

**IMPROVING TRAFFIC LAW ENFORCEMENT IN SOUTH AFRICA:
IMPROVING KNOWLEDGE WITH A SURVEY¹**

Ada Jansen², Sophia du Plessis¹, Krige Siebrits¹, Jason Bantjes³ and Christo Boshoff⁴

This version: 1 September 2019

Abstract

Road accidents impose very high costs on the South African economy and society. Given that South Africa has a relatively strong suite of laws to regulate the behaviour of road users, the country's poor road safety outcomes probably reflect a combination of poor law enforcement and low levels of law abidance. This paper explores this conjecture by discussing the factors influencing South Africans' decisions to pay or ignore speeding fines. To do so, it first outlines a conceptual framework that links the problems of poor law enforcement and low levels of law abidance to the ideas of Tom Tyler about why people obey or disobey laws. Next, it presents and discusses results of a survey about payment of speeding fines in Cape Town (South Africa) that was informed by this conceptual framework. The findings suggest that all the motives included in the conceptual framework influence decisions to pay or ignore speeding fines. This implies a rich menu of policy options for enhancing the capacity of the speeding fine system to improve road safety outcomes in South Africa. The paper ends with a discussion of these policy options informed by relevant psychological theories of behaviour.

¹ Financial assistance for this research project received from the National Research Foundation (NRF) are hereby acknowledged.

² Department of Economics (Stellenbosch University).

³ Department of Psychology (Stellenbosch University).

⁴ Department of Business Management and Vice-Dean (Research) of the Faculty of Economic and Management Sciences (Stellenbosch University).

1 Introduction

The reasons why people obey or disobey laws have long been studied by legal scholars and other academics. This issue is of considerable importance in the New Institutional Economics (NIE) as well. Given that laws are quintessential formal institutions, which are salient elements of the incentive structures of societies (North, 1994: 360), it is vital for policymakers and institutional economists to understand the factors that determine law abidance.

The well-known insight that informal institutions and the enforcement characteristics of formal institutions influence the effectiveness of formal institutions provides the NIE with the outlines of a conceptual framework for studying law abidance.⁵ One of the implications of this insight is that informal institutions and weak law enforcement may play key roles in decisions to transgress or ignore laws: beliefs, values and norms may provide moral justification for doing so, while weak enforcement may make it feasible. The present paper further explores these issues by presenting and discussing results of a survey about the motives behind the payment and non-payment of speeding fines in Cape Town (South Africa). Both the questionnaire used in the survey and the interpretation of the responses were informed by a conceptual framework based on the ideas of Tyler (2006).

The speeding fine enforcement system in South Africa is an interesting setting for exploring law abidance from an institutional perspective.⁶ Because of the high incidence of speeding in South Africa, the traffic authorities issue a large number of fines and employ various media to notify and remind transgressors to pay them. Yet many, though by no means all, drivers ignore these notices and subsequent reminders, even when summonsed to appear in court for not settling their fines. Such behaviour often goes unpunished. The question therefore arises whether decisions to pay or ignore speeding fines are based purely on the well-known ineffectiveness of the enforcement system or influenced by other considerations (such as informal institutions) as well. In addition, the reality that each notice of a fine is followed by several reminders and a court summons implies that transgressors have ample time to take such decisions and several opportunities to reconsider them. Hence, their decisions are likely to be more deliberate and better considered than the often unconscious or instinctive ones that determine adherence to many laws (including speed limits). Both factors suggest that this setting could generate useful information about the determinants of law abidance.

The structure of the remainder of the paper is as follows. Section 2 contextualises the analysis by discussing relevant aspects of the road safety situation in South Africa. Section 3 outlines the conceptual framework for studying law abidance that informed the survey questionnaire and aided the interpretation of the results. Salient information about the survey as well as sample statistics are provided in Section 4. Against this backdrop, Section 5 presents and interprets the results.

⁵ North (2005: 27-28), for example, stated that economic performance is "an admixture of the formal rules, the informal norms, and their enforcement characteristics". Pejovich (1999: 169-171) and Helmke and Levitsky (2004: 728-730) discussed possible outcomes of various combinations of these sets of factors.

⁶ Section 2 discusses this setting in more detail.

Section 6 discusses the policy implications of the analysis and suggests theoretical frameworks that should be helpful for developing interventions.

2 The road safety situation and traffic law enforcement in South Africa⁷

South Africa's road safety outcomes are poor (cf. Road Traffic Management Corporation, 2016a:32). In 2015, the country suffered 832 431 road traffic crashes, of which 11 144 were fatal and a further 40 117 major crashes. These crashes caused 13 591 deaths, 62 520 serious injuries and 202 509 slight injuries. According to a study commissioned by the Road Traffic Management Corporation (2016a: 36), the total cost of road traffic crashes in 2015 amounted to 3.4% of GDP. International comparisons suggest that the road traffic death rate as well as the total cost of road accidents are high in South Africa (cf. Du Plessis, Jansen and Siebrits, 2019: 6-7). The reality that the country has relatively strong formal institutions to regulate the behaviour of road users — it has road safety laws to deal with six of the seven major risk factors identified by the World Health Organisation (2015: 65) — suggests that its outcomes reflect a combination of low levels of law abidance and poor law enforcement. Du Plessis et al. (2019) reported evidence in support of this conjecture. Reliable data on the values and norms underpinning the driving behaviour of South African motorists do not exist, but several outcomes are indicative of the widespread existence of informal institutions that are inimical to safe driving. These include the high frequency of traffic law violations, the relatively high incidence of pedestrian deaths and drunk driving, and the relatively low seatbelt usage rate (cf. Du Plessis et al., 2019: 7-9). The traffic authorities undertake impressive numbers of law enforcements actions and issue large number of fines for speeding and other offences. From February 2015 to September 2016, for example, the national and provincial traffic authorities held 56 815 roadblocks, stopped 16 233 847 vehicles, and tested 211 432 drivers for alcohol (Road Traffic Management Corporation, 2016b: 8). And one city, namely Cape Town, issued almost 3.9 million fines from July 2014 to July 2016 (Du Plessis et al., 2019: 14). As was suggested earlier, however, payment of fines for speeding and other traffic offences are poorly enforced: the traffic authorities have acknowledged that fewer than 20% of all traffic cases are finalised with the fines paid (AARTO, undated).⁸

A brief explanation of the traffic law enforcement system in South Africa is in order given that its failure is the basis of the analysis discussed in this paper. Until President Cyril Ramaphosa signed the Administrative Adjudication of Road Traffic Offences (AARTO) Bill into law on 13 August 2019, the Criminal Procedure Act (Act No 51 of 1977) was the legal framework for the administration of contraventions of traffic laws (AARTO, undated).⁹ This setup criminalised traffic law violations, which culminated in court proceedings unless transgressors paid admission-of-guilt fines within set periods after receiving postal notice of alleged violations. The reasons for the dismal fine payment rate have included the unreliability of the postal system, widespread bribing of traffic officials,

⁷ This section draws heavily on Du Plessis, Jansen and Siebrits (2019).

⁸ Du Plessis et al. (2019: 15) reported a payment rate of similar magnitude in the City of Cape Town: only 26% of all traffic fines issued from July 2014 to July 2016 had been settled by the end of August 2016.

⁹ The AARTO Bill was approved by Parliament in 1998, but its implementation was delayed by legal challenges. Section 6 of this paper returns to the implications of AARTO for traffic law enforcement in South Africa.

procedural flaws in the adjudication process that have led courts to refuse large numbers of traffic law-related cases, and heavy caseloads that have forced some courts to hear only limited numbers of cases of traffic law infringements (AARTO, undated).

3 Conceptual framework

As was pointed out earlier, this paper and discusses the findings of a survey that explored the reasons why South African drivers pay or do not pay speeding fines. Figure 1 summarises a categorisation of reasons why people obey or disobey laws that guided the development of the questionnaire and the interpretation of the findings. This categorisation is based on the ideas of Tom Tyler (2006), which in turn reflect a large body of theoretical research into law abidance.¹⁰

According to Tyler (2006: 3), the two overarching perspectives on the reasons why people obey laws emphasise instrumental and normative considerations. Instrumental (or social control) perspectives argue that behaviour is driven by the desire to maximise personal gain and strongly influenced by aspects of the immediate environment (Tyler 2006: 21). One of the implications of these priors is that behaviour reflects perceptions about the rewards and penalties associated with obeying or disobeying laws.¹¹ It follows that authorities can control or modify behaviour by "manipulating access to valued social resources or by delivering or threatening to deliver sanctions" (Tyler, 2006: 21). Put differently, policymakers can secure law abidance by means of measures that reward compliance and punish transgressions. In practice, authorities have focused mainly on measures meant to affect the cost of violating rules. These have revolved around deterrence-focused efforts to increase the likelihood and severity of punishment (Tyler, 2006: 21). Hence, improving enforcement of rules features prominently in instrumental approaches to enhancing the effectiveness of formal institutions.

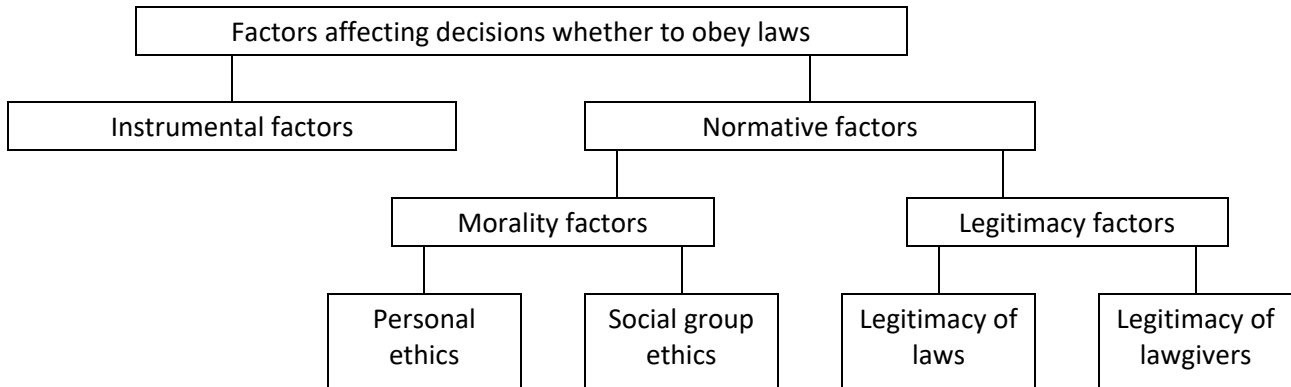
Normative perspectives downplay the influence on law abidance of self-interest seeking and cost-benefit considerations. Instead, they emphasise the effects on behaviour of persons' internalised norms of what is just and moral — in normative approaches, people deem law abidance appropriate because their attitudes about acceptable behaviour demand it (Tyler, 2006: 3). People with such attitudes will voluntarily commit themselves to obeying laws, irrespective of their perceptions of the risks of non-abidance. Tyler (2006: 4) identified two sources of normative commitments to law abidance, namely moral principles and legitimacy. Each of these sources of voluntarily-assumed obligations to obey laws has two building blocks. The moral principles that undergird normative commitment can be rooted in personal ethical views and in those of influential social groups such as family members and close friends (Tyler, 2006: 23-24), while legitimacy derives from perceptions about the fairness of the laws per se and the deemed authority of those who make, administer and enforce the laws (Tyler, 2006: 26). Normative perspectives suggest various interventions to increase law abidance that range from moral suasion to efforts to improve procedural justice and ensure

¹⁰ Psychological theories of behaviour are obvious alternatives to Tyler's categorisation for this purpose. This paper draws on one of these — the theory of planned behaviour — in Section 6.

¹¹ Becker's (1968) rational-choice theory of crime, which revolves around the costs and benefits of engaging in criminal activity, is a well-known example of an instrumental approach to law abidance.

respectful and fair treatment of citizens by officials. Put differently, normative approaches to enhancing the effectiveness of formal institutions focus on measures aimed at changing informal institutions and improving the enforcement of rules.

Figure 1
Determinants of law abidance



Source: Adapted from Tyler (2012: 3-5, 21-27).

This categorisation proved ideal for the development of the questionnaire and the interpretation of the responses. Yet at least two limitations should be noted. First, it reflects choices about the nature of some motives for obeying laws that could be disputed. To name but one example: while Figure 1 categorises the ethics of influential social groups as a morality-related normative factor, it could also be argued that it is an instrumental factor because failure to act in accordance with the ethical precepts of members of such groups may bring costs in the form of displeasure or ostracism (cf. Tyler, 2006: 23-24).¹² Second, the categorisation is fairly aggregated in nature, and finer-grained ones with more nuanced policy implications may well be possible. Thus, Jackson, Bradford, Hugh, Myhill, Quinton and Tyler (2012: 1055) pointed out that categorisations of the normative determinants of law abidance may be enhanced by distinguishing in any given context between the legitimacy of specific laws (for example, speeding laws) and the general legitimacy of the law.

4 Research method and demographic statistics

The survey¹³ on the payment of speeding fines was conducted in Cape Town amongst South African citizens and permanent residents with driver's licences. Stellenbosch University granted ethical clearance for the project, and the University's Centre for Statistical Consultation determined the appropriate sample size. The research team contracted the Department of Global Health in the Faculty of Medicine and Health Sciences at Stellenbosch University, which has much expertise in conducting surveys, to collect and capture the data. As was stated earlier, the development of the questionnaire was informed by the conceptual framework outlined in Section 3.

¹² Kroneberg, Heintze and Mehlkop (2010) provided a more detailed discussion of the interplay of instrumental and normative determinants of criminal activity.

¹³ Ethical clearance was granted by Stellenbosch University (Project number: REC-2019-10108).

To obtain a reasonably representative sample of drivers, the research team used purposive sampling to select the areas in which the questionnaires were administered. Stellenbosch University The field workers approached motorists at shopping malls, and requested them to complete the survey (which took fewer than ten minutes). Four shopping malls consented to the research team approaching respondents: Bayside Mall in Bloubergstrand, Khayelitsha Mall in Khayelitsha, Longbeach Mall in Noordhoek and Parow Centre in Parow. The survey was completed by 400 respondents from 65 suburbs with varying levels of socio-economic development. Table 1 summarises demographic characteristics of the respondents.

Table 1
Demographic characteristics of the respondents

Characteristics		Number (%)
Gender	Female	92 (23.0%)
	Male	305 (76.2%)
	Prefer not to say	2 (0.5%)
	Missing values	1 (0.3%)
Age group	20-44	220 (55.0%)
	45-65	134 (33.5%)
	66-75	25 (6.3%)
	76+	13 (3.2%)
	Missing values	8 (2.0%)
Level of education	Primary	28 (7.0%)
	Secondary	207 (51.7%)
	Tertiary	164 (41.0%)
	Missing values	1 (0.3%)
Home language	Afrikaans	74 (18.5%)
	English	151 (37.7%)
	isiXhosa	149 (37.2%)
	Other	26 (6.6%)

5 Results and discussion

This section contains three analyses of the survey results. The first contains tabulations and discussions of participants' responses to 26 statements. This is followed by an exploratory factor analysis and probit analysis of the same sets of responses.

Of the 400 respondents, 272 (68%) indicated that they have received speeding fines. This confirms the high prevalence of speeding in South Africa. Fully 169 of them (62.1%) indicated that they always pay their speeding fines, while a further 70 (25.7%) reported that they sometimes do so. Only 29 (10.7%) stated that they never pay speeding fines. These payment rates differ markedly from the actual ones reported in Section 2, which are of the order of 20-25%. This suggests that the findings to some extent were biased by social-desirability responses.¹⁴ In assessing this discrepancy in fine

¹⁴ Edwards (1957) introduced the notion of social-desirability responses, which holds that some participants in surveys provides responses that others would regard favourably (as opposed to truthful ones).

payment rates, it should be kept in mind that 72% of the respondents who reported that they always pay speeding fines had received no or only one such fine during the past twelve months.

The information in Table 2 reflects responses of a subset of participants, namely the 272 who have received speeding fines. The table shows the percentages of these participants who agreed or strongly agreed with each of the 26 statements. The responses are arranged according to their self-reported frequencies of fine payment ("never", "sometimes" and "always"). On balance, the data strongly suggest that the sets of motives included in the conceptual framework outlined in Section 3 influence the decisions of the respondents. Furthermore, the differences between the responses of fine-paying and fine-ignoring respondents are large enough to suggest that more rigorous analysis should be worthwhile.

Instrumental considerations clearly matter to the participants, both in principle and in practice. Thus, large proportions of the respondents in all three fine-paying categories indicated that they would pay if not doing so had serious consequences (Statement 13). Non-renewal of their driver's licences seems to be one such consequence, albeit one of lesser concern to non-payers (Statement 22). This group did express markedly stronger misgivings than those who sometimes or always pay speeding fines about the affordability of speeding fines, though (Statement 1). Responses to other questions suggested that the monetary cost of speeding fines matter to all three sub-groups of respondents. Irrespective of fine-paying habits, the vast majority of the respondents indicated that they would settle their fines if the amount was halved if paid within three months (Statement 5). Surprisingly, the threat of the fine being doubled if not settled within three months would be a markedly weaker incentives for all three sub-groups of respondents; in fact, only among those who always pay did a significant majority indicate that it would materially affect their decisions (Statement 6). While most members of all three sub-groups do not regard the payment of speeding fines as a particularly time-consuming activity, relatively large portions of those who never or only sometimes pay are of the view that the process (Statements 17 and 18). Given the well-known shortcomings of the fine-enforcement system referred to in Section 2, the finding that respondents in all three sub-groups overwhelmingly disagreed with the statement that non-payment has no consequences is also surprising (Statement 9).¹⁵

Personal morality considerations weigh heavily among those who always pay their speeding fines: very large percentages of the members of this sub-group indicated that transgressions require penance (Statement 2) and that neither the habits of others (Statements 10 and 14) nor own appraisals of guilt and the consequences of speeding (Statements 7 and 19) should have any bearing on payment decisions. On balance, these considerations matter markedly less among those who never or only sometimes pay speeding fines. They consistently carry more weight in the sub-group with members that sometimes pay speeding fines than in the sub-group with members that never do so. *Ceteris paribus*, it seems that personal morality considerations may be important reasons for differences in fine-paying habits.

¹⁵ The difference in the disagreement rates among those who never and always pay is noticeable, though.

Table 2
Fine payment motives of respondents who have received fines

Statement	Responses: "Agree" or "Agree strongly"		
	Never Pay	Sometimes pay	Always pay
	Number (%)	Number (%)	Number (%)
<u>Instrumental considerations</u>			
1 I can afford to pay speeding fines.	10 (34.5%)	37 (52.9%)	107 (63.3%)
5 I would pay my speeding fines if a 50% discount is given for paying within 3 months.	25 (86.2%)	68 (97.1%)	163 (96.4%)
6 I would pay my speeding fines if I knew that the fine would be doubled if I had not paid it within 3 months.	15 (51.7%)	36 (51.4%)	124 (73.4%)
9 Nothing would happen if I don't pay my speeding fines.	7 (24.1%)	12 (17.1%)	13 (7.7%)
13 I would pay my speeding fines if not doing so had serious consequences.	23 (79.3%)	61 (87.1%)	147 (87.0%)
17 It is time-consuming to pay speeding fines.	14 (48.3%)	33 (47.1%)	58 (34.3%)
18 It is complicated to pay speeding fines.	19 (65.5%)	44 (62.9%)	69 (40.8%)
22 I would pay my speeding fines if I am not allowed to renew my driver's license with outstanding fines against my name.	21 (72.4%)	59 (84.3%)	144 (85.2%)
<u>Personal morality considerations</u>			
2 Transgressors should always pay their speeding fines.	22 (75.9%)	54 (77.1%)	156 (92.3%)
7 I pay my fines when I know that I was guilty of violating speed limits.	18 (62.1%)	58 (82.9%)	150 (88.8%)
10 I pay my speeding fines even if most South Africans don't.	16 (55.2%)	51 (72.9%)	158 (93.5%)
14 I should pay my speeding fines even if my family members and close friends don't.	17 (58.6%)	57 (81.4%)	165 (97.6%)
19 I pay my speeding fines even if my speeding did not endanger my life or the lives of others.	14 (48.3%)	54 (77.1%)	159 (94.1%)
<u>Social group morality considerations</u>			
3 My family members and close friends believe that people should always pay their speeding fines.	22 (75.9%)	50 (72.5%)	148 (87.6%)
11 My family members and close friends would be disappointed in me if I did not pay my speeding fines.	16 (55.2%)	44 (63.8%)	138 (81.7%)
23 Other motorists will pay their speeding fines if they are not allowed to renew their driver's licences with outstanding fines against their names.	23 (79.3%)	59 (85.5%)	154 (91.1%)
25 Most motorists in South Africa pay their speeding fines.	10 (34.5%)	24 (34.8%)	61 (36.1%)
26 Most motorists in the Western Cape pay their speeding fines.	7 (24.1%)	22 (31.9%)	60 (35.5%)

Continued overleaf

Table 2 (continued)
Fine payment motives of respondents who have received fines

Statement	Responses: "Agree" or "Agree strongly"		
	Never Pay	Sometimes pay	Always pay
	Number (%)	Number (%)	Number (%)
<u>Legitimacy of the law considerations</u>			
20 The purpose of speeding fines is to generate money.	21 (72.4%)	37 (52.9%)	71 (42.0%)
21 The purpose of speeding fines is to promote road safety.	22 (75.9%)	58 (82.9%)	148 (87.6%)
24 The current system of speeding fines is an effective way to get motorists to obey speed limits.	18 (62.1%)	45 (64.3%)	135 (79.9%)
28 Speed limits are important to make roads safer.	27 (93.1%)	64 (91.4%)	167 (98.8%)
<u>Legitimacy of lawmakers considerations</u>			
4 Traffic officers do their best to make our roads safer.	15 (51.7%)	39 (55.7%)	114 (67.5%)
8 Traffic officers treat all road users fairly.	12 (41.4%)	25 (35.7%)	85 (50.3%)
12 Most traffic officers are corrupt.	15 (51.7%)	33 (47.1%)	68 (40.2%)
15 The courts treat all South Africans accused of traffic violations fairly.	12 (41.4%)	37 (52.9%)	108 (63.9%)
16 The correct procedures are always followed in South Africa when individuals are prosecuted for speeding violations.	10 (34.5%)	38 (54.3%)	98 (58.0%)
27 Traffic enforcement officers set a good example for all by complying with speeding laws.	16 (55.2%)	39 (55.7%)	106 (62.7%)

On balance, the ethical beliefs and choices of social groups do not appear to be especially powerful influences on the respondents' fine-paying habits. While large majorities of the participants in all three sub-groups reported that their family members and close believe that speeding fines should be paid (Statement 3), markedly fewer stated that non-payment on their part would disappoint the members of these social groups (Statement 11). The difference is particularly striking among the members of the subgroup that never pay speeding fines. Furthermore, the respondents are well aware of the low levels of fine payment in South Africa: fewer than 40% of the members of all three sub-groups concurred with the statements that most motorists in the Western Cape and in South Africa as a whole pay their speeding fines (Statements 25 and 26). It follows that those who never or only sometimes pay speeding fines probably do not experience significant pressure from society in general to change their behaviour.

Speeding laws per se command considerable legitimacy in the eyes of the respondents: more than 90% of the members of all three sub-groups acknowledged the importance of speed limits for road safety (Statement 28) and very large percentages of them believe that the purpose of such restraints is to promote road safety (Statement 20). However, the respondents in all three sub-groups seem markedly less convinced of the effectiveness of the current speeding fine system in South Africa (Statement 24). In fact, fully 72.4% of those who never pay fines endorsed the statement that the purpose of speeding fines is to make money — a percentage that is not all that different from the 75.9% of the same sub-group who agreed that restrictions on speeding are meant to promote road safety. Smaller yet far from negligible portions of the participants in the sub-groups that sometimes

or always pay also indicated that money-generation is a purpose of speeding fines. On balance, it seems that the respondents remain convinced of the potential of speed limits and speeding fines, but have reservations about their functioning in South Africa.

The survey questions grouped under the rubric "Legitimacy of lawmakers considerations" relate to the performance of traffic officials and the handling of traffic offences by the courts. On balance, respondents who always pay their fines assessed these aspects of the speeding fine enforcement system more favourably than did those who only sometimes or never pay fines. Yet many members of that sub-group also expressed misgivings: nearly 50% of those who always pay fines felt that traffic officers do not treat all road users fairly (Statement 8), while 37% of them disagreed with the statement that the courts treat all South Africans accused of traffic violations fairly (Statement 15). Furthermore, fully 40% believe that most traffic officers are corrupt (Statement 12). The responses of large fractions of the respondents who never or sometimes pay speeding fines point to widespread distrust in the effectiveness and fairness of the speeding fine enforcement system. This reflects issues such as the perceived lack of effort on the part of traffic officers (Statement 4), widespread failure to observe the correct procedures while prosecuting persons accused on traffic law violations (Statement 16), and unnecessary speeding by traffic enforcement officers themselves (Statement 27).

Table 3 contrasts the responses to some questions of those who have never and those who have received speeding tickets. These differences in responses suggest that personal experience of the speeding fine enforcement system have undermined its legitimacy and perceived effectiveness in the eyes of significant numbers of participants. This is particularly noticeable from the responses to the "Legitimacy of lawmakers considerations": compared to their counterparts who have received speeding fines, participants who have never been fined are clearly more sanguine about the performance and fairness of traffic officials (Statements 4, 8, 12 and 27) and the courts (Statement 15) as well as the procedural integrity of prosecutions of speeding offences (Statement 16). Participants who have received speeding fines have a relatively more accurate sense of the extent of payment (Statements 25 and 26), but are also markedly more likely to endorse the statements that the purpose of speeding fines is to make money (Statement 20) and that non-payment of such fines will not have consequences (Statement 9). Participants with experience of the speeding fine enforcement system also express greater concern about the monetary cost of fines (Statement 1) and the time-consuming nature of doing so (Statement 17).

Table 2 yielded tentative but promising evidence of the appropriateness for the task at hand of the conceptual framework outlined in Section 3. Table 3 complemented this evidence by suggesting that experience of the speeding fine enforcement system may affect payment habits by influencing instrumental and normative considerations (especially the perceived legitimacy of traffic officers and the court). The remainder of this section presents more rigorous (albeit preliminary) results derived from statistical analysis of the survey data

The starting point is to apply exploratory factor analysis (EFA) to the survey data. Exploratory factor analysis (EFA) is a statistical technique that analyses correlation patterns between multiple input

variables to determine a latent factor. Hence, the objective is to reduce the measured variables into fewer latent factors that are linked by a common variance, but are not observable (Yong and Pearce, 2013: 79).

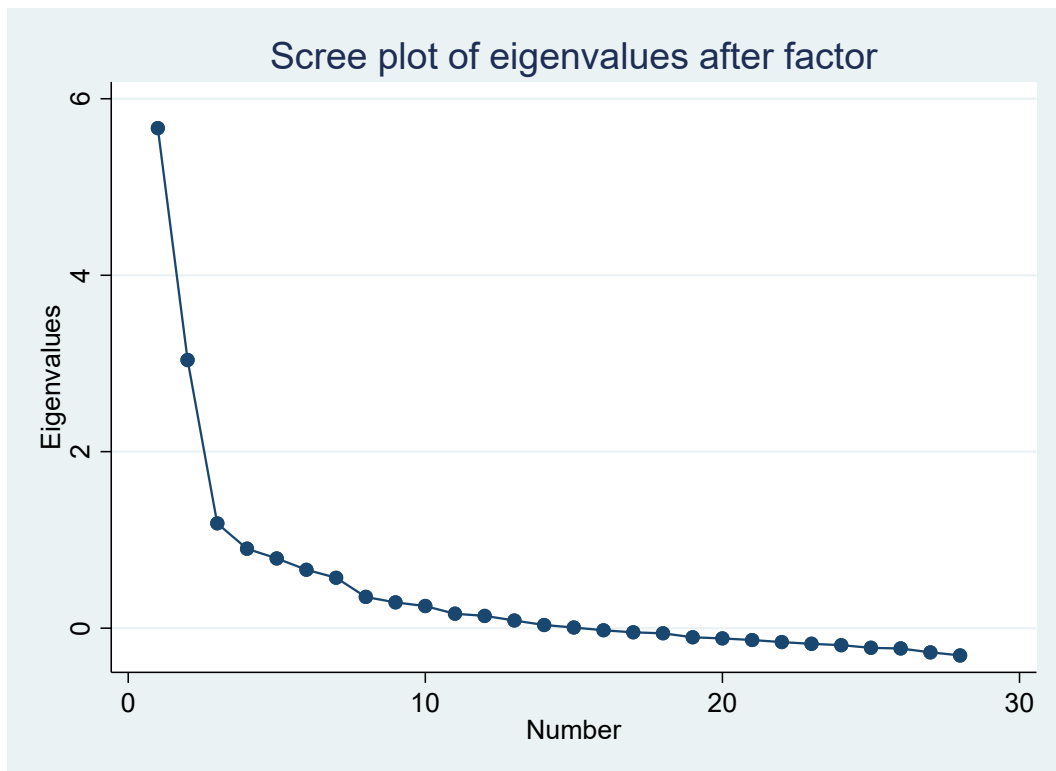
Table 3

Fine payment motives of respondents who have and have never received fines

Statement	Responses: "Agree" or "Agree strongly"		
	Have received	Have never received	All participants
	Number (%)	Number (%)	Number (%)
<u>Instrumental considerations</u>			
1 I can afford to pay speeding fines.	155 (57.0%)	100 (78.1%)	255 (63.8%)
9 Nothing would happen if I don't pay my speeding fines.	33 (12.1%)	9 (7.0%)	42 (10.5%)
17 It is time-consuming to pay speeding fines.	105 (38.6%)	36 (28.1%)	141 (35.3%)
<u>Personal morality considerations</u>			
2 Transgressors should always pay their speeding fines.	235 (86.4%)	120 (93.8%)	355 (88.8%)
<u>Social group morality considerations</u>			
25 Most motorists in South Africa pay their speeding fines.	97 (35.7%)	66 (51.6%)	163 (40.8%)
26 Most motorists in the Western Cape pay their speeding fines.	91 (33.5%)	64 (50.0%)	155 (38.8%)
<u>Legitimacy of the law considerations</u>			
20 The purpose of speeding fines is to generate money.	131 (48.2%)	47 (36.7%)	178 (44.5%)
<u>Legitimacy of lawmakers considerations</u>			
4 Traffic officers do their best to make our roads safer.	171 (92.9%)	103 (80.5%)	274 (68.5%)
8 Traffic officers treat all road users fairly.	125 (46.0%)	74 (57.8%)	199 (49.8%)
12 Most traffic officers are corrupt.	117 (43.0%)	45 (35.2%)	162 (40.5%)
15 The courts treat all South Africans accused of traffic violations fairly.	159 (58.5%)	90 (70.3%)	249 (62.3%)
16 The correct procedures are always followed in South Africa when individuals are prosecuted for speeding violations.	148 (54.4%)	89 (69.5%)	237 (59.3%)
27 Traffic enforcement officers set a good example for all by complying with speeding laws.	165 (60.7%)	89 (69.5%)	254 (63.5%)

A first step is to determine whether aspects of the dataset – such as the sample size and the relationships between the variables – are suitable for EFA. These aspects are evaluated with the Kaiser-Meyer-Olkin (KMO) test and Bartlett's test of sphericity. The KMO test yielded a value of 0.822, which indicated that the sample is adequate for EFA. Bartlett's test is a yardstick of multivariate normality that compares the correlation matrix to the identity matrix to indicate whether it is possible to reduce variables to some factors. A significant test score (that is, one that is less than 0.05) indicates that the data are suitable for EFA. In this case, the score was less than 0.05). The next critical aspect of the analysis is to determine the number of factors that must be chosen in the EFA. The scree plot depicted in Figure 2 shows that three factors can be identified from the analysed variables as underlying latent variables.

Figure 2
Scree plot of eigenvalue



Source: Own calculations.

The results of the EFA indicated that three factors can be identified from the responses to the following statements:

Factor 1

- | | |
|----|---|
| 1 | I can afford to pay speeding fines. |
| 2 | Transgressors should always pay their speeding fines. |
| 3 | My family members and close friends believe that people should always pay their speeding fines. |
| 5 | I would pay my speeding fines if a 50% discount is given for paying within three months. |
| 6 | I would pay my speeding fines if I knew that the fine would be doubled if I had not paid it within three months. |
| 7 | I pay my fines when I know that I was guilty of violating speed limits. |
| 10 | I should pay my speeding fines even if most South Africans do not. |
| 11 | My family members and close friends would be disappointed in me I did not pay my speeding fines. |
| 13 | I would pay my speeding fines if not doing so had serious consequences. |
| 14 | I should pay my speeding fines even if my family members and close friends do not. |
| 19 | I pay my speeding fines even if my speeding did not endanger my life or the lives of others. |
| 22 | I would pay my speeding fines if I am not allowed to renew my driving license with outstanding fines against my name. |
| 23 | Other motorists will pay their speeding fines if they are not allowed to renew their driver's license with outstanding fines against their names. |

Factor 2

4	Traffic officers do their best to make our roads safer.
8	Traffic officers treat all road users fairly.
12	Most traffic officers are corrupt.
15	The courts treat all South Africans accused of violating traffic laws fairly.
16	The correct procedures are always followed in South Africa when individuals are prosecuted for speeding violations.
17	It is time-consuming to pay speeding fines.
18	It is complicated to pay speeding fines.
20	The purpose of speeding fines is to generate money.
21	The purpose of speeding fines is to promote road safety.
24	The current system of issuing speeding fines is an effective way to get motorists to obey speed limits.
27	Traffic enforcement officers set a good example for all by complying with speeding laws.
28	Speed limits are important to make roads safer.

Factor 3

9	Nothing would happen if I don't pay my speeding fines.
25	Most motorists in South Africa pay their speeding fines.
26	Most motorists in the Western Cape pay their speeding fines.

Of the 13 statements in Factor 1, five have to do with instrumental considerations (Statements 1, 5, 6, 13 and 22) and a further 5 with personal morality considerations (Statements 2, 7, 10, 14 and 19). The remaining three (Statements 3, 11 and 23) have to do with social group morality considerations. Factor 2 is dominated by legitimacy considerations. It contains all four statements linked to law legitimacy considerations (Statements 20, 21, 24 and 28) and all six that have to do with the legitimacy of legal procedures and those who make and apply laws (Statements 4, 8, 12, 15, 16 and 27). The other two statements are related to instrumental considerations (Statements 17 and 18). Factor 3 contains only three statements. Two of these (Statements 25 and 26) have to do with social group morality issues, and the remaining one with instrumental considerations (Statement 9).

The focus now shifts to the results of tests to establish the statistical significance of scoring differences in the responses of sub-groups of participants to the statements in Factor 1 and Factor 2. The Mann-Whitney test, a non-parametric test that determines whether there is a significant difference between the observations in two independent samples, was used for this purpose. Table 4 presents results for the differences in the responses between participants who had and had never received speeding fines, while Table 5 focuses on the differences in the responses of participants who always pay speeding fines and those who sometimes or never pay.

The results of the two sets of Mann-Whitney tests reported in Table 4 differ substantially. The scoring tendencies of those who had and had never received speeding fines were significantly different for only three statements. Two of these were related to instrumental considerations (Statements 1 and 13), while the other one (Statement 12) had to do with social group morality considerations. Much more marked differences came to light when the test was applied to the responses of those who always pay speeding fines and those who sometimes or never pay. The scoring differences between the responses to fully nine of the statements were statistically significant, all at the 1% level. Five personal morality-related statements featured among these nine (Statements 2, 7, 10, 14 and 19), which suggests that such motives may strongly influence decisions

to pay or ignore speeding fines. This confirms one of the inferences made from the information in Table 2. Two instrumental considerations statements (Statements 1 and 6) and two statements about social group morality (Statements 3 and 11) also yielded highly significant differences.

Table 4
Results of Mann-Whitney tests for scores on statements included in Factor 1

Statement	Those who have received fines versus those who have not	Those who always pay fines versus those who sometimes or never pay
	Z score (p value)	Z score (p value)
1 I can afford to pay speeding fines.	-4.026 (0.0000***)	-2.892 (0.0038***)
2 Transgressors should always pay their speeding fines.	-1.049 (0.3021)	-3.245 (0.0011***)
3 My family members and close friends believe that people should always pay their speeding fines.	-0.142 (0.8637)	-2.775 (0.0049***)
5 I would pay my speeding fines if a 50% discount is given for paying within three months.	1.392 (0.1642)	-0.666 (0.5016)
6 I would pay my speeding fines if I knew that the fine would be doubled if I had not paid within three months.	1.720 (0.0858)	-3.405 (0.0006***)
7 I pay my fines when I know that I was guilty of violating speed limits.	0.736 (0.4725)	-4.039 (0.0000***)
10 I should pay my speeding fines even if most South Africans do not.	0.099 (0.9169)	-5.195 (0.0000***)
11 My family members and close friends would be disappointed in me if I did not pay my speeding fines.	-2.556 (0.0101**)	-2.914 (0.0036***)
13 I would pay my speeding fines if not doing so had serious consequences.	2.522 (0.0110**)	-1.552 (0.1136)
14 I should pay my speeding fines even if my family members and close friends do not.	0.677 (0.5013)	-5.220 (0.0000***)
19 I pay my speeding fines even if my speeding did not endanger my life or the lives of others.	1.054 (0.2950)	-5.181 (0.0000***)
22 I would pay my speeding fines if I am not allowed to renew my driving license with outstanding fines against my name.	0.581 (0.5543)	-0.663 (0.5089)
23 Other motorists will pay their speeding fines if they are not allowed to renew their driver's license with outstanding fines against their names	-1.015 (0.3092)	-1.881 (0.0635)

***p < 0.01; **p < 0.05.

Source: Own calculations.

Table 5 reports results of similar Mann-Whitney tests on the statements in Factor 2. The scoring tendencies of those who had and had never received speeding fines were significantly different for four of the 12 statements, all at the 1% level. Three of these were related to lawmaker legitimacy considerations (Statements 4, 15 and 16). This confirms the earlier observation — derived from Table 3 — that personal experience of the speeding law enforcement system affected respondents' perceptions of its fairness and the effectiveness of traffic officers. The fourth statement had to do with an instrumental consideration, namely the time-related opportunity cost of settling speeding fines (Statement 17). The reality that the scoring differences on Statements 4, 8 and 15 between

respondents who always pay speeding fines and those who never or sometimes pay are significant in statistical terms implies that the legitimacy of traffic officers and the courts may also influence fine-paying habits. There are also significant scoring differences between these two groups of respondents on Statements 20, 24 and 28, which all relate to the legitimacy of speeding laws. One instrumental consideration — the complexity of paying fines — also yielded statistically significant scoring differences (Statement 18).

Table 5
Results of Mann-Whitney tests for scores on statements included in Factor 2

Statement	Those who have received fines versus those who have not	Those who always pay fines versus those who sometimes or never pay
	Z score (p value)	Z score (p value)
4 Traffic officers do their best to make our roads safer.	-3.290 (0.0009***)	-2.432 (0.0153**)
8 Traffic officers treat all road users fairly.	-1.890 (0.0576)	-2.663 (0.0077***)
12 Most traffic officers are corrupt.	1.544 (0.1225)	1.310 (0.1910)
15 The courts treat all South Africans accused of violating traffic laws fairly.	-2.618 (0.0084***)	-2.104 (0.0356**)
16 The correct procedures are always followed in South Africa when individuals are prosecuted for speeding violations.	-2.595 (0.0089***)	-1.577 (0.1168)
17 It is time-consuming to pay speeding fines.	2.706 (0.0067***)	1.580 (0.1151)
18 It is complicated to pay speeding fines.	-0.004 (0.9998)	4.027 (0.0000***)
20 The purpose of speeding fines is to generate money.	1.881 (0.0587)	2.417 (0.0153**)
21 The purpose of speeding fines is to promote road safety.	0.366 (0.7147)	-0.743 (0.4590)
24 The current system of issuing speeding fines is an effective way to get motorists to obey speed limits.	-1.026 (0.3041)	-2.412 (0.0159**)
27 Traffic enforcement officers set a good example for all by complying with speeding laws.	-1.855 (0.0628)	-1.219 (0.2254)
28 Speed limits are important to make roads safer.	1.802 (0.0716)	-3.025 (0.0024***)

***p < 0.01; **p < 0.05.

Source: Own calculations.

Tables 6 and 7 report the results of Chi Square tests of the statistical significance of differences between participants' responses to the same statements. For this purpose, some data were combined into nominal categories and the numbers of observations in each category were compared. The test made it possible to determine whether the proportions observed for one variable were significantly different from those observed for another. The question posed to participants about the frequency of speeding fine payments had three possible responses: "Never", "Sometimes", and "Always". The first step was to reduce the responses to these questions to two categories, namely "Never and sometimes" and "Always". The 131 responses that were excluded from the recategorisation comprised of the 129 participants who indicated that they have never received a fine and two missing observations. Hence, the analysis on the variable "Payment of speeding fine" had 269 observations. The two categories "Never and sometimes" and "Always" contained 36.8% and 63.2% of the responses, respectively. In addition, the responses to the 28

statements were collapsed into two categories, namely "Strongly disagree and disagree" and "Agree and strongly agree".

Table 6
Results of Chi Square tests for scores on statements included in Factor 1

Statement	Numbers of respondents who:						P value
	Strongly disagree and disagree			Agree and Strongly agree			
	Not always pay	Always pay	Total	Not always pay	Always pay	Total	
1 I can afford to pay speeding fines.	52	62	114	47	108	155	0.010**
2 Transgressors should always pay their speeding fines.	23	13	36	76	157	233	0.000***
3 My family members and close friends believe that people should always pay their speeding fines.	26	21	47	72	149	221	0.003***
5 I would pay my speeding fines if a 50% discount is given for paying within three months.	6	6	12	93	164	257	0.332
6 I would pay my speeding fines if I knew that the fine would be doubled if I had not paid it within three months.	48	46	94	51	124	175	0.000***
7 I pay my fines when I know that I was guilty of violating speed limits.	23	19	42	76	151	227	0.009***
10 I should pay my speeding fines even if most South Africans do not.	32	11	43	67	159	226	0.000***
11 My family members and close friends would be disappointed in me I did not pay my speeding fines.	39	40	79	60	129	189	0.006***
13 I would pay my speeding fines if not doing so had serious consequences.	15	23	38	84	147	231	0.713
14 I should pay my speeding fines even if my family members and close friends do not.	25	4	29	74	166	240	0.000***
19 I pay my speeding fines even if my speeding did not endanger my life or the lives of others.	31	10	41	68	160	228	0.000***
22 I would pay my speeding fines if I am not allowed to renew my driving license with outstanding fines against my name.	19	25	44	80	145	225	0.337
23 Other motorists will pay their speeding fines if they are not allowed to renew their driver's license with outstanding fines against their names.	17	15	32	82	155	237	0.041**

***p < 0.01; **p < 0.05

Source: Own calculations.

Table 6 shows the frequencies of the two response categories "Strongly disagree and disagree" and "Agree and strongly agree" for the statements included in Factor 1 by the two categories of fine-

paying habits "Never and Sometimes" and "Always". It also displays the Chi Square probability value associated with each statement. The results are very similar to those of the Mann-Whitney tests. In fact, the same nine statements identified in Table 4 are again sources of statistically significant differences in the responses participants with different fine-paying habits. Five of these statements have to do with personal morality considerations, two with instrumental considerations and the remaining two with social group morality considerations. In all likelihood, these statements point to motives that may affect decisions to pay or ignore speeding fines. The only additional source of a statistically significant difference in responses in Table 6 is Statement 23, a social group morality-related statement that is significant at the 5% level.

Table 7
Results of Chi Square tests for scores on statements included in Factor 2

Statement	Numbers of respondents who:						P value
	Strongly disagree and disagree			Agree and Strongly agree			
	Not always pay	Always pay	Total	Not always pay	Always pay	Total	
4 Traffic officers do their best to make our roads safer.	45	56	101	54	114	168	0.041**
8 Traffic officers treat all road users fairly.	62	85	147	37	85	122	0.045**
12 Most traffic officers are corrupt.	51	95	146	48	68	116	0.285
13 The courts treat all South Africans accused of violating traffic laws fairly.	48	60	108	49	109	158	0.025**
16 The correct procedures are always followed in South Africa when individuals are prosecuted for speeding violations.	51	71	122	48	99	147	0.121
17 It is time-consuming to pay speeding fines.	52	112	164	47	58	105	0.030**
18 It is complicated to pay speeding fines.	36	101	137	63	69	132	0.000***
20 The purpose of speeding fines is to generate money.	41	98	139	58	72	130	0.010**
21 The purpose of speeding fines is to promote road safety.	19	22	41	80	148	228	0.169
24 The current system of issuing speeding fines is an effective way to get motorists to obey speed limits.	36	34	70	63	136	177	0.003***
27 Traffic enforcement officers set a good example for all by complying with speeding laws.	44	63	107	55	107	162	0.233
28 Speed limits are important to make roads safer.	8	2	10	91	168	259	0.004***

***p < 0.01; **p < 0.05

Source: Own calculations.

Much the same is true for the results in Table 7, which are derived from responses to the statements in Factor 2. The seven statements that yielded statistically significant differences in the responses

of those who always pay speeding fines and those who never or sometimes pay when the Mann-Whitney test was applied, do so again when subjected to the Chi Square test. As was pointed out earlier, three of these statements have to do with lawmakers legitimacy considerations (Statements 4, 8 and 15), another three with law legitimacy considerations (Statements 20, 24 and 28) and the seventh with an instrumental consideration (Statement 18). In addition, the Chi Square test identifies one additional source of statistically significant differences in responses, namely Statement 17. This statement also has to do with an instrumental consideration: the time required to pay speeding fines.

The final part of this section estimates a basic logistic model to determine the predictors that explain the probability that respondents choose to always pay a speeding fine (as opposed to paying never or sometimes). The outcome variable is equal to 1 if respondents always pay, and 0 if respondents never pay or pay sometimes. The model contains the following predictors:

- The age of the respondent grouped into three categories: 20 to 44 years (1), 45 to 65 years (2), and 66 years and older (3)
- Gender: Male = 1, Female = 0
- Education: Primary (1), Secondary (2), Tertiary (3)
- Ordinal variables drawn from the questionnaire (as listed below)

The ordinal variables that are included in the regression are measured on a 4 point Likert scale (1 = strongly disagree, 2 = disagree, 3 = strongly agree, 4 = agree). The following variables — one linked to each of the five sets of motives in the conceptual framework) — were included in separate models:

- I can afford to pay speeding fines (q6_1).
- My family members and close friends believe that people should always pay their speeding fines (q6_3).
- I should pay my speeding fines even if most South Africans do not (q6_10).
- The courts treat all South Africans accused of violating traffic laws fairly (q6_15).
- The current system of issuing speeding fines is an effective way to get motorists to obey speed limits (q6_24).

Tables 8 and 9 contain the regression outputs. More specifically, Table 8 contains odds ratios and p values, while Table 9 shows marginal effects. The regression results reveal that gender does not significantly influence the decision to always pay a speeding fine. Age, however, does: respondents older than 65 years are significantly more likely to always pay their speeding fines than those aged 20 to 44. Tertiary-level education is another statistically significant predictor of unfailing payment of speeding fines. Personal morality (proxied here by responses to q6_10) also significantly influences the decision to always pay a speeding fine: participants who answered that they strongly agree with that statement were significantly more likely to always pay their speeding fine). On the statement related to law legitimacy considerations (q6_15), respondents who agreed with the statement were more likely than those who strongly disagreed with it to always pay their speeding

finer. On balance, these results also constitute promising evidence of the usefulness of Tyler's conceptual framework.

Table 8
Logistic regression results of respondents who always pay speeding fines:
Odds ratios and P values

	Odds ratio	Std error	z	P > z	95% Confidence interval	
Gender	0.5994556	0.237893	-1.29	0.197	0.2753968	1.304833
Age category						
45 - 65	0.8322268	0.2643016	-0.58	0.563	0.4465952	1.550848
66+	8.076695	7.294677	2.31	0.021	1.375463	47.42622
Education						
Secondary	3.559688	2.48996	1.82	0.070	0.9036628	14.02224
Tertiary	4.267569	3.043371	2.03	0.042	1.054764	17.26656
I can afford to pay speeding fines.						
Disagree	0.8266201	0.4168672	-0.38	0.706	0.3076397	2.221108
Agree	0.9869818	0.4889483	-0.03	0.979	0.3737886	2.606107
Strongly agree	2.89381	2.408703	1.28	0.202	0.5661879	14.79039
My family members and close friends believe that people should always pay their speeding fines.						
Disagree	3.127836	4.553893	0.78	0.433	0.1802846	54.26618
Agree	4.678415	6.667338	1.08	0.279	0.2864364	76.41338
Strongly agree	5.167356	7.273309	1.17	0.243	0.3274613	81.54113
I should pay my speeding fines even if most South Africans do not.						
Disagree	1.075358	1.044881	0.07	0.940	0.1601312	7.221553
Agree	5.392099	4.733214	1.92	0.055	0.9650917	30.12639
Strongly agree	14.27088	14.26608	2.66	0.008	2.011573	101.2432
The courts treat all South Africans accused of violating traffic laws fairly.						
Disagree	2.556126	1.538507	1.56	0.119	0.7856924	8.315953
Agree	2.768272	1.650819	1.71	0.088	0.860215	8.908621
Strongly agree	1.848723	1.441066	0.79	0.431	0.4012053	8.518774
The current system of issuing speeding fines is an effective way to get motorists to obey speed limits.						
Disagree	1.351062	1.190898	0.34	0.733	0.2400938	7.602735
Agree	2.101041	1.791049	0.87	0.384	0.3952036	11.16987
Strongly agree	0.844155	0.7614141	-0.19	0.851	0.1440961	4.945295
Constant	0.0091618	0.0168603	-2.55	0.011	0.0002486	0.3376184

***p < 0.01; **p < 0.05

Source: Own calculations.

Table 9
Logistic regression results of respondents who always pay speeding fines:
Marginal effects

	Delta method				
	dy / dx	Std error	z	P > z	95% Confidence interval
Gender	-0.0934511	0.071714	-1.30	0.193	-0.2340079 0.047105
Age category					
45 - 65	-0.0353644	0.0612199	-0.58	0.563	-0.1553531 0.0846244
66+	0.2741267	0.0759103	3.61	0.000	0.1253452 0.4229081
Education					
Secondary	0.2489139	0.1320276	1.89	0.059	-0.0098554 0.5076832
Tertiary	0.2816341	0.133692	2.11	0.035	0.0196027 0.5436655
I can afford to pay speeding fines.					
Disagree	-0.0361561	0.0946656	-0.38	0.703	-0.2216973 0.1493851
Agree	-0.002441	0.0921751	-0.03	0.979	-0.183101 0.1782189
Strongly agree	0.1676851	0.1212446	1.38	0.167	-0.06995 0.4053202
My family members and close friends believe that people should always pay their speeding fines.					
Disagree	0.2252202	0.2700412	0.83	0.404	-0.3040509 0.7544913
Agree	0.3020301	0.2631351	1.15	0.251	-0.2137052 0.8177655
Strongly agree	0.320022	0.2597754	1.23	0.218	-0.1891285 0.8291725
I should pay my speeding fines even if most South Africans do not.					
Disagree	0.0137436	0.1827128	0.08	0.940	-0.3443669 0.3718541
Agree	0.3514083	0.1666727	2.11	0.035	0.0247358 0.6780808
Strongly agree	0.5117324	0.1711928	2.99	0.003	0.1762008 0.8472641
The courts treat all South Africans accused of violating traffic laws fairly.					
Disagree	0.1828751	0.116292	1.57	0.116	-0.0450529 0.4108032
Agree	0.1971831	0.1161576	1.70	0.090	-0.0304816 0.4248477
Strongly agree	0.1220732	0.1521252	0.80	0.422	-0.1760868 0.4202332
The current system of issuing speeding fines is an effective way to get motorists to obey speed limits.					
Disagree	0.0586661	0.1734392	0.34	0.735	-0.2812684 0.3986007
Agree	0.1393563	0.1673819	0.83	0.405	-0.1887063 0.4674188
Strongly agree	-0.0337027	0.1787017	-0.19	0.850	-0.3839516 0.3165462

***p < 0.01; **p < 0.05

Source: Own calculations.

6 Towards policy proposals

The evidence presented in this paper suggests that all five motives incorporated in the conceptual framework outlined in Section 3 affect the survey participants' decisions to pay or ignore speeding fines. On balance, however, personal morality considerations, lawmaker legitimacy considerations and law legitimacy considerations seem to be the most powerful of these motives, while social group considerations seem to be the weakest. While not negligible, the influence of instrumental considerations seems weaker might have been expected. In the South African context, this may well reflect the poor functioning of the speeding fine enforcement system. The responses to several questions and statements confirmed that rewards (e.g. discounts for quick settlement of speeding fines) and credible threats of sanctions (such as non-renewal of driver's licences until outstanding fines had been settled) would strongly influence the fine-paying habits of motorists.

Further confirmation of the potential strength of instrumental considerations came from another survey question, which asked respondents to indicate the likelihoods of them paying speeding fines delivered to them in various formats. Table 10 shows the numbers and proportions of participants in the various fine-receiving and fine-paying categories who stated that they would always pay a fine delivered in each mode. It is clear that the numbers and percentages of each group of respondents are very similar for fines delivered by ordinary mail, registered mail, E-mail and SMS. However, they are markedly higher for fines delivered by registered mail with a court summons – especially among respondents who sometimes or never pay speeding fines. This underscores the potential of credible threats to improve fine-payment rates in South Africa.

Table 10
Fine delivery mode and payment likelihood

Fine delivery mode	Response: "Always"			
	Have never received	Have received		
		Never pay	Sometimes pay	Always Pay
Number (%)	Number (%)	Number (%)	Number (%)	
Ordinary mail	64 (50.0%)	3 (10.3%)	19 (27.1%)	130 (76.9%)
Registered mail	67 (52.3%)	3 (10.3%)	19 (27.1%)	124 (73.4%)
SMS	63 (49.2%)	2 (6.9%)	19 (27.1%)	127 (75.1%)
E-mail	68 (53.1%)	2 (6.9%)	19 (27.1%)	129 (76.3%)
Registered mail with court summons	73 (57.0%)	7 (24.1%)	36 (51.4%)	136 (80.5%)

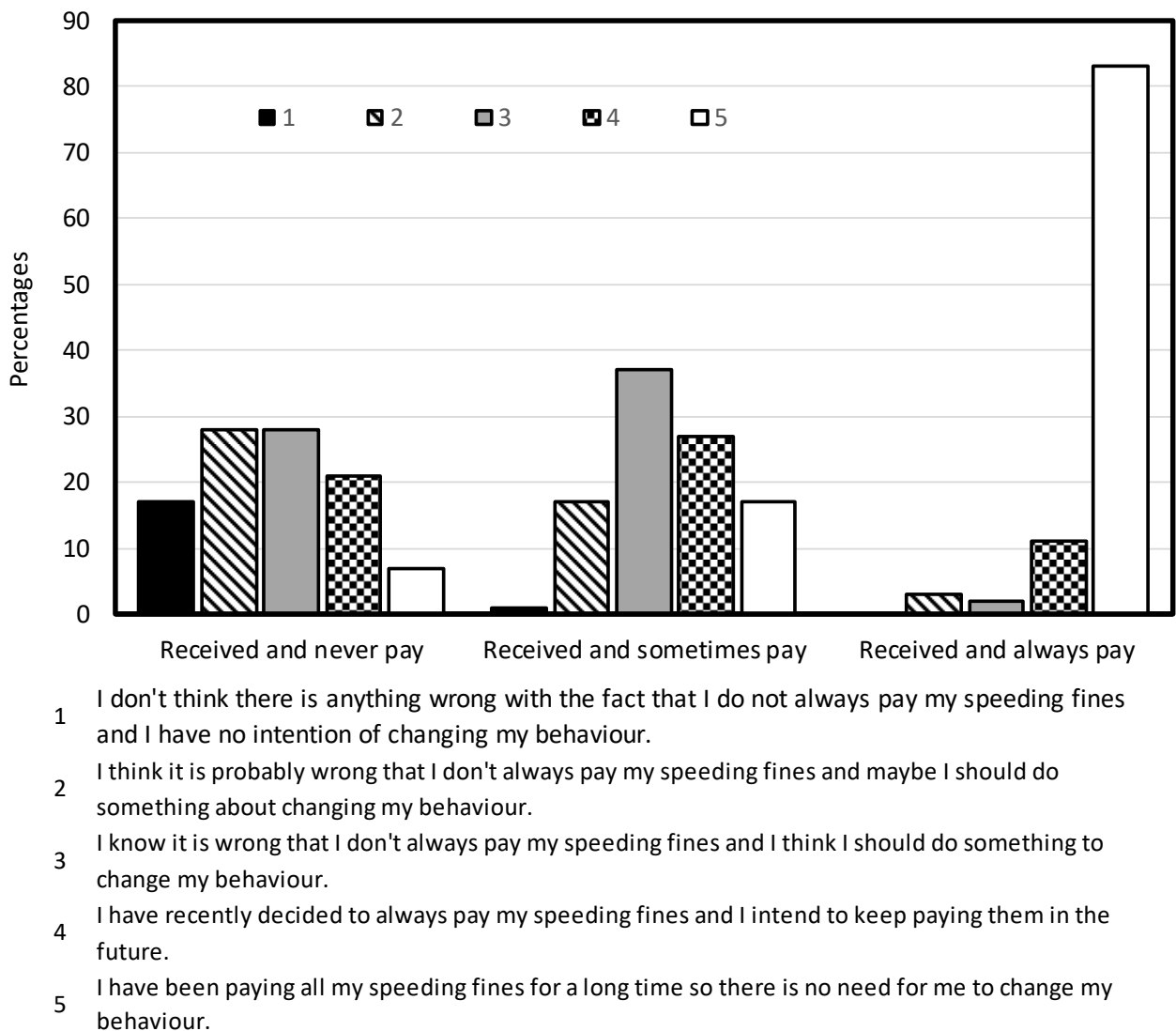
Viewed from an institutional perspective, the reality that a range of motives seemingly influence the decisions of South African motorists to pay or ignore fines implies that policymakers should work on the formal institutions, enforcement mechanisms and informal institutions. As far as the formal institutions are concerned, speedy and effective implementation of the AARTO legislation could go a long way to establishing a clear policy framework that relieves the pressure on the overburdened courts, restores the legitimacy of enforcement procedures, and credibly threaten transgressors of speeding and other traffic laws with appropriate sanctions. Various civil society organisations have announced their intention to challenge the legality of the AARTO legislation, however, and it is well known that many good laws have been neutered in South Africa by poor implementation. Hence, it remains to be seen whether (and if so, when) the AARTO legislation will have its intended effects.

The survey findings clearly showed that efforts to improve the enforcement of speeding and other traffic laws should not overlook the importance of eradicating bribery and ensuring that traffic officials treat all road users fairly. Tyler (2006) and Jackson et al. (2012), among others, found that the legitimacy of laws and of those who administer them powerfully affect levels of law-abidance among citizens. The results of this survey suggest that this effect extends to the payment of speeding fines.

It transpired from the survey that personal morality considerations are very important in the participants' decisions to pay or ignore speeding fines. Hence, attempts to improve the functioning of the speeding fine enforcement system should focus on informal institutions as well. In South

Africa, the traffic authorities have long used media campaigns to promote safe driving and payment of fines. These efforts have had limited success, however. In principle, much scope seems to exist for drawing on the insights of behavioural economists, psychologists and other scholars to design more effective interventions aimed at influencing the beliefs, values and norms that underpin South Africa's poor road safety outcomes and dysfunctional fine enforcement system. In closing, this paper provides two examples of the valuable perspectives that psychologists' workhorse models of human behaviour can bring to the study of speeding fine payment.

Figure 3
Beliefs regarding payment of speeding fines



Thus, the well-known theory of planned behaviour (Ajzen, 1991) emphasises the distinction between behavioural intentions (indications of individuals' readiness to behave in certain ways) and behaviour (the observable responses of individuals in particular situations). However, it also argues that desirable behaviours often do not take place unless appropriate behavioural intentions exist. Such intentions are shaped by the individual's attitude toward the behaviour, his or her subjective

norms (which are influenced by the views of other people) and his or her perceived behavioural (that is, perceptions about the ease or difficulty of the behaviour in question) (cf. Ajzen, 2002). Proper understanding of such roots of decisions regarding the payment of speeding fines is vital for designing interventions to overcome the behavioural effects of long-lasting informal institutions.

Important insights also follow from the transtheoretical model (TTM) or stages of change model, which is a model of intentional change that focuses on the decision-making of the individual (cf. Prochaska and DiClemente, 1984). The model identifies six stages of change, namely precontemplation, contemplation, preparation, action, maintenance, and termination (Prochaska and Velicer, 1997: 39). Based on these stages, the survey questionnaire including a question that required respondents to choose among five statements that describe possible beliefs about payment of speeding fines. Figure 3 summarises the responses of the three groups of participants who have received speeding fines – those that never pay, sometimes pay and always pay. Distinct beliefs, each representing a stage in the TTM, were most common within the three subgroups. This type of analysis of the beliefs that influence values, norms and, eventually, behaviour, is likely to be a useful starting-point for designing interventions to change informal institutions that sustain speeding and refusal to pay the resulting fines.

References

- AARTO. Undated. Background. Available at: <http://www.aarto.gov.za/index.php/background>. [Accessed on 2 May 2019.]
- Ajzen, I. 1991. The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2): 179–211.
- Ajzen, I. 2002. Perceived behavioral control, self-efficacy, locus of control, and the theory of planned behavior. *Journal of Applied Social Psychology*, 32(4): 665–683.
- Becker, G.S. 1968. Crime and punishment: an economic approach. *Journal of Political Economy*, 76(2): 169-217.
- Du Plessis, S.W.F., A. Jansen & F.K. Siebrits. 2019. The limits of laws: traffic law enforcement in South Africa. *Stellenbosch Economic Working Papers WP08/2019*. Stellenbosch: Stellenbosch University (Department of Economics and Bureau for Economic Research).
- Edwards, A. 1957. *The social desirability variable in personality assessment and research*. New York: The Dryden Press.
- Helmke, G. & S. Levitsky. 2004. Informal institutions and comparative politics: a research agenda. *Perspectives on Politics*, 2(4): 725-740.
- Jackson, J., B. Bradford, M. Hough, A. Myhill, P. Quinton & T.R. Tyler. 2012. Why do people comply with the law? *British Journal of Criminology*, 52(6): 1051-1071.
- Kroneberg, C., I. Heintze & G. Mehlkop. 2010. The interplay of moral norms and instrumental incentives in crime causation. *Criminology*, 48(1): 259-294.
- North, D.C. 1994. Economic performance through time. *American Economic Review*, 84(3): 359-368.
- North, D.C. 2005. Institutions and the performance of economies over time. In *The Handbook of New Institutional Economics* (edited by C. Ménard and M.M. Shirley). Amsterdam: Springer: 21-30.

- Pejovich, S. 1999. Effects of the interaction of formal and informal institutions on social stability and economic development. *Journal of Markets and Morality*, 2(2): 164-181.
- Prochaska, J.O. and C.C. DiClemente. 1984. *The transtheoretical approach: crossing traditional boundaries of therapy*. Homewood, IL: Dow Jones-Irwin.
- Prochaska, J.O. and W.F. Velicer. 1997. The transtheoretical model of health behavior change. *American Journal of Health Promotion*, 12(1): 38-48.
- Road Traffic Management Corporation. 2016a. *Costs of crashes in South Africa*. Pretoria: Road Traffic Management Corporation.
- Road Traffic Management Corporation. 2016b. *Traffic offence survey — December 2016*. Pretoria: Road Traffic Management Corporation.
- Tyler, T.R. 2006. *Why people obey the law*. Princeton: Princeton University Press.
- World Health Organisation. 2015. *Global status report on road safety 2015*. Geneva: World Health Organisation.
- Yong, A.G. and S. Pearce. 2013. A beginner's guide to factor analysis: focusing on exploratory factor analysis. *Tutorials in Quantitative Methods for Psychology*, 9(2): 79-94.