A comparison between Swedish and Nigerian taxi drivers

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Abstract

According to the World Health Organization, approximately 1.2 million people were killed in road traffic accidents and as many as 50 million were injured in 2004. Vulnerable road users (e.g. pedestrians, bicyclists, motorcyclists, rickshaw- and cart-drivers) in low- and middle-income countries shoulder a large proportion of the global burden of road traffic deaths and serious injury. The elderly, children and disabled are especially vulnerable. While road traffic accident deaths in high-income countries are projected to decrease by 27% between 2000 and 2020, they are projected to increase by 83% in low- and middle-income countries. One of the World Health Organization's concluding recommendations for the future was therefore to *"enhance programmes of law enforcement with public information and education campaigns*". One problem with this is, however, that we know very little about how road users in low- and middle-income countries perceive the traffic environment and why they make the decisions they do. This is because much research focuses on European or American road users while, for example, African road users are hardly ever represented. Research findings from high-income countries can sometimes be successfully used even in low- and middle-income countries but this is far from always the case. One reason as to why research findings in road safety are not always globally applicable is that the traffic environment is very different in different parts of the world, but also because of ideological bias in research. While most accident literature is based on "rational" approaches where accidents are seen as preventable many people in low-income countries have a completely different worldview where pre-destination plays an important role. In an attempt to further the knowledge about African road users, a small pilot study was conducted comparing Nigerian and Swedish taxi drivers. The study was based on the theory of planned behaviour and addressed behaviours such as speeding, drinking and driving, not using seat belts and driving a vehicle with bad tyres. This pilot study is the first in a series of studies. The results and their implications for the future studies is therefore discussed.

Keywords: Sweden, Nigeria, Cross-cultural comparison, theory of planned behaviour

According to the World Health Organization, approximately 1.2 million people were killed in road traffic accidents in 2004, and as many as 50 million were injured (Peden et al. 2004). This means that in less than 8 years a whole population, equalling the size of Sweden's, is killed on the world's roads. Vulnerable road users (e.g. pedestrians, bicyclists, motorcyclists, rickshaw- and cart-drivers) in low- and middle-income countries shoulder a large proportion of the global burden of road traffic deaths and serious injury. The elderly, children and disabled are especially vulnerable. While road traffic accident deaths in high-income countries are projected to decrease by 27% between 2000 and 2020, they are projected to increase by 83% in low- and middle-income countries. This means that road traffic injuries will step up, from being the ninth, to being the third leading contributor to the global burden of disease and injury. In comparison, coronary heart disease and clinical depression will be the two major contributors with war and HIV/AIDS on eight and tenth place, respectively. (Peden et al. 2004)

One of the World Health Organization's concluding recommendations for the future was to *"enhance programmes of law enforcement with public information and education campaigns*" (Peden et al. 2004). One problem with this is, however, that we know very little about how road users in low- and middle-income countries perceive the traffic environment and why they make the decisions they do. This is because much research focuses on European or American road users (or well road users living in urban areas of lower income countries) while, for example, African road users are hardly ever represented. Research findings from high-income countries can sometimes be successfully used even in low- and middle-income countries but this is far from always the case. One reason as to why research findings in traffic safety are not always globally applicable is that the traffic environment is very different in different parts of the world. In high-income countries the majority of vehicles are in good condition and carry only a few passengers, most roads are paved and vulnerable road users are separated from the rest of the traffic as far as possible. In many low-income countries the situation is very different. Many vehicles are in bad condition and it is not uncommon to see vehicles loaded with far more passengers than what they are designed for, many roads are in desperate need of repair and vulnerable road users share their space with the rest of the traffic. Another reason why research findings in road safety are not always globally applicable is that they are ideological biased (Dixey, 1999). Framed within a secular, individualistic and rationalist culture most accident literature is based on rational approaches where accidents are seen as preventable. In low-income countries, on the other hand, many people have a different worldview where pre-destination plays an important role and accidents might be seen as part of ones destiny.

One theoretical model, which has been extensively used in Europe and America, is the theory of planned behaviour (Ajzen, 1991; Wallén Warner, 2006; for a review). According to the theory of planned behaviour, people's *behaviour* (a defined action) is determined by their *intention* (a willingness to try to perform the behaviour), which, in turn, is determined by their *attitude towards the behaviour,* their *subjective norm* and their *perceived behavioural control.* Attitude towards the behaviour, subjective norm and perceived behavioural control are all aggregates of beliefs about the behaviour. Figure 1 shows a schematic representation of the theory of planned behaviour. For each circle in the figure specific rating scales are formulated to measure the different constructs of the model.

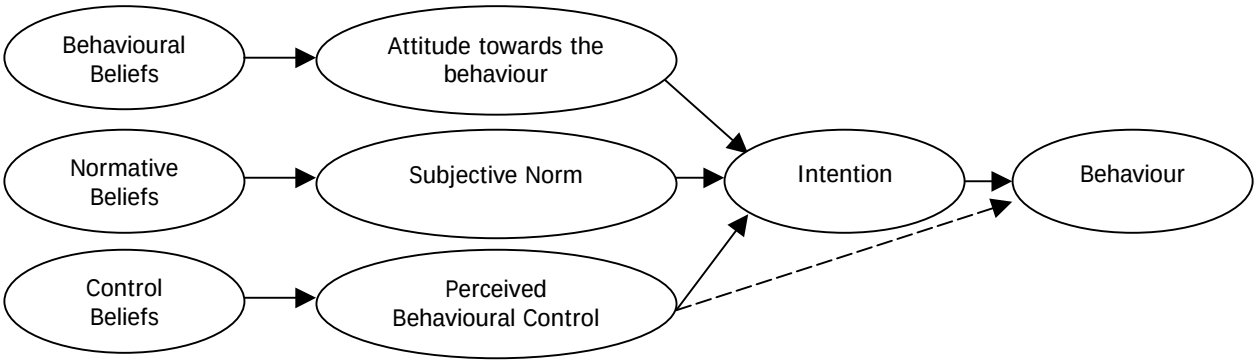

Figure 1. A schematic representation of the theory of planned behaviour.

In an attempt to further the knowledge about African road users a small pilot study was conducted comparing Swedish and Nigerian taxi drivers.

Method

Participants

A total of 37 Swedish and 28 Nigerian taxi drivers participated in the study.

Twenty-two of the Swedish taxi drivers were between 25 and 50 years old, while 3 were younger than 25 years old and 12 were older than 50 years old. Thirty-one were men while 6 were women.

Twenty-one of the Nigerian taxi drivers were between 25 and 50 years old, while 1 was younger than 25 years old and 4 were older than 50 years old (two chose not to answer the question). All Nigerian taxi drivers were men.

Procedure

The Swedish data were collected by Sjögren and Thorsén as part of their degree in psychology. In the end of 2006 the questionnaires, together with information about the study, was distributed to the staff room at three Swedish taxi companies in the county of Dalarna in Sweden. The taxi drivers were encouraged to complete the questionnaire and post them in a locked box, which was emptied six weeks later. The participants did not receive any rewards.

The Nigerian data were collected by Okpokam who works for the non-governmental organisation Eco Conscious Developments. Okpokam is brought up in the area where the data were collected and has several years experience working as community liaison officer. In the end of 2006 and the beginning of 2007 Okpokam interviewed taxi drivers in a taxi park in Calabar in South East Nigeria. All participating taxi drivers were offered a meal during the interview.

Questionnaires

One Swedish and one English version of the questionnaire were used. Both versions consisted of four different sections. The majority of the questions were identical in the two versions while a few questions were country specific.

The first section included background questions about the drivers as well as the vehicles they were driving.

The second section included questions about the Swedish and Nigerian traffic climate, respectively. These questions were used to create three indexes. The first index concerned how hindered taxi drivers felt by pedestrians and people on pushbikes, mopeds and

motorbikes in *urban areas*. The second index concerned how hindered taxi drivers felt by pedestrians and people on pushbikes, mopeds or motorbikes, as well as by animals, in *rural areas*. The third index concerned the traffic climate as a whole.

The third section included questions about what the taxi drivers saw as causes of accidents.

The fourth section included direct measures of attitude (A), subjective norm (SN), and intention (I) with regards to speeding, drinking and driving, not using seat belts and driving a vehicle with bad tyres. The English version also included direct measures of perceived behavioural control (PBC). Examples of questions are "How acceptable do you think it is for you to exceed the speed limits?" *1 = not acceptable, 5 = totally acceptable* (A), "What would your family think if you exceed the speed limits?" *1 = not acceptable, 5 = totally acceptable* (SN), "How hard is it for you to comply with the speed limits?" *1 = very hard, 5 = very easy* (PBC) and "How often do you intend to exceed the speed limits?" *1 = hardly ever, 5 = all the time* (I).

Results

Driver and vehicle

In Sweden working as a taxi driver requires a special licence. To receive this licence, one needs to be at least 21 years old and have had a driving licence for a car for at least 2 years (or have a driving licence for a bus). To get a driving licence one needs to pass both a theoretical and practical test. To become a licensed taxi driver one also needs to pass a medical examination and one cannot have been convicted for any violent or sexual crimes. Finally one needs to pass a test especially designed for taxi drivers. In Nigeria working as a taxi driver only requires an ordinary driving licence for a car (at least as far as we are aware). The results from this pilot study did, however, show that 25% of the Nigerian taxi drivers had not received any formal training or taken any practical or theoretical test before starting their profession.

In Sweden, the oldest vehicle driven by any taxi driver in this study was from 2000, while the newest was from 2006. The median vehicle was from 2005. In Nigeria, the oldest vehicle driven by any taxi driver in this study was from 1984, while the newest was from 2004. The median vehicle was from 1993.

Traffic environment

Table 1 shows that there were no significant differences between how hindered Swedish and Nigerian taxi drivers felt in traffic. The Swedish taxi drivers did, however, experience their traffic climate as safer and more harmonious than the Nigerian taxi drivers did.

Table 1. The Swedish (N=30) and Nigerian (N=26) taxi drivers' view on their traffic environment.

Index	**Sweden** mean (SD)	**Nigeria** mean (SD)	**t-value**
Hindered in *urban areas* *(1 = hindered; 2 = not hindered)*	1.19 (0.32)	1.15 (0.19)	-0.48
Hindered in *rural areas* *(1 = hindered; 2 = not hindered)*	1.55 (0.33)	1.49 (0.34)	-0.67
Driving in Sweden/Nigeria is: *(1 = safe and harmonious; 2 = dangerous and chaotic)*	1.32 (0.32)	1.98 (0.07)	11.04 ***

*** $p < .001$

Accidents

Table 2 shows that the Swedish taxi drivers thought the most common causes for accidents were alcohol or drugs, speeding and reckless driving while the Nigerian taxi drivers thought the most common causes for accidents were bad roads, reckless driving and speeding.

Table 2. The most common causes for accidents.

Causes for accidents	Sweden (times stated)	Nigeria (times stated)
Reckless driving (incl. risky overtakings)	9	24
Speeding	21	10
Bad roads (e.g. potholes, icy)	6	27
Alcohol or drugs	21	1
Inexperienced drivers	2	8
Bad cars	2	8
Others	43	16

There was a significant difference between the Swedish and the Nigerian taxi drivers view on fate when having an accident ($t(58) = -5.73$; $p < .001$). In Sweden 22% of the taxi drivers thought that fate plays an important role in whether or not one has an accident. In Nigeria 82% of the taxi drivers thought that fate plays an important role.

Risky traffic behaviours

Table 3 shows that the Nigerian taxi drivers had a more negative attitude and subjective norm towards speeding as well as driving a vehicle with bad tyres, than what the Swedish taxi drivers had. Looking at the taxi drivers' intention to speed, drink and drive, not using seat-belts and driving a vehicle with bad tyres there was, however, no significant differences between the Swedish and Nigerian taxi drivers.

Looking at the taxi drivers past and current behaviour, 5% of Swedish taxi drivers reported having driven a vehicle with a non-working speedometer at some point in the past and 19% reported having driven a vehicle with too shallow patterning on the tyres.

Among the Nigerian taxi drivers 30% reported having a non-working speedometer at the present time and among these, 25% reported it being very easy to keep within the speed limits and hardly ever intending to speed. In addition, 42% of the Nigerian taxi drivers did not know the legal speed limit in urban areas and 21% did not know the legal speed limit in rural areas. In terms of their tyres, 18% reported not being able to see any patterning, at the same time as all of them reported hardly ever intending to drive without patterning on their tyres.

Table 3. The Swedish and Nigerian taxi drivers' view on different risky traffic behaviours.

	Sweden		Nigeria		
Variable	N	mean (SD)	N	mean (SD)	**t-value**
Speeding					
Attitude	37	2.41	28	1.14	-5.57 ***
(1 = not acceptable; 5 = totally acceptable)		(1.28)		(0.45)	
Subjective Norm	36	2.06	26	1.08	-5.68 ***
(1 = not acceptable; 5 = totally acceptable)		(0.98)		(0.27)	
Perceived Behavioural Control	-	-	26	4.92	-
(Complying: 1 = very hard; 5 =very easy)				(0.27)	
Intention	37	2.14	24	1.71	-1.67
(1 = never/hardly ever; 5 = all the time) [1.]		(1.13)		(0.86)	
Drinking and driving					
Attitude	37	1.14	28	1.00	-1.71
(1 = not acceptable; 5 = totally acceptable)		(0.48)		(0.00)	
Subjective Norm	36	1.00	26	1.04	1.00
(1 = not acceptable; 5 = totally acceptable)		(0.00)		(0.19)	
Perceived Behavioural Control	-	-	26	5.00	-
(Not drinking: 1 = very hard; 5 =very easy)				(0.00)	
Intention	37	1.00	24	1.13	1.37
(1 = never/hardly ever; 5 = all the time) [1.]		(0.00)		(0.45)	
Not using seat-belts					
Attitude	37	1.59	28	1.25	-1.63
(1 = not acceptable; 5 = totally acceptable)		(1.09)		(0.58)	
Subjective Norm	36	1.36	26	1.27	-0.57
(1 = not acceptable; 5 = totally acceptable)		(0.64)		(0.60)	
Perceived Behavioural Control	-	-	26	4.81	-
(Using: *1 = very hard; 5 =very easy)*)				(0.49)	
Intention	37	1.41	24	1.58	0.76
(1 = never/hardly ever; 5 = all the time) [1.]		(0.90)		(0.88)	
Driving a vehicle with bad tyres					
Attitude	37	1.65	28	1.00	-5.84 ***
(1 = not acceptable; 5 = totally acceptable)		(0.68)		(0.00)	
Subjective Norm	35	1.51	26	1.04	-3.63 **
(1 = not acceptable; 5 = totally acceptable)		(0.74)		(0.20)	
Perceived Behavioural Control	-	-	26	5.00	-
(*Not driving: 1 = very hard; 5 =very easy)*)				(0.00)	
Intention	37	1.22	24	1.17	-0.39
(1 = never/hardly ever; 5 = all the time) [1.]		(0.48)		(0.48)	

1. The Swedish scale was 1 = never; 5 = always, while the English scale was 1 = hardly ever, 5 = always

** $p < .01$

*** $p < .001$

Discussion

The results show that the Swedish taxi drivers have a much more extensive driver training then the Nigerian taxi drivers and that they drive newer cars with less faults (e.g. tyres without patterning). In addition, the Swedish traffic climate is seen as safer and more harmonious compared with the Nigerian traffic climate which is seen as more dangerous and chaotic. In addition to this, the state of the Nigerian roads (e.g. potholes) is seen as the major cause of accidents. As the majority of traffic accidents are due to human error, vehicle failure and/or factors in the traffic environment it would be reasonable to believe that the number of accidents is higher in Nigeria than in Sweden. This is also in accordance with previous research (Peden et al. 2004) that has estimated the road traffic injury mortality rate to be at least double as much in Nigeria (19.1-28.3 fatalities / 100 000 population) as in Sweden (11.0 -12.0 fatalities / 100 000 population)

One of Peden at al.'s (2004) concluding recommendations was to *"enhance programmes of law enforcement with public information and education campaigns*". As mentioned in the introduction, it is very hard to design effective information and education campaigns suited to, for example, African road users as they have been largely underrepresented in current traffic safety research, and we therefore know very little about their traffic behaviour. Two factors that might affect their traffic behaviour are the traffic environment and the road users' worldview. With regards to the traffic environment this pilot study clearly shows that there are large differences in, for example, how safe the taxi drivers experience the traffic climate to be. The study also shows that nearly four times as many Nigerian compared to Swedish taxi drivers' think that fate plays an important role in whether or not one has an accident. This suggests that there are also some clear differences with regards to their worldview.

The current study also shows that the Nigerian taxi drivers have a more negative attitude and subjective norm towards speeding as well as driving a vehicle with bad tyres, compared to the Swedish taxi drivers. Looking at the taxi drivers' intention to speed, drink and drive, not using seat-belts and driving a vehicle with bad tyres there is, however, no significant differences between the Swedish and Nigerian taxi drivers. In Sweden, previous research has shown that there is a strong correlation between self-reported speed and observed speed (Haglund & Åberg, 2000), while we have not been able to find any similar studies conducted in Nigeria. In the current study 30% of the Nigerian taxi drivers did, however, report driving with a non-working speedometer at the present time (compared to 5% of the Swedish taxi drivers who at some point had driven with a non-working speedometer) at the same time as 25% of these drivers reported it being very easy to comply with the speed limits as well as not intending to speed. This suggests that the traditional questions and rating scales commonly used in studies in high-income countries might not be ideal for use in all situations. Instead it is necessary to adjust the questions and rating scales, as well as the research techniques for the specific situation. This might, for example, be done by transforming the rating scales into simple forms that can be used together with more participatory techniques (e.g. RRA, PRA, PLA; for further description see Chambers, 2000). One rating scale that is in accordance with these participatory techniques, and which has previously been used for cross-cultural comparisons is the ladder developed by Cantril (1965). This ladder consists of ten steps where the end points are defined by the respondent (in this case the taxi driver), where after the respondent is asked to state his or hers own position on the ladder.

To sum up, we strongly believe that the focus of traffic safety research has to shift from the road users in high-income countries to the road users in low- and middle-income countries in order to change the negative trend predicted for road traffic accident deaths in low- and middle- income countries. In doing so we need to be very sensitive to the differences in traffic environment and in culture, and close collaboration between researchers from all over the world is therefore absolutely essential.

References

Ajzen, I. (1991). The theory of planned behaviour. *Organizational Behavior and Human Decision Processes, 50*, 179-211.

Cantril, H. (1965). *The pattern of human concern.* New Jersey, USA: Rutgers University Press.

Chambers, R. (2000). Relaxed and participatory appraisal notes on practical approaches and methods. In VSO (org) *Working with communities*, (handout 7). Birmingham: VSO.

Dixey, R. A. (1999). "Fatalism", accident causation and prevention: Issues for health promotion from an exploatory study in a Yoruba town, Nigeria. *Health Eduction Research, 14,* 197-208.

Haglund, M., & Åberg, L. (2000). Speed choice in relation to speed limit and influences from other drivers. *Transportation Research Part F, 3*, 39-51.

Peden, M., Scurfield, R., Sleet, D., Mohan, D., Hyder, A. A., Jarawan, E., et al. (eds.) (2004). *The world report on road traffic injury prevention. Summary.* Geneva, Switzerland: World Health Organization.

Wallén Warner, H. (2006). Factors influencing drivers' speeding behaviour (Doctoral dissertation). *Acta Universitatis Upsaliensis. Digital Comprehensive Summaries of Uppsala Dissertations from the Faculty of Social Sciences 21*. Uppsala, Sweden.