Transitioning the Driving Workforce into the Era of Automated Vehicles

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Introduction

- Taxi/rideshare driving and long-distance trucking jobs are expected to become less common due to vehicle automation. Thus, current drivers will likely need to transition into new careers.
- This project leveraged the Occupational Information Network (O*NET) 24.2 Database to identify and compare potential transition occupations for truck and taxi drivers.

Method

- Using O*NET, we identified jobs that:
- Share skills (SS) with taxi or truck driving.
- Share work activities and/or the same industry (WI) with the driving job.
- Both share skills and work/industry (SSWI) for each driving job.
- We coded the number of important knowledge topics, skills, and other (KSAOs) for each SS, WI, and SSWI job that are shared with the focal driving job.
- We also coded the number of KSAOs that are not shared (i.e., unique - what drivers may need to gain or learn to enter the transition profession).

Method

- Example: Knowledge topics important for truck driving:

> **Transportation** — Knowledge of principles and methods for moving people or goods by air, rail, sea, or road, including the relative costs and benefits.
> **Public Safety and Security** — Knowledge of relevant equipment, policies, procedures, and strategies to promote effective local, state, or national security operations for the protection of people, data, property, and institutions.
> **Customer and Personal Service** — Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.
> **English Language** — Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.
> **Mechanical** — Knowledge of machines and tools, including their designs, uses, repair, and maintenance.

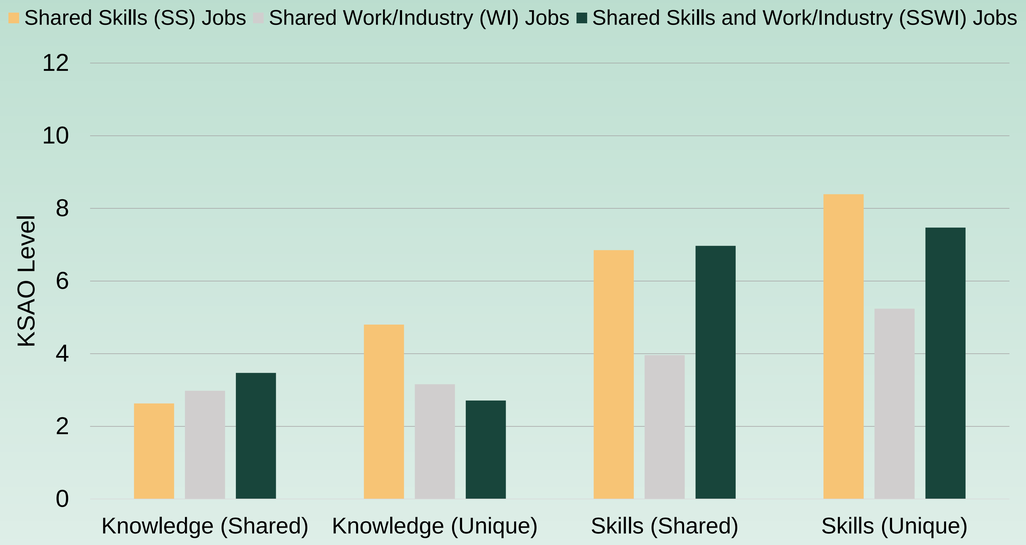
- Knowledge topics important for crane and tower operation:

> **Mechanical** — Knowledge of machines and tools, including their designs, uses, repair, and maintenance.
> **Mathematics** — Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications.

- There is 1 “shared” knowledge topic (mechanical), and 1 “unique” knowledge topic (mathematics).

Results

- We compared the average amount of “shared” and “unique” KSAOs between the three job sets using One-Way ANOVAs.
- Jobs identified based on their shared skills with truck driving indeed have significantly more skills in common with truck driving compared to jobs identified in a shared work/industry search—yet they also more unique skills, on average.
- Jobs identified in *both* the shared skills and work/industry searches have the most knowledge topics in common with truck driving, and the fewest unique.



Results

Truck Driver Shared Skills (SS) example jobs: Robotics Technician, Electrician, Plumber
Shared Work/Industry (WI) jobs: Cargo and Freight Agent, Statement Clerk, Traffic Technician
Shared Skills and Work/Industry (SSWI) jobs: Air Traffic Controller, Locomotive Engineer, Crane and Tower Operator

Discussion

- The set of shared skills and work/industry (SSWI) jobs displayed the greatest number of shared, and fewest unique, KSAOs with both driving jobs.
- We have thus presented a method for identifying transition careers for drivers threatened by displacement.
- Further work should help with understanding what obstacles arise in the job transition process.
- Another step can be to develop a decision aid to help workers find careers that match their needs (e.g., based on salary, interests and values fit).

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