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PERCEPTIONS OF UNIVERSITY STUDENTS TOWARDS THE CAUSES OF TRAFFIC ACCIDENTS IN NORTHERN CYPRUS

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ABSTRACT:

The main of the study is to research the perceptions of Turkish students studying in a university of Northern Cyprus about the causes of traffic accidents. According to main findings of the research the most important causes of traffic accidents are "availability of the drivers not complying with the traffic rules", "the technical and physical disruption of highways", "the lack of traffic signs and warnings", "insufficient control", "the lack of training of drivers", "the fact that drivers do not know traffic rules", "the lack of maintenance and repairs of the vehicles" and "other factors such as weather conditions and environmental factors. While drivers are stated as the most important cause of traffic accidents, respondents are undecided about the influence of pedestrians on the traffic accidents

KEYWORDS: Traffic Accidents, University students, Perceived Causes, Northern Cyprus

INTRODUCTION:

According to "Global Status Report on Road Safety 2015" 5 key risk factors for road traffic injuries are speed, drink–driving, and the failure to use helmets, seat-belts and child restraints (World Health Organization, 2015; Aktüel, 2013).

When a total of 210,498 faults that caused mortal injured traffic accidents in Turkey in 2015 were examined; 89.3% of the defects were found to come from drivers, 8.8% from pedestrians, 0.9% from roads, 0.6% from vehicle and 0.4% from passenger borne (TÜİK, 2016).

Depending on the specific conditions of countries the importance of the 5 risk factors for road traffic injuries will naturally vary. However, measures have to be planned and implemented by authorities and hence human being whatever the dimension of each risk factor is. Hence, main causes of traffic accidents should be perceived and realized as perquisite for the successful implementation of these measures.

Very limited number of literature is found in relation to perceived causes of traffic accidents. These can be summarised as follows:

- According to study of Machado-León *et al* (2016) drivers are estimated to contribute an overwhelming proportion to the burden of traffic crashes, as factors that increase crash risk are frequently due to unsafe driving behaviours.
- Survey of Smith & Smith (2017) examined risk perception with the focus being on driver behavior, risk taking and fatigue.
- Zhang *et al* (2016) termed fatigue driving as "silent killer" necessitating a thorough study of traffic accidents and the risk factors associated with fatigue-related casualties that is of utmost importance.
- The study of Nordfjærn *et al* (2014) aims to examine differences in cultural road traffic symbol exchange, risk propensity personality traits, risk perception, attitudes towards traffic safety and driver behaviour in a Turkish and Iranian sample. The results showed that Iranian drivers were more likely to conduct rule violations and speeding, and were less likely to use seat belts than drivers in the Turkish sample. The Iranian sample also estimated a lower probability of road traffic accidents and also less severe health consequences of road traffic accidents.
- The study of Şimşekoğlu et al (2013) examined traffic and non-traffic risk perception, fatalism and driver behaviors in Turkey and Iran. Results showed that Turkish respondents perceived greater risk both in traffic and non-traffic domains, such as environmental hazards. The Turkish respondents also reported safer driver behaviors and less fatalistic attitudes than Iranian respondents. In both samples traffic risk perception was correlated with non-traffic risk perception.
- The study of Şimşekoğlu et al (2012) investigated differences in road safety attitudes, driver behavior, and traffic risk perception between Turkey and Norway. The results show that Turkish respondents perceived traffic risk to be higher than Norwegian respondents. Turkish respondents reported safer attitudes towards drinking and driving than Norwegian respondents, while Norwegians reported safer attitudes towards speeding. Turkish respondents reported a lower frequency of speeding behaviors than Norwegian respondents, whereas Norwegian respondents reported a lower frequency of drinking and driving.
- The study of Yılmaz and Çelik (2006) reveals that drivers are not able to read the road and to take precautions relating to it and most of the respondents saw traffic accidents as a result of fate.
- Sümer and Özkan (2002) found that drivers who had two or more accidents experienced more traffic errors and violations than drivers who did not have any accidents. Furthermore, low-safe

driving skill, high sensation-seeking psychological tendency and aggressive attitudes were determined as the characteristics of these drivers.

- According to the results of the research conducted within the context of the SARTRE 4 (2011) project covering drivers and other persons in 19 European countries, the risk perceptions of the people toward traffic are mainly related to alcohol use, speeding and lack of education.
- The study of Özen et all (2014) reported the most important perceived causes of traffic accidents as "drivers not complying with the traffic rules", "untrained driver" and "drivers not knowing the traffic rules".

Any work on traffic perception in Cyprus has not been observed. Therefore, considering brief literature above, the causes of traffic accidents perceived by Turkish students studying in a university of Northern Cyprus were investigated in this study.

METHODOLOGY:

The study was conducted at the European University of Lefke in Northern Cyprus. Turkish students numbered as 8000 in this university is selected as target population. Before starting the research pilot tests were performed in order to test its validity (Pallant, 2005, pp. 6-7). The study was conducted in December 2016 using the convenience sampling method, and 298 valid surveys were collected. This number is well above the minimum sufficient sample count as explained below. The sample size was calculated using the following formula when the target population number is known (Kalıpsız, 1981; Akten, 2003, p. 119).

$$n = \frac{Z^2NPQ}{NQ^2 + Z^2PQ} \Rightarrow n = \frac{1.96^2 \times 8000 \times 0.95 \times 0.05}{8000 \times 0.05^2 + 1.96^2 \times 0.95 \times 0.05} = 72$$

n= sample size

Z= trust coefficient

P= Probability of measured feature to be in population (determined as 95% in the study)

Q= 1−P

N= size of population (8000)

The questions used in the survey were in two sections. The first section was designed to gather demographical information about subjects through three questions. The second section was intended to determine perceptions of students about the causes of traffic accidents through 11

questions. The scale related to causes of traffic accidents is taken from the study of Özen *et all* (2014).

The SPSS software package was used to obtain statistical data in the study.

Percentage analysis was applied to interpret demographic characteristics while a five-point Likert scale was used in order to determine perceptions of students about the causes of traffic accidents (1=strongly disagree, 2=disagree, 3=undecided, 4=agree, 5=strongly agree). In accordance with the Likert scale, final average score represents overall level of accomplishment or attitude toward the subject measured.

Cronbach's alpha test was taken as a reference to measure reliability of the scale. It is the most common measure of internal consistency ("reliability") being the degree to which the items that make up the scale are all measuring the same underlying attribute. The "single-group *t*-test" was conducted on the Likert-scale averages of student attitudes to traffic accidents. According to this test, highest averages show the most important causes of traffic accidents (Altunışık et al. 2012, pp. 183-186). A factor analysis was also applied to eleven variables of the scale in order to reduce the number of factors and to determine the extent to which they measure reasons of traffic accidents (Field, 2005, p. 731). Finally, One –Way ANOVA test was conducted to determine if perceptions of students differentiate according to demographics.

FINDINGS AND ANALYSIS:

DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS:

As detailed in Table 1 demographic data of respondents can be summarised as follows:

- From a total of 298 respondents 99 persons (33.2 %) are female while 199 persons (66.8 %) are male.
- The vast majority of respondents are in the age range of 19-21(54.7%) and 22-24 (18.1%).
- Percentages for the number of years students lived in Northern Cyprus are categorized as 1, 2, 3 and 4 and above are 45.3, 24.5, 9.7 and 20.5 respectively.

Table 1: Data about Demographic Characteristics

Characteristic	Category	Frequency	Percent (%)
Gender	Female	99	33,2
	Male	199	66,8
Age	18 and below	43	14,4
	Between 19-21	163	54,7
	Between 22-24	54	18,1

	25 and above	38	12,8
Number of years lived in Northern Cyprus	1	135	45,3
	2	73	24,5
	3	29	9,7
	4 and above	61	20,5

PERCEIVED CAUSES OF TRAFFIC ACCIDENTS:

As a first step, Cronbach's alpha test was taken as a reference to measure reliability of the scale related to students' perceptions toward the causes of traffic accidents. Cronbach's alpha is the most common measure of internal consistency ("reliability") being the degree to which the items that make up the scale are all measuring the same underlying attribute. According to reliability analysis of scale with 11 items Cronbach's alpha vaule is .791 that is over the acceptable value of 0.7 (George and Mallery, 2001).

A five-point Likert scale was used in order to determine students' perceptions toward the causes of traffic accidents (1=strongly disagree, 2=disagree, 3=undecided, 4=agree, 5=strongly agree). The final average score represents overall level of perception or attitude toward the subject matter. By utilizing the five-point Likert scale "The one-sample t-test" was applied to measure students' perceptions toward the cause of traffic accidents. The aim was to detect whether or not the averages calculated according to the Likert scale of 1–5 were statistically different from indecisive (3). As seen in Table 2, all variables have a weighted average 3 or above. This means that 8 out of 11 items had been found as effective on traffic accidents. Respondents are undecided about last 3 items. Accordingly, the most important causes of traffic accidents are "Availability of the drivers not complying with the traffic rules. (4.00)", "The technical and physical disruption of highways (3.75)", "The lack of traffic signs and warnings (3.73)", "Insufficient control (3.72)", "the lack of training of drivers (3.55)", "the fact that drivers do not know traffic rules (3.48)", "the lack of maintenance and repairs of the vehicles (3.43)" and "Other factors such as weather conditions and environmental factors (3.34). As understood from the table respondents are undecided about the causal effect of pedestrians on traffic accidents.

Table 2: "The One-Sample T-Test" (Test Value=3) for students' perceptions toward the causes of traffic accidents

S.NO	VARIABLE	AVERAGE
1	Traffic accidents are caused by the drivers not complying with the traffic rules.	4,00
2	Traffic accidents are caused by the technical and physical disruption of highways.	3,75
3	Traffic accidents are caused by the lack of traffic signs and warnings.	3,73

4	Traffic accidents are caused by insufficient control.	3,72
5	Traffic accidents are caused by the lack of training of drivers.	3,55
6	Traffic accidents are caused by the fact that drivers do not know traffic rules.	3,48
7	Traffic accidents are caused by the lack of maintenance and repairs of the vehicles.	3,43
8	Traffic accidents are caused by a number of factors such as weather conditions and environmental factors.	3,34
9	Traffic accidents are caused by the inattentiveness of pedestrians.	3,13*
10	Traffic accidents are caused by the fact pedestrians do not know the traffic rules	2,95*
11	Traffic accidents are caused by the lack of education of pedestrians.	2,94*

Scale: (1=strongly disagree, 2=disagree, 3=undecided, 4=agree, 5=strongly agree)

*It is statistically equal to 3 since *p* is greater than 0.05.

CONCLUTION:

There are 5 factors that can be effective on the occurrence of a traffic accident. These are mainly driver, pedestrian, vehicle, road defects and climate conditions. In general, driver mistakes are the most important factor, but the weight of these five factors may change depending on the unique conditions of the country. Therefore, while taking measures for traffic the importance of each factor should be emphasized according to specific conditions of the country. However, the success of traffic planning and hence implementation depends on the human factor consisting of authority, driver and pedestrian. We as the citizens should perceive and realize the crucial causes of traffic accidents for effective road safety measures. In this respect, the causes of traffic accidents perceived by Turkish students studying in a university of Northern Cyprus were researched in this study.

According to the research, the most important causes of traffic accidents are “availability of the drivers not complying with the traffic rules”, “the technical and physical disruption of highways”, “the lack of traffic signs and warnings”, “insufficient control”, “the lack of training of drivers”, “the fact that drivers do not know traffic rules”, “the lack of maintenance and repairs of the vehicles” and “other factors such as weather conditions and environmental factors.

The critical finding of the study reveals that most important cause of the traffic accidents is driver oriented. This overlaps with the existing literature.

The most interesting remark of the study is undecided perception of respondents on the impact of pedestrians on the traffic accidents.

REFERENCES

Akten, M. (2003), Determination of the existing potentials of some recreational areas in Isparta province. Suleyman Demirel Unıversity Turkish Journal of Forestry, Issue: A, Vol: 2, 115-132. (In Turkish).

Aktüel (2013), *Dünya trafik kazaları raporu!,* Available Worlwide: http://www.aktuel.com.tr/gundem/2013/03/18/dunya-trafik-kazalari-raporu; January 30, 2017.

Altunışık, R., R. Coşkun, S. Bayraktaroğlu & E. Yıldırım (2012*), Research Methods in Social Sciences, SPSS Applications*, Extended 7th edition, Sakarya. (In Turkish).

Field, Andy (2005), *Discovering Statistics Using SPSS*, Second Ed., SAGE Publications, Great Britain.

George, D. & Mallery, P. (2001) *SPSS for windows*. Third Edition, Allyn & Bacon/Pearson Education Company, USA.

Kalıpsız, A., (1981), *Statistical methods*. İstanbul University Faculty of Forestry. Issue Number: 2837. (In Turkish).

Machado-León, J. L., de Oña, J., de Oña, R., Eboli, L., & Mazzulla, G. (2016), "Socio-economic and driving experience factors affecting drivers' perceptions of traffic crash risk", *Transportation research part F: traffic psychology and behaviour*, 37:41-51.

Nordfjærn, T., Şimşekoğlu, Ö., Zavareh, M. F., Hezaveh, A. M., Mamdoohi, A. R., & Rundmo, T. (2014), "Road traffic culture and personality traits related to traffic safety in Turkish and Iranian samples", *Safety science*, *66*: 6-46.

Pallant, Julie (2005), *SPSS*, 2nd Ed., Open University Press, Sydney.

SARTRE 4, (2011). *European Road Users Risk Perception and Mobility*, The SARTRE 4 Survey.

Saruhan, Ş. C. & Özdemirci, A. (2005), *Science, Philosophy and Methodology*. Alkım Publisher. (In Turkish).

Smith, A., & Smith, H. (2017), "Perceptions of risk factors for road traffic accidents", *Advances in Social Sciences Research Journal*, *4*(1).

Sümer, N., Özkan, T., (2002), "Sürücü Davranışları, Becerileri, Bazı Kişilik Özellikleri ve Psikolojik Belirtilerin Trafik Kazalarındaki Rolü", *Türk Psikoloji Dergisi*, 17(50):1-22.

Şimşekoğlu, Ö., Nordfjærn, T., Zavareh, M. F., Hezaveh, A. M., Mamdoohi, A. R., & Rundmo, T. (2013), "Risk perceptions, fatalism and driver behaviors in Turkey and Iran", *Safety science*, 59: 187-192.

Şimşekoğlu, Ö., Nordfjærn, T., & Rundmo, T. (2012), "Traffic risk perception, road safety attitudes, and behaviors among road users: a comparison of Turkey and Norway", *Journal of Risk Research*, *15*(7): 787-800.

Özen, E., Genç, E., & Kaya, Z. (2014) "Remark on the Causes of Traffic Accidents and Traffic Awareness: Examples of Usak Province", *Optimum Journal of Economics and Management Sciences,* 1(1): 1-19. (In Turkish).

TÜİK (2016), *Karayolu Trafik Kaza İstatistikleri, 2015,* Türkiye İstatistik Kurumu – Emniyet Genel Müdürlüğü Haber Bülteni, Sayı: 21611, 19 Temmuz 2016; Available Online: http://www.tuik.gov.tr/PreHaberBultenleri.do?id=21611, January 30, 2107.

World Health Organization (2015), *Global Status Report On Road Safety 2015,* WHO Library Cataloguing-in-Publication Data, Italy.

Yilmaz, Veysel & H. Eray Çelik (2006), "Risky Driving Attitudes And Self-Reported Traffic Violations Among Turkish Drivers: The Case Of Eskişehir", *Doğuş Üniversitesi Dergisi*, 7 (1):127-138.

Zhang, G., Yau, K. K., Zhang, X., & Li, Y. (2016) "Traffic accidents involving fatigue driving and their extent of casualties", *Accident Analysis & Prevention*, 87: 34-42.