DEVELOPING A ROBUST SURVEY METHODOLOGY FOR COLLECTING INFORMATION ON THE PORT TRUCK DRAYAGE INDUSTRY

FINAL PROJECT REPORT

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16. Abstract

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The survey was a 44 question mail-back survey that was distributed at the Port of Seattle. The survey was distributed for eight days at all container terminals at the Port of Seattle, and got a 29% response rate.

The majority of the trips to and from the Port of Seattle are for the local Seattle area (33%) and the Kent Valley (20%). Other trips are distributed to service areas throughout the State of Washington. Owner-operators were found to make more of the short trips, with employee drivers making more of the long trips.

62% of trucks at the Port of Seattle are more than 12 years old. These trucks will have to be replaced before 2015 to comply with the Port of Seattle Clean Trucks Program.

The Port of Seattle has a diverse population, with 53% of drivers indicating that they did not speak English as a first language. Drivers who indicated that they didn't speak English were about 50% from Africa, with South/Central America and Asia/Pacific Islands also having significant populations.

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Abstract

This paper describes the population characteristics in the drayage trucking population of the Port of Seattle as determined by the 2013 Truck Driver Survey. The 2013 Truck Driver Survey was created to give the Port of Seattle more information on the trip destinations, working conditions, equipment, and economics of truck drivers serving the Port of Seattle, so that policy makers creating regulations affecting trucking at the port could be better informed about the trucking population.

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<center>**Executive Summary**</center>

The 2013 Truck Driver survey was designed to develop a statistically valid and reproducible method for surveying drayage truck drivers, reveal the characteristics of drayage at the Port of Seattle, and compare the results of the 2013 survey to past surveys of drivers at the Port of Seattle.

The 2013 Port of Seattle Truck Driver Survey was a mail-back survey that was distributed at terminal gates on 8 days over the course of three weeks. 1291 surveys were distributed 290 responses were received, for a response rate of 23%. The survey had 44 questions, with a mix of write-in and multiple choice questions covering the categories shown below.

Trip/Destination Information
Typical Length of trip: Almost 70% of owner-operator trips are 40 miles or less, while over 70% of employee driver trips are 40 miles or more.
Trip Destinations: Local trips within Seattle and trips to Kent/Green River Valley were the most common, but destinations as far away as Idaho and British Columbia were reported.
Turns per Day: Over 50% of drivers make 1-2 trips per day, with 35% making 3-4 trips per day and 13% making more than 5 trips per day.
Days at the Port of Seattle: 30% of drivers said that they worked 5 days at the Port of Seattle in the last week. 2% said they worked 6 days, with the rest of drivers indicating that they worked 4 or less.

Employment and Job Experience
Type of Employment: 36% of drivers said they were employee drivers, with 64% saying they are owner-operators.
Year-Round, Full-Time Job: 94% of drivers said that driving a truck at the Port of Seattle was a year-round job, and 91% of drivers said it was a full-time job.
Hours per Day: Most drivers said they work between 8-10 hours per day, or 10-12 hours per day, including non-driving time such as waiting in a queue or doing paperwork.
Length of Port Trucking Career: 51% of drivers have been driving for more than 10 years. Less than 2% of drivers have been working at the Port for less than one year.
Time at Current Company: 11% of drivers indicated working at their current company for more than 10 years. 14% of drivers have been at their current company for less than one year.

Other Work: About 37% of drivers, both employees and owner-operators indicated that they had done work other than drive a port truck in the last year.

Days in the Last Week: Employee drivers were more likely to have worked 5 or more days in the last week than owner-operators.

Earnings and Payments

Frequency of Pay: 70% of drivers indicated that they are paid weekly, with 27% indicating that they are paid every other week. Less than 3% are paid monthly.

Pay Calculation: Over 80% of owner-operators are paid by the trip, with most of the rest (about 20%) being paid by the mile. Less than one percent reported being paid by the hour. 55% of employee drivers reported being paid by the trip, with 30% being paid by the hour and 14% being paid by the mile.

Hourly Earnings Last Trip: Driver hourly earnings were calculated from two questions asking how much drivers made on their last trip, and how much time they spent on their last trip. The hourly earnings of owner-operators covered a much larger range than the hourly earnings of employee drivers. Drivers (employees and owner-operators) making longer trips had a larger range of hourly earnings than drivers making shorter trips.

Household Income: 27% of drivers had a household income of $20,000-40,000 per year, with 30% of drivers having a household income of $40,000-60,000 per year. 7% of drivers reported a household income of less than $20,000 per year, and 36% of drivers reported household incomes of more than $60,000 per year.

Employee Driver Earnings: 27% of employee drivers reported earnings of $30,000-40,000 per year, with 26% reporting earnings of $40,000-50,000 per year. 24% of drivers reported earnings of less than $30,000 per year and 15% reported earnings of more than $50,000 per year.

Owner-Operator Earnings: 28% of owner-operators earned between $25,000-35,000 per year, after expenses, and 17% earned between $15,000-$25,000. 29% of owner-operators were estimated to make less than $15,000 a year from port trucking, and 17% reported earnings of more than $35,000 per year.

Fuel Reimbursement: 57% of owner-operators indicated that they are reimbursed for fuel.

Owner-Operators who Speak English as a Second Language: Owner-Operators who spoke English as a second language were not found to be more likely to report low earnings (less than $15,000per year) than owner-operators as a whole. These owner-operators were also equally likely to report high earnings (more than $45,000 per year) as owner-operators as a whole.

Owner-Operators making trips of 40-500 miles: Drivers making trips of 40-500 miles were more likely to report low earnings (less than $15,000 per year) and were less likely to report high earnings (more than $45,000 per year).

Truck Information

Truck Ownership: 97% of owner-operators own their trucks, and 3% lease their trucks.

Length of Ownership: 35% of owner-operators have owned their truck for between 3 and 5 years. 25 % of owner-operators have owned their trucks for between 6 and 10 years, and 14% of drivers have owned their trucks for 10 years or more. 25% of owner-operators have owned their truck for 2 years or less.

Truck Payment: 62% of owner-operators have finished paying off their truck (83 out of 133 respondents). 26% of owner-operators still paying off their truck have a payment of $1000-1250, and 60% of drivers pay less than $1000 per month. Only 14% of drivers said that they have a truck payment of more than $1250 per month.

Cost of Truck: 37% of drivers spent between $10,000 and $20,000 on their truck, with another 22% spending between $20,000 and $30,000.

Truck Engine Year: 23% of owner-operator trucks at the Port of Seattle are from 1994 to 1997. 51% are from 1998-2001, and 19% are from 2002-2006. 6% are engine year 2007 or newer.

Truck Replacement to Meet 1994 Emissions Standards: 32% of owner-operators indicated that they replaced their truck to meet the 1994 emissions standard.

Plans to Upgrade Truck: 62% of owner-operators intend to upgrade their trucks, and 71% of owner-operators planning to upgrade intend to do so by 2015.

Upgrade Assistance: 72% of owner-operators are interested in a grant, with 48% of owner-operators interested in a loan and 18% interested in a lease.

Truck Parking

Parking Locations: 17% (30 out of 173) of owner-operators surveyed park in South Park or Georgetown. In the 2008 survey 22.5% of all drivers indicated that they parked in either South Park or Georgetown (the 2008 survey did not differentiate between owner-operators and employee drivers in their results regarding parking). 48% (83 out of 173) of drivers park off-street at home or in a parking lot. 12% of owner-operators parked at Terminal 25.

Parking Costs: 14% of owner-operators pay for parking. The average cost of parking for these drivers is $117 per month.

Demographics

Gender: Port of Seattle truck drivers are 98% male and 2% female.

English as a First Language: 46% of drivers speak English as a first language. Employee drivers were three times more likely to speak English as a first language than owner-operators.

Place of Origin: 55% of drivers who speak English as a second language are from Africa, with 18% coming from Eastern Europe, 13% from Asia/Pacific Islands, and 12% from South/Central America.

Languages: Drivers speak 19 different first languages, including English. Amharic was the most common first language other than English.

Education: 60% of drivers at the Port of Seattle have accomplished a level of education beyond high school. 15% of drivers did not graduate from high school.

Household Size: Most driver households (66%) have 2 adults. 54% of drivers have children in their household, and 29% of drivers support children that do not live in their household.

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Chapter 1 Introduction

The Port of Seattle is the 6th busiest port in the United States, transporting over 2.1 million TEUs in 2011. Containers transiting the Port of Seattle are served by rail yards in Seattle, distribution centers in the Kent Valley, and agricultural centers in Central Washington, among others. With the exception of cargo offloaded onto on-dock rail, all containers going into and out of the Port of Seattle are transported to and from the port by drayage drivers. This includes containers bound for off-dock rail facilities, such as the BNSF Seattle International Gateway. Drayage is when trucks are used to complete a segment of an intermodal trip between other modes, or when trucks are used to complete the first or last segment in an intermodal freight transportation chain.

In recent years, municipalities with ports have become increasingly concerned with the safety and air quality effects of drayage drivers at their ports (McClure,2011), and the Natural Resource Defense Council cites diesel engines at ports as major drivers in increasing smog and respiratory illness (National Resource Defense Council, 2004). Ports have been working to design regulation to address these issues (Shogren, 2006, and Port of Seattle, 2013). However, many drayage drivers work as owner-operators, and will be responsible for the costs imposed by additional regulations. This paper reports on the results of a survey distributed to Port of Seattle drayage truck drivers and designed to shed light on the economic and transportation characteristics of their work. The survey was designed to get a better understanding of drivers, their economic situations, and their equipment to help inform policy makers as they create regulation to address the issues surrounding drayage trucking.

The Port of Seattle is currently working on implementing a "Clean Trucks Program" at the Port of Seattle. In 2008, the Clean Trucks program specified that trucks entering the Port of

Seattle had to meet 1994 emissions standards. Beginning in 2015, trucks entering the Port of Seattle will be required to meet 2008 emissions standards. With the beginning of the Clean Trucks program, drivers were required to prove their trucks were emissions compliant, and obtain a sticker to indicate that the trucks were compliant. Beginning in April of 2013, the stickers were replaced with RFID tags to indicate compliance. Drivers not having appropriate proof of compliance were not allowed to access the port.

This issue is important because there are a variety of drivers serving the port. Drivers may not speak English as a first language, or may access the Port of Seattle infrequently. One goal of the 2013 survey was to identify groups such as the aforementioned, to help the Port of Seattle plan communications to all drivers who serve to the Port, to ensure they are aware of changing regulations and are able to comply with regulations and carry out their jobs. Helping drivers afford the necessary updates to comply with the Clean Trucks program is another necessary obstacle. A large portion of drayage drivers are owner-operators, who own their own trucks. These drivers would be responsible for upgrading to a newer truck, but the cost of upgrading may be three or four times a driver's annual earnings. For this reason, it was important to include survey questions that would help the Port of Seattle assess drivers' earnings, and drivers' ability to afford to comply with regulations. The Port of Seattle will be able to use this information to help design programs to help drivers afford to comply with regulations and continue to have careers in the field.

The Port of Seattle is also a major trip generator in the Seattle area, and throughout the state. The survey gathered data on drivers' last trip, and number of turns drivers made per day. This data can be used to estimate the trip distribution generated by the Port of Seattle. The Port of Seattle frequently works with state and local government to help plan road improvements to

alleviate traffic impacts of port trucks, and improve access to the port for these trucks. Getting a better understanding of this trip distribution can help the Port of Seattle, state government, and local governments plan improvements that will best serve the needs of the Port and the areas in which their trucks operate.

Chapter 2 Literature Review

Four previous projects that attempted to gather information about the drayage trucking population on the west coast, with two in Seattle, were carefully examined for comparability and lessons learned. One study "A Study of Drayage at the Ports of Los Angeles and Long Beach", by Kristen Monaco and Lisa Grobar, surveyed truckers at the Port of Long Beach, and attempted to describe the population. Another study, "Incentivizing Truck Retrofitting in Port Drayage: A Study of Drivers at the Ports of Los Angeles and Long Beach", conducted at the Port of Long Beach and the Port of Los Angeles, explored the economic conditions of drayage truckers and their willingness and ability to upgrade their trucks. The two studies conducted in Seattle, "Big Rig, Short Haul", by Port Jobs and the 2008 Truckers Day Survey by Port of Seattle, focused on exploring the drayage trucker population serving the Port of Seattle.

Previous Study Methods

Monaco and Grobar's study, "A Study of Drayage at the Ports of Los Angeles and Long Beach," was conducted by randomly selecting three terminals at the Port of Long Beach. Self-administered surveys were handed out at two of these terminals (one terminal was determined to not be conducive to handing out surveys). The surveys were handed out to drivers waiting to enter the port between 6am and 7am. Surveys were available in English and Spanish. Surveys were given to truckers waiting in or around their trucks, unless they were sleeping.

The Port Jobs study, "Big Rig, Short Haul", was based on the Monaco and Grobar study conducted in Long Beach. Truckers were given a self-administered survey on 4/27/2006 at 6 am while waiting to enter terminals. The survey was distributed at terminals 5, 8, and 46. The survey was explained by the facilitators. Surveys were only available in English.

The Monaco and Grobar study, "Incentivizing Truck Retrofitting in Port Drayage: A Study of Drivers at the Ports of Los Angeles and Long Beach", was conducted by surveying drivers at catering trucks outside three different terminals at the Ports of Long Beach and Los Angeles. The survey was given by administrators, and drivers were given $10 to participate. It was conducted during lunch (11:30 am to 1:30 pm) and dinner (4:30 am to 6 pm) on weekdays during two weeks in December. Respondents were given a choice between Spanish and English.

The Port of Seattle Trucker's Day Survey was distributed to 580 truckers, and 99 responded. Surveys were distributed at Trucker Appreciation Day.

Relevant Findings

The 2006 Port Jobs and the 2008 Trucker's Day Survey were relatively similar in their findings. The 2006 study found that the mean age of respondents was 43 years, compared with 46 in 2008. The mean tenure in 2006 was 11 years. The mean tenure as a driver wasn't given in the 2008 study, but the study did indicate that 50% of respondents had more than 10 years of tenure.

The 2006 survey reported mean earnings of $31,341 after expenses, while the 2008 survey reported a mean income of $35,140 after expenses.

In the 2006 survey, 61% of survey respondents were owner/operators, 31% were employee drivers, and 9% drove a truck for another owner/operator. 48 Respondents indicated they worked for a company of less than 25 employees, 83 indicated they worked for a company between 25-99, 9 worked for a company between 100-249, and 3 worked for a company of 250 or over. In the 2008 Trucker's Day survey, 56% of respondents were owner/operators, and 44% were employee drivers (there was no option to declare having driven for an owner/operator).

The 2006 survey reported that 44% of respondents speak a language other than English at home. The 2008 survey reported 56% of respondents spoke English as a first language (56 out of 99 respondents).

The 2004 Port of Long Beach/Los Angeles study indicated a mean driver age of 40.4 years, fairly close to the Seattle studies, and a mean income after expenses of $29. This study also had a much more homogeneous population, with 91% of respondents identifying as Hispanic. The overall education level was also lower than in either of the Seattle area studies, with about ⅓ of respondents indicating they had not completed high school, as compared with approximately 10 and 20 percent in the two Seattle studies. The population also had a much higher percentage of drivers born outside the United States, with only 11.4% of respondents indicating that they had been born in the US.

The 2008 Study, "Incentivizing," found that drivers had a mean income of $34,749, and found that 78.5% of drivers were owner/operators. The average driver was 38.6 years old with 8.7 years of experience.

"Incentivizing" also studied what options drivers preferred to upgrade to a newer truck, as well as what drivers would be able to pay to retrofit their truck. The study found that overall, drivers prefer that they receive a subsidy ($37,500) for a new truck, while contributing 12,500 themselves, and signing a 5 year contract to drive at the port. The next most popular option was getting a 2% loan, subsidized by the port, and signing a contract to drive for the port for two years.

Drivers were also asked how much they would be able to pay to retrofit their truck. 34.6% indicated they could pay $4000, with 7.6% saying they could afford $8000, and 2.2% indicating that they could pay $12,000.

Chapter 3 Study Site/Data

The study site was at the Port of Seattle. Surveys were distributed at terminal gates at the Port of Seattle. Data was gathered using a 44 question mail-back survey distributed by staff of the non-profit Port Jobs. Drivers were selected by giving surveys to drivers who were entering the Port of Seattle, ensuring that data was only gathered from Port of Seattle drivers.

Table 3.3.1 Sampling Schedule

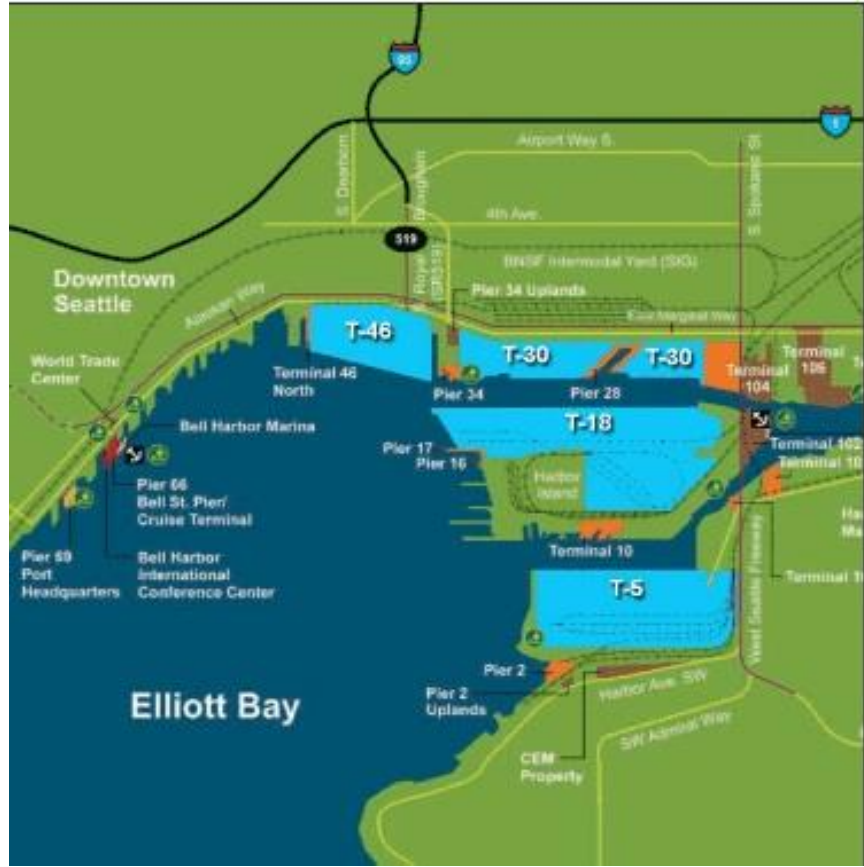| Sampling Schedule	
March 20, 2013	Terminals 18 and 46
March 21, 2013	Terminals 5, 30, and 46
March 25, 2013	Terminals 5, 18, and 46
March 26, 2013	Terminals 5, 18, and 46
March 27, 2013	Terminals 5 and 18
April 3, 2013	Terminals 5, 18, and 46
April 4, 2013	Terminals 5 and 46
April 5, 2013	Terminals 5, 18, and 46

Figure 3.3.1 Port of Seattle Terminal Map

Chapter 4 Method

The 2013 Port of Seattle Truck Driver Survey was a 44 question survey designed by the UW research team to obtain information on the equipment, economic situation, and work practices of the Port of Seattle truck driver population. The survey was designed by consulting with the Port of to ensure it could meet the Port's information needs, and was further refined by 1-on-1 interviews with Port of Seattle truck drivers. Previous Port of Seattle surveys, and surveys used at other Ports, served as models. A copy of the survey instrument is included in the appendix of this report.

The survey was distributed in pre-stamped envelopes at all container terminals at the Port of Seattle by workers from a local non-profit (Port Jobs). The survey was distributed from 7am to 9am on 8 days between March 20th and April 5th.

In total, 1251 surveys were distributed, and 290 surveys were returned, for a response rate of 23%.

Chapter 5 Results

<u>Trip/Destination Information</u>

In this section:

Typical Length of trip: Almost 70% of owner-operator trips are 40 miles or less, while over 70% of employee driver trips are 40 miles or more.

Trip Destinations: Local trips within Seattle and trips to Kent/Green River Valley were the most common, but destinations as far away as Idaho and British Columbia were reported.

Turns per Day: Over 50% of drivers make 1-2 trips per day, with 35% making 3-4 trips per day and 13% making more than 5 trips per day.

Days at the Port of Seattle: 30% of drivers said that they worked 5 days at the Port of Seattle in the last week. 2% said they worked 6 days, with the rest of drivers indicating that they worked 4 or less.

Drivers at Both Ports: 156 drivers (54%) said they worked at both the Port of Seattle and the Port of Tacoma in the last week.

Typical Trip Length

Drivers were asked to indicate their typical trip length from one of four categories: less than 10 miles (to rail yards and warehouses in Seattle), 10 to 40 miles (to warehouses in the Kent/Auburn Valley or the Eastside, e.g. Issaquah), 40 to 500 miles (to other locations in Washington, Oregon, Idaho, or West British Columbia), or more than 500 miles (long haul trips). Almost 70% of owner-operator trips are 40 miles or less, while over 70% of employee driver trips are 40 miles or more.
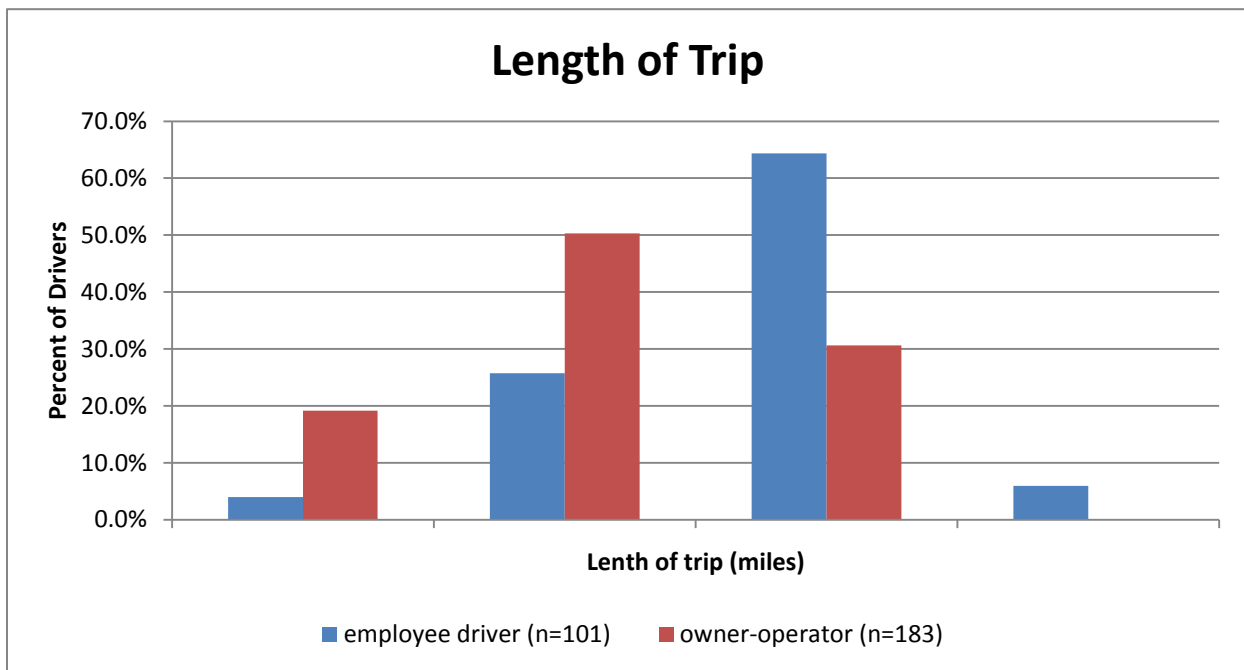

Figure 5.1 Length of Trip

Turns per Day

The figure below shows how many turns drivers make in a single day. Over 50% of drivers indicated that they make 1-2 trips per day, with 35% indicating 3-4 trips and 13% indicating they make 5 trips or more.
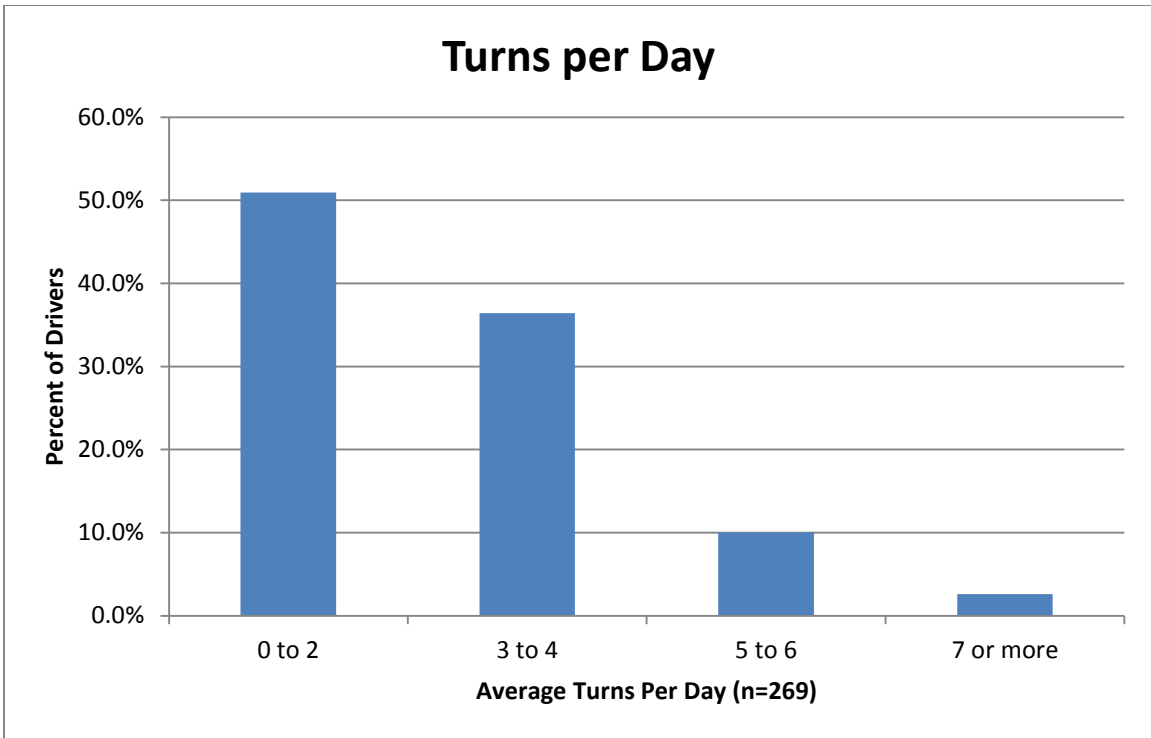
Figure 5.2 Turns per Day

Comparison to RFID Data

Survey data was compared to data gathered from a required RFID transponder that all trucks serving the port must have to enter (as of 4/1/13). The survey turns per day distribution was compared to the distribution of the number of times trucks checked into the Port with their RFID transponder.

The two data sources did not match exactly, but there was a common pattern of the percentage of drivers in a category declining as the number of turns in that category increased. The similar pattern implies that the survey sample is representative of the population of all drivers.
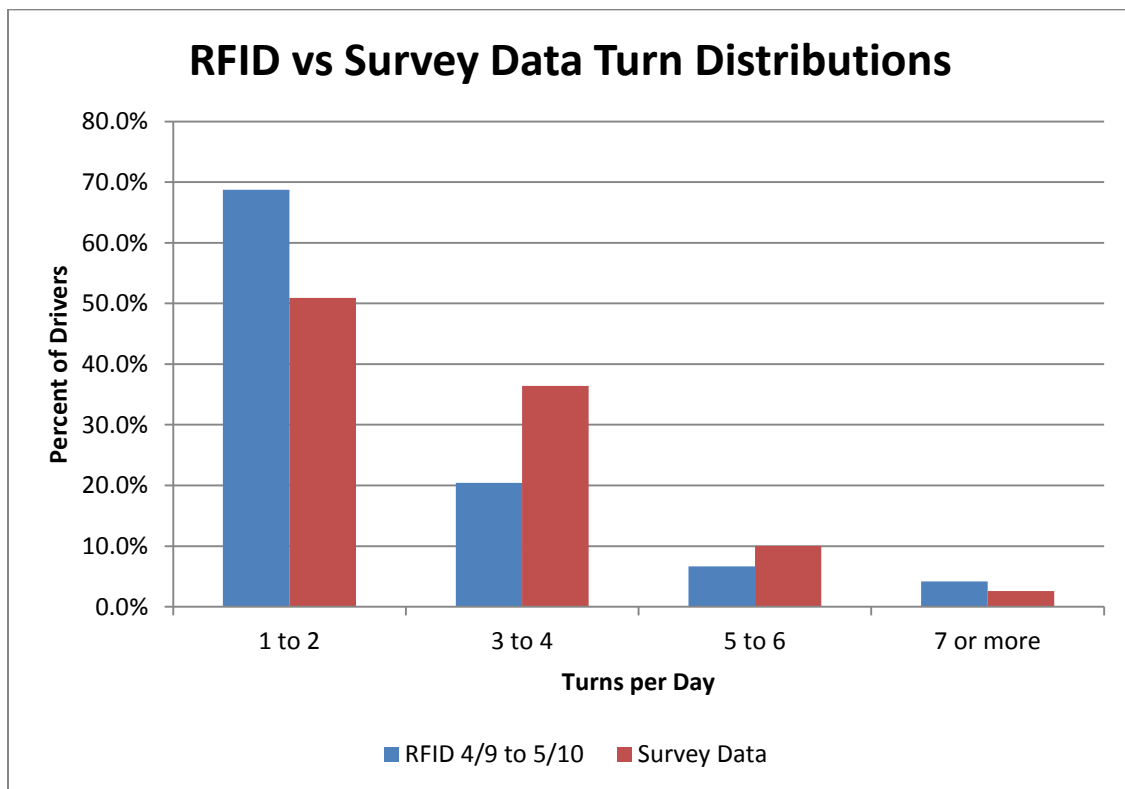

Figure 5.3 RFID vs Survey Data Turn Distributions

Trip Destinations

The table below shows the area served by drivers on their last trip. Local trips within Seattle and trips to Kent/Green River Valley were the most common, but destinations as far away as Idaho and British Columbia were reported. Notes: Trips to rail-yards are also included in local Seattle trips, as trips to rail yards were a type of local Seattle trip.

Figure 5.4 Driver Destinations
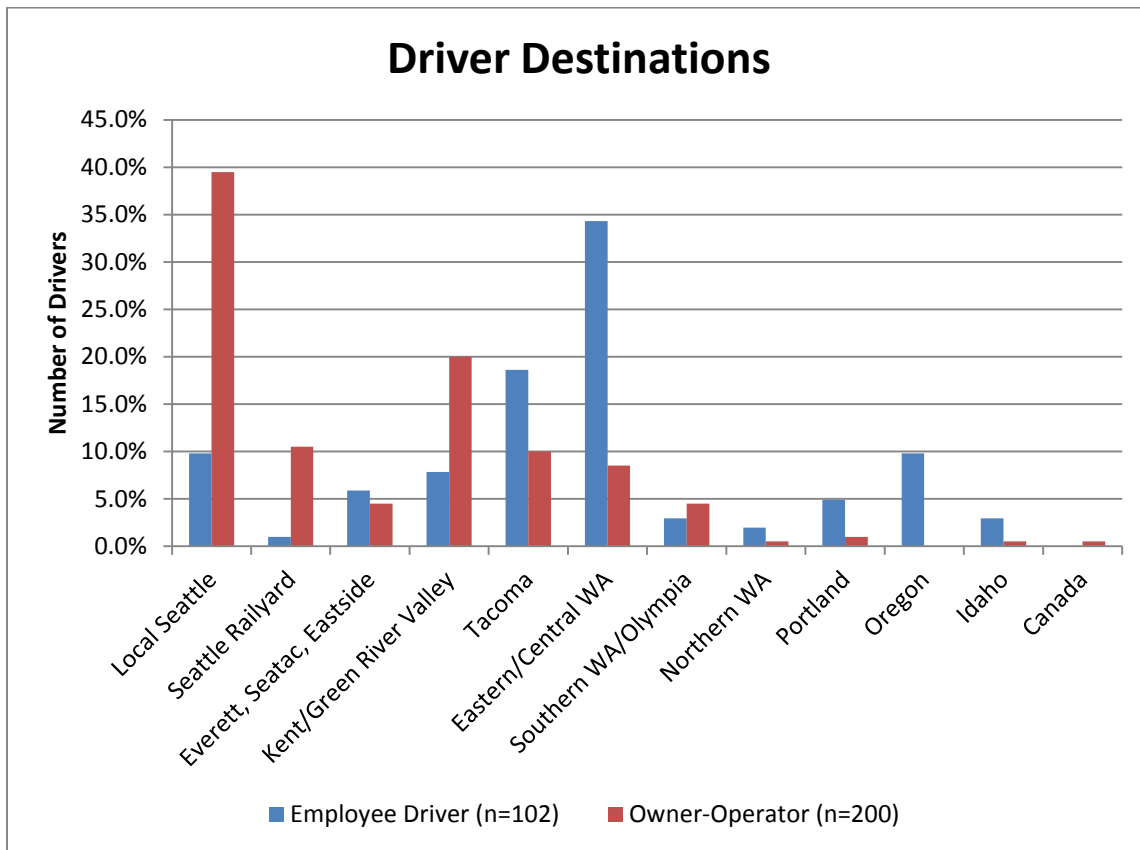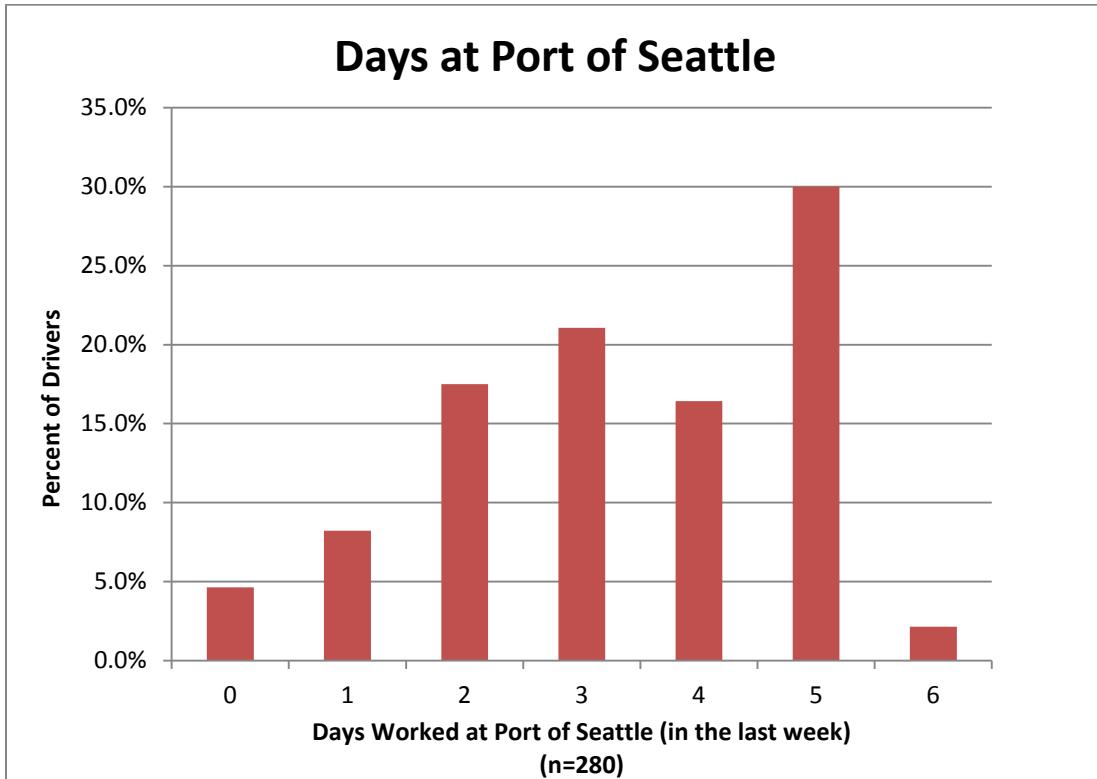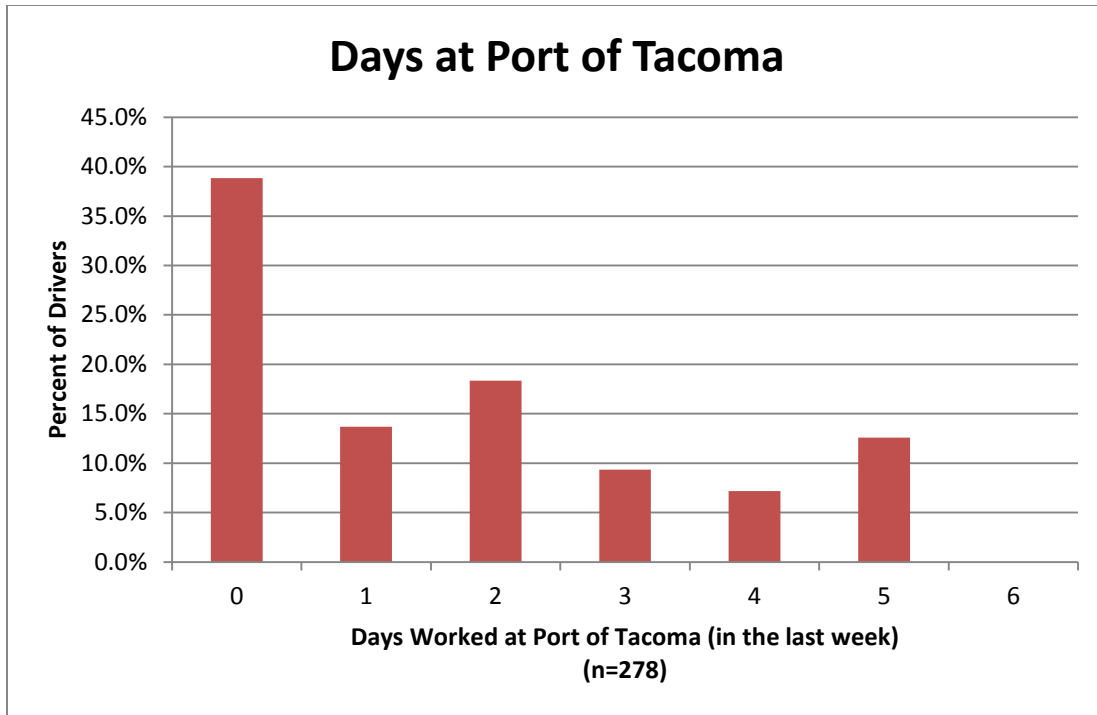
Days at the Port of Seattle and Port of Tacoma

The two tables below show how many days in the last week drivers served the Port of Seattle and the Port of Tacoma. 30% of drivers said that they worked 5 days at the Port of Seattle in the last week. 2% said they worked 6 days, with the rest of drivers indicating that they worked 4 or less.

Figure 5.5 Days at Port of Seattle

Figure 5.5.6 Days at Port of Tacoma

Drivers at Both Ports

Drivers making trips of 10 to 40 miles or 40 to 500 miles were the most likely to serve at both

ports, with both employee drivers and owner-operators making these lengths of trips serving both

ports. 156 drivers (54%) said they worked at both the Port of Seattle and the Port of Tacoma in

the last week.

Table 5.1 Drivers at Both Ports

Drivers at Both Ports		
Trip Length	employee driver	owner-operator
<10	1	1
10 to 40	23	57
40 to 500	36	35
>500	3	0

<u>Employment and Job Experience</u>

In this section:

Type of Employment: 36% of drivers said they were employee drivers, with 64% saying they are owner-operators.

Year-Round, Full-Time Job: 94% of drivers said that driving a truck at the Port of Seattle was a year-round job, and 91% of drivers said it was a full-time job.

Hours per Day: Most drivers said they work between 8-10 hours per day, or 10-12 hours per day, including non-driving time such as waiting in a queue or doing paperwork.

Length of Port Trucking Career: 51% of drivers have been driving for more than 10 years. Less than 2% of drivers have been working at the Port for less than one year.

Time at Current Company: 11% of drivers indicated working at their current company for more than 10 years. 14% of drivers have been at their current company for less than one year.

Other Work: About 37% of drivers, both employees and owner-operators, indicated that they had done work other than drive a port truck in the last year. Non-port trucking was the most common form of other work.

Days in the Last Week: Employee drivers were more likely to have worked 5 or more days in the last week than owner-operators. Drivers who reported doing other work were less likely to have worked 5 or more days in the last week than the average driver.

Type of Employment

36% of drivers identified as employee drivers, with 64% of drivers identifying as owner-operators.

Table 5.2 Type of Employment

Type of Employment		
Employee	**Owner-Operator**	**Total**
102 (36%)	184 (64%)	286

The 2013 results were similar to the results of the 2006 survey, in which 31% of drivers indicated that they were employee drivers and 61% indicated that they were owner-operators. In 2008, the proportion of employee drivers was higher, at 44%, with 56% of drivers identifying as employee drivers.

Year-Round, Full-time Job

Almost all drivers indicated that they considered the job a full-time, year-round job:

Table 5.3 Year-Round, Full-Time Job

	Yes	No
Year Round (n=254)	94%	6%
Full Time (n=181)	91%	9%

These results were similar to the 2008 Port of Seattle Trucker's Day survey, in which 96% of respondents indicated that port trucking was a full-time, year-round job (in 2008, it was asked as one question).

Hours per Day

Drivers were also asked to indicate how many hours they worked in a typical day, including non-driving time, such as waiting in a queue or paperwork, as well as driving time. Most drivers indicated working between 8 to 10 or 10 to 12 hours per day.
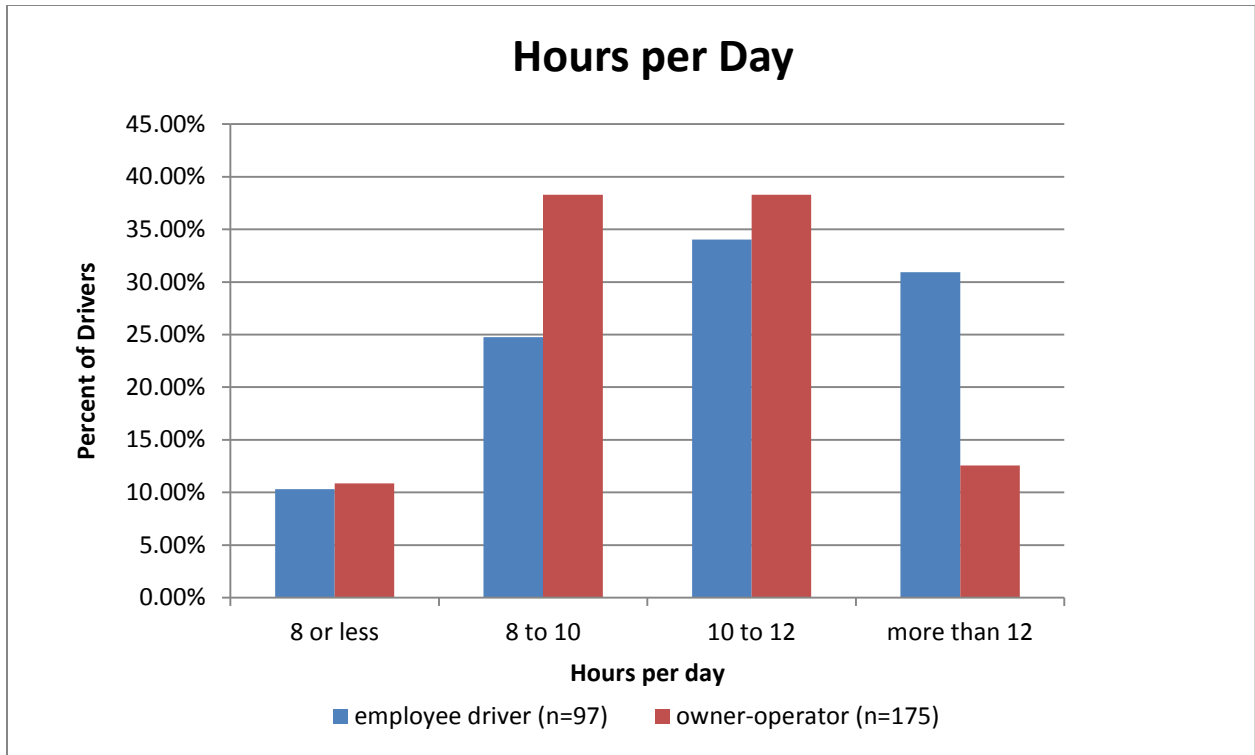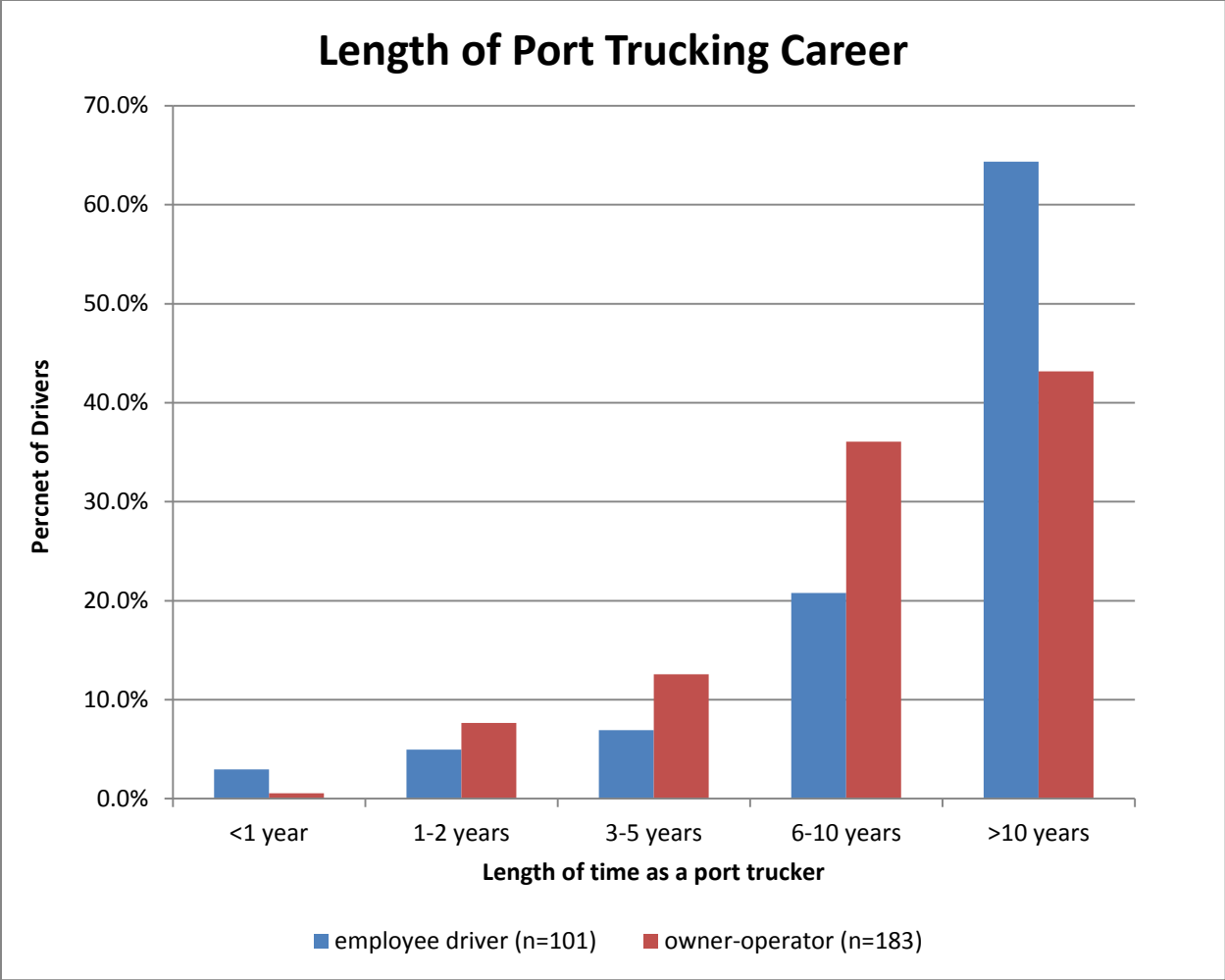
Figure 5.7 Hours per Day

Length of Port Trucking Career

A considerable number of drivers (51%) have been driving for more than 10 years, both for the employee and owner-operator population. The percentage of drivers in each length of time bucket increases with tenure.

Figure 5.8 Length of Port Trucking Career

2013 to 2008 Survey Comparison: Length of Port Trucking Career
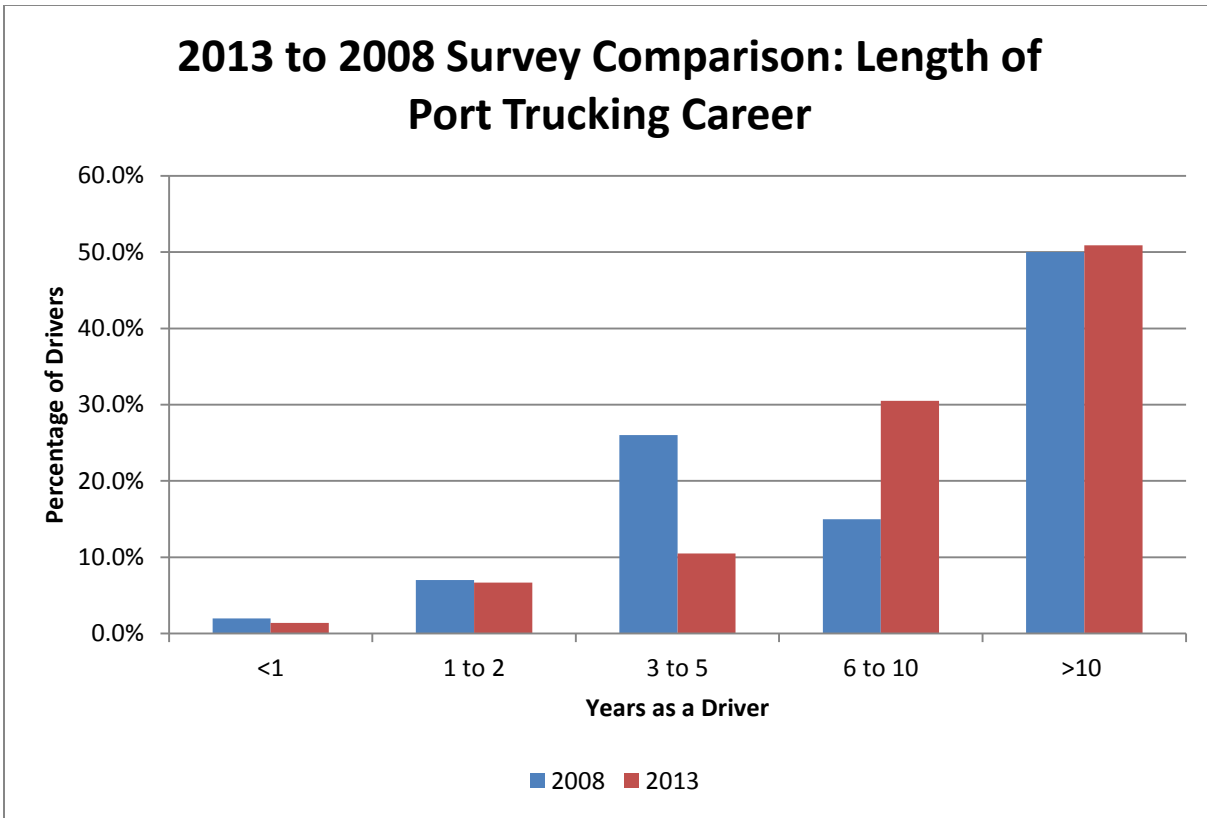
Figure 5.9 2013 to 2008 Survey Comparison: Length of Port Trucking Career

Career length as a driver was comparable from the 2008 to the 2013 survey, with the only major change being a shift from drivers in the 3-5 years category to the 6-10 years category.

Driver Time at Current Company

Drivers indicated shorter times at their current company than time as a driver, indicating that while drivers stay in the business for many years, they were less likely to stay with one company for the duration of their port trucking career. This varied from the 2008 survey, which asked drivers how many companies they had worked for during their career, and over 50% of drivers said only one company.
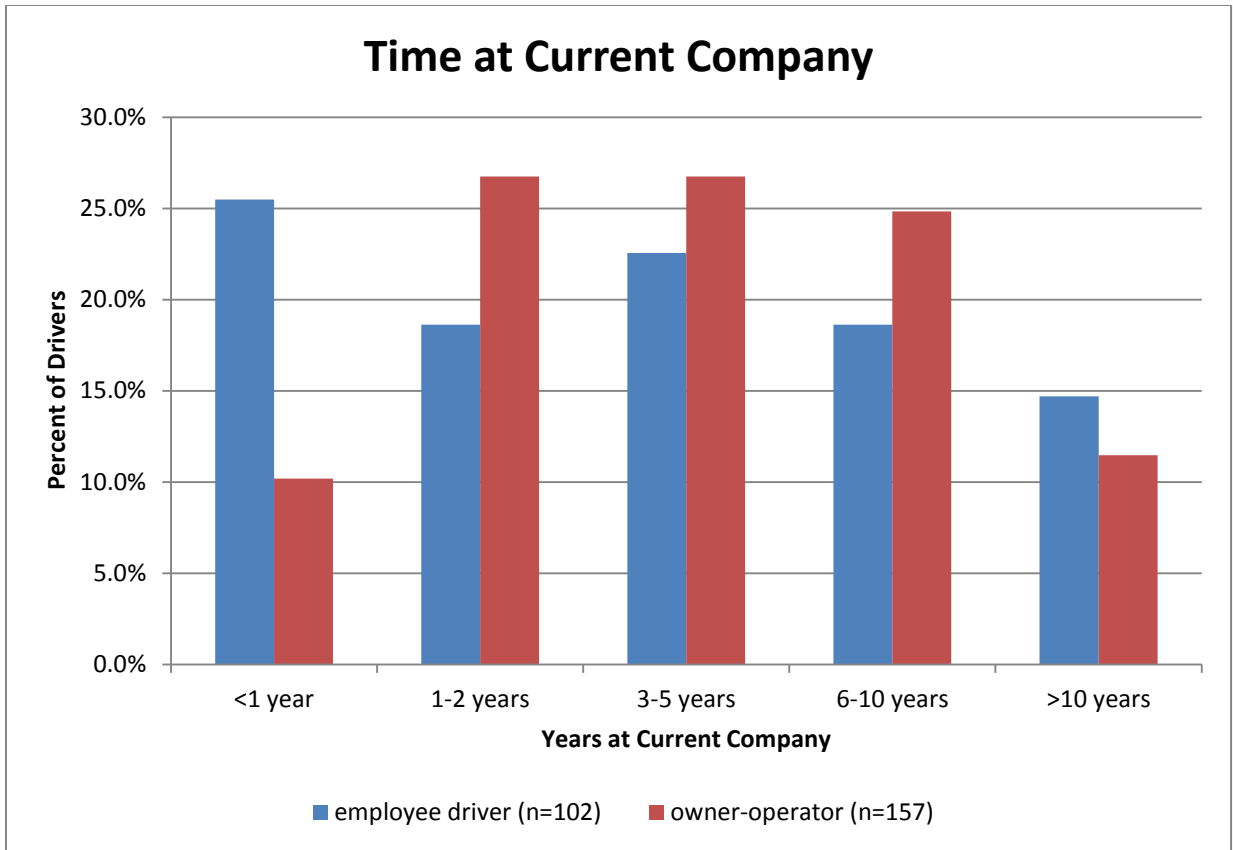
Figure 5.10 Time at Current Company

Other Work

Drivers were also asked to indicate if they had done work besides driving a port truck in the last year. About 37% of drivers (both employees and owner-operators) indicated that they had done other work. Results are shown below:

Table 5.4 Other work in the last year

	Yes	No
employee driver (n=95)	37.4%	62.6%
owner-operator (n=196)	37.8%	62.2%

Drivers who indicated that they had done other work in the last year were asked to describe what type of other work they had done. As can be seen on the chart below, non-port trucking and other driving were the most common forms of other work:
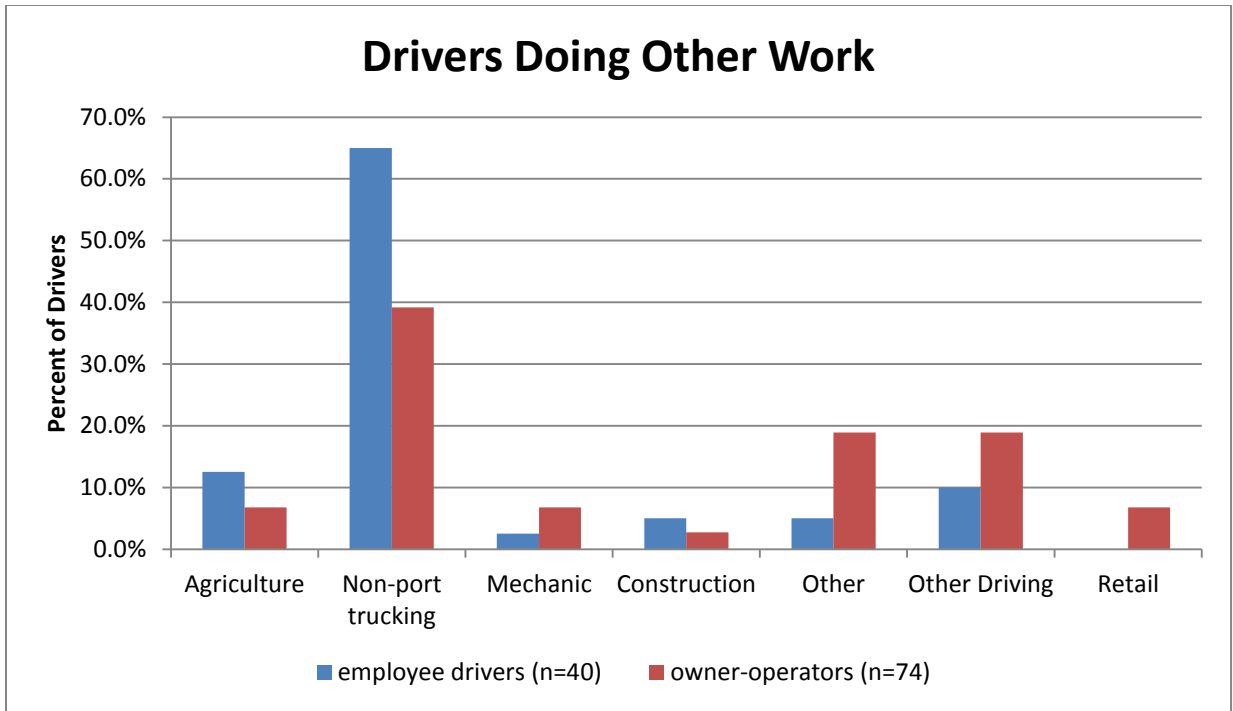
Figure 5.11 Drivers doing other work

Owner-operators were less likely than employee drivers to have worked 5 or more days in the last week. Drivers doing other work were also less likely to have worked 5 or more days in the last week.

Table 5.5 Work week of drivers doing other work

	5 or more	Less than 5
All Drivers		
Owner-Operators (n=141)	60.3%	39.7%
Employee Drivers (n=88)	84.1%	15.9%
Drivers Doing Other Work		
Owner-	47.0%	53.0%

Operators (n=49)		
Employee Drivers (n=27)	85.2%	14.8%

In this Section:

Frequency of Pay: 70% of drivers indicated that they are paid weekly, with 27% indicating that they are paid every other week. Less than 3% are paid monthly.

Pay Calculation: Over 80% of owner-operators are paid by the trip, with most of the rest (about 20%) being paid by the mile. Less than one percent reported being paid by the hour. 55% of employee drivers reported being paid by the trip, with 30% being paid by the hour and 14% being paid by the mile.

Hourly Earnings Last Trip: Driver hourly earnings were calculated from two questions asking how much drivers made on their last trip, and how much time they spent on their last trip. The hourly earnings of owner-operators covered a much larger range than the hourly earnings of employee drivers. Drivers (employees and owner-operators) making longer trips had a larger range of hourly earnings than drivers making shorter trips.

Household Income: 27% of drivers had a household income of $20,000-40,000 per year, with 30% of drivers having a household income of $40,000-60,000 per year. 7% of drivers reported a household income of less than $20,000 per year, and 36% of drivers reported household incomes of more than $60,000 per year.

Employee Driver Earnings: 27% of employee drivers reported earnings of $30,000-40,000 per year, with 26% reporting earnings of $40,000-50,000 per year. 24% of drivers reported earnings of less than $30,000 per year and 15% reported earnings of more than $50,000 per year.

Owner-Operator Earnings: 29% of drivers reported earning over $70,000 per year before expenses, with 35% making between $40,000 to $70,000, and 33% making $40,000 per year before expenses. 22% of drivers reported over $50,000 per year in expenses, with 24% reporting between $30,000 and $50,000. 23% of drivers reported $20,000 and $30,000 in expenses, and 32% of drivers reported less than $20,000 in expenses.

Owner-Operators who Speak English as a Second Language: Owner-Operators who spoke English as a second language were not found to be more likely to report low earnings (less than $15,000per year) than owner-operators as a whole. These owner-operators were also equally likely to report high earnings (more than $45,000 per year) as owner-operators as a whole.

Owner-Operators making trips of 40-500 miles: Drivers making trips of 40-500 miles were more likely to report low earnings (less than $15,000 per year) and were less likely to report high earnings (more than $45,000 per year).

Frequency of Pay

70% of drivers indicated that they are paid weekly, with 27% indicated that they are paid

every other week. A small percentage (<3%) indicated that they are paid monthly.

Pay Calculation

Drivers were asked how their pay was calculated, choosing between by trip, by mile, and by hour. 80% of owner-operators are paid by the trip, with about 20% being paid by the mile. Less than one percent reported being paid by the hour. 55% of employee drivers reported being paid by the trip, with 30% being paid by the hour and 14% being paid by the mile.
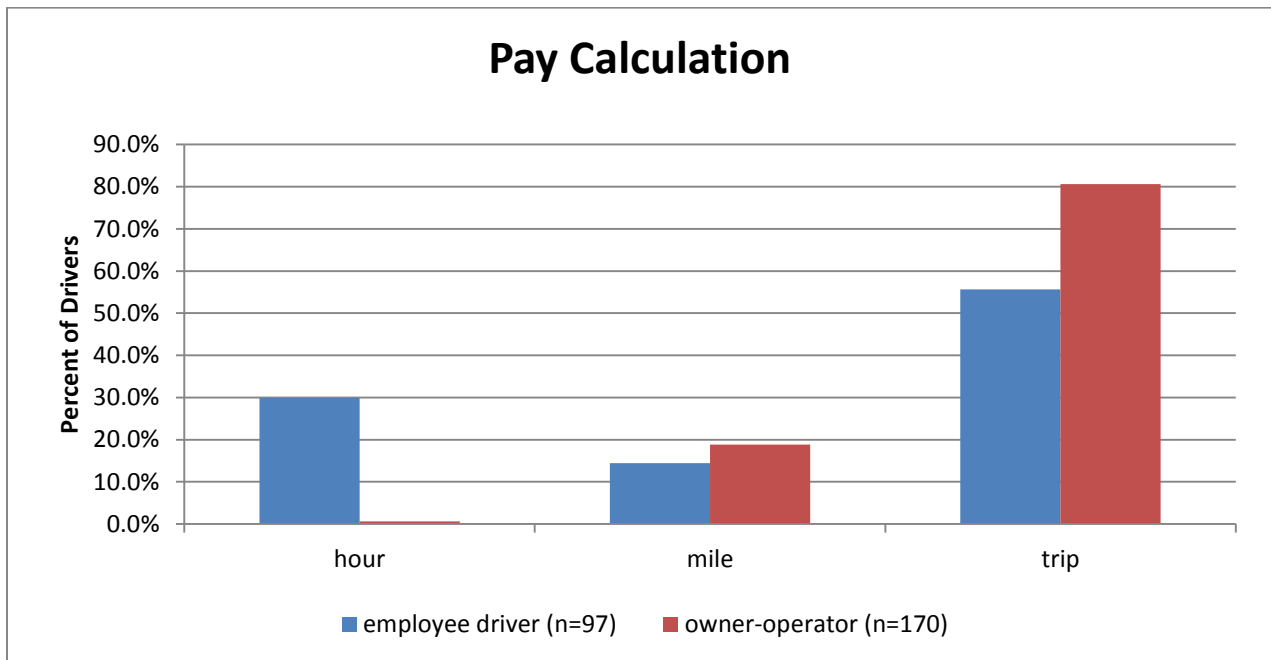
Figure 5.12 Pay Calculation

Hourly Earnings Last Trip

Driver hourly earnings were calculated from two questions asking how much drivers made on their last trip, and how much time they spent on their last trip. The hourly earnings of owner-operators covered a much larger range than the hourly earnings of employee drivers. Drivers (employees and owner-operators) making longer trips had a larger range of hourly earnings than drivers making shorter trips.

Household Income

A chart of drivers' household income is shown below. Note that household income will include earnings from other work, as well as other wage-earners in the household.

27% of drivers had a household income of $20,000-40,000 per year, with 30% of drivers having a household income of $40,000-60,000 per year. 7% of drivers reported a household income of less than $20,000 per year, and 36% of drivers reported household incomes of more than $60,000 per year.
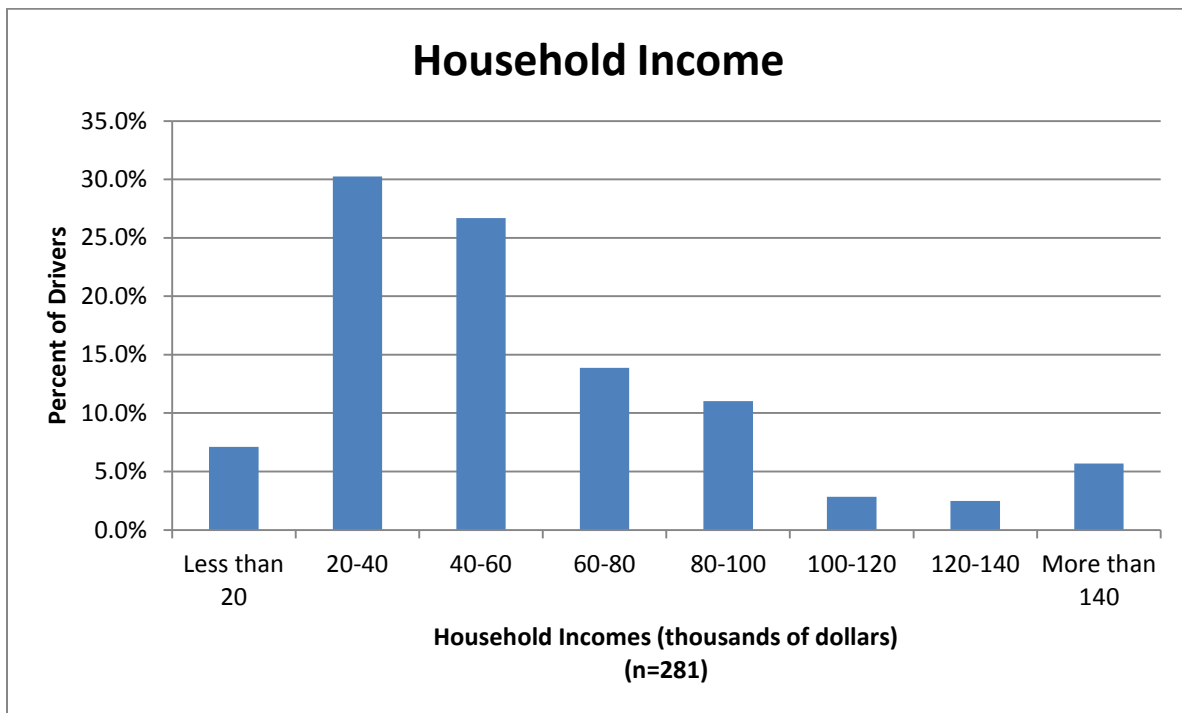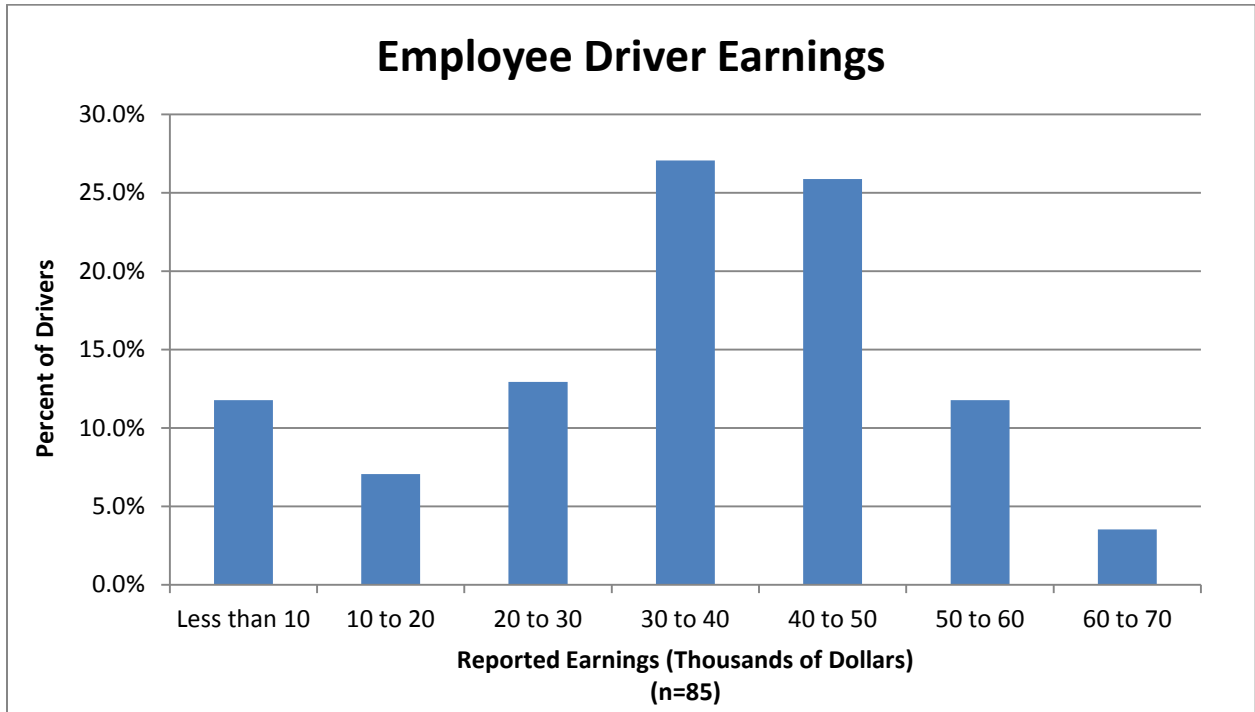
Household Income

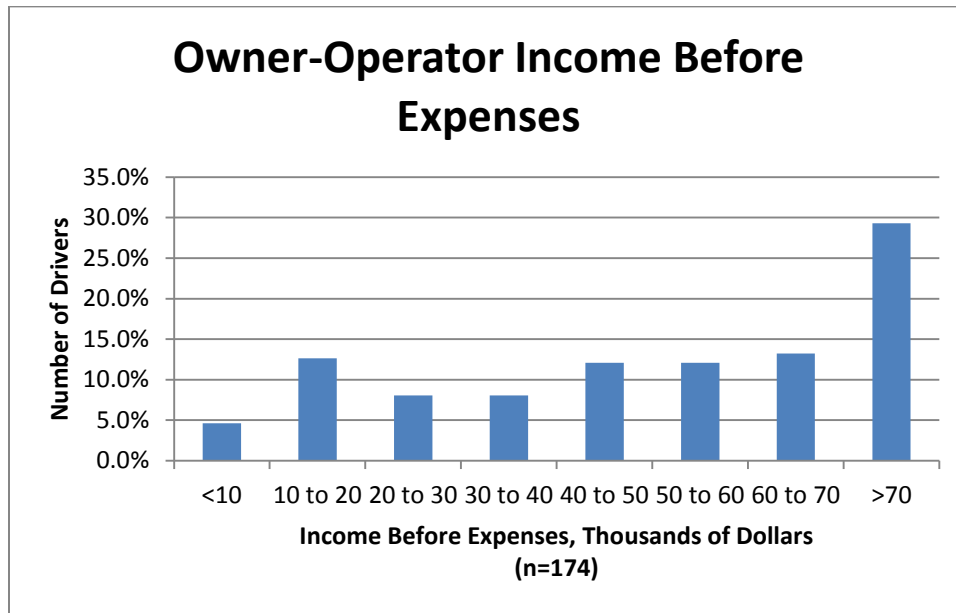**Figure 5.13 Household Income**

Employee Driver Earnings

27% of employee drivers reported earnings of $30,000-40,000 per year, with 26% reporting earnings of $40,000-50,000 per year. 24% of drivers reported earnings of less than $30,000 per year and 15% reported earnings of more than $50,000 per year.

Figure 5.14 Employee Driver Earnings

Owner-Operator Earnings

29% of drivers reported earning over $70,000 per year before expenses, with 35%

making between $40,000 to $70,000, and 33% making $40,000 per year before expenses.

Owner-Operator Income Before Expenses

(Chart: Number of Drivers vs. Income Before Expenses, Thousands of Dollars, n=174)

Income Range	Percentage
<10	~4.5%
10 to 20	~12.5%
20 to 30	~8.0%
30 to 40	~8.0%
40 to 50	~12.0%
50 to 60	~12.0%
60 to 70	~13.0%
>70	~29.0%

Figure 5.15 Owner-Operator Income Before Expenses

22% of drivers reported over $50,000 per year in expenses, with 24% reporting between

$30,000 and $50,000. 23% of drivers reported $20,000 and $30,000 in expenses, and 32% of

drivers reported less than $20,000 in expenses.

Owner-Operator Expenses
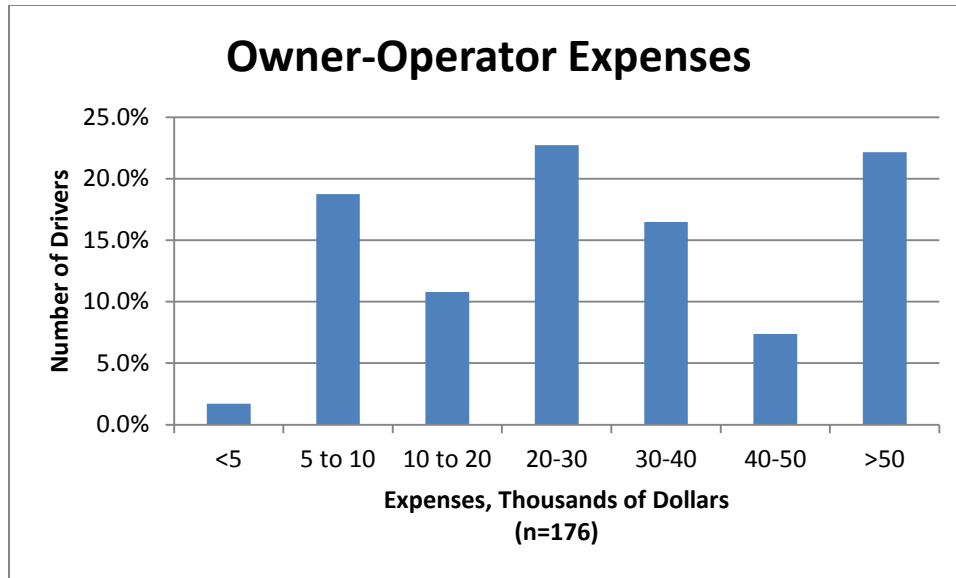
Figure 5.16 Owner-Operator Expenses

Fuel Reimbursement

Table 5.6 Fuel Reimbursement

Fuel Reimbursement	
Reimbursed	56.6%
Not Reimbursed	43.4%
n=166	

57% of owner-operators indicated that they were reimbursed for fuel.

Owner-Operators who Speak English as a Second Language:

Owner-Operators who spoke English as a second language were not found to be more likely to report low earnings (less than $15,000per year) than owner-operators as a whole. These owner-operators were also equally likely to report high earnings (more than $45,000 per year) as owner-operators as a whole.

Owner-Operators making trips of 40-500 miles:

Drivers making trips of 40-500 miles were more likely to report low earnings (less than $15,000 per year) and were less likely to report high earnings (more than $45,000 per year).

Truck Information

In this section:

Truck Ownership: 97% of owner-operators own their trucks, and 3% lease their trucks.

Length of Ownership: 35% of owner-operators have owned their truck for between 3 and 5 years. 25 % of owner-operators have owned their trucks for between 6 and 10 years, and 14% of drivers have owned their trucks for 10 years or more. 25% of owner-operators have owned their truck for 2 years or less.

Truck Payment: 62% of owner-operators have finished paying off their truck (83 out of 133 respondents). 26% drivers still paying off their truck have a payment of $1000-1250, and 60% of drivers pay less than $1000 per month. Only 14% of drivers said that they have a truck payment of more than $1250 per month.

Cost of Truck: 37% of drivers spent between $10,000 and $20,000 on their truck, with another 22% spending between $20,000 and $30,000.

Truck Engine Year: 23% of owner-operator trucks at the Port of Seattle are from 1994 to 1997. 51% are from 1998-2001, and 19% are from 2002-2006. 6% are engine year 2007 or newer.

Truck Replacement to Meet 1994 Emissions Standards: 32% of owner-operators indicated that they replaced their truck to meet the 1994 emissions standard.

Plans to Upgrade Truck: 62% of owner-operators intend to upgrade their trucks, and 71% of owner-operators planning to upgrade intend to do so by 2015..

Upgrade Assistance: 72% of owner-operators are interested in a grant, with 48% of owner-operators interested in a loan and 18% interested in a lease.

Truck Ownership

Owner-operators were asked if they owned their truck, leased their truck, or drove a company truck. The survey results indicated that 6 owner-operators (3%) lease their truck, and 173 (97%) own their truck.

Do you own your truck?

lease (n=8)
4%

own (n=176)
96%
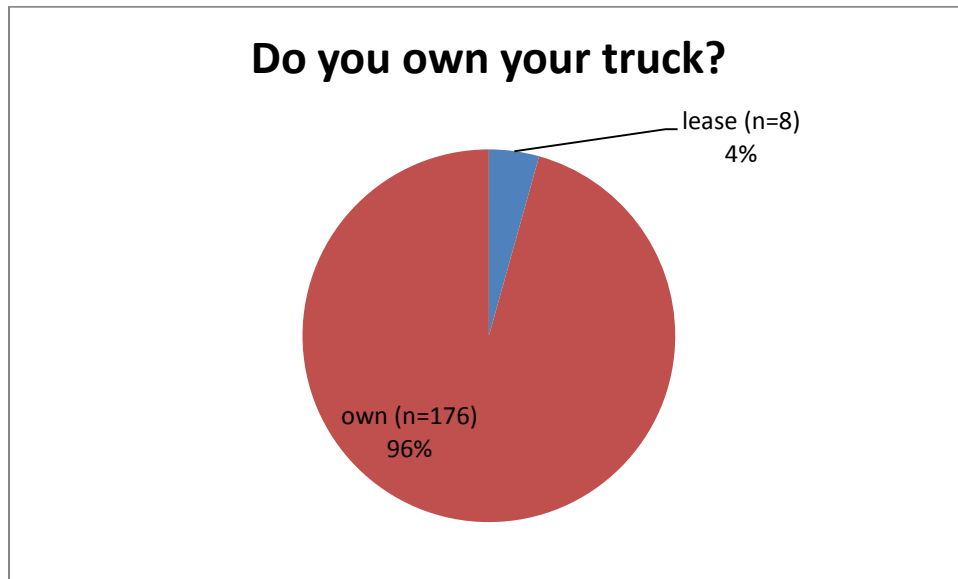
Figure 5.17 Truck Ownership

Length of Ownership

Drivers who owned their own truck were asked to indicate how long they have owned their truck. 35% of owner-operators have owned their truck for between 3 and 5 years. 25 % of owner-operators have owned their trucks for between 6 and 10 years, and 14% of drivers have owned their trucks for 10 years or more. 25% of owner-operators have owned their truck for 2 years or less.
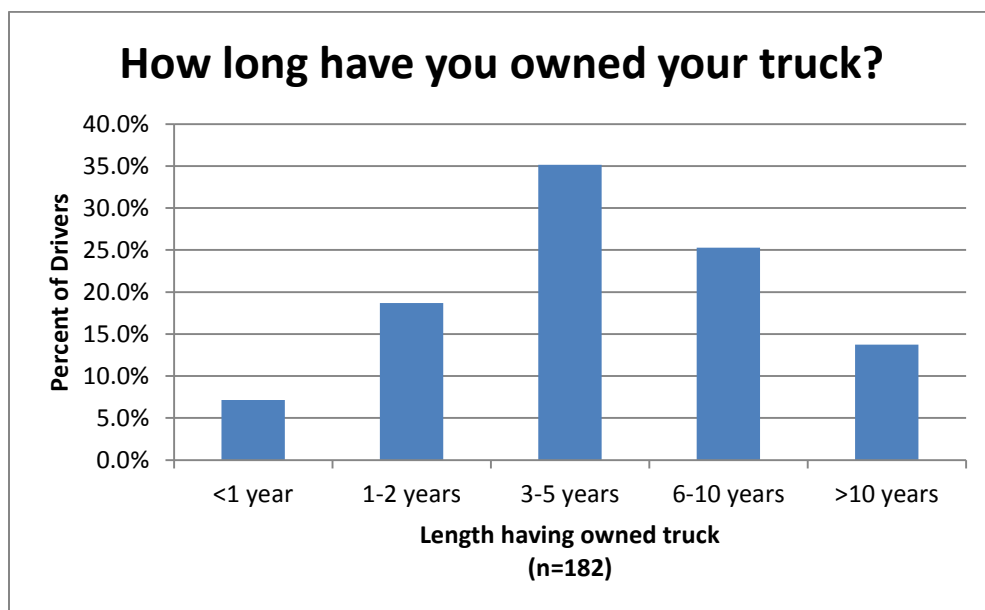
Figure 5.18 Length of Ownership

Truck Payment

62% of owner-operators have finished paying off their truck (83 out of 133 respondents). 26% drivers still paying off their truck have a payment of $1000-1250, and 60% of drivers pay less than $1000 per month. Only 14% of drivers said that they have a truck payment of more than $1250 per month.
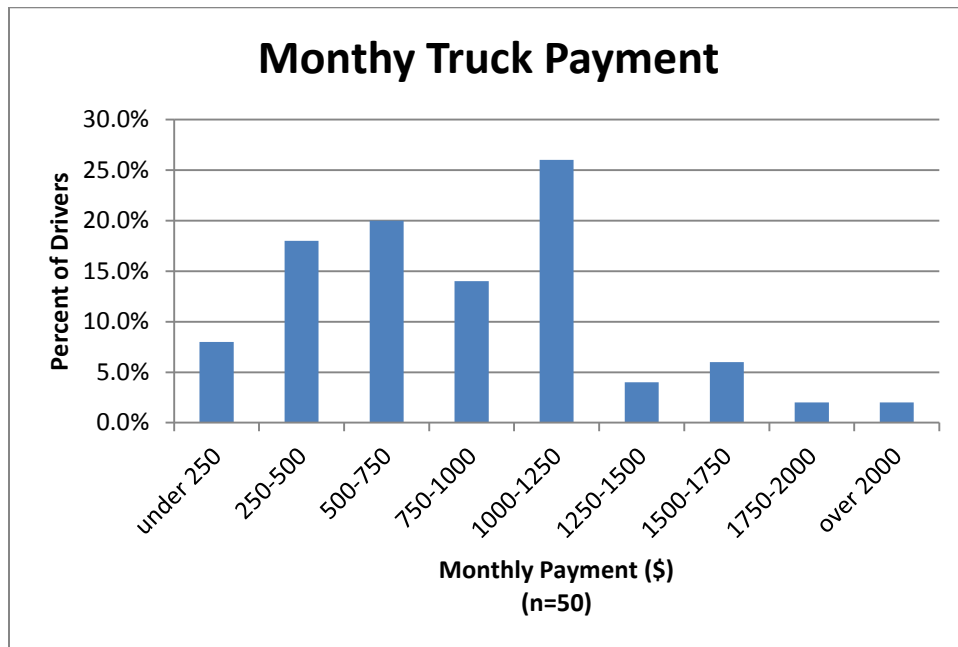
Figure 5.19 Monthly Truck Payment

Cost of Truck

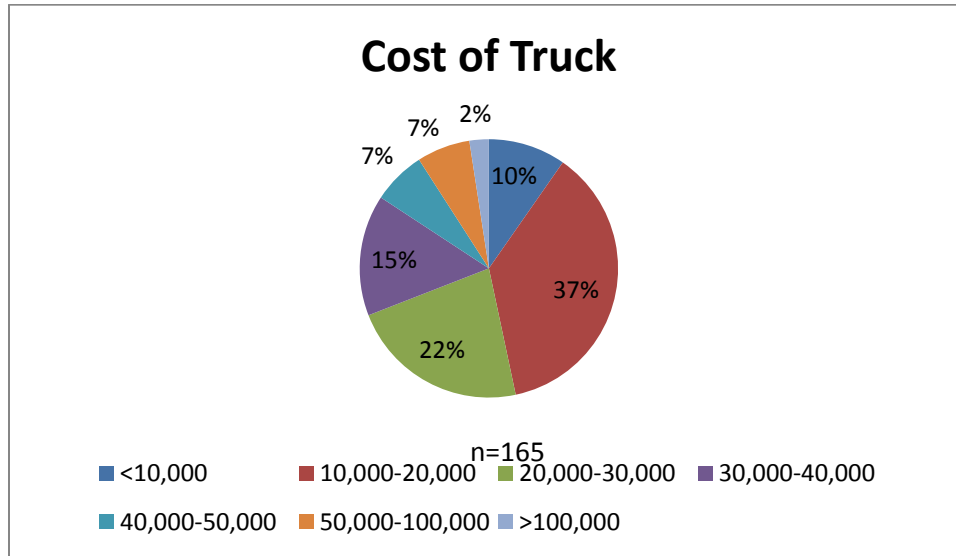Drivers were also asked to indicate how much they paid for their truck at the time of purchase. 37% of drivers spent between $10,000 and $20,000 on their truck, with another 22% spending between $20,000 and $30,000.

Cost of Truck

Segment	Value
<10,000	10%
10,000-20,000	37%
20,000-30,000	22%
30,000-40,000	15%
40,000-50,000	7%
50,000-100,000	7%
>100,000	2%

n=165

Figure 5.20 Cost of Truck

Truck Engine Year

23% of owner-operator trucks at the Port of Seattle are from 1994 to 1997. 51% are from 1998-2001, and 19% are from 2002-2006. 6% are engine year 2007 or newer.

Truck Engine Year

Percent of Drivers

100	
80	
60	
40	
20	
0	

1994-1997 1998-2001 2002-2006 2007 or later

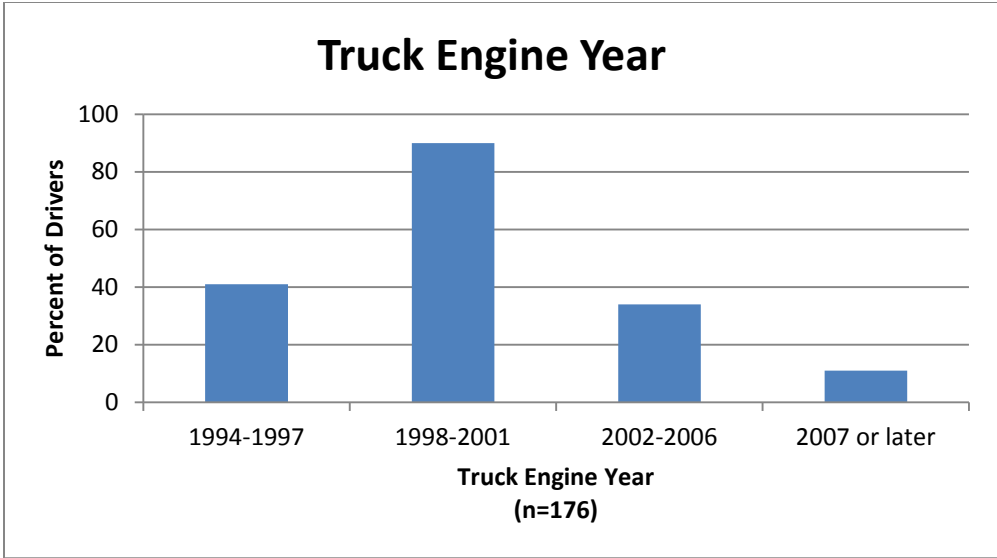**Truck Engine Year**
(n=176)

Figure 5.21 Truck Engine Year

Replaced Trucks to Meet 1994 Emissions Standards

32% of owner-operators indicated that they replaced their truck to meet the 1994

emissions standard.

Did you replace your truck to meet 1994 emissions standards?

Yes (n=70) 35%

No (n=132) 65%
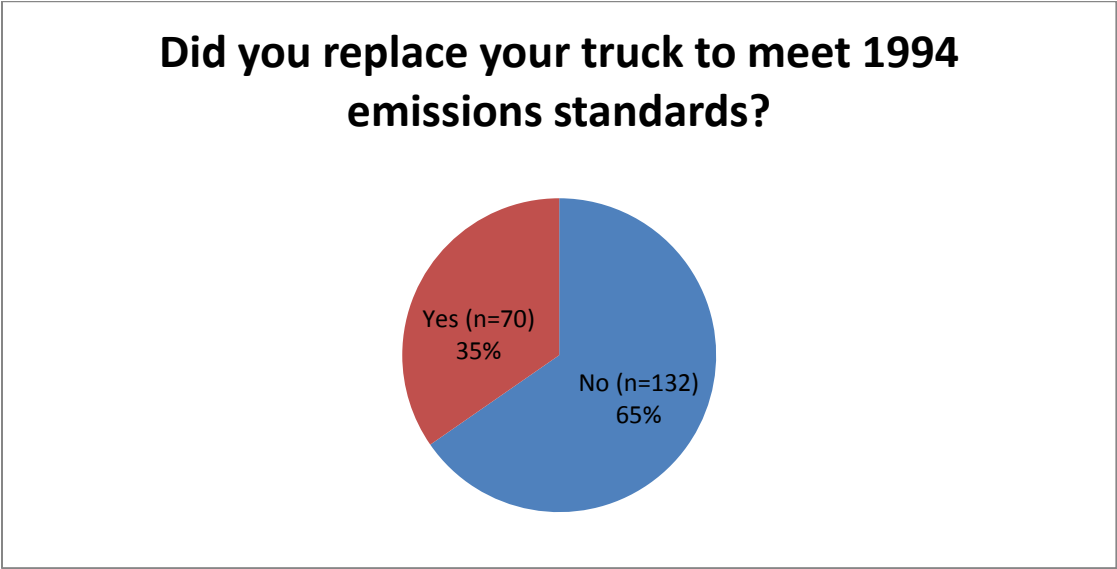
Figure 5.22 1994 Requirement Truck Replacement

Plans to Upgrade

In 2015, trucks will be required to have an engine year 2007 or newer truck to enter the Port of Seattle. Owner-operators in the survey were asked if and when they planned to upgrade their truck to conform with this requirement, and what year they planned on making an upgrade. 62% of owner-operators intend to upgrade their trucks, and 71% of owner-operators planning to upgrade intend to do so by 2015.

Do you plan to upgrade your truck?

no (n=82) 42%

yes (n=115) 58%

Figure 5.23 Upgrade Plans

Figure 5.24 Year of Planned Upgrade

Ability to Pay for Upgrade

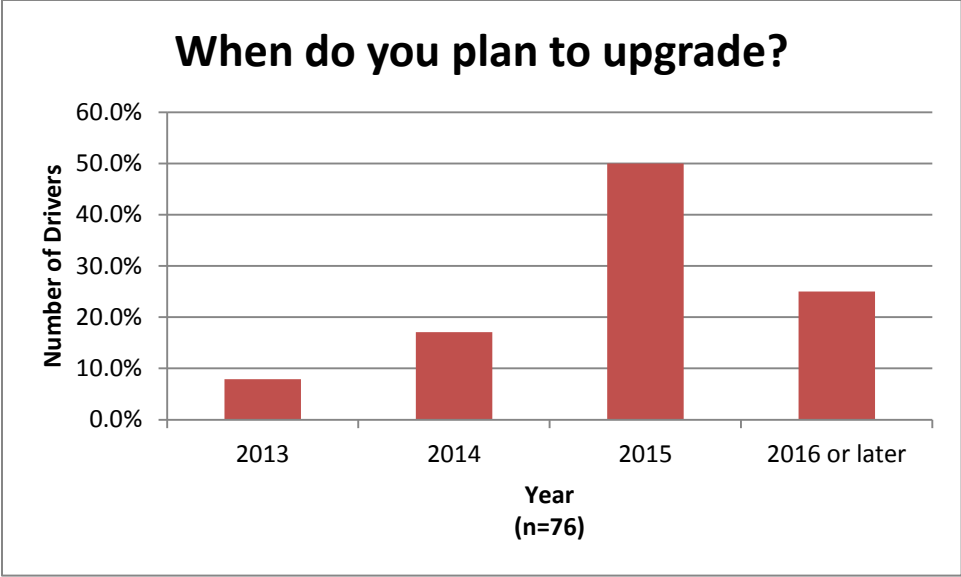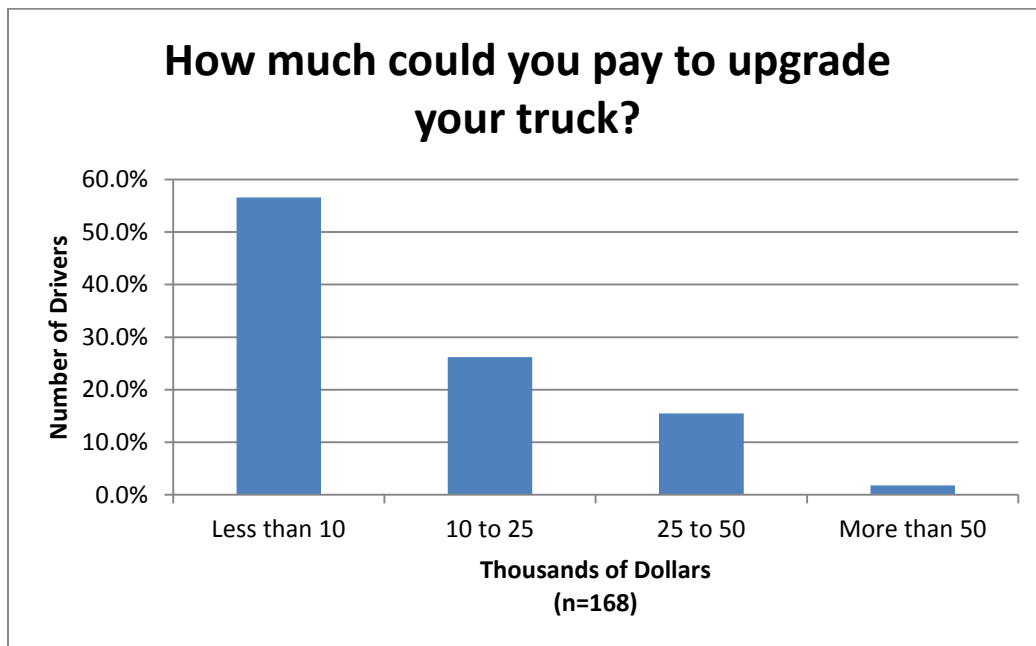Drivers were also asked to indicate how much they would be able to pay to make the required upgrade to their truck. The majority of drivers indicated that they would be able to pay less than $10,000 to upgrade.

How much could you pay to upgrade your truck?

Figure 5.25 Ability to Pay for Upgrade

Upgrade Assistance Preferences

Drivers were also asked what forms of assistance in upgrading their truck that would be helpful, choosing from a low interest loan, leasing assistance, and a grant to help cover their upgrade expenses. Drivers were able to indicate more than one form of assistance. 72% of owner-operators are interested in a grant, with 48% of owner-operators interested in a loan and 18% interested in a lease. 30 owner-operators expressed interest in a lease, compared to 6 owner-operators currently leasing.

Table 5.7 Assistance Preference

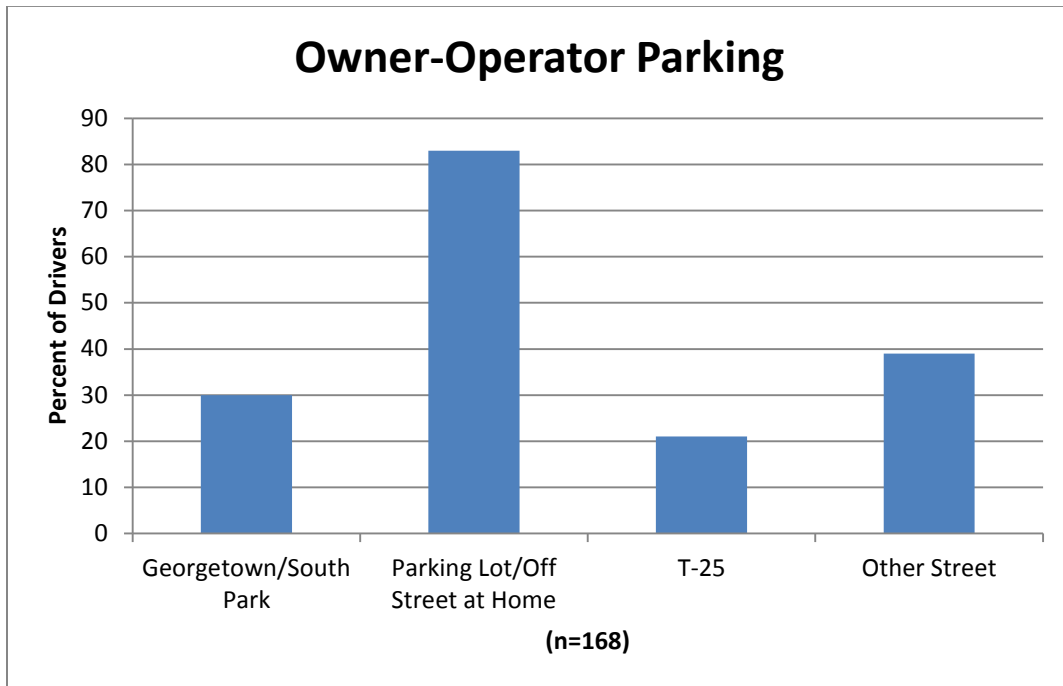|	
Loan	47.6%
Lease	17.6%
Grant	72.4%

<u>Truck Parking</u>

In this section:
Parking Locations: 17% (30 out of 173) of owner-operators surveyed park in South Park or Georgetown. In the 2008 survey 22.5% of all drivers indicated that they parked in either South Park or Georgetown (the 2008 survey did not differentiate between owner-operators and employee drivers in their results regarding parking). 48% (83 out of 173) of drivers park off-street at home or in a parking lot. 12% of owner-operators parked at Terminal 25.
Parking Costs: 14% of owner-operators pay for parking. The average cost of parking for these drivers is $117 per month.

17% (30 out of 173) of owner-operators surveyed indicated that they parked in South Park or Georgetown. This is a reduction from the 2008 survey, where 22.5% of all drivers indicated that they parked in either South Park or Georgetown (the 2008 survey did not differentiate between owner-operators and employee drivers in their results regarding parking). 48% (83 out of 173) of drivers park off-street at home or in a parking lot. 12% of owner-operators parked at Terminal 25, a parking area established by the Port in response to feedback from previous surveys where drivers said they would be interested in using Port provided parking.

Table 5.8 Owner-Operator Parking

Owner-Operator Parking

A bar chart titled "Owner-Operator Parking" with the y-axis labeled "Percent of Drivers" ranging from 0 to 90. The categories along the x-axis and their approximate values are:
- Georgetown/South Park: 30
- Parking Lot/Off Street at Home: 83
- T-25: 21
- Other Street: 39

(n=168)

Owner-operators were also asked if they pay for parking, and if they do pay for parking, how much. 14% of owner-operators indicated that they paid for parking, and owner-operators that paid for parking paid an average of $117 per month. In 2008, 11% of drivers reported paying to park their trucks.

<u>Demographics</u>

In this section:
Gender: Port of Seattle truck drivers are 98% male and 2% female.
English as a First Language: 46% of drivers speak English as a first language. Employee drivers were three times more likely to speak English as a first language than owner-operators.
Place of Origin: 55% of drivers who speak English as a second language are from Africa, with 18% coming from Eastern Europe, 13% from Asia/Pacific Islands, and 12% from South/Central America.
Languages: Drivers speak 19 different first languages, including English. Amharic was the most common first language other than English.
Education: 60% of drivers at the Port of Seattle have accomplished a level of education beyond high school. 15% of drivers did not graduate from high school.
Household Size: Most driver households (66%) have 2 adults. 54% of drivers have children in their household, and 29% of drivers support children that do not live in their household.

Gender

Port of Seattle truck drivers are 98% male and 2% female.

English as a First Language

Drivers were asked if they spoke English as a first language. Slightly more than half of drivers (53%) indicated that they do not speak English as a first language. Employee drivers were more likely to speak English as their first language.

Table 5.9 English as a First Language

Do you speak English as your first language?			
	Employee	**Owner-Operator**	**All Drivers**
Yes	86 (86%)	43 (25%)	129 (46%)
No	13 (13%)	130 (75%)	143 (53%)
Total	99	173	272

Place of Origin

Drivers that did not speak English as a first language were asked where they came from. 55% of drivers who speak English as a second language are from Africa, with 18% coming from Eastern Europe, 13% from Asia/Pacific Islands, and 12% from South/Central America.

Table 5.10 Place of Origin

Come From?	Number	Percent	Employee Drivers	Owner Operators
Africa	78	55%	4	74
Asia/Pacific Islands	18	13%	1	16
Eastern Europe	26	18%	1	25
Middle East	3	2%	0	3
South/ Central America	17	12%	10	7

Values for the 2006 and 2013 surveys were very similar, with 46% of 2006 drivers indicating that they were born outside the United States, and 47.5% of 2013 drivers indicating that English was not their first language. The 2008 data is somewhat different, with only 41% of drivers indicating that they speak English as a second language.
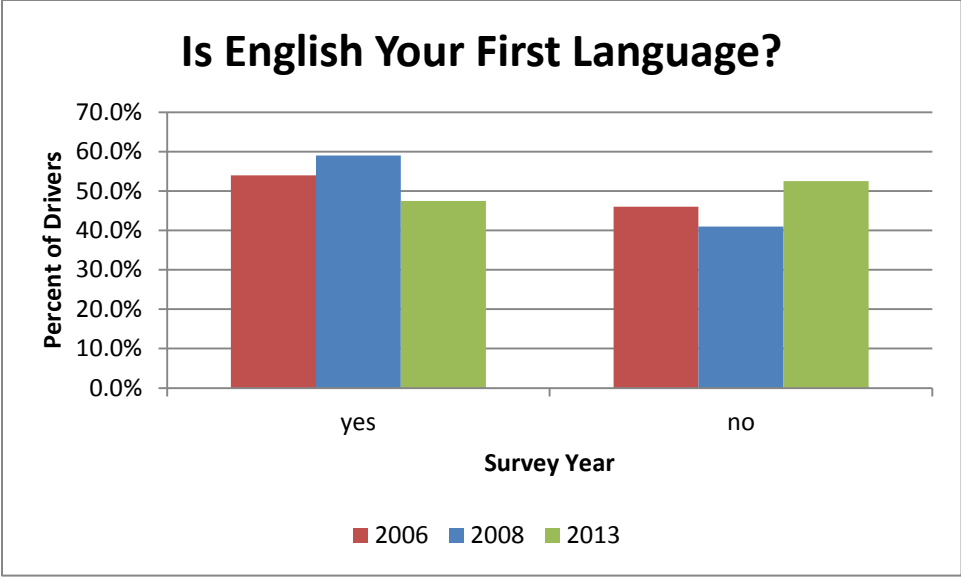
Figure 5.26 English as First Language Comparison
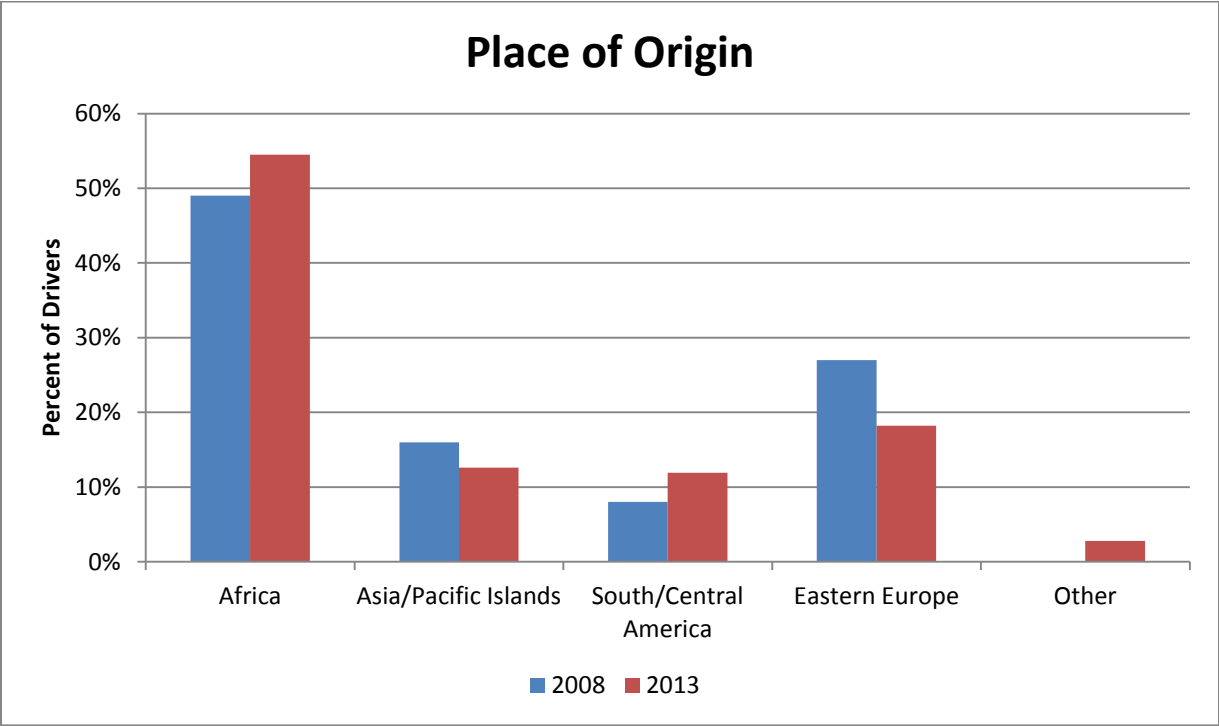
Figure 5.27 Place of Origin Comparison

Figure 1. Race/ethnicity (N=138)[3]

African / African American (n=35) 25%

Asian American/Asian/Pacific Islander (n=13) 9%

White (n=71) 52%

Other 14%

Native American (n=4) 3%

Hispanic/Latino (n=7) 5%

Mixed Race (Other) (n=8) 6%
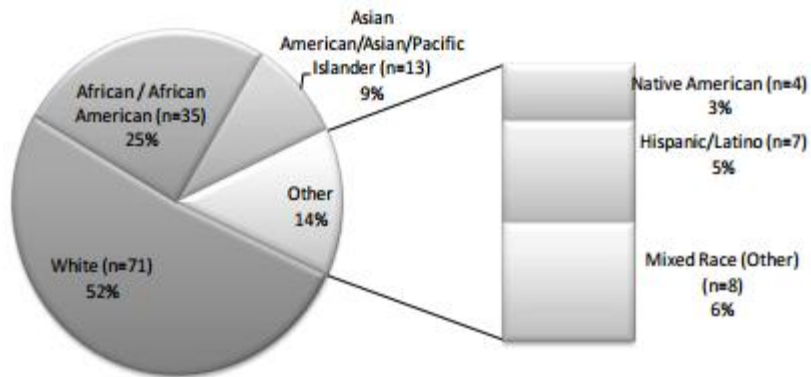
**Figure 5.28 Place of Origin Information from 2006 Survey**

First Languages

Drivers who indicated that they did not speak English as their first language were asked what language they spoke as a first language. Drivers speak 19 different first languages, including English. Amharic was the most common first language other than English.

African	
Amharic	46
Punjabi	16
Somali	13
Oromo	4
Wolof	1
Runyoro	1
Swahili	1
Tigrinya	9
Middle Eastern	
Arabic	4
South/Central America	
Spanish	12
Asia/Pacific Islands	
Filipino	1
Korean	3
Samoan	2
Eastern European	
Lithuanian	1
Romanian	4
Ukrainian	13
Russian	12
Other	
French	2

Figure 5.29 Table of First Languages

Education

All drivers were asked the highest level of education they had completed by choosing from the eight categories on the horizontal axis in the figure below. The majority of drivers (169 of 280, or 60%) had completed some level of education beyond high school, and only 42 of 280 drivers (15%) had not finished high school.
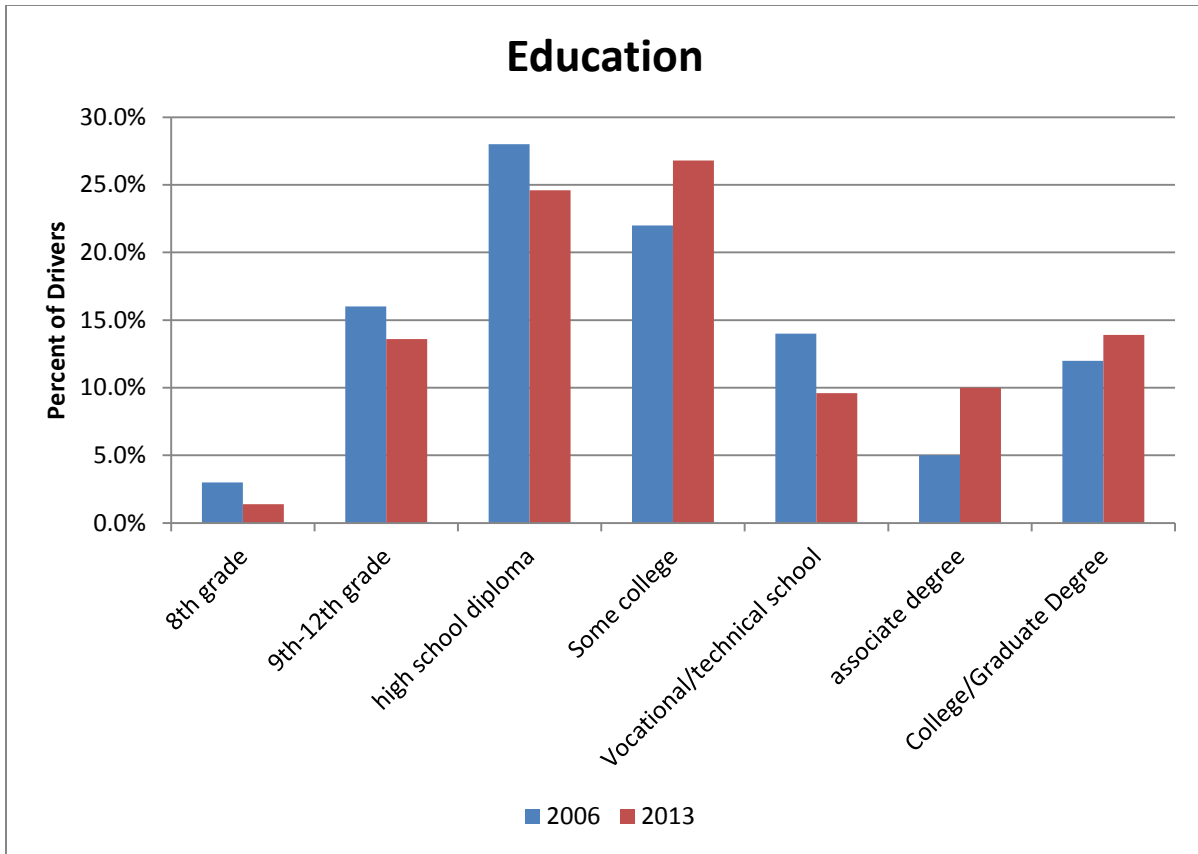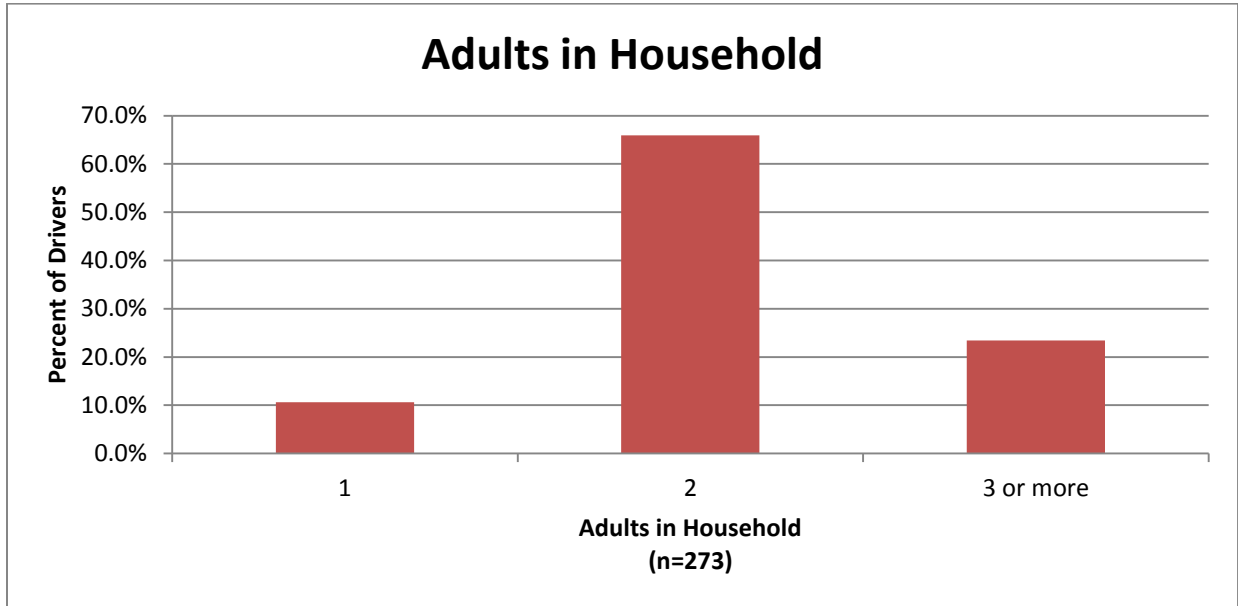
Figure 5.30 Education

The education numbers from the 2006 and 2013 surveys were very similar, with the largest categories of drivers indicating that they had a high school diploma or some college.

Household Size

Drivers were asked to indicate the number of adults and children in their household. The results are shown in the charts below.

Figure 5.31 Adults in Household

Children in Household

Children in Household chart: y-axis "Number of Drivers" (0.0% to 50.0%), x-axis "Number of Children (n=274)"

- 0: ~46%
- 1: ~15%
- 2: ~18.5%
- 3: ~12%
- 4 or more: ~8%
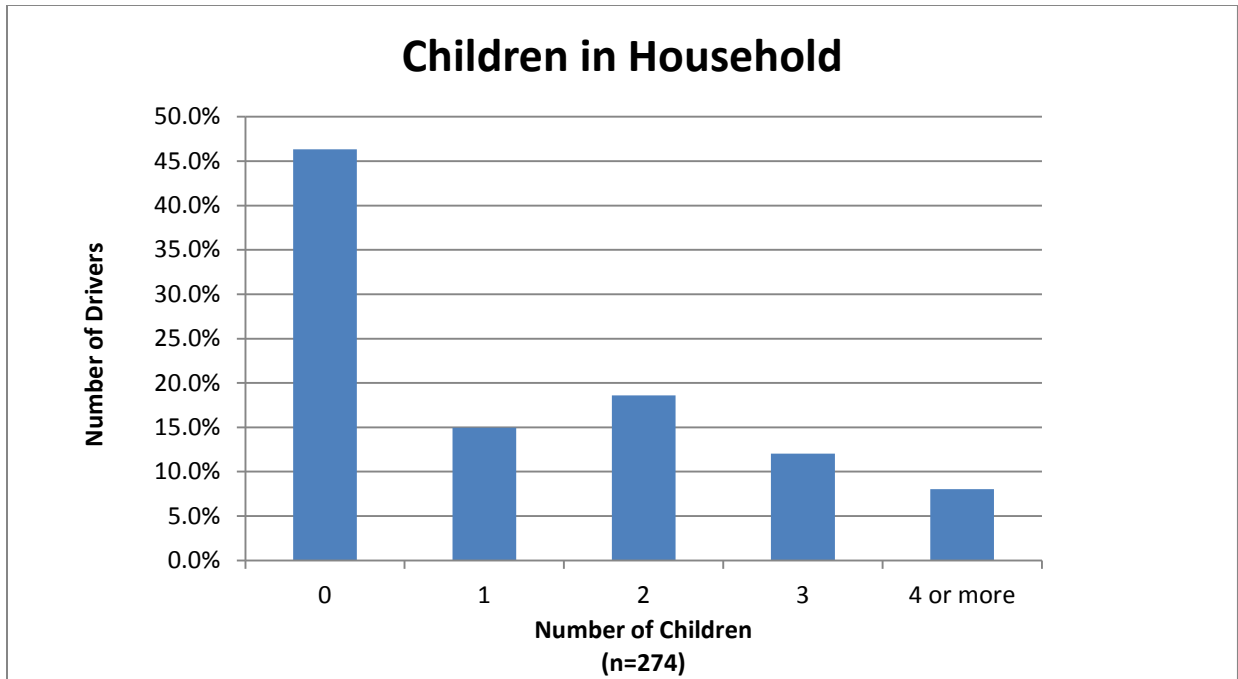
Figure 5.32 Children in Household

29% of drivers indicated that they supported children that do not live in their household.

Chapter 6 Discussion

There are a variety of drivers serving the port. Drivers may not speak English as a first language, or may access the Port of Seattle infrequently. One goal of the 2013 survey was to identify groups such as the aforementioned, to help the Port of Seattle plan communications to all drivers who serve to the Port, to ensure they are aware of changing regulations and are able to comply with regulations and carry out their jobs.

Helping drivers afford the necessary updates to comply with the Clean Trucks program is another necessary obstacle. A large portion of drayage drivers are owner-operators, who own their own trucks. These drivers would be financially responsible for upgrading to a newer truck.. For this reason, it was important to include survey questions that would help the Port of Seattle assess drivers' earnings, and drivers' ability to afford to comply with regulations. The Port of Seattle will be able to use this information to help design programs to help drivers afford to comply with regulations and continue to have careers in the field.

The Port of Seattle is also a major trip generator in the Seattle area, and throughout the state. The survey gathered data on drivers' last trip, and number of turns drivers made per day. This data can be used to estimate the trip distribution generated by the Port of Seattle. The Port of Seattle frequently works with state and local government to help plan road improvements to alleviate traffic impacts of port trucks, and improve access to the port for these trucks. Getting a better understanding of this trip distribution can help the Port of Seattle, state government, and local governments plan improvements that will best serve the needs of the Port and the areas in which their trucks operate.

Chapter 7 Conclusions and Recommendations

Previous surveys at the Port of Seattle had a much lower sample size collected. The difference between the past survey methods and this survey was a multi-day survey collection process, with the 2013 survey distributing over 8 days, compared to one day survey distribution/collection processes in 2008 and 2013. Staff from Port Jobs, a non-profit that works with the Port of Seattle, were on site distributing the survey for a total of 8 days, covering all terminals. In addition to distributing surveys, Port Jobs staff reminded drivers who indicated that they had already received surveys to mail the surveys in, which likely contributed to the high response rate of the survey.

Questions about destination, trip length, and pay should be refined for additional clarity about if the driver's pay and indicated trip time are round trip or one way.

Drivers seemed somewhat confused by questions such as number 13, which had two parts (Is this a year-round, full-time job for you?). Many drivers checked yes or no for only one of the two questions, leading to a poor response rate for both questions. This question likely would have gotten a better response had the language been simplified (e.g. Is this a full time job for you?), or presented as two questions.

The 2013 survey contained a mix of write-in and check-box (categorical) questions. Categorical questions generally got a better response rate than write-in questions, and write-in questions sometimes received answers that didn't make sense. Internal checks on categorical data to see if answers contradicted (such as length of average trip and average turns per day) usually indicated that responses were appropriate. Future surveying efforts (as all surveying

efforts), will have to weigh the balance between the strong response rate and quality responses

categorical questions allow against the higher precision afforded by write-in questions.

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