



Personality and Driving Behaviour

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Introduction

The concept of traffic psychology is not new to South Africa, but it is not often something that practitioners discuss in professional forums. This is somewhat strange, as traffic is probably one of the most ubiquitous topics of discussion for any person who finds themselves in it on a regular basis. More specifically, you will often find that South Africans lament the lack of driving skills or basic courtesy of drivers on the roads today. This, combined with added stressors such as construction on the roads, ill-maintained roads and traffic jams, probably makes the mention of traffic in a conversation a daily occurrence for any driver or passenger.

There is very little published research on driving behaviours in South Africa, but internationally, traffic psychology is a thriving field of research and practice. There are some reports on the incidence of road rage, and many transport companies make use of special assessments to select their drivers, but very few of these studies are published, so very little is publicly known about this field in South Africa.

The aim of this study was to conduct very preliminary research into the link between driving behaviours and aspects of personality. A brief (and very broad) questionnaire on different types of driving behaviours was created, and this was administered to a sample of South Africans along with two personality questionnaires in order to investigate whether there were any links. The personality questionnaires used were the Basic Traits Inventory and the Hogan Personality Inventory.

These results reported in this publication are purely experimental, as the samples were mainly samples of convenience, but they do provide some avenues for future research. Each of the personality questionnaires are described in more detail below.

The Basic Traits Inventory (BTI) is a South African-developed personality test also based on the Big Five model of personality. Each of the five factors on the BTI have four to five facets that provide a more in-depth look at the nature of the factor. The BTI scales are described in more detail in Table 1.

Table 1. Descriptions of the BTI scales

Factor	Descriptions of people with high scores
Extraversion (E)	Enjoys being around other people, likes excitement and is cheerful in disposition
Gregariousness	Enjoys frequent social interaction
Positive affectivity	Frequently experiences positive emotions
Ascendance	Enjoys entertaining and leading large groups of people
Excitement-seeking	Seeks out adrenaline-pumping experiences and intense stimulation
Liveliness	Is bubbly, lively and energetic
Neuroticism	Experiences negative affects in response to their environment
Anxiety	Is nervous, apprehensive, and tense
Depression	Frequently experiences guilt, sadness, and hopelessness
Self-consciousness	Is sensitive to criticism, and feels shame and embarrassment
Affective instability	Is easily upset, emotionally volatile and feels anger or bitterness
Conscientiousness	Is effective and efficient in how they plan, organise and execute tasks
Order	Is neat, tidy and methodical
Self-discipline	Able to start tasks and carry them through to completion
Dutifulness	Sticks to principles, fulfils moral obligations and is reliable and dependable
Effort	Sets ambitious goals and works hard to meet them
Prudence	Thinks things through carefully, checks the facts and has good sense
Openness to Experience	Is willing to experience new or different things and is curious
Aesthetics	Appreciates art, music, poetry and beauty
Actions	Tries new and different activities
Values	Is willing to re-examine social, political and religious values
Ideas	Enjoys considering new or unconventional ideas
Imagination	Has a vivid imagination and is creative-thinking
Agreeableness	Is able to get along with other people and has compassion for others
Straightforwardness	Is frank and sincere
Compliance	Defers to others, inhibits aggression and forgives easily
Modesty	Is humble and self-effacing
Tendermindedness	Has sympathy and concern for others
Prosocial tendencies	Is kind, generous, helpful and considerate

The Hogan Personality Inventory (HPI) was the first measure of normal personality based on the Five Factor Model of personality that was designed to be able to predict occupational performance. There is an enormous database of research studies done using the HPI in various occupational contexts and countries, and it has been validated across a range of jobs and industries. The HPI measures personality of seven scales that are linked to aspects of the FFM. The scales and their definitions are listed below:

- Adjustment (the degree to which a person is calm in the face of pressure versus moody and self-critical)
- Ambition (the degree to which a person seeks status and leadership positions or prefers to avoid the limelight)
- Sociability (the degree to which a person enjoys and seeks out social interaction)
- Interpersonal Sensitivity (the degree to which a person has tact, social sensitivity, and perceptiveness)
- Prudence (the degree to which a person is conforming, dependable, and has self-control)
- Inquisitive (the degree to which a person is imaginative, adventurous and analytical)
- Learning Approach (the degree to which a person enjoys academic activities and values education and training)

To date, there has been no research using the BTI for the purposes of investigating driver behaviour. The HPI, however, has been used in a number of studies, and most notably in the assessment of transport drivers in both Australia and the USA. It is hoped that this project will spur interest in this topic that it can be investigated more thoroughly in future.

Description of the sample

The Basic Traits Inventory, Hogan Personality Inventory and a brief questionnaire on driving behaviour were administered to 200 South African drivers in order to conduct a preliminary study on personality and driver behaviour. After removing 30 individuals who had incomplete information on any of the three assessments, the final sample then consisted of 120 South African drivers and 50 professional bus drivers. The demographic composition of the sample is provided in Table 2.

The professional bus driver group was made up of both luxury liner bus drivers who engage in long distance travel and shuttle bus drivers who provide daily transport for commuters working for a large organisation in South Africa. The comparison group was made up of a convenience sample of South African drivers who voluntarily completed the questionnaires.

Men and women were almost equally represented, and the participants ranged in age from 19 years to 80 years (Mean = 36 years). All four major population groups were represented, although the majority of the respondents were White (62.4%) or African (34.1%). Most of the respondents had an educational level of Grade 12 or higher, although 16.5% did not have a Grade 12 level of education. Most career sectors were represented in the sample.

Table 2. Demographic composition of sample

Category	Frequency	Percent
Gender		
Women	87	51.2
Men	83	48.8
Ethnicity		
Asian/Indian	5	2.9
African	58	34.1
Coloured	1	0.6
White	106	62.4
Educational Level		
Lower than Grade 12	28	16.5
Grade 12	36	21.2
National Diploma	18	10.6
Bachelors Degree	22	13.5
Honours Degree	34	20.0
Masters Degree	26	15.3
Doctorate Degree	5	2.9
Type of driver		
Standard	120	70.6
Professional	50	29.4
Career Sector		
Arts, Design, Entertainment, Sports, & Media	3	1.8
Business & Financial Operations	20	11.8
Community & Social Services	1	0.6
Computer & Mathematical Science	4	2.4
Construction & Extraction	2	1.2
Education, Training, & Library	15	8.8
Healthcare Practitioner & Technical	7	4.1
Healthcare Support	2	1.2
Legal	2	1.2
Life, Physical, & Social Science	14	8.2
Management	35	20.6
Office & Administrative	11	6.5
Production	1	0.6
Sales & Related	3	1.8
Transportation & Material Moving	50	29.4
Total	170	100.0

Descriptive statistics

Driving behaviour

The distributions of responses to the questions asked in the driving behaviour questionnaire are provided in Table 3. The drivers spent between 30 minutes and 10 hours a day on the road, with an average of 3 hours a day spent driving. Most drivers would stop to rest only when tired (40%) when driving long distances, although a large number would stop to rest every two hours (36.5%). Over half of drivers (54.7%) indicated that they would answer their cell phone without a hands-free kit while driving.

Table 3. Responses to the driver behaviour questionnaire

Hours spent driving per day	Frequency	Percent
Less than 1 hour	9	5.3
1 to 3 hours	102	60.0
4 to 8 hours	43	25.3
More than 8 hours	8	4.7
Did not specify	8	4.7
Rests when driving long distance	Frequency	Percent
Every two hours	62	36.5
Every four hours	31	18.2
When tired	68	40.0
Hardly ever	8	4.7
Did not specify	1	0.6
Cell phone behaviour	Frequency	Percent
Would not answer without hands-free kit	77	45.3
Would answer without hands-free kit	93	54.7
Aggressive driving level	Frequency	Percent
Complaining to myself or others in the car	133	78.2
Hooting, flashing lights or showing the other driver signs	31	18.2
Cutting the other driver off the road, or chasing the other driver	3	1.8
Did not specify	3	1.8

Table 3. (continued)

Number of accidents	Frequency	Percent
0	72	42.4
1	50	29.4
2	24	14.1
3	15	8.8
4	2	1.2
5	3	1.8
6	2	1.2
Did not specify	2	1.2

Number of infringements	Frequency	Percent
Routine stop	37	21.8
One infringement	68	41.2
Multiple infringements	28	16.5
Did not specify	35	20.6

Aggressive driving is often classified into four levels, namely: Expressions of annoyance, aggressive driving (verbal abuse or making gestures, flashing lights and using the hooter), direct threatening/intimidating (cutting people off or chasing people), and direct confrontational (arguing with or assaulting others). The majority of drivers in the sample indicated that they engage in Level 1 aggressive driving behaviours, while only 1.8% indicated that they actively cut other drivers off or chase them when frustrated in traffic (Level 3). None of the drivers indicated specific road rage behaviours of directly attacking another motorist.

The number of accidents reported ranged from 0 to 6 accidents, with an average accident rate of 1.06. The majority of respondents indicated that they had not been involved in a motor accident (42.4%). Drivers were also asked to indicate whether or not they had been pulled over by the police for driving infringements. The majority of the respondents (41.2%) indicated that they had been pulled over for at least one infringement, and 16.5% indicated that they had been stopped for two or more infringements. The rest of the group either did not specify why they had been pulled over, or had not been pulled over.

Results

Number of accidents

The difference in the number of accidents incurred was investigated for gender groups, the type of driver, road rage levels, cell phone behaviour and the number of infringements reported by drivers.

The results showed that men reported higher accident rates than women, although the difference was not statistically significant. However, the bus drivers reported significantly fewer accidents than the other drivers. For the different levels of aggressive driving the tests indicated that those drivers who tend to cut off other drivers and chase them down (Level 3) reported significantly more accidents than those who demonstrate Level 1 or Level 2 aggressive driving behaviours. However, there were only 3 drivers who reported Level 3 aggressive driving, so this result will have to be confirmed in larger, more representative samples.

In addition, drivers who admitted that they would answer the cell phone without a hands-free kit while driving also reported having statistically significantly more accidents than those drivers who would not answer the phone. In terms of being pulled over for driving or vehicle infringements, the tests showed that drivers who were pulled over for multiple infringements also reported statistically significantly more accidents than those who had been stopped for a routine check or one infringement.

There was no relationship between the number of accidents incurred and the number of years a person had their driver's licence or the number of hours a driver spends on the road per day.

From a personality perspective, the results indicated that drivers who are less energetic, less self-disciplined, and less likely to admit their mistakes are more likely to have road accidents than others.

Standard and professional drivers

The bus drivers were compared to the other drivers on each of the personality assessments. The results showed that the bus drivers were more conscientious, cautious, methodical and rule-following than the ordinary South African drivers, and tended to admit their mistakes, have empathy for others and were more likely to give way to others in traffic. They also reported having higher levels of personal energy, enjoying the company of large groups of people, and being willing to try new things. In addition, the bus drivers reported being less able to cope with stress, less likely to seek out positions of authority and the limelight, and more likely to be moody and self-critical. These aspects of personality will be linked with performance outcomes in future studies to determine which are predictors of safety behaviour.

Aggressive driving

In terms of aggressive driving, drivers who admitted to complaining to themselves or others when frustrated by traffic (Level 1) reported being generally more cheerful, methodical, likely to admit their mistakes and give way to others, and being more friendly and agreeable than drivers who admitted to flashing lights or gesturing and shouting at others (Level 2). These tests should be repeated with a larger sample group, as only 3 drivers indicated that they engaged in Level 3 aggressive driving behaviours, so it may well be that different patterns emerge in a more representative group.

Number of infringements

The results of the tests showed that those drivers who had been pulled over for multiple infringements tended to be more appreciative of poetry, art and music than drivers who had only been stopped for routine checks. They also indicated that drivers who had been pulled over for multiple infringements tended to be more open to different experiences, and especially more tolerant of those with different value sets than all other drivers.

Taking rests when driving long distances

The results indicated that drivers who said that they hardly ever stop for rests when driving long distances reported putting less effort into the things they do than all the

other drivers. They also reported being less concerned with rules and regulations and less prone to flights of fancy than drivers who stop when tired. Again, there were only 8 drivers who endorsed the "Hardly ever" category, so it is possible that in larger samples, different patterns may emerge.

Answering the cell phone

There were interesting differences found between drivers who would or would not answer their cell phone without a hands-free kit while driving. Those drivers who would answer the cell phone while driving reported being less bubbly and cheerful, less likely to try new things, less likely to be creative and inquisitive, and generally less conscientious and agreeable than drivers who would not answer their cell phone. They were also less emotionally stable and tended to focus more on practical than theoretical or academic approaches to learning.

On closer inspection of the data, it appeared that most of the professional drivers indicated that they would not answer the cell phone while driving. In order to get a picture of what the personality profiles of the ordinary driver groups looked like, it was decided that the professional drivers should be removed from the analysis to see if a different pattern arose.

The pattern of results was quite different to those found with the professional drivers included in the analysis. The new results show that ordinary drivers who are willing to answer the cell phone while driving tend to be less emotionally stable, more self-conscious, more anxious, less likely to appreciate beauty and quality, and also less likely to enjoy learning for the sake of learning than drivers who would not answer the cell phone. This can perhaps be explained in the following way: Drivers who answer the cell phone while driving may feel worried about what the caller will think of them if their call is ignored, or be more anxious about the content of the call, and need to answer the call if they think something may be wrong. They may also be more concerned with what happens in the present instead of thinking about future consequences of their actions.

Discussion

The preliminary research conducted during this study revealed some patterns in driving behaviour and its relationship with aspects of personality. This study should be repeated in more representative samples of both ordinary and professional drivers, and probably requires a more comprehensive type of driving behaviour questionnaire, with demonstrated measurement properties. Nonetheless, the findings still provide possible avenues for future research and reveal interesting trends.

The results indicated that drivers who engage in more risky driving behaviours such as aggressive driving, answering their cell phone while driving, and who get caught breaking the driving laws are also likely to be involved in more road accidents than those who do not engage in such risky behaviours. There were also correlations between aspects of personality such as level of personal energy, self-discipline, and willingness to admit mistakes and the number of accidents incurred.

There were also notable differences in personality style between professional drivers and ordinary drivers. Professional drivers reported being more conscientious, agreeable, having higher personal energy, being more sociable and being more adventurous than ordinary drivers. They also reported being somewhat less likely to remain calm under pressure, and less likely to seek out the limelight.

The findings related to personality and risky driving behaviours were also illuminating. However, in many of these cases the size of the groups was small, so there is limited generalisability of the results. Various trends and patterns in personality traits were found for different admissions of risky driving behaviours. Further research into these areas may provide useful insights into the characteristics and behaviours that can lead to accidents, and perhaps aid the selection of safe drivers and promotion of safe driving behaviour. In addition, research into the aspects of personality that predict safer driving behaviour is needed.