Both <input type="checkbox"/> 3	16. How long do you think you will keep this car for? _____

Your car owning 'history'		
<p>17. Did you have a car before this one?</p> <p style="text-align: center;">Yes / No</p> <p><i>If yes:</i></p> <p>18. What was it?</p> <p>_____</p>	<p>19. How long had you had it?</p> <p>_____</p>	<p>20. How old was it?.....</p> <p>_____</p>
	<p>21. Had you bought it: New / second hand?</p>	<p>22. How many cars have you ever owned (including this one)?</p> <p>_____</p>
Your household		
<p>23. No. adults (≥ 17 yr)</p> <p>_____</p>	<p>24. Children 0-13 yr</p> <p>_____</p>	<p>25. Children 14-16 yr</p> <p>_____</p>
<p>26. No. drivers licences</p> <p>_____</p>	<p>27. No of cars:</p> <p>Private <input type="checkbox"/></p> <p>Company <input type="checkbox"/></p>	<p>28. Location (postcode)</p> <p>_____</p>
<p>29. How many miles do YOU drive per year on average?</p> <p>_____</p>	<p>30. How many miles do you expect this new car will be driven per year?</p> <p>_____</p>	<p>31. Would you also classify yourself as a user of public transport:</p> <p>Often <input type="checkbox"/> 1</p> <p>Occasionally <input type="checkbox"/> 2</p> <p>Rarely <input type="checkbox"/> 3</p> <p>Never <input type="checkbox"/> 4</p>
You		
<p>32. Age (yrs)</p> <p>17-24 <input type="checkbox"/> 1</p> <p>25-34 <input type="checkbox"/> 2</p> <p>35-44 <input type="checkbox"/> 3</p> <p>45-54 <input type="checkbox"/> 4</p> <p>55-64 <input type="checkbox"/> 5</p> <p>65+ <input type="checkbox"/> 6</p>	<p>33. Income (personal annual, £)</p> <p>Less than 4000 <input type="checkbox"/> 1</p> <p>4000 - 13,999 <input type="checkbox"/> 2</p> <p>14,000 - 23,999 <input type="checkbox"/> 3</p> <p>24,000 - 44,999 <input type="checkbox"/> 4</p> <p>45,000 + <input type="checkbox"/> 5</p> <p>Don't know <input type="checkbox"/> 6</p> <p>Refused <input type="checkbox"/> 7</p>	<p>34. Employment</p> <p style="text-align: center;">None / FT / PT</p> <p>35. Job Title:</p> <p>_____</p>

OPEN QUESTIONS

A. Warm up

1. Tell me **why you bought this particular car?**
Probe: Just keep this wide open. Don't prompt as have plenty of questions below to tease out issues. If they say 'because I changed jobs' etc, re-ask the question with the emphasis on why this car.
- 1b. Was there a particular **reason for buying a car** at this time?
Probe: if this was partially answered by '1', just use this for clarification e.g. 'So, you say you needed a new car because you changed jobs?'
- 1c. IF THEY OWNED A CAR PREVIOUSLY: Tell me about the **car you owned just prior to this one.**
Probe: What was it? How long had you had it? Why did you buy it? What did you like / dislike about it?
- 1d. Tell us about the **other cars in your household.**

B. The car purchasing process

2. Think about when you first started thinking about getting a new car. Can you take me through the **steps** from when you first thought about buying to actually buying it?
Probe: when did you first start thinking about getting a new car? Was it your idea? Was there someone else involved in the decision (partner, father etc). Did you spend much time looking? NOTE: we have more probing questions on this later.
3. How did you **go about looking** / deciding what car to buy? Did you have a car in mind when you first started looking? What was this/ was this the same car you ended up with? Did you **compare** many makes and models?
Probe: Did they compare many models? How did they make the comparisons? What information were they looking for?
4. What **research** did you conducted before deciding which model/car to buy? What information sources did you consult?
Probe: E.g. websites/magazines/TV/friends/family. What information were you looking for? Was it important to be able to compare modes - if yes, what on? Do you know anyone who also owns this particular model?
5. Briefly, what made you buy this particular make / model? What were the **important attributes?**
Probe: if some of the criteria are not clear. E.g. if they just say 'this is a comfortable car' ask what is comfortable about it etc. At this stage, if they say 'it is efficient' then ask what they mean by efficient and probe a little bit. Don't ask specific details about whether they know their mpg etc at this stage - see if they offer the information voluntarily. However, if they say 'it is efficient' ask them how they knew this when they were looking - what information did they use to find this out / compare between modes. Ask them if they compared many makes and models on some of these attributes.
6. Were you persuaded by any **advertising?**
Probe: E.g. in magazines, at the cinema, on billboards? Can you remember seeing an ad relating to a [Ford Focus] while you were in the process of buying it? Keep short.
- 6b. **SHOW THE WHAT CAR ADVERTS IN ORDER.**

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For each of the 3 adverts ASK THESE QUESTIONS VERBATIM IN THIS ORDER:

- What do you think each of these adverts is saying to you as a potential car-buyer?
- What kind of person do you think would buy these this car?
- How does each of these adverts make you feel?
- Are they persuasive?
- Would you buy this car?

Probe: if they don't seem to be saying much, tell them to be perfectly honest and say whatever they think! Also ask: If you had to purchase one of the three cars, which would you buy? How does the car you actually bought compare with these three models?

C. The car choice

7. If you were speaking to your family or friends, what would you say about the car you have just bought? How would you describe it?
Probe: Vehicle size and comfort, etc. Let interviewee give response, then ask how important these features are
8. What can you tell me about the car's **reliability and safety**?
Probe: If they don't say much except 'yeah, these cars are pretty reliable' say 'Oh yeah, what makes them reliable' etc.
9. Tell me about the **cost** of the car you purchased
Probe: Is this what you expected you would be paying when you started out looking for a car? Just leave it at this at first. It is unlikely that they will mention running costs, but wait to see.
- 9b. What about the **running costs** of the car?
Probe: Then probe about running costs:
 - What about general running costs? *NOTE: interviewer avoids raising issue of 'fuel economy' at this stage or VED unless mentioned by interviewee. If mentioned by interviewee, don't probe much at this stage as have a section on this later.*
 - What about insurance? Servicing?
 - Did you know anything about how the car does in terms of depreciation?
 - Did you think about future ownership and operating costs? If yes, how did you calculate these?
10. Were there any **other important factors** / attributes that persuaded you to buy this car? THIS MAY NOT BE NEEDED
11. Thinking back to what was in your mind when you first started thinking about buying a car and then what was going through your mind when you were looking at the car you actually bought, did any of these **features become more or less important** as you went through the car purchasing process?
Probe: Was the list of criteria you started out with the same as the ones that 'sold' the car to you in the end?
12. If you bought the car in a **dealership**, what was the experience like?
Probe: was there a pushy salesperson? Which attributes of the car did he / she emphasise to you? Were you persuaded by any of these features and the information given in the showroom? Did you change your mind once in the showroom? How good/bad was the experience?
13. If there was one **overriding feature** of this car that persuaded you to buy it, what was it? MAY NOT BE NEEDED

D. Running costs

13b. What cars come to mind when we say 'good fuel economy? What about good fuel efficiency?

14. What can you tell me about your car's **fuel economy / fuel efficiency?**

Probe: NOTE do not mention 'mpg' or any other metric - just leave it at 'fuel economy'.

14b. What does the term **fuel economy** mean to you?

Probe: Say 'for example, when you think about fuel economy, what does this mean to you? ... Do you think of it in monetary terms? If so, how? (PAUSE) (If necessary probe: e.g. in terms of how much it costs to fill up a tank etc). NOTE do not mention 'mpg' or any other metric - just leave it at 'fuel economy'.

14c. How do you think your car **compares** to the fuel economy of other cars?

Probe: Do you consider your car to be better or worse than other cars?

15. Do you know the **official mpg rating** of the car?

Probe: this may have already emerged, but most of the following questions still need asking.

16b. IF THEY KNOW **MPG** FIGURE:

- What is this figure?
- How do you know this figure?
- Did you know this before you bought the car?
- If so, how did you find out this information?
- Did you ask about this when you were buying a car?
- Were you told by the sales person? Was the salesperson knowledgeable / helpful?

16c. IF THEY DO NOT KNOW:

- Can you have a guess at what this is?
- What is this guess based on?

16d. TO ALL:

- Do you know how much money you spend on fuel? (Probe: e.g. annually, monthly, weekly). NOTE: make sure to ask them annually and see what they say.
- Do you know how much it costs to fill up your tank?
- Do you know how many miles you get out of an average tank?
- Do you know what the fuel cost is per mile?
- Do you keep records of fuel costs? If so, how do you do this? Why do you do this?

16. Was fuel economy **important** in deciding to buy this car?

- Did you consider the cost of fuel in your decision?
- How did you estimate costs in the future?
- Did they have a per litre fuel price in their mind?
- Did you think about fuel prices going up?

17. Now that you have the car and have had a chance to drive it, **have you calculated your fuel economy?**

18b. **IF YES**, how have you calculated this? Why have you calculated this? Is it more or less than you expected?

18c. IF NO, can you guess how many miles you get to the gallon?

18. Are you taking any actions to reduce fuel costs?

Probe: leave quite a silence first ... then mention driving more economically, driving less, car sharing.

19. [Not used]

D2. The environment

20. How do you think the car performs in terms of its impact on the environment? How does this compare to other cars? Were environmental considerations important in deciding to buy this car?

Probe: IMPORTANT - interviewer avoids raising issue of CO₂ at this stage

WARNING: if (s)he hasn't already, the interviewee may now guess what the real focus of our research is. It is important to look for signs that they are not just responding in a socially responsible way and if you think this is happening, just say something like 'its ok! This is not a test - there are no right or wrong answers. Just say what you really think'.

21. What can you tell me about the CO₂ emissions of the car purchased? Do you know the car's official CO₂ emissions figures?

Probe: this is self explanatory.

22b. **IF THEY KNEW CO₂ FIGURE:** Did you know this before you bought the car? If so, how did you find out this information? Were you told by the sales person? Did you ask about this when you were buying a car? Was the salesperson knowledgeable / helpful?

IF THEY DO NOT KNOW THE CO₂ FIGURE leave the questioning here. DO NOT get out look up table as this will give away the VED band at this stage. There will be a chance below to come back to the CO₂ information.

22. Tell me what you understand about the link between running costs and CO₂ emissions? If appropriate, also check what they think is the link between running costs and mpg.

Probe: this may draw a blank so you can then say 'for example, when you think about CO₂ emissions in relation to your car - what does this make you think about? Do you think about CO₂ in terms of fuel economy or in terms of impact on the environment?

23. What would have persuaded you to buy a more fuel efficient car or one with lower CO₂?

Probe: If they say 'nothing', say 'nothing at all?' and stay silent. If they mention something to do with price / tax benefits, ask 'by how much'. If they mention something to do with performance, probe on what they mean if not very specific.

24. What would persuade/ would have persuaded interviewee to buy a smaller car (by one vehicle class).

Probe: same as above.

25. What would persuade/ would have persuaded interviewee to buy an alternative fuelled car?

Probe: Don't mention any types at first and see what they come out with. Then you may have to mention battery electric, hybrid, gas. If they mention something to do with price, ask by how much. If they mention something to do with performance, probe on what they mean if not very specific.

E. VED and colour coded labels

26. Do you know your 'road tax' **(VED) band**? Do you know how much you will pay per year?
Probe: this is self explanatory. However, supplementary questions in 23b and c also need to be asked.

GET OUT CO₂ LOOK UP TABLE

- *tell them/ confirm what band they are in.*
- *ask them if they were aware that VED was now tied to CO₂ - describe how this works (e.g. band A is lowest emitter, band G highest etc)*
- *Point out to them what kinds of cars are in the bands above and below their band.*

Then get out VED - CURRENT RATES TABLE

Probe: compare what the interviewee said with what is in the table for current VED rates. If they did not know in advance, ask them if it surprises them.

27b. Do you know what your VED will be **in a couple of years time**?

USE TABLE TO LOOK UP FUTURE RATES.

Probe: What do you think about the recent changes to VED?

27c **IF THEY SAID THEY DID KNOW WHAT THEIR VED WAS:** Did you know this before you bought the car? Were you told by the sales person what band the car is in/ how much it would be? Did you ask about this when you were buying a car? Was the salesperson knowledgeable / helpful?

Probe: now that they have bought the car, are they surprised/ happy with the VED band they are in?

27d **IF THEY DIDN'T KNOW WHAT THEIR VED WAS:** If you had known this information in advance, would it have influenced your decision? Do you recall the sales person talking to you about VED bands at all? Do you think it would make a difference to future purchases?

27. Have you heard of the **vehicle energy label**? Did you see the label when you were buying a car?

IMPORTANT NOTE: the label is only available on new cars. However, interesting to ask this even if second hand car - some people might say they saw the label even when we know it wouldn't have been there.

28b **IF THEY SAID THEY SAW THE LABEL:** Did you use the label to help decide what car to buy? Did it influence your decision? Was it on show when you bought the car? Where / how? Did the salesperson mention it? What do you think of the label?

GET OUT CAR LABEL.

28c **FOR THOSE WHO HAVENT SEEN IT:** Have you seen anything like this before? **EXPLAIN THE LABEL.** What do you think about it? Would this affect your decision if you were to buy a new car?

F. Closing section - de-brief

We have now come to the end of the interview. Thank you very much for your time. Before we finish, is there anything else you want to comment on? Have we covered everything you expected?

Car buyer survey: from 'mpg paradox' to 'mpg mirage' – Final Report

We are interviewing around 30 people in Aberdeen and Bristol. We will be publishing a report at the end of July and this will feed into Government policy about motor taxes and potential future trends in car ownership.

PAUSE: some interesting comments may come up here

As promised, here are some vouchers to show our appreciation for you taking time out to do this.