

Situational Stress Levels of Cab Drivers in India: A Review

Parle Kalyan Chakravarthy

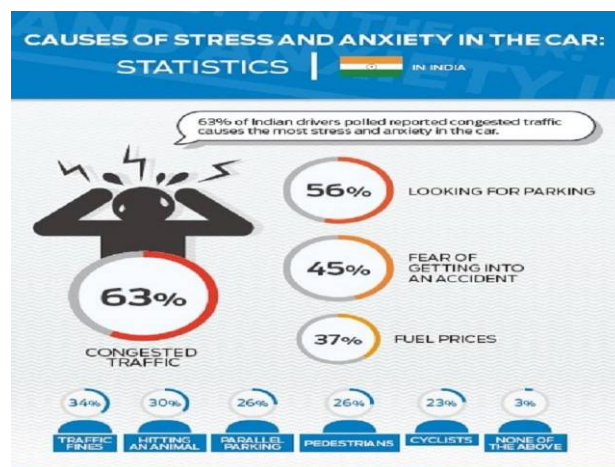
Centurion University of Technology and Management, Odisha

Abstract: Stress is the most common aspect in a person's life now a day. It became the unexpected guest which knocks the door of every individual or family in most common situations. Now people are in more stressful life because of unemployment, firing from organizations, no work-no pay etc. , because of the situations globally due to COVID-19 and its impacts on the society. The aim of the study was to describe the relationship between personality traits, stress levels, and the way of participating in the traffic. The author wish to draw attention to the fact that the nature of man and the way how he/she copes with stressful situations can have a decisive influence on behavior on the road. The study included active and professional drivers, with the right to drive in good psychophysical condition. The paper is based on review of different papers previously published in different journals by the help of google and other search engines. The findings, suggestions have been figured out from the sources at the end.

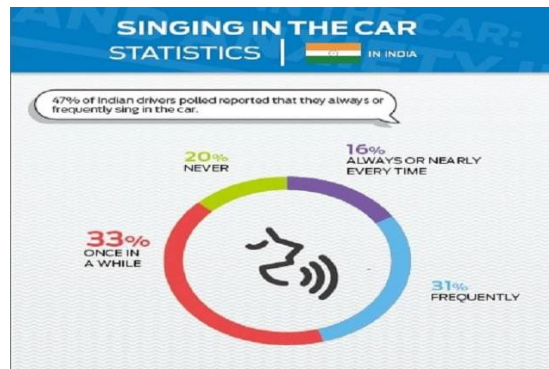
Keywords: Drivers, Situations, Stress Levels

INTRODUCTION

Indian drivers are most stressed about increasing congestion on roads with as many as 63 per cent drivers constantly worried about bumper-to-bumper traffic, a recent study commissioned by Ford Motor Company revealed. For 56 per cent drivers, parking was the second most common cause of stress, followed by fear of getting into an accident (45 per cent), fuel prices (37 per cent) and traffic fines (34 per cent), the survey revealed. The fear of hitting an animal, the presence of pedestrians and cyclists with 30, 26 and 23 per cent, respectively constituted the other reasons for stress). Only 3 per cent of Indian drivers remained unaffected with any of these. The survey undertaken by Ford is part of its focus on smart mobility experiments to find long-term solution to transportation challenges. One of the experiments include a unique pilot project in Bangalore, where Ford is working with Zoom car to test a sharing concept that would allow small groups, such as co-workers, apartment dwellers and families, to share a vehicle among multiple drivers. The approach is sure to help consumers who can't afford a car but want the benefits of owning one. Besides congested roads, 56% of **Indian drivers** also found **stress levels** rising due to parking constraints while 45% **drivers** were **stressed** due to fear of accidents. Rising fuel prices and traffic fines also caused **stress** in 37% and 34% of **drivers** respectively.



A whopping 49 per cent of Indian drivers spent more than 12-hours every week or about 100-minutes every day in their cars. The figure was higher than the average in Asia Pacific region where 42 per cent of the respondents claimed that they spent the same amount of time in driving. Drivers at moments, they time pass by singing songs, chewing bubble gums or eating chocolates to reduce the stress levels also. The statistics report is below



Review

The global status report on road safety in 2015, reflecting information from 180 countries, indicates that 1.25 million people die worldwide each year due to traffic accidents.¹ According to the current data of the Turkish Statistical Institute, in the road network of Turkey, 1,229,364 traffic accidents occurred during the year 2018. Among all those 1,229,364 accidents resulted in collision damage, 186,532 resulted in human death or injury. Concerning these accidents involving death or injury, 75% of them occurred in an inhabited area and 25% occurred at an uninhabited area. As a result of 186,532 accidents involving death or injury occurred during the year 2018, 3368 people were killed at an accident scene and 3307 people were injured and transferred to health facilities, and then they died within 30 days because of accident-related health damage (reported road fatalities: 75.9% males and 24.1% females). The below table presents a summary of accident losses between 2008 and 2018.

Table 1. Road traffic accident statistics 2008–2018 in Turkey.²

Year	Total number of accident	Number of accident involving death or injury	Number of accident involving material loss only	Total number of people dead	Number of people dead at accident scene	Number of people dead in the following accident	Number of people injured
2008	950,120	104,212	845,908	4236	4236	–	184,468
2009	1,053,346	111,121	942,225	4324	4324	–	201,380
2010	1,106,201	116,804	989,397	4045	4045	–	211,496
2011	1,228,928	131,845	1,097,083	3835	3835	–	238,074
2012	1,296,634	153,552	1,143,082	3750	3750	–	268,079
2013	1,207,354	161,306	1,046,048	3685	3685	–	274,829
2014	1,199,010	168,512	1,030,498	3524	3524	–	285,059
2015	1,313,359	183,011	1,130,348	7530	3831	3699	304,421
2016	1,182,491	185,128	997,363	7300	3493	3807	303,812
2017	1,202,716	182,669	1,020,047	7427	3534	3534	300,383
2018	1,229,364	186,532	1,042,832	6675	3368	3307	307,071

Between 2008 and 2014, the number of people died due to accident-related injuries was not recorded and only the number of people died at accident scenes was given.

Why so stressful ?

Unfortunately, many factors influence one’s stress levels. Driving at peak times and in congested areas probably cause the most stress. The feeling of being stuck in traffic and the inability to do anything – even after the traffic light in front of you changes to green – can hugely elevate your stress levels. The stress of everyday life, like work or personal problems can often contribute to feeling tense on the road too. The effects of stress on people are already well-known. Issues range from making you physically unwell and affecting your emotions, to not being able to concentrate.

Reducing stress on the road

There are several ways you can reduce stress on your journey. If you think that you’ll get stuck in traffic, or that you might be late, you may get stressed out. Plan your route beforehand, avoid peak times when possible, or even try travelling at slightly different times of the day. Leaving 15-20 minutes earlier, or later, can potentially transform your journey depending on where you’re going. Make sure your satnav is up-to-date too, as certain streets might be closed and check on mobile map apps for any live disruptions. You can also use these to explore the location of arrival for parking options.



Are you causing other drivers stress ?

Even if you're an experienced driver you should always follow the road laws; staying within the speed limit, obeying road signs and generally being respectful to other drivers. Pay attention to other drivers too and don't get distracted by, say, changing your music. On the topic of music, it's been proved that the music you listen to can make you drive more dangerously. Listening to something soothing can help to keep you calm on the roads. Be aware of other drivers, sometimes people make mistakes on the road. Don't allow their mistakes to rile you. Simply drive past safely and remain vigilant. Use your horn sparingly. According to rule 112 in the Highway Code, you should only use your horn to alert other vehicles of your presence, or warn of any danger on the road.

It's actually illegal to use a horn:

- On a restricted road, between the times of 11.30 pm and 7.00 am.
- Or while stationary

What should I do if an aggressive driver confronts me?

We hope that this never happens to you, but if you're ever confronted by an aggressive driver there are some steps you should follow. The main thing to remember is to stay calm and get away from the person as soon as possible. Don't rise to their anger. You never know, this person might have a weapon or may become suddenly violent. The safest thing is to have no contact with them at all. If you have to stop keep your doors locked and the engine running, that way you can move away if a situation arises. If you're followed, try and get to the nearest police station, or a busy garage forecourt - anywhere that there's plenty of people around. Memorise the registration number of the car, its colour, make and model, if you can. That way you can report it to the police as soon as you're safe.

Experts share stay-calm strategies for common driving hassles.

Stressful Situation: Road Construction Ahead

How to deal: Winding past potholes and orange cones slows you down. But the whole thing can be even more stressful if you're running late. The simplest way to lessen construction-related driving stress is to rely on your common sense: Check traffic patterns and routinely build in extra time for these types of unexpected detours, says Robert Nemerovski, a San Francisco-based clinical psychologist who specializes in anger management. A more surprising expert tip from Nemerovski: Don't avoid the route altogether. Going a different way may turn into a longer ordeal that can actually increase your anxiety.

Stressful Situation: Backseat Driver On Board

How to deal: Unwanted advice from a passenger can be super annoying. Luckily, there's a surefire way to handle it: Don't respond. This prevents a stressful exchange (assuming the person gets the hint). Then, Elaine Masters, a yoga teacher and author of *Drivetime Yoga*, suggests using this stress-relieving trick: Breathe in for seven seconds, hold for four, then exhale for seven seconds. "Slow-breathing techniques help, because they can lower elevated heart rate and blood pressure—and they can be done silently," she says.

Stressful Situation: Merging At Rush Hour

How to deal: Feeling anxious as you enter the highway (or change lanes) is common, but there are simple things you can do to feel in control. For one, remain cautious during the merge, and treat it as part of a routine drive. "Acknowledge what's happening and that it's affecting your body," says Masters. To keep anxiety at bay, she suggests spending time driving onto the highway during off-peak times, when there are fewer cars on the road, and it's easier to build your reflexes while staying calm.

Stressful Situation: You're Lost!

How to deal: Don't blame yourself (or anyone else). "Let go of the blame-game and focus on finding your way," says Masters. That means pulling over. Once you've stopped, do a few simple neck or upper-back stretches to relax. Diverting your attention also helps you regain control. Then, have your GPS re-calculate the route, look at a map, consult your phone or drive to a gas station to ask for directions—and allow your blood pressure to return to normal levels.

Stressful Situation: Your Phone Won't Stop Buzzing

How to deal: The pinging and ringing won't end just because you're behind the wheel, but the temptation to check a text message could lead you to take your eyes off the road. "The more things we have on our minds, the more stressed we will likely feel," Nemerovski. Rather than risk getting overwhelmed, try apps that block texts and calls for the duration of your drive. Or turn off your phone until you're safely parked at your destination.

Stressful Situation: You're Stuck Behind A Freight Train Crossing

How to deal: Some trains can take 10 minutes or more to pass through an intersection, which can feel like an eternity for many drivers. Instead of counting down the minutes, use your time to queue up a favorite song or think through a problem. Deciding on a specific activity as the train passes and following through can provide a sense of productivity during a time when most of us feel helpless (or irritated), says therapist Sy Cohn.

Perceptions of an Individual in Indian Traffic (Along with the Questions asked)

What are the stress-related disorders you typically see?

Dr Nilesh Gautam: There are a lot of stress-related disorders. In fact, they are on the increase these days, and blood pressure is one of them. Then there's acid peptic disease which increases acidity, tremors, sweating and palpitation; unease with which a patient gets upset or angry.

What are the most extreme implications of stress from driving?

NG: Extreme anger, anxiety, irritability, rise in blood pressure and a rise in the heart rate are all the extreme results we see as far as stress and driving is concerned.

What are the different kinds of stress, and which kind does stress from driving fall under?

NG: There are three major categories by which stress is divided – episodic stress, acute stress and chronic stress.

Driving is typically associated with episodic stress. It usually begins when the person starts driving through traffic and goes on for up to 35-45 minutes post reaching the destination.

In that category of stress, how much does driving contribute?

NG: With respect to multiple levels of stress that a person undergoes, driving is one of the top most factors. Traffic and all the conditions related to traffic form one of the major causes of episodic stress.

Does the medical community recognise stress from driving as a health issue?

NG: We are not well aware of this issue. This especially becomes very difficult because incidents of a patient suffering a heart attack or a brain stroke while driving and making it in time to the hospital are few and far. As it is, the number of instances of blood pressure is on the rise. But to correlate or corroborate, this increase in blood pressure with driving is very difficult, and we would require a large study to substantiate these findings.

What are the long-term health issues which arise from driving-related stress?

NG: If a person is driving for an hour or two from home to work and back every day, and he already has blood pressure, sugar or a heart issue, then chances of him having problems related to these definitely go up. This is because spikes in blood pressure, increase in the heart rate are all seen because of the stress from driving.

What are the less obvious side effects of stress from driving?

NG: If you have silent or underlying blood pressure, or borderline blood pressure issues, which is not detected because

you are asymptomatic, your blood pressure may episodically shoot up while driving. So silent ischemia, which is the lack of blood supply to the heart or brain, may be developing. And this may come up as a sudden event maybe months or years later. The actual background for this is daily stress which you are being exposed to for one or two hours while driving.

What effect does driving-related stress have on a person every day?

NG: Some of the symptoms of stress are that the person is easily irritable. There's a lack of concentration, anxiety, sweating and tremors.

What would you recommend that people do to stay calm behind the wheel?

NG: This is easier said than done. But yoga, meditation and deep breathing definitely help. There are some things we can do behind the wheel to alleviate stress build-up within us. For example, you shouldn't react aggressively to a situation.

Are stress-related disorders on the rise, given that the volume of traffic is increasing exponentially?

NG: Yes, definitely. With the traffic congestion increasing, the state of the roads worsening and the population growing, stress-related disorders caused by driving are definitely on the rise.

Are there any differentiators for stress-related disorders? For instance, does gender or the size of a car make a difference?

NG: Again, I think that, as of now, there is insufficient data to determine whether there is a gender difference or not. But on a personal note, I feel that women are much calmer and react to stress rather differently. So I presume driving-related stress disorders are lesser in women. But of course, large studies are required to substantiate this data. As far as vehicles are concerned, I think a better serviced vehicle would cause less stress. However, I don't think that the vehicle's size matters.

Factors that cause stress while driving

1. In traffic, progress is restricted severely due to the density of vehicles on our roads. You're constantly blocked, and there is no place to move – neither forward nor to the lane next to you. In our traffic conditions, this can also be **claustrophobic**. You look around and see vehicles inches away from your own in every direction. At junctions, drivers inch closer and closer to one another because of an abject lack of lane discipline. The most common occurrence of this is on flyovers, where six to eight lanes of traffic try to merge into three lanes. Right of way plays no role here in India – it's everyone for themselves and this builds anxiety and even rage.
2. Traffic policemen and traffic lights regulate traffic. However, when traffic is already dense, **human control especially at busy junctions increase waiting times**. This leads to anxiousness. You cannot explain why traffic isn't moving when the lights turn green – you honk, creep ever closer to the vehicle ahead, flash your lights, you curse and even shake a fist at the traffic policeman. In traffic, you may be sitting in a powerful car, which is quicker than the other car, rickshaw or the bus ahead of you, and yet you seem to be going nowhere. This sort of regulation is also constricting and builds anxiety.
3. **Psychological stress** in the form of fear, rage, urgency and feebleness are aroused when you feel your vehicle is in danger. Someone is creeping up too close to your precious set of wheels. The body could get nicked, scratched or worse, dented. Your car is your castle, and the immediate space around it is your territory. You feel invaded whenever someone gets too close. You honk aggressively warning the other person to get off your space, your territory. Then you charge through into less intimidating surroundings, breathe easy for a second and prepare yourself for the next onslaught. The chemicals in your body and your pulse rate rise and fall over and over again. It's a never-ending cycle.
4. **Other drivers' behaviour on the road** can often be another trigger for stress. You know it's against the law to speak on the phone, and the minute you see someone else doing it, your blood pressure rises. How dare he, right? You've heard so much about people driving and speaking on a cell phone and being a threat to others that it infuriates you when you encounter such a person breaking the widely accepted regulation. The same goes for those driving faster than most others (speeding), drivers playing loud music with their windows open, drivers allowing others to stick their heads out of the sunroof. All stressful sights!
5. Traffic at all times is unpredictable. Is someone going to cut in ahead of you? Is the lane I'm driving in going to slow down? Should I shift lanes? Is that auto-rickshaw going to veer into my path? Are those guys standing on the median going to try and cross when the traffic is flowing? Is the green light going to turn red any second now? Traffic has just **too many variables** for your mind to process simultaneously or as rapidly as needed.

6. **Multi-tasking** is another aggravating factor. You have to deal with the number of controls on your dashboard, where each fit, how they operate and what needs to be operated – Bluetooth or aux, air conditioning, fresh air or recirculate, radio or streaming. The complexities within a car itself can sometimes be harrowing. Things get worse with touchscreen systems where the lack of textures reduces your ability to recognise features. Their functions raise anxiety, especially if you're also trying to navigate through traffic.
7. **Denial of our own wrongdoings** or not understanding that we, as drivers, committed an error. It is human nature to overlook our own errors and see others as wrongdoers. This attitude of self-righteousness is what raises anxiety in us as we often see the others as offenders. Seldom do we recognise that we may also be in the wrong.
8. Sometimes, **an anomaly in traffic** starts off far from where we may be at that moment. There is no way for us to control that situation. In a traffic jam, the cause of the jam may be kilometres ahead of you. However, the tailback extends several kilometres beyond that incident. Over and above that, everybody near that point that's trying to make their way past that incident is disrupting the normal flow of traffic, and this cascades into further delays in the tailback. As a result, the further behind you are, the less you feel in control of the situation, not knowing the reason or a solution to the delay. Anxiety increases!
9. **Cultural influences and the way we learn to behave** from the time we are children are further causes of stress. We watch our parents shake a fist, abuse and curse at other motorists. As adults we do the same, not realising our kids in the car are picking up on the same things. It's a vicious cycle that leads to stress and anxiety.
10. We vent our **anger, rage, frustration and aggression** in various ways. We either abuse or try and get past the guy who got ahead or cut you off, or we block the path of someone trying to rush past you. There are several ways of venting out our emotions, and over time this plays unconsciously. And then sometimes we don't vent and instead choose to keep it bottled up within us. This is far worse because when it erupts, the repercussions could be far more damaging than the milder venting.
11. Anxiety could also arise out of **future events** that you know will take place because someone or something is delaying you. Because you're stuck in a traffic, you're late for a meeting, the movie will start off, your girlfriend will get pissed off for leaving her alone at the restaurant, or you will lose your favourite parking spot. There are a number of eventualities in the future that could be affected by you getting delayed due to traffic. But there is only a few eventualities in the present that are guaranteed to happen, and that is your blood pressure rising, your anxiety increasing and your stress levels hitting the roof!

Effects of Stress on Individual Health

- It **can lead to heart disease**, either by increasing your blood pressure or raising cholesterol. If your commute is longer and you tend to spend more time in traffic building stress, chances are your blood pressure will also increase over time. We are no longer talking about a temporary spike but a one way ticket to a stroke!
- You can also **lose your fitness levels**, especially your cardiovascular fitness. This means you will no longer have the energy to carry out certain physical tasks. If you find yourself getting increasingly exhausted at the gym, your commute could probably be one of the leading causes. The exhaustion will also affect your work and personal life, you may start feeling sleepier at the workplace and even at home, you might just want to lie down and sleep after a particularly long commute! This reduces your productivity, and in the long run who's to say it does not also affects your chances at that promotion.
- Then there are the **social issues** as well. Long commutes drain not just the energy out of you but also the will to spend time with friends and family. Weekend outings are despised because, let's face it, you don't want to be driving again on the weekend, not after the horrendous week stuck in one jam or the other. Oh and let us not forget, your stressful commute also depletes your sex drive.
- Longer commutes also result in **increased cost** to the exchequer. The government is trying to reduce the nation's fuel bill, but there is no point to all the policies and suggestions if you spend hours idling in traffic burning precious fuel. So not only are you using more money, and that should in itself encourage us to make a change, but harmful pollutants are constantly released into the atmosphere. So the longer you sit in a traffic, the more you pollute.
- And last but not the least, stress due to driving is also the biggest cause of **anxiety and rage**. The latter is harmful not just to you but also to those around you. Several incidents have been recorded in India, where rage has led to irreparable consequences for both the victim and assailant.

Suggestions to reduce stress while driving

- Carpool
- Listen to music that lifts your mood
- Change your route
- Carry something to snack on
- Experiment with leaving for work or home at different hours of the day
- Get someone else to drive
- Use a restroom before you depart
- Consciously avoid trying to honk
- Catch up on audiobooks, podcasts and anything
- Ask yourself why that driver is aggravating you
- Figure out what triggers get your heart rate or blood pressure rising
- Be aware that you are in control
- Call someone
- Let it go
- Take a slow, deep breath

CONCLUSION

The harsh truth that the stress test revealed is that driving in the city is slowly but surely causing significant harm right under our nose. This is especially true if the person already has a pre-existing health issue. As the test pointed out, drivers are completely oblivious to the amount of stress they were subject to on a daily basis. What's worse, we have no idea how bad the side effects are until a major health issue pops up. Another important point that we discovered from this test is that the stress levels are worryingly high regardless of the shape of the car, the age of a person or gender. The test also goes to show that even the convenience of an automatic transmission can't save you from stress. An automatic makes your work less, but this doesn't really reduce how stressful you are feeling being in that situation. Of course, the exact level of stress experienced in various situations differs from person to person, depending on their mental and physical capacity to handle a stressful situation. Essentially, the biggest factor that contributes to stress is the maddeningly lawless traffic with an every-man-for-himself attitude. This remains the same whether you're in a small hatchback or a big SUV. If there was more law and order on our roads, the stress factor would be significantly less. All three of our subjects mentioned at some point how they were worried about damaging the vehicles. After all, getting stuck in traffic is pretty much an unavoidable phenomenon worldwide. The only difference is that you aren't in a battle with your fellow road users in most developed countries. There are several ways to help manage stress behind the wheel, one of which is acceptance and self-discipline. Of course, this is certainly easier said than done. But once you make a conscious effort to understand and change your driving behaviour, you're on a road to a healthier life.

REFERENCES

- [1] Arthur, W. A., Jr., Strong, M. H., & Williamson, J. (1994). validation of a visual attention test as a predictor of driving accident involvement. *Journal of Occupational and Organizational Psychology*, 67, 173–182
- [2] Brenner, B. & Selzer, M. L. (1969). Risk of causing a fatal accident associated with alcoholism: Psychopathology and stress: Further analysis of previous data. *Behavioral Science*, 14, 490–495.
- [3] Dorn, L. & Matthews, G. (1992). Two further studies of personality correlates of driver stress. *Personality and Individual Differences*, 13, 949–952.
- [4] Dorn, L. & Matthews, G. (1995). Prediction of mood and risk appraisals from trait measures: Two studies of simulated driving. *European Journal of Personality*, 9, 25–42.
- [5] Eysenck, H. J., & Eysenck, S. B. G. (1964). *The Eysenck personality inventory*. London: London University Press
- [6] Glendon, A. I., Dorn, L., Matthews, G., Gulian, E., Davies, D. R., & Debney, L. M. (1993). Reliability of the driving behaviour inventory. *Ergonomics*, 36, 719–726
- [7] Gulian, E., Debney, L. M., Glendon, A. I., Davies, D. R., & Matthews, G. (1989). Coping with driver stress. In M. G. McGuigan & W. E. Sime (Eds.), *Stress and tension control* (Vol. 3, pp. 173–186). New York: Plenum
- [8] Gulian, E., Glendon, A. I., Matthews, G., Davies, D. R., & Debney, L. M. (1990). The stress of driving: A diary study. *Work and Stress*, 4, 7–16
- [9] Gulian, E., Matthews, G., Glendon, A. I., Davies, D. R., & Debney, L. M. (1989). Dimensions of driver stress. *Ergonomics*, 32, 585–602
- [10] Hancock, P. A., & Parasuraman, R. (1992). Human factors and safety in the design of intelligent vehicle-highway systems (IHVS). *Journal of Safety Research*, 23, 181–198.
- [11] Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal and coping*. New York: Springer
- [12] Matthews, G. (1993). Cognitive processes in driver stress. In *Proceedings of the 1993 International Congress of Health Psychology* (pp. 90–93). Tokyo: International Congress of Health Psychology
- [13] Matthews, G. & Desmond, P. A. (1995). Stress as a factor in the design of in-car driving enhancement systems. *Le Travail Humain*, 58, 109–129.
- [14] Matthews, G., Desmond, P. A., Joyner, L. A., Carcary, B. & Gilliland, K. (1997). A comprehensive questionnaire measure of driver stress and affect. In E. C. Vaya & J. A. Rothengatter (Eds.), *Traffic & transport psychology: Theory and application* (pp. 317–324). Amsterdam: Pergamon
- [15] Matthews, G., Dorn, L. & Glendon, A. I. (1991). Personality correlates of driver stress. *Personality and Individual Differences*, 12, 535–549
- [16] Matthews, G., & Tsuda, A. (1996). *Individual differences in driver stress vulnerability in a Japanese sample*. Manuscript submitted for publication