

Validating Self-Report Transport Manager Safety Surveys

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Abstract

Safety management research has focused largely on identifiable policies, practices and technologies and has relied heavily on self-report surveys of managers. This paper suggests that, in some cases, there is a strong argument for validating manager self-report surveys. It further argues that management culture can moderate the effectiveness of policies, practices and technologies. Evidence was found for the efficacy of 17 safety management characteristics in a qualitative study (n=15) designed to validate an earlier manager survey study of safety management in heavy vehicle transport operations (Mooren et al., 2014). The results suggest a better validation rate for companies with lower crash claim rates.

Background

A previous study compared safety management characteristics of companies that operate heavy trucks with low rates of insurance claims (zero per truck in a 3-year period) and companies with higher claims rates (at least 0.17 per truck) as part of a 5-year Australian Linkage Grant project investigating the safety management system for heavy vehicle transport. Manager surveys about company practices identified 37 safety management characteristics or practices that distinguished low from higher claiming companies. However, 20 of these characteristics were unexpected because managers in higher claiming companies more often reported safety management characteristics consistent with good safety outcomes in the safety literature. For example, higher claimers reported more policies, more driver training and more driver monitoring than did lower claimers.

Because self-report measures can be unreliable, a validation was necessary to ensure strong evidence of practices for a safety management system. The high number of unexpected results reinforced the need for follow-up. This paper presents the validation results.

Method

A subsample (n=15) of the surveyed companies stratified by size and claim rate participated in the validation study which involved confirmatory management and driver interviews/surveys, workplace observations, and company document review.

A qualitative analysis was conducted of these convergent data sources to better understand the previous survey findings.

Results

Table 1 shows that 82% of the unexpected results in higher-claiming companies were not validated; whereas 94% of characteristics that were more likely at lower-claiming companies in the previous survey were validated. Characteristics validated as more prevalent in low claiming companies were:

- Risk assessment/management (8 characteristics) – consider safety features in truck purchasing, fewer defect notices, pre-trip inspections, check traffic conditions, limit speed on poorer quality roads, safety audit own sites, document fatigue management, and time limit responses to drivers' safety concerns;

- Driver management (8 characteristics) - check accident histories of driver applicants, employ fewer drivers over 60 years, pay by time worked (not by trip or load), pay waiting time, use experienced drivers to check/coach others, formally investigate unsafe behaviours, encourage driver input into work health and safety, and offer incentives for safety innovations;

Table 1. Number of management characteristics that were validated, by the direction of differences between low and higher claimers found in previous survey

Previous manager survey		Results of in-depth validation			
Characteristics were:	Direction was:	Number (%) of characteristics:			
		validated	not validated	inconclusive	Total
More prevalent in low claimers	Expected	16 (94.1)	0 (0.0)	1 (5.9)	17 (100)
	Unexpected	0	0	0	0
More prevalent in higher claimers	Expected	0	0	0	0
	Unexpected	11 (55.0)	4 (20.0)	5 (25.0)	20 (100)
Total		27 (73.0)	4 (10.8)	6 (16.2)	37 (100)

The validation study also revealed an additional characteristic emerging from manager and driver interviews. Managers in the low claiming companies took more proactive and consultative actions regarding safety, suggesting greater commitment to safety.

Conclusions

The results show the benefits of validating manager self-report surveys through in-depth investigations. The lower reliability of manager reports in poorer safety performing companies might be an indicator of a weak safety culture.

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