An opinion survey on road side speed control devices

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Abstract

Vehicle speeds have been identified as a contributory factor to the severity of road traffic crashes (Perez et al., 2007; World Health Organisation [WHO], 2013). Considering that car manufacturers are consistently portraying speed as a key performance feature or a higher standard of sporting performance, it is important to establish the true worth of speed to drivers and how vehicle speeds can be managed effectively if road crash deaths are to be reduced. This paper presents the findings of an online questionnaire conducted in the United Kingdom (UK) to ascertain the opinion about six selected roadside speed control devices. These speed control devices comprised two main categories; punitive (example; speed camera) and non-punitive (example; 'Bend Ahead' flashing sign) devices. In total 502 respondents were obtained from drivers and/or motorcyclists, 52% of whom were male. There were 76.1% of drivers who had more than ten years of driving experience and 32.9% who had never had a crash as a driver. The results indicate that drivers are knowledgeable about the purpose of the speed control devices. More people indicated that speed cameras had an influence on their driving speed than the vehicle activated signs which is understandable considering that speed cameras have punitive consequences. In general, respondents expressed positive views about the speed control devices. Other findings about the speed control devices are presented in this paper.

Introduction

There is evidence to show that inappropriate speeding is a major contributor to the severity of road traffic crashes (Barker, 1997; Chen et al., 2002; Taylor et al., 2002; Winnett & Wheeler, 2002; Perez et al., 2007) and that road traffic speed reduction measures are essential in reducing road traffic crash severities (Crombie, 2002; Peden et al., 2004; Pilkington & Sanjay, 2005). A study ranked road crashes as the tenth leading cause of death worldwide (Murray et al., 1996). This study forecast that by the year 2020 road crashes would move up to third place in the table of leading causes of death and disability facing the world community (Murray et al., 1996) with speed being a contributory factor in these crashes. Various initiatives have emerged over the years aimed at increasing public awareness about the consequences of speeding and its subsequential road traffic crash menace affecting communities. A current initiative has been the years 2011 to 2020 declared by the United Nations as the decade of action for road safety aimed at preventing five million road traffic deaths globally by 2020 (United Nations[UN], 2012). The 2013 World Health Organisation Global Status Report (World Health Organisation [WHO], 2013) on road safety also reveal that if no urgent action is taken, by 2030 road traffic deaths will become the fifth leading cause of death as suggested by current trends. The same report mentions speeding as a major road safety problem in all countries.

In an attempt to reduce vehicle speeds, various applications have been implemented over the years and these include road humps, chicanes, rumble strips, narrowing, mini-roundabout and village gateway schemes. More recently devices such as speed cameras and vehicle activated signs are more commonly deployed along roads to help reduce driver vehicle speeds. The mode of operation of speed cameras is by the photographic filming or videotaping of vehicles as they pass by them at a speed higher than a predetermined speed set to the speed camera. The vehicle registration number is recorded by the speed camera device and processing takes place to enable an infringement notice to be issued to the offender. Vehicle activated signs on the other hand are characterised by their ability

to display messages to motorists when a particular threshold is exceeded and this is usually dependent on the travelling speed of the vehicle. Speed cameras have punitive consequences such as monetary fines, penalty points on offenders licence, driving licence withdrawal and imprisonment of offenders while vehicle activated signs do not. Speed cameras were first introduced in the UK in 1992 (Blincoe et al., 2006) whilst vehicle activated signs have been used in the UK since the late 1970's with their use growing over the years (Winnett & Wheeler, 2002). Both devices have been associated with vehicle speed and crash reduction (Walter & Broughton, 2011).

Improvements realised from the use of speed cameras are not unique to the UK and in other parts of the world it includes a reduction in mean traffic speeds in comparison to posted speed limit levels with traffic speeds declining in the absence of enforcement measures (Chen et al., 2002; Keall et al., 2002). Crash and casualty data from these studies also indicate a significant reduction in estimated casualties per crash as well as reduced speeds (Chen et al., 2002; Keall et al., 2002). There is some overseas evidence to further suggest the usefulness of speed cameras. In Australia speed cameras have produced up to 41% reduction in fatal crashes (Cameron et al., 2003). In another Australian study (Newstead, 2009) there was an estimated 47% reduction in fatal to medically treated crashes with an overall 32% and 30% reduction respectively in all reported crashes including non-injury crashes for 2 years assessed. An analysis of 10 studies of the effect of speed cameras in seven European countries found a 19 percent decrease in injury causing crashes (Elvik, 2002). Canada recorded a 9 percent reduction in road traffic crashes and a 2.8 kilometres per hour fall in mean speeds at speed camera sites (Chen et al., 2002; Jones et al., 2008). A speed camera evaluation pilot project in the UK carried out in 1992 showed that camera use resulted in a 41 percent decrease in casualties killed or seriously injured and a mean speed reduction of 10 miles per hour (Gloag, 1993).

In a study on fixed vehicle activated signs (Winnett & Wheeler, 2002) to establish the factors influencing drivers' response to the signs a roadside survey of 446 drivers was conducted. There was no evidence from the study that drivers become less responsive to the signs with time, even after three years. Also vehicle activated signs were shown to be effective at reducing speeds with particular reference to those drivers exceeding the speed limit and who have been shown to contribute disproportionately to the crash risk. Results from another study (Walter & Broughton, 2011) which looked at temporary speed indicator devices (SIDs) which are vehicle activated signs displaying real-time speeds of passing vehicles showed that speed reductions of up to 1.4mph were achieved with a much significant reduction obtained for vehicles exceeding the speed limit. However, it was noted that within a week of removal of the SIDs, mean vehicle speeds returned to their pre-SIDs levels. It is worth stating that the short period of time for which the SIDs were installed (between one and three weeks) may have contributed to the short period of their effect.

There is evidence to suggest that despite the cost implications of deploying speed cameras in comparison to vehicle activated signs, both nevertheless contribute to reduce road crash casualties and collisions through the reduction of vehicle speeds in the UK and other countries (Winnett & Wheeler, 2002; Blincoe et al., 2006; Burbridge et al., 2010; Santiago-Chaparro et al., 2012; Carnis & Blais, 2013).

With an increased use of vehicle activated signs and speed cameras in the UK, this paper reports the findings of a questionnaire on six speed control devices (4 vehicle activated signs and 2 speed cameras) in use in the UK to determine drivers knowledge about the purpose of the devices and the extent to which the device influences their driving behaviour.

Method

Participants

In total, 502 people responded to the questionnaire. 'Quota' and 'convenience' sampling methods were used to obtain participants from within the UK using these approaches: a university participation program via email and university electronic notice board notification (n=133); and personal contact via email to colleagues, friends and family members who also passed on the questionnaire link to other friends and colleagues (n=369). Participants were required to be drivers and/or motorcyclists who live in the UK. These participants were particularly chosen because they are the ones who experience the use of the speed control devices being studied even though these devices are not uniformly distributed along UK roads.

Materials

A similar questionnaire used by the Transport Research Laboratory (TRL), UK (Winnett & Wheeler, 2002) was used in this study. The content of some of the questions from the TRL study were the same as those used in this study but the wording were slightly altered to allow for better understanding based on responses obtained from piloting. The response categories were also altered and some completely new questions were introduced into this study. However their study was an interviewer led study instead of the web based approach adopted in this one. Also, all the devices used by TRL were vehicle activated signs while this study made use of speed cameras as well.

Procedure

The questionnaire was administered as a web based study. This method of administering the questionnaire was selected to reduce cost and provide an anonymous and confidential platform for responding to the survey. A self-imposed/in-built check was incorporated into the design of the questionnaire. Since it was web-based it was possible to set up the questions such that a respondent who did not select an answer as being a driver or a motorcyclist or both could not have their responses accepted by the answer compiling system. Some questions were classed as mandatory while others were optional so the mandatory questions were used to act as a self-checking system to avoid respondents leaving questions unanswered.

Prior to commencing the actual survey, ethical approval was obtained from Loughborough University's Ethical Advisory Committee. An initial pilot survey was carried out on about 15 drivers and the recommendations and suggestions received used to modify the questionnaire. A second pilot survey carried out received fewer suggestions. These were incorporated into the survey and a final pilot was then conducted. After the third and final pilot survey, no further amendments were made and the final survey was launched online. The survey was launched at the beginning of April 2012 and was on for a period of 6 months. Respondents were asked to identify which of the signs they had seen before, differentiate between penalties imposed signs and non-penalty imposed signs, reveal their knowledge about the mode of operation of the devices and the purpose of the device. Other questions asked sought to establish the extent to which respondents agreed or disagreed with the devices being used for road safety purposes, the extent of effect each device had on their driving speed and to generally provide any comments about the survey.

The speed control devices used for the survey are shown in Figure 1 to allow for better interpretation and understanding of the results. Summaries of questions and responses obtained are provided in Appendix A.

					
"Your speed"	**"30mph"**	**"Speed camera logo"**	**"Bend ahead"**	**"Speed camera"**	**"Average speed camera"**

Figure 1: Photos of speed control devices used in questionnaire

Results

Overview of Respondents

Of the 502 respondents, 52% were male with the majority of respondents aged from 24 years to 65 year (94.6%) (see Appendix A, Table 1A).

Figure 2 gives information about the percentage proportions of the respective driver types and also the number of years the driver has been driving in the UK. Results indicate the majority of respondents (90%) are drivers and most respondents (76%) have more than ten years of driving experience in the UK.

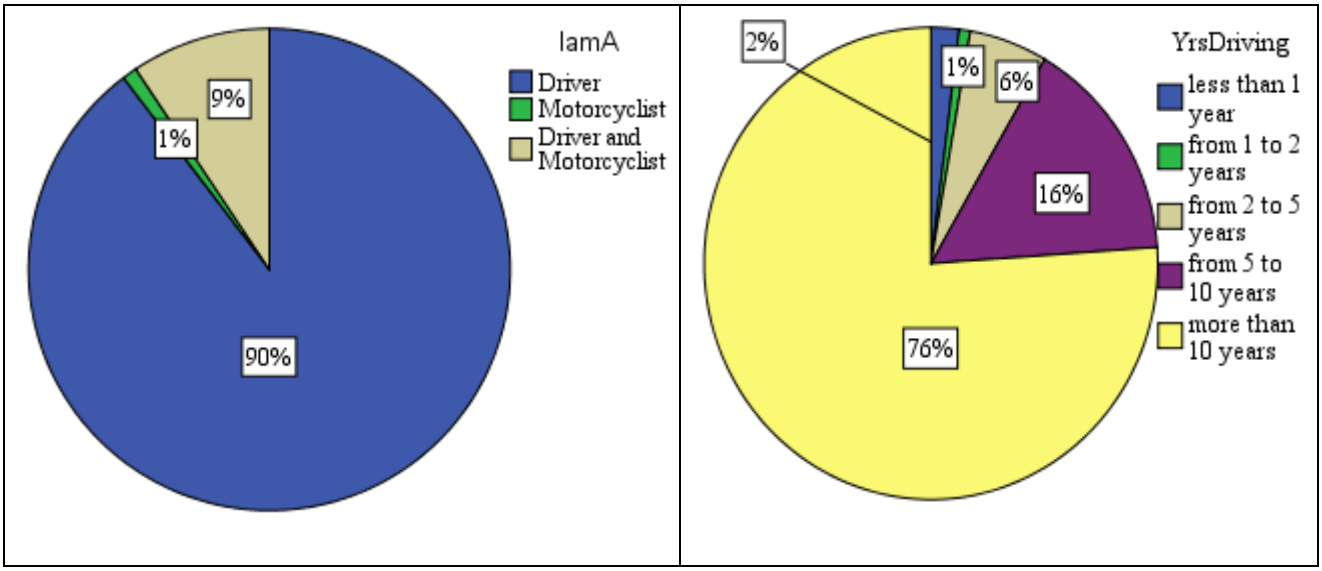

Figure 2: Type of driver and years of driving in the UK

Respondents were asked 'When was the most recent accident you had with you being the driver'. There were 165 people representing 33% of the sample who indicated they had never had a crash as a driver with the remaining 337 representing 67% of the sample indicating they had had a crash as a driver within a time period varying from less than six months ago to more than three years ago. Figure 3 provides information about the age range of respondents in relation to the most recent crash they had as a driver. Over 75% of respondents less than 24 years old said they had never had a crash as a driver.

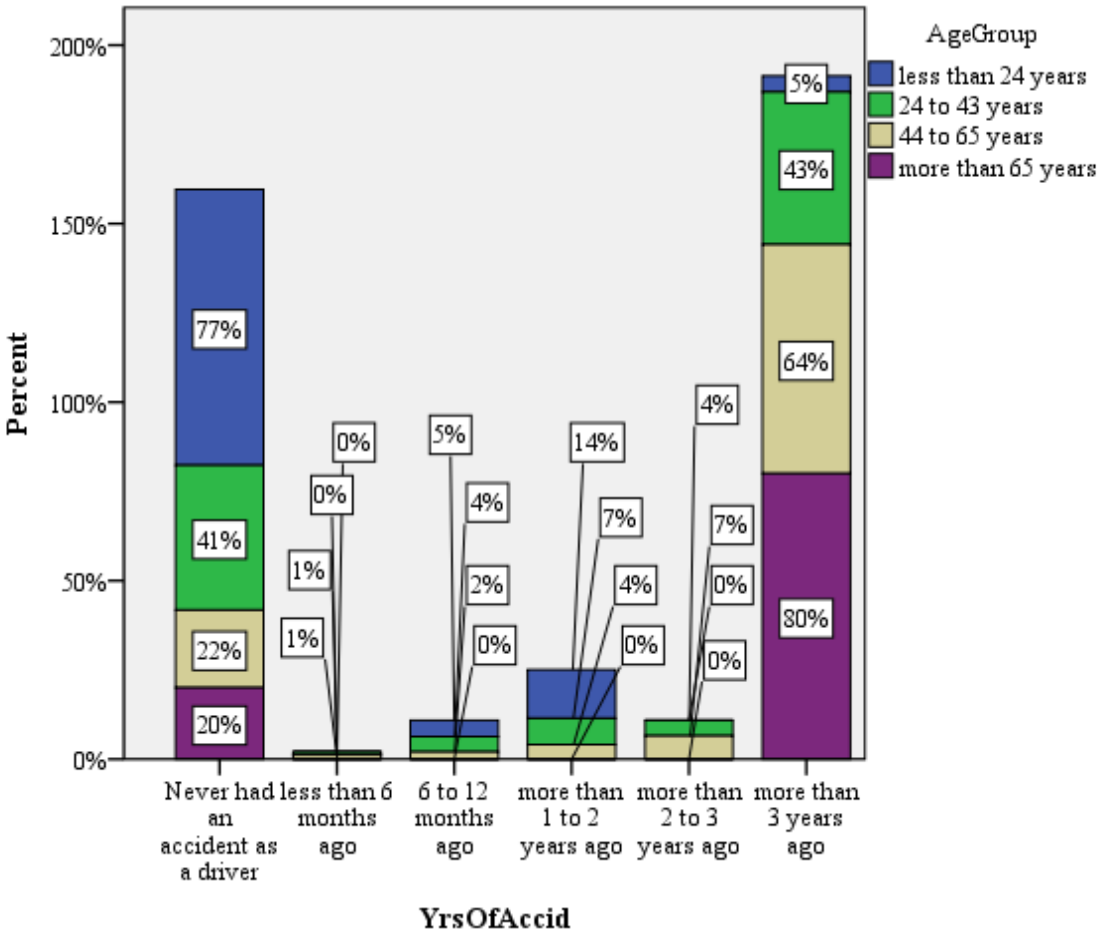

Figure 3: Age group in relation to most recent accident being a driver

Devices seen and fine/penalty expectation

Of the six different road side speed control devices used for the survey four of the devices had non-penalty consequences with the remaining two having penalty consequences. The photographs of the devices were presented with the non-penalty ones appearing followed by the penalty ones (see Figure 1). Respondents were specifically asked to identify which of the devices they had seen in the UK. The responses received for the various devices are provided in Table 1.

Table 1: Devices seen

	Your Speed		**30mph**		**Speed Camera Logo**		**Bend Ahead**		**Speed Camera**		**Average Speed Camera**	
Response	freq	%	freq	%	freq	%	freq	%	freq	%	freq	%
Not Seen	15	3.0	12	2.4	172	34.3	72	14.3	7	1.4	25	5.0
Seen	487	97	490	97.6	330	65.7	430	85.7	495	98.6	477	95.0

It is apparent from these figures that most respondents have seen the speed control devices considering that these devices are not placed on all UK roads. A test of significance was carried out on respondents who indicated to have seen/not seen the device. The null hypothesis being there is no difference between respondents' gender and having seen/not seen the devices. This hypothesis was tested against the alternative hypothesis that there is a difference in respondents' gender and having seen/not seen the devices. Table 2 reveal only the 'Bend ahead' and 'Average speed camera'

device showing any association with p-value 0.05. Chi square results are provided where the total sample size was greater than 40 with an expected frequency being at least 5. Where the sample did not meet this requirement, the Fisher's exact test results are provided.

Table 2: Results of Chi- square test for devices seen/not seen

	Your Speed	**30mph**	**Speed Camera Logo**	**Bend Ahead**	**Speed Camera**	**Average Speed Camera**
	p-value	p-value	p-value	p-value	p-value	p-value
Pearson Chi-Square	0.675	0.058	0.226	0.002		0.014
Fisher's Exact test					0.715	

Respondents were also asked 'If you were to drive along a road which had one of these devices and you exceeded the speed limit, from which of these would you expect to get a fine/penalty'. Table 3 gives the proportions of responses.

Table 3: Expectation of a penalty

	Your Speed		**30mph**		**Speed Camera Logo**		**Bend Ahead**		**Speed Camera**		**Average Speed Camera**	
Response	freq	%	freq	%	freq	%	freq	%	freq	%	freq	%
Do not expect a penalty	491	97.8	497	99.0	453	90.2	497	99.0	1	0.2	49	9.8
Expect a penalty	11	2.2	5	1.0	49	9.8	5	1.0	501	99.8	453	90.2
Total	502	100	502	100	502	100	502	100	502	100	502	100

A generic null hypothesis tested was that gender does not play a role in respondents' expectation of a penalty or not for a device. The research hypothesis was that gender plays a role in respondents' expectation of a penalty or not for a device. The outcome of the analysis indicated the 'Your speed', 'Speed camera logo' and 'Average speed camera' devices showing significance of association with p-value 0.05 as given in Table 4. The rest of the devices showed no significance of association.

Table 4: Results of Chi- square test for expectation of a penalty or not

	Your Speed	**30mph**	**Speed Camera Logo**	**Bend Ahead**	**Speed Camera**	**Average Speed Camera**
	p-value	p-value	p-value	p-value	p-value	p-value
Pearson Chi-Square	0.023		0.004			0.000
Fisher's Exact test		1.000		0.675	0.480	

A chi square analysis was carried out to assess whether there is an association between having seen/not seen a device and expectation of a penalty. A null hypothesis was set as H_o: No association between seeing/not seeing a device and expectation of a penalty. The alternative hypothesis was set as H_1: There is an association between seeing/not seeing a device and expectation of a penalty.

Table 5: Results of Chi- square test – seeing a device and penalty expectation

	Your Speed	**30mph**	**Speed Camera Logo**	**Bend Ahead**	**Speed Camera**	**Average Speed Camera**
	p-value	p-value	p-value	p-value	p-value	p-value
Pearson Chi-Square			0.009			
Fisher's Exact test	1.000	1.000		0.540	1.000	0.000

From Table 5 it can be seen that the 'Speed camera logo' and 'Average speed camera' devices show a p-value 0.05, meaning the null hypothesis must be rejected with evidence to suggest an association between having seen/not seen the device and the expectation of a penalty. All other devices show no evidence of association between having seen/not seen the device and the expectation of a penalty.

Influence on driving speed and ever caused to light up, trigger or received fine/penalty

A question posed to respondents was 'Indicate the extent to which each device influences your driving speed' using a 6-point scale varying from 'never' to 'always'. Majority of responses obtained for all six devices were towards the positive end of the response scale. Responses obtained are given in Appendix A, Table 3A. Table 6 reveals the mean responses and standard deviations obtained. Mean responses for all devices varied from 5.3 to 6.3 with the standard deviation also varying from 1.3 to 1.6. The outcome of the analysis indicates the individual responses varied approximately 1.5 points from the mean value obtained.

Table 6: Extent to which device influences driving speed

	Your Speed	**30mph**	**Speed Camera Logo**	**Bend Ahead**	**Speed Camera**	**Average Speed Camera**
Mean response	5.3	5.3	5.3	5.4	6.3	6.2
Std. Dev. of response	1.6	1.5	1.6	1.4	1.3	1.4

Chi-squared analysis was carried out to find out if there was any association between people who have caused the device to light up, trigger or received a fine/penalty for speeding and the extent to which the device influences their driving speed. The null hypothesis set was H_o: No association between people who have caused the device to light up, trigger or received a fine/penalty and the extent to which the device influences their driving speed. The alternative hypothesis was set as H_1: There is an association between people who have caused the device to light up, trigger or received a fine/penalty for speeding and the extent to which the device influences their driving speed. Results obtained are provided in Table 7. The p-values obtained for the 'Speed camera logo', 'Bend Ahead'

Table 7: Chi-square results

	Your Speed	**30mph**	**Speed Camera Logo**	**Bend Ahead**	**Speed Camera**	**Average Speed Camera**
	p-value	p-value	p-value	p-value	p-value	p-value
Pearson Chi-Square	0.798	0.431	0.020	0.000	0.404	0.040

and 'Average speed camera' device were less than 0.05 suggesting there is association between people who have caused the device to light up, trigger or received a fine/penalty for speeding and the extent to which the device influences their driving speed. The other devices had a *p* value greater than 0.05 suggesting there is no association between people who have caused the device to light up, trigger or received a fine/penalty for speeding and the extent to which the device influences their driving speed.

Road safety purposes

On a seven point scale of 'completely disagree' to 'completely agree' (see Appendix A, Table 2A) to choose from, respondents were asked 'Indicate the extent to which you agree/disagree to these devices being used for road safety purposes'. In order to have all the 'agree' responses put together and the 'disagree' ones also put together, the response categories were reduced from seven to three by combining all the disagree responses into one and the agree responses into one leaving the 'neither agree nor disagree' response on its own. Analyses were carried out using the new reduction in response categories given as 'disagree to some extent', 'neither agree nor disagree' and 'agree to some extent'. The response rates obtained are shown in Table 8 and indicate that more people agree to the non-punitive devices being used for road safety purposes than the punitive devices.

Table 8: Opinion on use of the speed control devices for road safety purposes

	Your Speed	**30mph**	**Speed Camera Logo**	**Bend Ahead**	**Speed Camera**	**Average Speed Camera**
Response	%	%	%	%	%	%
Disagree to some extent	7.4	5.2	9.6	4.8	27.1	23
Neither agree nor disagree	5.0	3.6	12.5	2.8	5.8	6.2
Agree to some extent	87.6	91.2	77.9	92.4	67.1	70.8
Total	100	100	100	100	100	100

Limitations of the study

The first limitation is the difficulty encountered in translating the results obtained to represent the much broader population. This may be due to the combined 'quota' and 'convenience' sampling methods used to obtain participants. Obviously the sampling methods may have introduced some level of bias in the form of self-selection (via email) as well as the mode of completion of the questionnaire (web- based). However, some benefits in the form of time savings and cost were derived from the sampling method used. Secondly the web-based approach of administering the questionnaire may have proven un-popular with the generation that do not readily embrace the computer age. Every effort was made to make the computer interface very user friendly so as to encourage people to fully participate. The over 65 years age group represented only 1.0% of the sample size and some of the questions which can be raised here are whether this age group are not computer friendly or in fact they did not have the survey passed on to them to answer (via email).

The third limitation of interest in this study was the unlikely possibility of multiple respondent entries to the questionnaire and a reason has been provided to support this. Even though the design of the questionnaire provided the option to request for respondents email address which would have provided a means to check if respondents were answering the questionnaire more than once, it was

thought not reasonable to do. This was because the participant information assured respondents of the questionnaire being anonymous and confidential and it was thought that putting in that option would be a breach of their confidentiality and anonymity. Fourthly, there is the possibility that the accuracy of responses obtained about the speed control devices may have been influenced by some factors as follow; Firstly, since anonymity was established it was not possible to follow up on the respondents to find out if for those who said they had received a penalty/fine for speeding, this was a long time ago or recent and if the passage of time will alter their opinions about the speed control devices. Secondly, those who completed the additional comments box (20%) may not be representative of the whole survey sample. One can only suggest that if respondents were particularly unhappy about the speed control devices they would have made the effort to write it. The fifth limitation is that, even though the devices used are commonly found in the UK, respondents may not have equal exposure to these devices and thus may influence some of the responses given. The use of counterbalancing as a method for controlling order effect was also missed out in this study since all non-punitive devices were placed first followed by the punitive devices.

Finally, it is possible the design of some questions may have been ambiguous in terms of the response options provided. One question which asked participants to choose from a set of options provided ('When was the most recent accident you had with you being the driver') did not offer participants the opportunity to indicate the exact number of years since they last had a crash as a driver. The results obtained for this question in relation to the age of respondents also illustrates the importance of analysing recent crash history instead of crash history over the course of a person's lifetime since ages were put in groups (see Figure 3). The final limitation may be attributed to an inherent weakness in self-report surveys since the wording and response categories of questions can either make it easier or be detrimental to obtaining true responses.

Discussion and Conclusion

Few published studies have focussed on opinion surveys about speed control devices with none identified focussing on a combination of punitive and non-punitive devices as was done in this study. The survey design approach used in this study provided a level of uniqueness and an opportunity to investigate an area which has not been extensively done in the past. The study by Winnett and Wheeler (2002) which was a roadside survey solely discussed vehicle activated signs as compared to this current study which focused on a combination of vehicle activated signs and speed cameras.

More than half of the respondents (76.1%) have been driving for more than 10 years with a significant proportion of this group having had a crash as a driver. Approximately half (51.8%) of respondents indicated they had had a crash being a driver more than three years ago. These results can be argued from two points of view. The first is that with more years of driving experience it is possible the likelihood of getting involved in a crash may be reduced but this expectation has also been argued as a complex issue by Holland et al. (2010) since other factors such as personality, gender and driving style also come to play. The other factor that comes to play in this argument is exposure since the more people drive, the more they are likely to be exposed to or involved in road crashes. Considering that over 75% of respondents less than 24 years old have never had a crash was an interesting finding. This result is contrary to what other studies (Department for Transport[DfT], 2011; Clarke et al. 2010) have reported since this age group is labelled as high risk. A probable explanation may be the lack of exposure to driving and the low proportion (4.4%) of this age group who responded to the questionnaire.

Majority of respondents from this study indicated they had seen the speed control devices used for the survey. For the question asking respondents to indicate which devices they would expect to

receive a penalty/fine if they exceeded the speed limit along a road they drove, 49 respondents indicated they would expect a fine for the 'Speed camera logo' device. This figure though not phenomenal, is of interest since approximately 1 in 10 out of the total respondents consider the 'Speed camera logo' sign as a penalty imposing device. This wrong notion of the 'Speed camera logo' sign being a penalty imposing device may be attributed to the general knowledge about the actual speed camera being a penalty imposing device. Thus the 'speed camera logo' device has been interpreted as being penalty imposing due probably to lack of knowledge or general assumption.

Interestingly but not surprising, results about the purpose of the devices suggest that although people regard the punitive devices as a means of generating money, they also paradoxically acknowledge them as a road safety measure. These results strengthen Tay's (2010) findings who argued that even though speed cameras are not solely operated to raise revenue as suggested by some advocates it does not nullify the possibility of the role fines and penalties from speed camera operations play in partly raising revenue. Also the analysis reveals that people are more in favour of the non-punitive devices being used for road safety purposes than for the punitive devices. This is understandable considering that people will want to avoid getting a penalty and thereby the non-punitive devices prove more popular with respondents.

Even though Chen and Warburton (2006) mentioned in their study that the safety benefit of reduced speed is difficult for motorists to perceive this may not necessarily be the case since a number of people mentioned in this study that they reduced their speed at certain areas in order to avoid crashes. Another finding was that even though the 'Average speed camera' device showed evidence of association between people who have caused the device to light up, trigger or received a fine/penalty for speeding and the extent to which the device influences their driving speed, the 'speed camera' device did not. This finding is interesting as one may rather expect the outcome to be the other way round. This is because the 'speed camera' device records the instant speed of the device whilst the 'average speed camera' records two speeds and calculates the average over the distance travelled between speeds so one would expect people to be more cautious with the 'speed camera' as compared with the 'average speed camera'. Indications from this study are that people acknowledge speed control devices for the purpose for which they have been provided. However the extent to which people regard them varies from device to device and this mainly depends on whether the device is punitive or not.

In conclusion, results obtained from the analysis carried out indicate that people are in favour of speed control devices accepting and appreciating them as road safety improvement measures. Also this study shows that speed control devices are still being positively embraced by the day to day users with opinion varying between the punitive and non-punitive devices.

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Appendix A

Table 1A: Some basic information

What is your gender?	*Frequency*	*Percentage*
Male	261	52
Female	241	48
What is your age group?		
Less than 24 years	22	4.4
24 to 43 years	232	46.2
44 to 65 years	243	48.4
More than 65 years	5	1.0
I am a		
Driver	450	89.6
Motorcyclist	5	1.0
Driver and Motorcyclist	47	9.4
How many years have you been driving in the United Kingdom?		
Less than 1 year	10	2.0
From 1 to 2 years	4	0.8
From 2 to 5 years	28	5.6
From 5 to 10 years	78	15.5
More than 10 years	382	76.1
When was the most recent accident you had with you being the driver?		
Never had an accident as a driver	165	32.9
Less than 6 months ago	5	1.0
6 to 12 months ago	16	3.2
More than 1 to 2 years ago	30	6.0
More than 2 to 3 years ago	26	5.2
More than 3 years ago	260	51.8

Table 2A: Device specific information

	Your speed		**30mph**		**Speed camera logo**		**Bend ahead**		**Speed camera**		**Average speed camera**	
	freq.		*freq.*		*freq.*		*freq.*		*freq.*		*freq.*	
Which of these devices have you ever seen in the United Kingdom?	487		490		330		430		495		477	
If you were to drive along a road which had one of these devices and you exceeded the speed limit, from which of these would you expect to get a fine/penalty?	11		5		49		5		501		453	
	freq	%	freq	%	freq	%	freq	%	freq	%	freq	%
****What in your opinion causes the device to light up, trigger or record your registration number?***												
When the vehicle speed exceeds a specified speed limit of the device.	130	25.9	401	79.9	273	54.4	146	29.1	476	94.8	301	60.0
When the device detects an approaching vehicle at any speed.	363	72.3	83	16.5	162	32.3	301	60.0	22	4.4	179	35.7
Other reasons not stated	2	0.4	10	2.0	20	4.0	27	5.4	4	0.8	12	2.4
Do not know	7	1.4	8	1.6	47	9.4	28	5.6	0	0.0	10	2.0
	frequency		frequency		frequency		frequency		frequency		frequency	
****What in your opinion is the purpose of these devices?***												
Advise motorists about the speed limit of the road.	233		390		145		29		40		37	
Warn of a hazard along the road.	16		54		47		407		13		16	
Reduce road accidents.	348		349		312		368		293		288	
Encourage drivers to slow down the vehicle.	423		402		428		347		296		305	
Record vehicle number plate and speed.	2		2		20		4		390		388	
Generate money.	2		0		7		0		251		222	
Other (please specify)	7		1		7		0		6		10	

Respondents were asked to select more than one response

Table 3A: Device specific information

	Your speed		30mph		Speed camera logo		Bend ahead		Speed camera		Average speed camera	
	freq	%	freq	%	freq	%	freq	%	freq	%	freq	%
Indicate the extent to which you agree/disagree to these devices being used for road safety purposes.												
Completely disagree	18	3.6	15	3.0	28	5.6	14	2.8	56	11.2	52	10.4
Often disagree	11	2.2	8	1.6	10	2.0	6	1.2	42	8.4	33	6.6
Sometimes disagree	8	1.6	3	0.6	10	2.0	4	0.8	38	7.6	30	6.0
Neither agree nor disagree	25	5.0	18	3.6	63	12.5	14	2.8	29	5.8	31	6.2
Sometimes agree	35	7.0	48	9.6	58	11.6	38	7.6	102	20.3	100	19.9
Often agree	108	21.5	114	22.7	83	16.5	88	17.5	75	14.9	84	16.7
Completely agree	297	59.2	296	59.0	250	49.8	338	67.3	160	31.9	172	34.3
Indicate the extent to which each device influences your driving speed.												
Never	14	2.8	13	2.6	23	4.6	8	1.6	6	1.2	10	2.0
Very seldom	15	3.0	17	3.4	18	3.6	9	1.8	9	1.8	9	1.8
Seldom/Sometimes	120	22.9	117	23.3	101	20.1	116	23.1	38	7.6	46	9.2
Often	91	18.1	99	19.7	93	18.5	114	22.7	43	8.6	44	8.8
Very often	112	22.3	121	24.1	126	25.1	116	23.1	75	14.9	84	16.7
Always	150	29.9	135	26.9	141	28.1	139	27.2	331	65.9	309	61.6
Have you ever caused any of these devices to light up, trigger or received a fine/penalty for speeding												
No	74	14.7	89	17.7	260	51.8	170	33.9	366	72.9	475	94.6
Yes	428	85.3	413	82.3	242	48.2	332	66.1	136	27.1	27	5.4