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PERCEPTIONS OF PROFESSIONAL AND UNPROFESSIONAL DRIVERS ABOUT THEIR OWN BEHAVIOURS AND SKILLS

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ABSTRACT

According to Social Identity Theory people tend to be positive for members of group to which they feel as belonging and to be negative for members of group to which they do not feel as belonging. Such perception bias is thought to be exist among different group of drivers in traffic, as well. In this context, this study aims to investigate professional (like taxi drivers) and unprofessional (private car users) drivers' driver skills, safety concerns and risk-taking behaviors and together with researching perception of each group of drivers toward the other. 40 unprofessional and 39 professional drivers participated in the study. After each participant assessed himself/herself through Driver Skill Inventory (DSI) and risk-taking behavior scale, s/he also evaluated members of the other group of drivers through these scales. One-way analysis of variance (ANOVA) revealed significant differences between the two groups. Specifically, it was found that professional drivers state their driver skills and safety concerns higher and their risk-taking behaviors lower than unprofessional drivers in traffic. Moreover, each group's self-assessment scores with regard to driving skills, safety concerns and risk-taking behaviors are generally in line with the other group's perception of that group on these variables.

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Key Words: *professional drivers, unprofessional drivers, driver skills, risk-taking behaviors, traffic psychology*

Profesyonel ve Profesyonel Olmayan Sürücülerin Davranışları ve Becerileri Hakkındaki Algıları

ÖZET

Sosyal Kimlik Kuramına göre insanlar, aidiyet hissettiği grubun üyelerini daha olumlu, aidiyet hissetmediği grubun üyelerini ise daha olumsuz değerlendirme eğilimindedir. Bu bağlamda trafiğe karışan farklı sürücü gruplarının da buna benzer bir tutum sergileyebileceği düşünülmüştür. Dolayısıyla profesyonel (taksi şoförlerinin) ve profesyonel olmayan sürücülerin; sürücü becerileri, güvenlik endişeleri ve risk alma davranışlarının incelenmesi ve her iki grubun bu özellikler açısından birbirine yönelik algısının araştırılması bu çalışmanın temel amacıdır. Çalışmaya 39 tane profesyonel ve 40 tane profesyonel olmayan sürücü katılmıştır. Her katılımcı kendisini Sürücü Becerileri Ölçeği (SBÖ) ve risk alma davranışları ölçeği üzerinden değerlendirip karşı grubun üyelerini de aynı ölçekler üzerinden değerlendirmiştir. Tek yönlü varyans analizi (ANOVA) ile iki grup arasında anlamlı farklılıklar bulunmuştur. Spesifik olarak, profesyonel sürücülerin trafikte profesyonel olmayan sürücülere göre sürücü becerilerini ve güvenlik kaygılarını daha yüksek ve risk alma davranışlarını daha düşük olarak beyan ettikleri bulunmuştur. Ayrıca, her grubun öz değerlendirme puanları ile diğer grubun üyelerine yönelik algısı genellikle paralellik göstermiştir.

Anahtar Kelimeler: *profesyonel sürücüler, profesyonel olmayan sürücüler, sürücü becerileri, risk-alma davranışları, trafik psikolojisi*

Introduction

The current paper begins with handling the process of social categorization in the scope of social psychology literature. Specifically, the underlying theories behind social group formations, interaction and perceptions among these social groups are focused. Then, such social category formation among drivers and perception of these groups towards each other with respect to traffic context is tackled. In the second part, social categories as professional drivers and unprofessional drivers

in traffic is defined, and afterwards specific driving behaviors of the two is discussed in detail in the light of the literature.

In-group Favoritism and Out-Group Hostility in Traffic

In their original study, Tajfel and Turner (1979) defined 'group' as social categories which an assemblance of individuals perceive themselves as belonging to, are emotionally involved with, and have a social consensus in the way of their thinking and understanding the group and membership. In this case, it is inevitable for existing interactions between members of a group to come to minds at first. However, there is no need of such interactions between members to be part of a specific group, rather just holding a perception of belonging to that group is enough for being felt as its member (Trepte, 2006). Thereby, categorizing self and others into groups becomes easier. Similarly, categorizing based on even trivial factors can be counted as enough for the establishment of group memberships (Tajfel et al., 1971). As an example of social categorization with respect to this statement, all female doctors in a specific hospital can be considered as a group. In fact, classifying people into groups or social categories facilitates the way of understanding others so that humankind can share some expectations or fears about outer groups (Trepte, 2006). Thereby, people lay the foundations of their judgements directed others. Moreover, having such feelings or thoughts regarding other groups influence individuals in way that they tend to present specific behaviors and perceptions towards the others. However, this tendency is generally observed as being favored of in-group and disfavored of out-group, and even presence of an out-group is enough for these reactions to occur (Tajfel & Turner, 1979). Especially, the more differences between in-groups and out-groups become clear, the more effects of being a part of these groups on individual's behavior and perception (Oakes, 1987), thus the more perceptions of disfavored of an out-group be seen.

Such social categorization persists in among drivers with respect to traffic context, as well. As an example of such social categories or groups would be female drivers and male drivers, or younger and older drivers. In-group favoritism or out-group hostility, namely as perception bias, mentioned above can also exist among these social categories regarding drivers. For example, in a study carried out by Ariyanto et al. (2011), perception bias in relation to some traits such as being orderly vs not being orderly or creating traffic jam vs not creating traffic jam among three different driver groups (private car drivers, public transportation drivers, and motor riders) was investigated, and it was found that private car users tended to rate in-group members more positively, which could be an example of in-group favoritism, while motor riders tended to rate public transportation drivers more negatively, which could be an example of out-group hostility. Similarly, it was found that car drivers with various experience of years reported more negative attitudes toward motorcyclists regarding behaviors in traffic than dual drivers, who had experiences of both car and motorcycle use (Crundall et al., 2008). Needless to say, here perception of two different group of drivers based on vehicle types used rather than age or gender was examined, and as it can be noticed in this finding, dual drivers in the study reported fewer negative attitudes toward motorcyclists because their experience of motorcycle use led them to perceive fewer discrepancies between themselves and motorcyclists as an out-group. The aforementioned statement by Oakes (1987) can account for this conclusion. That is, differences between dual drivers and motorcyclists were to be blurred rather than clear, which resulted in a less out-group hostility. Apart from age, gender or types of vehicle factors, perception of social categories is sometimes based on political orientation of drivers, as well. Given the fact that availability of an existing group in its own could provoke in-group favoritism or out-group hostility, as mentioned above, politically-contented labels or cues placed on cars as visible can sometimes form a perception of an out-group hostility or in-group favoritism on the road.

In accordance with this notion, it has been found that participant drivers tended to more favorably evaluate their in-group members in regards to aggressive violations, ordinary violations, errors, and lapses than the control group in a recent study (Tekeş et al., 2019). Here, perception of participants toward an out-group was shaped by political orientation rather than some traffic-related factors, and such perception still had an effect on judging traffic-related behaviors of out-group members.

Driving Skills, Safety Concerns and Risk-Taking Behaviors Among Professional and Unprofessional Drivers

Given the aforementioned findings on social categories in traffic context, an example of different groups can be professional drivers and unprofessional drivers. Professional drivers can be thought of taxi drivers or bus drivers who drive as part of their jobs whilst unprofessional drivers as private car users. Apart from a social categorization based on occupational factors, Sullman et al. (2002) pointed out that potential differences observed between the two groups could be explained by some other variables such as levels of driving experiences or total time spent on driving. That is, as a requirement of the job, it would not be wrong to conclude that these variables are considered as becoming distinctive features of professional drivers in public opinion. In fact, it is reasonable for professional drivers to be on the roads for more hours than unprofessional drivers. However, this situation leads to different traffic-related outcomes for the two group. For example, professional drivers were reported to be at a greater risk of being involved in accidents compared with unprofessional drivers because of staying on the road for more hours alongside with increased stress levels and being tired (Lam, 2004). That is, differential features belonging to the one group have also some effects on their behaviors and can end up with distinguishable scenarios in traffic. Furthermore, Bener et al. (2008) pointed out that those who drive different types of vehicles like private car, taxi, or bus exhibit varied driving behaviors. Unlike unprofessional drivers, taxi

drivers or bus drivers' preferences for vehicle type is quite restricted. For example, a bus driver is supposed to drive a minibus, which requires higher levels of driving skills from the driver or s/he can become better at driving with time. As stated in Erkuş and Özkan (2019), all drivers carry a sense of responsibility for their and other road users' lives, but this feeling is thought be doubled for professional drivers who also concern about their lives of passengers. Thus, a good driving experience is more likely to be expected of them. Also, professional drivers are usually expected to use the same vehicle for more years than private car users; therefore, their driving behaviors or skills get different in time than those of unprofessional drivers. Therefore, it is proposed that professional drivers seem to be more experienced than non-professional drivers; therefore, their driving behaviors would be different. Before passing on findings probing these distinct driving behaviors between experienced and inexperienced drivers, in a way between professional drivers and unprofessional drivers, it would be worth noting that these driving behaviors in the light of traffic literature should be explained. Researchers differentiate driving skills from driving behaviors or styles. According to them, driving skill is something that drivers can improve by practicing and training (Elander et al., 1993), as in the case of professional drivers. On the other hand, driving behavior's definition is so extensive that attitudes, beliefs, values, and personality have effects on it (Lajunen et al., 1997; Sümer, 2003). Therefore, different types of measurement tools have been developed in order to assess these distinct variables. One of them measuring driving skills is Driver Skill Inventory (DSI) which was developed by Lajunen and Summala (1995). In addition to measuring skills, there is safety component of DSI because the authors thought that safety and skills are related to each other in driving. One can evaluate him/herself as more skillful in driving and it is not necessary to conclude that s/he is also safe in driving. In contrast, people seem to overestimate their driving skills (Delhomme, 1991). When they are more likely to be overconfident about their driving skills, their risk-taking

behaviors increase and therefore, they tend to ignore safety issue in traffic environment. For example, in their study measuring the relationship between safety and skills, Sümer, Özkan, and Lajunen (2006) found that those who have higher levels of driving skills and low levels of safety concern report a greater number of accidents, overtaking tendencies, and number of total penalties than those who have lower levels of driving with less safety concerns. This means that safety concern plays a mediator role in predicting outcomes because negative outcomes like number of accidents increase when less safety concern comes with high driving skills. Similarly, the evidence coming from Lajunen and Summala (1995) showed that experienced drivers evaluated themselves as more competent in terms of driving skills and less concerned about traffic safety than inexperienced ones. The less concerns of experienced drivers about safety issue would be due to underestimating the risk factors related to the traffic condition like exceeding speed limits because they judge their driving skills as higher. Moen (2007) made points on the same conclusion that people's behavioral intentions, priorities and motivation regarding safety can be affected in a safety-reducing direction when they perceive a higher control. Additionally, in their study investigating professional drivers' risky behaviors and accident liability, Wang, Li, Feng, and Peng (2014) found that professional taxi drivers were more vulnerable to risky behaviors and accident involvement whilst non-professional drivers reported less risky behaviors. For example, it was found that compared to professional drivers, non-professional drivers were more cautious and watchful in driving, they tended to give stronger priority to the safety issue, and they used seat belt more often (Nordfjærn et al., 2012).

Moreover, there are some other factors making differences in driving skills, safety concerns or risky behaviors. For example, Sivak et al. (1989) found differences in terms of driver self-assessment and risk-perception across nationalities. Therefore, because the current study's sample comprises of Turkish drivers, it gives opportunity to understand

how cultural differences can be in a relationship with drivers' skills, safety concerns, and risk-taking behavior.

The aim of the current study, based on the literature, is to investigate how professional drivers and non-professional drivers differ in their responses to the Driver Skill Inventory (DSI), which means in terms of driving skill and safety concern, and as well as their risk-taking behaviors. Also, for each group of drivers, it is the focus of the study to investigate the relationship between DSI scores that measures driving skills and safety concerns of drivers and risk-taking behaviors. Moreover, this paper tries to give answer to the question how each group of drivers perceive other groups' driving skills, safety concerns, and risk-taking behaviors. In line with the aims of this paper, outcomes of the current study are supposed to contribute to the traffic climate and safety of the country by being used in further research. After all, it is aimed to get informed about whether being professional drivers or unprofessional drivers is a concept leading to feeling of belonging to a group. Additionally, perceptions of each group toward the other are further discussed from the point of in-group favoritism and out-group hostility. Finally, in accordance partially with previous findings and partially with common senses, whether professional drivers are more skillful in driving or unprofessional drivers seem to assess themselves as riskier in traffic is also aimed to be made explicit in the discussion section.

Method

Participants

In the current study, we assessed two groups of drivers (N = 79) which are professional and non-professional drivers. The first group, professional drivers, included 39 men between the ages of 20 and 58 years (M = 40.72, SD = 11.29), some of them were recruited from Middle East Technical University and the others participated from outside the campus according to their physical availability in Ankara. They were

reached one by one and were asked to fill the surveys. Among these professional drivers, 17 of them were minibus drivers, 14 of them are taxi drivers, and 8 of them were commercial car drivers. The second group, non-professional drivers, included 35 men and 5 women between the ages of 20 and 57 years (M = 25.5, SD = 6.16), and these drivers were not only from Ankara. They were recruited randomly through the online survey both in the METU campus and the outside of the campus. Among these non-professional drivers, except one pickup truck driver, the rest of them were automobile drivers.

Measurements

In the current study, we assessed a variety of demographic information including drivers' age, gender, number of years they have driven, and number of accidents they had. Perceptions of the two group of drivers on driving skills, safety concerns, and risk-taking behaviors were assessed. In addition to self-assessment, each group was assessed by the other group on these variables so that each group's perception toward the other group was tried to depict, as well. While assessing these measures, we used two questionnaires: Risk-Taking Behavior Scale (Iversen, 2004) and Driver Skill Inventory (DSI) (Lajunen & Summala, 1995).

Risk-Taking Behavior Scale

In order to measure driver's risk-taking behaviors, a self-report measurement tool was developed by Iversen (2004) was used in the current paper. This scale consists of 24 items with 7 umbrella factors. The first factor is violation of traffic rules and speeding (e.g., driving above speeding limits). The second one is reckless driving (e.g., driving too close to other cars on the road). The third one is about not using seat belt. The fourth factor is cautious and watchful driving (e.g., being alert and submissive to speeding limits). The fifth factor is drinking and driving (e.g., driving after more than one glass of alcohol). The sixth

factor is attentiveness towards children in school (e.g., reducing speeding when around school areas). The final factor is driving below speed limits (e.g., complying with speed rules regulations). Satisfactory reliability coefficient for all factors of risk-taking behavior scale were obtained except for drinking and driving factor (α = .38) and this acceptable reliability ranges from Cronbach alpha of .66 to .85 (Iversen, 2004). Each item is measured on a 6 point-Likert scale with 1 standing for never and 6 standing for almost every time. In this study scale items of this scale were translated to Turkish by the researcher of this study and three of her colleagues and then reliability and validity analysis were done in detail. Depend on relevant analysis, acceptable internal consistencies were obtained for the risk-taking behavior scale: violation of traffic rules/speeding factor consisted of 6 items (α = .82), reckless driving/fun riding factor consisted of 5 items (α = .93), not using seat belts factor consisted of 2 items (α = .49), cautious/watchful driving factor consisted of 4 items (α = .89), drinking and driving factor consisted of 3 items (α = .94), attentiveness towards children in traffic factor consisted of 2 items (α = .94), and driving below speed limits factor consisted of 2 items (α = .81).

Driver Skill Inventory (DSI)

Driver Skill Inventory is self-report measurement tool which was developed by Lajunen and Summala (1995). The DSI covers two dimensions consisting of 20 items and it measures the ability to drive and obey the traffic rules in general, on the basis of the drivers' own evaluations. Items in the scale were evaluated with five-point scales (1 = very weak and 5 = very strong) (Sümer et al., 2006). The reliability and validity study of DSI was done by Sümer and Özkan (2002). The same factor structure with the original study was reached. That is, items measuring driving skills were grouped into the factor called perceptual-motor skills whilst items measuring traffic-related safety were grouped into the factor named as safety skills. In the Turkish study satisfactory

reliability values were obtained and according for perceptual-motor skills factor which consists of 10 items, α = .90 and for safety skills factor which consist of 10 items, α = .82 were reached (Sumer and Özkan, 2002).

Procedure

Ethical approval was taken from Middle East Technical University Psychology Departmental Ethical Approval Committee. The surveys for the non-professional drivers were put online for them to fill out. Researcher collected data via snowball sampling and participant number were determined by G*Power analysis with by G*Power statistical software as 44 for total depending on within and between measurement and their interaction research design of original study. (Faul et al., 2009). The other surveys for the professional drivers were delivered by hand, and they were asked to fill out. Participants read and approved informed consent of the online survey. Filling out the surveys took approximately 10 minutes. A detailed debriefing was given at the end of the online survey to the participants

Results

To begin with socio-demographic information of professional and unprofessional groups, 39 professional drivers attended the study and all of them were male. On the other hand, among 40 professional drivers who participated in the study, 35 of were male drivers (87,5%) and 5 of were female drivers (12,5%). Furthermore, more information about age, total number of kilometers participant drivers had made since taking their driver's licenses and how much time they have had the driver's licenses are presented in Table-1.

There are two factors of DSI scale: Safety skills and perceptual-motor skills, and there are seven factors of the risk-taking behavior scale: Violation of traffic rules/speeding, reckless driving, not using seat belt, cautious and watchful driving, drinking and driving, attentiveness toward

children in traffic, and driving below speed limits. Since each participant evaluated him/herself and then other group of drivers (if the individual is professional, s/he evaluated unprofessional drivers) on these two scales, mean of each factor was calculated both for the self-assessment and the evaluation of the drivers of the other group. One-way analysis of variance (ANOVA) was conducted through IMB SPSS software program for the comparison of professional and unprofessional drivers' both self-report scores and the scores they gave each other on all sub-scales of both Driver Skill Inventory (DSI) and the risk-taking behavior scale. The results indicated that regarding DSI scale, significant main effects were obtained. That is, there are significant differences between the self-assessment scores of professional drivers and unprofessional drivers on perceptual-motor skills, $F(1, 77) = 15.42$, $p < .001$, and safety skills, $F(1, 77) = 6.84$, $p = .011$, and as well as significant differences between the scores of evaluating the other party on perceptual-motor skills, $F(1, 77) = 21.65$, $p < .001$, and safety skills, $F(1, 77) = 27.46$, $p < .001$. *(see Table 2 and Table 3 below).* Specifically, professional drivers ($M = 4.37$, $SD = .73$) rated themselves with higher scores on perceptual-motor skills than unprofessional drivers ($M = 3.81$, $SD = .51$). Similarly, they ($M = 4.12$, $SD = .74$) obtained higher scores on self-assessment of safety skills compared with unprofessional drivers ($M = 3.74$, $SD = .53$) *(see Figure 1).* In terms of their perception of the other group's skills, while unprofessional drivers evaluated professional ones' perceptual-motor skills as higher ($M = 3.68$, $SD = .61$) and safety skills as lower ($M = 2.24$, $SD = .65$), professional drivers evaluated unprofessional drivers' perceptual-motor skills as lower ($M = 2.81$, $SD = 1.01$) and safety skills as higher ($M = 3.06$, $SD = .75$) *(see Figure 2).*

Table 1: Descriptive Statistics on Demographic Information of Professional and Unprofessional Drivers

Unprofessional Drivers	**N**	**Mean**	**SD**	**Min**	**Max**
Age	40	25.5	6.16	20	57
How long have you had a driver's license?	17	5	2.55	2	9
Total km made since having driver's license	31	33866.58	58044.28	14	300000
Professional Drivers	**N**	**Mean**	**SD**	**Min**	**Max**
Age	39	40.72	11.29	20	58
How long have you had a driver's license?	39	20.26	10.05	3	37
Total km made since having driver's license	39	942179.49	1019048.7	15000	3800000

Table 2: Group Differences in Self-assessments of Driver Skill Inventory (DSI) Subscales Between Professional and Unprofessional Drivers Through One-way ANOVA

	professional drivers (n = 39)		unprofessional drivers (n = 40)						
Dependent Variable	M	SD	M	SD	Error	*df*	F	*p*	η^2
Perceptual-motor skills	4.37	.73	3.81	.51	77	1	15.42**	.000	.167
Safety Skills	4.12	.74	3.74	.53	77	1	6.84*	.011	.082

** statistically significant at $p < .001$ level

* statistically significant at $p < .05$ level

Table 3: Group Differences in The Perceptions of Professional and Unprofessional Drivers Toward Each Other on Driver Skill Inventory (DSI) Subscales Through One-way ANOVA

	professional drivers[a] (n = 39)		unprofessional drivers[b] (n = 40)						
Dependent Variable	M	SD	M	SD	Error	*df*	F	p	η^2
Perceptual-motor skills	2.81	1.01	3.68	.61	77	1	21.65**	.000	.219
Safety Skills	3.06	.75	2.24	.65	77	1	27.46**	.000	.263

** statistically significant at $p < .001$ level

[a] professional drivers' ratings of unprofessional drivers

[b] unprofessional drivers' ratings of professional drivers

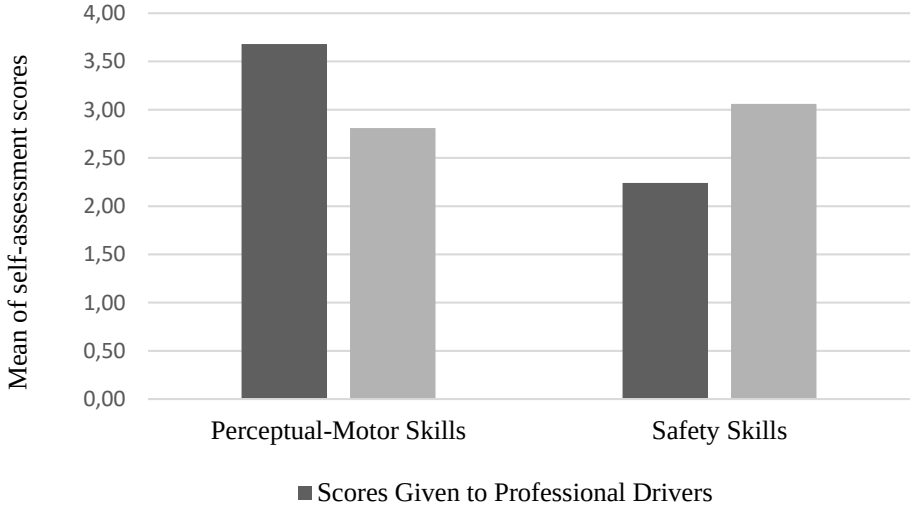

Figure 1: Mean of each group's self-assessment scores on Driver Skill Inventory (DSI) subscales

Note: This histogram illustrates professional and unprofessional drivers' mean of self-assessment scores on two subscale of Driver Skill Inventory (DSI): Perceptual-motor skills and safety skills. Y-axis (vertical and left side of the figure) represents average self-assessment scores, and X axis (bottom of the figure) are categorized by dark grey bars representing professional drivers and by light grey bars representing unprofessional drivers. The differences between professional and unprofessional drivers' self-assessment scores are statistically significant.

Figure 2: Perceptions of two group of drivers about each other on two subscales of DSI: Perceptual-motor skills and safety skills.

Note: This histogram illustrates how each group of drivers evaluated the other one on perceptual-motor and safety skills. Y-axis (vertical and left side of the figure) represents means of scores each group gave to one another, and X axis (bottom of the figure) are categorized by dark grey bars representing scores given to professional drivers by unprofessional ones and by light grey bars representing scores given to unprofessional drivers by professional ones.

Regarding their risk-taking behaviors, significant differences between professional drivers and unprofessional drivers across all factors of the risk-taking behavior scale were obtained. In fact, the two groups' ratings of themselves significantly differed on the subscales of violation of traffic rules/speeding, $F(1, 77) = 15.98$, $p < .001$, reckless driving, $F(1,$

77) = 139.62, $p < .001$, not using seat belt, $F(1, 77) < 28.01$, $p < .001$, cautious and watchful driving, $F(1, 77) = 15.86$, $p < .001$, drinking and driving, $F(1, 77) = 193.07$, $p < .001$, attentiveness toward children in traffic, $F(1, 77) = 21.94$, $p < .001$, and driving below speed limits, $F(1, 77) = 24.50$, $p < .001$. Specifically, unprofessional drivers reported significantly higher scores on violation of traffic rules/speeding (M = 3.35, SD = .81), on reckless driving (M = 4.02, SD = .69), on drinking and driving (M = 4.68, SD = .69), and on driving below speed limits (M = 3.84, SD = .72) whereas professional drivers reported significantly lower scores on violation of traffic rules/speeding (M = 2.47, SD = 1.12), on reckless driving (M = 1.92, SD = .88), on drinking and driving (M = 1.77, SD = 1.12), and on driving below speed limits (M = 2.59, SD = 1.42). However, unprofessional drivers have significantly lower scores on cautious and watchful driving (M = 2.29, SD = .80) and on attentiveness toward children in traffic (M = 2.59, SD = .96) than professional drivers' scores on these two factors (M = 3.50, SD = 1.75) and (M = 4.08, SD = 1.76) respectively. Moreover, unprofessional drivers reported significantly greater scores (M = 4.14, SD = 1.04) than professional drivers (M = 2.73, SD = 1.31) with respect to not using seat belt *(see Table-4 and Figure-3).*

Table 4: Group Differences in the Self-Assessments of Risk-Taking Behaviors Between Professional and Unprofessional Drivers Through One-way ANOVA

	professional drivers (n = 39)		unprofessional drivers (n = 40)						
Dependent Variable	M	SD	M	SD	Error	*df*	F	*p*	η^2
Violation of traffic rules/speeding	2.47	1.12	3.55	.81	77	1	15.98**	.000	.172

Reckless driving	1.92	.88	4.02	.69	77	1	139.62**	.000	.645
Not using seat belt	2.73	1.31	4.14	1.04	77	1	28.01**	.000	.267
Cautious and watchful driving	3.50	1.75	2.29	.80	77	1	15.86**	.000	.171
Drinking and driving	1.77	1.12	4.68	.69	77	1	193.07**	.000	.715
Attentiveness toward children in traffic	4.08	1.76	2.59	.96	77	1	21.94**	.000	.222
Driving below speed limits	2.59	1.42	3.84	.72	77	1	24.50**	.000	.241

** statistically significant at $p < .001$ level

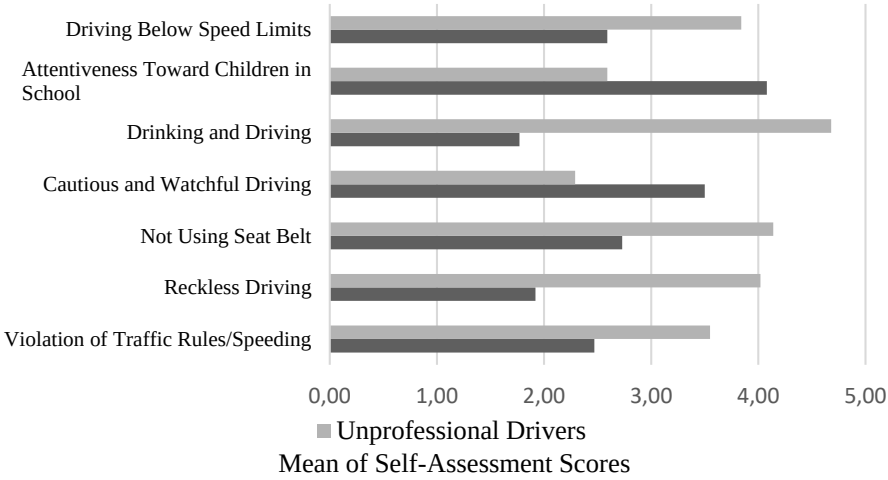

Figure 3: Self-assessment scores of professional and unprofessional drivers on risk-taking behavior subscales

Note: This figure shows both professional and unprofessional drivers' average self-report scores on all subscales of the risk-taking behavior scale which are driving below speed limits, attentiveness toward children in school, drinking and driving, cautious and watchful driving, not using seat belt, reckless driving, and violation of traffic rules/speeding, respectively. The light grey bars represent unprofessional drivers' means while dark grey bars represent professional drivers' ones.

When it comes to evaluating the other group's risk-taking behaviors, significant discrepancies between the two group of drivers' perception are reported on some sub-scales: Violation of traffic rules/speeding, $F(1, 77) = 14.79$, $p < .001$, reckless driving, $F(1, 77) = 6.87$, $p = .011$, not using seat belt, $F(1, 77) = 6.66$, $p = .012$, drinking and driving, $F(1, 77) = 6.41$, $p = .013$, and driving below speed limits, $F(1, 77) = 15.65$, $p < .001$. However, the data was not significant for the evaluation of the other group's cautious and watchful driving factor and for the evaluation of the other group's attentiveness toward children in

traffic factor. Specifically, the scores given by unprofessional drivers to professional ones on the sub-scales of violation of traffic rules/speeding (M = 1.95, SD = .79), reckless driving (M = 2.42, SD = 1.07), and not using seat belt (M = 2.09, SD = 1.10) are found to be significantly lower than the scores given by professional drivers to unprofessional ones on the same sub-scales (M = 2.79, SD = 1.14, M = 3.06, SD = 1.10, and M = 2.82, SD = 1.41 respectively). On the other hand, while being evaluated on drinking and driving sub-scale and driving below speed limits sub-scale, professional drivers (M = 3.52, SD = 1.31, M = 3.61, SD = 1.05, respectively) obtained higher scores than unprofessional drivers (M = 2.75, SD = 1.38, M = 2.51, SD = 1.40, respectively) *(see Table-5 and Figure-4).*

Table 5: Group Differences in the Perception of Professional and Unprofessional Drivers Toward Each Other on The Risk-Taking Behavior Subscales Through One-way ANOVA

	professional drivers (n = 39)		unprofessional drivers (n = 40)						
Dependent Variable	M	SD	M	SD	Error	*df*	F	*p*	η^2
Violation of traffic rules/speeding	2.79	1.14	1.95	.79	77	1	14.79**	.000	.161
Reckless driving	3.06	1.10	2.42	1.07	77	1	6.87*	.011	.082
Not using seat belt	2.82	1.41	2.09	1.10	77	1	6.66*	.012	.080
Cautious and watchful driving	3.20	1.07	3.06	1.06	77	1	.35	.555	.005
Drinking and driving	2.75	1.38	3.52	1.31	77	1	6.41*	.013	.077

Attentiveness toward children in traffic	3.24	1.58	3.43	1.18	77	1	.38	.537	.005
Driving below speed limits	2.51	1.40	3.61	1.05	77	1	15.65**	.000	.169

** statistically significant at $p < .001$ level

* statistically significant at $p < .05$ level

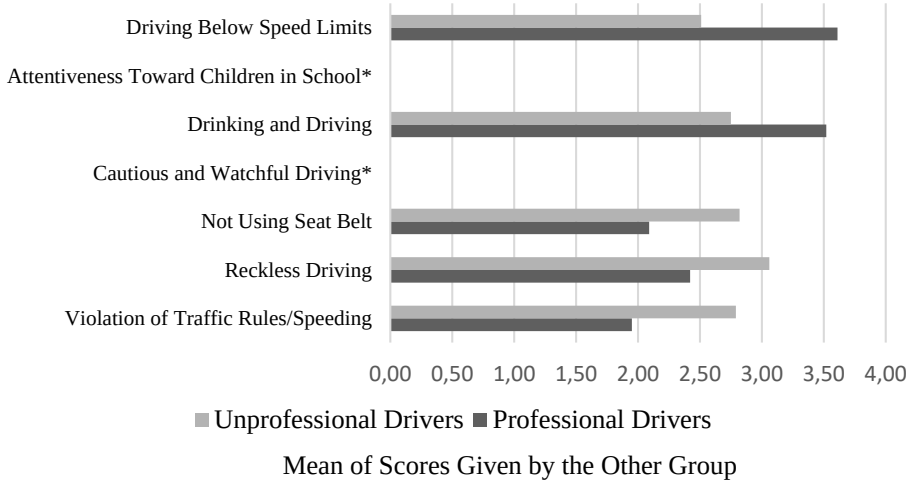

Figure 4: Mean of scores each group of drivers giving one another regarding sub-scales of the risk-taking behaviors

* There were not found any significant differences between professional and unprofessional drivers in terms of these two sub-scales.

Note: This figure illustrates each group's perception toward the other in terms of risk-taking behaviors. The light grey bars represent unprofessional drivers' average scores which were given them by professional drivers, and the dark bars represent professional drivers' average scores which were given them by unprofessional drivers.

Discussion

In social psychology, it has been asserted that people are involved in specific social group formations and hold different perceptions toward groups they feel as belonging to and toward groups they consider as outer or as not belonging to. In accordance with the literature, such perception bias is generally observed in two variants: favoring in-group and exhibiting hostility toward out-groups (Tajfel & Turner, 1979). Similarly, drivers who are believed to be main actors of traffic environment might also have such perceptions about groups in the roads. Specifically, in the current study, professional drivers like taxi drivers or bus drivers and unprofessional drivers who are private car users were defined as two distinct groups in traffic, and perceptions towards each other among these two groups of drivers was claimed to be influenced through the aforementioned ingroup favoritism and outgroup hostility. Moreover, it has been also discussed by the current paper that there would be differences among professional and unprofessional drivers with respect to their driving skills, safety concerns and risk-taking behaviors. Given that, the current paper aimed to investigate such different patterns of driving behaviors among the two groups through self-assessment scales, which are Driving Skills Inventory (DSI) and risk-taking behavior scale. In addition, each group's perception toward the other regarding these driving behaviors was also proposed to be different.

Based on the results, significant differences were found between the professional drivers and non-professional drivers with respect to self-reported scores on driver skills, safety concerns and risk-taking behavior. Specifically, professional drivers assessed themselves as more skillful in driving and more concerned about traffic safety than unprofessional drivers. That is, they gained higher scores on both subscales of the Driver Skill Inventory (DSI), which are perceptual-motor skills and safety concerns. Given that professional drivers like taxi drivers have richer driving experience (Stewart et al., 2005), the findings were inconsistent

with the previous research by Lajunen and Summala (1995) in this aspect in which it was claimed that experienced drivers had higher driving skills and less safety concerns compared to inexperienced ones. As can be seen, for professional drivers as having both higher driver skills and more safety concerns may be explained by professional drivers', like taxi drivers, escalated responsibility for their passengers' safety (Erkuş & Özkan, 2019). Moreover, professional drivers' increased safety concerns can be also explained by the traffic rules or regulations. For example, in a previous study it was found that professional drivers like taxi and minibus drivers drove their vehicles at more decreased speed levels (Öz et al., 2010). Therefore, they might be kind of representing the behavioral patterns of being more concerned about traffic safety through pursuing lower speed levels. However, when it comes to the perceptions of each group toward the other regarding these two variables, not the same patterns of behavior were obtained. According to the results, unprofessional drivers rated professional drivers as significantly better on perceptual-motor skills but as significantly worse on safety concerns. On the other hand, professional drivers evaluated unprofessional ones' safety concerns as significantly higher and perceptual-motor skills as significantly lower. It makes sound that for both bus and taxi drivers to be evaluated favorably on having better driving skills because of being on the roads almost every day for longer hours than unprofessional drivers. Thus, they might be believed to have higher levels of driving skills. On the other hand, unprofessional drivers were rated less favorably by professionals on perceptual-motor skills, which is consistent with other studies finding out that taxi drivers appraised their driving more favorably than others (Shams et al., 2011).

In terms of risk-taking behaviors, the current study found out that professional drivers reported that they were less likely to engage in risk-taking behaviors compared to unprofessional drivers. Specifically, they believed that they were less likely to violate speed limits and exhibit reckless driving. They also considered themselves as being more

attentiveness toward children in traffic than unprofessional drivers. Unlike the results of previous studies (Nordfjærn et al., 2012; Nævestad et al., 2019) which were conducted in Norway and Greece, this paper found out that professional drivers reported more seatbelts use than unprofessional drivers while in traffic. As discussed below in detail, professional drivers' more usage of seat belt was also claimed by unprofessional drivers, which in turn makes the finding much stronger. Thus, there can be seen different pattern of behaviors across nationalities. Furthermore, it has been reported that professional drivers presented less cautious and watchful driving (Nordfjærn et al., 2012) but in this study, it was found that professional drivers were more likely assess themselves as more cautious and watchful in driving. Moreover, they gave significantly lower scores to themselves regarding the drinking and driving scale and the driving below speed limits scale compared with unprofessional drivers. They thought that they are less likely to be drunk while driving; however, they also thought that they are more likely to exceed speed limits. Indeed, with respect to being less reckless in driving and much safer in terms of drinking and driving, the findings are consistent with those of Nordfjærn et al. (2012). Given all sub-scales of the risk-taking behavior scale, except for the driving below speed limits sub-scale, professional drivers thought they tend to engage in less risky-driving behaviors compared to unprofessional drivers. Unlike the findings by Wang, Li, Feng, and Peng (2014), professional drivers rated themselves as less risky drivers compared to unprofessional drivers. One explanation for this contradictory finding could be that since professional drivers are composed of taxi and minibus drivers, they are required to be safer in driving for the passengers they carry every day. However, the findings of the current paper are consistent with the ones indicating that professional drivers seemed to be safer and to show less risky behaviors in traffic (Sümer & Özkan, 2002).

Like professional drivers think of themselves, unprofessional drivers also rated professional drivers as significantly lower on violation

of traffic rules, reckless driving, and not using seat belts. That is, private car users thought that taxi drivers or bus drivers were less likely to involve in violation of traffic rules or reckless driving. Moreover, they also adapted that professional drivers are more likely to use seat belts while driving. Furthermore, professional drivers rated unprofessional ones with significantly higher scores on violation of traffic rules, reckless driving, and not using seatbelt. Indeed, unprofessional drivers also rated themselves with higher scores on the respective scales. As can be noticed, both self-reported scores by both group of drivers on violation traffic rules, reckless driving and not using seat belts and the scores given by the one group to the other on these sub-scales seem to be in the same direction. On the contrary, as indicated above, while professional drivers rated themselves with significantly lower scores on the drinking and driving sub-scale and as well as on the driving below speed limits sub-scale, unprofessional drivers rated them with higher scores on the related sub-scales. That is, professional drivers thought of themselves as riskier in terms of driving below speed limits and less risky in terms of driving with alcohol consumption but unprofessional drivers thought of them in an opposite way. Similarly, while unprofessional drivers rated themselves with higher scores with respect to these two sub-scales, that is, they thought of themselves as being much risky drivers, professional drivers rated them with lower scores. Furthermore, there are no significant differences found between the perceptions of the two groups toward each other on the sub-scale of cautious and watchful driving and on the sub-scale of attentiveness toward children in traffic.

Taken together, in their study investigating the relationship between Driver Skill Inventory (DSI) and Driver Behavior Questionnaire (DBQ) (Reason et al., 1990), Martinussen, Møller, and Prato (2014) clustered drivers into four categories based on their scores on DSI and DBQ and they identified a category of drivers named as "skilled safe drivers" whose features seem to be matched with the findings of the current study about professional drivers (p.10). That means that this

group of drivers took higher scores on DSI and lower scores on violations, errors, and lapses and that in turn makes them more skillful and safer in driving as well as less likely to take risk-taking behaviors in traffic. The current study reached similar conclusion about professional drivers.

In general, professional drivers perceive themselves as having more driving skills, more safety concerns while driving, and less risk-taking behaviors while in traffic compared with unprofessional drivers. Furthermore, perception of each group of drivers toward the other one regarding the respective variables also seem to be in parallel with self-reports. That is, professional drivers' thoughts of themselves and unprofessional drivers' thoughts of them mostly pursued the same direction. In fact, unprofessional drivers disfavored professional ones in terms of their safety concerns in traffic but they reached a cohesion about which professional drivers' perceptual-motors skills were better. On the other hand, professional drivers agreed with unprofessional ones about that unprofessional drivers' perceptual-motor skills were worse. However, they were favor of private car users in terms of safety concerns, and they thought that unprofessional drivers had more safety concerns on the road. That means that rather than a clear-cut in-group favoritism or an out-group hostility, a much-blurred results were obtained from the current study in which out-group favoritism was partly observed. Similarly, while unprofessional drivers demonstrated patterns of out-group favoritism by evaluating professional drivers as less risky individuals on violation of traffic rules, reckless driving, and not using seat belts, professionals shove similar attitudes by assessing unprofessional drivers as less risky on drinking and driving subscale. Furthermore, as mentioned above in detail, both perceptions scores toward other party and self-assessment scores mostly tended to be in the same direction thus, making both forms of obtained scores much stronger. In fact, such favorable evaluations toward out-group rather than in-group were also reported in the literature. For example, in their study,

Ariyanto et al. (2011) found out that motor-riders and public transportation drivers presented out-group favoritism toward private car users with respect to being orderliness. The authors explained this situation through importance and desirability of private car using in Jakarta, where the study was conducted, which in turn resulted in out-group favoritism.

In the current study two types of drivers namely as professional drivers and unprofessional drivers were examined in terms of driver skills, safety concerns and risk-taking behaviors and patterns of the relationship between these groups was tried tackled. Given that the findings of this study can lead to further investigations in the related area, those relations among various driver groups are important in terms of whole traffic safety and atmosphere on the behalf of traffic safety all across the country. However, there are also some limitations which should be acknowledged when interpreting the findings. The sample size should be taken into consideration in the first place. Total numbers of participants who completed all the procedures in the current study might not have reached a satisfactory level. Therefore, the generalizability of the findings remains questionable. Further studies with bigger sample sizes would be warranted with respect to the generalizability. Moreover, there were only 5 unprofessional women and there were not any women in the professional group, which poses a problem in terms of gender distribution. In fact, the unproportionate distribution of male and female professional drivers was also observed in other studies (e.g., Öz et al., 2013). Even though the focus of the current study was not on gender distribution, further research should be done and researchers should take this situation into consideration if they intend to investigate gender differences on these variables. Moreover, different data collection methods between professional and unprofessional drivers could have led to social desirability bias which could be considered as one of the weakness of the study. Social desirability bias is described as one's inclination to respond the questions in a socially accepted manner

(Paulhus & Reid, 1991). As most of the data obtained from professional drivers were taken in a face-to-face situation, their responses would have been influenced by the social desirability bias. For example, a recent study by Yılmaz et al. (2022) found that drivers who were sensitive to overrating their skills and had concerns about presenting themselves in a positive way to others were more likely to report higher scores on the safety skills subscale of the Driver Skills Inventory (DSI). Therefore, it can be suggested for the future studies to investigate driver skills, safety concerns and risk-taking behaviors with controlling the effects of the social desirability bias through reliable scales.

Information Note

The article has been prepared in accordance with research and publication ethics. This study does not require ethics committee approval. The authors contributed jointly to the study and there is no conflict of interest between the authors.

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EXTENDED ABSTRACT

Aims

The basic aim of the current study was to investigate how different group of drivers in traffic perceive each other's driver skills, safety concerns and risk-taking behaviors. These group of drivers were identified as professional drivers like taxi drivers and as unprofessional drivers which are private car users. Alongside assessment of the perceptions of these two groups of drivers toward each other, the study also tried to examine each group of drivers on the aforementioned variables. That is, this paper also aimed to evaluate in-group performances in terms of driver skills, safety concerns and risk-taking behaviors.

Methods

39 professional drivers and 40 unprofessional drivers participated in the study through online survey and by hand survey methods. Each participant agreed on voluntary attending and signed an informed consent in this regard. After ethical permission was taken from Middle East Technical University ethical committee, the study was carried out. Apart from the socio-demographic information form, Driver Skill Inventory (DSI) scale which was developed by Lajunen and Summala (1995) was used in order to assess two dimensions: driver skills and safety concerns. For measuring risk-taking behavior, risk-taking behavior scale which was used in Iversen's study (2004) was used. Each participants assess himself/herself through DSI and risk-taking behavior scale at first and then s/he was asked to assess the other group of drivers on these scales, respectively. At the end, two sets of scores were gathered: the first one is self-assessment scores of each participant and the second one is about perception of that participant toward the other group of drivers. One-way analysis of variance (ANOVA) was run through SPSS software program to look at the group differences between each group's self-assessment scores and as well as each group's scores reflecting their perception toward the other group.

Results

It is found that professional drivers are more likely to have better driver skills and safety concerns as well as less risk-taking behaviors while in traffic than unprofessional drivers. Moreover, unprofessional drivers also thought that professional drivers have better drivers skills and less risk-taking behaviors but worse safety concerns. When it comes to risk-taking behaviors, professional ones evaluated themselves as less risky in traffic than unprofessional drivers in terms of violating traffic rules, using seat belt, reckless driving, driving below speed limits, being watchful and careful while driving and lastly being attentive towards children in traffic. Similarly,

unprofessional drivers also thought that professional ones show less risk-taking behaviors on most of the aforementioned sub-dimensions.

Discussion

On the contrary to the Social Identity Theory (Tajfel & Turner, 1979) which claims that people show positive attitudes towards members of the in-group and more negative attitudes towards members of out-groups, in this study, unprofessional drivers did not show negative attitudes for the professional drivers, rather they are more likely to seem positive toward such an out-group. However, professional drivers negatively evaluated members of unprofessional drivers on driver skills, safety concerns and risk-taking behaviors. This study can be considered as a new contribution to Turkish traffic psychology literature. In addition, because these relationships between different types of driver groups are critical to overall traffic climate and safety, the results of the study can be used in future studies to improve traffic safety across the country.