PointLeader Predictive Analytics Case Study for Drivers

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16 PUBLICATIONS **23** CITATIONS

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TRUCK DRIVER SELECTION PROJECT

Introduction

The trucking industry is critical to the US economy, with approximately 1 million drivers paid $40 billion annually to operate trucks over the road for more than 200,000 companies. Truck drivers impact **profitability** in the trucking business through their behavioral differences in customer service, dependability, and delivery time. They impact **costs** through differences in turnover, cargo theft and accidents. Altogether, the potential impact per driver on business outcomes across domestic long haul trucking firms averages +/- $138,000 annually. By selecting drivers with a high probability for increasing profits and a low probability for increasing costs, key business outcomes can be improved by 40% per driver. To demonstrate this effect, PointLeader conducted a predictive analytics project for truck driver selection.

Methods

PointLeader conducted a job analysis of the long-haul driver job for a large Southwestern US truck line (i.e., 600 drivers) using the PointLeader Competency Profiler. Based on the results, the ten most critical competencies for job success were identified. Predictor scales for driver selection were validated based on synthetic and local validation methods. Parameter values from these sources were used as starting values in the predictive model (below). The PointLeader Predictive Assessment (PPA) was administered to 2,652 qualified applicants to select 271 drivers over a six month period. Employment status, accident rate, cargo theft, and moving violations for drivers were evaluated two years after selection.
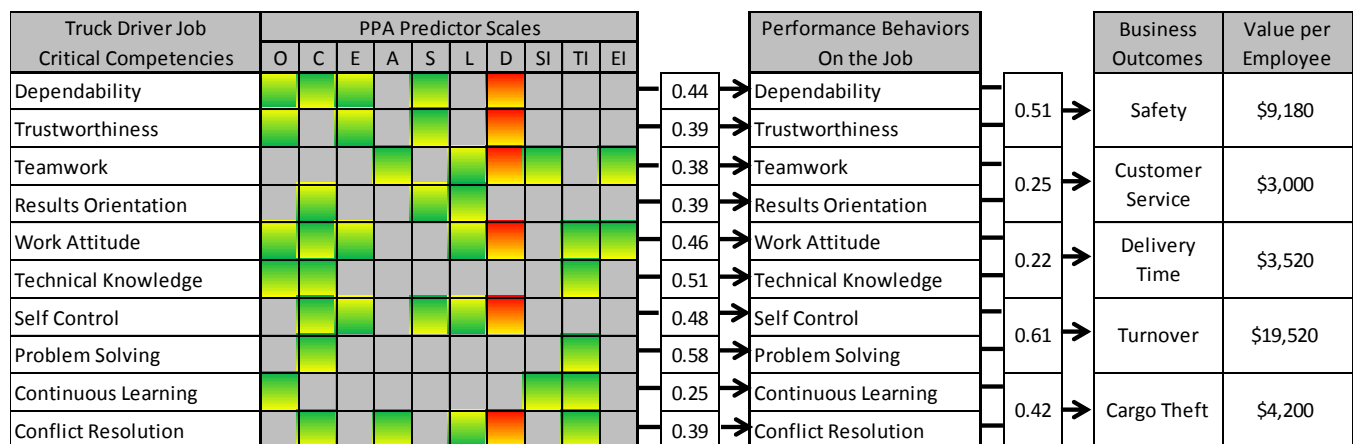
Results

Use of the PPA had no adverse impact for the applicant pool. Impacts on business outcomes are presented below in the table and predictive model.

Impact of Truck Driver Selection with PPA on Business Outcomes

Outcomes by driver group	Turnover Yr 1	Turnover Yr 2	Accident Rate	Cargo Theft	Moving Violations
Selected with PPA (n = 271)	32%	19%	1%	0%	3%
Selected with other methods (n = 325)	98%	101%	15%	5%	21%

Predictive Model of Truck Driver Impact on Business Outcomes

Truck Driver Job Critical Competencies	PPA Predictor Scales O C E A S L D SI TI EI		Performance Behaviors On the Job		Business Outcomes	Value per Employee
Dependability		0.44	Dependability	0.51	Safety	$9,180
Trustworthiness		0.39	Trustworthiness			
Teamwork		0.38	Teamwork	0.25	Customer Service	$3,000
Results Orientation		0.39	Results Orientation			
Work Attitude		0.46	Work Attitude	0.22	Delivery Time	$3,520
Technical Knowledge		0.51	Technical Knowledge			
Self Control		0.48	Self Control	0.61	Turnover	$19,520
Problem Solving		0.58	Problem Solving			
Continuous Learning		0.25	Continuous Learning	0.42	Cargo Theft	$4,200
Conflict Resolution		0.39	Conflict Resolution			

Discussion

Sufficient evidence of PPA fairness and predictive validity for driver selection were found to support and defend use by the trucking firm. Based on amounts provided by the business, use of PointLeader predictive analytics for selection improved the bottom line per employee by $39,420 annually for a return on investment of $53.60 for each $1 of assessment costs. The overall annual impact to the business of using the PPA with the entire driver workforce is $8,290,360 compared to the costs/benefits of previous selection methods using interviews and background checks.