

doi: <https://doi.org/10.15446/rcp.v30n2.78948>

# **“I Drive Well, the Problem is the Other Driver”: A Study About the Self-Assessment of the Ability to Drive**

EDUARDA LEHMANN BANNACH

ALESSANDRA SANT’ANNA BIANCHI

Universidade Federal do Paraná, Curitiba, Brazil



The views expressed here are those of the authors. Except where otherwise noted, the contents in this journal is licensed under a Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License. Consultation is possible at <https://creativecommons.org/licenses/by-nc-nd/4.0/>

**How to cite this article:** Bannach, E. L., & Bianchi, A. S. (2021). “I drive well, the problem is the other driver”: a study about the self-assessment of the ability to drive. *Revista Colombiana de Psicología*, 30 (2), 87-97.

Correspondence concerning this article should be addressed to Alessandra Sant’Anna Bianchi, e-mail: [bianchi@ufpr.br](mailto:bianchi@ufpr.br). Address: Praça Santos Andrade, No. 50, sala 214, Curitiba, PR, Brazil. Zip Code 80020-300.

SCIENTIFIC RESEARCH ARTICLE

RECEIVED: MAY 7<sup>TH</sup>, 2019 – ACCEPTED: MARCH 1<sup>ST</sup>, 2021

### **Abstract**

This study aims to verify the self-evaluation that people make about their ability to drive and investigate whether there is a difference between self-evaluation and evaluation about their friends' abilities. To this end, 151 people answered three different questionnaires, one questionnaire about driving abilities (self-evaluation and evaluation of friends), the Driver's Behavior Questionnaire and a socio-demographic questionnaire. The sample consisted of 50.3% of males with a mean age of 25.32 years ( $SD = 1.66$ ). As a result, self-evaluation was positively correlated with age, evaluation of friend, weekly driving hours, Common Violations, and Aggressive Violations. In addition, there was significant difference between evaluation by sex: males carry out self-assessments in a more positive way. It was also found that people evaluate themselves better than they evaluate their friends. From this research, it is possible to think the target audience that would most benefit from an intervention to reduce self-evaluation, that is, men, people over 24 years old, and people who have more driving experience.

*Keywords:* driver's competence, driving skills, self-evaluation, self-perception, traffic psychology.

### **“Yo Conduzco Bien, el Problema es el Otro”: Un Estudio Sobre la Autoevaluación de la Capacidad de Conducir**

#### **Resumen**

Este estudio tiene como objetivo verificar la autoevaluación que las personas hacen sobre su capacidad para conducir y si hay diferencia entre la autoevaluación y la evaluación de las habilidades de sus amigos. Fueron aplicados tres instrumentos, un cuestionario sobre habilidades de conducción (autoevaluación y evaluación de amigos), el Driver's Behavior Questionnaire y un cuestionario sociodemográfico. Participaron 151 personas (50.3% hombres) con una edad media de 25.32 años ( $DE=1.66$ ). Hubo una correlación positiva entre la autoevaluación y la edad; evaluación de amigos; horas semanales de conducción; violaciones ordinarias y violaciones agresivas. Además, hubo una diferencia significativa entre la evaluación por sexo: los hombres realizan autoevaluaciones de una manera más positiva. También se descubrió que las personas evalúan mejor a sí mismas de lo que evalúan a sus amigos. Así, es posible pensar en el público que se beneficiaría más de una intervención para reducir la autoevaluación: hombres, personas mayores de 24 años y personas que tienen más experiencia de conducción.

*Palabras clave:* autoevaluación, autopercepción, competencia del conductor, habilidades de conducción, psicología del tráfico.

THE FACT that human beings make erroneous estimates of their own ability to drive motor vehicles may have important safety implications (Horrey, Lesch, Mitsopoulos-Rubens, & Lee, 2015). Thus, assessment of own driving skills is an important dimension of road risk management (Boccaro, Delhomme, Vidal-Gomel, & Rogalski, 2011) and can be of fundamental importance in both, reducing the likelihood of an accident and increasing safety in driving (Amado, Arıkan, Kaça, Koyuncu, & Turkan, 2014).

The research by Kruger and Dunning (1999) showed results that became known as the Dunning-Kruger effect, a phenomenon that leads people with low academic performance to believe they know more than others. The authors state that participants who scored in the lower quartile in tests as grammar and logic overestimated their performance and thought they were above average. In contrast, participants who were in the upper quartile underestimated their skills when compared to their colleagues, not realizing that high skill is not necessarily an attribute shared with their peers.

Positive self-assessment can have diverse consequences. For example, there is a relationship between self-efficacy beliefs and academic performance (Cupani & Zalazar-Jaime, 2014). However, the overestimation of one's driving ability is probably more dangerous than its underestimation (Nakai & Usui, 2012), because it may increase a risky driving behavior (Isler, Starkey, & Drew, 2008; White, Cunningham, & Titchener, 2011), and it could cause non-assertive decision-making (Horrey et al., 2015; Kruger & Dunning, 1999).

Furthermore, overconfidence among drivers makes them less likely to adapt their behavior to traffic situations, leading to even more violations of traffic rules (De Craen, 2010; Isler et al., 2008). The question of overestimated driver's self-appreciation also reflects the impact of traffic safety campaigns: why people who overestimate their skills should pay attention to the instructions given to drivers in general since they are safer and drive better than

these drivers? (Svenson, 1981). Hence, such drivers do not seem to identify themselves as requiring instruction (Svenson, 1981), because they believe that campaigns are aimed at drivers who are not so skillful and who are not as protected as they think they are (Horswill, Waylen, & Tofield, 2004). Accordingly, one study showed that interest in post-license driver training was greater in the case of less confident participants (Molina, Sanmartín, & Keskinen, 2013).

Thus, it is essential that people know about their actual skills (Zell & Krizan, 2014). The ability to drive is related to the level of knowledge and skills in traffic, as well as processing information and performance in different driving tasks, as maneuvers, detection of risks, etc. (Elander, West, & French, 1993).

In the second half of the last century, several authors researched people's self-assessment of their ability to drive automotive vehicles. All of these authors showed that drivers overestimated their ability when compared to the average, or with the "common driver" (Delhomme, 1991; Goszczyńska & Roslan, 1989; Groeger & Grande, 1996; McCormick, Walkey & Green, 1986; McKenna, Stanier, & Lewis, 1991; Svenson, 1981).

However, after the turn of the century, the idea that people overestimate their driving skills was refuted. For example, Sundström (2011) argued that the method of previous studies was not ideal for measuring such issue. In addition, De Craen, Twisk, Hagenzieker, Elffers, and Brookhuis (2011) point out that the method chosen to measure the self-assessment of driving skills has a great impact on conclusions that study reaches. Thus, the word "average" has a tendency to be understood negatively and thus encourages people to evaluate themselves more positively (Groeger, 2001).

According to Sundström (2008), the most common way of assessing the subjective skills of drivers has been to ask them to compare their own skill with that of "other drivers" or that of a "common driver". In the same way, according to the author, comparison with the "common driver" can

be considered as an ambiguous and imprecise reference, generating several methodological problems as it results in biased evaluations, since there is a tendency for people to classify themselves in this category. Due to these methodological weaknesses, Sundström emphasizes the importance of considering another approach to measure the subjective ability of driving (Sundström, 2008). Therefore, the subjective measure of general driving ability can be related to the measure of the real driving capacity (Sundström, 2008).

Martinussen, Møller and Prato (2017) compared the self-assessment with the measurement of a simulator and found that young male drivers' self-evaluations were inconsistent with their driving performance. Amado et al. (2014) also observed that people rated their ability better than the score assigned by an expert, using a naturalistic observation method.

Another important factor to be analyzed is that there is no consensus in literature if age and sex are related to how well people evaluate their driving skills. Studies have shown that young drivers have an even greater tendency to evaluate themselves as more skilled and less risk-prone than their peers (Harré, Foster, & O'Neill, 2005; Horswill et al., 2004; McKenna, 1993; Svenson, 1981; White et al., 2011). Besides, Mynttinen et al. (2009) say that inexperienced drivers have a realistic or underestimated assessment of their driving skills.

Difference between the responses of both sexes was found, concluding that males tend to evaluate their driving skills more optimistically than females (Boccaro, Delhomme, Vidal-Gomel, Dommès, & Rogalski, 2010; Delhomme, 1991; McKenna et al., 1991). Other studies indicate that despite this fact, the differences between sexes are not statistically significant (Boccaro et al., 2011; Nakai & Usui, 2012) or there are no significant differences at all (Sundström, 2011). Contrary to all these results, the research by Mynttinen et al. (2009) demonstrated that women overestimate abilities of "vehicle maneuver" and "economic driving" in relation to men.

As can be noticed, authors have different views about self-perception of driving ability: for some of them, sex (Boccaro et al., 2010; Delhomme, 1991; McKenna et al., 1991) and age (Horswill et al., 2004; Svenson, 1981; White et al., 2011) is an important issue, for others it is not (Sundström, 2011). Some have studied people's beliefs about their ability (Delhomme, 1991; Freund, Colgrove, Burke, & McLeod, 2005; Goszczyńska & Roslan, 1989; McCormick et al., 1986; McKenna et al., 1991; Svenson, 1981) while others focused on testing the difference between the believed ability and the actual ability with practical tests (Mynttinen et al., 2009; Sundström, 2011).

In light of these considerations, the need for more research on the subject to solve these impasses and to test other methods suggested by authors who criticize the use of comparison with the "common driver" becomes evident. Cases in literature also supports the idea that further studies needed to be carried out on the self-assessment capability to improve road safety (Amado et al., 2014).

Despite an extensive body of literature on Traffic Psychology throughout the world, to the best of the authors' knowledge, there is yet no research on the subject that has been done in Brazil. This disagreement problem and lack of Brazilian research is intended to be solved with the present research. The vast majority of articles cited in the present study have been done in European countries as France, the United Kingdom, Sweden, Finland, the Netherlands and Spain, and other countries as the United States, Australia and Japan.

It is important to note that the countries mentioned have a different socioeconomic performance compared to Brazil. The Human Development Index of this country is well below the others, occupying the 79th position in the ranking (United Nations Development Programme, 2019). Another problem in Brazil is social inequality: the richest 10% accumulate around 42% of the country's total income (United Nations Development Programme, 2019). In terms of traffic mortality, Brazil is also the country with the worst rates among the countries

mentioned. While Brazil has a rate of 19.7 deaths per 100,000 inhabitants, the rates for some of the countries mentioned are: 5.5 in France, 2.8 in Sweden, 4.7 in Finland, 5.6 in Australia, 4.1 in Japan, and 12.4 in the United States (World Health Organization, 2018).

Also, in Brazil, the car is not perceived only as an instrument for locomotion (Maoski, 2014). The symbolic and psychological factor attributed to the car may have an influence on how the driver acts and may be related to the high number of traffic accidents that occur in Brazil every year (Maoski, 2014).

Hence, understanding overestimation and influencing factors is of great importance to understand risk behaviors, and thus clarify the intervention needed to reduce them. This study aims to evaluate the assessment that people make about their own ability to drive, as well as to investigate if age, sex, and the amount of time people drive per week influence their perception of their skills as drivers. Also, a comparison is made between self-assessment and people's assessment of their friends' driving skills.

## Method

### Participants

The sample consisted of 151 Brazilians (50.3% male), between 18 and 58 years old ( $M=25.32$ ,  $SD=1.66$ ), from Curitiba (city located in the southern region of Brazil). For some analyses, the ages were divided in two groups: (a) group of young people, between 18 and 24 years old ( $N=102$ ,  $M=21.41$ ,  $SD=1.66$ ); (b) group of adults, from 25 to 58 years old ( $N=49$ ,  $M=33.47$ ,  $SD=8.57$ ). The criterion for participating was to have a driver's license. Regarding the schooling of the participants, 67.5% were undergraduates and the remaining ones were graduates (32.5%).

As for driving experience, participants have driving time ranging from 1 to 420 months ( $M=68.14$ ,  $SD=85$ ), with 7.9% driving for less than 12

months. In addition, they drive between 0 and 22 hours per week ( $M=7.42$ ,  $SD=5.52$ ). It is important to note that 9.9% of the sample drove less than one hour per week.

Whereas it was necessary to have Wi-Fi to apply the instruments, the convenience sample was chosen, that is, no procedure was adopted for data collection to be random. Thus, most data were collected on the campuses of the Federal University of Parana and a part was collected out of these. Participants were approached by being invited to participate of a study if they had a driver's license and then they were informed of the average time to answer the questionnaire.

### Instruments

**Questionnaire about driving abilities.** The questionnaire developed was based on Hatakka, Keskinen, Laapotti, Katila and Kiiski (1992), and asks about one's own abilities in different aspects of driving ability. In addition, aspects that Mynttinen et al. (2009) have pointed out as important for the ability to drive were considered: parking maneuvers, control of traffic situations, showing consideration for pedestrians and cyclists, and avoiding risks. The author's point of not asking about the "common driver" was taken into consideration (Mynttinen et al., 2009). That is, it was not asked how the participant felt about the "common driver", but rather how he / she evaluated himself / herself by performing each of the mentioned skills.

The questionnaire developed from these considerations asks the person to evaluate on a scale of 1 (*terrible*) to 5 (*excellent*) his / her own driving ability on each item. The option 3, *more or less*, means that the person is neither self-considered good nor bad in that specific activity. It is important to highlight that this option differs from the idea of "common driver", referring to self-comparing with the average of other drivers. In total, there are 38 items, divided into two groups: assessment of own abilities (19 items) and assessment of friends'

abilities (same 19 items). The questions covered skills of: parking and getting out of parking lots, overtaking, perceiving risks, adjusting the speed to the situation, driving in different weather conditions, driving in different ways, following the rules of the Brazilian Traffic Code, and paying attention to other people who compose the traffic (cyclists, pedestrians, etc.).

**Driver Behavior Questionnaire (DBQ).** After completing these scales, participants responded to the Driver Behavior Questionnaire (DBQ) by Lawton, Parker, Manstead and Stradling (1997), which was translated and adapted to Brazil by Bianchi and Summala (2002), containing 28 questions. Participants should indicate on a scale from 0 (*never*) to 5 (*always*) the frequency of each behavior. This questionnaire is composed of four factors present in the actions that drivers perform in traffic: Errors, Lapses, Ordinary Violations, and Aggressive Violations.

Errors can be understood as failures in actions planned to achieve a goal, which consequences have the potential to generate dangerous situations (Reason, Manstead, Stradling, Baxter, & Campbell, 1990). Lapses are behaviors that result from lack of attention or memory; these can cause embarrassment but usually do not affect safety (Reason, et al, 1990). Ordinary violations are intentional violations of practices that are essential to maintaining traffic safety, that is, violations of traffic laws (Lawton et al., 1997). Aggressive violations are more hostile in nature (Lawton et al., 1997). As the psychometric properties of the instrument, Bianchi and Summala (2002) found Cronbach's alpha from 0.79 for Errors, 0.82 for Ordinary Violations, 0.60 for Aggressive Violations, and 0.51 for Lapses.

**Socio-demographic.** Questions aiming at collecting socio-demographic data as sex, age, and schooling were asked as well as questions about the experience as a driver, how long the person had been driving and how many hours they usually drive weekly.

## Procedures

**Data collection procedure.** Before responding to the questionnaire, people had to read and agree to the Free and Informed Commitment Term. The whole process took about 10 minutes. The research instruments were applied in tablets. They were previously transformed into a model of Google Forms. Thus, to apply them, it was necessary to have Wi-Fi Internet connection. The sample was smaller than planned precisely because of this need for Wi-Fi at the time of data collection. Considering the population of Curitiba, 151 participants represent results with a 95% confidence level and an 8% margin of error.

Each participant received a tablet and mark his / her responses without the help from the researcher. The sequence to answer was fixed: read and agree to the Free and Informed Commitment Term, answer the questionnaire about driving abilities (starting with items about their own abilities and then the same items about their friends' abilities), DBQ and, finally, answer the socio-demographic questionnaire.

**Data analysis procedure.** As data analysis, analysis of variance (ANOVA) was used to compare mean differences between groups to self-evaluation. To verify if there was a significant difference between the means of self-evaluation and evaluation for the friends, paired samples t-test was used. The correlation test was performed to verify if there was a relation between the self-evaluation and other variables, as how long has the person been driving.

## Results

The instrument used was specifically developed for this study. Therefore, it was important to verify Cronbach's alpha. This coefficient, described by Cronbach (1951), aims to estimate the reliability of a questionnaire by measuring the correlation between answers. Values range from 0 to 1, with recommended values equal to or greater than

.8 (Streiner, 2003). Cronbach's alpha of the self-assessment questionnaire was .83. The participant was then asked to mark his / her friends' driving ability in the same way as the self-assessment, in this case, Cronbach's alpha was very high: .91.

The mean of self-evaluation was 3.68 ( $SD=.48$ ) and the evaluation for friends was 3.55 ( $SD=.58$ ). Considering that the scale ranges from 1 to 5 points, these averages represent positive evaluations performed by participants. When using paired samples t-test with self-evaluation mean and evaluation for friends, it was possible to notice that there was a significant difference between the means of self-evaluation and the evaluation for friends ( $t_{(150)}=2.47$ ;  $p=.015$ ). This difference showed that people self-rated themselves more positively in relation to the evaluation they performed for their friends.

There were significant correlations between self-assessment performance and evaluation for the friends, hour driven per week and age (see Table 1). This means that: (1) although the correlation is weak, a person who evaluates oneself well tends to evaluate well the driving skills of friends; (2) the longer the person drove a week, the more positive the self-assessment was; (3) the older the participant was, the more positive the self-assessment was. To make this type of analysis, the average of the responses attributed by the participant to their ability to perform each of the 19 traffic situations was considered. Furthermore, it was found that there is a positive correlation between how many hours people spend driving by week and age ( $r=.30$ ;  $p\leq.01$ ), showing that older people tended to drive more hours per week than the younger ones.

Regarding DBQ, the self-assessment showed a significant positive, but moderate correlation with Aggressive Violations, and negative with Errors and Lapses. That is, the more Aggressive Violations and the less Errors and Lapses the person made, in the past 12 months, the more positive self-assessment was. The values of the correlation tests performed can be seen in Table 1.

**Table 1**  
*Correlation Tests in Relation to Self-assessment*

	Self-evaluation	<i>p</i>
Evaluation performed for the friends	0.23	$p = .004$
Hours driven per week	0.33	$p < .001$
Age	0.20	$p = .017$
Ordinary Violations	0.11	$p = .170$
Aggressive Violations	0.17	$p = .043$
Errors	-0.26	$p = .002$
Lapses	-0.25	$p = .002$

Considering the analysis between groups, there was a significant difference in the self-assessment according to the age group: people in the group over 24 years rated themselves better than those in the group of 18 to 24 years old. Another result is that males rated themselves more positively than females. Besides that, there was no significant difference between the self-assessment by the person's level of education. Table 2 shows the differences in self-assessment of the driving ability in relation to the age and sex groups mentioned.

**Table 2**  
*Self-assessment by Age and Sex Groups*

Self-assessment		Mean	<i>SD</i>	<i>DF</i>	<i>F</i>	<i>P</i>
Age group (years)	18-24	3.60	0.50	1.149	10.18	0.002
	Over 24	3.86	0.40			
Sex	Female	3.59	0.49	1.149	6.008	0.015
	Male	3.78	0.46			

### Discussion and Conclusion

Literature of the late twentieth century shows a high prevalence of the idea that people perform a better self-assessment of their driving ability than the assessment of the average ability of other drivers (Delhomme, 1991; Freund et al., 2005; Goszczyńska & Roslan, 1989; Groeger & Grande, 1996; McCormick et al., 1986; McKenna et al., 1991; Svenson, 1981). In the present research, questions about the average of other drivers (or of the “common driver”) were not asked, because of the fact that more recent studies (Groeger, 2001; Mynttinen et al., 2009; Sundström, 2008; Sundström, 2011) point out that this question generates methodological problems.

Thus, the developed instrument has questions about self-assessment and evaluation of specific driving skills of friends. Even with such a methodological change, the present study confirmed the phenomenon of high self-assessments of the ability to drive, previously demonstrated in Europe and the United States, also in Brazil. However, it should be noted that the present study couldn't confirm the Dunning-Kruger effect (Kruger & Dunning, 1999), since the skills are reported by the subjects themselves and are not actually measured.

The result found was a positive self-assessment: average of 3.68 (on a scale ranging from 1 to 5 points). In addition, the assessment for friends was 3.55, this difference in means is statistically significant, suggesting that people tend to self-evaluate better than evaluate their friends. This finding is in agreement with that presented by Horswill et al. (2004), in which drivers rated themselves superior to their peers in several components of driving ability (as risk perception, vehicle control, and overall driving ability). Similarly, Harré et al. (2005), showed that young drivers believe that they obey traffic rules more, drive safer and are more qualified, and have better reflexes than people of their age group.

The present study did not identify a correlation between how long the person has been driving and the self-assessment performed. However, it

found a correlation between the driving time per week and the self-assessment. This result goes towards the result observed by De Craen et al. (2011), which showed that more experienced drivers tended to self-assess in a more optimistic way about their driving ability. The study of Martinussen et al. (2017) revealed that self-assessments of driving ability were more imprecise when the driver was less skilled than when driver was qualified. In addition, the result can also be explained with that presented by Mynttinen et al. (2009) who states that inexperienced drivers make underrated evaluations of their ability to drive.

However, there was a positive correlation between the self-assessment and the person's age, that is, the older the person is, the more positively he / she evaluates themselves. Also, when dividing the sample into two age groups (Group 1: 18 to 24 years; Group 2: over 24 years), there was a difference between the means of the two groups, reinforcing that age may be a problem to self-assessment. However, this result is not compatible with the ones found in the literature (Horswill et al., 2004; McKenna, 1993; Svenson, 1981; White et al., 2011). It is important to note that the older people were, the more hours they drive weekly, so this result can be attributed to the fact that the age factor is confused with the experience factor.

Another important fact is the difference between the sexes in relation to self-assessment. Several studies have suggested that males tend to evaluate their own driving skills better than females (Boccaro et al., 2010; Delhomme, 1991; McKenna et al., 1991). However, this result runs counter to studies that claim that the difference between sexes is not statistically significant (Boccaro et al., 2011; Nakai & Usui, 2012; Sundström, 2011). Therefore, the present research suggests that males tend to self-evaluate in a more optimistic way than female subjects.

In relation to DBQ, the present study suggests that people who commit fewer Errors are the ones that better self-evaluate. In addition, there was a positive correlation between self-evaluation and



Ordinary Violations and Aggressive Violations. That is, the more the person positively self-assessed, the more Aggressive Violations and Ordinary Violations he / she committed. The literature shows that overconfidence among drivers causes them more difficulty in adapting their behavior to traffic situations, leading to more violations of traffic rules (De Craen, 2010; Isler et al., 2008). Therefore, it is possible to perceive that inflated self-assessment can cause concrete risks to people, because if the person believes to be a better driver, have the tendency to commit violations of traffic laws and aggressive behavior and endanger the lives of others as a result.

From the foregoing, the main objective of the study was reached. In other words, it was verified the self-assessment performed by people regarding their own ability to drive. In addition, other goals were also achieved, as comparing self-assessment with one's assessment of a friend's ability to drive, and understanding whether gender, age, schooling, and experience are related to self-assessment.

One limitation of the present study is the sample size and that only people from two categories of level of education (undergraduate and graduate) participated in the sample (not representative of the population). This limitation occurred due to the need of the Wi-Fi Internet for data collection, making it impossible to collect such data in the streets—which would further diversify the sample's schooling.

Because of this, it is not possible to say that schooling is not related to self-assessment, but only that there is no difference between self-assessment of the ability to drive between graduate and undergraduate people. Another limitation of the study is that all instruments of data collection depended on the self-report, that is, it was not verified whether the participants actually commit violations, but rather they were only asked about it.

The presented results and the literature suggest that people who self-evaluate very positively tend to have more traffic violations. Therefore, all the results found on the population that is most positively evaluated can be used when thinking

about an intervention to remediate such evaluation and reduce risks in traffic. Thus, it is recommended that interventions in this direction be carried out. In addition, new studies on the theme need to be done, mainly in Brazil, to give more visibility and support to the theme.

Due to traffic safety, the subject of self-assessment is important to be discussed. From this research it is possible to think about the target audience that would most benefit from an intervention in the sense of reducing self-assessment: males over 24 and who spend more time driving per week would be the most needed audience to make a realistic perception about their driving skills. Interventions in this sense would be important because the data presented indicate that self-assessment, when optimistic, can generate risks in traffic. That being said, Martinussen et al. (2017) agree that the male group may benefit from intervention measures that take into account the accuracy of self-rated driving ability. And, knowing that road deaths are already considered a public health problem, this issue is of the utmost importance.

### Acknowledgements

The authors would like to thank the Academic Publishing Advisory Center (*Centro de Assessoria de Publicação Acadêmica-CAPA*) of the Federal University of Paraná for language assistance on this manuscript. This study was financed in part by the Coordenação de Aperfeiçoamento de Pessoal de Nível Superior-Brasil (CAPES)-Finance Code 001.

### References

- Amado, S., Arıkan, E., Kaça, G., Koyuncu, M., & Turkan, B. N. (2014). How Accurately Do Drivers Evaluate Their Own Driving Behavior? An On-road Observational Study. *Accident Analysis and Prevention*, 63, 65-73. <https://doi.org/10.1016/j.aap.2013.10.022>
- Bianchi, A., & Summala, H. (2002). Moral Judgment and Driver's Behavior Among Brazilian Students. *Psychological Reports*, 91, 759-766. <https://doi.org/10.2466/pro.2002.91.3.759>

- in a Postlicense Training Program: Comparison of Instructors' Assessments and Self-assessments by Seniors' Age and Sex. *Perceptual and Motor Skills*, 110(1), 117-128. <https://doi.org/10.2466/PMS.110.1.117-128>
- Boccaro V., Delhomme P., Vidal-Gomel C., & Rogalski J. (2011). Time Course of Driving-skill Self-assessments During French Driver Training. *Accident Analysis & Prevention*, 43(1), 241-246. <https://doi.org/10.1016/j.aap.2010.08.016>
- Cronbach, L. J. (1951). Coefficient Alpha and the Internal Structure of Tests. *Psychometrika*, 16, 297-334. <https://doi.org/10.1007/BF02310555>
- Cupani, M., & Zalazar-Jaime, M. F. (2014). Rasgos complejos y rendimiento académico: contribución de los rasgos de personalidad, creencias de autoeficacia e intereses. *Revista Colombiana de Psicología*, 23(1), 57-71. <https://doi.org/10.15446/rcp.v23n1.39774>
- De Craen, S. (2010). *The X-Factor: A longitudinal study of calibration in young novice drivers*. Delft, Netherlands: Saskia de Craen.
- De Craen, S., Twisk, D. A., Hagenzieker, M. P., Elffers, H., & Brookhuis, K. A. (2011). Do Young Novice Drivers Overestimate Their Driving Skills More Than Experienced Drivers? Different Methods Lead to Different Conclusions. *Accident Analysis & Prevention*, 43, 1660-1665. <https://doi.org/10.1016/j.aap.2011.03.024>
- Delhomme, P. (1991). Comparing One's Driving with Others': Assessment of Abilities and Frequency of Offences. Evidence for a Superior Conformity of Self-bias? *Accident Analysis & Prevention*, 23(6), 493-508. [https://doi.org/10.1016/0001-4575\(91\)90015-W](https://doi.org/10.1016/0001-4575(91)90015-W)
- Elander, J., West, R., & French, D. (1993). Behavioral Correlates of Individual Differences in Road-traffic Crash Risk: An Examination of Methods and Findings. *Psychological Bulletin*, 113(2), 279-294. <https://doi.org/10.1037/0033-2909.113.2.279>
- Freund, B., Colgrove, L. A., Burke, B. L., & McLeod, R. (2005). Self-rated Driving Performance Among Elderly Drivers Referred for Driving Evaluation. *Accident Analysis and Prevention*, 37(4), 613-618. <https://doi.org/10.1016/j.aap.2005.03.002>
- Goszczyńska, M., & Roslan, A. (1989). Self-evaluation of Drivers' Skill: A Crosscultural Comparison. *Accident Analysis and Prevention*, 21(3), 217-224. [https://doi.org/10.1016/0001-4575\(89\)90012-2](https://doi.org/10.1016/0001-4575(89)90012-2)
- Groeger, J. A. (2001). *Understanding Driving*. Applying Cognitive Psychology to a Complex Everyday Task. Philadelphia: Taylor & Francis Inc.
- Groeger, J. A., & Grande, G. E. (1996). Self-preserving Assessments of Skill? *British Journal of Psychology*, 87(1), 61-79. <https://doi.org/10.1111/j.2044-8295.1996.tb02577.x>
- Harré, N., Foster, S., & O'Neill, M. (2005). Self-enhancement, Crash-risk Optimism and the Impact of Safety Advertisements on Young Drivers. *British Journal of Psychology*, 96, 215-230. <https://doi.org/10.1348/000712605X36019>
- Hatakka, M., Keskinen, E., Laapotti, S., Katila, A., & Kiiski, H. (1992). Driver's Self-confidence—The Cause or the Effect of Mileage. *Journal of Traffic Medicine (Supplement)*, 21, 313-315.
- Horrey, W. J., Lesch, M. F., Mitsopoulos-Rubens, E., & Lee, J. D. (2015). Calibration of Skill and Judgment in Driving: Development of a Conceptual Framework and the 24 Implications for Road Safety Skill and Judgment in Driving. *Accident Analysis & Prevention*, 76, 25-33. <https://doi.org/10.1016/j.aap.2014.12.017>
- Horswill, M. S., Waylen, A. E., & Tofield, M. I. (2004). Drivers' Ratings of Different Components of Their Own Driving Skill: A Greater Illusion of Superiority for Skills That Relate to Accident Involvement. *Journal of Applied Social Psychology*, 34(1), 177-195. <https://doi.org/10.1111/j.1559-1816.2004.tb02543.x>
- Isler, R. B., Starkey, N. J., & Drew, M. (2008). *The 'frontal lobe' project*. Nova Zelândia.
- Kruger, J., & Dunning, D. (1999). Unskilled and Unaware of It: How difficulties in Recognizing One's Own Incompetence lead to Inflated Self-assessments. *Journal of Personality and Social Psychology*, 77(6), 1121-1134. <https://doi.org/10.1037/0022-3514.77.6.1121>
- Lawton, R., Parker, D., Manstead, A. S. R., & Stradling, S. G. (1997). The Role of Affect in Predicting Social Behaviors: The Case of Road Traffic Violations. *Journal of Applied Social Psychology*, 27, 1258-1276. <https://doi.org/10.1111/j.1559-1816.1997.tb01805.x>
- Maoski, F. (2014). *Ter um carro é... A percepção sobre o significado do carro e o comportamento do condutor*

- (Master's thesis, Federal University of Paraná). DSpace Repository. <https://acervodigital.ufpr.br/handle/1884/36902>
- Martinussen, L. M., Møller, M., & Prato, C. G. (2017). Accuracy of Young Male Drivers' Self-assessments of Driving Skill. *Transportation Research Part F*, 46, 228-235. <https://doi.org/10.1016/j.trf.2017.03.001>
- Mccormick, I. A., Walkey, F. H., & Green, D. E. (1986). Comparative Perceptions of Driver Ability—A Confirmation and Expansion. *Accident Analysis & Prevention*, 18(3), 205-208. [https://doi.org/10.1016/0001-4575\(86\)90004-7](https://doi.org/10.1016/0001-4575(86)90004-7)
- McKenna, F. P. (1993). It Won't Happen to Me: Unrealistic Optimism or Illusion of Control? *British Journal of Psychology*, 84(1), 39-50. <https://doi.org/10.1111/j.2044-8295.1993.tb02461.x>
- McKenna, F. P., Stanier, R. A., & Lewis, C. (1991). Factors Underlying Illusory Self-assessment of Driving Skill in Males and Females. *Accident Analysis & Prevention*, 23(1), 45-52. [https://doi.org/10.1016/0001-4575\(91\)90034-3](https://doi.org/10.1016/0001-4575(91)90034-3)
- Molina, J. G., Sanmartín, J., & Keskinen, E. (2013). Driver Training Interests of a Spanish Sample of Young Drivers and its Relationship with Their Self-assessment Skills Concerning Risky Driving Behavior. *Accident Analysis and Prevention*, 52, 118-124. <https://doi.org/10.1016/j.aap.2012.12.035>
- Mynttinen, S., Sundström, A., Koivukoski, M., Hakuli, K., Keskinen, E., & Henriksson, W. (2009). Are Novice Drivers Overconfident? A Comparison of Self-assessed and Examiner-assessed Driver Competences in a Finnish and Swedish Sample. *Transportation Research Part F: Traffic Psychology and Behaviour*, 12(2), 120-130. <https://doi.org/10.1016/j.trf.2008.09.002>
- Nakai, H., & Usui, S. (2012). Comparing the Self-assessed and Examiner Assessed Driving Skills of Japanese Driving School Students. *IATSS Research*, 35, 90-97. <https://doi.org/10.1016/j.iatssr.2011.09.003>
- Reason, J., Manstead, A., Stradling, S., Baxter, J., & Campbell, K. (1990). Errors and Violations on the Roads: A Real Distinction? *Ergonomics*, 33, 1315-1332. <https://doi.org/10.1080/00140139008925335>
- Streiner, D. L. (2003). Starting at the Beginning: An Introduction to Coefficient Alpha and Internal Consistency. *Journal of Personality Assessment*, 80(1), 99-103. [https://doi.org/10.1207/S15327752JPA8001\\_18](https://doi.org/10.1207/S15327752JPA8001_18)
- Sundström, A. (2008). Self-assessment of Driving Skill – A Review from a Measurement Perspective. *Transportation Research Part F: Traffic Psychology and Behaviour*, 11(1), 1-9. <https://doi.org/10.1016/j.trf.2007.05.002>
- Sundström, A. (2011). The Validity of Self-reported Driver Competence: Relations Between Measures of Perceived Driver Competence and Actual Driving Skill. *Transportation Research Part F: Traffic Psychology and Behaviour*, 14, 155-163. <https://doi.org/10.1016/j.trf.2010.11.011>
- Svenson, O. (1981). Are We All Less Risky and More Skillful Than Our Fellow Drivers? *Acta Psychologica*, 47, 143-148. [https://doi.org/10.1016/0001-6918\(81\)90005-6](https://doi.org/10.1016/0001-6918(81)90005-6)
- United Nations Development Programme. (2019). *Beyond income, beyond averages, beyond today: Inequalities in human development in the 21st century*. <http://hdr.undp.org/sites/default/files/hdr2019.pdf>
- White, M. J., Cunningham, L. C., & Titchener K. (2011). Young Drivers' Optimism Bias for Accident Risk and Driving Skill: Accountability and Insight Experience Manipulations. *Accident Analysis & Prevention*, 43(4), 1309-1315. <https://doi.org/10.1016/j.aap.2011.01.013>
- World Health Organization. (2018). *Global status report on road safety 2018*. <https://www.who.int/publications/i/item/9789241565684>
- Zell, E., & Krizan, Z. (2014). Do People Have Insight into Their Abilities? A Metasynthesis. *Perspectives on Psychological Science*, 9(2), 111-125. <https://doi.org/10.1177/1745691613518075>