

Crime Prevention for Truckers Study



U.S. Department of Transportation
Federal Motor Carrier Safety Administration

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FOREWORD

This report presents the Crime Prevention for Truckers Study for the Federal Motor Carrier Safety Administration (FMCSA). The overall goal of the project is to evaluate the prevalence of crimes being committed against women and minority truck drivers in the United States. The report summarizes literature relevant to the project's objectives. Topics include frequency of crimes committed, nature of crimes, and contributing factors to crimes committed. The literature review findings were used to support and plan the remainder of the project tasks, which include implementing a truck driver survey, performing a data analysis, and composing a final report to conclude the findings.

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16. Abstract The Federal Motor Carrier Safety Administration (FMCSA) initiated this project to understand the nature and prevalence of harassment and assaults against truckers. Harassment, in this study, is defined as the threat of harm or actual physical harm perpetrated against a trucker, their possessions, vehicle, or cargo. Harassment was evaluated for women and minority male truckers with incidence among non-minority males serving as a control. The project team first performed a literature review on the topic, which indicated that threats of harm and actual physical harm are the most common types of crime committed against women and minority truckers; however, they are experienced differently among the two groups. The literature review was followed by the development of an online survey to collect data. The data collected pertained to three driver groups: 1) women truck drivers, 2) minority male truck drivers, and 3) non-minority male truck drivers (control group). Next, a statistical analysis was performed to determine if the nature and frequency of crimes committed against women and minority male truck drivers differ significantly from the control group of non-minority male truck drivers. The survey data provided important insights into the nature and frequency of harassment against truck drivers, where and when these incidents occur, characteristics of the aggressors, how many of these incidents go unreported and why, and the harassment odds risk of women and minority truck drivers relative to non-minority truck drivers. The following are suggestions provided by surveyed truck drivers for preventing future harassment against truckers and include enhancing safety at existing trucking facilities, providing additional parking facilities, allowing firearm carrying in the trucking industry, improving communication within the trucking industry, providing personal safety training to truck drivers, and developing educational material to increase awareness. Note: regulatory and policy changes related to carrying firearms are beyond the purview of FMCSA's authority.			
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SI* (MODERN METRIC) CONVERSION FACTORS

Approximate Conversions to SI Units				
Symbol	When You Know	Multiply By	To Find	Symbol
Length				
In	inches	25.4	Millimeters	mm
Ft	feet	0.305	Meters	m
Yd	yards	0.914	Meters	m
Mi	miles	1.61	Kilometers	km
Area				
in ²	square inches	645.2	square millimeters	mm ²
ft ²	square feet	0.093	square meters	m ²
yd ²	square yards	0.836	square meters	m ²
Ac	Acres	0.405	Hectares	ha
mi ²	square miles	2.59	square kilometers	km ²
Volume (volumes greater than 1,000L shall be shown in m³)				
fl oz	fluid ounces	29.57	Milliliters	mL
Gal	gallons	3.785	Liters	L
ft ³	cubic feet	0.028	cubic meters	m ³
yd ³	cubic yards	0.765	cubic meters	m ³
Mass				
Oz	ounces	28.35	Grams	g
Lb	pounds	0.454	Kilograms	kg
T	short tons (2,000 lb)	0.907	megagrams (or "metric ton")	Mg (or "t")
Temperature (exact degrees)				
°F	Fahrenheit	5(F-32)/9 or (F-32)/1.8	Celsius	°C
Illumination				
Fc	foot-candles	10.76	Lux	lx
Fl	foot-Lamberts	3.426	candela/m ²	cd/m ²
Force and Pressure or Stress				
Lbf	pound-force	4.45	Newtons	N
lbf/in ²	pound-force per square inch	6.89	Kilopascals	kPa
Approximate Conversions from SI Units				
Symbol	When You Know	Multiply By	To Find	Symbol
Length				
Mm	millimeters	0.039	Inches	in
M	meters	3.28	Feet	ft
M	meters	1.09	Yards	yd
Km	kilometers	0.621	Miles	mi
Area				
mm ²	square millimeters	0.0016	square inches	in ²
m ²	square meters	10.764	square feet	ft ²
m ²	square meters	1.195	square yards	yd ²
Ha	hectares	2.47	Acres	ac
km ²	square kilometers	0.386	square miles	mi ²
Volume				
mL	milliliters	0.034	fluid ounces	fl oz
L	liters	0.264	Gallons	gal
m ³	cubic meters	35.314	cubic feet	ft ³
m ³	cubic meters	1.307	cubic yards	yd ³
Mass				
G	grams	0.035	Ounces	oz
Kg	kilograms	2.202	Pounds	lb
Mg (or "t")	megagrams (or "metric ton")	1.103	short tons (2,000 lb)	T
Temperature (exact degrees)				
°C	Celsius	1.8c+32	Fahrenheit	°F
Illumination				
Lx	lux	0.0929	foot-candles	fc
cd/m ²	candela/m ²	0.2919	foot-Lamberts	fl
Force and Pressure or Stress				
N	newtons	0.225	pound-force	lbf
kPa	kilopascals	0.145	pound-force per square inch	lbf/in ²

* SI is the symbol for the International System of Units. Appropriate rounding should be made to comply with Section 4 of ASTM E380. (Revised March 2003, Section 508-accessible version September 2009)

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LIST OF ACRONYMS, ABBREVIATIONS, AND SYMBOLS

Acronym	Definition
CB	citizen's band
CDL	commercial driver's license
CI	credible interval
CITI	Collaborative Institutional Training Initiative
EEOC	Equal Employment Opportunity Commission
FMCSA	Federal Motor Carrier Safety Administration
GVWR	gross vehicle weight rating
HR	human resources
ICR	information collection request
IRB	Institutional Review Board
NCVS	National Crime Victimization Survey
NPR	National Public Radio
OHRP	Office of Human Research Protections
OMB	Office of Management and Budget
OR	odds ratio
RAINN	Rape, Abuse & Incest National Network
SVS	Supplemental Victimization Survey
PII	personally identifiable information
USDOT	United States Department of Transportation
WIT	Women In Trucking

EXECUTIVE SUMMARY

PURPOSE

The Federal Motor Carrier Safety Administration (FMCSA) has an interest in the safe movement of motor carrier personnel and freight throughout the country. To understand the nature and prevalence of harassment and assaults against truckers, FMCSA initiated a project titled the *Crime Prevention for Truckers Study*. Harassment, in this study, is defined as the threat of harm or actual physical harm perpetrated against a trucker, their possessions, vehicle, or cargo. Harassment was evaluated for women and minority male truckers with non-minority males serving as a control. This document may be useful to motor carriers, truck stop operators, law enforcement personnel, and others in their efforts to address the situation.

PROCESS

The study process included the following steps:

Literature Review

The project team first performed a literature review on the topic. The literature review provided substantial information on the nature of the crimes and the factors contributing to them. Threats of harm and actual physical harm are the most common types of crime committed against women and minority truckers; however, they are experienced differently among the two groups. Harassment is not unique to the motor carrier industry. Women truck drivers face types of crime similar to those faced by women in other male-dominated industries. One aspect that remains unaddressed in the body of literature is crimes committed against minority truckers. The factors contributing to minorities facing crimes include pre-existing prejudice and racism, motor carrier companies' supply chains, and the vulnerability surrounding minorities who cannot speak English.

Online Survey

This was followed by the development of an online survey to collect data and perform statistical analysis. The data collected pertained to three driver groups: 1) women truck drivers, 2) minority male truck drivers, and 3) non-minority male truck drivers (control group).

Before launching the online survey, approvals from the Office of Management and Budget (OMB) and the project team's Institutional Review Board (IRB) were received. The project team partnered with trucking organizations, consultants, and carriers to promote the survey. A total of 653 truckers responded to the survey (201 women, 167 minority male, and 285 non-minority male truckers).

Statistical Analysis

Statistical analysis was performed to determine if the nature and frequency of crimes committed against women and minority male truck drivers differ significantly from the control group of non-minority male truck drivers.

FINDINGS

This section summarizes the findings from the survey data collected and analyzed.

The Nature and Frequency of Harassment Against Truck Drivers

Harassment against truck drivers is prevalent. Being called undesirable names (59 percent of women, 52 percent of minority males, and 51 percent of non-minority males) and receiving threatening words (38 percent of women, 40 percent of minority males, and 44 percent of non-minority males) are the most common forms of harassment. Relative to men (8 percent of minority and 14 percent non-minority), women truck drivers (33 percent) are exposed to more sexual harassment.

Where and When Do These Incidents Occur

Harassment is more likely to happen at truck stops (23 to 30 percent depending on gender and minority status), places where truck drivers pick up or deliver cargo (15 to 17 percent), and fueling stations (9 to 11 percent). In addition, the respondents mentioned that crimes are more likely to happen in urban areas (42 to 56 percent) compared to rural areas (26 to 35 percent). Harassment against women truck drivers is particularly more likely to happen at night (from 12 a.m. to 6 a.m.).

Characteristics of the Aggressors

The individuals committing the harassment are more likely to be other truck drivers whom the victims did not already know (e.g., 31 percent of women, 27 percent of minority male, and 34 percent of non-minority male truckers who were victims mentioned that the perpetrator was another truck driver whom they did not know before). Relative to males, women truck drivers are more likely to experience harassment from another truck driver at their company (15 percent) or their trainers (11 percent).

How Many of These Incidents Go Unreported and Why

About half of the harassment incidents go unreported (i.e., 42 percent of women, 57 percent of minority men, and 51 percent of non-minority men choose not to report the harassment). The reason given was that they did not think that it would make a difference (29 to 38 percent) or they have to deal with it anyway (17 to 38 percent).

Statistical Analysis Comparing Crimes Among the Trucker Groups

Statistical analysis of the survey data did not find a statistically significant difference in the experience of harassment overall between women and minority men compared to non-minority men. This combined measure refers to at least one incident of occurrence in any of the six specific harassment categories over the preceding two years. However, statistically significant differences did arise in two harassment categories. Women truck drivers were found to be two to four times more likely to report being touched without permission compared to non-minority men. Minority women were up to nine times more likely to report being physically harmed compared to non-minority men. Similarly, non-minority women are two to six times as likely than non-minority men to be touched without permission.

SURVEY PARTICIPANTS' SUGGESTIONS AND OBSERVATIONS

This section provides suggestions and observations submitted through the survey.

Enhance Safety at Existing Trucking Facilities

Providing adequate lighting and security features to existing truck parking lots, fueling stations, truck stops, and docking areas of shippers and receivers should be the priority. Restrooms should be located closer to parking entrances. Presence of safety patrol and law enforcement is beneficial for safety.

Provide Additional Parking Facilities

The majority of survey participants suggested that many of the crimes that happen against truckers are the direct result of limited parking availability, especially in urban areas. In some cases, truck drivers resorted to parking their trucks on freeway ramps and abandoned lots, putting them at increased risk of accidents and crimes.

Allow Firearm Carrying in the Trucking Industry

Many respondents mentioned that they would feel safer if they were allowed to carry a firearm. However, policies of many trucking companies, shippers, and receivers do not allow truckers to carry firearms in their trucks. Also, State laws on carrying firearms significantly vary. Many truckers suggested a regulation prohibiting carriers, receivers, and shippers from barring truckers to carry legally owned firearms. *Note: regulations related to carrying firearms is beyond the purview of FMCSA's regulatory authority.*

Improve Communication Within the Trucking Industry

Truck drivers, dispatchers, carriers, and customers need to communicate to choose a travel plan that is efficient and safe, e.g., delays and scheduling conflicts at shipper and receiver facilities force truckers to park in unsafe locations.

Provide Personal Safety Training to Truck Drivers

Many respondents indicated that they never received any type of training on personal safety and protection. Therefore, truck drivers could benefit from personal safety, security, and protection training, as well as self-defense programs.

Develop Educational Material to Increase Awareness

Educational material that promotes the safety of truck drivers is needed. The material should address topics such as how to recognize, prevent, interject, and report crimes. The educational material can also be directed to trucking companies, encouraging them to have a clear and zero-tolerance policy against harassment.

1. INTRODUCTION

The Federal Motor Carrier Safety Administration (FMCSA) initiated the *Crime Prevention for Truckers Study* to understand the prevalence of crimes against truck drivers and uncover when, where, and why the crimes happen. The objective of this project was to compile and summarize information and data pertaining to general workplace discrimination (as a proxy for harassment), frequency of crimes committed against truck drivers, nature of crimes committed, and factors contributing to crimes. Although FMCSA is interested in documenting the crimes against all truck drivers, particular attention was given to crimes committed against women and minority male truck drivers in this project.

The crimes believed to be most often committed against women and minority male truckers involve harassment. For this study, harassment is defined as the threat of harm or actual physical harm perpetrated against the trucker, his or her possessions, vehicle, or cargo. The statistics on harassment of women and minority male truckers are generally not available because most incidents are unreported. Even when officially reported to police, the police reports of such incidents are not categorized by occupation, such as “trucker.” This report starts with the use of discrimination as a proxy for harassment. However, the authors want to clarify that harassment, as defined, is generally treated differently than discrimination under the law. Harassment, as defined, is punishable under criminal or penal codes that can result in incarceration. Discrimination is punishable under civil codes, usually labor laws, that result in court orders, legal injunctions, fines, and other sanctions generally not ending in incarceration. This study focuses on harassment rather than discrimination but uses discrimination as a proxy for harassment in places.

This introductory section discusses the general project background, objectives, and scope. The next section presents the literature review on the topic, where general workplace discrimination and statistics, nature of the crimes, and factors contributing to the crimes are discussed. This is followed by sections that discuss how the data collection effort was designed and how the online survey was developed. The next section presents the statistical analysis of the survey data. The nature and frequency of crimes against women and minority male truck drivers are compared with crimes against non-minority male truck drivers. The final section presents conclusions and lessons learned from the project. The online survey questions and supporting documents used to obtain the Office of Management and Budget (OMB) and the project team’s Institutional Review Board (IRB) approvals are included in the appendices. The list of references is presented at the end of the document.

1.1. BACKGROUND

Currently, FMCSA does not provide materials or training to truckers, particularly minority and women truckers, on how to protect themselves from being stalked, harassed, assaulted, or robbed. Before effective solutions to reduce harassment and assaults against women and minority truckers can be developed and implemented, one must understand the prevalence, seriousness, and nature of the problem of harassment and assaults against truckers. Currently, there is insufficient data. The frequency of assaults occurring, the portion that are unreported, and reasons for underreporting are unknown.

The purpose of this research study is to gather information to answer these questions, to understand how serious the problem is, and to report it to FMCSA. FMCSA can decide on further options for evaluation and action. FMCSA needs to address the problem of preventing crimes, especially against women and minority male truckers, for two reasons. First, anecdotally there have been many recent instances impacting these subpopulations of truckers that indicate they may be more vulnerable than others. Second, there is a challenge with truck driver retention, with many fleets experiencing high turnover rates. Helping women and minority male truckers protect themselves from crimes may draw more truckers from these subpopulations to alleviate the shortage of commercial drivers in the motor carrier industry.

1.2. SCOPE

This project and the exploratory survey developed were the first of their kind. Therefore, the project was limited in scale and scope. This study was limited to commercial drivers operating vehicles with a gross vehicle weight rating (GVWR) of more than 10,000 lbs. The survey focused on collecting the harassment and crime experiences of truck drivers who were regulated by FMCSA and had professional experience in the past 2 years. Crimes against taxi drivers and chauffeurs are not included in this project.

The exploratory survey was a cross-sectional study, i.e., it was designed to collect information from respondents one time only. There was no plan for follow-up or supplementary surveys in the future. Respondents are not tracked to determine any change in their experience of harassment or crime over time.

1.3. APPROACH

The project team initially conducted an extensive literature review on the topic. It was evident that there was a lack of organized and recent data addressing crimes against truck drivers. Therefore, based on the findings of the literature review and input from statisticians, independent reviewers, and survey experts, an online survey was designed and developed to collect data. Both qualitative and quantitative data were collected to examine the nature and frequency of crimes against truckers. Based on the descriptive and exploratory analysis of the qualitative and quantitative data collected, statistical models were developed to assess and compare the specific crimes against women and minority male truckers relative to the control group of non-minority male truck drivers.

2. LITERATURE REVIEW

The objective of this literature review was to document the current state of knowledge on the following topics: general workplace discrimination, frequency of crimes committed against truck drivers, nature of crimes committed, and factors contributing to crimes. The project team implemented search strategies based on combinations of key words to capture literature pertinent to crime against truck drivers. Information or data deemed relevant to the objectives of the project was individually summarized. This was followed by compiling the information obtained from the relevant sources and analyzing whether it addressed the fundamental research questions of the project. Given the specificity of the topic, it was difficult to locate published literature to adequately address the project's objectives. Therefore, the project team had to broaden the search criteria and include literature that is less reputable than desired. Sources such as blogs, YouTube videos, magazines, news web sites, and dissertations were leveraged to contribute to this report.

2.1. GENERAL WORKPLACE DISCRIMINATION

As indicated earlier, crimes committed against women and minority male truck drivers proved to be a narrow and specific research topic. With limited material to report on, this section was written to address the high-level themes of harassment discovered while performing this research. This section uses discrimination as a proxy for harassment. The "Discrimination in America" study surveyed different groups of people in the U.S. on the topic of discrimination.⁽¹⁾ The results indicated that at least 50 percent of all people surveyed in the groups listed in Table 1 say discrimination exists within their own identifying group. After examining the nature of crimes women face in other male-dominated industries, research shows they are consistent with the nature of crimes women experience in the motor carrier industry. Harassment and discrimination are the legal offenses most experienced by women in a predominately male occupation.

2.1.1. Discrimination in America

Discrimination is a prevalent issue and an important topic today in America.⁽²⁾ In a survey conducted by National Public Radio (NPR), the Robert Wood Johnson Foundation, and the Harvard T.H. Chan School of Public Health, researchers surveyed 3,453 U.S. adults aged 18 years or older about discrimination. The participants included Caucasians, African Americans, Latinos, Asian Americans, and Native Americans.⁽³⁾ They were asked about several aspects of discrimination, including personal experiences, perceptions of the local community, national beliefs and political contact.⁽⁴⁾ Participants from each group of people were asked the following question: "Generally speaking, do you believe there is or is not discrimination against (respondent's own group identity) in America today?"^(5 6) The results are shown in Table 1.

Table 1. Percentage of each group saying that discrimination against their own group exists in America today.

Group (Identity)	Percentage of Each Group Saying Discrimination Against <u>Their Own Group</u> Exists in America Today
African Americans	92%
Latinos	78%
Native Americans	75%
Asian Americans	61%
White (Non-Hispanic)	55%
LGBTQ	90%

Source: NPR

The following question was asked only to those who said they believe discrimination against their own group exists: “When it comes to discrimination against (respondent's own group identity) in America today, which do you think is the bigger problem?” The results are shown in Table 2.

Table 2. Each group’s perceptions of whether individual or institutional discrimination is the larger problem for discrimination against their group (among those who believe discrimination against their own group exists.)

Group (Identity)	Discrimination Based on the Prejudice of Individual People	Both Equally (vol)	Discrimination Based on Laws and Government Policies
African Americans	49%	25%	25%
Latinos	47%	14%	37%
Native Americans	41%	16%	39%
Asian Americans	68%	16%	14%
White (Non-Hispanic)	61%	11%	26%
LGBTQ	43%	23%	33%

Source: NPR

The Equal Employment Opportunity Commission (EEOC) holds the responsibility for enforcing Federal laws making it illegal to discriminate against a job applicant for the following: race, color, religion, sex (including pregnancy, gender identity, and sexual orientation), national origin, age (forty or older), disability or genetic information.⁽⁷⁾ They also enforce anti-discrimination laws for people who have complained about discrimination, filed a charge, or participated in a discrimination lawsuit.

In 2015, approximately 30 percent of EEOC complaints were regarding racial harassment. While a limited number of surveys about racial harassment exists, the EEOC claims between 40 percent and 70 percent of employees report racial and ethnic harassment.

The following sections describe women’s experiences with harassment in traditionally male occupations. Similar information related to minority men’s experiences with harassment in specific occupations could not be found.

2.1.2. Women Firefighters

Women truck drivers only make up 7 percent of the total truck driver population.⁽⁸⁾ Similar to women truckers, women firefighters make up only 7 percent of the firefighter population, also a male-dominated occupation.⁽⁹⁾ The Center for Firefighter Injury Research & Safety Trends conducted a study to research unique safety features women bring to the firefighting profession, how those practices contribute to a safer fire service, and the cultural barriers that exist for this implementation to occur.⁽¹⁰⁾ Many women in the firefighter study felt they were being discriminated against because of their gender, which the project team assumes is comparable to how women truck drivers feel. In the firefighting profession, tasks on the job can be challenging to anyone despite their gender. The study found that women firefighters are more likely to use diverse ergonomic techniques when executing a task than men. Currently, the training that firefighters complete is more geared towards a man’s body in relation to physical strength. Women are not able to approach these training tasks with the same technique a man uses due to the differences in body size, biomechanics, and physical strength compared to a man. Some women are put through “girl drills,” which require harder or extra training such as ladder carrying drills or practicing fire calls with their oxygen packs turned off. Women already feel as if they stick out; they will risk injury before showing signs of weakness, as with minority truck drivers unwilling to be interviewed. Hostile work conditions or cultures similarly exist for women firefighters. Women firefighters are also subject to sexual harassment such as inappropriate touching. Numerous similarities exist between the two industries, which suggests these legal offenses happen on a larger scale and are not specific to either of the industries.

2.1.3. Women in Construction

In 2015, women made up less than 3 percent of the construction industry.⁽¹¹⁾ Similar to the motor carrier industry, harassment and discrimination are the most dominant forms of legal offenses women experienced. Demeaning comments and obscene or lewd language are the types of verbal harassment women face.^(12 13) The wage gap in the construction industry is a prominent form of gender discrimination.⁽¹⁴⁾ Women in the industry make ninety-two cents on the dollar, compared to men. Gender discrimination is also felt when women are mistaken for a secretary or assistant rather than a construction worker.⁽¹⁵⁾ During an interview with a female construction worker, she mentioned feeling surrounded by an “old boys club,” which is comparable to how women truckers describe their industry. According to the Associated Builders and Contractors, there is a shortage of skilled labor in the construction industry.⁽¹⁶⁾ An estimated 1.6 million new skilled workers will be needed in 2022. Women and other minority groups are expected to be recruited to help fill this void.

2.1.4. Women in Mining

In a global industry such as mining, women only compose 9 percent of full-time employees.⁽¹⁷⁾ The NSW Minerals Council reports that women also hold less than 1 percent of board or executive positions. Research reveals harassment and discrimination to be the most prevalent forms of legal offenses against women.⁽¹⁸⁾ Up until the 1990s, South African legislation prohibited women from working underground. This changed in 2002 when the South African

Mining Charter introduced a quota for mining companies to employ women as 10 percent of their staff. A lawsuit was launched against a diamond mining company for harassing and discriminating against women based on their gender.⁽¹⁹⁾ They experienced this treatment in training (in predominantly male training groups) and mine sites. Women were also physically attacked and not allowed to use the restroom. While male workers would urinate inside the underground tunnels, women were told to wait to use the restroom because women’s facilities were not available at the mine sites. Furthermore, in a separate lawsuit against a coal company, a peephole in the women’s shower room was discovered in between tiles in the wall.⁽²⁰⁾

2.2. FREQUENCY OF CRIMES COMMITTED

Prior to being able to comprehend statistics on crimes committed against truck drivers, it was important to identify the magnitude of the number of truck drivers. Understanding the magnitude will aid in determining the prevalence of crimes committed against truck drivers. Seventy percent of freight in the U.S. is transported by truck, which requires a significant number of truck drivers. There are approximately 3.5 million truck drivers in the U.S., with 1.5 million being minorities.^(21 22) Minority is defined as all men and women who are not Caucasian males.⁽²³⁾ A general crime statistic encompassing types of crime that all women truck drivers experience was not found; however, 42 percent of long-haul women truckers experience one or more types of workplace violence. Research performed to find statistically relevant information about the frequency of crimes committed against minority truck drivers proved unsuccessful.

Women: For perspective, 200,000 of the 3.5 million truck drivers are women, making up approximately 7 percent of all truck drivers.⁽²⁴⁾ Figure 1 categorizes the population of truckers by nationality and gender in the U.S.

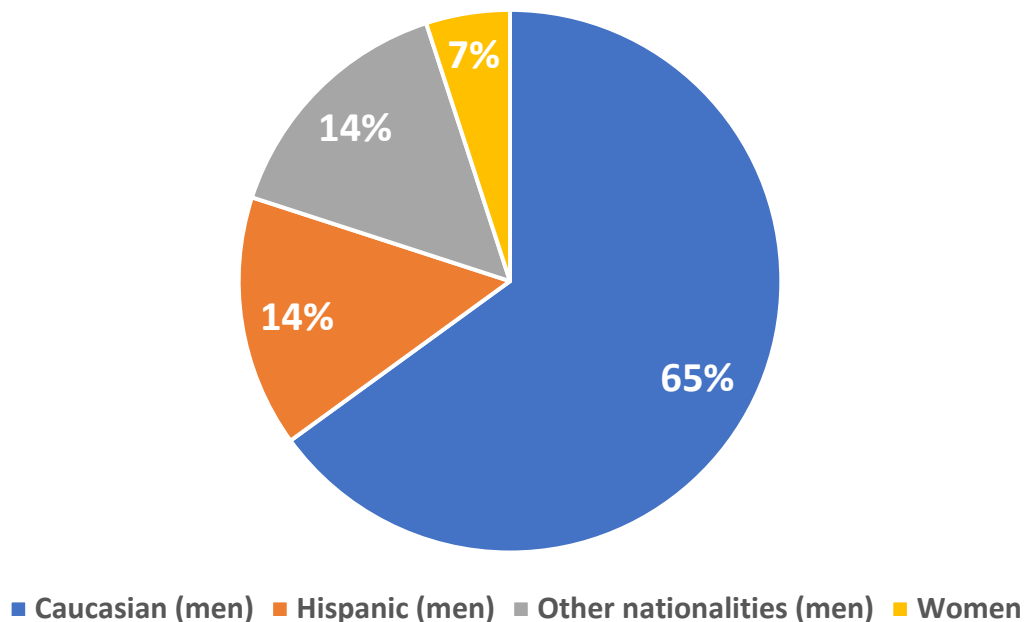


Figure 1. Pie Chart. American Trucking Associations truck driver population categorization.

Source: American Trucking Associations

Mary Review magazine reports that women have filed hundreds of gender discrimination claims against the trucking industry over the past 20 years.⁽²⁵⁾ According to the EEOC, 414 gender discrimination complaints from women in trucking were received in 10 years, spanning from 2005 to 2015. Approximately 17 percent or 69 of the 414 complaints received by the EEOC cited the nature of the claim to be related to race. Around 67 percent or 276 of the 414 victims reported experiencing retaliation as a consequence of filing the claim. In *Security Journal*, the article “Workplace Violence against Female Long-haul Truckers” said that 42 percent of female long-haul truckers reported experiencing one or more types of workplace violence.⁽²⁶⁾ Sixty-seven percent of women from the same study had feared for personal safety while working in this industry during the previous year. Reed and Cronin report that one-third of women in the commercial driving industry experience harassment multiple times per week.⁽²⁷⁾

Minorities: Research conducted to discover the frequency of crimes committed against minority truck drivers was unsuccessful. The inadequate results suggest the specificity of this topic to be a limiting factor. Additional statistics related to offenses committed against minorities can be found in the General Workplace Discrimination section.

According to an investigation performed by *USA Today*, 140 trucking companies have been accused by a minimum of one driver of being a victim of illegal work practices.⁽²⁸⁾ Illegal work practices entail receiving unfair compensation or being forced to work longer hours after receiving threats.⁽²⁹⁾

2.3. NATURE OF CRIMES COMMITTED

Before countermeasures can be implemented to prevent crime, it is crucial to identify the nature of crimes being committed and gain a comprehensive understanding of their prevalence. As noted by this research, harassment, i.e., both threats of harm and actual physical harm, are types of crime experienced by both women and minorities; however, the specific forms of harassment are encountered differently. Women truck drivers face harassment, usually sexual assault. African Americans suffer from being harassed, usually in verbal form. Similar to African Americans, Latinos also suffer from verbal harassment as well as extortion practiced by the motor carrier companies.

2.3.1. Types of Crimes

Women: Women truck drivers encounter many forms of harassment. Sexual harassment is a common type of harassment, including physical, verbal, and mental forms.⁽³⁰⁾ Physical harassment crimes include stalking and sexual assault.^(31 32) The perpetrators of these crimes can include male training instructors or male driving partners.⁽³³⁾

Minorities: Like women, discrimination among minority truck drivers also includes physical, verbal, and mental forms.⁽³⁴⁾ African American truck drivers are subject to being called racial slurs and inappropriate names by coworkers who are Caucasian.⁽³⁵⁾ An African American truck driver reported being called racial slurs over the citizen’s band (CB) radio.⁽³⁶⁾ CB radio is described in the ‘Nature of Crimes Committed’ section. While making racial slurs over CB radio may not be prosecuted, making threats of physical harm can be prosecuted. African Americans are subject to having racial slurs written in graffiti on their equipment. *The Harvard Business Review* reports an African American trucker having his vehicle’s tires slashed and having a foul-

smelling substance placed in his shoes by his supervisors.⁽³⁷⁾ This incident resulted in a court trial with the court ruling that the driver's supervisors failed to resolve the issue by removing the graffiti or performing preventative measures to deter this type of crime from occurring.

Research suggests Latino truckers are treated more poorly than African American truckers. While subject to harassment in the form of racial slurs, Latino truck drivers are also subject to encountering forms of extortion and illegal work practices.⁽³⁸⁾ There is a reported instance where a male Latino truck driver received a sixty-seven-cent weekly paycheck. Male minority motor carrier drivers stated they had no choice but to break Federal safety laws. These laws limit truck drivers to driving a maximum of eleven hours per day. The minority drivers were then held without pay until the inspection reports that track hours were falsified to document a maximum of eleven hours per day to obey the applicable Federal safety laws. Besides being required by the motor carrier to partake in illegal work practices, the trucking companies would extort Latino truckers. Motor carriers leverage owning their trucks by threatening the Latino drivers leasing the trucks with the threat of keeping the money already paid in equity.⁽³⁹⁾ It is conventional for professional truck driving companies to offer a lease-to-own contract for a truck, which allows the driver to make regular payments with the goal of eventually owning the vehicle. Some motor carriers take advantage of this system with Latino truck drivers.

Many Latino truckers in the Los Angeles region are port truckers who haul goods short distances between stores and shipping ports.⁽⁴⁰⁾ They are responsible for moving almost half of the nation's container imports out of Los Angeles. Research highlights the vulnerability of Latino port truckers who may not be fluent in English. Upon being issued a lease-to-own contract, many truckers are given two options: sign or resign immediately. Hostile work conditions are a foundation for extortion when drivers cannot read the contract or be given reasonable time to seek legal help before signing.

While research insists the nature of the crimes described above may be specific to each minority group, there does not appear to be any geographical prevalence tied to these crimes.

2.3.2. Time and Location of Crimes

After assessing the nature of the crimes committed, research reveals no correlation between the time and location of the crimes. The crimes commonly committed against women, including harassment, ensue throughout different times and settings in the workday. Extortion, harassment, and illegal work practices against minorities transpire most commonly at the place of employment, company parking lot, truck stops, and fueling stations independent of the time of day, week, or season.

Women: As expressed in the "Types of Crimes" section, women most commonly suffer harassment. The list below describes where these crimes take place:

- *Driver Training/Motor Carrier School:* Harassment for women truckers often begins in driver training or in the motor carrier school they attend.⁽⁴¹⁾ Driver training is a vulnerable setting for women truckers as the majority of trainers are men, which presents the opportunity for the trainer to leverage his power or authority. In addition to this situation, there is currently a shortage of women trainers. If the female trainee refuses a male trainer, the female trainee does not receive training.

- *Team Driving*: The concept of team driving pairs two drivers who drive with one another, allowing for longer distance trips to be executed by switching driving responsibilities.⁽⁴²⁾ Women are placed in a vulnerable position as they travel long distances for extended periods with a stranger.⁽⁴³⁾ With the limited number of women truckers, most women are paired with men truckers.⁽⁴⁴⁾ Gruber describes the team driving method as “...an opportunity for someone to misbehave without immediate repercussions.”
- *Truck Stops, Fueling Stations, Shipping Docks, Rest Areas*: While loading and unloading shipments, women are subject to harassment.⁽⁴⁵⁾ Women In Trucking founder, Ellen Voie, describes truck stops, shipping docks, and rest areas as a few of the most dangerous places for women.⁽⁴⁶⁾ Reed and Cronin report that some women feel unsafe at truck stops and do not even stop to eat or exercise.⁽⁴⁷⁾
- *CB Radio*: The CB radio is a truck-installed radio that truckers use to socialize and communicate information about road conditions and law enforcement presence.⁽⁴⁸⁾ Contrary to the original intent of the CB radio, some non-minority drivers use this communication tool as a platform to make racist, sexist, obscene, and lewd comments to non-minority drivers listening to the radio. Lively described that women face harassment from men over this short-range communication radio.⁽⁴⁹⁾ While expressing such comments over CB radio may not be prosecuted as crimes, threats of physical harm can be prosecuted.
- *Department of Human Resources (HR)*: Research indicates HR at trucking companies do not always fulfill their duty to help victims resolve their complaints or apprehend the culprits of crimes.⁽⁵⁰⁾ Cathy Sellars, a woman truck driver, complained to her company’s HR Department to follow up on her complaint about being harassed. The HR employee responded to Cathy saying it was none of her business and when Cathy broached the topic to HR again later, she was told they would look into it; however, HR stated it was her word against his.
- *Driving on the Road*: Women receive harassment from men driving passenger cars and other semi-truck male drivers, such as obscene or lewd gestures or comments.⁽⁵¹⁾

Minorities: Like women truck drivers, minorities also face harassment on the CB radio.⁽⁵²⁾ Research suggests that minorities experience harassment, extortion, and illegal work practices primarily in the two locations described below.

1. *Motor Carrier Parking Lot*: Described in the “Nature of Crimes Committed” section, minority truck drivers are subject to their non-minority managers forcing them to go back to work when returning for the night. If the drivers are not willing to break Federal safety laws by working more hours than legally able, they face not having any routes the following day.⁽⁵³⁾
2. *Motor Carrier Office*: Mentioned in the “Nature of Crimes Committed” section, minorities encounter extortion by the non-minority-owned motor carrier forcing them to sign an unfair contract. In addition to extortion-related crimes, other illegal work practices affect minorities as well.⁽⁵⁴⁾

2.4. FACTORS CONTRIBUTING TO CRIMES COMMITTED

With a comprehensive understanding of the nature of crimes committed and the environment in which they occur, contributing factors can be identified and derived. Recognizing the contributing factors helps to identify a solution or understand why these crimes are being committed so that a resolution can be implemented. Women being physically weaker than men and working in a field heavily dominated by men greatly contributes to the crimes women are subjected to. Research advocates that people with prejudiced beliefs are the largest contributing factor to crimes minorities face. Some types of crimes minorities experience are specific to particular minorities.

2.4.1. Contributing Factors

Women: The lack of accountability and responsiveness by motor carrier HR departments is a common theme contributing to crimes committed against women truckers.⁽⁵⁵⁾ Crimes reported to HR are not always followed up appropriately, and many HR employees do not elevate the issue for corrective action to be taken. If the HR employee receives a complaint about a coworker the employee knows, the employee may not believe the complaint to be valid due to the pre-existing relationship. It is also trivial for HR to state that it is a “he said, she said” case and that since there are no witnesses, there is no proof. If complaints continue to go unresolved and offenders are not reprimanded, it is assumed these issues will continue.

A woman driving alone or with a stranger (team driving) on the road for extended periods of time presents a vulnerable situation in itself.⁽⁵⁶⁾ When long-haul trucking across the United States, it can be expected that certain regions will have little or no cellular service. Cell phones are used for distress calls, and non-availability presents an undesirable situation in case of an emergency.

A study that examined the experience of women in the trucking industry found that select women truck drivers have negative attitudes about other women truck drivers and are not supportive of one another.⁽⁵⁷⁾ The study mentioned that women are said to be critical of each other and are known to “backstab” one another. These women also believe that pointing out inappropriate dress and behavior of other female colleagues will help them avoid harassment. The study suggests this type of behavior is motivated by women trying to show men how they can behave themselves on the road. Notably, there is an initiative led by Women in Trucking (WIT) to encourage women to network and support one another.

Minorities: Factors contributing to minorities facing crime are significantly diverse. While the causes of crime related to women involve perceived weakness and sexuality, the causes of crime related to minorities are considered to be a result of their social vulnerabilities. Motor carriers’ supply chains, truck drivers’ poor attitudes toward other nationalities, and minorities’ lack of English language skills are considerable contributing factors to why minorities experience the crimes they do.

Research suggests one of the most prevalent contributing factors to crimes committed against minorities in trucking revolves around the manufacturers’ or retailers’ supply chain. A supply chain is the process by which goods or services are produced and distributed throughout the lifecycle of the product or service.⁽⁵⁸⁾ Large retailers contract motor carriers to transport their

goods from warehouses or manufacturing centers to retail store locations.⁽⁵⁹⁾ These retailers demonstrate a lack of social responsibility through the operation of their supply chain. They purposely hire third-party motor carriers and logistics companies based on the lowest bid received without understanding the consequences of doing so. Retailers have also paid lobbyists to fight legislation that would hold motor carriers accountable for giving truck drivers a minimum wage and other protection. A *USA Today* investigation found that America's major retailers have spent over a decade fighting with the Government's efforts to resolve this issue, while driving thousands of truck drivers into debt. Motor carriers have benefitted from these practices as the drayage companies have forced the drivers to work up to twenty hours per day, paying them pennies per hour as reported by the *USA Today* investigation.

As with women truckers, Latino truck drivers also feel that raising the issue of harassment to authorities is ineffective and that no one will listen.⁽⁶⁰⁾ Some Latino drivers do not speak fluent English and come from agricultural industries where wages are inadequate and working conditions poor.⁽⁶¹⁾ For some Latinos, unfavorable conditions in the trucking industry are still better than their previous occupation.

Rather than non-minority truckers viewing minority truckers as potential union workers or fellow colleagues, they are viewed as competition.⁽⁶²⁾ Research indicates non-minority truckers' concerns about the depressing effect on wages from Latino drivers resonates and gives them an undesirable mindset about this group of people. Latino drivers also attest that these issues are true.⁽⁶³⁾ Inferences can be made about the effects this may have on attitudes or interactions non-minority drivers have with minorities. Motor carriers often recruit from minority communities, contributing to non-minority truck drivers feeling threatened about losing their jobs to minorities willing to work for a much lower wage.⁽⁶⁴⁾ Declining economic conditions aggravate such threats to non-minority truck drivers and, in turn, lead to increasing harassment against minority truck drivers.

2.4.2. Effects of Crimes

The effects of crimes committed against women and minority truckers have a lasting impression on the individuals affected and the motor carrier industry as a whole. Understanding these effects can help determine the prevalence of these crimes so they can be addressed appropriately. Research implies that deterring minority groups away from this industry has the potential to create an even larger gap of trucking jobs to fill. Also, by addressing the crimes and taking corrective action, industry and other businesses may learn to implement better business practices.

Women: Bourne reports that 60 percent of sexual assault victims have negative physical and psychological health outcomes.⁽⁶⁵⁾ Negative physical health outcomes include bruises, broken bones, lacerations, headaches, sexually transmitted infections, and pregnancy. Harmful psychological outcomes include fearing the perpetrator, anxiety, depression, post-traumatic stress disorder, and suicide ideation or at least one suicide attempt. A 60 percent rate of sexual assault victims is equivalent to approximately 120,000 women truck drivers. Truck driving is currently the occupation with the highest number of openings, making women an asset in the trucking industry to help meet demand.⁽⁶⁶⁾ The Bureau of Labor Statistics estimates that employment in transportation as a whole will grow by 9 percent from 2020 to 2030.⁽⁶⁷⁾ Truck driver turnover rate was at 96 percent at the end of 2014.⁽⁶⁸⁾ This turnover is attributed to growing freight

volumes, regulatory pressure, and normal attrition, but may include unreported harassment or crimes.

Minorities: *The Harvard Business Review* reported that a U.S. district court convicted a motor carrier of violating Title VII of the Civil Rights Act of 1964; the trucking company failed to take affirmative action after a black man was a target of graffiti and was called racial slurs.⁽⁶⁹⁾ The court ordered the motor carrier company to take measures to prevent these types of criminal acts from happening in the future. Preventative measures included being required to educate the company and to sensitize management to eliminate racial discrimination from the workplace.

2.4.3. Frequency and Explanation of Unreported Incidences of Crime

While some information and data were available about the frequency of unreported incidences and the explanation of why they may go unreported, information on this topic as a whole was rather limited. Unreported incidences of harassment experienced among women and minorities occur because of fear. Research shows both parties fear there will be a consequence to pay if a complaint is filed or report is made.

Women: Bourne states that 73 percent of assaults on women go unreported.⁽⁷⁰⁾ Research suggests that fear of retaliation and the lack of results are the main causes of unreported crime.⁽⁷¹⁾ Women also fear embarrassment from colleagues, counterproductivity, and job loss.⁽⁷²⁾ Keathley reports that it is rare for women to report sexual harassment, as they try to avoid being identified as troublemakers and do not wish to be subject to a hostile work environment.⁽⁷³⁾ If a woman does file a complaint, she is often told to “get used to it because it is a man’s job.” The ineffectiveness of a complaint being addressed in a timely manner provides little comfort to the victim and exposes the victim to more harassment and retaliation in the meantime.⁽⁷⁴⁾ This provides little incentive for a victim to come forward and report an incident. A woman will stay at her job even if she is discriminated against or harassed because she is satisfied at their job and receive a high rate of pay.⁽⁷⁵⁾

Minorities: In a study that addressed harassment against truck drivers, the researcher seeking out minority truck drivers to be interviewed at a union found that only one was willing.⁽⁷⁶⁾ The African American driver who gave the interview stated he feared his retaliation while being interviewed. A study from 2003 discovered 75 percent of employees who spoke out about being mistreated faced retaliation.

2.4.4. Truck Driver Resistance to Crimes

Research indicates that women and minorities possess a lack of faith that harassment crimes will be resolved, and for good reason. As explained above in the “Factors Contributing to Crimes Committed” section, speaking out against the “good old boys club” could mean facing serious consequences. The “good old boys club” is a derogatory nickname given to the exclusive relationship between men in a male-dominated industry.⁽⁷⁷⁾ Women and minorities have taken it upon themselves to adopt and implement their own corrective actions and mitigation strategies against crime.

Women: In an interview with a researcher who studied harassment against truck drivers, a woman truck driver said she had been physically attacked twice in the last few years. As a form

of physical protection, she now carries a “tire buddy” with her.⁽⁷⁸⁾ A “tire buddy” is a large blunt object used to check tire pressure. Other women drivers may travel with dogs to deter potential culprits or carry other types of weapons.^(79 80) In addition to physical protection, women use a more psychological and tactical approach to counter and deter sexual harassment. This is accomplished through humorous and feisty verbal responses and building friendships with male drivers.⁽⁸¹⁾ Women drivers also may surround themselves with males to receive less harassment and feel safer. They may also wear a wedding band to send a message that they are married or walk in a fashion to demonstrate authority and to present a strong image. Some women attempt to avoid feeling threatened altogether by stopping at truck stops and sleeping during the day, when there is less traffic, to avoid any potentially negative interaction. Behaving more like a man is also said to help a woman get by in a male-dominated arena.

Minorities: Information or data specifically pertaining to minority attempts to resist crime in trucking was researched; however, no results were found. Workplace culture has the most significant impact on deterring workplace harassment.⁽⁸²⁾ In workplaces that lack diversity, harassment flourishes as strong norms are formed, where minority workers may not fit in.

2.5. SUMMARY OF LITERATURE REVIEW

A number of publications address the nature of workplace crimes, as well as the factors contributing to those crimes. Research on general discrimination facts and statistics indicates there is a wealth of information and resources available; however, limited published research on this topic was performed due to the specificity and scope of the project. The literature search did provide generalized information about crimes committed against women and minority truck drivers. The following can be concluded from the literature reviewed:

1. The specificity of this area of focus provided challenges for finding information relevant to all subject areas. After initial research was performed on the four topics described above, the overarching theme of crimes committed against all parties was harassment and discrimination. Leveraging this knowledge, research pertaining to these topics was performed, which is explained in the “General Workplace Discrimination” section. Results suggest that harassment and discrimination are not unique to the truck driving industry. Research was performed to compare the crimes experienced by women truckers against crimes committed against women in other male-dominated industries. Findings indicated the same nature of crimes was experienced among women in the firefighting, construction, and mining industries.
2. Although the population of women truck drivers is small compared to the male truck driver population, statistics about the frequency of crimes committed against women truck drivers are important. An exclusive statistic encompassing a general crime frequency against women truckers was not found; however, research statistics regarding specific crimes were discovered. Forty-two percent of women in the long-haul trucking occupation report experiencing one or more types of workplace violence. Sixty-seven percent of women from the same study feared for personal safety while working in the industry the previous year. In a different study, one-third of women in the commercial driving industry experienced harassment multiple times per week. Research performed to discover the frequency of crimes committed against minorities was unsuccessful. While researching the topic for the “Frequency of

Crimes Committed” section, it was found that minorities generally do not speak out or file formal reports or complaints about crimes they have experienced. These results suggest finding a statistic of this nature to be unlikely.

3. This study showed the nature of the crime committed to be independent of the geographical location and the time the crime occurred. The majority of crimes women and minorities experienced were either harassment or discrimination; however, women and the different minority groups experience those crimes in unique fashions.
4. Factors contributing to the crimes women and minority truckers experienced were vastly different. The lack of responsibility shown by motor carrier companies’ HR departments also fosters this behavior when offenders are not reprimanded. On the other hand, factors contributing to crimes committed against minorities are largely surrounded by prejudice and racism, trucking companies’ supply chains, and the vulnerability that surrounds minorities who cannot speak English.

Although the reviewed literature provided substantial information on the nature and the factors contributing to the crimes committed against women and minority truck drivers, one aspect of the literature review objectives remains unaddressed in the body of literature. There were no statistics found pertaining to the frequency of crimes committed against minority truck drivers.

Despite the lack of previous research examining crimes committed against women and minority truck drivers, this literature review proved useful for the following:

- It confirmed the gap in knowledge on the topic of crimes committed against women and minority truck drivers.
- It identified crimes and issues that exist exclusively in the truck driving industry.
- It provided a solid baseline of information upon which subsequent project tasks, survey-based data collection, can be successfully conducted.

The next section addresses the frequency of crimes committed, the nature of the crimes, the times and locations of these crimes, and the frequency and explanation of the number of incidents that go unreported in more detail using results from a survey and associated data collection and analysis.

3. DATA COLLECTION DESIGN AND DEVELOPMENT OF SURVEY INSTRUMENT

The literature review uncovered anecdotes and dated studies of drivers being harassed or mistreated. However, no recent formal research specifically on crimes against women and minority male truckers had been published. Therefore, a new survey was needed to focus on the extent of crimes against women and minority male truck drivers. This section discusses the rationale of the new data collection effort and how it was designed. The design and development of the survey were reviewed by an independent review panel consisting of four motor carrier experts.

3.1. OBJECTIVES OF THE DATA COLLECTION

The objective of this activity was to develop a plan for collecting nationwide data on the prevalence of harassment and crimes against women and minority male truckers, and then determine a percentage of those crimes that go unreported across the nation. For comparison purposes, male non-minority truck drivers serve as the control group. Based on the findings of the literature review, the project team developed an extensive questionnaire addressing the nature and frequency of harassment and crime against truckers. While developing the questionnaire, the project team received valuable input from previously completed survey research studies as well from motor carrier experts and crime statistics. In addition, several of the FMCSA guidelines for conducting research were incorporated. This includes methods for designing research studies, basic sampling techniques, protection of human subjects, conducting data analysis, use of independent review panels, and standards and guidelines for statistical surveys.

Initially, the data collection plan was to conduct in-person intercept surveys at selected truck stops and fueling stations and phone or in-person interviews. However, since data collection was scheduled during the outbreak of the COVID-19 pandemic, in-person data collection was not possible. Therefore, in agreement with FMCSA, the project team switched to an online data collection effort. The advantage of online data collection is that it is faster, less expensive, more accurate, and convenient for participants because they can take the survey from the comfort of their home any time they get an opportunity to do so. In addition, responses are more likely to be honest because online surveys are anonymous and not affected by the reaction of an interviewer since the questions deal with sensitive issues.

In this study, the project team developed three surveys for three truck driver groups: 1) for women truck drivers, 2) for minority male truck drivers, and 3) for non-minority male truck drivers. The questions in the three surveys were essentially the same. However, the introductory language and purpose of the surveys were customized to communicate to each group.

3.2. SURVEY CONTENT

The contents of the survey questions are shown in Appendix A. When respondents went to the online survey, they were first given introductory remarks about the survey and what the objectives are. The survey was entirely voluntary and respondents were granted the opportunity

to give informed consent before starting the survey questions. The overall content of the online survey was as follows:

- Screening questions for eligibility.
 - Survey questions Q1 through Q7
- Background, demographics, and information pertaining to their profession.
 - Survey questions Q8 through Q12
- What is the nature and frequency of these crimes?
 - Survey questions Q13 through Q21
- Where and when do these incidents occur?
 - Survey questions Q22 to Q29
- Characteristics of the aggressors?
 - Survey questions Q30 through Q33
- How many of these incidents go unreported and why?
 - Survey questions Q34 to Q39
- How respondents heard about the survey?
 - Survey questions Q40

The first 12 questions of the survey ask for background and demographics. People who began the survey but did not pass the screening questions were thanked and dismissed.

The screening questions ask whether the respondent drives a truck regulated by FMCSA and has professional experience in the past 2 years. Age, gender, ethnicity, and race also are asked. Answers to screening questions are required, and a respondent was dismissed as soon as a disqualifying answer was given.

The core of the survey is contained in questions 13 through 21. These questions ask whether the respondent has experienced one or more of nine specific classes of harassment or assault and offer the respondent the opportunity to describe an incident that was not on the pre-selected list. The remainder of the survey focused on one of the classes of incident and asked follow-up questions (e.g., where, who, when). Where possible, questions were patterned after the National Crime Victimization Study. The survey asked whether the incident was reported to authorities, the nature of the response if it was, and the reasons if it was not. The final question was open-ended, allowing the respondent to describe any information that may have been missed and inviting the respondent to make suggestions.

Skip patterns within the survey were introduced to ensure only those questions that a respondent needed to answer were shown, avoiding any irrelevant or extraneous data and undue burden on respondents' time. Prior to launching the survey, tests were conducted to ensure the survey fully met specifications and functioned as anticipated.

3.3. RECRUITMENT

The project team partnered with trucking organizations, trucking consultants, and carriers to recruit truck drivers to respond to the online survey. The team prepared an invitation message and materials (posters and flyers) for distribution to the truck drivers who are members of the trucking organizations, trucking consultants, and carriers. Promotion of the survey was done primarily through an email invitation sent to the survey partners. Recruiting materials, i.e., posters and flyers, were also placed at truck stops. The survey was advertised on social media platforms (e.g., postings on Facebook groups of truck drivers, LinkedIn posts, and newsletters) of the partnering trucking organizations, trucking consultants, and carriers. The recruiting materials and messages clearly identified the target population and mentioned that the survey was about harassment and assaults against truck drivers.

In total, there are more than 20,000 truck drivers who are members of the partnering trucking organizations, trucking consultants, and carriers. These truck drivers live and work in geographically diverse locations around the United States.

Data collection started on January 12, 2022. It continued through February 22, 2022. After the initial invitations were sent to potential respondents via email, follow-up emails were sent twice a week to remind drivers about the survey and encourage them to participate. Participation was voluntary and respondents were not offered monetary gifts, or any other gifts, for participating.

Data collection was planned to be capped at a maximum of 440 each of women, minority men, and non-minority men (total of 1,320 responses). However, there was reluctance from truck drivers to respond to the online survey. Table 3 shows the number of respondents who started the survey, the number of respondents who were qualified to take the survey, the number of respondents who completed the survey (gave a response to the last question), and the respondent completion rate (percentage of respondents that completed the entire survey). By the time the survey closed, there were a total of 653 qualified respondents to the online survey (201 women, 167 minority male, and 285 non-minority male truck drivers). The actual number of respondents was lower than what was initially anticipated. This affected the sample size and statistical confidence of the results.

Table 3. Number of respondents who started, qualified, and completed the survey.

Truck Driver Group	Total Respondents Who Are Qualified to Take the Survey	Total Respondents Who Completed All Questions	Respondent Completion Rate
Women	201	186	93%
Minority Male	167	124	74%
Control Group	285	238	84%
Totals	653	548	84%

The survey was entirely anonymous. None of the questions that were asked could personally identify the respondent or any other individuals involved. Survey instructions reminded the respondent not to include names or other identifying information. Before analysis began, project

staff read the responses and removed any facts or combination of facts that could potentially identify an individual or an organization.

3.4. ANALYSIS

The majority of the questions on the survey could be answered by selecting one or more predetermined responses. Quantitative statistical methods can readily analyze this type of response. Patterns between types of crimes, locations of incidents, and characteristics of the perpetrators can be easily observed, and hypotheses can be formulated and tested. The prevalence of different kinds of assaults and harassment was estimated as the proportion of respondents indicating any assault or harassment over a two-year period. The proportion of individuals that choose not to report an incident to authorities was also estimated. Measures of central tendency (e.g., means) were reported as well as an indication of variability through confidence intervals. Measures for the women and minority male truckers were compared statistically to those of the control group of non-minority males to establish whether the experiences of women and minority men are unique to their groups or are consistent with the profession at large.

A small number of questions in the survey were open-ended. Most importantly, respondents were invited to describe an event of harassment or assault that was not on the predetermined list. Some of the responses were unique, but others could be consolidated into common patterns. Free responses were analyzed qualitatively.

3.5. MINIMIZING THE BURDEN ON SMALL BUSINESSES

Many of the drivers who participated in the survey were expected to be self-employed owners of their own truck tractor. These drivers can be considered to work for small businesses. The questionnaire for this survey was designed to require less than 20 minutes. Since the survey was entirely online, respondents could quickly take it anytime and anyplace, at their convenience, without interfering with their driving schedule. Furthermore, to decrease the burden on respondents, the survey incorporated skip patterns to ensure only those questions that a respondent needed to answer were shown, avoiding any irrelevant or extraneous data and undue burden on respondents' time. Participation in the survey was entirely voluntary. If truck drivers could not accommodate participating in the survey, they were free to forego the survey. The data collection was conducted one time only, with no follow-up and additional or supplemental surveys in the future.

Persons responding to the online survey were voluntary participants and they were not paid or offered a gift for their participation. This was believed to enhance the quality of the data collected by discouraging fraudulent respondents who take surveys for the sake of collecting payments. For this reason, the project team's IRB had no objection to conducting the online survey without any payment to respondents.

3.6. CONFIDENTIALITY ASSURANCE

Volunteer respondents were instructed about the informed consent statement at the survey's landing page and were informed that the survey was anonymous. The survey did not ask for the respondent's name and other personally identifiable information (PII). It reminded the

respondent in more than one place not to use names of companies or other people. The information that appears in the public-use dataset does not include PII.

The project team obtained approval from its IRB (a committee that ensures the protection of human subjects in the way data are collected, stored, analyzed, used, and reported in an ethical way). The approval ensured that all proposed research protocols and research activities met IRB requirements. The key personnel involved in administering the survey had Human Subjects Research certifications and were trained on how to ensure respondents' privacy, anonymity, and confidentiality.

3.7. PUBLICATION OF SURVEY DATA FOR PUBLIC USE

The project team was required to deliver a public-use dataset to allow other researchers to analyze the data in different ways. The data collected from the online survey instrument were first analyzed by the project team. The final dataset included all the essential responses to the surveys, and PII, if any, had been redacted. The open-ended questions were consolidated to express common patterns. This dataset will be available to other researchers who wish to further analyze the data according to their own pursuits.

3.8. COMPLIANCE WITH 5 CFR 1320.8

To comply with 5 CFR 1320.8, notice was published in the Federal Register to collect comments from the public. Few comments were received from individuals and representatives of the trucking industry. The comments received indicated that the issue was urgent enough that the agency should take immediate action to address it. No comments were received that were explicitly against conducting the survey.

3.9. ONLINE SURVEY DEVELOPMENT

Data collection was conducted entirely online on SurveyMonkey.com from January 12, 2022, through February 22, 2022. The three surveys (women truck drivers, minority male truck drivers, and non-minority male truck drivers) and the landing page to the surveys (Appendix A) were created on SurveyMonkey and were IRB- and OMB-approved. Participants were able to participate in the survey using a computer, tablet, or smartphone. All potential respondents (truck drivers) were directed to the survey landing page where they could select one of the three separate surveys.

The different sections of the survey (as shown in Appendix A) were created as separate pages. Participants were required to click on the "continue" button at the bottom of the introduction and informed consent pages to begin the survey. The survey then had a page asking participants whether they had previously taken the survey to avoid repeat participants. Question 12 also asked participants whether the questions sounded familiar to them and whether they had taken the survey before. Each survey had a quota set to 440 qualified respondents.

Required questions were noted by an asterisk and participants could not move to the next page of the survey without answering them. Sensitive questions provided the option for the participant to choose "Prefer not to answer." Each page in the survey contained a group of questions addressing a common topic to allow participants to easily scroll through the pages of the survey. The number of questions per page was determined by separate sections of the survey or following a skip pattern. Questions contained either multiple-choice (for selecting one answer),

checkboxes (for selecting all that applied), comment box (no limit for text responses), or dropdown option (for selecting date or State).

Once the landing page link to the surveys was distributed, the surveys remained open until the survey administrator closed the surveys' links. Any participant accessing the survey after it was closed received a message thanking them and informing them that the survey had closed.

Estimated completion rate for the woman truck driver survey was 93 percent, estimated completion rate for the minority male survey was 73 percent, and estimated completion rate for the non-minority male survey was 84 percent. The estimated time to complete the survey was 13 minutes across all surveys.

4. EXPLORATORY ANALYSIS OF THE DATA COLLECTED

Some survey questions allowed participants to pick multiple answer choices thus resulting in more answers than the number of respondents. Some questions had multiple-choice options where the respondent had to select only one response. Other questions had the option for respondents to select as many answers as applied, while also allowing the respondent to choose the “other” category, thus increasing the number of answers per respondent. Respondents were also allowed to skip a question if it did not require an answer. For instances where respondents chose to write their answer choice, when available, these open-ended responses were analyzed separately and included as qualitative data analysis in this report. Responses that had irrelevant comments in the open-ended category were not analyzed. Examples of irrelevant comments include responses that read “hello” or “tut” to the question that asked if there is anything a respondent wanted to share (Q39) and a response that reads “This is a shaming question” to the question that asked what type of personal protection a respondent uses (Q11). Tables below show number of participants per answer choice, and where applicable, the percentage of participants for each category. Questions that allow participants to select more than one answer choice when presented in a table format will not have percentages since those numbers will represent number of responses, not number of respondents.

The survey first asked whether the respondent had experienced harassment or assaults on the job. If the driver had such an experience, the survey asked follow-up questions about where and when the incidents occurred, any information the respondent knows about the perpetrator, and whether the respondent reported the incident. Most of the survey questions were multiple-choice type, where respondents chose one or more answers from a predetermined set of possible responses. When applicable, respondents were asked open-ended questions where they freely expressed their responses. Other than the first few screening questions, respondents had the freedom to skip answering a question or pick “prefer not to answer” as a response.

The summary of individual question survey responses is provided for all questions by the three groups of interest: women, minority male, and non-minority male. The identification of these groups is the result of aggregation of Questions 5, 6, and 7 as documented below.

4.1. SCREENING QUESTIONS FOR ELIGIBILITY

*Introductory Question: Have you **previously** taken this survey?*

Respondents who responded Yes were disqualified. Data were not collected since this was not formatted as a question (so Question 1 below would start as “Question 1”). The introductory question was a statement asking the participant whether they have taken the survey previously, and directing them to click on “Exit” if Yes and “Continue” if No.

Question 1: What kind of driver’s license do you have? Please select one response.

Driver License Type	Women	Minority Male	Non-Minority Male
Commercial Driver’s License Class A (CDL-A)	195 (97.0%)	161 (96.4%)	281 (98.6%)
Commercial Driver’s License Class B (CDL-B)	2 (1.0%)	3 (1.8%)	1 (0.4%)
Commercial Driver’s License Class C (CDL-C)	2 (1.0%)	0 (0%)	0 (0%)
Regular driver’s license	2 (1.0%)	3 (1.8%)	3 (1.1%)

Question 2: In the past two years, have you driven a truck with a gross vehicle weight rating (GVWR) of more than 10,000 pounds as part of your job?

This question was applicable to participants who answered Question 1 as having a “regular driver’s license.” To be eligible to take the survey, respondents must have driven a vehicle with GVWR more than 10,000 lb. in the past 2 years. The two women, three minority male, and three non-minority male truck drivers answering Question 1 as having a “regular driver’s license” all confirmed in this question that they had driven a vehicle with GVWR more than 10,000 lbs. As such, all of them were retained in the survey results as eligible to respond.

Question 3: Have you worked as a truck driver in the past two years?

This question was applicable to participants who answered Question 1 as having a “commercial driver’s license” of any class. To be eligible to take the survey, individuals must have worked as a truck driver in the past 2 years. Of the 199 women, 165 minority male, and 282 non-minority male truck drivers reporting that they had a “commercial driver’s license” in Question 1, all of them reported having worked as a truck driver in the past 2 years. As such, all of them were retained in the survey results as eligible to respond.

Question 4: About how old are you?

Age Range	Women	Minority Male	Non-Minority Male
18–24 years old	4 (2.0%)	4 (2.4%)	12 (4.2%)
25–34 years old	27 (13.4%)	35 (21.0%)	54 (18.9%)
35–49 years old	66 (32.8%)	63 (37.7%)	75 (26.3%)
50–65 years old	100 (49.8%)	62 (37.1%)	124 (43.5%)
66 years old or older	4 (2.0%)	3 (1.8%)	20 (7.0%)

Question 5: Are you female/male?

Out of the 653 participants, 201 reported being women truck drivers, while 452 reported being male truck drivers.

Question 6: Are you Hispanic or Latino/a?

Out of the 201 women truck drivers (Question 5), only 9 (4.5 percent) responded they were Hispanic or Latina. Out of the 452 male truck drivers, 48 responded they were Hispanic or Latino. The Hispanic and Latino male drivers are categorized as minority male drivers. Individuals who answered affirmatively to Question 6 were not asked the following Question 7 about self-identified race.

Question 7: Please choose one or more races that you consider yourself to be.

This question allowed for one or more of the following response options; White, Black or African American, American Indian or Alaska Native, Asian, Native Hawaiian or Other Pacific Islander, and Other (which permitted open response).

Race	Respondents
American Indian or Alaska Native	5
Asian	4
Black or African American	134
Native Hawaiian or Other Pacific Islander	2
White	430
Black or African American – AND – American Indian or Alaska Native	1
Black or African American – AND – Asian	1
Black or African American – AND – Native Hawaiian or Other Pacific Islander	2
White – AND – American Indian or Alaska Native	4
White – AND – American Indian or Alaska Native – AND -Asian	1
White – AND – Black or African American	1
White – AND – Other - Innu	1
Other – American	1
Other – Islanos	1
Other – Japanese	1
Other – Middle East	1
Other – Middle eastern	2
Other – North African	1
Other – Prefer not to say	1
Other – Scottish	1
Other – Other minorities besides racial minorities	1

The aggregate of the responses for Questions 5, 6, and 7 were used to assign individuals to the three groups of interest for this study: women, minority male, and non-minority male. Women and men were determined from Question 5. Men responding affirmatively to Question 6 were designated as minority males. The designation of men responding to Question 7 as minority male was based on their race being other than White only. Participants that responded White only as their race are considered as non-minority.

4.2. BACKGROUND, DEMOGRAPHICS, AND INFORMATION PERTAINING TO THEIR PROFESSION

Question 8: What routes do you usually run? (Choose all that apply)

Routes	Women	Minority Male	Non-Minority Male
Over-the-road	179	147	249
Short haul	28	31	49
Pickup and delivery	22	33	19
Other	3	5	7

Question 9: Are you any of the following? (Choose all that apply).

Employment Type	Women	Minority Male	Non-Minority Male
Owner-operator	60	90	124
Employee	112	28	88
Independent contractor	40	68	97

Question 10: Have you had any training in self-defense for drivers?

Out of the 201 women truck drivers, only 29 (14 percent) responded they had received training in self-defense for drivers. Out of the 162 minority male truck drivers, 47 (29 percent) responded they had received training. Out of the 285 non-minority male truck drivers, 66 (23 percent) responded they had received training.

Question 11: Do you do any of these things for personal protection? (Choose all that apply).

Personal Protection Used	Women	Minority Male	Non-Minority Male
I pay attention to always be aware of what is happening around me	198	160	273
I stick to lighted areas	159	82	173
I stay around other people	104	57	96
Other, please specify	51	13	46

Fifty-one women participants responded to “other, please specify” when asked what they do for personal protection. Seventeen of those participants responded they carry some type of weapon (e.g., wasp spray, knife, mace, heavy stick, tire iron, keys, spray bottle with ammonia, taser, and gun); 5 participants have a dog with them; and 29 participants practice some type of safety measure including: not leaving the truck after dark or in unsafe areas, using door straps, not dressing in feminine attire, and “walking with meaning.”

Thirteen of the minority male participants responded to “other, please specify” when asked what they do for personal protection. Two of those participants responded they carry some type of weapon (including knife and gun); 1 participant has a dog with him; and 10 participants practice some type of safety measure including: not leaving the truck after dark or in unsafe or

unpopulated areas, securing door with seat belt at night, parking at Truck Travel Stops only, going to popular fuel stations, and staying away from cluttered vehicles.

Forty-six of the non-minority male participants responded to “other, please specify” when asked what they do for personal protection. Twenty-two of those participants responded they carry some type of weapon (including winch bar, knife, tire thumper, hammer, and gun); 3 participants have a dog with them; and 16 participants practice some type of safety measure including: not leaving the truck after dark or in unsafe areas, parking at well-known truck stops, using pre-paid parking as much as possible, avoiding on and off ramps in certain cities, avoiding parking in major metropolitan cities, defense training, and team driving. One participant suggested they need parking and two participants indicated that it is not always possible to either stick to lighted areas or do any of the listed options.

Question 12: Just checking. Do these questions sound familiar to you? Is it because you have taken this survey before?

Respondents who responded Yes were disqualified. There were 201 women truck drivers, 167 minority truck drivers, and 285 non-minority truck drivers that responded No to the question and were eligible to continue with the survey.

4.3. WHAT IS THE NATURE AND FREQUENCY OF THESE CRIMES?

A total of 201 women, 167 minority male, and 285 non-minority male truck responders were qualified to take the survey based on responses through Question 12. For the questions about nature and frequency of harassment, 5 women, 15 minority men and 15 non-minority men exited the survey before responding to the 13th question. One additional woman and one additional non-minority male exited the survey before responding to the 19th question. Analysis for these questions is based on respondents who had not exited the survey.

Question 13: In the past two years, somebody called me a name I didn’t like. But they didn’t physically hurt me.

Somebody Called Me a Name	Women	Minority Male	Non-Minority Male
It did not happen to me	79 (40%)	69 (45%)	122 (45%)
It happened once	45 (23%)	34 (22%)	53 (20%)
It happened more than once	70 (36%)	45 (30%)	85 (31%)
Prefer not to answer	2 (1%)	4 (3%)	10 (4%)

Seventy out of 196 of the women participants responded “it happened more than once” when asked whether somebody called them a name they didn’t like but did not physically hurt them. Twenty of those participants responded a few or 2–5 times; 29 participants responded 6–15 times; 2 participants responded more than 15 times, and 18 participants responded more than 50 times or that it happened frequently (daily or weekly) or “too many times to count.”

Forty-five out of 152 of the minority male participants responded “it happened more than once” when asked whether somebody called them a name they didn’t like but did not physically hurt them. Nineteen of those participants responded a few or 2–5 times; 11 participants responded 6–

15 times; 2 participants responded more than 15 times, and 10 participants responded more than 50 times or that it happened frequently (daily or weekly) or “too many times to count.”

Eighty-five out of 270 of the non-minority male participants responded “it happened more than once” when asked whether somebody called them a name they didn’t like but did not physically hurt them. Twenty-five of those participants responded a few or 2–5 times; 26 participants responded 6–15 times; 8 participants responded more than 15 times, and 23 participants responded more than 50 times or that it happened frequently (daily or weekly) or “too many times to count.”

Question 14: In the past two years, somebody said words that threatened to hurt me.

Somebody Threatened to Hurt Me	Women	Minority Male	Non-Minority Male
It did not happen to me	118 (60%)	84 (55%)	141 (52%)
It happened once	36 (18%)	34 (22%)	65 (24%)
It happened more than once	39 (20%)	27 (18%)	55 (20%)
Prefer not to answer	3 (2%)	7 (5%)	9 (3%)

Thirty-nine out of 196 of the women participants responded “it happened more than once” when asked whether somebody said words that threatened them. Nineteen of those participants responded a few or 2–5 times; 7 participants responded 6–15 times; 3 participants responded more than 15 times, and 6 participants responded more than 50 times or that it happened frequently (daily or weekly) or “too many times to count.”

Twenty-seven out of 152 of the minority male participants responded “it happened more than once” when asked whether somebody said words that threatened them. Fourteen of those participants responded a few or 2–5 times; 2 participants responded 6–15 times; 2 participants responded more than 15 times, and 6 participants responded more than 50 times or that it happened frequently (daily or weekly) or “too many times to count.”

Fifty-three out of 270 of the non-minority male participants responded “it happened more than once” when asked whether somebody said words that threatened them. Twenty-six of those participants responded a few or 2–5 times; 14 participants responded 6–15 times; 3 participants responded more than 15 times, and 8 participants responded more than 50 times or that it happened frequently (daily or weekly) or “too many times to count.”

Question 15: In the past two years, somebody vandalized my truck or cargo (Like painted it or broke something).

Somebody Vandalized My Truck or Cargo	Women	Minority Male	Non-Minority Male
It did not happen to me	162 (83%)	109 (72%)	200 (74%)
It happened once	20 (10%)	20 (13%)	43 (16%)
It happened more than once	13 (7%)	20 (13%)	24 (9%)
Prefer not to answer	1 (1%)	3 (2%)	3 (1%)

Thirteen out of 196 of the women participants responded “it happened more than once” when asked whether somebody vandalized their truck or cargo. Eight of those participants responded a few or 2–5 times; 2 participants responded 6–15 times; 1 participant responded more than 15 times. Two participants did not mention a frequency but noted items in their truck were stolen, graffiti painted, and air lines were cut from truck.

Twenty out of 152 of the minority male participants responded “it happened more than once” when asked whether somebody vandalized their truck or cargo. Sixteen of those participants responded a few or 2–5 times; and two participants responded 6–15 times. Two participants did not mention a frequency but indicated they had a broken window and fuel theft several times, and attempted break-in on an off-ramp because there was no available parking for 200 miles.

Twenty-four out of 268 of the non-minority male participants responded “it happened more than once” when asked whether somebody vandalized their truck or cargo. Nineteen of those participants responded a few or 2–5 times; 1 participant responded 6–15 times; and 1 participant responded more than 15 times. Three participants did not mention a frequency but noted they had experienced oil drained from their truck in driveway, brake hoses cut, and gladhands and fifth wheel handle pulled. One participant mentioned they had their fuel siphoned at least three times a year.

Question 16: In the past two years, somebody pushed me or hit me or physically hurt me.

Somebody Pushed or Hit or Physically Hurt Me	Women	Minority Male	Non-Minority Male
It did not happen to me	164 (84%)	139 (91%)	230 (85%)
It happened once	21 (11%)	7 (5%)	30 (11%)
It happened more than once	8 (4%)	3 (2%)	4 (1%)
Prefer not to answer	3 (2%)	3 (2%)	6 (2%)

Eight out of 196 of the women participants responded “it happened more than once” when asked whether somebody pushed, hit, or physically hurt them. Five of those participants responded a few or 2–5 times; 1 participant responded 6–15 times; and 1 participant responded “many.” One participant did not mention a frequency but indicated it was a former teammate.

Three out of 154 of the minority male participants responded “it happened more than once” when asked whether somebody pushed, hit, or physically hurt them. One of those participants responded a few or 2–5 times; and 1 participant responded 6–15 times. One participant did not mention a frequency but noted how it starts with verbal abuse, then emasculation, and race hating before it gets physical.

Four out of 268 of the non-minority male participants responded “it happened more than once” when asked whether somebody pushed, hit, or physically hurt them. Three of those participants responded a few or 2–5 times; and 1 participant responded 6–15 times.

Question 17: In the past two years, somebody threatened me with a weapon, like a gun or a knife or a wrench or a tire thumper.

Somebody Threatened Me with a Weapon (Gun, Knife, Wrench, or Tire Thumper)	Women	Minority Male	Non-Minority Male
It did not happen to me	168 (86%)	112 (74%)	202 (75%)
It happened once	22 (11%)	31 (20%)	54 (20%)
It happened more than once	5 (3%)	7 (5%)	11 (4%)
Prefer not to answer	1 (1%)	2 (1%)	3 (1%)

Five out of 196 of the women participants responded “it happened more than once” when asked whether somebody threatened them with a weapon. Three of those participants responded a few or 2–5 times; and 1 participant responded 6–15 times.

Seven out of 152 of the minority male participants responded “it happened more than once” when asked whether somebody threatened them with a weapon. Four of those participants responded a few or 2–5 times; and 1 participant responded 6–15 times. One participant felt threatened by the police.

Eleven out of 270 of the non-minority male participants responded “it happened more than once” when asked whether somebody threatened them with a weapon. Eight of those participants responded a few or 2–5 times; and 1 participant responded more than 15 times. One participant indicated that it happens in city truck stops.

Question 18: In the past two years, somebody touched me or my clothes and I didn’t want it.

Somebody Inappropriately Touched Me	Women	Minority Male	Non-Minority Male
It did not happen to me	129 (66%)	136 (89%)	227 (84%)
It happened once	41 (21%)	10 (7%)	33 (12 %)
It happened more than once	24 (12%)	2 (1%)	6 (2%)
Prefer not to answer	2 (1%)	4 (3%)	4 (1%)

Twenty-four out of 196 of the women participants responded “it happened more than once” when asked whether somebody touched them or their clothes and they did not want it. Sixteen of those participants responded a few or 2–5 times; 4 participants responded 6–15 times; and 4 participants responded more than 50 times or that it happened daily or “too many times to count.”

Two out of 152 of the minority male participants responded “it happened more than once” when asked whether somebody touched them or their clothes and they didn’t want it. One of those participants responded a few or 2–5 times; and 1 participant responded “too many to count.”

Six out of 270 of the non-minority male participants responded “it happened more than once” when asked whether somebody touched them or their clothes and they didn’t want it. All 6 of those participants responded a few or 2–5 times.

Question 19: In the past two years, somebody kept me in human trafficking or forced labor.

Somebody Kept Me in Human Trafficking or Forced Labor	Women	Minority Male	Non-Minority Male
It did not happen to me	194 (99%)	149 (98%)	266 (99%)
It happened once	1 (1%)	1 (1%)	1 (0%)
It happened more than once	0 (0%)	0 (0%)	0 (0%)
Prefer not to answer	0 (0%)	1 (1%)	3 (1%)

None of the participants across the three groups responded “it happened more than once” when asked whether somebody kept them in human trafficking or forced labor.

Question 20: We listed a few things that might have happened to you. Maybe you have faced some other form of threat or assault. Would you be willing to tell us about it?

Willing to Tell Us More about the Threat or Assault?	Women	Minority Male	Non-Minority Male
Yes	70 (36%)	40 (27%)	62 (23%)
No	20 (10%)	36 (24%)	59 (22%)
Nothing happened to me	104 (54%)	72 (49%)	148 (55%)

Question 21: What happened? Please remember not to write anyone’s name.

Seventy out of 194 (36 percent) of the women participants responded they would be willing to tell us about things that might have happened to them. Forty out of 148 (27 percent) of the minority male participants, and 62 out of 269 (23 percent) of the non-minority male participants indicated they would be willing to tell us about things that might have happened to them. Some respondents did not respond or provided irrelevant comments. Responses were grouped in the following categories and participants could have responded with information that fit more than one category below.

Category	Women (n=70)	Minority Male (n=40)	Non-Minority Male (n=62)
Robbery or attempted robbery/break-in, fleet keys used to enter someone else’s truck	4	5	9
Threatened physically, physical fights, physically or sexually assaulted, sexual harassment, stalked	44	5	17
Threatened truck/property (threaten to set truck on fire, slash tires, disconnect air lines, rocking truck back and forth, etc.)	4	0	3
Received verbal threats, racial slurs, cuss words, bullying	14	14	10
Threatened with weapon	2	4	7
Victim of road rage or tailgating	2	2	9

Physical threats were sometimes with guns, knives, or other weapons (hammer or pipe), usually at truck stops or truck stop fuel islands/gas stations and conducted mainly by other truck drivers and sometimes homeless people aggressively asking for money.

4.4. WHERE AND WHEN DO THESE INCIDENTS OCCUR?

Question 22: Where did it happen? (Choose all that apply)

Where Did It Happen?	Women (n=66)	Minority Male (n=28)	Non-Minority Male (n=51)
On my company's property	14	5	2
At a place where I picked up or delivered	22	7	16
At a truck stop	33	16	25
At a fueling station	16	5	9
At a public rest area	6	4	10
At a weigh station or border crossing	2	1	0
At an overnight parking location other than a truck stop or rest area	10	4	6
While I was driving	23	8	18
While I was riding in the truck and somebody else was driving	8	1	3
Prefer not to answer	3	1	0
Someplace else [a blank to fill in]	7	2	5

Seven out of 66 of the women participants responded “someplace else” when asked where it happened. Two of those participants responded in a motel or hotel; one participant responded in or near a highway or local street; one participant responded at a garage or parking lot; and three other participants responded in a training truck, left in a field after being assaulted by co-driver at training company, and at a car wash.

Two out of 28 of the minority male participants responded “someplace else” when asked where it happened. One of those participants responded in or near a local street; and one participant responded at a garage or parking lot.

Five out of 51 of the non-minority male participants responded “someplace else” when asked where it happened. Two of those participants responded in a motel or hotel; two participants responded in or near a highway or local street; and one participant responded at a garage or parking lot.

Question 23: Where on the property was it? (Choose all that apply)

Where on the Property was it?	Women (n=66)	Minority Male (n=28)	Non-Minority Male (n=51)
In the parking lot	30	12	26
Outdoors away from buildings	11	3	5
Around the fuel pumps	20	6	13

Where on the Property was it?	Women (n=66)	Minority Male (n=28)	Non-Minority Male (n=51)
By the loading dock or in the warehouse	15	4	10
In the restaurant or lobby or laundry	9	3	4
In my truck	14	6	14
In a truck I was being trained in	12	1	0
In somebody else's truck	3	2	0
In a meeting or training room	5	1	1
In a break room or waiting area	9	3	1
In the restroom or shower or locker room	3	0	3
In the maintenance shop	6	0	0
Prefer not to answer	4	1	1
Someplace else [a blank to fill in]	14	7	8

Fourteen out of 66 of the women participants responded “someplace else” when asked where in the property it happened. Six of those participants responded in or near a highway or local street; 2 participants (14 percent) responded at a guard shack; and 4 participants (29 percent) responded either at a lot across from truck stop, truck wash, weight house, or rest area.

Seven out of 28 of the minority male participants responded “someplace else” when asked where in the property it happened. Three of those participants responded in or near a highway or local street; 2 participants (25 percent) responded either at a going out lot, a gas station, or in the office.

Eight out of 51 of the non-minority male participants responded “someplace else” when asked where in the property it happened. All eight of those participants responded in or near a highway or local street.

Question 24: Were/Are you aware of the place having a no harassment policy?

Were You Aware of No Harassment Policy?	Women	Minority Male	Non-Minority Male
Yes	20 (30%)	5 (18%)	14 (27%)
No	18 (27%)	8 (29%)	14 (27%)
Don't Know	26 (39%)	14 (50%)	22 (43%)
Prefer not to answer	2 (3%)	1 (4%)	1 (2%)

Question 25: Do you know if the place has (choose all that apply)?

Security Features	Women (n=66)	Minority Male (n=28)	Non-Minority Male (n=51)
Security cameras?	21	7	22
Lighting?	25	8	22
Alarm boxes?	1	0	1
A guard stationed somewhere?	10	2	7

Security Features	Women (n=66)	Minority Male (n=28)	Non-Minority Male (n=51)
Don't know	34	22	23
Prefer not to answer	1	0	1
Something else [a blank to fill in]	4	0	4

Four out of 66 of the women participants responded “something else” when asked whether they knew if the property had any security cameras, lighting, guard station, alarm boxes, etc. Two of those participants responded police patrolling the area and a gate.

Three out of 51 of the non-minority male participants responded “something else” when asked whether they knew if the property had any security cameras, lighting, guard station, alarm boxes, etc. One of those participants responded “they were notified but didn't care” and another one responded body or dash cameras. Another participant responded nothing.

Question 26: What type of area did it happen in? (Choose all that apply)

Type of Area the Harassment Happened	Women (n=66)	Minority Male (n=28)	Non-Minority Male (n=51)
Rural	29	9	19
Urban	35	16	35
Other	16	7	7
Prefer not to answer	3	2	1

Question 27: Which State did this happen in? (Choose more than one State if it happened more than once)

State	Women (n=63)	Minority Male (n=26)	Non-Minority Male (n=48)
Alabama	3	4	4
Arizona	2	0	5
Arkansas	2	3	5
California	14	2	8
Colorado	1	0	1
Connecticut	0	1	2
Delaware	0	0	1
Florida	6	2	4
Georgia	6	4	3
Idaho	1	0	0
Illinois	8	1	8
Indiana	6	3	1
Iowa	2	0	0
Kansas	2	1	2

State	Women (n=63)	Minority Male (n=26)	Non-Minority Male (n=48)
Kentucky	5	1	3
Louisiana	2	1	0
Maryland	0	0	4
Massachusetts	1	0	4
Michigan	7	1	0
Mississippi	1	0	1
Missouri	2	3	2
Montana	2	0	0
Nebraska	1	0	0
New Jersey	2	1	1
New Mexico	2	0	0
New York	3	1	4
North Carolina	2	1	1
Ohio	7	2	3
Oklahoma	5	1	0
Oregon	2	0	3
Pennsylvania	6	1	2
South Carolina	1	1	0
Tennessee	2	5	5
Texas	3	4	7
Utah	3	0	0
Vermont	0	1	0
Virginia	2	1	3
Washington	1	1	1
West Virginia	1	0	0
Wisconsin	2	1	0
Wyoming	2	0	0
Prefer not to answer	3	1	3
Don't Know	5	0	0

Question 28: About when did it happen? (Or when did it happen most often?)

Month	Women (n=60)	Minority Male (n=22)	Non-Minority Male (n=45)
January	4	0	5
February	1	1	4
March	3	0	3
April	3	0	0

Month	Women (n=60)	Minority Male (n=22)	Non-Minority Male (n=45)
May	4	1	1
June	5	2	7
July	5	3	4
August	2	0	4
September	5	4	4
October	4	1	3
November	5	2	3
December	4	1	1
Don't Know - Month	10	5	7
Prefer not to answer - Month	3	2	1

Day of the Week	Women (n=60)	Minority Male (n=22)	Non-Minority Male (n=45)
Monday	1	0	2
Tuesday	2	2	1
Wednesday	3	1	5
Friday	3	2	3
Thursday	0	3	2
Saturday	1	0	2
Sunday	1	1	0
Don't Know - Day	13	5	9

Time of the Day	Women (n=60)	Minority Male (n=22)	Non-Minority Male (n=45)
after 12 midnight - 6 a.m.	7	2	5
after 6 a.m. - 12 noon	2	1	5
after 12 noon - 3 p.m.	4	1	2
after 3 p.m. - 6 p.m.	4	2	3
after 6 p.m. - 9 p.m.	3	0	1
after 9 p.m. - 12 midnight	2	2	2
At night:	0	0	3
During the day:	0	0	1
Don't Know - Time	0	1	1

Question 29. Before the event, did you have concerns something might happen? (Choose all that apply)

Concerns Something Might Happen?	Women (n=66)	Minority Male (n=28)	Non-Minority Male (n=51)
No	46	20	37
Somebody told me they would get me	1	1	2
Somebody was following me around	5	2	1
The whole place bothered me, but I had to go there for my job	16	5	8
There had been things happening all along	8	2	5
Prefer not to answer	3	2	0
Something else [a blank to fill in]	5	2	2

Five out of 66 of the women participants responded “something else” when asked whether if they had any concerns something might happen. Two of those participants noted “general safety concerns as a female” and “always have to be alert, doesn't matter where, what month, what time of day, or surroundings.” One participant stated there was a man staring at her when she walked back from showers and it made her uncomfortable, she smiled and he didn't smile back, just starred at her. Another participant noted the “company atmosphere is toxic.”

Two out of 28 of the minority male participants responded “something else” when asked whether if they had any concerns something might happen. Both participants noted “everything was just hectic over there, a lot of commotion” and that “some places you have no control over whether [there are] detours or just the road one has to travel.”

Two out of 51 of the non-minority male participants responded “something else” when asked whether if they had any concerns something might happen. One of those participants responded “always looking for criminals trying to highjack a load;” while another participant stated “I would have been safer with my own gun.”

4.5. CHARACTERISTICS OF THE AGGRESSOR

Question 30: Think of all the people who have done this to you in the past two years. Who were they? (Choose all that apply)

Who was the Aggressor?	Women (n=66)	Minority Male (n=28)	Non-Minority Male (n=51)
Another driver at my company	17	6	0
Somebody who was training me	13	2	0
A boss at my company	2	2	0
Some other employee at my company	9	3	0
Somebody at a customer's place	11	7	6
A truck stop employee	3	1	1
Some other driver	36	13	20

Who was the Aggressor?	Women (n=66)	Minority Male (n=28)	Non-Minority Male (n=51)
Somebody else (give their job or relationship, not their name) [a blank to fill in]	14	7	11
Don't know	9	6	16
Prefer not to answer	3	2	4

Fourteen out of 66 of the women participants responded “somebody else” when asked for them to think of all the people who have done this to them in the past 2 years. Five of those participants responded a stranger or random person; three participants responded someone they know (husband, ex-husband, friend/boss); two participants (14 percent) responded homeless people; and two other participants responded the guard at receiver, and an employee of a customer. One participant noted a foreman on site.

Seven out of 28 of the minority male participants responded “somebody else” when asked for them to think of all the people who have done this to them in the past 2 years. Two participants responded a stranger or random person; two participants responded “somebody from the neighborhood”; and another truck driver from a different company. Two participants indicated lumpers and “coworker supervisor site manager and the regional manager Sup and site manager at another location.”

Eleven out of 51 of the non-minority male participants responded “somebody else” when asked for them to think of all the people who have done this to them in the past 2 years. Five of those participants responded a stranger or random person; one participant responded law enforcement; two participants responded they did not know or were not sure; one participant responded a customer; and one participant responded a homeless person. One participant indicated the warehouse supervisor.

Question 31: Before the event, did you already know this person?

Did You Already Know this Person?	Women	Minority Male	Non-Minority Male
Yes	13 (20%)	0 (0%)	2 (4%)
I recognized them but don't know their name	1 (2%)	2 (7%)	0 (0%)
No	45 (68%)	24 (86%)	49 (96%)
Don't know	1 (2%)	1 (4%)	0 (0%)
Prefer not to answer	6 (9%)	1 (4%)	0 (0%)

Question 32: Does this person have a reputation or history of doing this?

Was the Aggressor Recidivist?	Women	Minority Male	Non-Minority Male
Yes	5 (8%)	1 (4%)	2 (4%)
No	1 (2%)	3 (11%)	1 (2%)
Don't know	58 (88%)	23 (82%)	47 (92%)
Prefer not to answer	2 (3%)	1 (4%)	1 (2%)

4.6.HOW MANY OF THESE INCIDENTS GO UNREPORTED AND WHY?

Question 33: Did you report any of the attacks or the threats?

Attacks or Threats Reported?	Women	Minority Male	Non-Minority Male
Yes	36 (55%)	9 (32%)	24 (47%)
No	28 (42%)	16 (57%)	26 (51%)
Prefer not to answer	2 (3%)	3 (11%)	1 (2%)

Question 34: Where did you report it? (Choose all that apply)

Reported Where?	Women (n=35)	Minority Male (n=9)	Non-Minority Male (n=24)
To the police	15	4	14
To my employer	24	5	10
To the site manager	12	5	11
To a social agency	2	0	0
To a friend or coworker	9	1	3
Other [blank to fill in]	10	1	3
Prefer not to answer	0	0	0

Ten out of 35 of the women participants responded “other, please specify” when asked where they reported it. Their responses included: employee at truck stop, other driver’s employer, parents, security, shipping employee, employer, and training coordinator; two participants stated they tried to seek help from a trucking organization and “they didn’t care and said it was not their problem” or “no help at all.”

One out of nine of the minority male participants responded “other, please specify” when asked where they reported it. The participants responded that it was reported to a broker.

Three out of 23 of the non-minority male participants responded “other, please specify” when asked where they reported it. Participants responded the warehouse personnel and company loss prevention on premises. One participant responded that it was reported to a person without specifying who the person is.

Question 35: Did anything happen after you reported it?

Report Followed-Up?	Women	Minority Male	Non-Minority Male
Yes	6 (17%)	0 (0%)	5 (21%)
No	21 (60%)	7 (78%)	13 (54%)
Don’t know	8 (23%)	2 (22%)	6 (25%)

Question 36: Tell us briefly what happened after you reported it.

Six of the women participants responded to what happened after they reported it. Participants' responses included: "everything was ok," "he went to jail in another country," "I got suspended for a week," "my company fired him [for rape]," "I chose not to press charges as I didn't want to ever have to see him again," "received would not allow access without an escort 'because you were making trouble for them'," "dispatcher called police who took him to jail. The sexual harassment from [the] dispatcher was report[ed] to my company's owner and the dispatcher was fired."

None of the minority male participants responded to this question.

Five of the non-minority male participants responded to what happened after they reported it. Participants' responses included: police response and investigation.

Question 37: How satisfied were you with the response?

Satisfied with the Response?	Women	Minority Male	Non-Minority Male
Yes	3 (50%)	0 (0%)	1 (20%)
No	0 (0%)	0 (0%)	0 (0%)
Prefer not to answer	1 (17%)	0 (0%)	2 (40%)

Question 38: Why not? (Choose all that apply)

Why was the Response not Satisfactory?	Women (n=28)	Minority Male (n=16)	Non-Minority Male (n=26)
I didn't know where to report it.	9	3	3
I thought I would lose my job.	6	1	1
I wanted to but never got around to it.	0	0	0
It's too embarrassing to talk about.	6	3	1
I did not think that it would make a difference.	17	8	14
That's the way it is. I have to deal with it.	10	6	14
Other (Please do not tell us a person's name or a company name.) [a blank to fill in]	10	4	4

Ten of the women participants responded "other, please specify" for why they were not satisfied with the response they received after reporting their incident, but only eight provided an answer. Their responses included: not being able to prove it, sharing the information with other brokers/drivers she trusted, will report after she leaves the area, no official place to report it and be taken seriously. One of the women truck drivers wrote more specifically to the fact that it would not make a difference: "The driver was a random driver at truck stop. I just wanted to get away from him. I felt if I reported it or wouldn't matter because he'd be long gone." Another woman truck driver wrote more specifically about the fear of losing job and indicated that with "this type of accusation many times the trainee and trainer are both fired."

Four of the minority male participants responded “other, please specify” for why they were not satisfied with the response they received after reporting their incident. Their responses included: not being able to prove it, leaving it where it lies and learn from the experience, beating up the offender, and noting offender rode around him.

Four of the non-minority male participants responded “other, please specify” for why they were not satisfied with the response they received after reporting their incident. They all said they could handle the matter by themselves, “not that big of a deal,” and “who am I going to go run and tell someone called me names?” One participant stated “People don’t protect LGBT truck drivers. Especially not transgender ones.”

Question 39: Is there anything we missed, or anything you’d like to share? Do you have a recommendation to make things better?

One hundred and nineteen women participants (69 percent) submitted suggestion, 60 minority male participants (36 percent), and 123 non-minority male participants (43 percent). Some of the most common suggestions include: making safer, more secure and well-lit rest areas and truck parking areas; allow truck drivers to carry weapons for protection (mainly guns); trucks need more parking areas; self-defense classes provided by employers; more rest areas with bathroom facilities that are close to parking area; more security and law enforcement in truck areas; hotline to report incidents, among others.

4.7. HOW RESPONDENTS HEARD ABOUT THE SURVEY

Question 40: Could you please tell us how you heard about this survey?

How Did You Hear about the Survey?	Women	Minority Male	Non-Minority Male
Invitation by email or social media posting from Women In Trucking Association	98 (53%)	27 (23%)	27 (11%)
Invitation by email or social media posting from the National Transportation Consultants	8 (4%)	23 (19%)	42 (18%)
Invitation by flyer at a truck stop	0 (0%)	1 (1%)	2 (1%)
Colleague or co-worker	17 (9%)	13 (11%)	52 (22%)
Other, please specify	61 (33%)	56 (47%)	115 (48%)

Sixty-one of the women participants responded “other, please specify” for how they heard about the survey. Some cited the answer options already listed above. Thirty-eight out of those participants said they received it through their employer; 12 participants received it through Prime Inc. Freight Transport & Logistics Trucking Company; 5 participants received it through organizations such as: One Voice For Truckers Everywhere (OOIDA), SHE Trucking, Real Women in Trucking, USXpress, and the discussion forum for the Engage WIT site; 3 participants received it by email or saw the link; 1 participant saw it on LinkedIn; and another participant noted it was sent out to drivers on the driver App.

Fifty-six of the minority male participants responded “other, please specify” for how they heard about the survey. Many cited the answer options already listed above. Thirty-five out of these participants said they received it through their employer (via email, newsletter, link on site, or

posted on company App); 9 participants received it via Trinity Logistics/broker/carrier; 7 participants said they received it through Prime Inc. Freight Transport & Logistics Trucking Company; 5 participants receive it through unspecified email or web site. One participant noted they received it through social media., and another through NCTA.

One hundred and fifteen of the non-minority male participants responded “other, please specify” for how they heard about the survey. Many cited the answer options already listed above. Seventy-five of these participants received it through their employer; 19 participants received it through Trinity Logistics/broker/carrier; 12 participants received it through Prime Inc. Freight Transport & Logistics Trucking Company; 3 participants received it through other trucking companies; one participant mentioned US 1 Logistics; another via Facebook, and 4 via unspecified email.

5. STATISTICAL ANALYSIS OF THE SURVEY DATA

Based on the descriptive and exploratory analyses presented in the previous section, statistical models were developed to assess and compare the nature and frequency of crimes against women and minority male truck drivers relative to the control group of non-minority male truck drivers. The statistical models were logistic regression models interpreted in terms of odds and odds ratios.

5.1. DATA PROCESSING

To understand potential impacts of the survey questions on different minority populations, the original survey questions for ethnicity and race were further recoded. Each participant's response to Q7 on the survey (which asks them to identify the race(s) to which they belong) was grouped into one of the race categories as defined by the U.S. Census: White, Black, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, Multiracial, or Other. Contrary to these designations, however, those identifying as Middle Eastern or North African (MENA) were grouped into the Other category rather than White. This is a point of contention among those communities (in this dataset, there were five such cases in the non-minority male group) and follows the Census Bureau's "2015 National Content Test Race and Ethnicity Analysis Report" which recommended the inclusion of a separate MENA category as "optimal." The Native Hawaiian/Other Pacific Islander and American Indian or Alaska Native groups within the survey were combined into one Indigenous group due to the small number of respondents in these categories. Participants who identified as Hispanic or Latino/Latina on Q6 were not shown Q7 at all and did not have an opportunity to identify a race. To allow for analysis of differential responses within subgroups of minority males and for minority women, a minority category designation was developed that combines the Q6 ethnicity and Q7 race questions to produce the following categories: Hispanic or Latino/Latina, Black, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, Multiracial, or Other.

5.2. STATISTICAL MODELING

The survey contains a series of questions (Q13–Q19) asking respondents how often specific incidents of harassment and/or assault had occurred within the past 2 years. Each of these questions allows the respondent to indicate whether the incident had never occurred, had occurred only once, or for them to specify the number of occurrences. For modeling purposes, this response was dichotomized into a binary variable indicating the number of occurrences (0 or at least 1). A simple way to approach this problem is to model the probability of at least one incident of harassment or assault. One form of such a model is a binary logistic regression model:

$$\Pr(\text{at least one incident}) = \sigma \left(\beta_0 + \sum_{p=1}^P \beta_p x_{pi} \right),$$

where σ is the logistic sigmoid function, which constrains probability estimates to be between 0 and 1, and x_{pi} are values of the covariates in the model. For example, if X_I is the age category, then x_{Ii} represents the age category for the i^{th} individual.

One advantage of this model is that comparisons to a reference group can be easily made; in this instance, the interest is in comparing women and minority male truckers to the reference group of non-minority males. Here, the model contains two sets of primary inputs. In the first set, X_1 is an indicator for the survey panel: woman or minority male. In the second set, X_1 is an indicator for women, and X_2 is an indicator for minorities. Also included is an interaction between these two as an additional predictor X_3 for respondents who are both women and a minority. Each set of models also include age, employment type, and route type as inputs; the reference group for each of these additional inputs is 50–65 years old, truckers who are employees only, and truckers who exclusively drive over-the-road routes, respectively. A total of three qualified respondents (two minority males and one non-minority male) did not provide a response to the employment type or the route type question, so these respondents were excluded from the model fitting process.

This model is fit separately to each question q in Q13–Q19 as well as an additional composite question (denoted “Q_any”) indicating if *any* of the incidents in Q13–Q19 occurred. For each question, a Bayesian logistic regression model is fit to the data, which has the additional benefit of drawing approximate posterior samples to permit uncertainty quantification.

5.3. RESULTS

Table 4 summarizes the survey results with counts and percentages of responses in each question by gender and minority status. The composite question is denoted as “Q_any.” Overall, the proportion of those who responded reporting at least one incident is 67.5 percent, 70.3 percent, 68.3 percent, and 66.7 percent for non-minority males, minority males, non-minority women, and minority women, respectively. Also provided is the number of respondents in each subpopulation who did not answer the questions; these answers are omitted from the modeling process. The missing responses have the potential to introduce bias into the results, especially if their reason for being excluded is related to what would have been the true response. In this survey, the relative percentage of missing responses is usually below 10 percent of all responses and therefore such bias is likely to be small if it exists at all.

Logistic regression models are commonly interpreted in terms of odds and odds ratios. The odds of an event is defined as the ratio of the probability of the event occurring to the probability of the event not occurring; e.g., if an incident occurs with 60 percent probability, then the odds of the incident are $0.6/0.4 = 1.5$, meaning that the incident is 1.5 times as likely to occur than not. If the probability of an incident is 60 percent for non-minority males and 75 percent for minority males, then the odds for each group are 1.5 and 3, respectively. To compare the two, the odds ratio would be $3/1.5 = 2$. The jump in probability from 60 to 75 percent between the two groups indicates that minority males are twice as likely to be harassed/assaulted than non-minority males. An odds ratio of 1 would indicate no difference between the two groups.

Table 4. Counts and percentages of responses by gender and minority status.

Question	Description	Male/Female	Minority Status	0	1+	Number Missing
Q_any	any_incidents	male	non-minority	32.46% (87)	67.54% (181)	17
Q_any	any_incidents	male	minority	29.73% (44)	70.27% (104)	19

Question	Description	Male/Female	Minority Status	0	1+	Number Missing
Q_any	any_incidents	female	non-minority	31.72% (46)	68.28% (99)	3
Q_any	any_incidents	female	minority	33.33% (17)	66.67% (34)	2
Q13	called_name	male	non-minority	46.92% (122)	53.08% (138)	25
Q13	called_name	male	minority	46.62% (69)	53.38% (79)	19
Q13	called_name	female	non-minority	40.56% (58)	59.44% (85)	5
Q13	called_name	female	minority	41.18% (21)	58.82% (30)	2
Q14	threaten_words	male	non-minority	54.02% (141)	45.98% (120)	24
Q14	threaten_words	male	minority	57.93% (84)	42.07% (61)	22
Q14	threaten_words	female	non-minority	61.54% (88)	38.46% (55)	5
Q14	threaten_words	female	minority	60% (30)	40% (20)	3
Q15	vandalized	male	non-minority	74.91% (200)	25.09% (67)	18
Q15	vandalized	male	minority	73.15% (109)	26.85% (40)	18
Q15	vandalized	female	non-minority	83.33% (120)	16.67% (24)	4
Q15	vandalized	female	minority	82.35% (42)	17.65% (9)	2
Q16	physical_harm	male	non-minority	87.12% (230)	12.88% (34)	21
Q16	physical_harm	male	minority	93.29% (139)	6.71% (10)	18
Q16	physical_harm	female	non-minority	86.62% (123)	13.38% (19)	6
Q16	physical_harm	female	minority	80.39% (41)	19.61% (10)	2
Q17	threaten_weapon	male	non-minority	75.66% (202)	24.34% (65)	18
Q17	threaten_weapon	male	minority	74.67% (112)	25.33% (38)	17
Q17	threaten_weapon	female	non-minority	86.81% (125)	13.19% (19)	4
Q17	threaten_weapon	female	minority	84.31% (43)	15.69% (8)	2
Q18	touched	male	non-minority	85.34% (227)	14.66% (39)	19
Q18	touched	male	minority	91.89% (136)	8.11% (12)	19
Q18	touched	female	non-minority	63.64% (91)	36.36% (52)	5
Q18	touched	female	minority	74.51% (38)	25.49% (13)	2
Q19	trafficking	male	non-minority	99.25% (265)	0.75% (2)	18
Q19	trafficking	male	minority	99.34% (150)	0.66% (1)	16
Q19	trafficking	female	non-minority	99.31% (144)	0.69% (1)	3
Q19	trafficking	female	minority	98.04% (50)	1.96% (1)	2

The primary objective of the study was to determine the relative occurrence of harassment and assault against truck drivers and to differentiate, if possible, the relative risks to women and minority males as compared to non-minority males. To estimate these risks, a model was first fit with respondent panel as a predictor and covariates for age, employment type, and route type. The results for these groups are listed in Table 5, which includes the odds ratios (adjusted for age, employment type, and route type), standard error, and the lower and upper bounds of a 90 percent Bayesian uncertainty interval for each question and subgroup. Intervals that exclude 1 are considered to be significantly different (these results are in bold). Wider intervals correspond

to greater uncertainty in the estimate. The intercept is the odds of at least one instance of harassment/assault for the reference group (i.e., non-minority males), and the remaining estimates are relative to this group. For example, on the composite question (Q_any), non-minority males are virtually twice as likely to have at least one incident than not (odds ratio (OR)=1.6, 90 percent credible interval (CI) (1.09, 2.32)), and the odds for both women (OR=1.02, 90 percent CI (0.71, 1.46)) and minority males (OR=0.96, 90 percent CI (0.65, 1.42)) are not significantly different from that of non-minority males with the same age, employment status, and route type. This may speak to trucking being a dangerous profession in general, and it is a similar result to what is shown for that question in the data summaries in Table 4. After adjusting for age, employment status, and route type, the only statistically significant results from Table 5 include:

- Women are more than three times as likely (OR=3.1, 90 percent CI (2.0, 4.69)) to report being touched without permission (Q18) as non-minority males.
- Women are only 60 percent as likely (OR=0.63, 90 percent CI (0.42, 0.95)) to report having their trucks vandalized as non-minority males (Q15).
- Women are only 50 percent as likely (OR=0.52, 90 percent CI (0.34, 0.80)) to report being threatened with a weapon (Q17) as non-minority males.
- Minority males are also less likely to have experienced at least one instance of physical harm (Q16) (OR=0.42, 90 percent CI (0.21, 0.78)) and touch without permission (Q18) (OR=0.44, 90 percent CI (0.23, 0.80)) than non-minority males.

There are no significant differences between women or minority males and non-minority males on any of the other questions or on the composite question.

Table 5. Model estimates for the three panels.

Question	Description	Term	Adjusted Odds Ratio	Standard Error	Lower	Upper
Q_any	any_incidents	Intercept: non-minority male	1.6	0.22	1.09	2.32
Q_any	any_incidents	female	1.02	0.21	0.71	1.46
Q_any	any_incidents	minority male	0.96	0.24	0.65	1.42
Q13	called_name	Intercept: non-minority male	0.82	0.21	0.57	1.17
Q13	called_name	female	1.34	0.21	0.95	1.88
Q13	called_name	minority male	0.87	0.22	0.61	1.24
Q14	threaten_words	Intercept: non-minority male	0.65	0.21	0.46	0.94
Q14	threaten_words	female	0.77	0.21	0.54	1.08
Q14	threaten_words	minority male	0.75	0.22	0.53	1.08
Q15	vandalized	Intercept: non-minority male	0.31	0.26	0.2	0.48
Q15	vandalized	female	0.63*	0.26	0.42	0.95

Question	Description	Term	Adjusted Odds Ratio	Standard Error	Lower	Upper
Q15	vandalized	minority male	1.11	0.25	0.74	1.66
Q16	physical_harm	Intercept: non-minority male	0.2	0.31	0.12	0.33
Q16	physical_harm	female	1	0.3	0.62	1.59
Q16	physical_harm	minority male	0.42*	0.4	0.21	0.78
Q17	threaten_weapon	Intercept: non-minority male	0.21	0.28	0.13	0.33
Q17	threaten_weapon	female	0.52*	0.27	0.34	0.8
Q17	threaten_weapon	minority male	0.97	0.25	0.63	1.47
Q18	touched	Intercept: non-minority male	0.14	0.3	0.08	0.22
Q18	touched	female	3.1**	0.25	2.09	4.69
Q18	touched	minority male	0.44*	0.37	0.23	0.8
Q19	trafficking	Intercept: non-minority male	0	1.15	0	0.01
Q19	trafficking	female	1.62	0.9	0.34	7.53
Q19	trafficking	minority male	0.24	1.45	0.01	1.95

* Odds ratio is statistically significantly less than 1 with 90 percent confidence.

** Odds ratio is statistically significantly greater than 1 with 90 percent confidence.

For the age, employment, and route demographic inputs, the following groupings and reference category status (in bold) were included in the analysis as shown in Table 6.

Table 6. Categories for age, route type, and employment type.

Age Range	18-24 years old	25-34 years old	35-49 years old	50-65 years old*	66 years or older
Route Type	Over-the-road*	Short haul	Pickup and delivery	Other	More than one type
Employment Type	Owner-operator*	Employee	Independent contractor	More than one type	

* Reference category

Generally, statistically significant results for the age, employment, and route demographics include:

- Truckers younger than 50–65 years old are relatively more likely to experience at least one instance of harassment (Q_any: OR=1.9, 90 percent CI (1.23, 2.98) for age 25–34; OR=1.69, 90 percent CI (1.21, 2.45) for age 35–49). In particular, these instances include being called a name they didn't like (Q13: OR=1.65, 90 percent CI (1.1, 2.5) for age 25–34; OR=1.67, 90 percent CI (1.19, 2.33) for age 35–49), being threatened with a weapon

(Q17: OR=1.73, 90 percent CI (1.05, 2.78) for age 25–34; OR=1.92, 90 percent CI (1.3, 2.78) for age 35–49), or being touched without permission (Q18: OR=1.99, 90 percent CI (1.21, 3.28) for age 25–34). Those older than 65 are also relatively more likely to be threatened with a weapon (Q17: OR=2.73, 90 percent CI (1.23, 5.82)).

- Truckers driving short haul routes are relatively less likely than over the road drivers to experience at least one instance of harassment (Q_any: OR=0.54, 90 percent CI (0.3, 0.95)), particularly being verbally threatened (Q14: OR=0.52, 90 percent CI (0.27, 0.98)), being physically harmed (Q16: OR=0.04, 90 percent CI (0, 0.28)), or being threatened with a weapon (Q17: OR=0.3, 90 percent CI (0.1, 0.71)).
- Truckers that have more than one type of employment are more likely than those who are employees only to experience at least one instance of harassment (Q_any: OR=2.72, 90 percent CI (1.38, 6.08)) or be verbally threatened (Q14: OR=1.83, 90 percent CI (1.03, 3.29)).
- Owners/operators are less likely than those who are employees to be physically harmed (Q16: OR=0.48, 90 percent CI (0.27, 0.85)) or touched without permission (Q18: OR=0.62, 90 percent CI (0.38, 1.0)).
- Independent contractors are more likely than employees to be called a name they didn't like (Q13: OR=1.61, 90 percent CI (1.09, 2.41)).
- Truckers indicating driving multiple routes are less likely than over the road drivers to have their truck or cargo vandalized (Q15: OR=0.36, 90 percent CI (0.19, 0.64)), and truckers driving "other" routes are less likely to be physically harmed (Q17: OR=0.1, 90 percent CI (0, 0.99)).

The previous analysis was repeated with the minority status added for women truckers. Table 7 shows the results of this second model, which allows for minority and non-minority women to be further examined as separate subpopulations in contrast to the first model. A few important differences result:

- For Q15 and Q17, this separate estimation shows that only non-minority women are less likely to have their truck vandalized (OR=0.63, 90 percent CI (0.40, 1.00)) or be threatened with a weapon (OR=0.52, 90 percent CI (0.31, 0.84)) than non-minority males; for minority women, the odds are not significantly different than for non-minority men.
- For Q16, women truckers in general did not show a significantly different incidence of being threatened with physical harm than non-minority men, but that difference splits greatly between minority and non-minority women. Minority women are more than 3 times as likely (OR=3.52, 90 percent CI (1.33, 9.24)) to report being threatened with physical harm than non-minority men.
- For Q18, the higher incidence of women reporting being touched in a way they did not like also split between minority status with non-minority women (OR=3.76, 90 percent CI (2.43, 6.05)) being the only group of women reporting a significantly higher likelihood than non-minority men.

- For the age, employment, and route inputs, the only changes were on Q18, where pickup/delivery drivers showed a significant difference (OR=3, 90 percent CI (1.01, 8.62)) and owners/operators became non-significant (OR=0.65, 90 percent CI (0.39, 1.05)).

Table 7. Model estimates by gender and minority status.

Question	Description	Term	Adjusted Odds Ratio	Standard Error	Lower	Upper
Q_any	any_incidents	Intercept: non-minority male	1.59	0.23	1.08	2.32
Q_any	any_incidents	female & non-minority	1.08	0.23	0.74	1.6
Q_any	any_incidents	minority	0.95	0.23	0.65	1.38
Q_any	any_incidents	female & minority	0.81	0.42	0.41	1.59
Q13	called_name	Intercept: non-minority male	0.8	0.22	0.57	1.17
Q13	called_name	female & non-minority	1.42	0.23	0.97	2.08
Q13	called_name	minority	0.87	0.23	0.6	1.25
Q13	called_name	female & minority	0.96	0.4	0.49	1.9
Q14	threaten_words	Intercept: non-minority male	0.66	0.23	0.46	0.95
Q14	threaten_words	female & non-minority	0.79	0.22	0.54	1.13
Q14	threaten_words	minority	0.75	0.23	0.52	1.08
Q14	threaten_words	female & minority	1.26	0.39	0.65	2.39
Q15	vandalized	Intercept: non-minority male	0.31	0.26	0.2	0.47
Q15	vandalized	female & non-minority	0.63*	0.27	0.4	1
Q15	vandalized	minority	1.11	0.24	0.75	1.64
Q15	vandalized	female & minority	0.85	0.48	0.39	1.9
Q16	physical_harm	Intercept: non-minority male	0.2	0.31	0.12	0.33
Q16	physical_harm	female & non-minority	0.88	0.32	0.52	1.5
Q16	physical_harm	minority	0.44*	0.39	0.22	0.82
Q16	physical_harm	female & minority	3.52**	0.57	1.33	9.24
Q17	threaten_weapon	Intercept: non-minority male	0.21	0.28	0.13	0.33
Q17	threaten_weapon	female & non-minority	0.52*	0.3	0.31	0.84

Question	Description	Term	Adjusted Odds Ratio	Standard Error	Lower	Upper
Q17	threaten_weapon	minority	0.98	0.25	0.64	1.45
Q17	threaten_weapon	female & minority	1.03	0.52	0.43	2.36
Q18	touched	Intercept: non-minority male	0.13	0.31	0.07	0.21
Q18	touched	female & non-minority	3.76**	0.28	2.43	6.05
Q18	touched	minority	0.44*	0.36	0.23	0.77
Q18	touched	female & minority	1.07	0.51	0.46	2.47
Q19	trafficking	Intercept: non-minority male	0	1.16	0	0.01
Q19	trafficking	female & non-minority	1.39	1.01	0.23	7.74
Q19	trafficking	minority	0.38	1.33	0.04	2.57
Q19	trafficking	female & minority	3.85	1.63	0.27	63.14

* Odds ratio is statistically significantly less than 1 with 90 percent confidence.

** Odds ratio is statistically significantly greater than 1 with 90 percent confidence.

6. CONCLUSIONS

This section discusses survey findings pertaining to the nature and frequency of crimes against truck drivers, where and where they happen, characteristics of the aggressors, and how many of them go unreported. In addition, the statistical comparison of crimes among the three trucker groups is presented. In this section, the suggestions from the survey respondents are discussed.

6.1. SURVEY FINDINGS

The nature and frequency of crimes against truck drivers:

Crimes against truck drivers are prevalent. Table 8 summarizes the percentage of truck drivers who were exposed to different kinds of harassment or crime at least once in the past two years. Being called undesirable names and receiving threatening words are by far the most common harassment truck drivers experience. Relative to male truck drivers, women truck drivers are particularly exposed to crimes that are sexual in nature. In addition, the nature of harassment is not limited because of an individual’s gender and race but also extends to religion, lifestyle, and sexual orientation.

Table 8. Proportions of responses exposed to harassment or crime at least once in the past two years.

Harassment or Crime Type	Women	Minority Male	Non-Minority Male
Being called a name they did not like	59%	52%	51%
Received words that threatened to hurt them	38%	40%	44%
Truck or cargo got vandalized	17%	26%	25%
Got pushed or hit or physically hurt	15%	7%	13%
Got threatened with a weapon, like a gun or a knife or a wrench or a tire thumper	14%	25%	24%
Got touched inappropriately	33%	8%	14%

Where and when do these incidents occur:

Although the harassment against truck drivers happens at all locations relevant to the trucking industry, it is more likely to happen at truck stops (23 to 30 percent depending on gender and minority status), places where truck drivers pick up or deliver cargo (15 to 17 percent), and fueling stations (9 to 11 percent depending on gender and minority status). Some respondents mentioned that the harassment occurred while they were inside their truck (15 to 33 percent). Respondents mentioned that they are exposed to harassment from other truck or passenger vehicle drivers while they were driving on the road (16 to 19 percent depending on gender and minority status). In addition, respondents mentioned that crimes are more likely to happen in urban areas (42 to 56 percent depending on gender and minority status) compared to rural areas (26 to 35 percent depending on gender and minority status). In terms of the time when crimes against truck drivers happen, there is no indication that crimes are more prevalent in certain months of the year or days of the week. Although crimes can happen at any day and time, crimes against women truck drivers are more likely to happen at night (after 12 a.m. to 6 a.m.).

Characteristics of the aggressors:

The individuals committing crimes against truck drivers are more likely to be other truck drivers whom the victims did not already know (e.g., 31 percent of women, 27 percent of minority male, and 34 percent of non-minority male truckers who were victims mentioned that the perpetrator was another truck driver they did not know before). Relative to men, women truck drivers are more likely to experience harassment from another truck driver at their company (15 percent) or by their trainers (11 percent).

How many of these incidents go unreported and why:

About half of the harassment goes unreported (i.e., 42 percent of women, 57 percent of minority males, and 51 percent of non-minority males choose not to report the harassment). The reason given was that they did not think that it would make a difference (29 to 38 percent depending on gender and minority status) or they have to deal with it anyway (17 to 38 percent depending on gender and minority status). This indicated that there is a reluctance by truck drivers in reporting the harassment incidents and follow up with harassment complaints by respective departments in their trucking companies.

Statistical analysis comparing crimes among the trucker groups:

Statistical analysis of the survey data did not find a statistically significant difference in the experience of harassment overall for women and minority males compared to non-minority men. This combined measure refers to at least one incident of occurrence in any of the six specific harassment categories over the preceding 2 years. However, statistically significant differences did arise in two harassment categories. Women truck drivers were found to be 2 to 4 times more likely to report being touched without permission compared to non-minority males. Minority women were up to 9 times more likely to report being physically harmed compared to non-minority men. Similarly, non-minority women are 2 to 6 times as likely than non-minority males to be touched without permission.

6.2. RECOMMENDATIONS BASED ON SURVEY PARTICIPANTS' SUGGESTIONS

Enhance safety at existing trucking facilities:

Providing adequate lighting and security features to existing truck parking lots, fueling stations, and truck stops should be the priority. This also applies to docking areas of shippers and receivers. Providing safe and well-lit sidewalks between parking lots and fueling islands to the store or cashier area would deter the aggressors. Location of restrooms should be closer to parking entrances as opposed to secluded areas. Presence of safety patrol and local law enforcement will also improve safety.

Provide additional parking facilities:

The majority of survey participants mentioned that there is a shortage of truck parking lots in the industry. They suggested that many of the crimes that happen against truckers are the direct result of limited parking availability, especially in urban areas. In some cases, truck drivers resorted to parking their trucks on freeway ramps and abandoned lots, putting them at increased risk of crashes and crimes. More parking provides more options for truckers' safety. Therefore, either existing facilities need to be expanded or new facilities need to be built.

Allow firearm carrying in the trucking industry:

Many respondents mentioned that they would feel safer if they were allowed to carry some type of firearm. However, many trucking company policies do not allow truck drivers to carry firearms in their trucks. Also, many shippers and receivers prohibit firearms on their property. Even if company policy does not prohibit carrying firearms, State laws on carrying firearm significantly vary. Many truck drivers suggested a regulation that prohibits carriers from barring their drivers and employees from carrying legally owned firearms, and barring shippers and receivers from prohibiting firearms on their properties. Some also suggested national concealed carry reciprocity for truck drivers. *Note: regulations related to carrying firearms is beyond the purview of FMCSA's regulatory authority.*

Improve communication within the trucking industry:

Truck drivers, trucking companies, dispatchers, and customers need to communicate to choose a travel plan as efficient and safe as possible. For example, delays and scheduling conflicts at shipper and receiver facilities forces truck drivers to park in unsafe locations.

Provide personal safety training to truck drivers:

Most of the trainings that truck drivers are offered pertain to safe driving and cargo security. However, training on how truck drivers can maintain personal security is lacking. A large portion of respondents indicated that they never received any type of training on personal safety and protection. Therefore, truck drivers could benefit from personal safety, security, and protection, as well as self-defense programs. Many respondents called for employers to encourage their truck drivers to participate in such trainings and schedule them on a regular basis, e.g., yearly or bi-yearly.

Develop educational material to increase awareness:

FMCSA can use the findings of this study to develop programs that promote diversity and inclusion. Educational material that promotes safety of truck drivers is needed. The material should address topics such as how to recognize, prevent, interject, and report crimes. The educational material can also be directed to trucking companies, encouraging them to have a clear and zero-tolerance policy against harassment. Also, procedures are needed to ensure each complaint is taken seriously and that an investigation takes place when necessary. This is particularly important because several survey respondents mentioned that they did not think that it would make a difference if they reported a harassment incident or nothing would happen after they reported it.

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APPENDIX A: ONLINE SURVEY QUESTIONS ON CRIME PREVENTION FOR TRUCKERS

This document details the survey questions that we will present to the three truck driver categories, namely: 1) women drivers, 2) minority male drivers, and 3) non-minority male drivers. To conveniently administer the survey to the targeted driver categories, the project team developed three separate surveys. The majority of the survey questions (Q8 through Q39) are the same for all driver categories. However, the survey introduction and screening questions (Q1 through Q7) will be customized as detailed below.

INTRODUCTION FOR FEMALE AND MINORITY TRUCK DRIVERS

Hi. We're interested in learning about harassment and assaults against female and minority truck drivers. We want to know when and where these things happen. We want to know about the types of people who do these things. If you are a female or minority male truck driver, please take this survey even if you have not experienced harassment or crime yourself. It will take 15 to 20 minutes.

INTRODUCTION FOR CONTROL GROUP (NON-MINORITY MALE TRUCKERS)

Hi. We're interested in learning about harassment and assaults against truck drivers. We want to know when and where these things happen. We want to know about the types of people who do these things. It will take 15 to 20 minutes.

INFORMED CONSENT

We are from Battelle, a research and development company, and we are conducting this survey for the United States Department of Transportation (USDOT).

This is an anonymous survey. We will do everything we can to protect your identity. We will not ask for your name. We will not collect your phone or computer information. Please do not tell us anything else that could identify you. Do not tell us your employer's name or the name of anybody you work with. We will read your answers and try to remove any names or other identifying information that you might accidentally provide.

We will use this information to gain an understanding of the prevalence of harassment and assault. We want to understand what kinds of crimes are perpetrated on drivers. By sharing these experiences, it will aid us in developing recommendations to the USDOT that are aimed at creating a safer environment for all drivers.

The results of this survey will be available from the USDOT. No personally identifiable information will be provided in these results.

We will ask you a few questions to see if you are eligible for the survey. If you are not eligible, the survey will excuse you with our thanks for your willingness to participate.

We recognize that questions include sensitive or personal topics which may be upsetting as you try to remember your experiences. You may skip any question you do not want to answer but we encourage you to answer as many as possible. There are minimal requirements we have for your overall survey response to count.

Honest and complete information will best help inform future efforts to take action to prevent harassment and assault against truck drivers.

If you have questions about the survey, please contact [\[Insert a name and contact info\]](#).

This survey is voluntary. If you are willing to take part in our survey, please click Continue.

[\[Participants who click Continue begin the survey.\]](#)

Screening Questions

Have you previously taken this survey?

- Yes [\[If YES, we thank you for your time. Please click on Exit \(top right\) to exit the survey.\]](#)
- No [\[If NO, please click Continue.\]](#)

[\[Q1 through Q7 and Q12 screen for eligibility. Participants can proceed only if they answer all of these questions and meet all of the criteria.](#)

[Q8 through Q11 are background.](#)

[Q13 through Q21 are the basic questions of what happened.](#)

[Q22 and onward probe for details of what, who, where, and so forth. Participants may choose not to answer questions by selecting “Prefer not to answer”.\]](#)

First, we need to know your background. This is anonymous. We do NOT want personal information that could identify who you are.

- Q1. What kind of driver’s license do you have? Please select one response. [\[require one answer\]](#)
- Commercial Driver’s License Class A (CDL-A) [\[Skip to Q3\]](#)
 - Commercial Driver’s License Class B (CDL-B) [\[Skip to Q3\]](#)
 - Commercial Driver’s License Class C (CDL-C) [\[Skip to Q3\]](#)
 - Regular driver’s license.
- Q2. In the past two years, have you driven a truck with a gross vehicle weight rating (GVWR) of more than 10,000 pounds as part of your job? [\[require one answer\]](#)
- Yes [\[Skip to Q4\]](#)
 - No [\[Skip to Exit Page A for participants who do not qualify.\]](#)
- Q3. Have you worked as a truck driver in the past two years? [\[require one answer\]](#)
- Yes
 - No [\[Skip to Exit Page A for participants who do not qualify.\]](#)

[The following question is adapted from the National Crime Victimization Survey NCVS-500 Control Card (2010 Sample Design) https://www.bjs.gov/content/pub/pdf/ncvs500_2016.pdf.]

Q4. About how old are you? [require one answer]

- younger than 18 years old [Skip to Exit Page A for participants who do not qualify.]
- 18-24 years old
- 25-34 years old
- 35-49 years old
- 50-65 years old
- 66 years old or older

[The following three questions come from the National Crime Victimization Survey NCVS-500 Control Card (2010 Sample Design) https://www.bjs.gov/content/pub/pdf/ncvs500_2016.pdf. The American Community Survey requires one of two choices for sex. <https://www.census.gov/acs/www/about/why-we-ask-each-question/sex/> According to a January 26, 2018, memo for the 2020 census, the 2020 census will allow multiple Hispanic ethnicities and add a write-in area and provide examples for some racial categories. Those additions will not be on this survey. https://www2.census.gov/programs-surveys/decennial/2020/program-management/memo-series/2020-memo-2018_02.pdf]

Female Group Survey

Q5. Are you [require one answer]

- Female
- Male [Skip to Exit Page A for participants who do not qualify.]

[After we reach 440 completed surveys from females, we will stop accepting them. Also, we will stop accepting after we reach 400 in female category who have experienced an event (Case 1 following Q14 through Q19). Skip to Exit Page A.]

Q6. Are you Hispanic or Latina? [require one answer]

- Yes [Skip to Q8]
- No

Q7. Please choose one or more races that you consider yourself to be. [require at least one answer; allow more than one answer]

- White
- Black or African American
- American Indian or Alaska Native
- Asian
- Native Hawaiian or Other Pacific Islander
- Other [blank to fill in]

[Participants who are current truck drivers from the desired demographic groups will continue.]

Minority Male Group Survey

Q5. Are you [require one answer]

- Female [Skip to Exit Page A for participants who do not qualify.]
- Male

[After we reach 440 completed surveys from minority males, we will stop accepting them. Also, we will stop accepting after we reach 400 in minority male category who have experienced an event (Case 1 following Q14 through Q19). Skip to Exit Page A.]

Q6. Are you Hispanic or Latino? [require one answer]

- Yes [Skip to Q8]
- No

- Q7. Please choose one or more races that you consider yourself to be. [require at least one answer; allow more than one answer]
- White [Skip to Exit Page A for participants who do not qualify.]
 - Black or African American
 - American Indian or Alaska Native
 - Asian
 - Native Hawaiian or Other Pacific Islander
 - Other [blank to fill in]

[If the answer to Q5 is Male and the answer to Q6 is No and the answer to Q7 is a single check on White, then skip to Exit Page A for participants who do not qualify.]

[Participants who are current truck drivers from the desired demographic groups will continue.]

Non-Minority Control Group Survey

- Q5. Are you [require one answer]
- Female [Skip to Exit Page A for participants who do not qualify.]
 - Male

[After we reach 440 completed surveys from non-minority males, we will stop accepting them. Also, we will stop accepting after we reach 400 in non-minority male category who have experienced an event (Case 1 following Q14 through Q19). Skip to Exit Page A.]

- Q6. Are you Hispanic or Latino? [require one answer]
- Yes [Skip to Exit Page A for participants who do not qualify.]
 - No

- Q7. Please choose one or more races that you consider yourself to be. [require at least one answer; allow more than one answer]
- White
 - Black or African American [Skip to Exit Page A for participants who do not qualify.]
 - American Indian or Alaska Native [Skip to Exit Page A for participants who do not qualify.]
 - Asian [Skip to Exit Page A for participants who do not qualify.]
 - Native Hawaiian or Other Pacific Islander [Skip to Exit Page A for participants who do not qualify.]
 - Other [blank to fill in] [Skip to Exit Page A for participants who do not qualify.]

[Participants who are current truck drivers from the desired demographic groups will continue.]

[Q8 through Q39 will be asked to all driver categories]

- Q8. What routes do you usually run? (choose all that apply) [allow more than one answer]
- Over-the-road
 - Short haul
 - Pickup and delivery
 - Other
- Q9. Are you any of the following? (choose all that apply) [allow more than one answer]
- Owner-operator
 - Employee
 - Independent contractor
- Q10. Have you had any training in self-defense for drivers? [allow one answer]
- Yes
 - No
- Q11. Do you do any of these things for personal protection? (choose all that apply) [allow more than one answer]
- I pay attention to always be aware of what is happening around me.
 - I stick to lighted areas.

- I stay around other people.
- Other [blank to fill in]

Q12. Just checking. Do these questions sound familiar to you? Is it because you have taken this survey before?
[require one answer]

- Yes [Skip to Exit Page B for participants who do not qualify.]
- No

[On each row, the driver will be able to select exactly one item: a check in one of the first two blanks or a number in the third blank. Put the matrix (Q13 through Q19) and the yes-no question (Q20) and the extra question (Q21) if it appears all on one page. Have a “continue” button at the bottom.]

Truck drivers sometimes experience harassment or even violence. Please tell us about threats or crimes that happened to you. Think of what happens as it directly relates to your work as a driver. Include both on-duty and off-duty time. Off-duty responses only apply if they relate to your work as a driver.

We would like a response to all questions. If an event never happened, please check the “It did not happen to me” answer choice or you may click Exit to stop and exit the survey.

	In the past two years . . .			Prefer not to answer
	It did not happen to me.	It happened once.	If it happened more than once, try to remember how many times	
Q13. Somebody called me a name I didn't like. But they didn't physically hurt me.				
Q14. Somebody said words that threatened to hurt me.				
Q15. Somebody vandalized my truck or cargo (Like painted it or broke something).				
Q16. Somebody pushed me or hit me or physically hurt me.				
Q17. Somebody threatened me with a weapon, like a gun or a knife or a wrench or a tire thumper.				
Q18. Somebody touched me or my clothes and I didn't want it.				
Q19. Somebody kept me in human trafficking or forced labor.				

Q20. We listed a few things that might have happened to you. Maybe you have faced some other form of threat or assault. Would you be willing to tell us about it? [allow one answer]

- Yes [Show Q21. Do not leave this page until the participant clicks Continue.]
- No [Do not leave this page until the participant clicks Continue. Skip to Q39.]
- Nothing happened to me [Skip to Q39]

Q21. What happened? Please remember not to write anyone's name. Do not use a company's name. Use words like my supervisor, a dispatcher, my trainer, or a mechanic.

[Provide a space for 5000 characters of text.]

If you don't want to answer a question, please choose “Prefer not to answer.”

[All of the remaining questions are optional; the participant may skip any of them. In most cases, if the participant does not answer a question, proceed to the next question. If an unanswered question is followed by an unconditional skip, take the skip. The instructions note some exceptions where the survey will skip to a different question if the participant chooses not to answer.]

In the next few questions, if something happened several times, please choose all of the answers that apply. Try to remember what happened in the past two years.

Q22. Where did it happen? (choose all that apply) [allow more than one answer]

- On my company's property
- At a place where I picked up or delivered
- At a truck stop
- At a fueling station
- At a public rest area
- At a weigh station or border crossing
- At an overnight parking location other than a truck stop or rest area
- While I was driving
- While I was riding in the truck and somebody else was driving
- Somewhere else [a blank to fill in]
- Prefer not to answer

Q23. Where on the property was it? (choose all that apply) [allow more than one answer]

- In the parking lot
- Outdoors away from buildings
- Around the fuel pumps
- By the loading dock or in the warehouse
- In the restaurant or lobby or laundry
- In my truck
- In a truck I was being trained in
- In somebody else's truck
- In a meeting or training room
- In a break room or waiting area
- In the restroom or shower or locker room
- In the maintenance shop
- Somewhere else [a blank to fill in]
- Prefer not to answer

Q24. Were/Are you aware of the place having a no harassment policy? [allow one answer]

- Yes
- No
- Don't know
- Prefer not to answer

Q25. Do you know if the place has (choose all that apply) [allow more than one answer]

- Security cameras?
- Lighting?
- Alarm boxes?
- A guard stationed somewhere?
- Something else [a blank to fill in]
- Don't know
- Prefer not to answer

Q26. What type of area did it happen in? (choose all that apply) [allow more than one answer]

- Rural
- Urban
- Other
- Prefer not to answer

[The question about State is patterned after question 8 in the National Crime Victimization Survey NCVS-2 Crime Incident Report https://www.bjs.gov/content/pub/pdf/ncvs16_cir.pdf. The time of day follows the pattern of question 6 on that survey.]

Q27. Which State did this happen in? (choose more than one State if it happened more than once) [have a dropdown box with 50 States, District of Columbia] [This question is not required to allow participants to only select 1 State from dropdown otherwise they have to select 4 as currently displayed in survey]
Prefer not to answer

Q28. About when did it happen? (Or when did it happen most often?)

Month [dropdown]
Day of the week [dropdown]
Time [dropdown like this]

During the day

after 6 a.m. - 12 noon
after 12 noon – 3 p.m.
after 3 p.m. – 6 p.m.

At night

after 6 p.m. - 9 p.m.
after 9 p.m. - 12 midnight
after 12 midnight - 6 a.m.

OR

Don't know
Prefer not to answer

Q29. Before the event, did you have concerns something might happen? (choose all that apply) [allow more than one answer]

- No.
- Somebody told me they would get me.
- Somebody was following me around.
- There had been things happening all along.
- The whole place bothered me, but I had to go there for my job.
- Something else [a blank to fill in]
- Prefer not to answer

Q30. Think of all the people who have done this to you in the past two years. Who were they? (choose all that apply) [allow more than one answer]

- Another driver at my company
- Somebody who was training me
- A boss at my company
- Some other employee at my company
- Somebody at a customer's place
- A truck stop employee
- Some other driver
- Somebody else (give their job or relationship, not their name) [a blank to fill in]
- Don't know
- Prefer not to answer

[The questions about the perpetrator are based on the Supplemental Victimization Survey (SVS) to the National Crime Victimization Survey 2006 https://www.bjs.gov/content/pub/pdf/svs1_06.pdf, questions 4 through 9. The questions about the perpetrator's demographics are not identical to those about the participant. The SVS does not ask ethnicity and offers fewer choices for race. Question 10 in the SVS is about the relationship of the perpetrator to the victim. That question appears in the same order here, but the choices are different.]

Q31. Before the event, did you already know this person? [allow one answer]

- Yes
- I recognized them but don't know their name.
- No

- Don't know
- Prefer not to answer

Q32. Does this person have a reputation or history of doing this? [allow one answer]

- Yes
- No
- Don't know
- Prefer not to answer

[The next series of questions is based on the Supplemental Victimization Survey (SVS) to the National Crime Victimization Survey 2006 https://www.bjs.gov/content/pub/pdf/svs1_06.pdf.]

Q33. Did you report any of the attacks or the threats? [allow one answer]

- Yes
- No [Skip to Q38]
- Prefer not to answer [If the participant chooses not to answer, skip to Q39, which is the open-ended question before the Normal Exit Page.]

Q34. Where did you report it? (choose all that apply) [allow more than one answer]

- To the police
- To my employer
- To the site manager
- To a social agency
- To a friend or coworker
- Other [blank to fill in]
- Prefer not to answer

Q35. Did anything happen after you reported it? [allow one answer]

- Yes
- No [Skip to Q39, which is the open-ended question before the Normal Exit Page.]
- Don't know [Skip to Q39, which is the open-ended question before the Normal Exit Page.]
- Prefer not to answer

Q36. Tell us briefly what happened after you reported it. Remember not to use any names.

[blank to fill in]

Q37. How satisfied were you with the response? [allow one answer]

- Very dissatisfied
- Dissatisfied
- Neither satisfied nor dissatisfied
- Satisfied
- Very satisfied

[Skip to Q39, which is the open-ended question before the Normal Exit Page.]

Q38. Why not? (choose all that apply) [allow more than one answer]

- I didn't know where to report it.
- I thought I would lose my job.
- I wanted to but never got around to it.
- It's too embarrassing to talk about.
- I did not think that it would make a difference.
- That's the way it is. I have to deal with it.
- Other (Please do not tell us a person's name or a company name.) [a blank to fill in]

[These are the final questions. A participant can arrive here by completing the survey, or by answering Q13 through Q20 but not giving an answer that required follow-up.]

Q39. Is there anything we missed, or anything you'd like to share? Do you have a recommendation to make things better? Feel free to say what's on your mind, but please don't write any names. Use words like my supervisor, a dispatcher, my trainer, or a mechanic. [open-ended text box]

Q40. Could you please tell us how you heard about this survey?

- Invitation by email or social media posting from Women In Trucking Association
- Invitation by email or social media posting from the National Transportation Consultants
- Invitation by flyer at a truck stop
- Colleague or co-worker
- Other (please specify)

[This is the Normal Exit Page. This page is for participants who were eligible (as determined by Q1 through Q7) and answered the basic questions about their experiences (Q13 through Q20). It thanks the participant for completing the survey. The two other exit pages are for participants who begin the survey but are ineligible to take the survey or choose not to complete the required questions.]

Thank you for taking the time to answer these questions. We understand it may have been difficult for you. Your answers will help us better understand the situation. We believe that you sharing your experiences will help us think of ways to make a safer environment for all drivers.

[We plan to list several places people can go if they need help dealing with their situation in one way or another. The organizations here are only examples as placeholders.]

If you would like help dealing with any of these matters, here are some places to contact:

- RAINN (Rape, Abuse & Incest National Network) Trained support specialists provide support, information, advice, or a referral by telephone or an online chat.
<https://www.rainn.org/> 800-656-4673
- EEOC (United States Equal Employment Opportunity Commission)
<https://www.eeoc.gov/employees/howtofile.cfm> You can file a charge of employment discrimination on the basis of race, sex, or other reasons. You can call 1-800-669-4000 to discuss your situation.

If you have questions about the survey, please contact [Insert a name and contact info].

[Exit Page A. End of Survey]

Participants reach this page if they have taken the survey before (Q12)]

Thank you for taking time to visit.

If you have questions, please contact [Insert a name and contact info].

[Display the same list of places to go for help.]

Clicking Continue will go to:

Thank you for participating in the survey!

[Exit Page B. Survey Group Complete]

This is the page for people who begin the survey but do not meet the selection criteria. Participants reach this page because one of their answers to the screening questions on profession or demographics excluded them (Q1 through Q7). They come to this page as soon as we learn they are ineligible.]

Thank you for taking time to visit. We have enough responses from people in your group.

If you have questions, please contact [Insert a name and contact info].

[Display the same list of places to go for help.]

You may close the window or click **Exit** to exit the survey.

Clicking Continue will go to:

Thank you for participating in the survey!

APPENDIX B: SUPPORTING DOCUMENT PART A

INTRODUCTION

This is to request the Office of Management and Budget's (OMB) clearance for a new information collection titled, Crime Prevention for Truckers.

PART A. JUSTIFICATION

1. CIRCUMSTANCES THAT MAKE THE COLLECTION OF INFORMATION NECESSARY

FMCSA has accumulated evidence, both documentary and anecdotal, for a serious pattern of crimes related to harassment and assaults against female and minority male truckers. For example, Security Journal, in a 2006 article entitled "Workplace Violence against Female Long-haul Truckers," reported that 42 percent of female long-haul truckers reported experiencing one or more types of workplace violence. Further, *USA Today*, in a 2019 article entitled, "Women are increasingly joining the deadly world of truck driving, confronting sexism and long days," details barriers that women drivers face. And, *USA Today* in a 2017 article entitled, "Rigged," gave accounts of repeated harassment of minority male truckers.

Currently, the FMCSA does not provide materials or training to truckers, particularly minority and women truckers, on the problem of how to protect themselves from being stalked, harassed, assaulted, or robbed. Before effective solutions to reducing harassment and assaults against female and minority truckers can be developed and implemented, one must understand the prevalence, seriousness, and nature of the problem of harassment and assaults against truckers. Currently, there is insufficient data. The frequency of assaults occurring, the portion that are unreported, and reasons for underreporting are unknown.

The purpose of this research study is to gather information to answer these questions, to understand how serious the problem is, and to report it to FMCSA so the Agency can decide on further options for evaluation and action. FMCSA needs to address the problem of preventing crimes, especially against female and minority men truckers for two reasons. There seems to be a perception among these subpopulations of truckers that they are more vulnerable than others. Second, there is a critical shortage of truckers, and helping these subpopulations of truckers to protect themselves from crimes would draw more truckers from these subpopulations to alleviate the shortage of commercial drivers in the motor carrier industry.

2. HOW, BY WHOM, AND FOR WHAT PURPOSE IS THE INFORMATION USED

FMCSA has contracted with Battelle to create and execute a study of truck drivers to gather this information. This exploratory survey will be the first of its kind, so it will be limited in scale and scope. Quantitative and qualitative analysis of the data by FMCSA

and Battelle will help the Agency to understand the nature and extent of the problem and begin to formulate an approach to reducing the problem. The results will not be used for rulemaking.

We will survey professional truck drivers. The survey will separately assess female and minority male truck drivers, with non-minority male truck drivers as a reference control group. All survey respondents will be selected based on a convenient sampling method. The survey will ask whether the drivers have experienced harassment or assaults on the job. If the driver has had such an experience, the survey will ask follow-up questions on where and when the incidents occurred, any information the respondent knows about the perpetrator, and whether the respondent reported the incident. Respondents will take the survey online.

The total population of non-minority male truck drivers is significantly larger than that of minority male truck drivers, which in turn significantly outnumbers female truck drivers. The survey will attempt to reach 400 each of female drivers, minority male drivers, and non-minority male drivers who have experienced on-the-job harassment or assault. The overall number of drivers in each category is sufficiently large that a finite population correction is not required and selecting equal numbers of each allows estimates of each with the same margin of error. Identical questions will be asked of all drivers, but answers from each of the three groups will be analyzed separately.

Survey Content

FMCSA has posed several specific questions to be answered in the study. The questions, along with the specific survey questions (see “Survey on Crime Prevention for Truckers”), are of the following types:

- Screening questions for eligibility.
 - Survey questions Q1 through Q7
- Background, demographics, and information pertaining to their profession.
 - Survey questions Q8 through Q12
- What is the nature and frequency of these crimes?
 - Survey questions Q13 through Q21
- Where and when do these incidents occur?
 - Survey questions Q22 to Q29
- Characteristics of the aggressors?
 - Survey questions Q30 through Q33
- How many of these incidents go unreported and why?
 - Survey questions Q34 to Q39
- How respondents heard about the survey?
 - Survey questions Q40

The first 12 questions on the survey questionnaire ask for background and demographics. People who begin the survey but do not pass the screening questions will be thanked and dismissed.

The screening questions ask whether the respondent drives a truck regulated by FMCSA and has professional experience in the past two years. Age, gender, ethnicity, and race are asked. Answers to screening questions are required, and a respondent is dismissed as soon as a disqualifying answer is given. The core of the survey is contained in questions 13 through 21. They ask whether the respondent has experienced one or more of nine specific classes of harassment or assault and offer the respondent the opportunity to describe an incident that is not on the pre-selected list. The remainder of the survey focuses on one of the classes of incident and asks follow-up questions (e.g., where, who, when, etc.). Where possible, questions are patterned after the National Crime Victimization Study. The survey asks whether the incident was reported to authorities, the nature of the response if it was, and the reasons if it was not. The final question is open-ended, allowing the respondent to describe any information that may have been missed and inviting the respondent to make suggestions.

Skip patterns within the survey will ensure only those questions that a respondent needs to answer will be shown, avoiding any irrelevant or extraneous data and undue burden on respondents' time. A pilot study of nine or fewer drivers will pre-test the questionnaire prior to the main survey to ensure they fully meet specifications and function as anticipated.

Recruiting

We will recruit through a number of methods, primarily through an email invitation to members of trucking organizations or associations and, if needed, including distributing recruiting materials such as flyers at truck stops and social media posts as a last resort. Recruiting materials will identify the target population and say that the survey is about harassment and assaults. These materials will be distributed in at least four locations spread around the United States to provide geographic diversity; no stratification of results is planned in the analysis phase. At least two candidate locations will be identified in each region, and the final selection will be randomized if multiple candidate locations are available.

Project staff who develop recruiting materials and respond to participants questions will be familiar with the truck driving profession. They will be drivers themselves, retirees from motor carrier inspection personnel or a similar career. Project staff having personal contact (for the purpose of passing flyers and displaying recruitment materials such as posters) with potential respondents will be females or minority males. These staff will be trained in human subject protection and in the procedures of this project. Due to the current COVID-19 health concerns, the staff will follow social distancing and other requirements set forth by Centers for Disease Control and Prevention and other health officials in the process of recruiting respondents.

Drivers who are part of the on-site recruited portion of the study will encounter a recruiting flyer with the paperwork reduction act statement, informed consent statement, and a web address where they can take the survey online using their own computer or phone at their convenience. Drivers recruited through email or social media will also be directed to a web site. The survey questions will be identical in all cases.

A maximum of 440 each of females, minority males, and non-minority males will be included in the final results to cap the resources and effort while maximizing the potential to get as close as possible to 400 responses with specific recent experience of harassment or assault. Some individuals may be eligible to participate in the survey but will not have had any recent experience of harassment or assault. These individuals will be included in the final results for calculation of prevalence. The total number of respondents targeted for those who experienced some sort of harassment or assault will be 400 in each group. If 400 targeted individuals are reached before the overall cap of 440 respondents, data collection will be stopped for that group. Individuals who are screened but fail to qualify, such as not being active drivers, will not be included in the survey respondent counts, though a tabulation of the number of such contacts and reason for their disqualification will be reported to better understand resource needs and burden in future data collection efforts of this type.

The survey will be anonymous. None of the questions that will be asked could personally identify the respondent or any other individuals involved. Survey instructions remind the respondent not to include names or other identifying information. Before analysis begins, project staff will read the responses and remove any facts or combinations of facts that could potentially identify an individual or an organization. Battelle will request a waiver of documented informed consent because the documentation would be the only connection between the respondent and the answers.

Analysis

The majority of the questions on the survey can be answered by selecting one or more fixed responses. This type of response can be readily analyzed by quantitative statistical methods. Patterns between types of crimes, locations of incidents, and characteristics of the perpetrators will be observed, and hypotheses will be formulated and tested. The prevalence of different kinds of assaults and harassment will be estimated both as the proportion of respondents indicating any assault or harassment over a two-year period, as well as a crime rate calculated as the total number of such incidents per individual per year. The proportion of individuals that choose not to report an incident to authorities will also be estimated. Both measures of central tendency such as means or medians will be reported as well as an indication of variability through confidence intervals. Measures for the women and minority male truckers will be compared statistically to those of the control group non-minority males to establish whether the experiences of women and minority men are unique to their groups or are consistent with the profession at large. A small number of questions in the survey are open-ended. Most importantly, respondents will be invited to describe an event of harassment or assault that is not on the predetermined list. Some of the responses will certainly be unique, but others may fit common patterns. Free responses will be analyzed qualitatively.

The data will be analyzed, first by Battelle. Battelle statisticians experienced in surveys and in analyzing data for FMCSA will execute the plan. Battelle is required to deliver a public-use dataset at the conclusion of the project. This dataset will include all of the essential responses to the surveys, and personally identifiable information (PII) will have been redacted. Specific responses will be edited to remove or re-code items that appear to

reveal the following, or other text that is judged to be able to be linked or linkable to a specific individual:

- Names
- Geographical subdivisions: regions, States, cities
- Dates
- Phone numbers
- Fax numbers
- Electronic mail addresses
- Social Security numbers
- License plate numbers
- Universal Resource Locators (URLs)
- Internet Protocol (IP) addresses

This dataset will be available to other researchers who wish to further analyze the data according to their own pursuits.

This exploratory study has several boundaries to be acknowledged. The target sample size is sufficient for estimating the prevalence of harassment and assaults within the population. The number of respondents who have experienced an incident may be too small to estimate statistics for other answers with a high confidence. The convenience sample will not allow us to stratify the sampling beyond the separation of female, minority male, and control group non-minority male drivers, and the sample size is too small to draw conclusions about subpopulations, such as older or younger drivers or particular minority groups. A literature review as part of this study identified sources of information on harassment in the workplace in general and in other fields. Individuals who did not become truck drivers because of incidents they experienced during their training will be excluded by the survey questions requiring recent truck driving experience. This population will be difficult to locate and must be left for a later study. Respondents will be asked to count incidents they experienced in the past two years. This is a longer recall period than is common in crime studies and respondents may not be able to accurately recall dates from more than a few months ago. With a limited budget for recruiting respondents, this allows a greater total exposure period for events to have occurred, albeit at a likely cost of precision in memory. For a similar reason, respondents will be asked to report all locations a certain incident occurred in the past two years. Typically, a survey of this type would ask the respondent to select only the most recent incident, randomizing the selection and ensuring a fresh memory. The project team decided to announce the topic of harassment and assaults in publicity materials to attract more drivers with experience on the circumstances of these events, conscious that self-selection can bias a prevalence estimate.

Purpose

FMCSA has an interest in the safety of motor carrier personnel and in the free movement of freight throughout the country. By understanding the nature and prevalence of harassment and assaults against truckers, FMCSA will be able to formulate and promote programs to address the problem. The report will be published on the Agency's web site

so that the general public will be aware of the findings. It may be useful to law enforcement personnel, motor carriers, operators of private truck stops, and others in their efforts to address the situation.

3. EXTENT OF AUTOMATED INFORMATION COLLECTION

The information will be collected through an online survey. All 1320 respondents will take the survey electronically and will be able to participate at a time and place that is convenient to them.

4. EFFORTS TO IDENTIFY DUPLICATION

Battelle searched published literature for information relevant to the topic and submitted the results of the review to FMCSA. Anecdotes and dated studies of drivers being harassed or mistreated were available, but no formal recent research specifically on crimes against female and minority male truckers had been published. A new survey is needed to focus on the extent of crimes against female and minority male truck drivers.

5. EFFORTS TO MINIMIZE THE BURDEN ON SMALL BUSINESSES

Many of the drivers who participate in the survey will be self-employed owners of their own truck tractor. These drivers can be considered working for small businesses. The questionnaire for this survey has been designed to require less than 20 minutes. The information collection is voluntary. Drivers on schedules, if they cannot accommodate even a small delay, can forego the survey. The online questionnaire will allow drivers to participate at a later time that does not interfere with their driving schedule.

6. IMPACT OF LESS FREQUENT COLLECTION OF INFORMATION

This request is to collect information from a set of respondents at one time only. There are no follow-up, additional, or supplementary surveys.

7. SPECIAL CIRCUMSTANCES

There are no special circumstances that would cause this collection to be conducted in a manner inconsistent with OMB guidelines.

8. COMPLIANCE WITH 5 CFR 1320.8

To achieve compliance with 5 CFR 1320.8, a sixty (60) day notice was published in the Federal Register. Three generally supportive comments were received from women that are representative of the trucking industry. And, while no comments were received that were explicitly against conducting the survey, one commenter believed that the issue was urgent enough that the agency should take immediate action to address it. The agency plans to publish a thirty (30) day notice in the Federal Register and this section will be updated after it is published and the comment period closes.

9. PAYMENTS OR GIFTS TO RESPONDENTS

Persons responding to the online survey will voluntarily participate and they will not be paid or offered a gift for their participation. This will enhance the quality of the data

collected by discouraging fraudulent respondents who take the survey for the sake of collecting payments. Since the survey is entirely online, respondents can quickly take it anytime and anyplace at their convenience. For this reason, Battelle's Institutional Review Board (IRB) has no objection to conducting the online survey without any payment to respondents.

10. ASSURANCE OF CONFIDENTIALITY

Volunteer respondents will learn about informed consent at the survey's landing page and will be informed that the survey is anonymous. The survey does not ask the respondent's name. It reminds the respondent in more than one place not to use names of companies or other people. If a name is entered, it will be redacted from the public-use dataset by Battelle. All respondent entered text responses are reviewed by a survey data team in a pre-processing step. Any responses that are judged identifying are either re-coded (i.e., "person" rather than "name") or entirely redacted. The original raw data (with possibility of PII) is maintained in a FISMA (Federal Information Security Management Act) moderate environment and upon study completion at the direction of the FMCSA client will be permanently destroyed. Battelle will also examine responses, in its best efforts and expert determination, for combinations of information that could be assembled to constitute PII. For example, if the length of a certain highway in one State is short and has only a single public rest area, then references to an event in a public rest area on that highway in that State may need to be obscured.

The online surveys will be conducted using a commercial service such as SurveyMonkey. The team will select a survey provider that collects only the information that its customers request it to collect. Most pertinently, the survey will not record the IP address of respondents, and there will be no way to trace back to the device that respondents used to take the survey. While a data breach is conceivably possible at any organization, the provider's policy will be that its customers (in this case Battelle) own the survey data and the provider makes no use of the data. Therefore, responses will be kept confidential from unauthorized users.

Battelle will request from the IRB a formal waiver of documented consent. No human subject's signature will be required, because it would be the sole document linking the subject to participation in the research. Respondents who visit the web site for the survey will see the informed consent statement on the landing page. Their clicking a "continue" button to proceed to the survey's questions will constitute their consent.

Battelle is firmly committed to ensuring that the rights, welfare, and privacy of individuals are protected when they participate in research. The Battelle approach to protecting human subjects is guided by commonly accepted ethical principles and guidelines, including respect for persons, beneficence, and justice, as set forth in the Belmont Report. These ethical principles have been legally codified in Title 45 CFR Part 46 and Subpart A and have been adopted by other Federal agencies, including the Department of Transportation, as the "Common Rule." Battelle assures its commitments through adherence to the Terms of Assurance for its DHHS Federal Wide Assurance FWA#00004696, approved to 13 September 2022.

Battelle maintains an IRB to ensure that all proposed research protocols and ongoing research activities meet requirements set forth in these rules. Battelle's IRB is registered with DHHS's Office of Human Research Protections (OHRP) and with the U.S. Food and Drug Administration (FDA) as IRB00000284, approved to 16 April 2022. Battelle's IRB takes into consideration any State or local laws or client contractual drivers that may be more protective than the Federal statutes for the protection of human subjects. The Battelle IRB will determine if proposed research requires categorization as human subjects research and, if so, if the IRB must review, approve, and oversee the conduct of the research to its conclusion. Battelle's board members are experienced and receive regular continuing education in ethics, regulations, and human subjects issues. The IRB meets regularly with additional meetings as needed to provide timely review of all new and ongoing projects.

Battelle Policy 2.4 "Research and Scientific Activities" establishes institutional expectations for human research protections. Principal Investigators and Project Managers have a primary responsibility to carefully evaluate the ethical, social, medical, and psychological consequences of proposed work involving human subjects and to implement work plans that consider these consequences. Battelle's commitment to accepted practices in human research are documented and are accessible to all staff members through formal Standard Operating Procedures. The Battelle IRB has established detailed Internal Operating Procedures that direct all aspects of its operations.

All Battelle staff members who engage human subjects or who have access to human subjects' private, identifiable information will complete human subjects training with refresher training every two years. Training is provided through the Collaborative Institutional Training Initiative (CITI). CITI training is internationally recognized as "high quality" and is used by hundreds of U.S. institutions of higher learning as well as some Federal agencies.

All responses to the survey questionnaire will be used to create a database. Battelle maintains a secure environment to protect against unauthorized access, modification, destruction, or disclosure of data. Electronic data will be stored securely within Battelle's internal network on designated servers and workstations and will be backed up nightly to reduce the possibility of data loss. Battelle regularly handles PII for human subjects on sensitive topics and will employ established procedures for doing so, with access limited to project staff and security standards appropriate for data with PII.

The information that appears in the public-use dataset will not include PII, such as names or employer, that could lead to identification of a particular respondent.

11. JUSTIFICATION FOR COLLECTION OF SENSITIVE INFORMATION

An important topic of this research is sexual harassment and sexual crimes. The survey will ask about crimes and the surrounding circumstances. None of the questions will ask the respondents to express their own attitudes or behavior regarding sexuality. The survey data collection does not contain additional questions related to matters that are commonly considered sensitive or private.

No PII will be intentionally collected, and no potentially identifying information will be published.

12. ESTIMATE OF BURDEN HOURS FOR INFORMATION REQUESTED

Battelle will collect data through an online survey. The design calls for a total of 1200 respondents (400 each of female, minority male, and non-minority male) to reach the end of the survey, or a cap of 1320 respondents eligible to participate. The time required to complete the questions will depend on the respondent’s answers.

For the purpose of estimating burden hours incurred by respondents, FMCSA separates potential respondents into three groups: 1) truck drivers who report no harassment or assault; and 2) truck drivers who do report an incident of harassment or assault. The estimated number of respondents falling into each category, the information collection length and burden are outlined in Table 9.

Any individual who is not a truck driver will be screened out by Question 12. Those individuals are unlikely to attempt the survey because all recruiting and publicity materials will state clearly that the survey is for truck drivers. For this reason, FMCSA assumes the number of ineligible individuals that attempt the survey and the associated burden are negligible.

Table 9. Estimated number of respondents burden category.

Group	Leave the Survey By	Expected Number	Estimated Time Per Respondent
Ineligible individuals	Question 12	negligible	negligible
Eligible respondents who report no harassment or assault	Question 21	120	8 minutes
Eligible respondents who report harassment or assault	(end)	1200	20 minutes
TOTAL	--	1320	--

Eligible respondents that report no harassment or assault will end the online survey at Question 21. The time to respond to the multiple-choice questions leading to this point is approximately eight minutes. An eligible respondent that does report an incident of harassment or assault will complete the entire survey and incur a burden of approximately 20 minutes.

FMCSA does not know the precise proportion of respondents who will report an incident of harassment or assault. However, the Agency expects a sizable majority of eligible individuals will report at least one form of harassment, and it relies on two publications to estimate the proportion. Table 10 contains a rough calculation of a lower bound for the proportion who will report an incident. The table estimates the proportion of females in transportation occupations who would experience a violent crime in a year. Three of the numbers in the table are from a report by the Bureau of Justice Statistics.⁽⁸³⁾ The fourth

number was calculated using ratios. The numbers from the report indicate that, when all occupations are counted, all workers experience workplace violence at a rate of 5.1 per 1,000 workers every year. Females experience workplace violence at a rate of only 4.1 per 1,000 per year. The calculation assumes that this ratio (4.1/5.1) holds for transportation occupations. If the assumption holds, then of 1,000 females in transportation, 10.1 would experience a violent crime in a year ($12.6 \times 4.1/5.1 = 10.1$). The category of transportation occupations (other than bus driver or taxi cab driver) is broader than truck drivers, and female truck drivers are suspected to be subject to more events than females in office transportation jobs. Also, this report is limited to violent crimes, while the proposed survey questionnaire asks for property crimes, threats, and harassment as well. Therefore, the number of respondents reporting an incident and completing the entire survey should be higher.

Table 10. Average annual rate of workplace nonfatal violence per 1,000 persons age 16 or older.

Population	All Occupations	Transportation Occupations (Other Than Bus Driver or Taxi Cab Driver)
Total	5.1 (SE=0.27)	12.6 (SE=2.15)
Female	4.1 (SE=0.33)	10.1* (SE)

Source: Bureau of Justice Statistics

* estimated by a proportion from the three other numbers

The second source to estimate the proportion of respondents who will report an incident is an analysis of data from the National Survey of Workplace Health and Safety.⁽⁸⁴⁾ This survey is valuable because it includes both psychological aggression and physical violence. Psychological aggression was characterized by five phrases ranging from “shouted obscenities at you or screamed at you in anger” to “threatened you with a knife, gun, or another weapon.” Physical violence was characterized by four phrases ranging from “pushed you, grabbed you, or slapped you in anger” to “attacked you with a knife, gun, or another weapon.” Although the survey recorded respondents’ occupation, the categories were not sufficiently definitive enough to identify truck drivers or even transportation workers. In this telephone survey, workers were asked whether they had experienced “never,” “less than once a month,” or in four categories of higher frequency. Of all survey respondents, 41.4 percent reported experiencing psychological aggression at work, and 6.0 percent reported physical violence. Table 11 lists the prevalence of psychological aggression and physical violence for the overall working population and for males, females, whites, and minorities.

Table 11. Prevalence of aggression and violence experienced at work, all occupations.

Population	Psychological Aggression	Physical Violence
Overall	41.4	6.0
Male	43.3	5.3
Female	39.4	6.9
White	41.6	5.5
Minority	40.9	7.5

Source: Schat et al.

For the purposes of this information collection request (ICR), FMCSA conservatively assumes that 120 of the 1320 respondents will report no harassment or assault. These respondents will exit online survey at Question 21. Each respondent reporting no incident will incur a burden of approximately 8 minutes, resulting in a burden of 16 hours (120 respondents × (8 minutes ÷ 60 minutes per hour)). The remaining 1200 respondents, assumed to report an incident of harassment or assault, will spend 20 minutes each completing the full online survey, resulting in a burden of 400 hours (1200 respondents × (20 minutes ÷ 60 minutes per hour)). The information collection is expected to result in a total burden of 416 hours as detailed in Table 12.

Table 12. Estimated number of respondents, responses, burden hours, and burden hour costs.

Group	Number of Respondents (a)	Responses per Respondent (b)	Number of Responses (a × b = c)	Average Burden Hours per Response (d)	Total Burden (c × d = e)	Total Burden Hour Cost (e × \$31.86)
Report no harassment or assault	120	1	120	0.133	16	\$510
Report harassment or assault	1200	1	1200	0.333	400	\$12,744
TOTAL	1320	--	1320	--	416	\$13,254

Totals may not add due to rounding.

To estimate burden hour costs, the Agency assumes that the respondent occupation for the information collection corresponds to Heavy and Tractor-Trailer Truck Drivers (Standard Occupational Classification 53-3032). The median hourly wage for Heavy and Tractor-Trailer Truck Drivers is \$20.42.⁽⁸⁵⁾

A loaded hourly wage is obtained by adding the value of hourly fringe benefits to the median hourly wage. The Agency estimates a fringe benefits rate of 56 percent of median hourly wage, or \$11.44 per hour (\$20.42 × 0.56). The 56 percent fringe benefits rate was

calculated by dividing the total benefits costs for private industry workers of the transportation and warehousing industry segment (\$13.92) by the average hourly value of wages and salaries (\$24.71) as reported by the Bureau of Labor Statistics in its Employer Costs for Employee Compensation for December 2017.⁽⁸⁶⁾ Adding the dollar value of hourly fringe benefits to the median hourly wage for Heavy and Tractor-Trailer Truck Drivers results in a loaded hourly wage of \$31.86 (\$20.42 + \$11.44).

As detailed in Table 12, the total burden hour cost for this information collection is \$13,254. This includes \$510 for the 120 respondents that do not report an incident of harassment or assault which are expected to incur a total burden hour cost of (120 respondents × 1 response per respondent × (8 minutes ÷ 60 minutes per hour) × \$31.86 per hour); and \$12,744 for the 1200 respondents that complete the full survey (1200 respondents × 1 response per respondent × (20 minutes ÷ 60 minutes per hour) × \$31.86 per hour).

Totals for this ICR:

Estimated Total Annual Burden Hours: 416 hours
Estimated Total Respondents: 1320 respondents
Estimated Total Annual Responses: 1320 responses
Estimated Total Annual Burden Costs: \$13,254

13. ESTIMATE OF TOTAL ANNUAL COSTS TO RESPONDENTS

There are no additional costs to respondents.

14. ESTIMATE OF COST TO THE FEDERAL GOVERNMENT

The contract for the Crime Prevention for Truckers Study is a Firm Fixed Price Contract totaling \$336,936 (\$95,277 annually), which includes \$277,936 in direct labor and consultant costs; \$35,000 in travel costs; and \$24,000 in other direct costs, including peer review. The research design, protocol development, and implementation of the research methods will be completed in March 2022.

Oversight of the study will be carried out by a General Schedule 14 Program Manager. The labor cost of this activity is estimated to be \$73.92 per hour, comprising \$48.53 in hourly wages,⁽⁸⁷⁾ employee benefits equal to 36.25 percent of wages, and overhead expenses equal to 12 percent of wages and benefits [(\$48.53 × (1 + 0.36)) × (1 + 0.12)].⁽⁸⁸⁾ FMCSA estimates that oversight tasks require 4 hours each week for the duration of the 3-year contract, totaling 624 hours (4 hours × 52 weeks × 3 years). The estimated Federal staff support is \$46,126 (\$73.92 × 4 × 52 × 3), or \$15,375 annually.

Estimated Total Annual Cost to Federal Government: \$110,652.

(\$95,277 in contractor costs + \$15,375 in Federal staff support)

15. EXPLANATION OF PROGRAM CHANGES OR ADJUSTMENTS

This is a new information collection therefore there is an increase of annual 277.4 burden hours and annual \$8,835 burden costs.

16. PUBLICATION OF RESULTS OF DATA COLLECTION

FMCSA plans to publish a report to document this information collection, including analysis of the results. Furthermore, a public-use dataset will be released so that other researchers can analyze the data in different ways. The survey will be implemented beginning in the summer of 2021, pending OMB approval of the request. Data collection is scheduled to be completed in the winter of 2021. Battelle's submission of the final report is scheduled for March 2022. Following review by the publication office, the report should be available to the public in late calendar 2022.

17. APPROVAL FOR NOT DISPLAYING THE EXPIRATION DATE OF OMB APPROVAL

The Agency is not requesting approval for not displaying the expiration date.

18. EXCEPTIONS TO CERTIFICATION STATEMENT

The information collection being requested requires no exceptions.

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APPENDIX C: SUPPORTING DOCUMENT PART B

PART B. COLLECTIONS OF INFORMATION EMPLOYING STATISTICAL METHODS

1. DESCRIBE POTENTIAL RESPONDENT UNIVERSE AND ANY SAMPLING SELECTION METHOD TO BE USED.

The population of interest is female and minority male professional truck drivers. The respondents' universe for this study consists of all adult female and minority (Hispanic or not white) male truck drivers with recent (within the past two years) professional truck driving experience in the United States. To provide a control group for comparison purposes, an equivalent number of non-minority males will also be included in the survey.

Considering cost, time constraints, and efficiency of getting respondents, this study will use a convenience sampling method to select respondents that are readily accessible. In this convenience sampling method, we will include distribution of recruiting materials at locations with high concentrations of truck drivers, such as truck stops and truck shows, and through available mailing lists and social media.

To approximate the size of the respondent universe (i.e., target population), we start with the number of persons employed in truck transportation in the United States, shown in Table 9. The 12.5 percent in the table is females in all aspects of truck transportation, which would include drivers, dispatchers, managers, clerks, and other jobs. Secondary sources typically put the fraction of female truck drivers at about 5 percent. Table 14 applies the percentages in the demographic groups listed in Table 9 to estimate the numbers of individuals in each category. The number of females in truck transportation is estimated to be 246 thousand; the fraction of those who are drivers is part of the respondent universe. The size of the remainder of the respondent universe (male truck drivers who are not white or are Hispanic) is difficult to estimate. The Bureau of Labor Statistics reports the data in a way that make it impossible to calculate the number of truck transportation employees who are in the category of Hispanic or the category of non-white. A rough estimate of the male portion of the respondent universe would begin with the number of males in truck transportation (87.5 percent of 1,965 thousand, or 1,719 thousand). If 17.0 percent of these are Black or African American and 3.3 percent are Asian, that would be 292 thousand males and 57 thousand males, respectively. The number of Hispanic or Latino males would be 351 thousand. These numbers cannot be added because some persons whose ethnicity is identified as Hispanic or Latino are White.

Battelle, FMCSA's contractor for this study, plans to perform separate analyses of two groups—women and minority men, each compared to a reference control group of non-minority males. There are two reasons for this. First, women are expected to be subject to different kinds of harassment and assaults than are men. Second, the truck driving population includes many more minority men than women, so a single, combined pool of

responses would not give adequate voice to the women. The same set of survey questions will be used for all respondents. Responses will be separated according to self-reported sex and minority status. It would be possible for a third analysis of combined responses of women, minority men, and non-minority men by weighting the data, but there is no plan to do so.

Table 13. Employed persons by detailed industry, sex, race, and Hispanic or Latino ethnicity.

Industry	Total Employed (Thousands)	% Women	% White	% Black or African American	% Asian	% Hispanic or Latino
Total, 16 years and over	153,337	46.9	78.4	12.1	6.2	16.9
Transportation and utilities	8,159	24.0	73.1	18.8	4.9	17.8
Truck transportation	1,965	12.5	76.6	17.0	3.3	20.4

Source: U.S. Department of Labor, Bureau of Labor Statistics.⁽⁸⁹⁾

Estimates for the above race groups (White, Black or African American, and Asian) do not sum to totals because data are not shown for all races. Persons whose ethnicity is identified as Hispanic or Latino may be of any race.

Table 14. Estimate of the respondent universe (in 1000s).

Industry	Women	White	Black or African American	Asian	Hispanic or Latino
Truck transportation	246	1,505	334	65	401

Because of the way that the data are reported by the Bureau of Labor Statistics, it is not possible to estimate the number of truck transportation employees who are non-white or Hispanic. Truck drivers are a subset of persons employed in truck transportation.

Project staff engaged in recruitment will be current or former truck drivers and inspectors who are already experienced in speaking with drivers and will have specialized training for this project. For the portion of the study where potential respondents are sourced at field locations, researchers will seek permission to distribute recruiting materials at places in at least four regions of the country (NE, SE, NW, SW) where target population truck drivers are anticipated to encounter the materials. These locations could include truck stops, truck shows, or training centers. Due to the current COVID-19 health concerns, the staff will follow social distancing and other requirements set forth by Centers for Disease Control and Prevention and other health officials in the process of recruiting respondents.

Recruiting for the study at four widely separated locations will diversify the sample by geography and allow participation by those in the population who are not accessible by the other recruitment options. Recruiting by social media and e-mailing lists will reach drivers whose job does not take them to truck stops or are not at truck shows; the geographic locations of these drivers will not be controlled. There are no plans to stratify

the sample by geography, age, or other factors, nor is there an expectation of sufficient data for a formal analysis by subgroups. The demographic and occupational characteristics of the surveyed individuals will be tabulated for future reference as to the composition of the sample.

The survey will sample a portion of the respondent universe, and assumptions must be made to select the sample size. The characteristics of the sample (e.g., mean prevalence of incidents, percent of crimes unreported) are only estimates, subject to random variation, for the corresponding population parameters. To limit the range of uncertainty in estimates, an adequate sample size of survey respondents is required. If it can be assumed that survey respondents will provide answers to questions that will yield estimated outcomes of proportions (e.g., proportion of drivers experiencing a crime), and it is further assumed that prevalence rates of 50 percent are possible, the number of responses would have to be 384 to be able to present results with a margin of error of +/- five percentage points. This sample of 384 each would be required for the three separate populations of female truck drivers, male minority, and male non-minority truck drivers, for a total of 1152 responses. An adequate sample of female drivers must be obtained, and an adequate sample of minority male drivers must be obtained. To allow for the possibility that some completed surveys might be unusable, the target sample size will be 1320 (440 in each group), as shown in Table 15. By comparison with previous driver research, we expect to engage approximately three individuals to achieve one completed survey response. The number of individuals we expect to contact is in the first row Table 15 ($3 \times 440 = 1,320$), and the bottom row is the number of completed surveys required for the analysis (440), which is the target sample size. The survey will be conducted entirely online.

Table 15. Anticipated initial and target sample sizes.

Sample Size	Females	Minority Males	Non-Minority Males	Total
Initial sample size	1,320	1,320	1,320	3,960
Target sample size	440	440	440	1,320

The first questions in the survey will screen for eligibility. Those whose self-reported demographic or occupational status does not meet the criteria (e.g., not an active driver) will be thanked and dismissed before they begin the content questions of the survey. Those dismissed will not count toward the target sample to be obtained. Those who report that they have not experienced harassment or assault will be counted toward the total target sample, even though they will not provide the full range of information in the survey. After approximately 400 each of women, minority men, and non-minority men have taken the survey, and reported some form of harassment or assault, the online survey will not allow more participants in the satisfied category and additional respondents in the satisfied category will not be actively recruited. If 400 positive responses are not attained within 440 overall eligible participants (i.e., including those that are eligible but reported no incidents), the survey of that group will terminate to cap the data collection burden.

2. DESCRIBE PROCEDURES FOR COLLECTING INFORMATION, INCLUDING STATISTICAL METHODOLOGY FOR STRATIFICATION AND SAMPLE SELECTION, ESTIMATION PROCEDURES, DEGREE OF ACCURACY NEEDED, AND LESS THAN ANNUAL PERIODIC DATA CYCLES.

Sample Selection

There is no complete list of truck drivers with their contact information from which a probability sampling design can be constructed. The membership of the organization Women In Trucking includes approximately one percent of the total estimated female truck drivers in the United States. The list cannot be considered a sample frame, but it can be used to elicit responses from female truckers. Although there is no corresponding organization of minority male commercial drivers, the International Brotherhood of Teamsters has national caucuses for black, Hispanic, and female drivers. These, too, are convenient means of reaching a portion of the respondent universe.

We will start the survey with three sets of initial samples, one for female truckers, one for minority male truckers, and one for the control group non-minority males, each anticipated to consist of 1,320 individuals. The population of female drivers is much smaller than that of minority male truck drivers, so additional recruiting measures may need to be applied for females.

Post-Survey Adjustments

Because of the convenience sampling method being adopted, no post-survey weighting will be applied. Instead, the relevant demographic and occupational sample characteristics for the separate female, minority and non-minority male samples will be tabulated as reference for the sample. These characteristics will include age, race, ethnicity, type of driver (i.e., over-the-road, short haul, pickup and delivery), and occupational status (i.e., owner-operator, employee, independent contractor).

Statistical Data Analysis

The survey consists primarily of questions with fixed responses, which are amenable to quantitative analysis. Questions with free-form answers will require qualitative analysis.

Quantitative data analysis will be performed by using SAS statistical analysis software. Univariate distributions and descriptive statistics which describe and summarize information from the survey will be obtained for each of the survey questions. If necessary, cross-tabulations will be computed to understand how different survey items are related. Graphical summaries (histograms, means, and confidence intervals) for selected questions will be generated.

Three primary estimates are expected for each sample panel (women, minority men, and non-minority men):

1. **Prevalence Rate:** The proportion of those eligible to participate who indicate in the survey that they experienced at least one incident of each type of harassment or assault within the last two years. Those eligible to participate but without any experience will be included in the denominator of the proportion.

Prevalence Rate = (# eligible participants indicating at least one incident) / (# eligible people who took the survey) × 100

2. Victimization Rate: The victimization rate from above as the estimated mean rate of such incidents per person per year. Those indicating no incidents will count as zero but will be included in the denominator of the rate.

Victimization Rate per 1000 people per year = $0.5 \times (\# \text{ crimes indicated by sample for 2-year period}) / (\# \text{ eligible people who took the survey}) \times 1000$

3. Non-Reporting Prevalence Rate: For respondents indicating in the survey that they experienced at least one incident of harassment or assault, we will calculate the proportion of individuals who indicate not reporting a specific selected one of these incidents to police or other authorities.

Non-Reporting Prevalence Rate = (# participants indicating their detailed incident was not reported to authorities) / (# participants indicating a detailed incident) × 100

To understand the relative impact of harassment or assault on women and minority men, the statistics for each group will be compared to those of the control group non-minority men. If significant differences are not found, within the sensitivity of the collected data, characteristics can be inferred to be representative of the driving profession at large.

Many questions in the survey can be answered by selecting from a list of fixed responses or by marking “other” and filling in a response. Where possible, similar “other” responses will be grouped and included in the quantitative analysis along with the fixed responses.

Two of the questions in the survey invite the respondent to write an extended response. In Question 21, a respondent can relate an incident that is not among the nine pre-written descriptions of harassments and assault. Study staff will read these responses for patterns of similar incidents and unusual incidents that the staff had not anticipated in preparing the survey. These incidents will be organized and summarized so that FMCSA can be aware of other situations affecting drivers that may need attention. Researchers will use content analysis to infer the most common answers. The final question on the survey, number 40, invites the respondent to write any thoughts on their mind that were not captured in the prepared questions. This could be other pertinent details of events or factors that enable harassment and assault against truckers. The question also solicits suggestions from the respondents on how to improve the situation. These ideas may be the genesis of concrete steps that can be taken to make truck driving a safer environment. Again, similar responses will be combined, eloquent phrases will be quoted, and information will be codified.

Findings will be presented in tables, figures, and text. Bar charts and pie charts will present the most salient findings in a simple way that is readily grasped. Tables will present the results of multivariate analysis to convey more subtle and nuanced effects.

Some of the questions are adapted from the National Crime Victimization Study, so that response patterns for truck drivers can be compared with those of the general population. As appropriate, responses will be compared with other studies on workplace harassment and violence.

3. DESCRIBE METHODS TO MAXIMIZE RESPONSE RATE AND TO DEAL WITH THE ISSUES OF NON-RESPONSE.

More than one round of advertisements will be sent through each recruiting channel to give individuals as much opportunity to participate as possible. In any communication to potential respondents we provide, we will clearly state how the participants will benefit from the results of this study in a long run.

Battelle has achieved success in surveys by employing several approaches including verifying participant information, creating well-written and compelling survey materials that are succinct and use well-established and tested survey administration procedures such as advanced letters from a trusted source, and employing tracking and reminder systems. A reminder letter would re-introduce the participant to the study and include the study web address.

The following measures for the initial email invitation will maintain a high response rate:

- Keep the email very short
- Embed the survey link near the beginning of the email
- Include a short subject line
- Reference their membership in Women In Trucking or other relevant membership organization and that organization's support
- Include a customer service/questions phone number

Publicity materials will clearly state that the survey is for truck drivers, with separate publicity materials to attract female and minority male truck drivers. This will increase the interest of the target populations and minimize the number of ineligible individuals who are screened out in the first few questions. The publicity materials will clearly state that the survey topic is harassment and assault to selectively attract drivers who have experienced such an event. This will provide richer data on the circumstances of harassment and assaults, though the estimate of prevalence will be biased high. The survey landing page's informed consent statement will state the purpose of the survey but encourage all eligible drivers to continue.

Because the study uses a convenience sample, non-response is not an issue. Staff will simply continue to apply the recruiting methods until the desired number of respondents is reached.

4. DESCRIBE TESTS OF PROCEDURES OR METHODS TO BE UNDERTAKEN

Before the main survey is initiated, “pretests” or small-scale rehearsals of the data collection will be conducted to evaluate the survey instrument as well as the data collection and respondent selection procedures. Survey designers consider the data collected during pre-test for high rates of missing data, out-of-range values, or inconsistencies with other questions and suggest for revising the questionnaire. We are planning a pilot test of the questionnaire with no more than nine individuals to evaluate the questions and closed-response options, to evaluate general design of the questionnaire, to analyze the survey procedures seeking suggestions for improvement, and to evaluate the degree of, and reasons, behind any failure to respond. During the survey implementation phase, we might refine the survey questionnaire to obtain additional information about the minority and female truck drivers.

5. PROVIDE NAME AND TELEPHONE NUMBER OF INDIVIDUALS WHO WERE CONSULTED ON STATISTICAL ASPECTS OF THE INFORMATION COLLECTION AND WHO WILL ACTUALLY COLLECT AND/OR ANALYZE THE INFORMATION.

Chris Flanigan

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