

The Impact of Technology on the Work Lives of Truck Drivers

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Session 2, Part II Track C

Sloan Industry Studies Annual Meeting

April 19-21, 2004 – Atlanta, GA

Research Questions

- Which Drivers Use Technology?
- What Types of Technology do they use?
- What is the impact?
 - ✓ Miles
 - ✓ Pay
 - ✓ Hours of Service

Data Source

- **Trucking Industry Program Survey of Drivers**
 - ✓ **570 drivers**
 - ✓ **1997**
- **A Portrait of technology outcomes from the drivers perspective**

Which Technologies Are Used for Communications?

Fax	32.3%
Beeper	28.5%
2 way radio	6.8%
Cellular Phone	31.1%
E-mail	2.3%
Satellite Based System	29.5%

Which Technologies are Used for Routing?

Dispatcher	32.6%
CB Radio	64.7%
On-Board Computer with Maps	8.1%
Laptop with Maps	3.9%

Probit Estimation of Technology Adoption

- Which types of drivers are most likely to have satellite based systems in their trucks?
- Controls for local, private carriage, owner operator, union, drybox, pay method, firm size

Probit Model Results

- Drivers in Private Carriage 21% more likely to have SBS
- Union drivers 20% less likely to have SBS
- Drivers paid percent of revenue 16.3% more likely to have SBS
- Drivers paid hourly are 14.6% less likely to have SBS

Probit Model Results

■ Firm Size Matters

- ✓ Firms with more than 250 drivers are between 44% and 62% more likely to use SBS than firms with less than 25 employees.
- ✓ Evidence of scale effects.

Technology and Work Outcomes

Annual Earnings

- Mean Earnings for the Sample were \$33,000
- SBS raise earnings 17.6%
- Raise rates or intensity of work?

Technology and Work Outcomes

Mileage Rates

- Mean mileage rates for the sample 38.9¢
- SBS lower mileage rates 5.9 ¢
- Is technology a substitute for experience?

Technology and Work Outcomes

Annual Miles

- Mean annual miles in sample 124,865
- SBS increases miles 17.4% (21,717 miles)
- Clearly SBS increases intensity

Technology and Work Outcomes

Hours of Work and Hours of Service

- Mean hours of work 65.4 hours, mean violations of 10-hour rule 6 times in 30 days
- Drivers with SBS work additional 6.6 hours (14% more)

Conclusions

SBS are associated with...

- **Higher annual earnings**
- **Higher annual miles and weekly hours**

Conclusion

- Technology improves productivity and earnings, but lengthens the work day.