Attitudes towards Safety Regulation and Job Satisfaction in Commercial Motor Vehicle Drivers

Actitudes hacia la regulación de la seguridad y la satisfacción laboral en los conductores de vehículos comerciales

Juan Carlos Oyanedel\textsuperscript{a}, Andrés Mendiburo-Seguel\textsuperscript{a}, Silvia Da Costa\textsuperscript{b}, Andrés Rubio\textsuperscript{a,c}, Eduardo Acuña-Durán\textsuperscript{a}, & Eliseo Lara-Órdenes\textsuperscript{a}

\textsuperscript{a}Universidad Andrés Bello, Santiago, Chile
\textsuperscript{b}Universidad del País Vasco, San Sebastián, España
\textsuperscript{c}Universidad Diego Portales, Santiago, Chile

This paper presents a study about the relationship between attitudes toward safety regulations and job satisfaction among commercial motor vehicle operators in Chile. 318 truck drivers were recruited during 2012. Results show that the principal predictor of attitudes toward safety regulations is job satisfaction, after time driving in this occupation. These findings suggest that trust in work safety is relevant for a risky profession, as the studied.

Keywords: traffic safety, job satisfaction, safety, commercial vehicles, truck drivers.

Este artículo presenta un estudio sobre la relación entre las actitudes hacia la regulación de la seguridad y la satisfacción laboral en los conductores de vehículos comerciales que operan en Chile. Fueron reclutados 318 conductores de camiones durante 2012. Los resultados muestran que el principal predictor de las actitudes hacia la regulación de la seguridad es la satisfacción laboral, después de un tiempo conduciendo en esta ocupación. Estos hallazgos sugieren que la confianza en la seguridad del trabajo es relevante en una profesión riesgosa como la estudiada.

Palabras clave: seguridad vial, satisfacción laboral, seguridad, vehículos comerciales, conductores de camiones.

Agradecimientos: Se agradecen los financiamientos de Conicyt PIA CIE 160009, Fondecyt 1181533 y Fondecyt 3210780.

Contacto: J. C. Oyanedel. Facultad de Educación y Ciencias Sociales, Universidad Andrés Bello, Fernández Concha 700, Las Condes, Santiago, Chile. Correo electrónico: juan.oyanedel@unab.cl

Cómo citar: Oyanedel, J. C., Mendiburo-Seguel, A., Da Costa, S., Rubio, A., Acuña-Durán, E., & Lara-Órdenes, E. (2020). Attitudes towards Safety Regulation and Job Satisfaction in Commercial Motor Vehicle Drivers. Revista de Psicología, 29(2), 1-8. http://dx.doi.org/10.5354/0719-0581.2020.60807
Introduction

Job satisfaction is a pleasurable or positive emotional state resulting from the appraisal of one’s job or job experiences (Locke, 1976). Job satisfaction is a topic of study interest in different areas, such as education (Klassen & Chiu, 2010; Menghi & Oros, 2014; Pedraza Melo, 2020), hotel professionals (Nadiri & Tanova, 2010) and health workers (Álvarez Gómez, Mori Vara, & Gómez Sánchez, 2019; Hayes, Bonner, & Pryor, 2010; Marín Samanez & Placencia Medina, 2017), among others. However, in drivers of commercial vehicles, there is scarce research on this subject. In one of the few studies in this topic, De Croon, Blonk, De Zwart, Frings-Dresen, and Broersen (2002) found that the greater workload is a predictor of dissatisfaction. Job satisfaction refers to affects and judgments people make about their job (Cuadra Peralta & Veloso Besio, 2007), how much it is valued and whether it is a source of pleasure (Aziri, 2011).

This subjective dimension of work is of relevance since it stands as a source of identity of individuals (Hulin, 2002) and predicts work performance (Judge, Thoresen, Bono, & Patton, 2001; Mora Romero & Mariscal Rosado, 2019). Different explanatory factors of job satisfaction have been examined. In particular, the influence of elements related to the context of the work has been highlighted, such as the labour situation, evaluating the influence of the type of workday (Huang, Chen, Rogers, & Krauss, 2003), the salary received (Judge, Piccolo, Podsakoff, Shaw, & Rich, 2010) or the type of contract (Gamero, 2007). The relationship between job satisfaction and satisfactory workplace safety has also been examined (Gyekye, 2005).

Considering the risks involved in the activity of commercial vehicle drivers (Bidasca & Townsend, 2014), this article seeks to investigate attitudes towards road safety (Douglas & Swartz, 2009) as an explanatory component of job satisfaction. We will examine not the relationship between safety at work and job satisfaction, but the extent to which positive attitudes towards road safety norms, standards, or rules (i.e., beliefs about their effectiveness, beliefs that are applied effectively and the positive assessment of these safety standards) are positively associated with job satisfaction. We postulate that a positive view of safety standards will minimize the perception of occupational hazards associated with driving commercial vehicles and that these beliefs will help to have a more positive view of work in the transport sector. Drivers of commercial vehicles probably share attitudes and behaviours of animosity towards risk, as people in general (Kahneman, 2012), we postulate that a positive attitude towards road regulations will help to evaluate their work as safe. It is expected that favourable attitudes towards road regulations will enhance job satisfaction, controlling the previously described positive working conditions (contract or more stable employment, higher incomes, etc.) associated with job satisfaction.

Method

Population and sample

The population of the study corresponds to 8,111 truck drivers, affiliated to the Trade Union of Chilean Transport (Sindicato de Transportes de Chile) and to the list of those who work in the port of Valparaiso, Chile. The questionnaire Characterization of Truck Drivers was applied by trained interviewers to 318 drivers of commercial vehicles in Chile, belonging to the 15 regions, during 2012, with a sampling error of 5.2% for the 95% confidence level. The average age of respondents was 46.5 years (SD = 10.5), with 99.7% men. Sampling was carried out using a non-random, convenience sampling method. All participants were given an informed consent, which they had to sign prior to participation, where they were informed of the study objectives and that the data processing would be confidential. The study was approved by the Comité de Bioética of Facultad de Educación y Ciencias Sociales (Universidad Andrés Bello, Santiago, Chile).

Instruments

Job Satisfaction Scale. This scale was developed by Warr, Cook, & Wall (1979) and translated into Spanish at the Instituto de Seguridad e Higiene en el Trabajo del Ministerio de Trabajo y Asuntos Sociales de España (Pérez & Fidalgo, 1995). The scale included 15 statements, related to intrinsic and extrinsic factors of job satisfaction. In this study, the internal consistency of this scale was high, reaching a very satisfactory level of .88 for Cronbach’s alpha statistic.
Scale of Attitudes towards Road Regulation. This scale was developed by Douglas & Swartz (2009), being translated and validated into Spanish by Oyanedel, Villalobos, Mella, & Plaza (2013). The scale is composed of 13 statements, distributed in three factors: a) enforcement of the rule (example of item is the current road safety rules are well enforced); b) positive attitudes towards road safety (example of inverted item is the road safety rules have become very complicated); and c) effectiveness of the rules (example of item is rules that regulate how long a driver can drive are good for road safety). The total of the items on the scale the agreement with road rules. In this study, both the general scale and the dimensions have adequate psychometric properties, with Cronbach’s alpha for the first factor of .79, for the second of .72 and for the third of .68, while for the general scale of .78.

Job stability. To measure this construct, two variables were included. The first one looks at the number of years in the current company and the second at the number of jobs in the last three years.

Working conditions. Number of hours and days driven daily was asked, as well as whether the company works by shifts or shift change. In the latter case, the answers were coded as 1 = if you work in shifts and 0 = if you do not work in shifts.

Employment contract. Respondents were asked whether they had an employment contract as part of their work as drivers of commercial vehicles (1 = yes, 0 = no).

Income. An ordinal measure of income was used, where respondents were categorized into the following tranches: “less than 46,000”, “46,000 to less than 115,000”, “115,000 to less than 230,000”, “230,000 to less than 350,000”, “350,000 to 460,000”, “460,000 to 580,000”, “580,000 to 700,000”, “700,000 to 800,000”, “800,000 to 930,000” and “more than 930,000 pesos”.

Age and years or work. Included age and years working in the transport sector.

Data analysis

First, descriptive analysis was carried out (means and frequencies). Secondly, correlations between the variables were examined and a multiple linear regression was carried out with job satisfaction as predicted variable and attitudes towards road safety and the work factors (stability, working conditions, income), age and years of work as predictors variables. Statistical package IBM-SPSS v. 20 was used for data analysis. Finally, a mediation analysis was carried out based on structural equation modeling (SEM), in order to test the direct and indirect effects of the control variables included in the multiple regression analysis on the dependent variable (job satisfaction), with the attitude towards road safety as a mediating variable.

Results

The average for job satisfaction was 5.3 (SD = 0.979), showing a higher satisfaction with job as main tendency, because the scale oscillates between 1 and 7 and mean was well above theoretical mean of 4. The scale of attitudes towards road safety has an average of 5.0 (SD = 0.807), evidencing an important agreement with the existing traffic regulations in Chile. The drivers of commercial vehicles have been on average, 6.0 years (SD = 6.399) in the company where they are working and have had 1.7 jobs (SD = 1.619) in the last 3 years. In turn, on average, participants work 8.9 hours a day (SD = 3.88) and 23.5 days a month (SD = 5.06), having spent a mean of 21.3 years in the transport sector (SD = 10.844).

On the other hand, 86.2% of those surveyed have a work contract and only 18.6% work in shifts. Income is concentrated in sections 460,000 to 580,000 (30.0%) and 580,000 to 700,000 (25.4%).

Bivariate correlations indicate that job satisfaction is associated as expected with attitudes, seniority, and better work conditions, like driving fewer hours per day, working fewer hours per month, shift work and higher incomes. By respect to age, the older the worker, the longer he or she works in the sector. The more time in the transport sector, the more time in the company and the fewer days worked, means that they have better working conditions. If the worker doesn’t have a contract, he drives more hours, work more days, and earn less. People who do not work shifts are those who have been in the transport sector for the least number of years, work fewer days per month and are younger.
The correlations of the three dimensions of the Road Regulation Scale showed that the agreement with the enforcement of the rule or the application of the norm is associated with job satisfaction, as well as with seniority, this means with years working in the sector, years in the company and age. While agreement with effectiveness of the rules, or the effectiveness of regulatory standards, is associated with the other two dimensions of scale and job satisfaction, it is not associated with any of the other variables. The dimension of attitudes towards road safety it is not associated with satisfaction or other variables.

When introducing variables as predictors of job satisfaction, it is possible to observe that the regression is statistically significant, $F(10,277) = 9.916, p < 0.001$, explaining 23.7% of the variance of the dependent variable.

The variables years in the transport sector, number of jobs in the last three years, having a work contract, age, whether the company works in shifts and years in the company do not significantly influence the prediction of job satisfaction, although the last two showed significant bivariate correlations. On the other hand, the overall score of the scale of attitudes towards road safety, higher income, fewer daily driving hours and days worked per month are significant predictive factors. The first two are positively associated with job satisfaction, while the other two are negatively associated with job satisfaction. In other words, the greater the agreement with the traffic rules and the higher salary are specifically related to job satisfaction. At the opposite, higher levels of workload are associated with lower job satisfaction. Atitudes towards road safety is the most important predictor of job satisfaction ($B = 0.234$), after the number of hours driven daily ($B = -0.278$).
Table 3

Correlations between predictors and job satisfaction

|                    | 1     | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    |
|--------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1. Job satisfaction | .25** | .33** | -.03  | .18** | .07   | .17** | -.02  | -.11  | -.31** | -.25** | .14   | .09   | .16** |
| 2. Attitudes towards road safety: total | .82** | .65** | .67** | .06   | .02   | -.01  | .05   | .02   | -.04  | .06   | .03   | -.07  |
| 3. Dimension rule enforcement | .28** | .39** | .15** | .12   | -.05  | .01   | -.01  | -.07  | .02   | .15** | -.07  |
| 4. Dimension positive attitudes towards road safety | .14*  | .01   | -.05  | .05   | .07   | .04   | -.11  | .03   | -.06  | -.02  |
| 5. Dimension effectiveness of rule | -0.07 | -0.07 | -0.02 | .06   | -0.01 | -0.02 | .08   | -0.06 | -0.07 |
| 6. Years in the transport sector | .34** | -.17** | -.05  | .11   | .03   | -.12  | .81** | -.03  |
| 7. Years in the company | -.26** | -.17** | -.08  | -.06  | -.05  | .36** | .09   |
| 8. Jobs in the last 3 years | -.06  | -.02  | -.01  | .07   | -.07  | -.01  |
| 9. Work contract | .14   | .15** | .02   | -.06  | -.11  |
| 10. Hours you drive daily | -.17** | -.04  | .01   | -.01  |
| 11. Days you work in the month | -.19** | .08   |
| 12. Company works by shifts | -.09   |
| 13. Age | 1   |
| 14. Income | 1   |

Note. * p < .05, **p < .01.

Table 4

Multiple Linear Regression

|                     | B     | SD    | Standardised coefficients β | t     | Sig. | B Confidence Interval 95.0% |
|---------------------|-------|-------|-------------------------------|-------|------|----------------------------|
|                     | Low CI| High CI|                               |       |      |                             |
| (Constant)          | 4.674 | .604  |                               | 7.74  | .001 | 3.486                      | 5.862 |
| Attitudes towards road safety | .292 | .066  | .234                          | 4.46  | .001 | .163                       | .421  |
| Years in the transport sector | .001 | .009  | -.003                         | -.03  | .975 | -.001                      | .177  |
| Years in the company | .010 | .009  | .066                          | 1.12  | .266 | .008                       | .028  |
| Jobs in the last 3 years | -.009 | .032  | -.016                         | -.29  | .772 | -.001                      | .026  |
| Work contract       | -.160 | .161  | -.054                         | -.99  | .321 | -.477                      | .157  |
| Hours you drive daily | -.072 | .014  | -.278                         | -.514 | .001 | -.099                      | .044  |
| Days you work in the month | -.043 | .011  | -.210                         | -3.82 | .001 | -.066                      | -.021 |
| Company works by shifts | .177 | .137  | .069                          | 1.30  | .196 | -.092                      | .447  |
| Age                 | .008  | .009  | .081                          | .85   | .399 | -.001                      | .025  |
| Income              | .087  | .035  | .134                          | 2.51  | .013 | .019                       | .155  |

To test the direct and indirect effects of the variable hours of daily driving, days of driving in the month and age and income, on the variable job satisfaction, a MIMIC model was built, which is presented in figure 1, where the variable attitude towards road safety acted as a mediating variable.

The results of the analysis (see table 5) show there are no relevant mediation effects. All the variables present significant direct effects on job satisfaction, except for the age variable, which has a significant positive indirect effect on job satisfaction, mediated by attitude towards road safety. However, the total effect of age on job satisfaction was not significant. On the other hand, the variables hours of daily driving and days of driving in the month, present significant direct and total negative effects, while, in turn, the variables attitude...
towards road safety and income, present significant direct and total positive effects on job satisfaction.

Figure 1. MIMIC Model of job satisfaction.

Table 5
Mediation effects MIMIC model of job satisfaction

| Variable/Factor                        | Total effect | Total indirect effect | Specific indirect effect ATRS → Job satisfaction | Direct effect |
|----------------------------------------|--------------|-----------------------|--------------------------------------------------|---------------|
| Attitudes towards road safety          | .418**       | .002                  | .418**                                           |               |
| Hours you drive daily                  | -.264**      | .002                  | -.266**                                          |               |
| Days you work in the month             | -.233**      | -.059                 | -.174**                                          |               |
| Age                                    | .113         | .087**                | .087**                                           | .026          |
| Income                                 | .161**       | -.025                 | -.025                                            | .187**        |

**p < .01.

Discussion

This study results are congruent with the few studies on job satisfaction in drivers of commercial vehicles: higher workload is a predictor of dissatisfaction (De Croon et al., 2002; Díaz Mamani & Choque Cahuantico, 2019; Gavilanes Gavilanes, 2020). At the same time, it is also consistent with research in other areas that indicates that better incomes or salary are associated with job satisfaction (Judge et al., 2010; Mora Romero & Mariscal Rosado, 2019). Results also showed that agreeing with attitudes towards road safety specifically predict the job satisfaction of these workers. Ultimately, the safety of commercial vehicle drivers underlies their activity. This type of attitude facilitates safe driving practices and, as the literature suggests, safety is related to job satisfaction (Gyekye, 2005). Results also showed that job satisfaction was strongly associated with the application dimension of the standard or the successful enforcement of the rule, and, to a lesser extent, with the effectiveness of the regulatory standards. The agreement that road safety rules or norms are actually enforced and that they are effective is likely to decrease negative affectivity, particularly anxiety about the risk of accident, as well as increase the sense of control in the work of the professional driver. Both psychological processes are associated with well-being and job satisfaction (Warr, 2007), that are strongly interrelated (Unanue, Gómez, Cortez, Oyanedel, & Mendi-buro-Seguel, 2017). This profile suggest that this are two aspects or normative facets to be reinforced by prevention campaigns and formation. The results suggest that making drivers aware of successful application of the rules of road regulation as well as reporting on their effectiveness will enhance their job satisfaction, as well as probably
increasing their prevention behaviours. In this vein, Iversen & Rundmo (2004) study showed that positive attitudes towards traffic safety issues influenced lower involvement in risk behaviour in traffic, especially attitudes towards rule violations and speeding. While years in the company, years in the transport sector and age were positively associated with agreeing that standards are successfully applied, belief in the effectiveness of the norms of road safety did not show this profile. This means that mere experience and learning helps to reinforce belief in the application of norms of road safety. However, experience did not increase agreement with the effectiveness of norms of road safety. In other words, a persuasive effort through information campaigns would seem to be necessary to reinforce beliefs in the effectiveness of road regulation rules. On the other hand, in addition to information, systematic training processes would be necessary for people working in the sector to acquire habits of applying regulatory norms, since it is known that mere information is not sufficient and that it is necessary for it to be complemented with the acquisition of practices, their evaluation and maintenance (Hall & Rossi, 2008).

Although it is necessary to state that one of the limitations of this study is the lag between the time of data collection, in 2012, and the time of presentation of this article, at the same time it is possible to argue that this weakness is largely part mitigated by its originality and relevance. There is little literature on the matter, mainly in populations of truck drivers from Latin American cultures. Consequently, it is considered that this limitation does not represent a sufficient reason to discard the important new empirical evidence provided by this research and that it may contribute to future research.

References

Álvarez Gómez, L., Mori Vara, P., & Gómez Sánchez, C. (2019). Síndrome de burnout y satisfacción laboral en enfermeras españolas en tiempos de crisis económica. Metas de Enfermería, 22(4), 20-58. https://doi.org/fp9s

Gyekye, S. A. (2005). Worker’s perceptions of workplace safety and job satisfaction. International Journal of Occupational Safety and Ergonomics, 11(3), 291-302. https://doi.org/10.1080/10803548.2005.11076650

Aziri, B. (2011). Job satisfaction: A literature review. Management Research and Practice, 3(4), 77-86. https://bit.ly/2XnlxzD

Bidascà, L. & Townsend, E. (2014). Gestión del riesgo vial de las flotas de furgonetas. Bruselas, Bélgica: Consejo Europeo de Seguridad del Transporte.

De Croon, E. M., Blonk, R., De Zwart, B. C. H., Frings-Dresen, M., & Broersen, J. (2002). Job stress, fatigue, and job dissatisfaction in Dutch lorry drivers: Towards an occupation specific model of job demands and control. Occupational and Environmental Medicine, 59(6), 356-361. https://doi.org/10.1136/oem.59.6.356

Cuadra Peralta, A. & Veloso Besio, C. (2007). Liderazgo, clima y satisfacción laboral en las organizaciones. Revista Universum, 2(22), 40-56. https://doi.org/drnv68h

Díaz Mamani, G. & Choque Cahuantico, E. Y. (2019). Motivación y satisfacción laboral en conductores de transporte de carga pesada (Tesis de grado). Universidad Nacional de San Agustín de Arequipa, Arequipa, Perú. Retrieved from https://bit.ly/3bqI95Y

Douglas, M. A. & Swartz, S. M. (2009). A multi-dimensional construct of commercial motor vehicle operators’ attitudes toward safety regulations. The International Journal of Logistics Management, 20(2), 278-293. https://doi.org/10.1108/09574090910981341

Gamero Burón, C. (2007). Satisfacción laboral y tipo de contrato en España. Investigaciones Económicas, 31(3), 415-444. Retrieved from https://bit.ly/3i6cX9i

Nadiri, H. & Tanova, C. (2010). An investigation of the role of justice in turnover intentions, job satisfaction, and organizational citizenship behavior in hospitality industry. International Journal of Hospitality Management, 29, 33-41. https://doi.org/10.1016/j.ijhm.2009.05.001

Hall, K. L. & Rossi, J. S. (2008). Meta-analytic examination of the strong and weak principles across 48 health behaviors. Preventive Medicine, 46(3), 266-274. https://doi.org/10.1016/j.ypmed.2007.11.006

Hayes, B., Bonner, A., & Pryor, J. (2010). Factors contributing to nurse job satisfaction in the acute hospital setting: A review of recent literature. Journal of Nursing Management, 18(7), 804-814. https://doi.org/10.1111/j.1365-2834.2010.01131.x

Huang, Y. H., Chen, P. Y., Rogers, D. A., & Krauss, A. D. (2003). Role of workplace safety: A revisit of the relationship between job satisfaction and employment status. Work, 21, 251-256. Retrieved from https://bit.ly/3nsE7Yl
Hulin, C. (2002). Lessons from industrial and organizational psychology. In J. M. Brett & F. Drasgow (Eds.), The psychology of work. Theoretically based empirical research (pp. 3-22). Mahwah, New Jersey: Lawrence Erlbaum Associates.

Iversen, H. H. & Rundmo, T. (2004). Attitudes towards traffic safety, driving behaviour and accident involvement among the Norwegian public. *Ergonomics*, 47(5), 555-72. https://doi.org/10.1080/00140130410001658709

Judge, T. A., Thoresen, C. J., Bono, J. E., & Patton, G. K. (2001). The job satisfaction-job performance relationship: A qualitative and quantitative review. *Psychological Bulletin*, 127(3), 376. https://doi.org/10.1037/0033-2909.127.3.376

Judge, T. A., Piccolo, R. F., Podsakoff, N. P., Shaw, J. C., & Rich, B. L. (2010). The relationship between pay and job satisfaction: A meta-analysis of the literature. *Journal of Vocational Behavior*, 77, 157-167. https://doi.org/10.1016/j.jvb.2010.04.002

Kahneman, D. (2012). Pensar rápido, pensar despacio. Barcelona, España: Debate.

Klassen, R. M. & Chiu, M. M. (2010). Effects on teachers’ self-efficacy and job satisfaction: Teacher gender, years of experience, and job stress. *Journal of Educational Psychology, 102*(3), 741-756. https://doi.org/10.1037/a0019237

Locke, E. A. (1976). The nature and causes of job satisfaction. In M. D. Dunnette (Ed.), *Handbook of industrial and organizational psychology* (pp. 1297-1349). Chicago, Illinois: Rand McNally.

Marín Samanez, H. S. & Placencia Medina, M. D. (2017). Motivación y satisfacción laboral del personal de una organización de salud del sector privado. *Horizonte Médico, 17*(4), 42-52. https://doi.org/10.24265/horizmed.2017.v17n4.08

Menghi, M. S. & Oros, L. B. (2014). Satisfacción laboral y síndrome de burnout en docentes de nivel primario. *Revista de Psicología, 10*(20), 47-59. Recovered from https://bit.ly/2LKntcf

Mora Romero, J. L. & Mariscal Rosado, Z. M. (2019). Correlación entre la satisfacción laboral y desempeño laboral. *Revista Dilemas Contemporáneos: Educación, Política y Valores, 31*(Especial). https://doi.org/10.46377/dilemas.v31i1.1307

Gavilanes Gavilanes, J. R. (2020). Satisfacción laboral y síndrome de desgaste profesional en conductores de las compañías de transporte de carga extra pesada del cantón Salcedo (Master thesis). Universidad Técnica de Ambato, Ambato, Ecuador. Retrieved from https://bit.ly/2LG38Tq

Oyanedel, J. C., Villalobos, J., Mella, C., & Plaza, A. (2013). Validación en español de la escala de actitudes hacia las regulaciones viales en conductores de vehículos comerciales. *Securitas Vialis, 16*, 83-96.