Willingness to pay a fine

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Aim: To determine whether the fine amount, the fine detection mode and the socioeconomic status of the offender influence the willingness to pay a fine.

Method: Adults from NSW were surveyed about their experience with traffic fines and willingness to pay fines. 71 per cent of respondents were obtained from a CATI sample and 29 per cent from on-line surveys. Those who had been fined were randomly allocated to scenarios about paying a future speeding fine based on fine amount ($234, $436, $2,252) and detection mode (speed camera or police).

Results: 2,222 (70%) of the 3,154 respondents had been fined for a parking or traffic offence. 21 per cent of this group had not paid their fine on time, while 41 per cent had considered not paying it. Higher fine amounts were associated with lower willingness to pay. While over 80 per cent of the $254 fine scenario was likely or almost certain to pay a future speeding fine, this was only the case for 69 per cent of the $436 scenario and 31 per cent of the $2,252 scenario. There was no significant effect of the mode of detection being speed camera or police. Respondents who were not in paid employment were less willing to pay the $2,252 fine than respondents who were in paid employment (63% certainly would not or would be unlikely to pay vs. 53%). Respondents who had previously considered not paying their fine were more likely to be male, younger, having known a non-payer of a fine who got away with it, had more prior speeding offences and had been fined more recently.

Conclusion: Consideration should be given to conducting an economic analysis to determine at what point, the marginal costs associated with higher fines exceed the marginal benefits, at least for offences where fines are commonly used.

Keywords: Fines, default, income, employment, willingness to pay

INTRODUCTION

Fines are by far the most widely used sanction in the regulatory toolkit. In 2014, NSW Courts imposed more than 41,000 fines (NSW Bureau of Crime Statistics and Research, 2015), accounting for 37 per cent of all penalties imposed by NSW courts (including the Children's Court). The fines imposed by courts, however, are only a fraction of all fines imposed. In the 2014/2015 financial year the NSW Office of State Revenue processed more than 476,000 fines for speeding related offences (NSW Office of State Revenue, 2015). All of these fines were imposed by way of penalty notice, a notice requiring the person named on the notice to either pay the stated fine or have the alleged offence dealt with in court.[1] In practice the vast majority are paid without the alleged offender choosing the option of a court appearance.

Fines have a number of advantages over other forms of sanction. They are easy and comparatively simple to administer.

They can be adjusted to reflect variation in offence seriousness or offender culpability. In theory at least, they can also be adjusted to reflect an offender's capacity to pay. Despite this, as a sanction, fines are not without their problems. The most troublesome of these is fine default. Nearly 40 per cent (39.66%) of fines imposed in the 2014/15 financial year for speeding related offences were not paid before the penalty notice was due. Nearly 22 per cent (21.98%) were not paid before the penalty reminder notice was due (NSW Office of State Revenue, 2015). In 2014, nearly 160,000 (159,876) people had their NSW license suspended for non-payment of a fine (Roads and Maritime Services, 2016). Between July 2014 and June 2015, more than 2,600 people were charged with driving while license suspended or disqualified under s.66 of the Fines Act 1996 (NSW) where the suspension was the result of non-payment of a fine.

Although a great deal of research has been conducted into the deterrent effect of criminal penalties (for a recent review, see

Nagin, 2013), there is surprisingly little theory and research surrounding the factors that influence willingness to pay fines. Becker's (1968) theory remains the dominant paradigm within which fines are conceptualised. His theory, simply stated, assumes that an individual will comply with the law only when the expected cost (viz. probability of being caught multiplied by the magnitude of the penalty if caught) of committing a crime is higher than the expected benefit. In the context of fines, this theory leads to the prediction that the higher the fine, the greater the level of compliance with the law. This seems implausible, if only because the higher the fine, the greater the incentive not to pay the fine. Increasing fines could result in more individuals defaulting on their fines and/or increased Government outlays in enforcing fine payment. As it happens, existing evidence (limited though it is) casts doubt on the deterrent effectiveness of high fines (Moffatt & Poynton, 2007; Weatherburn & Moffatt, 2011).

Another feature of the fine system that has received little if any research attention is the means by which the offence is detected and the offender apprehended. There are two main ways in which speeding offences are detected. The first and most common method involves a fixed radar/camera set up. When a speeding violation is detected by the fixed radar it sends a signal to a fixed camera which then takes a photograph of the vehicle's license plate. In such cases the offending may not be witnessed by anyone. The offence detection and penalty imposition process are entirely automatic. Indeed, the fact of detection for offending may not even become apparent to the offender until he or she receives a penalty notice some time later in the mail. The second less common method involves detection by a stationary or mobile police patrol. In this instance the offence is still detected by radar but the penalty notice is delivered in person by a uniformed police officer who pulls the driver over and hands them a speeding ticket.

There are three reasons for thinking that the second method of detection may result in higher rates of fine payment. The first is that it is clearly more confronting to be stopped in the street by uniformed police and issued with a fine than to receive a penalty notice in the mail. This may enhance the deterrent effect of the fine, not only in relation to compliance with speeding laws but also in relation to compliance with laws regarding fine payment. The second is that the temporal gap between offending and sanction is much shorter in the case of being pulled over by the police than where an offender receives a penalty notice in the mail several days after the speeding offence. There is some evidence suggesting that compliance is greater when the sanction is delivered swiftly than after a delay (e.g. Howe & Brandau, 1988). The third reason is that offenders are more likely to comply with rules where the enforcement process is fair and respectful than where it is not (Sherman, 1993; Tyler, 2006). The automated nature of detection by radar/camera may leave some drivers feeling that their reasons for speeding were not given any hearing.

In this report we present the results of a study into how fine severity and mode of offence detection influence the willingness of drivers to pay speeding fines. The specific questions of interest are as follows:

Question 1. What proportions of people (who have received a fine) have: (i) not paid within the time allowed or; (ii) have considered not paying the fine at all?

Question 2. *The high cost/low compliance hypothesis:* Does increasing fine amount decrease willingness to pay (WTP)?

Question 3. *The mode of detection hypothesis:* Are police issued fines associated with higher willingness to pay than camera issued fines?

Question 4. *The fine amount/mode of detection hypothesis:* Is there an interaction between fine amount and mode of detection on willingness to pay?

Question 5. *The demographic/poverty hypothesis:* Does fine amount have a different effect on willingness to pay for people from more socio-economically disadvantaged backgrounds or for people from particular demographic groups?

Question 6. What factors differentiate between those who always paid within the time allowed from those who have either not paid within the time allowed and/or considered not paying the fine at all?

METHOD

DESIGN

Adults from New South Wales (NSW) who had received a fine for a parking or traffic offence were contacted to participate in a phone or online surveys. They were asked if they had always paid their fine on time and also if they had ever considered not paying the fine at all. Respondents were then asked to imagine that they are driving along a major road trying to get to an appointment but were booked for speeding and received a fine. Respondents participating in the survey were allocated to one of six scenarios which varied the mode of detection to two types (speed camera or police) and the fine amount to three levels ($254, $436 or $2,252). Each of the six scenario groups were compared in terms of the respondents' stated willingness to pay the hypothetical fine within 21 days.

DATA COLLECTION

Data were collected by a market research company during June 2015. Around 71 per cent of the data were collected using a fixed line computer-assisted telephone interviewing (CATI) survey. Two online panel samples were also used: (i) My Opinions panel (Online MyOp) and (ii) Quality Online Research (QOR) panel.

CATI response rate

A total of 14,461 randomly generated numbers were called. Of these, 4,978 were called without achieving contact and were either terminated after five attempts (n = 3,105) or had been called less than five times when the field work was completed (n = 1,873). A further 3,187 numbers were found to be out of

scope because they were invalid numbers (n = 1,125), fax or data lines (n = 626) or business numbers (n = 1,436).

A total of 6,296 valid in-scope numbers were reached. Of these: 3,180 (50.5%) refused to participate; 190 (3.0%) had language difficulties that prevented the interview from proceeding; 66 (1.0%) were unavailable for the field period; 409 (6.5%) had the age group/gender quota full; 125 (2.0%) where the selected respondent had not been reached at the conclusion of field work and; 84 (1.3%) for other reasons. In 2,242 cases, a screening interview was conducted (35.6% response rate).

Online surveys

Two online panels were also used. It is not possible to define a response rate for these two panels. From the Online MyOp panel, 7,200 individuals residing in NSW were invited to participate in the survey. Reminder notices were sent to 1,475. There were responses to the invitation from 2,009 people. Of these responses 502 indicated that they only use a mobile phone, though four of these did not live in NSW. Surveys were then completed online by 498 of these mobile phone user only individuals.

There were 31,182 invitations sent to the Online QOR panel overall and 27,384 of these resided in NSW. Reminder notices were sent to 19,091. There were 2,052 responses overall. Restricting eligibility to mobile phone users only in NSW there were 418 survey participants from the Online QOR panel.

QUESTIONNAIRE

Each respondent was asked whether they have ever received a driving-related fine (e.g. parking fine or speeding fine). Those who said 'no' were excluded. The remainder were then randomly presented with one of six different hypothetical speeding scenarios which varied by mode of detection and level of fine imposed. The two different detection modes were:

Detection mode 1: Imagine you are driving along a major road trying to get to an important appointment. You are booked by a **speed camera** and two weeks later you receive a speeding ticket that requires you to pay **$X** within 21 days

Detection mode 2: Imagine you are driving along a major road trying to get to an important appointment and a police officer pulls you over and books you for speeding. The speeding ticket you are given requires you to pay **$X** within 21 days

Approximately half the respondents received the speed camera scenario and the other half received the police officer scenario. Within each detection mode the fine amount ($X) was randomly assigned across three levels: **$254, $436** and **$2,252**. The first value is the applicable fine (at the time of writing) for exceeding the speed limit by 10km. The second value is the applicable fine (at the time of writing) for exceeding the speed limit by 20km. The third is the applicable fine (at the time of writing) for exceeding the speed limit by 45 km.[2] Each respondent was then asked how likely they would be to pay the fine within 21 days. This was measured using a five point Likert scale with

the following categories: 'Almost certainly would not'; 'Unlikely'; 'Might or might not'; 'Likely'; 'Almost certain'.

Each respondent was also asked to provide the following information:

1. Postcode of residence
2. Age
3. Gender
4. Employment status (paid full time work, paid part time work, do not do any paid work)
5. Whether they know anyone who has failed to pay a fine and got away with it (yes, no)
6. Number of speeding fines received in past five years
7. If they had always paid their prior parking or speeding fines on time (always, at least once did not, not sure)
8. If they had they ever considered not paying a prior parking or speeding fine at all (yes, no, not sure)

Respondents were classified as residing in Sydney or the rest of NSW ('other') on the basis of postcode. Extra information about location and the level of socio-economic disadvantage was also obtained from postcode data. The Accessibility/Remoteness Index of Australia (ARIA) for 2012 was used to classify individuals as residing in major cities, inner regional areas or outer regional and remote areas (Australian Bureau of Statistics, 2003). The Socio-Economic Index for Areas (SEIFA) level was obtained using each respondent's postcode. The SEIFA scale used in the analysis was the Index of Relative Socio-Economic Disadvantage (IRSD). These data were converted into quartiles whereby lower SEIFA scores indicate a higher level of disadvantage (Wise & Mathews, 2011).

STATISTICAL ANALYSIS

Unweighted data was used in all analyses. The comparisons of percentages across categories of predictor variables were assessed using chi-square analyses. This provided information about the characteristics of those who had been fined in the past and those who had not. This method was also used to assess if the randomisation of respondents to the different scenarios had removed bias from measured variables.

The main outcome on which the six scenarios were compared was the five point Likert scale of how likely the respondent rated themselves to pay the fine within 21 days (from 'Almost certainly would not' to 'Almost certain'). There were a number of regression approaches which could potentially be used to compare the groups on this outcome. An ordinal logistic regression could be conducted which assumes that the parameter estimates of the covariates would be the same across the four different ordinal comparisons (e.g. 'Almost certain' vs. other four categories; 'Almost certain' and 'Likely' combined vs. other three categories; etc…). This model has four intercept terms (Kleinbaum & Klein, 2002; Bender & Grouven, 1997). The

ordinal logistic regression approach was not used because the proportional odds assumption underpinning this approach was rejected (χ^2_9 = 19.9, p = .019).

The alternative was to use Poisson or negative binomial regression methods where the data are integers and not less than zero (Agresti, 1996). The Poisson regression approach was selected because the data were not over-dispersed.[3] For each explanatory variable, categories within it are compared with a referent category. A statistically significant incidence rate ratio (IRR) greater than one would indicate a greater willingness to pay the speeding fine for a particular characteristic compared with the referent category. A statistically significant IRR less than one would indicate less willingness to pay the speeding fine for a particular characteristic compared with the referent category.

The high cost/low compliance hypothesis was tested by comparing the IRRs for each of the $436 and $2,252 categories with the referent $254 fine category. The mode of detection hypothesis was tested by comparing the IRR for the police category compared with the referent speed camera category. The fine amount/mode of detection hypothesis was examined by testing the statistical significance of adding two interaction terms between fine amount and detection mode to the Poisson regression model.

The demographic/poverty hypothesis was addressed by conducting analyses of the effect of fine amount on willingness to pay on time within levels of each of the following socioeconomic and demographic factors:

- level of socioeconomic disadvantage (SEIFA quartiles)
- in paid employment status (yes, no)
- age group (18-39 years old, 40 years and older)
- gender (males, females)

Poisson regression was conducted within the levels of each of the above variables. A combined Poisson regression was also conducted to measure if there was an interaction between the levels of each variable and fine amount on willingness to pay on time. Age group was defined as two categories because the overall sample size precluded the use of a larger number of age categories.

RESULTS

PRIOR PARKING & TRAFFIC FINES

Of the 3,158 survey respondents, 2,242 (71.0%) were from the CATI sample, 498 (15.8%) from the Online MyOp sample and 418 (13.2%) from the Online QOR sample. These 3,158 respondents were asked if they had ever received a fine for a parking and/or traffic offence. It was found that 932 (29.5%) had never received such a fine (*Never Fined*), 587 (18.6%) had during the previous year (*Recently Fined*) and 1,635 (51.8%)

had before the previous year (*Previously Fined*). Four (0.1%) respondents refused to answer this question (all were from the CATI sample, three were aged 18-29, three were from Sydney with equal numbers of males and females).

Characteristics of the three parking/traffic fine status groups are shown in Table 1. The *Previously Fined* group were older compared with the other two groups, with 48 per cent aged 50 years and older compared with 41 per cent of the *Never Fined* group and only one quarter of the *Recently Fined* group (χ^2_8 = 163.4, p < .001). The three fine groups differed by gender, with around 60 per cent of the *Recently Fined group* and 55 per cent of the *Previously Fined group* being male but almost 60 per cent of the *Never Fined* group being female (χ^2_2 = 75.6, p < .001). While almost three quarters of the *Recently Fined* group were from Sydney, this was only the case for about 60 per cent of the *Previously Fined* group and 56 per cent of the *Never Fined* group (χ^2_2 = 45.7, p < .001). In terms of ARIA location, over 80 per cent of the *Recently Fined* group were from a major city compared with around two thirds of the other two groups (χ^2_4 = 56.1, p < .001).

There were differences between the three fine status groups in the level of socio-economic disadvantage in the postcode where the respondents' resided (as measured by SEIFA; χ^2_6 = 54.4, p < .001). While one third of the *Recently Fined* group belonged to the very advantaged category, this was only the case for around one fifth of the other two groups. Notably, more of the *Never Fined* group were from the disadvantaged categories combined (56%), compared with the *Previously Fined* group (50%) and the *Recently Fined* group (42%). The three fine status groups also differed in terms of the sampling frame (χ^2_4 = 44.1, p < .001). While three quarters of the *Previously Fined* group were from the CATI sample, this was the case for 70 per cent of the *Recently Fined* group and less than two thirds of the *Never Fined* group.

PRIOR PAYMENT OF FINES

Among the 2,222 who had been fined, 1,763 (79.3%) had always paid within the time allowed while 419 (18.9%) did not pay on time at least once. There were 40 (1.8%) who were unsure whether they had ever paid on time. In subsequent analyses those who were not sure were combined with those who reported that they had not always paid their fine on time (n = 459, 20.7%). More of the *Recently Fined* group reported that they had not always paid their fine on time compared with the *Previously Fined* group (28.5% vs. 17.9%; χ^2_1 = 29.6, p < .001).[4]

There were 910 individuals (41.0%) who had considered not paying their prior fines at least once. This group included those who had not paid their fines as well as those who had considered not paying at least once but always had paid within the time allowed.[5]

Table 1. Characteristics of respondents by parking/traffic fine status (n = 3,154)

Variable	Category	Recently Fined n	Recently Fined %	Previously Fined n	Previously Fined %	Never Fined n	Never Fined %
Age group	18-29	133	22.7	212	13.0	216	23.2
	30-39	151	25.7	273	16.7	195	20.9
	40-49	156	26.6	363	22.2	139	14.9
	50-59	78	13.3	342	20.9	125	13.4
	60+	69	11.8	445	27.2	257	27.6
Gender	Male	355	60.5	904	55.3	375	40.2
	Female	232	39.5	731	44.7	557	59.8
Region	Sydney	426	72.6	962	58.8	521	55.9
	Other	161	27.4	672	41.1	410	44.0
	Unknown	0	0.0	1	0.1	1	0.1
ARIA	Major city	479	81.6	1,108	67.8	601	64.5
	Inner Regional	79	13.5	373	22.8	221	23.7
	Outer Regional, Remote(s)	28	4.8	151	9.2	108	11.6
	Unknown	1	0.2	3	0.2	2	0.2
SEIFA	Very Disadvantaged	112	19.1	388	23.7	221	23.7
	Disadvantaged	132	22.5	429	26.2	297	31.9
	Advantaged	146	24.9	453	27.7	240	25.8
	Very Advantaged	193	32.9	360	22.0	169	18.1
	Unknown	4	0.7	5	0.3	5	0.5
Sample	CATI	410	69.9	1,237	75.7	591	63.4
	Online MyOp	92	15.7	219	13.4	187	20.1
	Online QOR	85	14.5	179	11.0	154	16.5
Total		587	100.0	1,635	100.0	932	100.0

SCENARIOS FOR WILLINGNESS TO PAY FINES

The number of respondents who were randomly allocated to each of the six scenarios is shown in Table 2.

Analyses showed, as expected, that respondents randomly allocated to the six scenarios were very similar. The characteristics of the six scenario groups are shown in the Appendix (Table A1) along with the results of statistical tests for group differences. In summary, there was no significant difference across the six scenarios in terms of age group, gender, employment, region (Sydney vs. rest of NSW), ARIA (major city vs. regional or remote areas), postcode socio-economic disadvantage (SEIFA), the percentage fined in the preceding 12 months, the percentage that had previously not paid their fine on time at least once the percentage who had considered not paying, the percentage who reported knowing someone who had not paid their fine or the number of prior speeding fines. About three quarters of each scenario came from the CATI sample.

Table 2. Numbers of respondents randomly assigned to the six scenarios

Detection mode	Fine amount	N	%
Speed camera	$254	390	17.6
	$436	358	16.1
	$2,252	346	15.6
Police	$254	365	16.4
	$436	369	16.6
	$2,252	394	17.7
Total		2,222	100.0

DOES INCREASING FINE AMOUNT DECREASE WILLINGNESS TO PAY?

Table 3 shows the relationship between willingness to pay a fine and the nominated fine amount with modes of detection pooled. Among those facing the $254 fine scenario, around 59 per cent said they were almost certain to pay. For the $436 fine scenario, this figure fell to 47 per cent. For those facing the $2,252 scenario, the proportion almost certain to pay fell to less than 17 per cent. About 32 per cent of those in this high fine scenario group said they would almost certainly not pay the fine while almost one quarter said they were unlikely to pay.

Table 3. Willingness to pay a speeding fine within 21 days by fine amount (n = 2,222)

	Almost certainly would not	Unlikely	Might or might not	Likely	Almost certain	None of these
Scenario						
$254	3.1%	7.3%	8.1%	22.0%	59.3%	0.3%
$436	7.0%	12.2%	10.5%	22.8%	46.5%	1.0%
$2,252	31.5%	23.8%	12.2%	14.2%	16.6%	1.8%

Poisson regression was used to compare the willingness to pay across the fine amount levels and the results are shown in Table 4. The lowest fine amount ($254) was the reference category. Respondents allocated the $436 fine scenario were less willing to pay compared with those facing a $254 fine, with a statistically significant IRR of 0.89. Respondents presented with the very high $2,252 fine scenario were even less willing to pay the fine compared with those presented with the $254 fine scenario, with a statistically significant IRR of 0.49.[6]

Table 4. Fine amount as a predictor of willingness to pay a speeding fine: Poisson regression

	Incidence Rate Ratio (95% CI)	p value
Scenario		
$436 vs.$254	0.89 (0.84, 0.94)	< .001 *
$2,252 vs. $254	0.49 (0.46, 0.52)	< .001 *

* Significant at the 0.01 level

Table 5. Willingness to pay a speeding fine within 21 days by mode of detection (n = 2,222)

	Almost certainly would not	Unlikely	Might or might not	Likely	Almost certain	None of these
Scenario						
Speed camera	13.3%	15.3%	11.8%	19.3%	39.5%	0.9%
Police	14.4%	13.6%	8.7%	20.0%	42.3%	1.1%

ARE POLICE ISSUED FINES ASSOCIATED WITH HIGHER WILLINGNESS TO PAY THAN CAMERA ISSUED FINES?

Table 5 shows the relationship between willingness to pay and mode of detection only. In this table responses to the three fine amounts have been combined. The differences between the detection mode scenarios in reported willingness to pay were not large. Almost 40 per cent of respondents presented with the speed camera scenario were almost certain to pay their respective fines compared with 42 per cent of respondents presented with the police scenario. A slightly larger percentage of those detected by speed camera reported that they might or might not pay the fine compared with those detected by the police (12% vs. 9%). There was very little difference in the percentage of each detection mode who reported that they almost certainly would not pay the fine (13% vs. 14%).

Table 6. Detection mode as a predictor of willingness to pay a speeding fine: Poisson regression

	Incidence Rate Ratio (95% CI)	p value
Scenario		
Police vs. Speed camera	1.02 (0.97, 1.08)	= .384

Table 6 shows the results of the Poisson regression examining willingness to pay across the two different modes of detection. While it may appear that respondents who were fined by the police reported a greater willingness to pay their fine(s) than those fined automatically by a speed camera, this difference was very small (with an IRR of 1.02) and was not statistically significant. This means that at the bivariate level there was no difference between the two modes of detection in the willingness to pay the fine.[7]

IS THERE AN INTERACTION BETWEEN FINE AMOUNT AND MODE OF DETECTION ON WILLINGNESS TO PAY?

Table 7 shows the three way relationship between willingness to pay, fine amount and mode of detection. There does not appear to be any interaction between fine amount and mode of detection. Amongst those faced with the $254 scenario, for instance, around 61 per cent of those fined by the police and 57 per cent of those fined by a speed camera said they were almost certain to pay. For the $436 fine scenario, the proportion reporting that they were almost certain to pay was lower than for the $254 scenario but the differences between detection modes was not great (around 48 per cent of the police mode and 45 per cent of the speed camera mode). Only the high fine scenario was associated with a slight difference between detection modes

Table 7. Willingness to pay a speeding fine by mode of detection and fine amount (n = 2,222)

		Almost certainly would not	Unlikely	Might or might not	Likely	Almost certain	None of these
Scenario							
Speed camera	$254	3.3%	9.0%	10.0%	20.3%	57.4%	0.0%
	$436	4.8%	13.7%	11.5%	24.6%	45.0%	0.6%
	$2,252	33.2%	24.0%	14.2%	12.7%	13.6%	2.3%
Police	$254	2.7%	5.5%	6.0%	23.8%	61.4%	0.6%
	$436	9.2%	10.8%	9.5%	21.1%	48.0%	1.4%
	$2,252	30.0%	23.6%	10.4%	15.5%	19.3%	1.3%

Table 8. Fine amount and mode of detection as predictors of willingness to pay a speeding fine: Poisson regression

	Incidence Rate Ratio (95% CI)	p value
Scenario		
Fine amount		
$436 vs. $254	0.89 (0.84, 0.94)	< .001 *
$2,252 vs. $254	0.49 (0.45, 0.52)	< .001 *
Detection mode		
Police vs. Speed camera	1.05 (0.99, 1.10)	= .079

* Significant at the 0.01 level

in the proportion almost certain to pay (19 per cent in the police scenario and 14 per cent in the speed camera scenario).

To formally assess whether the effect of fine amount on willingness to pay differs by the mode of detection, interaction terms between fine amount and mode were included in a Poisson regression model. These interaction terms were not statistically significant (χ^2_2 = 4.1, p = .130).

Table 8 shows the results from a Poisson regression model which only contained terms for fine amount and mode of detection with no interaction between them. The overall effect for fine amount remained statistically significant (χ^2_2 = 474.0, p < .001). Compared with those facing the $254 fine scenario, respondents facing the $436 scenario were less willing to pay their fine (IRR = 0.89). This reduced willingness to pay was even greater for the $2,252 fine scenario (IRR = 0.49).[8]

While not statistically significant at the five per cent level it is worth noting that after adjusting for the effect of fine amount, the incidence rate ratio for police detection versus speed camera detection is close to statistical significance (IRR = 1.05, p = .079). Nevertheless the final Poisson regression analyses presented in Table 8 clearly demonstrates that it is the level of fine which is the most important factor in predicting willingness to pay on time.[9]

EFFECT OF FINE AMOUNT ON WILLINGNESS TO PAY AMONG DISADVANTAGED AND OTHER DEMOGRAPHIC GROUPS

Table 9 shows the effect of fine amount on willingness to pay a fine broken down by the level of socio-economic disadvantage related to respondents' postcode of residence (SEIFA). Within each quartile of disadvantage there was always a large decline in willingness to pay between the $2,252 scenario and the $254 scenario, which was statistically significant (p < .001). The IRR was in the range of 0.48 to 0.49 within all four quartiles. Interestingly it was only within the very disadvantaged and disadvantaged quartiles that respondents facing the $436 scenario were significantly less willing to pay the fine compared with those given the $254 scenario. For the very disadvantaged quartile the IRR was 0.88 (χ^2_1 = 4.2, p = .040) and for the disadvantaged quartile the IRR was 0.83 (χ^2_1 = 9.9, p = .002).

By contrast within each of the very advantaged and advantaged quartiles respondents facing the $436 fine scenario were no less willing to pay the fine than those facing the $254 fine. For the very advantaged quartile the IRR was 0.90 (χ^2_1 = 3.02, p = .082) and for the advantaged quartile the IRR was 0.93 (χ^2_1 = 1.5, p = .218). A Poisson regression model which included interaction terms between the main effects of fine amount and socio-economic disadvantage revealed that the effect of fine amount on willingness to pay did not interact with the level of postcode disadvantage (χ^2_6 = 2.7, p = .851). There may be sample size problems here given the large number categories involved in the interaction between SEIFA quartiles and three levels of fine amount.

Table 10 shows the effect of fine amount on willingness to pay, broken down by whether or not respondents were in paid employment at the time of the survey. When presented with the $436 scenario, those 'in paid employment' were significantly less willing to pay the fine compared with those facing the $254 scenario (IRR = 0.89, p = .001). The group facing the $2,252 scenario showed even less willingness to pay the fine, with almost 53 per cent saying that they would either certainly not or be unlikely to pay the fine (IRR = 0.51, p < .001).

Table 9. Willingness to pay a speeding fine by quartile of socio-economic disadvantage (SEIFA) and fine amount

		Almost certainly would not	Unlikely	Might or might not	Likely	Almost certain	None of these
SEIFA quartile							
Very disadvantaged	**$254**	3.4%	8.9%	5.6%	20.7%	60.9%	0.6%
	$436	6.7%	14.6%	8.5%	23.2%	46.3%	0.6%
	$2,252	31.2%	29.9%	7.6%	12.7%	17.8%	0.6%
Disadvantaged	**$254**	4.3%	4.8%	7.5%	18.2%	65.2%	0.0%
	$436	8.3%	13.0%	14.0%	19.7%	43.5%	1.6%
	$2,252	27.1%	24.3%	16.0%	14.9%	14.9%	2.8%
Advantaged	**$254**	3.0%	9.9%	9.4%	24.3%	53.0%	0.5%
	$436	6.3%	13.6%	8.9%	22.0%	48.2%	1.1%
	$2,252	35.9%	20.9%	10.7%	14.1%	16.5%	1.9%
Very advantaged	**$254**	1.6%	5.5%	9.3%	25.1%	58.5%	0.0%
	$436	6.8%	8.0%	10.2%	27.3%	47.2%	0.6%
	$2,252	31.4%	21.7%	13.4%	14.4%	17.5%	1.6%

Table 10. Willingness to pay a speeding fine by paid employment status and fine amount

		Almost certainly would not	Unlikely	Might or might not	Likely	Almost certain	None of these
Paid employment status							
In paid employment	**$254**	2.4%	7.1%	8.4%	24.4%	57.6%	0.2%
	$436	5.9%	11.5%	12.1%	23.9%	45.5%	1.2%
	$2,252	29.0%	23.5%	13.3%	15.7%	17.4%	1.1%
Not in paid employment	**$254**	4.9%	7.9%	6.4%	15.8%	64.5%	0.5%
	$436	9.2%	14.3%	6.9%	19.8%	49.8%	0.0%
	$2,252	37.5%	25.0%	9.1%	10.6%	14.9%	2.9%

Table 11. Willingness to pay a speeding fine by age group and fine amount

		Almost certainly would not	Unlikely	Might or might not	Likely	Almost certain	None of these
Age group							
18-39 years old	**$254**	4.1%	11.2%	11.6%	30.7%	42.0%	0.4%
	$436	9.3%	13.3%	10.5%	22.6%	43.2%	1.2%
	$2,252	29.1%	23.6%	15.4%	15.0%	15.4%	1.6%
40 years and older	**$254**	2.5%	5.1%	6.2%	17.2%	68.9%	0.2%
	$436	5.9%	11.7%	10.4%	23.0%	48.2%	0.8%
	$2,252	32.7%	23.9%	10.5%	13.8%	17.3%	1.9%

Table 12. Willingness to pay a speeding fine by gender and fine amount

		Almost certainly would not	Unlikely	Might or might not	Likely	Almost certain	None of these
Gender							
Male	**$254**	3.5%	8.0%	8.2%	23.3%	56.7%	0.2%
	$436	6.3%	10.7%	11.0%	23.8%	46.9%	1.4%
	$2,252	30.9%	22.0%	12.8%	14.6%	17.0%	2.7%
Female	**$254**	2.4%	6.4%	7.9%	20.3%	62.7%	0.3%
	$436	8.0%	14.4%	9.7%	21.5%	46.0%	0.3%
	$2,252	32.2%	26.0%	11.3%	13.7%	16.1%	0.6%

Similar results were found for those 'not in paid employment'. Once again, those exposed to the $436 scenario were significantly less willing to pay compared with those facing the $254 scenario (IRR = 0.87, p = .016). There was, however, a significant interaction between paid employment status and fine amount on the willingness to pay the very high fine (χ^2_2 = 6.2, p = .044). Almost 63 per cent of the 'not in paid employment' respondents said they would either certainly not or be unlikely to pay the $2,252 fine, compared with only 53 per cent of the 'paid employment' $2,252 group (IRR = 0.42, p < .001).

Table 11 shows the effect of fine amount on willingness to pay across the 18-39 and 40 years and older age groups. There was a significant interaction between age group and fine level on willingness to pay the fine (χ^2_2 = 6.4, p = .042). Within the 40 years and older group, those facing the $436 scenario were less willing to pay the fine compared with those facing the $254 scenario (IRR = 0.86, p < .001) and the $2,252 scenario were even less willing to pay (IRR = 0.46, p < .001). Among the younger 18-39 age group however, no significant difference was found in willingness to pay between those presented with the $436 scenario and those facing the $254 scenario (IRR = 0.94, p = .243). There was however still a significant and marked reduction in willingness to pay between respondents given the $2,252 scenario compared with those facing the $254 scenario (IRR = 0.55, p < .001).

Table 12 shows the effect of fine amount on willingness to pay broken down by gender. Among males, those facing the $436 scenario were less willing to pay the fine compared with those given the $254 scenario (IRR = 0.92, p = .029). Males given the $2,252 scenario were even less willing to pay (IRR = 0.51, p < .001). Among females, significant effects were also found for the $436 scenario (IRR = 0.85, p < .001) and the $2,252 scenario (IRR = 0.46, p < .001). No significant interaction was found between gender and fine amount (χ^2_2 = 2.6, p = .271) which indicates similar effects of decreased willingness to pay as fine amount increases across males and females.

FACTORS WHICH DIFFERENTIATE INDIVIDUALS CONSIDERING NOT PAYING A FINE

There were a number of factors which predicted the likelihood that a fined individual had considered not paying previous parking or traffic fines. Around 43 per cent of males had considered not paying a previous fine compared with only 38 per cent of females (χ^2_1 = 6.1, p = .014). While 38 per cent of those aged 40 years and older had considered not paying past fines, this was much lower compared with the 47 per cent of those aged 18-39 years who had considered not paying their fines (χ^2_1 = 15.3, p < .001). Around 42 per cent of those in paid employment had considered not paying a fine compared with 37 per cent of those who were not in paid employment (χ^2_1 = 5.3, p = .021)

Among those who knew a non-payer who got away with not paying a fine, 56 per cent themselves had considered not paying

a previous fine. This was significantly greater than the 38 per cent of those who did not know a non-payer (χ^2_1 = 35.6, p < .001). Individuals who had more speeding fines in the previous five years were also more likely to have considered not paying a past fine. One third of those with no prior speeding fines had considered not paying a parking or traffic fine, compared with 44 per cent of those with one speeding fine, 56 per cent of those with two speeding fines and 62 per cent of those with three or more speeding fines (χ^2_3 = 81.4, p < .001). Those who had been fined within the last 12 months were also more likely to have considered not paying the fine (53% vs. 37%; χ^2_1 = 47.7, p < .001). There was no relationship between either location or socio-economic disadvantage quartile and past consideration of not paying fines.

DISCUSSION

Seventy per cent of the 3,154 respondents interviewed for the survey had been fined for a parking or traffic offence. More than one in five (21%) of this group had not paid their fine on time, while 40 per cent had considered not paying on time. While over 80 per cent of those facing the $254 fine scenario were likely or almost certain to pay a future speeding fine, this was only the case for 69 per cent of those given the $436 scenario and 31 per cent of those given the $2,252 scenario. The results were unaffected by whether the mode of detection was a speed camera or police. Respondents who had previously considered not paying their fine were more likely to be male, younger, to know someone who had not paid a fine and got away with it, to have more prior speeding offences and to have been fined more recently.

Tests were conducted to see whether the effect of fine amount on willingness to pay was affected by level of socioeconomic disadvantage, employment, age or gender. No interaction effect was found between fine amount and level of socioeconomic disadvantage or between fine amount and gender. A significant interaction was found between fine amount and paid employment status. A much higher proportion (63%) of those 'not in paid employment' said they would either certainly not or be unlikely to pay the $2,252 fine, compared with those in 'paid employment' (53%). A significant interaction was also found between fine amount and age group. Within the 40 years and older group, those facing the $436 scenario were less willing to pay the fine compared with those facing the $254 scenario. Those facing the $2,252 scenario were even less willing to pay. Among the younger 18-39 age group, however, no significant difference was found in willingness to pay between those facing the $436 scenario and those facing the $254 scenario. Significant differences only emerged when respondents facing the $2,252 scenario were compared with those facing the $254 scenario.

The results, overall, suggest that higher fines increase the risk of fine default, particularly among those who are not in paid employment. Some level of fine default might be expected in

any system that relies heavily on fines as a sanction for criminal offending. In the NSW system, however, (and perhaps in other jurisdictions as well), the level of late payment and non-payment of fines is quite high. As noted in the introduction to this report, nearly 40 per cent (39.66%) of fines imposed in the 2014/15 financial year for speeding related offences were not paid before the penalty notice was due. Nearly 22 per cent were not paid before the penalty reminder notice was due (NSW Office of State Revenue, 2015). In 2014, nearly 160,000 (159,876) people had their NSW license suspended for non-payment of a fine (Roads and Maritime Services, 2016). Between July 2014 and June 2015, more than 2,600 people were charged with driving while their license was suspended or disqualified under s.66 of the Fines Act 1996 where the suspension was the result of non-payment of a fine.

Of course, it is important to bear in mind two important limitations of this study. The first is that we did not actually examine rates of fine default in relation to fine amount. We studied respondents' stated willingness to pay different levels of fine within the required 21 day period. In practice, respondents may be more or less likely to pay a fine than they indicated in the current survey. It is also important to bear in mind that while every effort was made to draw a representative sample of people fined for speeding, we cannot guarantee that the sample ultimately selected is representative of the general population. These are real issues but it is important not to overstate their significance. Self-report surveys have been in use in criminology for a very long time and used properly, generally give reliable results (Joliffe & Farrington, 2014). The representativeness issue is relevant to our estimate of the percentage of the population who have considered not paying a fine. It is not so relevant to the relationship between variables (e.g. fine amount and willingness to pay) which are our principal interest.

What conclusions flow from our results? It is worth noting at this juncture that there is reason to doubt the common assumption that higher fines exert stronger deterrent effects. Weatherburn and Moffatt (2011), for example, found that fine amount had no effect on the risk of re-offending among drink drivers. In light of this, it may be worth conducting a cost-benefit analysis of the fine system — at least for those offences for which large numbers of people are fined — to determine the point at which the marginal costs of imposing higher fines exceed the marginal benefits. The second conclusion is that there may be some value in exploring options for tailoring fines more closely to the means of an offender. Court-imposed fines can already be adjusted to suit the income of an offender but most fines are not imposed by the courts. This is not the place for a full discussion of options but it is worth noting that Chapman, Quiggin, Freiberg and Tait (2004) have argued that a fine payment system modelled on the Higher Education Contribution Scheme (HECS) would provide a much more efficient and equitable basis on which to impose and collect fines.

NOTES

1. Section 20 of the Fines Act 1996 defines a penalty notice as follows: (1) A penalty notice is a notice referred to in subsection (2) to the effect that the person to whom it is directed has committed a specified offence and that, if the person does not wish to have the matter dealt with by a court, the person may pay the specified amount for the offence to a specified person within a specified time. (2) A penalty notice for the purposes of this Act is: (a) a notice issued under any of the statutory provisions set out in Schedule 1, or (b) any similar notice issued under any statutory provision specified by the regulations for the purposes of this section, or (c) a notice issued under a statutory provision that declares the notice to be a penalty notice for the purposes of this Act, or (d) a notice that, at the time it was issued, was issued under a statutory provision referred to in paragraph (a), (b) or (c). (3) A notice is not a penalty notice for the purposes of this Act unless it is of a kind referred to in subsection (2). As the definition indicates, a penalty notice gives the recipient a choice between paying a fixed amount to the agency that issued the notice, or going to court, to deal with the alleged commission of the specified offence.

2. See: http://www.rms.nsw.gov.au/documents/roads/safety-rules/demerits-speeding.pdf. Retrieved 7 Jul. 2016.

3. The willingness to pay scale satisfied an important assumption of Poisson regression that the mean and variance are of similar magnitude. Further, when negative binomial regression was applied to this scale the parameter estimate for alpha was zero. The parameter estimates for the fine and detection mode terms were identical to what they were in Poisson regression.

4. Among the 1,647 from the CATI sample 1,319 (80.1%) had always paid their fine within 21 days while 328 (19.9%) had not (including those who were unsure). Again more of the *Recently Fined* group had not always paid their fine on time compared with the *Previously Fined* group (31.0% vs. 16.3%; χ^2_1 = 41.9, p < .001).

5. Among the CATI sample there were 656 (39.8%) individuals who had considered not paying their fines at least once.

6. The relationship between fine amount and willingness to pay the fine was also analysed within the CATI sample. This confirmed the findings from the three samples combined. Among those in the $254 fine scenario 64 per cent were almost certain to pay and this was lower for the $436 fine scenario (49%) and much lower again for the $2,252 fine

scenario (17%). Poisson regression showed that the $436 scenario were significantly less willing to pay compared with the $256 scenario (IRR = 0.88, p < .001). The $2,252 scenario were even less willing to pay the fine compared with the $254 scenario (IRR = 0.46, p < .001).

7. The lack of a relationship between mode of detection and willingness to pay the fine was confirmed within the CATI sample. Among the speed camera scenario 41 per cent were almost certain to pay the fine on time compared with 44 per cent of the police detection scenario. Only 15 per cent of each detection mode (speed camera versus police) reported that they would almost certainly not pay the fine within 21 days. Poisson regression confirmed that respondents presented with the police detection scenario were no more willing to pay their fine on time than respondents presented with the speed camera scenario (IRR = 1.04, p = .262).

8. Among the CATI sample there was also no significant interaction between fine amount and mode of detection on willingness to pay the fine within 21 days (χ^2_2 = 5.42, p = .067). Within the $254 fine scenario 67 per cent of those fined by police and 61 per cent of those fined by speed camera were almost certain to pay on time. Among the $436 fine scenario the proportion of the police and speed camera modes of detection who was almost certain to pay was equal (49%). For the $2,252 fine scenario 19 per cent of the police detection mode was almost certain to pay compared with 14 per cent of the speed camera detection mode. The Poisson regression model which did not include the non-significant interaction term found that the $436 fine scenario was significantly less willing to pay on time compared with the $254 fine scenario (IRR = 0.88, p < .001) and the $2,252 fine scenario were even less willing to pay (IRR = 0.46, p < .001).

9. While in the CATI sample the police detection mode showed a greater level of willingness to pay on time compared with the speed camera mode this difference was not statistically significant (IRR = 1.05, p = .121). The conclusion from the CATI sample is that higher levels of fine amount result in less willingness to pay on time.

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APPENDIX

Table A1. Characteristics of the six scenario groups (n = 2,222)

| Variable | Speed camera | | | | | | Police | | | | | | p value |
| | $254 | | $436 | | $2,252 | | $254 | | $436 | | $2,252 | | |
	n	%	n	%	n	%	n	%	n	%	n	%	
Fine status													
Recently Fined	103	26.4	89	24.9	96	27.8	76	20.8	113	30.6	110	27.9	= .063
Previously Fined	287	73.6	269	75.1	250	72.3	289	79.2	256	69.4	284	72.1	
Fine payment category													
Always paid	320	82.1	279	77.9	278	80.4	303	83.0	288	78.1	295	74.9	= .061
Did not always pay	70	18.0	79	22.1	68	19.7	62	17.0	81	22.0	99	25.1	
Considered not paying?													
No	239	61.3	197	55.0	208	60.1	225	61.6	218	59.1	225	57.1	= .417
Yes	151	38.7	161	45.0	138	39.9	140	38.4	151	40.9	169	42.9	
Knows a non-fine payer?													
No	324	83.1	310	86.6	296	85.6	316	86.6	321	87.0	332	84.3	= .598
Yes	66	16.9	48	13.4	50	14.5	49	13.4	48	13.0	62	15.7	
No. prior speeding fines													
0	205	52.6	187	52.2	185	53.5	218	59.7	204	55.3	208	52.8	= .410
1	104	26.7	83	23.2	88	25.4	84	23.0	93	25.2	106	26.9	
2	39	10.0	48	13.4	42	12.1	32	8.8	25	6.8	36	9.1	
3 or more	25	6.4	24	6.7	23	6.7	24	6.6	28	7.6	29	7.4	
Unknown	17	4.4	16	4.5	8	2.3	7	1.9	19	5.2	15	3.8	
Age group													
18-29	60	15.4	56	15.6	49	14.2	59	16.2	58	15.7	63	16.0	= .638
30-39	76	19.5	61	17.0	70	20.2	72	19.7	73	19.8	72	18.3	
40-49	85	21.8	81	22.6	74	21.4	79	21.6	97	26.3	103	26.1	
50-59	86	22.1	59	16.5	70	20.2	69	18.9	69	18.7	67	17.0	
60+	83	21.3	101	28.2	83	24.0	86	23.6	72	19.5	89	22.6	
Gender													
Male	225	57.7	208	58.1	187	54.1	200	54.8	221	59.9	218	55.3	= .578
Female	165	42.3	150	41.9	159	46.0	165	45.2	148	40.1	176	44.7	
Employment													
Paid full time	207	53.1	178	49.7	181	52.3	186	51.0	196	53.1	214	54.3	= .765
Paid part time	78	20.0	72	20.1	62	17.9	78	21.4	60	16.3	71	18.0	
Retired	52	13.3	69	19.3	58	16.8	55	15.1	54	14.6	60	15.2	
Caring for household	22	5.6	13	3.6	19	5.5	20	5.5	25	6.8	17	4.3	
Other	29	7.4	24	6.7	23	6.7	25	6.9	32	8.7	31	7.9	
Unknown	2	0.5	2	0.6	3	0.9	1	0.3	2	0.5	1	0.3	
Region													
Sydney	244	62.6	221	61.7	221	63.9	231	63.3	225	61.0	246	62.4	= .972
Other	146	37.4	137	38.3	125	36.1	133	36.4	144	39.0	148	37.6	
Unknown	0	0.0	0	0.0	0	0.0	1	0.3	0	0.0	0	0.0	
ARIA													
Major city	278	71.3	253	70.7	243	70.2	263	72.1	265	71.8	285	72.3	= .978
Inner/Outer Regional, Remote	112	28.7	105	29.3	103	29.8	100	27.4	102	27.6	109	27.7	
Unknown	0	0.0	0	0.0	0	0.0	2	0.6	2	0.5	0	0.0	
SEIFA													
Very Disadvantaged	96	24.6	80	22.4	72	20.8	83	22.7	84	22.8	85	21.6	= .879
Disadvantaged	96	24.6	100	27.9	87	25.1	91	24.9	93	25.2	94	23.9	
Advantaged	94	24.1	87	24.3	97	28.0	108	29.6	104	28.2	109	27.7	
Very Advantaged	103	26.4	90	25.1	88	25.4	80	21.9	86	23.3	106	26.9	
Unknown	1	0.3	1	0.3	2	0.6	3	0.8	2	0.5	0	0.0	
Sample													
CATI	272	69.7	273	76.3	270	78.0	272	74.5	269	72.9	291	73.9	= .455
Online MyOp	63	16.2	45	12.6	40	11.6	46	12.6	57	15.5	60	15.2	
Online QOR	55	14.1	40	11.2	36	10.4	47	12.9	43	11.7	43	10.9	
Total	390		358		346		365		369		394		