

A comparison of reported dangerous driving behavior by drivers with and without a CDL



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Vision Zero

“Vision Zero is a strategy to eliminate all traffic fatalities and severe injuries, while increasing safe, healthy, equitable mobility for all.”

<https://visionzeronetwork.org/about/what-is-vision-zero/>



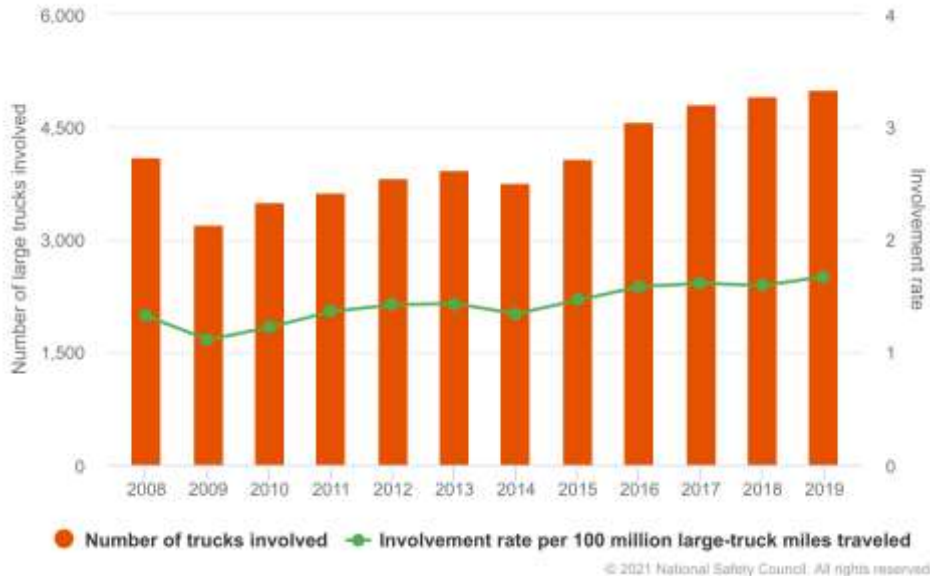
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Traffic Safety

Large-truck involvement in fatal crashes



- “Large Trucks” (CDL) account for 4% of all registered vehicles (2019).
- “Large Trucks” (CDL) account for a disproportionate number of fatal crashes (10%).
- Trend is increasing in term of both number and rate of involvement.

Large Trucks (NSC): <https://injuryfacts.nsc.org/motor-vehicle/road-users/large-trucks/>

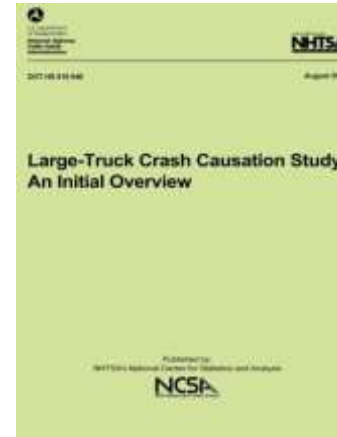
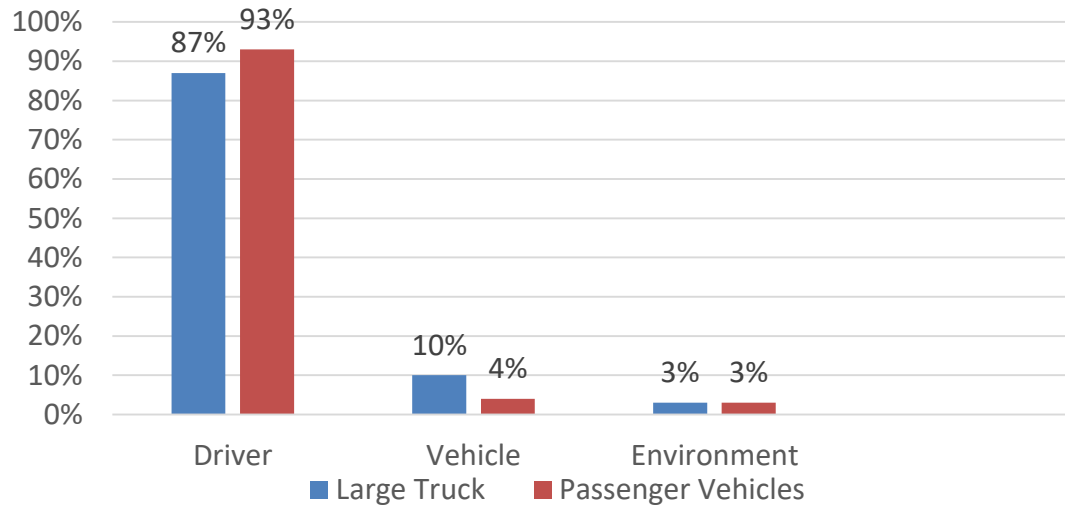


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Driver Behaviors



Source: Large Truck Crash Causation Study, 2005

Driver behavior is the most frequent **“contributor”** for fatal crashes.



Study Objectives

- To compare **risky driving behaviors** between commercial drivers and the general driving population.
- Explore possible explanations.



Sample Description

- N=1210, 615 commercial and 595 non-commercial drivers.
- Ages 18-65 (M=30.17, SD=9.73).
- Quota in each sample:
 - 50% female.
 - Drove vehicles every day or most of the days.
 - 40% drivers had at least one crash.
 - 40% drivers had at least one ticket.



Survey Method

- Data was collected through anonymous **web-based survey** by Qualtrics.
- Participants reported demographic information, general driving history (miles driven, license age), crashes and tickets.
- Two questionnaires (DDDI and DBQ) measured **self-reported** risky driving.

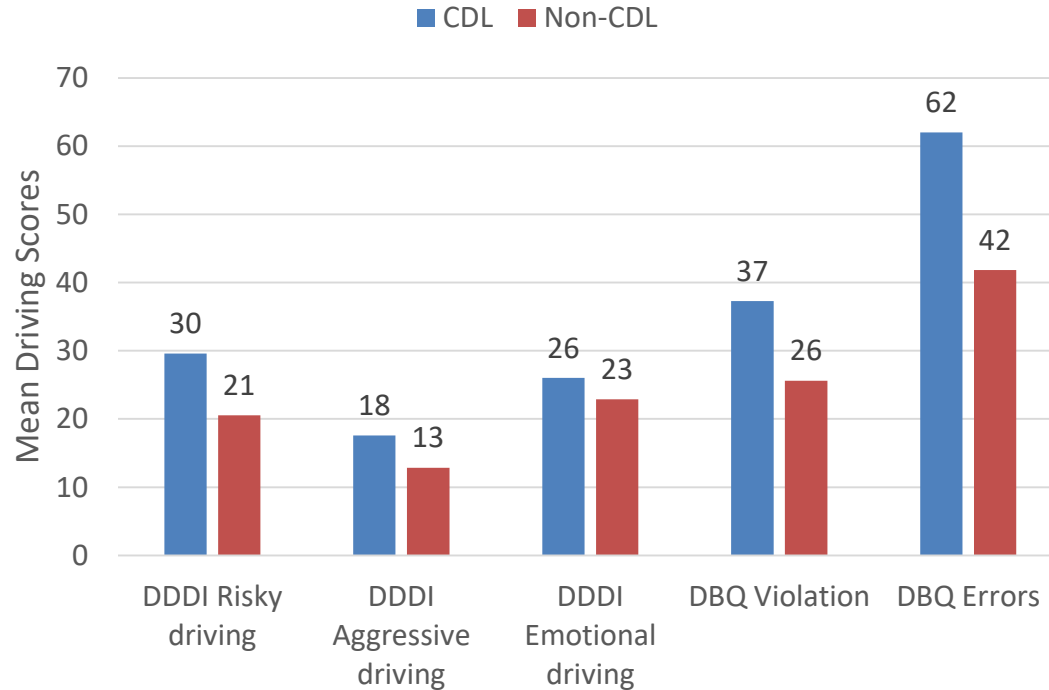


Dangerous Driving Measures

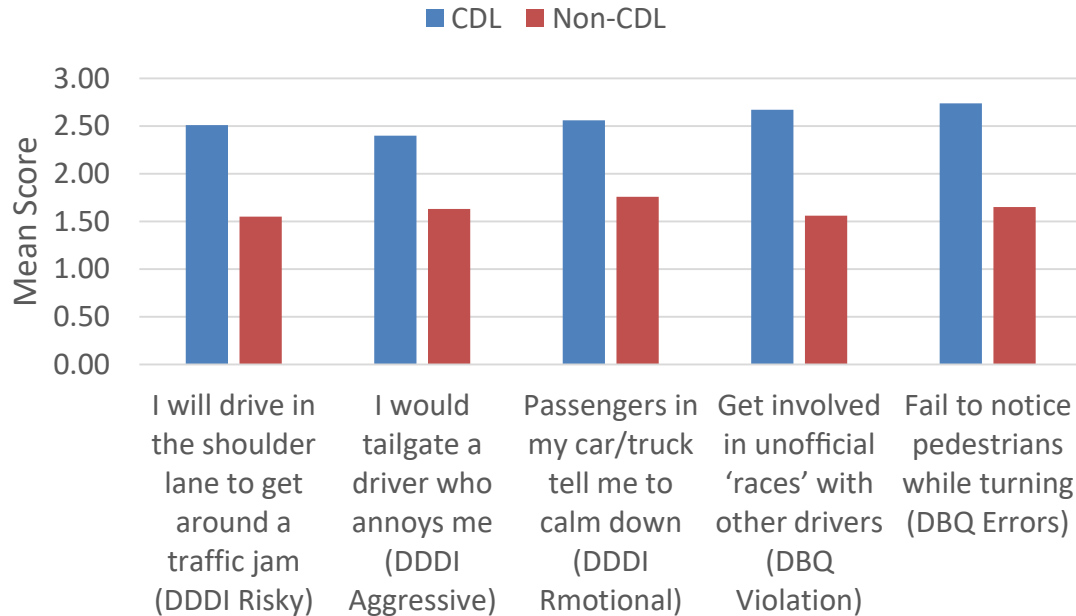
Scale	DDDI (Dula & Ballard, 2003)	DBQ (Reason et al., 1990)
Items	28 questions	36 questions
Scale	5-point Likert scale (1=almost never, 5=almost always).	5-point Likert scale (1=almost never, 5=almost always).
Behaviors Measured	<ul style="list-style-type: none">• DDDI Risky Driving ("I will cross double yellow lines to see if I can pass a slow-moving car.")• DDDI Aggressive Driving ("I verbally insult drivers who annoy me.")• DDDI Negative Emotional Driving ("I drive when I am angry or upset.")	<ul style="list-style-type: none">• DBQ Violations ("Deliberately disregard the speed limit.")• DBQ Errors ("Ignore a yield sign and almost collide.")



Difference between CDL and Non-CDL



Difference between CDL and Non-CDL



Explanatory Factors

Controlled

- Quota
 - Age
 - Gender
- Covariate
 - License Year
 - Annual mileage

Other Factors

- Routes
- Weather
- Time of day (fatigue)
- **Emotional Intelligence**

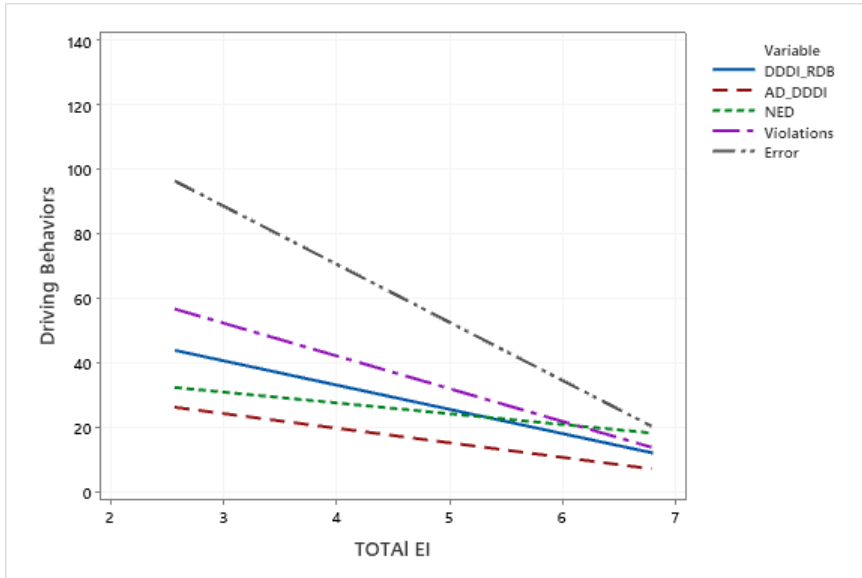


Emotional Intelligence

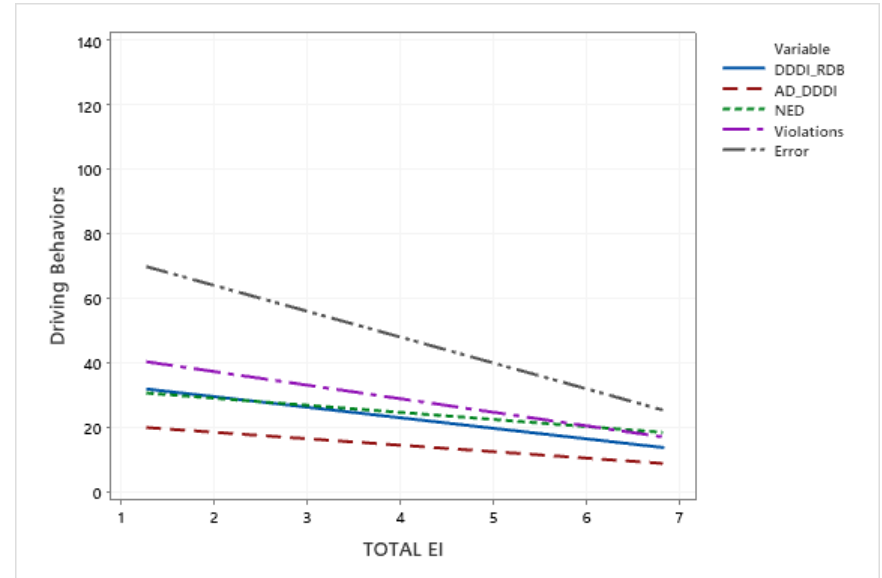
The ability to **understand** one's own and others' emotions, **differentiate** between them, and **use** them to guide their thoughts and actions. *Mayer et al. (1990)*



EI and Driving Behaviors Correlation



CDL



Non-CDL



Conclusion

- CDL disproportionate % of crash fatalities.
 - Less license age and less mileage is more risky behavior.
- CDL drivers report more dangerous driving than non-CDL.
 - Risky, aggressive, and emotional driving, violations and errors.
- What explains these differences?
 - External factors: Characteristics of trips (route, duration etc.)
 - Internal factors: Characteristic of drivers (EI).
- Driver education programs may be able to address EI.

