



# Vehicle Safety Innovation and Enabling Technology

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Presentation to



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# Method

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1. Study eight private fleets that have invested in safety technology and management practices
2. Conduct on-site visits with senior safety executives
3. Survey the company management
4. Survey company drivers
5. Conduct literature search on truck safety

# Safety Technologies Examined

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- Stability control
- Lane keeping/departure
- Over speed alert system
- Adaptive cruise control
- Electronic log book
- Forward collision control and braking
- Automatic transmission
- Disc brakes
- In-cab facing cameras
- Forward facing cameras

# Company survey

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- Truck and trailer inventory
- Product information
- Driver information
- Operations (terminals, plants, operating region)
- Safety technologies used
- Safety protocol and training
- DOT reportable crash history
- Safety technology adoption history
- Safety policy adoption history

# Truck Driver Survey

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- Driver information: Age, gender, work status, driving history, work characteristic, knowledge of safety policy.
- Thoughts, feelings and attitudes with regards to driving truck
- Driver perceptions of the value and priority given to safety by the employer
- Driver opinion on the supervisor effectiveness related to safety.
- Driver perceptions of truck safety policies and safety communication within the organization.
- Driver satisfaction with company, policies and benefits

# Truck Driver Survey

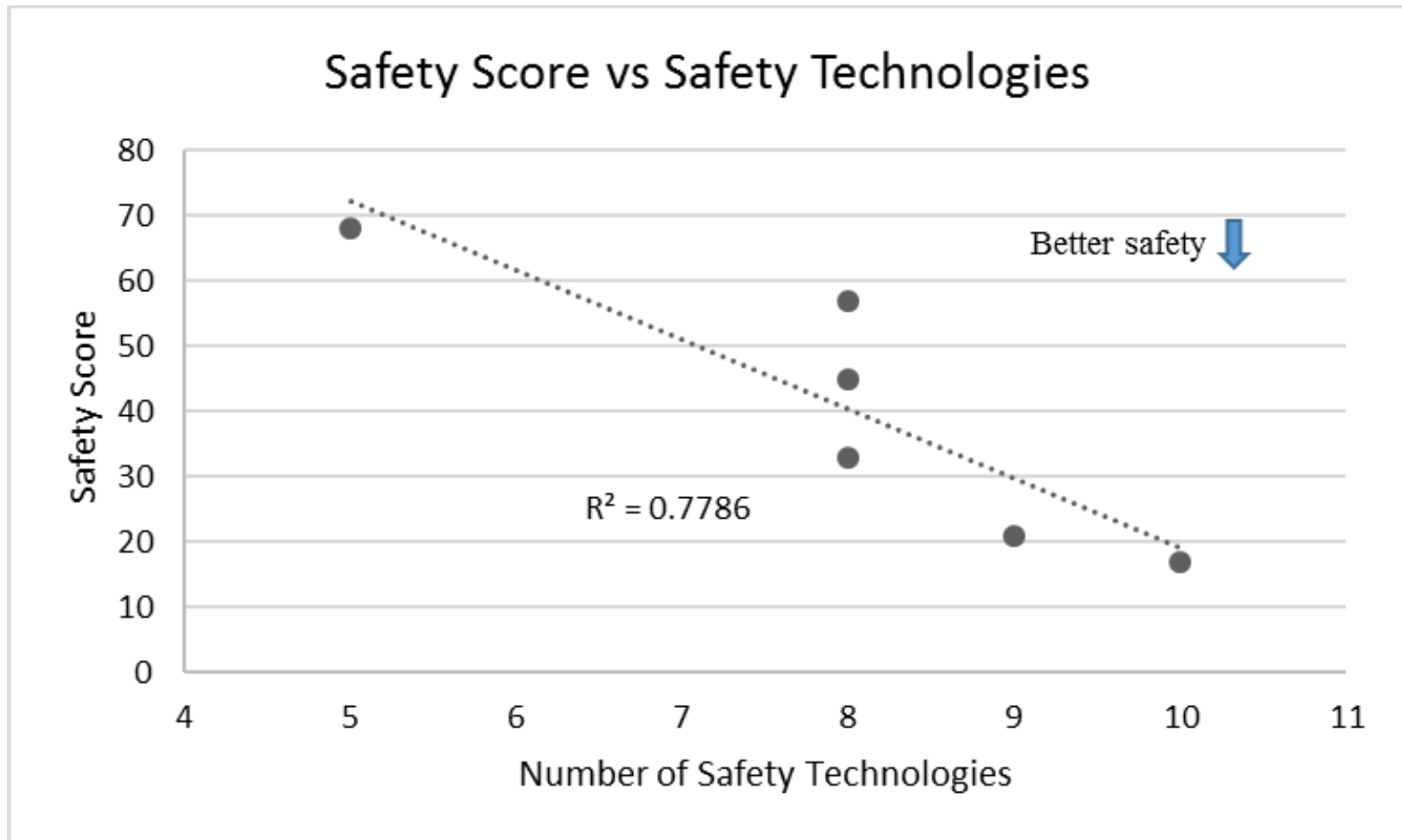
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- Use of a cell phone and other behaviors while driving (eating, drinking, GPS maps, reaching for snacks, seat belt use)
- Driver perceptions on in-vehicle technology – familiarity with the technology, acceptance of technology, distraction related to safety technology
- Driver assessment of effectiveness of technology

# On-board safety technologies

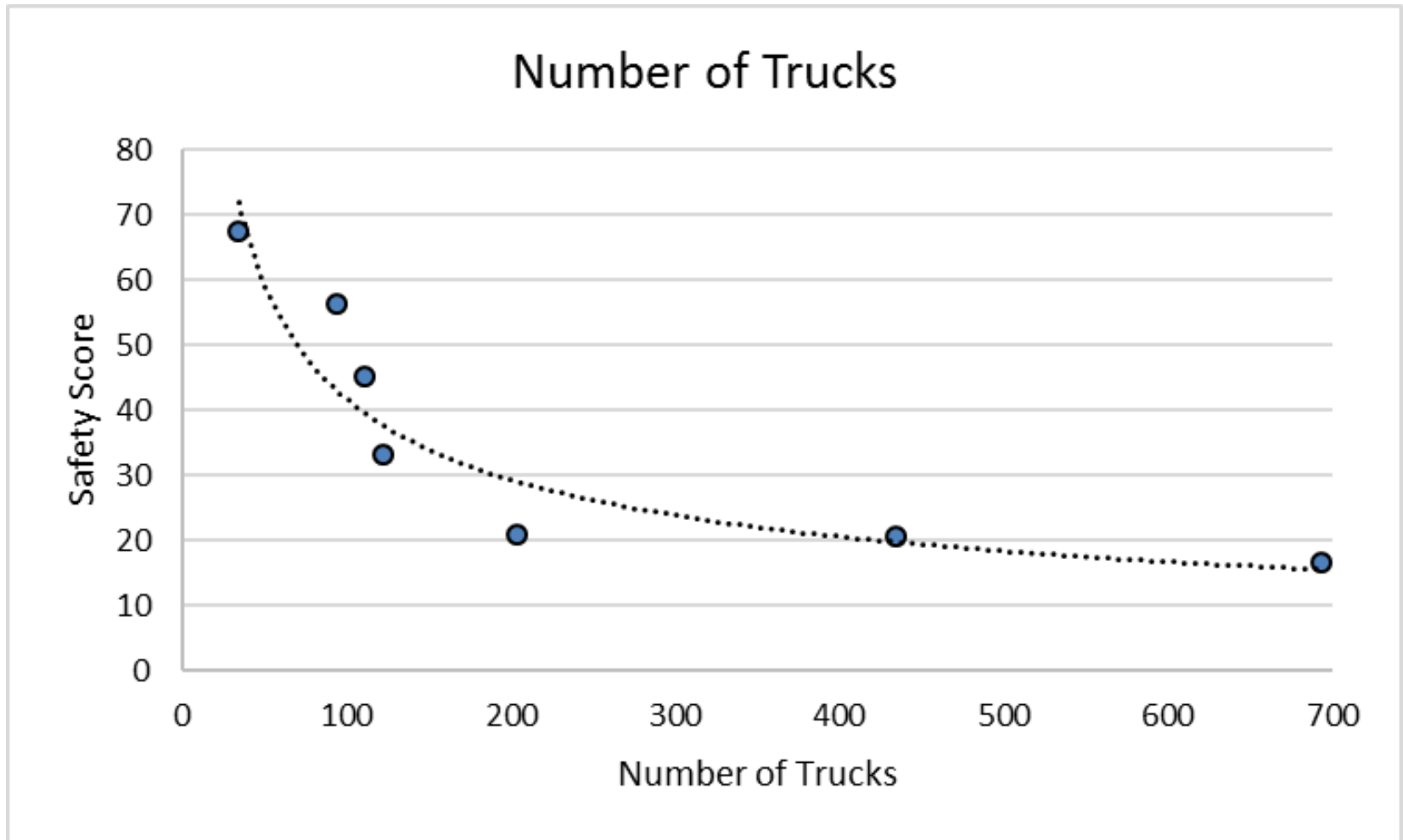
Safety Technology	
Driver + Management	Driver only
Stability control	Lane keeping/departure
Over-speed alert system	Adaptive cruise control
Forward control and crash mitigation braking	Automated transmissions
Electronic log book	Disc brakes
In-cab cameras	
Forward facing cameras	

# Number of safety technologies per truck





# Number of trucks in fleet



# Driver assessment of technology

Technology	Accepted	Satisfied	Rank
<b>Highly Effective Technology</b>			
Disk Brakes	91%	86%	1
Auto Transmission	79%	71%	2
Electronic Log Book	91%	69%	3
<b>Effective Technology</b>			
Stability control	74%	59%	4
Adaptive cruise control	74%	57%	5
Forward facing Cameras	77%	55%	6
Speed monitoring with GPS	66%	52%	7
Forward collision control and braking	66%	49%	8
Lane keeping/departure	65%	43%	9
<b>Less- Effective Technology</b>			
In-Cab Facing Cameras	48%	32%	10

# What is safety culture

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## Organisational culture

- Norms, attitudes, values, and beliefs held by members of an organisation.
- The prevailing ideology that people carry inside their heads.

## Safety Culture

- Defined as the condition where adverse events are avoided and actions and procedures are implemented to prevent them

# Safety management - *what does not work*

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- A culture of fear
- Termination threats
- “Customer is always right” attitude, because sometimes the customer is wrong about safety
- Adversarial approach to training (“cop and robber”) as opposed to a coaching approach
- Incentives without recognition
- Generic safety programs
- Pretending compliance is the same thing as safety

# Safety management - *what works*

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- Messages from the top leadership through the departments to drivers
- Consistent verbal communication
- Participation and buy-in for all departments, not just the safety department
- Internal co-operation across departments
- Education and training on how to do things right
- Balanced positive and negative reinforcement
- Demonstrated management commitment to safety
- Screening during hiring
- Simple, consistent, repeated safety messages

# Five components to develop a comprehensive safety culture:

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1. Organisational commitment, defined by top management adopting safety as a core value.
2. Consistent management involvement, monitoring, supervising, and directing for safety.
3. A reward system for safe behavior and achievements.
4. Empowering employees to promote safety and take action.
5. A reporting system to evaluate levels of safety and identify areas for improvement.

# Conclusions

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- The number of safety technologies per truck is a strong indicator of overall fleet safety performance
- Fleet size was found to have an influence on safety outcome
- Safety technologies that provide direct digital feedback to fleet safety management were found to support better safety outcomes
- It appears that the electronic log book (electronic logging device) platforms offer a means of enabling standardized information and data management



# Thank You

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