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RACIAL/ETHNIC DIFFERENCES IN FATALITY RATES FROM MOTOR VEHICLE
CRASHES: AN ANALYSIS FROM A BEHAVIORAL AND CULTURAL PERSPECTIVE

A thesis submitted in partial fulfillment of the requirements for the degree of Master of
Science in Sociology at Virginia Commonwealth University.

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Abstract
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By Huda Hamdan, M.S.

A thesis submitted in partial fulfillment of the requirements for the degree of Master of
Science at Virginia Commonwealth University.

Virginia Commonwealth University, 2013

Major Director: Dr. Sarah Jane Brubaker
Assistant Professor, Wilder School of Government and Public Affairs

Ethnic/racial minorities in the United States are overrepresented in fatalities from motor vehicle crashes (MVC). Growing evidence indicates that there are differences among racial/ethnic groups in risk of involvement in fatal crashes. Based on previous research, numerous factors may be involved in high racial/ethnic fatality rates from MVCs, including failure to use safety equipment, driving while under the influence of alcohol/drug, red light running, and speeding. Using data from the Office of the Chief Medical Examiner (OCME) and the FR300P Police Crash Report, this project explores differences in variables associated with traffic safety behavior and traffic law obedience between non-White and White road users (drivers, passengers, and pedestrians). Results indicate that there is a significant association between race/ethnicity and driving while under the influence of alcohol/drugs (DUI). Those endeavoring to develop more effective traffic safety prevention and education programs may consider the effect of social/cultural factors in future efforts.

CHAPTER 1.

INTRODUCTION TO THE STUDY

Fatalities and injuries from motor vehicle crashes (MVCs) are significant public health issues. Indeed, the World Health Organization (WHO) has estimated that by the year 2020, traffic crashes will be the third leading cause of death and disability world-wide. Currently, motor vehicle crashes are the eighth leading cause of death for Americans of all ages and races/ethnicities (NHTSA 2006). Although these rates are based on deaths and injuries of all Americans, they are not equally distributed amongst all racial/ethnic minorities in the United States (Ward, 2007).

Growing evidence indicates that there are differences among racial/ethnic groups for risk of involvement in fatal crashes. Race/ethnicity is “one of the largest areas of disparity in rates of motor vehicle crash injuries and fatalities . . . and ethnic minorities are disproportionately affected” (Caetano, 2005). For example, the 2002 leading cause of death data show that deaths from motor vehicle crashes constitute 6.8% of deaths from all causes for Native Americans and more than 4.7% for Hispanics (NHTSA, 2006). These rates were considerably lower for Whites (1.6%), African Americans (1.8%), and Pacific Islanders (2.5%). In addressing this problem, the National Highway Traffic Safety Administration (NHTSA) is seeking out those most at risk of death or injury from motor vehicle crashes by establishing new and more effective ways to reduce behaviors that contribute to motor vehicle traffic crashes. Of special interest are racial/ethnic minorities who are disproportionately killed in traffic crashes.

Thinking about the relationship between racial/ethnic minorities in the United States and fatal motor vehicle crashes often requires examining cultural and behavioral values that may

contribute to racial disparities in motor vehicle crashes. This may help in developing strategies and solutions that encourage positive changes in driving behaviors and safety awareness.

Current strategies for reducing traffic injuries and fatalities focus on training and educating individuals on risk behaviors and their consequences. Also they focus on limiting risk behaviors by the enforcement of traffic regulations. Traditional strategies also aim at protecting drivers from the consequences of risk behaviors by modifying and enhancing road and vehicle design. Although these strategies have had some notable improvements in reducing the fatal crash rate, the rate of improvement in traffic safety has slowed in recent years which may be attributable to factors that are not currently addressed by traditional traffic safety interventions.

For example, one risk factor that is not included in the subset of current factors that affect the fatal crash rate is the “culture” of the society. Some officials from the traffic safety community believe that more attention should be given to culture in order to achieve significant reductions in motor vehicle crash related casualties. In other words, more attention should be given to underlying reasons behind traffic behaviors and actions.

The purpose of this research is to explore some cultural and behavioral issues that may produce behaviors and actions that lead to fatal crashes amongst racial/ethnic minorities in the United States. This study intends to examine racial/ethnic minority groups’ traffic behaviors by evaluating variables associated with risk taking and abiding with traffic laws.

This study aims to provide evidence-based findings that may assist decision makers and contribute to transportation program adjustments. Results may also assist in the development of countermeasures to reach those most at risk of death or injury in a motor vehicle crash, help improve traffic safety, and contribute to future transportation programs that help decrease the rates of minorities’ traffic fatalities in the United States.

This chapter discusses the statement of the problem and provides a review of the relevant literature regarding race/ethnicity and fatalities from MVCs, in addition to factors of fatal MVCs, minorities and high risk behavior, and minorities and law obedience. It also examines the social resistance framework as the theoretical basis for this research. At the end of this chapter, the limitations for this project are reviewed. Chapter 2 is the methods section in which the general research questions and hypotheses are provided. It also reviews the research design, data collection measure and procedure, variables of interest, and data analysis. Chapter 3 focuses mainly on the results of the analysis. The concluding chapter discusses the results of the results of this research and provide some implications and suggestions for future research.

STATEMENT OF THE PROBLEM

Previous research indicates that non-White racial/ethnic groups in the United States are more likely than Whites to be involved in fatal motor vehicle crashes (NHTSA, 2006). They experience high fatality rates as drivers, passengers and pedestrians. Populations of minorities are also increasing, which stresses the importance of studying fatalities amongst minority racial/ethnic groups.

U.S. Census data from 2000 and 2010 show steady annual increases in the populations of African Americans, Hispanics, and Asians. At 43%, Hispanic and Asian populations have the largest rate of increase between 2000 and 2010, followed by African Americans with a rate increase of 13%, and for Whites, the change was an increase of 6% (U.S. Department of Commerce Economics and Statistics Administration U.S. Census Bureau, 2010). These trends are expected to continue in the future (NHTSA, 2006).

Most research and policy related to traffic issues and violations address characteristics of traffic problems by focusing on demographic factors and individuals' backgrounds (e.g. age, education, race/ethnicity, economic status, employment). They also aim at analyzing vehicles and road types. Although results from these studies are fruitful, they still do not provide a broader analysis of the influence of culture on individuals' traffic behaviors.

This study suggests that casting a wider net that examines social and cultural aspects may prove useful for determining possible factors of high MVC fatalities among minority groups in the United States. Results from such examination may improve efforts to reduce and prevent traffic fatalities.

LITERATURE REVIEW

This section provides an overview on the fatality analysis reporting system (FARS) of the U.S. Department of Transportation. It also presents background information on fatalities from MVCs and race/ethnicity in the U.S. and in Virginia. Additionally, the most common causes and risk factors that lead to fatal MVCs are discussed. The final part of this discussion presents a discussion on minorities' engagement in high risk behaviors and abidance with the law.

Race/Ethnicity Reporting

The Fatality Analysis Reporting System (FARS) is a U.S. Department of Transportation database in the public domain. Since 1975, FARS has been reporting data on fatalities that occur from all motor vehicle traffic crashes. In 1999, race/ethnicity was added to the list of variables collected in the FARS system. Since that time, almost half of the U.S. states reported race/ethnicity for 90% of fatalities. By 2002, only 12 states failed to report race/ethnicity to FARS for at least 90% of recorded fatalities (Briggs, 2005).

Motor Vehicle Fatalities and Racial/Ethnic Groups

The NHTSA annually calculates leading causes of death for all race/ethnicity and age groups. Data on the leading cause of death is acquired from the Centers for Disease Control and Prevention's (CDC) National Center for Health Statistics. The following are some of these findings for 2002:

- 1) For Native Americans, motor vehicle traffic crashes had the most serious effect. For all ages, motor vehicle crashes were the third leading cause of death (NHTSA, 2006).
- 2) For Hispanics or Latinos, motor vehicle traffic crashes were the fifth leading cause of death (NHTSA, 2006).
- 3) Motor vehicle crashes were ranked the seventh cause of death for Asians and Pacific Islanders (NHTSA, 2006).
- 4) Fatalities from Motor vehicle crashes were the eighth leading cause of death for Whites (NHTSA, 2006).
- 5) As for African Americans, motor vehicle crashes were not one of one the ten most leading causes of death. (NHTSA, 2006).

The CDC's Morbidity and Mortality weekly report (MMWR) included death rates for all race/ethnic groups from 2003-2007. Native Americans had the highest motor vehicle related death rates for that period. Whites came in the second place and were followed by African Americans and Hispanics who had similar rates. Asians and Pacific Islanders had the lowest death rates (CDC, 2011).

Multiple factors lead to fatal crashes. The next section provides an overview of the most common factors that lead to fatal motor vehicle crashes.

Causes and Risk Factors

Leading causes and risk factors of fatal motor vehicle crashes include non-use of safety equipment, driving under the influence, red-light running, and speeding. Each of these factors are discussed in greater detail below.

- *Safety Equipment Use*

The use of traffic safety equipment effectively reduces the risk of having serious injuries. However, important differences in using traffic safety equipment were found amongst racial/ethnic minorities. It is estimated that only 70% of US drivers use seat belts. Some driver populations are more likely than others to be non-users of seat belts. For example, in a recent study published by the NHTSA, African Americans continue to have significant lower rates of wearing seat belts than other races and ethnicities (NHTSA, 2009).

National data on child safety seats show that booster seats protect children better than seat belts; however, only 19% of eligible children use them. Nearly 65% of fatally injured American Indian children were not seated in a booster seat at the time of the fatal crash, followed by 55% of Hispanic and African Americans children, 40% of Asian children, and 30% of White children (Garrison & Crump, 2007).

- *Driving Under the Influence(DUI)*

There are differences in drinking patterns within each racial/ethnic group. According to the CDC's Morbidity and Mortality Weekly report, in 2006 Native Americans had the highest proportion killed in alcohol-impaired crashes (48%), followed by Hispanics (36%), African Americans and whites (both 31%), and Asians and Pacific Islanders (23%) (CDC, 2011). Racial/ethnic groups that are at most risk for alcohol-impaired driving were included in the

NHTSA's 2010 alcohol and highway safety report. Native Americans and Whites are among those at most risk. The picture is less clear for Hispanic and African American drivers. While the vehicle mile traveled (VMT) measure shows that African Americans and Hispanics are more likely to DUI than Whites, the Crash Incidence Ratio (CIR) measure shows that Hispanics are more at risk for alcohol-impaired driving than African Americans and Whites (NHSTA, 2010).

- ***Red Light Runners***

The number of MVCs in the U.S. that occur at intersections has increased from 40% in 1996 to 43% in 2001. Between 1992 and 1996, fatal red light crashes increased from 1888 to 2242. This number increased another 25% from 1996 to 2001 (from 2242 to 2804), indicating the need for controlling this increasing problem (Romano, 2005).

A research conducted by the Pacific Institute for Research and Evaluation examined fatal crashes that took place between 1990 and 1996. This study shows that a number of factors lead to an increase in red light running. Drivers who are young, male, consume alcohol, have an invalid driver license, and who are involved in previous traffic convictions are at a higher risk of running red lights. These factors are uniform across all racial/ethnic groups. It was also found that Hispanics and Whites are more likely to be involved in red light running than African-Americans. There are no differences in the prevalence of red light running between Hispanics and the majority of the U.S. population (Romano, 2005).

- ***Speeding***

Speeding is considered a primary reason for fatalities in motor vehicle crashes. It is estimated that 30% of all fatal crashes include one or more drivers who were exceeding the speed limit. In general, younger drivers are more likely to report speeding; males are 50% more likely than females to admit to speeding. In terms of race/ethnicity, it is still not clear if there are

differences in speeding amongst racial/ethnic groups. However, it is estimated that 22% of Native American/Alaskan drivers and 18% of Hispanic drivers are more likely to have been stopped for a traffic-related violation than are other drivers (NHTSA, 2002).

From previous research it can be concluded that fatalities from MVCs among racial/ethnic minorities in the United States can be contributed to driving under the influence, failing to use the seat belt, running red lights, and speeding. All the aforementioned factors can be associated with high risk behaviors and law disobedience. The next section examines the association between these two categories and racial/ethnic minorities in the United States.

Minorities and High Risk Behavior

Public health research suggests that individuals of non-dominant minority groups, racial/ethnic groups and members of low socioeconomic status, are often more likely to get involved in different high risk behaviors, compared to the majority or dominant group. Such high risk behaviors include smoking (Osypuk, Kawachi, Subramanian, & Acevedo-Garcia, 2006; Sorensen, Barbeau, Hunt, & Emmons, 2004), alcohol consumption, use of marijuana (Friese & Grube, 2008; Gerevich, Bacskai, Czobor, & Szabo, 2010), sexual risk and HIV risk behaviors (Dariotis, Sifakis, Pleck, Astone, & Sonenstein, 2011; Del Amo, 2011; Trepka et al., 2008). They also tend to have poor diet and limited physical activity (Cockerham, 2005), and they demonstrate more unsafe driving-related behaviors such as failing to use seat belts, running red lights, etc. (Braver, 2003).

Despite genetic differences in non-dominant minority groups and the heterogeneous events that may have led to their marginalization (e.g., through enslavement, colonization, or immigration), disparities in high-risk behaviors and health outcomes among minorities remain

significantly common. Consequently, it is expected to observe similar patterns in social entities that include minorities, Maori New Zealanders vs. “pakeha” New Zealanders of European descent, Australian Aborigines vs. white Australians, First Nations tribes vs. the rest of Canada, aboriginal Taiwanese vs. Chinese-ethnic Taiwanese from the mainland, Turkish immigrants vs. Dutch descent in the Netherlands, non-Jews vs. Jews in Israel; Native Americans vs. White Americans, and African Americans vs. Whites in the United States (Factor, Kawachi, & Williams, 2011). In all these cases, non-dominant minorities exhibit higher rates of high-risk behaviors, which result in excess burdens of morbidity and mortality.

Minorities and Law Obedience

According to Michael Tonry in his book “Ethnicity, Crime, and Immigration,” members of some disadvantaged minority groups in Western societies are more likely to be arrested, convicted, and imprisoned for violent, property, and drug crimes. This applies to minority groups who are of a different race from the majority population, such as African Americans in the United States, England, and Canada, or of different ethnic backgrounds, such as Yugoslavs or Eastern Europeans in Germany and Finns in Sweden (Tonry, 1997). Differences in patterns of law disobedience and justice system experiences of members of racial/ethnic minorities in a country are not simply the result of group differences in wealth, social status, or political power.

Criminal justice research provides additional insights into the relationship between race/ethnicity and traffic fatalities. Recent surveys indicate that the American public generally lack confidence in the criminal justice system. In 2002, the National Institute of Justice found that 73% of Americans expressed lack of confidence in the criminal justice system. In 1998, the

General Social Survey found that 78% of Americans expressed lack of confidence in the courts. This may have negative outcomes (Tyler, 2005).

Trust in the legal system is especially important to motivate the public to voluntarily cooperate with the police. Such cooperation indicates that people are internally motivated to obey the law as a law-abiding society. Research findings suggest that trust and confidence in police depends on how police officers exercise their authority (Tyler, 2005). When the police abuse their authority, the public's trust in the police declines, leading to less cooperation and greater law breaking (Tyler, 2005).

The lack of trust and confidence in the police and courts is widely found among minority citizens. The consequences of low legitimacy amongst minorities lead not only to greater law-breaking behavior, but also to a general unwillingness among minority groups to work with the police (Tyler, 2001). This paper examines high risk behaviors and abiding with traffic laws among racial/ethnic minorities. The next section presents a background on MVCs and racial/ethnic minorities in Virginia.

Motor Vehicle Crashes and Racial/Ethnic Minorities in Virginia

From 2004 – 2010, national MVCs fatality rates are 14.8 per 100,000. While the highest rate is registered in Wyoming (30.20 per 100,000), Massachusetts has the lowest rate (6.25 per 100,000). Rates in Virginia are approximately 11.55 per 100,000. Resembling NHTSA analysis on national fatalities, data from 2004-2011 indicate that from 2004 until 2007 fatalities have been increasing steadily. However, as was expected by the NHTSA, Virginia fatalities increased from 740 cases in 2010 to reach 764 cases in 2011.

In terms of minorities, Virginia is among 12 states that failed to report race/ethnicity for at least 90% of fatalities. The other states include Alaska, Hawaii, Idaho, Indiana, New York, Rhode Island, and Utah (Briggs, 2005). The total population of minorities in Virginia has significantly increased from 2000 – 2010. In 2000, the minority population was 2,112,874. In 2010, the number increased to 2,814,574, marking an increase of 33.2% (U.S. Department of Commerce Economics and Statistics Administration U.S. Census Bureau, 2010).

Summary of Literature Review

After reviewing earlier studies on fatality rates from motor vehicle crashes among different races/ethnicities, it is evident that racial/ethnic minority groups are disproportionately killed in motor vehicle crashes. As there is an increase in the population of minorities on a national level, it is predicted that by 2020 motor vehicle crashes will be the third leading cause of death, which may have a serious effect on racial/ethnic minority groups. Also, racial/ethnic minorities exhibit higher rates of high-risk and law-breaking behavior.

Further analysis of racial/ethnic groups' traffic behavior is needed. The following section provides an overview of studies on social and cultural factors that are associated with the probability of involvement in fatal crashes. It also discusses the social resistance framework which proposes an explanation on how social influences may lead racial/ethnic minorities to get engaged in high risk traffic behaviors and not abide with traffic laws.

THEORETICAL FRAMEWORK

Studies of the relationship between social and cultural factors and fatal crashes have found that involvement in a fatal crash varies by gender, age, ethnic group, social class,

educational capital, and economic capital. Gender has been identified as a significant indicator for MVCs. Men are twice as likely as women to commit traffic violations and die from fatal crashes. Age is also another indicator. Younger drivers are more likely to be involved in fatal MVCs and high risk traffic behavior. As discussed previously, racial/ethnic groups are disproportionately killed by MVCs. Education and economic capital are two dramatic indicators of involvement in fatal crashes. Fatalities from MVCs were found to be higher among people with low levels of education and socioeconomic status (Factor, Yair, & Mahalel, 2010). In addressing the problem of minorities' tendency to be engaged in high risk behaviors and to disobey the law, various social theories have been put forward.

Proposed explanations can be divided into two groups. First, macro-structural explanations focus on the structural conditions that influence the behavior of individuals, e.g. Colón's "belief in destiny theory" (Byrd et al., 1998), Ulrich Beck's "risk society, safety culture paradigm, and theory of acculturation" (Romano, Voas, & Lacey, 2010). Second, micro-agentic theories focus on the individual and perceive him/her as detached from structural constraints, e.g. Jessor's "problem behavior theory, or PBT" (Griffen et al., 2004 & Factor, Kawachi, & Williams, 2011). One theoretical framework that offers a more comprehensive explanation and takes into account the role of the social structure as well as the individual is the social resistance framework.

This section provides an illustration of the social resistance framework and how it can be used to explain the relationship between racial/ethnic disparities in fatal MVCs, and law disobedience and high risk behaviors.

Non-dominant Minorities and Social Resistance

Non-dominant (racial/ethnic) minorities are “members of society who are defined by others as ‘different’ in biological, cultural, behavioral, or organizational terms” (Factor, Kawachi, & Williams, 2011, p. 1295). Perceiving minority groups as ‘different’ may deny them access to valued resources so that “selected ethnics are confined to a limited range of low pay/low prestige economic positions and to ethnically homogeneous slums” (p. 1295). As segregation deepens, interactions among members of minority groups increase, which strengthens their cultural, organizational and behavioral identity. Minorities eventually consider themselves independent from the society and will often have lower levels of attachment to their community.

Based on the social resistance framework, as a result of discrimination and other demographic factors, non-dominant minority groups become alienated and detached from the society. They eventually develop active means to express their dissatisfaction and resilience (Factor, Kawachi, & Williams, 2011). They sometimes gradually start to create a collective identity that pressures members of minority groups to avoid behaviors of the dominant group. Consequently, resistance and avoiding acting as the dominant majority result in noncompliance with the country’s laws and unhealthy outcomes. For this research, the social resistance framework is being used as a proxy to create a framework that may explain the reason racial/ethnic minorities are overrepresented in fatal MVCs.

Social Resistance and High Risk Behaviors

Social scientists have found that minority – majority conflicts produce both *oppositional social identity* and an *oppositional cultural frame of reference* (Factor, Kawachi, & Williams, 2011). A collective identity is possessed by individuals who have a sense of belonging to their

social surrounding. It is expressed by shared feelings, attitudes, behaviors, languages, and beliefs. A collective identity is produced by individuals' collective experiences such as wars, conquests, and slavery. Based on their collective experiences, non-dominant minority groups develop their own collective identity that perceives the treatment of the majority as an ongoing oppression. As a result, non-dominant minority groups sometimes react in ways that exclude them and prevent them from assimilating with the collective identity of the majority (Factor, Kawachi, & Williams, 2011).

In addition to developing an oppositional social identity, non-dominant groups seek to protect their oppositional identity and to distinguish themselves from the majority by developing an oppositional cultural frame of reference. Members of non-dominant minority groups associate various behaviors such as being thin, not smoking, and wearing seat belts with the majority group. Based on the social resistance framework,

To maintain their own oppositional social identity and oppositional frame of reference, members of non-dominant minority groups pressure each other not to “act white”, i.e., not to embrace attitudes and behaviors that are identified with the majority group (Factor, Kawachi, & Williams, 2011, p.1297).

Alienation, Detachment, and Disobeying the Law

Research shows that alienation and social exclusion among non-dominant minority groups may cause a lack of commitment to implemented laws and regulations, which may lead to greater levels of noncompliance with state laws. Non-dominant minority groups are more aware of injustice than other groups, therefore they perceive the legal system as less legitimate or deficient. It can be expected therefore, that minority groups living in societies with racial/ethnic segregation, are more likely to be less attached to the mainstream society and may exhibit higher

levels of not abiding with the country's laws including traffic laws, alcohol and drug consumption bans, and smoking restrictions (Factor, Kawachi, & Williams, 2011).

Application of Social Resistance Framework

Growing evidence indicates that minorities are less likely to commit to safety traffic rules. For example, data show that minorities are more likely to drive while under the influence, not to wear seat belt, run a red light, and exceed the speed limit. While these behaviors may be perceived as high risk behaviors, they are also considered to be against the law. Minorities' involvement in high risk behaviors and illegal actions can be at least partially explained by the social resistance framework. Figure (1) is a graph of the framework this thesis proposes.

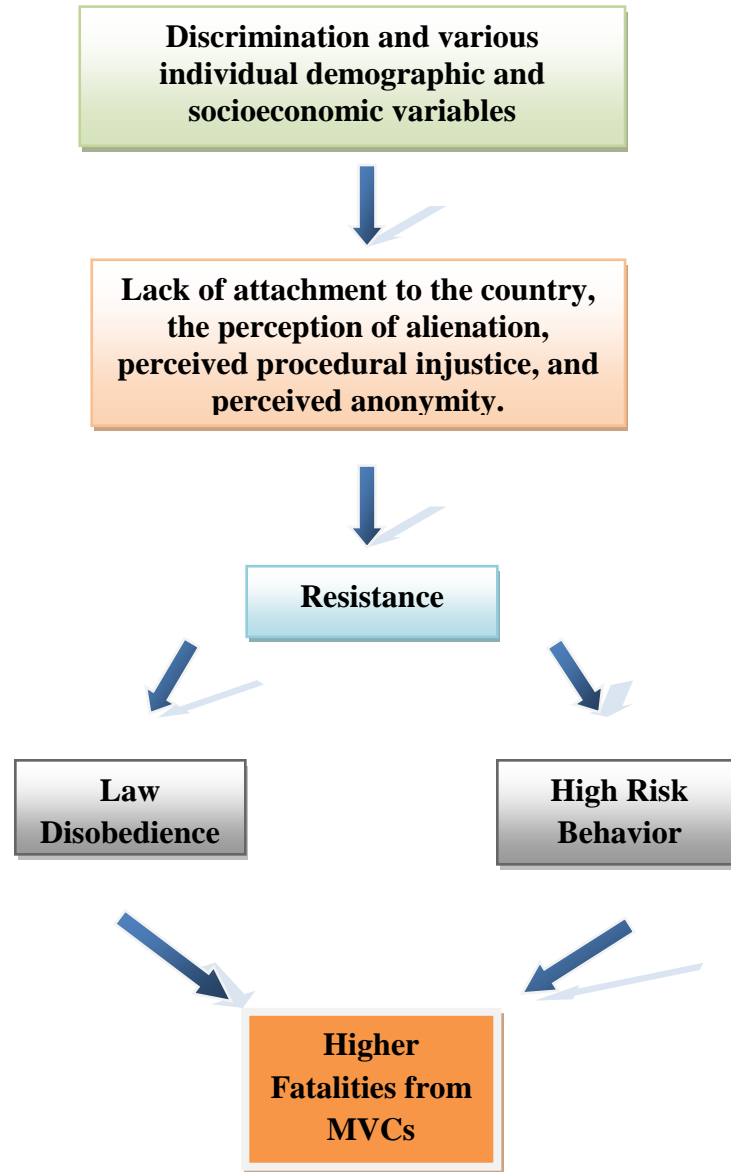


Figure (1): Social resistance framework and high fatalities from motor vehicle crashes

CHAPTER 2.

METHODOLOGY

This chapter discusses the research questions and hypotheses, as well as target population, sample, data source and collection, in addition to variables, and an overview of the data analysis approach.

The research method proposed for this study is a case study of one year of state data gathered by the Virginia Commonwealth University Transportation Safety Training Center. It will incorporate a statistical non-experimental quantitative approach, using a between-subjects design and a correlational framework. Available data do not assess motivation for safety and legal/illegal practices; however findings help to assess the potential relationships between safety, legal/illegal practices and race/ethnicity.

Research Questions and Hypotheses

This study examines the following research questions:

ResQ1: Were racial/ethnic minorities who died from a fatal crash more likely to demonstrate high rates of traffic risky behaviors than Whites before and at the time of the crash (safety equipment use failure and not following safety speed)?

H1: Members of minority groups are more likely than Whites to be found not using safety equipment before the fatal crash.

H2: Members of minority groups are more likely than Whites to be found not following the safety speed before the fatal crash.

ResQ2: Were racial/ethnic minorities who died from a fatal crash more likely to demonstrate high rates of disobedience for official traffic laws (illegal actions, speeding, underage driving, driving under the influence)?

H3: Members of minority groups are more likely than Whites to have been speeding before the fatal crash.

H4: Members of minority groups are more likely than Whites to have been involved in an illegal action before the fatal crash.

H5: Members of minority groups are more likely than Whites to have been under the influence at the time of the fatal crash.

H6: Drivers of minority groups are more likely than Whites drivers to be under age at the time of the fatal crash.

Target Population

The subjects are 764 individuals who died from fatalities due to motor vehicle crashes that took place in Virginia between January 1, 2011 and December 31, 2011. These cases covered 707 fatal crashes in which 764 died; 535 drivers, 154 passengers, and 75 pedestrians (Virginia Department of Motor Vehicles, 2011).

Data and Coding

Data were collected through the Virginia Commonwealth University Transportation Safety Training Center. Two data sources were used - the Office of Chief Medical Examiner (OCME) and the FR300P Police Crash Report (APPENDIX A). These data sources provided both independent and dependent variables. The OCME is “responsible for determining the cause and manner of deaths that occur under certain circumstances in Virginia” (Virginia Department of Health). It provided data on the race/ethnicity and the blood alcohol analysis for cases reported in 2011. The FR300P Police Crash Report is used to investigate and report motor vehicle crashes and determine and document circumstances associated with such crashes. From the FR300P, primary data on the following variables were investigated: age of deceased, speed before crash, speed limit, safety speed, driver’s action, drinking, safety equipment use, pedestrian’s action, pedestrian drinking, and pedestrian’s wearing reflective clothing. Other

variables from the FR300 police report were also investigated, including gender, , weather conditions, light condition, roadway surface condition, and vehicle condition.

Collected data from the above sources and from the above sources and the independent and dependent variables that were investigated are all associated with those who died from fatal crashes. In the following section, the coding of independent and dependent variables are discussed.

Coding of Independent Variables

- **Minority Status:** Classification of race and ethnicity is based on the 1977 guidelines on Race and Ethnicity Standards for Federal Statistics and Administrative Reporting. Race and ethnicities were categorized as Hispanic, White, non-Hispanic, African-American or Black, non-Hispanic, American Indian or Alaska Native, Asian, and Native Hawaiian or Other Pacific Islander. Race/ethnicity is coded as follows:

White: White

Non- White: Hispanic, African-American or Black, non-Hispanic, American Indian or Alaska Native, Asian, and Native Hawaiian or Other Pacific Islander.

- **Gender:**

Female

Male

- **Age Group:**

Adolescent: from 13 to 19 years old.

Other: less than 13 and greater than 19 years old.

Coding of Dependent Variables

- **Safety Equipment Use:**

Yes: lap belt only, shoulder belt only, lap and shoulder belt, child restraint, helmet, other, booster seat.

No: no restraint used

- **Driver's Action:**

Not illegal: no improper action, failure to stop at through highway, failure to set out flares or flags avoiding pedestrian, avoiding other vehicle, avoiding animal, crowded off highway, blinded by headlights, avoiding object on roadway, failure to maintain proper control, and over correction.

Illegal: exceeded speed limit, improper passing of school bus, cutting in, overtaking on hill, overtaking on curve, overtaking at intersection, other improper passing, wrong side of road, did not have right of way, following too close, failure to signal or improper signal, improper turn-wide right turn, improper turn-cut corner on left turn, improper turn from wrong lane , other improper turn, improper backing, improper start from parked position, disregarded officer or flagger, disregarded traffic signal, disregarded stop or yield sign, driver distraction, driving through work zone, driving without lights, improper parking location, hit and run, eluding police, improper passing, car ran away-no driver, and improper or unsafe lane change.

- **Drinking:** this variable is measured based on the medical examiner's report on Blood Alcohol Level (BAC) and drug level.

Yes: blood alcohol concentration of 0.08% W/V (weight/volume) or more, blood cocaine concentration of 0.02 or more milligrams per liter, blood methamphetamine concentration

of 0.1 or more milligrams per liter, blood phencyclidine concentration of 0.01 or more milligrams per liter, and blood 3,4-methylenedioxymethamphetamine concentration of 0.1 or more milligrams per liter.

No: if levels of alcohol and drug are less than the above stated levels.

- **Pedestrian's Action:**

Not illegal: crossing at intersection with signal, crossing not at intersection-rural, crossing not at intersection-urban, coming from behind parked cars, getting off or on school bus, getting on or off another vehicle, walking on roadway with traffic-sidewalks available, hitching on vehicle, working in roadway, and not in roadway.

Illegal: crossing at intersection against signal, crossing at intersection no signal, crossing at intersection diagonally, playing in roadway, walking in roadway with traffic-sidewalks not available, walking in roadway against traffic-sidewalks not available, standing in roadway, and lying in roadway.

- **Pedestrian Drinking:** this variable is measured based on the medical examiner's report on Blood Alcohol Level (BAC) and drug level.

Yes: blood alcohol concentration of 0.08% W/V or more, blood cocaine concentration of 0.02 or more milligrams per liter, blood methamphetamine concentration of 0.1 or more milligrams per liter, blood phencyclidine concentration of 0.01 or more milligrams per liter, and blood 3,4-methylenedioxymethamphetamine concentration of 0.1 or more milligrams per liter.

No: if levels of alcohol and drug are less than above stated levels.

- **Pedestrian Reflective Clothing:**

Yes: wearing reflective clothing.

No: not wearing reflective clothing.

- **Under Age:**

Yes: under 18 years old

No: over 18 years old.

- **Age Group:**

Adolescent: from 13 to 19 years old

Adult: from 20 to 64 years old.

Senior: 65 years old or older

Statistical Analysis

I used the Statistical Package for the Social Sciences (SPSS), version 20.0 to run the statistical procedures. In order to better examine safety behavior and abidance with traffic laws of the deceased, a cross tabulation analysis for all variables was conducted. I used Chi-square test to test hypotheses of safety behavior and law obedience. Fisher's exact test was used for samples where the minimum expected counts for the Chi-Square test were less than 5. Goodman and Kruskal's gamma was used to assess the strength and direction of the relationships. The results for each hypothesis are presented individually below.

The sample for this study is comprised of Whites and non-Whites who died from fatal crashes (N = 673 excluding missing cases). Whites represented (71%) of the sample and non-Whites represented (29%). Of the 673 reported cases, drivers constituted the highest percentage of the sample (70%), passengers came next (19%), and finally pedestrians (11%).

The six Traffic Safety Behavior and Law Obedience indices for this study were speeding over speed limit, speeding over safety speed, safety equipment use, underage driving, blood alcohol analysis, and illegal actions.

Statistical analysis was conducted in two phases. First, in order to measure the correlation between race/ethnicity and high risk behaviors and law disobedience, a *cross tabulation* analysis was used. The distribution of cases is displayed by their values on employed variables in a contingency table. The joint frequency distribution were analyzed using the chi-square statistic or in some cases Fisher's exact test to determine whether variables on drivers', passengers', and pedestrians' high risk behaviors and law obedience are statistically independent of or associated with their minority status.

In the second phase, a logistic regression was applied to investigate the joint effect of race/ethnicity and other factors on the prevalence of law disobedience and high risk behaviors among fatal MVCs.

CHAPTER 3. RESULTS

The results of this research are presented and discussed in terms of each hypothesis. This section starts with presenting a frequency distributions for all independent and dependent variables. Then, the statement of the hypothesis is presented followed by a statistical analysis for each hypothesis. Overall, more than one hypothesis turned out to lack any statistical significance, but one significant relationship was found.

Table 1: Frequency Distribution for all Independent Variables

Variable	Status	Frequency	Percent
Drivers-Gender	Female	114	21.6
	Male	412	78.2
	Total	527	100
Drivers- Age Group	Other	508	96.4
	Adolescents	19	3.6
	Total	527	100
Drivers -Minority Status	Non-White	115	24.2
	White	361	75.8
	Total	476	100
Passengers - Minority Status	Non-White	44	33.3
	White	88	66.7
	Total	132	100
Pedestrians – Minority Status	Non-White	33	50.8
	White	32	49.2
	Total	65	100

Table 2: Frequency Distribution for all Dependent Variables

Variable	Status	Frequency	Percent
Drivers-Under Age Driving	No	524	99.4
	Yes	3	0.6
	Total	527	100
Drivers- Safety Equipment Use	No	233	45.7
	Yes	277	54.3
	Total	510	100
Speeding over Speed Limit	No	246	59.9
	Yes	165	40.1
	Total	411	100
Speeding over Safety Speed	No	184	48.4
	Yes	196	51.6
	Total	380	100
Drivers- Illegal Action	No	110	21.5
	Yes	401	78.5
	Total	511	100
Drivers- Alcohol/Drug	No	94	41.4
	Yes	133	58.6
	Total	227	100
Passengers- Safety Equipment Use	No	80	55.2
	Yes	65	44.8
	Total	145	100
Passengers- Alcohol/Drug	No	18	43.9
	Yes	23	56.1
	Total	41	100
Pedestrians-Safety Equipment Use	No	55	94.8
	Yes	3	5.2
	Total	58	100

Hypothesis 1: Members of minority groups are more likely than Whites to be found not using safety equipment before the fatal crash.

Table 3: Drivers, Passengers, and Pedestrians - Safety Equipment Use and Minority Status

Status	Safety Equipment Use	NW		W	
		Count	Column N %	Count	Column N %
Drivers	No	52	46.4%	162	46.3%
	Yes	60	53.6%	188	53.7%
Passengers	No	24	60.0%	45	52.3%
	Yes	16	40.0%	41	47.7%
Pedestrians	No	28	96.6%	22	91.7%
	Yes	1	3.4%	2	8.3%

Chi-square results for drivers and passengers ($\chi^2 (1) = .001, p > .05$; $\chi^2 (1) = .649, p > .05$) respectively

Gamma for drivers and passengers respectively: .003, $p > .05$, .155, $p > .05$

Fisher's exact test for pedestrians: .584, $p > .05$

The first hypothesis proposed that drivers, passengers, and pedestrians of minority groups who died from a fatal crash were more likely than Whites to have not been using safety equipment before that fatal crash. The null hypothesis of statistical independence cannot be rejected for any of these relationships; gamma values were low for drivers and passengers.

Hypothesis 2: Members of minority groups are more likely than Whites to be found not following the safety speed before the fatal crash.

Table 4: Speeding over Safety Speed Percentages and Minority Status

Status	Speeding Over Safety Speed	NW		W	
		Count	Column N %	Count	Column N %
Drivers	No	44	48.9%	121	47.3%
	Yes	46	51.1%	135	52.7%

Chi-square results for drivers ($\chi^2 (1) = .070, p > .05$)

Gamma for drivers: .033, $p > .05$

The second hypothesis explored the possibility that non-White drivers who died from a fatal crash were more likely than White drivers to have been speeding over the safety speed

before the fatal crash. A chi-square test of independence found no significant relationship when the frequency of speeding over the safety speed was compared to race of the driver.

Hypothesis 3: Members of minority groups are more likely than Whites to have been speeding before the fatal crash.

Table 5: Speeding over Speed Limit Percentages and Minority Status

Status	Speeding over Speed Limit	NW		W	
		Count	Column N %	Count	Column N %
Drivers	No	44	57.4%	121	59.4%
	Yes	46	42.6%	135	40.6%

Chi-square results for drivers ($\chi^2 (1) = .105, p > .05$)

Gamma for drivers: $-.039, p > .05$

The third hypothesis proposed that non-White drivers who died from a fatal crash were more likely than White drivers to have been speeding over the speed limit. A chi-square test of independence was calculated comparing the frequency of speeding over the speed limit for White and non-White drivers who died from a fatal crash. No significant relationship was found.

Hypothesis 4: Members of minority groups are more likely than White to have been involved in an illegal action before the fatal crash.

Table 6: Drivers and Pedestrians - Illegal Action Percentages and Minority Status

Status	Illegal Action	NW		W	
		Count	Column N %	Count	Column N %
Drivers	No	23	20.7%	79	22.4%
	Yes	88	79.3%	274	77.6%
Pedestrians	No	28	90.3%	25	83.3%
	Yes	3	9.7%	5	16.7%

Chi-square results for drivers ($\chi^2 (1) = .135, p > .05$)

Gamma for drivers and passengers respectively: $-.049, p > .05, .302, p > .05$

Fisher's exact test for pedestrians: $.473, p > .05$

The fourth hypothesis proposed that non-White drivers and pedestrians who died from a fatal crash were more likely than White drivers or pedestrians to have been involved in an illegal

traffic action. A chi-square test of independence was calculated comparing the frequency of illegal actions of White and non-White drivers, and a Fisher's exact test was calculated for the same purpose with pedestrians. No significant relationship was found.

Hypothesis 5: Members of minority groups are more likely than Whites to have higher blood alcohol/drug content before the fatal crash.

Table 7: Drivers, Passengers, and Pedestrians - Being under the Influence of Alcohol/Drug at the Time of the Crash and Minority Status

Status	Under the Influence of Alcohol/Drug	NW		W	
		Count	Column N %	Count	Column N %
Drivers	No	14	25.0%	75	47.2%
	Yes	42	75.0%	84	52.8%
Passengers	No	7	53.8%	10	40.0%
	Yes	6	46.2%	15	60.0%
Pedestrians	No	6	37.5%	4	28.6%
	Yes	10	62.5%	10	71.4%

Chi-square results for drivers and passengers respectively: ($\chi^2 (1) = 8.390, p < .05, \chi^2 (1) = .663, p > .05$)

Gamma for drivers and passengers respectively: $-.456, p < .05, .273, p > .05$

Fisher's exact test for pedestrians: $.709, p > .05$

The fifth hypothesis proposed that non-White drivers, passengers, and pedestrians who died from a fatal crash were more likely than White drivers, passengers, and pedestrians to have been under the influence of alcohol/drugs. A chi-square test of independence was calculated comparing the frequency of DUI for White and non-White drivers, passengers, and pedestrians. A significant relationship was found for non-White drivers. Gamma was found to be moderate and negative ($-.456, p < .05$), which means that the likelihood of DUI decreases if the deceased driver was White. For passengers and pedestrians, gammas were weak and positive ($.273, .200$ respectively). White passengers and pedestrians were more likely than non-Whites to be under the influence of alcohol or drugs.

Hypothesis 6: Drivers of minority groups are more likely than White drivers to be under age before the fatal crash.

Table 8: Under Age Driving and Minority Status

Status	Safety Speeding	NW		W	
		Count	Column N %	Count	Column N %
Drivers	No	114	99.1%	359	99.4%
	Yes	1	.9%	2	.6%

Chi-square results for drivers ($\chi^2 (1) = .139, p > .05$)

Gamma for drivers and passengers respectively: $-.223, p > .05$

The final hypothesis in this analysis investigated if non-White drivers who died from a fatal crash were more likely than Whites to have been under 18 years old at the time of the crash.

A chi-square test of independence found no significant relationship.

Analysis of the joint impact of all independent variables on DUI

The joint impact of the race/ethnicity, age and gender on DUI is shown in Table 8, which presents the output of the logistic regression. The outcome shows that DUI is positively associated with being non-White. A non-White driver who dies in a fatal crash is approximately 2.5 more likely than a White driver to be DUI at the time of the crash ($p < .05$). No significant gender or age group effect was detected.

Table 9: Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp(B)
NW	.862	.353	5.962	1	.015	2.367
Male	.387	.381	1.031	1	.310	1.472
Step 1 ^a Senior	20.741	23120.400	.000	1	.999	1017828273.571
Adult	21.388	23120.400	.000	1	.999	1944935283.868
Constant	-21.469	23120.400	.000	1	.999	.000

No. of cases: 215

Chi-square results for drivers ($\chi^2 (1) = 16.271, p < .05$)

Summary of Cross-tabulation and Logistic Regression Analysis Findings

This analysis tested six hypotheses and found one to be statistically significant. There was a significant association between race/ethnicity and driving while under the influence of alcohol/drugs. No statistically significant association was found between race/ethnicity and underage driving, speeding over speed limit, speeding over safety speed, drivers' safety equipment use and drivers' illegal action. Also, no statistically significant association was found between race/ethnicity and passengers' safety equipment use and being under the influence. The same applies to analysis results for pedestrians' illegal action, pedestrians' safety equipment use, and pedestrians' being under the influence of alcohol/drugs. In examining the joint impact of DUI and race/ethnicity in addition to other independent variables (age and gender), a non-White driver who dies in a fatal crash was found to be approximately 2.5 more likely than a White driver to be DUI at the time of the crash ($p < .05$). No significant gender or age group effect was detected.

CHAPTER 4.

DISCUSSION AND CONCLUSION

This research examines predictors that may explain why non-dominant minority groups in the United States are overrepresented in fatal MVCs. The research questions were designed based on the social resistance framework, which suggests that social resistance is the driving force behind law disobedience and high risk behavior amongst non-dominant groups. The theoretical framework is derived from the social resistance framework, which may provide possible explanation of the high MVC fatality rates amongst non-Whites.

To answer the research questions, the relationship between safety traffic behavior and abidance with traffic laws amongst racial/ethnic minorities, and fatal motor vehicle crashes in

Virginia was investigated. This goal was achieved through a secondary analysis of data from the 2011 FR300 police report and the Medical Examiner's database. A cross tabulation analysis was conducted to answer the research questions and analyze proposed hypotheses using a significance level of 0.05. A logistic regression was performed afterward to ascertain if other variables such as age and gender are related to whether drivers, pedestrians, and passengers abide with the traffic laws and follow safety procedures. Variables that were tested to investigate safety behavior are following safety speed and safety equipment use. For traffic laws obedience, speed limit, illegal action, underage driving, and being under the influence of drugs/alcohol were tested.

This study did not confirm findings that there are differences in safety behaviors between Whites and non-Whites who died in fatal crashes. When analyzing variables that measure law obedience for both groups, DUI was the only significant predictor, as non-Whites were found to be almost twice as likely as White drivers to drive under the influence. Based on gamma statistics (-0.456), there is a moderate negative relationship between DUI and minority status. Furthermore, the outcome of the logistic regression model reveals that the correlation between DUI and factors other than the minority status such as age group and gender was insignificant.

Theoretical Implications

Based on the data analysis, there is no evidence of social resistance amongst non-dominant minority groups, as they did not demonstrate higher rates of high risk behavior and law disobedience when compared with White road users. Driving under the influence was the only significant difference between Whites and non-Whites. However, it would be folly to make the assumption that minority groups are more likely to disobey traffic laws by looking at only one factor.

There are possible explanations for the lack of empirical support from this analysis for the social resistance framework. First, variables that are used to predict the safety behavior of road users may not be enough for the analysis. Other predictors for safety behavior were not measured in this analysis because they were not available in the used dataset. These include driver distraction (using cell phones, eating/drinking, talking with passenger), staying in driving lane, maintaining following distance, maintaining occupancy rates, and following warning signs. Second, this research is looking at subjects who died from MVCs, therefore, disobeying traffic laws and unsafe traffic behavior may be already more prevalent amongst them. Accordingly, it may be unlikely to find significant differences between Whites and non-Whites in traffic law obedience and safety behavior. Third, based on both the literature and theory, the model suggested in this research is assuming that the outcome of higher fatality rates is caused by law disobedience and high-risk behavior. These assumptions may be false, however; higher fatality rates from MVC amongst racial/ethnic minorities may not be attributed to law disobedience and high risk behavior and therefore, the social resistance framework may not provide a strong theoretical understanding of this problem.

Other Research Implications

Findings of this research are inconsistent with previous research which shows that racial/ethnic minorities were more likely to be involved in high risk behavior and not abide with laws and regulations. There were no differences in safety traffic behavior (following safety speed and using safety equipment) between White and non-White drivers who died from a fatal crash. This is inconsistent with previous research which shows that racial/ethnic minorities were less likely to use safety equipment. The same applies to most variables that were used to measure law obedience. There were no differences between Whites and non-Whites in speeding, underage

driving, illegal action, and being under the influence of alcohol/drugs for pedestrians and passengers. This could be an indication that fatalities amongst racial/ethnic minorities are not caused by law disobedience and high risk behavior. Higher fatalities may be attributed to other social factors such as income, education, language illiteracy, or religiosity. Also, it could be an indication that rates of safety behavior and law obedience have decreased for Whites and became similar to non-Whites.

Having DUI as the only significant difference between Whites and non-Whites, is another implication. Rates of DUI were found to be higher amongst non-Whites while gender and age were not related to DUI rates. DUI may be happening as a function of other predictors such as culture and education.

Limitations and Strengths

In this research, data were analyzed regarding Virginia's fatalities, and the research sample therefore does not represent national estimates. Having limited access to variables on safety behavior is also another limitation that is crucial to understanding the safety behavior of racial/ethnic minorities. Also, the used dataset does not include data that provides further insight into the cultural and socioeconomic differences for racial/ethnic minorities, which may serve as predictors of DUI behavior. One last limitation of this research is related to sample selection. The subjects for this study had all died from fatal crashes, and may be more likely to not abide with traffic laws and not follow safety procedures. Therefore, results concluded from the analysis may not represent the overall population of White and non-White road users.

Despite its limitations, the current study has several strengths. First, data collected for this research are primary data collected directly by police officers at the time of the crash. Having raw data facilitates data manipulation and grouping of variables to serve the research purpose.

Second, data used for this study are recent (2011); this provides a better understanding of the current racial/ethnic groups' traffic behavior. Third, it allows for the evaluation of racial/ethnic minorities traffic behavior from a new angle. Last but not least, there is growing evidence that police profiling may influence the credibility of the FR300. However, data collected on variables used in this research are less prone to profiling effect. They are based on actual observations (safety equipment use, age, gender, deceased action), and scientific analyses and calculations (speed limit, safety speed, blood alcohol level).

Future Research

Future studies can investigate racial/ethnic overrepresentation in fatal MVC from two perspectives. The first approach is to further analyze the social resistance framework and other theoretical frameworks that may explain processes underlying racial/ethnic differences in drinking and driving behaviors. The second approach is to study how certain factors (e.g. income, education, occupation) that may be associated with the high fatality rates from MVCs amongst racial/ethnic groups.

Although the model created for this research does not explain the high fatality rates of minorities in MVCs, it may still apply if additional variables and predictors were examined. In case further analysis revealed significant differences in safety behavior between Whites and non-Whites, the social resistance framework may still apply to high fatalities from MVCs amongst racial/ethnic minority groups. It can be studied further by creating surveys and qualitative interviews that examine if racial/ethnic groups believe that they are being discriminated against and if -as a result of discrimination and social injustice- they are being detached and alienated from the society. Also, analyzing perceptions of minority groups on high risk behavior and law obedience is necessary to understand how social resistance may result in risky outcomes.

Studying religiosity and fatalism may also provide a better insight into understanding safety behavior and DUI amongst non-White road users. Fatalism is defined as “the idea that what happens (or has happened) in some sense has to (or had to) happen” (Solomon, 2003, p. 435). Several studies have found that there was a significant correlation between individuals’ belief in fate and destiny and their health behavior. In a study conducted in 1992 by I. Colón, the relationship between the likelihood of wearing a seat belt and belief in destiny was examined for 1063 participants. The results of this research revealed that individuals who believed in destiny were significantly less likely to wear seat belts. This can also be applied to DUI and safety behavior by doing a qualitative research that addresses the following questions: How do minority groups perceive fate? How much control does fate have on individuals’ life? Can individuals make choices that impact their lives? Which is more likely to lead to negative outcomes; fate or individuals’ actions?

In addition to the aforementioned theoretical frameworks, other social issues (education, occupation, and income) are worth looking into to explain the overrepresentation of racial/ethnic minority groups in fatal MVCs. Higher education level is associated with better employment and eventually higher income and less economic hardship (Saegert, Adler, Bullock, Cauce, William, & Wyche, 2006). Individuals with lower levels of education are more likely to perform labor jobs and may do shift work more often which may require traveling at night and during adverse weather conditions. This may increase the likelihood of being involved in a fatal crash.

Individuals with lower educational attainment may also have lower paid jobs and therefore may live in lower income neighborhoods. One study shows that areas with high proportions of minority and low-income households exhibit an increase in pedestrian-vehicle crashes (Cottrill & Thakuriahb, 2010). Such neighborhoods may possess inadequate facilities for

pedestrians such as roads of poor quality and insufficient number of sidewalks. Low income may not only be associated with living in poor neighborhoods, but may also be related to high stress level which may lead to heavy drinking. Frequency of heavy drinking is positively associated with stress. It is suggested that stress does not lead to frequent drinking but to frequent consumption of larger quantities of alcohol (Dawson, Bridget, & Ruan, 2005). Stressors resulting from low income may be associated with occupation, legal issues, living in high crime neighborhoods, or other factors.

For future research, it may be more applicable to conduct analysis on non-fatal crashes to obtain necessary information. Studying the occupation of minority groups who have been involved in a vehicle crash may permit analyzing how occupation may increase the likelihood of driving at night and during adverse weather conditions. Additionally, examining stress levels and alcohol consumption of the same group may facilitate understanding the relationship between stress, heavy drinking, and DUI.

Works Cited

- 1) Agran, P. F, Winn, D. G., Anderson, C.L., Valle, C.D. (1981). Family, social, and cultural factors in pedestrian injuries among Hispanic children. 4, 188–193. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1730392/pdf/v004p00188.pdf>
- 2) Anderson & Wooditch, PC. (2011). Virginia Code: DUI Laws. Retrieved from Anderson & Wooditch, Retrieved from PC Online: <http://pnalawdwiddefense.com/virginia-dwidui-guide/virginia-code-dui-laws/>
- 3) Bernard, S.J., Paulozzi, L.J., & Wallace. L.J.D. (May 2007). Fatal Injuries Among Children by Race and Ethnicity --- United States, 1999—2002. Retrieved from Center for Disease Control and Prevention Online: <http://www.cdc.gov/mmwr/preview/mmwrhtml/ss5605a1.htm>
- 4) Braver, E. R. (2003). Race, Hispanic origin, and socioeconomic status in relation to motor vehicles occupant death rates and risk factors among adults. *Accident Analysis and Prevention*, 35(3), 295-309.
- 5) Brigs, N.C., Levine, R.S., Haliburton, W.P., Schlundt, D.G., Goldzweig, I., & Warren, R.C. (2005). The Fatality Analysis Reporting System as a Tool for Investigating Racial and Ethnic Determinants of Motor Vehicle Crash Fatalities. *Accident Analysis and Prevention*, 37, 641–649.
- 6) Byrd, T. (1998). Seatbelt use and belief in destiny among Hispanic and non-Hispanic drivers. *Accident Analysis and Prevention*, 31, 63–65.
- 7) Caetano, R., McGrath, C. (2005). Driving under the influence of alcohol Examining ethno-specific rates and the mediating effects of psychological distress and harmful and problematic drinking, 37, 217–224.
- 8) Centers for Disease Control and Prevention (CDC) (2010). Motor Vehicle–Related Deaths — United States, 2003–2007. *Morbidity and Mortality Weekly Report (MMWR)*, 60(01), 52-55. Retrieved Centers for Disease Control and Prevention Online: <http://www.cdc.gov/mmwr/preview/mmwrhtml/su6001a10.htm>
- 9) Cockerham, W. C. (2005). Health lifestyle theory and the convergence of agency and structure. *Journal of Health and Social Behavior*, 46(1), 51-67.
- 10) Cooper .(2000). Towards a model of safety culture. *Safety Science* 36 (2000) 111-136.
- 11) Cottrill, C. D., & Thakuriahb, P. (. (2010). Evaluating pedestrian crashes in areas with high low income or minority populations. *Accident Analysis and Prevention*, 1718–1728.

- 12) Griffin K.W. (2004). Low Perceived Chances for Success in Life and Binge Drinking Among Inner-City Minority Youth. *Journal of Adolescent Health*, 34, 501–507.
- 13) Dariotis, J. K., Sifakis, F., Pleck, J. H., Astone, N. M., & Sonenstein, F. L. (2011). Racial and ethnic disparities in sexual risk behaviors and STDS during young men's transition to adulthood. *Perspectives on Sexual and Reproductive Health*, 43(1), 51-59.
- 14) Dawson, D. A., Bridget, G. F., & Ruan, W. J. (2005). The Association Between Stress and Drinking: Modifying Effects of Gender and Vulnerability. *Alcohol & Alcoholism*, 453-460.
- 15) Del Amo, J. (2011). The sexual health of migrants from Central and Eastern European countries in London: new methods and new data. *Sexually Transmitted Diseases*, 87(4), 265-266.
- 16) Factor, Roni, Ichiro Kawachi and David R. Williams.(2011). "Understanding high-risk behavior among non-dominant minorities: A social resistance framework." *Social Science & Medicine*, 73(9), 1292-1301.
- 17) Friese, B., & Grube, J. (2008). Differences in drinking behavior and access to alcohol between Native American and white adolescents. *Journal of Drug Education*, 38(3), 273-284.
- 18) Garrison, H.G, & Crump, C.E. (2007). National Highway Traffic Safety Administration (NHTSA) Notes. *Annals of Emergency Medicine*, 49(2).
- 19) Gerevich, J., Bacskai, E., Czobor, P., & Szabo, J. (2010). Substance use in Roma and non-Roma adolescents. *Journal of Nervous and Mental Disease*, 198(6), 432-436.
- 20) Legislative Information System. Definition of terms "motor vehicle" and "nonresident" in motor vehicle and aircraft accident cases. Retrieved from Legislative Information System online: <http://leg1.state.va.us/cgi-bin/legp504.exe?000+cod+8.01-307>
- 21) MacFadden, J.K. (2010). Measuring the Effectiveness of Survey Feedback in Improving Safety Culture and Accidents in a U.S. Army Sample. (Doctoral Dissertation). Retrieved from Sociological Abstracts Database. (UMI Number: 3428158).
- 22) Miliaa, L.D., Smolensky, M.H., Costa, G., Howarth, H.D., Ohayon, M.M., Philip, P. (2011). Demographic factors, fatigue, and driving accidents: An examination of the published literature, 43, 516–532.
- 23) Osypuk, T. L., Kawachi, I., Subramanian, S. V., & Acevedo-Garcia, D. (2006). Are state patterns of smoking different for different racial/ethnic groups? An application of multilevel analysis. *Public Health Reports*, 121(5), 563-577.

- 24) Sorensen, G., Barbeau, E., Hunt, M. K., & Emmons, K. (2004). Reducing social disparities in tobacco use: a social-contextual model for reducing tobacco use among blue-collar workers. *American Journal of Public Health*, 94(2), 230-239.
- 25) Romano, E., Tippetts, S., Voas, R. (2005). Fatal red light crashes the role of race and Ethnicity, 37, 453–460.
- 26) Romano, E., Voas, R.B., and Lacey., J. C. (2011). Alcohol and Highway Safety: Special Report on Race/Ethnicity and Impaired Driving. *Special Report on Race/Ethnicity and Impaired Driving*. Retrieved from U.S. Department of Transportation National Highway Traffic Safety Administration Online: <http://www.google.com/url?sa=t&rct=j&q=&esrc=s&frm=1&source=web&cd=1&ved=OCC8QFjAA&url=http%3A%2F%2Fwww.nhtsa.gov%2Fstaticfiles%2Fnti%2Fpdf%2F811336.pdf&ei=eAgZUZ3NBorK0AGxhIHodg&usg=AFQjCNFGlQ2GcKLCqdklGSISoxSEEYF5kw&bvm=bv.42080656,d.dmg>
- 27) Roni, F., Yair, G., & Mahalel, D. (2010). Who by Accident? The Social Morphology of Car Accidents. *Risk Analysis*, 30(9), 1141-1423.
- 28) Saegert, S. C., Adler, N. E., Bullock, H. E., Cauce, A. M., William, M. L., & Wyche, K. F. (2006). *Report of the APA Task Force on Socioeconomic Status*. Washington, DC.: American Psychological Association.
- 29) Sleet, D. A., Dinh-Zarr, T.B., Dellinger, A.M. (2007). Traffic safety in the context of public health and medicine. 2007 AAA Foundation for Traffic Safety & University of Minnesota. Retrieved from the AAAN Foundation for Traffic Safety online:<http://www.aaafoundation.org/pdf/SleetDinhZarrDellinger.pdf>
- 30) Sociology Guide. (2011). Questions on Ethnicity. Retrieved from Sociology Guide Online: <http://www.sociologyguide.com/questions/ethnicity.php>
- 31) Stewart, A. E., & Lord, J.H. (2002). Motor Vehicle *Crash* Versus *Accident*: A Change in Terminology is Necessary. *Journal of Traumatic Stress*, 15(4), 333–335.
- 32) Tonry, M. (1997). Ethnicity, Crime, and Immigration. *Crime and Justice*, 21, 1-29.
- 33) Turner, J. H. (1986). Toward a unified theory of ethnic antagonism: a preliminary synthesis of three macro models. *Sociological Forum*, 1, 403-427.
- 34) Lederach, J.P. (1995). *Preparing for peace: Conflict transformation across cultures*. Syracuse, NY: Syracuse University Press.
- 35) Tyler, T (2001). Obeying the Law in America: Procedural Justice and the Sense of Fairness. *Issues of Democracy*, 6, 16 -21.

- 36) USLegal. (2012). Pedestrian Law & Legal Definition. Retrieved from US Legal Online:
<http://definitions.uslegal.com/p/pedestrian/>
- 37) U.S. Department of Transportation National Highway Traffic Safety Administration (2002). National Survey of Speeding and Unsafe Driving Attitudes and Behavior: 2002. Retrieved from U.S. Department of Transportation Online:
http://www.nhtsa.gov/people/injury/research/speed_volIII_finding/SpeedVolumeII FindingsFinal.pdf
- 38) U.S. Department of Transportation National Highway Traffic Safety Administration (May 2006). Race and Ethnicity in Fatal Motor Vehicle Traffic Crashes 1999 – 2004. Retrieved from U.S. Department of Transportation Online:
<http://www-nrd.nhtsa.dot.gov/Pubs/809956.PDF>
- 39) U.S. Department of Transportation (October 2007). Action Plan to Reduce Motorcycle Fatalities. Retrieved from U.S. Department of Transportation Online:
<http://www.nhtsa.gov/DOT/NHTSA/Communication%20&%20Consumer%20Information/Articles/Associated%20Files/4640-report2.pdf>
- 40) U.S. Department of Transportation National Highway Traffic Safety Administration (August 2009). Traffic Safety Facts: 2006 Data Race and Ethnicity. Retrieved from U.S. Department of Transportation Online:
<http://www-nrd.nhtsa.dot.gov/Pubs/810995.pdf>
- 41) U.S. Department of Transportation National Highway Traffic Safety Administration (April 2009). Seat Belt Use in 2008—Race and Ethnicity Results Among Occupants Traveling With Children. Retrieved from U.S. Department of Transportation Online:
<http://www-nrd.nhtsa.dot.gov/Pubs/811107.pdf>
- 42) U.S. Department of Transportation National Highway Traffic Safety Administration (November 2010). Alcohol and Highway Safety A Special Report On Race Ethnicity and Impaired Driving. Retrieved from U.S. Department of Transportation Online: http://www.nhtsa.gov/staticfiles/traffic_tech/TT398.pdf
- 43) U.S. Department of Transportation National Highway Traffic Safety Administration (2011). Congressional Budget Justification. Retrieved from U.S. Department of Transportation Online:
<http://www.dot.gov/budget/2011/budgetestimates/nhtsa.pdf>
- 44) Vivod, J.M., Eby, D.W., Kostyniuk, L. P, (2004). Differences in safety belt use by race. 36, 1105–1109.

- 45) Virginia Department of Motor Vehicles (2011). Virginia Traffic Crash Facts. Retrieved From Department of Motor Vehicles (DMV) online: http://www.dmv.state.va.us/webdoc/safety/crash_data/crash_facts/crash_facts_11.pdf
- 46) Voas, R.B., Tippetts, A.S., Fisher, D. A. (2000). Ethnicity and Alcohol-Related Fatalities: 1990 to 1994. Retrieved from National Highway Traffic Safety Administration: <http://www.nhtsa.gov/people/injury/alcohol/Archive/ethnicity/ethnicity.html>
- 47) Wells, J.K., Williams, A. F., Farmer, C. M. (2002). Seat belt use among African Americans, Hispanics, and Whites. *Accident Analysis and Prevention*. 34, 523–529.
- 48) Ward, N.J. (2007). The Culture of Traffic Safety in Rural America. 2007 AAA Foundation for Traffic Safety & University of Minnesota. Retrieved from the AAAN Foundation for Traffic Safety online: <http://www.aaafoundation.org/pdf/Ward.pdf>
- 49) Ward, N, J, Linkenbach, J., Keller, S. N., Otto, J. (2002). White Paper on Traffic Safety Culture. 34 (2002) 523–529. Retrieved from the Strategic Highway Safety Plan Online: <http://safety.transportation.org/doc/web2%20Safety%20Culture%20White%20Paper.pdf>
- 50) Yee, B.W.K., Castro, F.G., Hammond, W.R., John, R., Wyatt, G.E., & Yung, B.R. (1995). Panel IV: Risk-Taking and Abusive Behaviors Among Ethnic Minorities. *Health Psychology*, 14(7), 622-631.
- 51) Yong, H.P. (2007). Social Norms. Department of Economics, University of Oxford. Retrieved from Economic Repository Online: <http://economics.ouls.ox.ac.uk/>

APPENDIX A. POLICE CRASH REPORT (FR300P)

Commonwealth of Virginia • Department of Motor Vehicles



FR300P (Rev 7/07)

Revised Report

Police Crash Report

Page _____ of _____

CRASH				GPS Lat. _____				GPS Long. _____							
Crash Date MM DD YYYY		Day of Week		MILITARY Time (24 hr clock)		County of Crash				Official DMV Use					
City of _____		City or Town Name		Landmarks at Scene											
Location of Crash (route/street)						Railroad Crossing ID no. (if within 150 ft.)				Local Case Number					
At Intersection With or _____						Miles <input type="checkbox"/> Feet <input type="checkbox"/>		N <input type="checkbox"/> S <input type="checkbox"/> E <input type="checkbox"/> W <input type="checkbox"/> of _____		Location of Crash (route/street)		Mile Marker Number		Number of Vehicles	

VEHICLE # _____						DRIVER					
Driver's Name (Last, First, Middle)						Driver Fleed Scene <input type="checkbox"/>					
Address (Street and Number)						Gender <input type="radio"/> M <input type="radio"/> F					
City						State		ZIP			
Birth Date MM DD YYYY		Drivers License Number		State		DL <input type="radio"/> Y <input type="radio"/> N		CDL <input type="radio"/> Y <input type="radio"/> N			
Safety Equip. Used		Air Bag		Ejected		Date of Death MM DD YYYY		Injury Type		EMS Transport	
Summons Issued As Result of Crash		Offenses Charged to Driver									

VEHICLE # _____						DRIVER					
Driver's Name (Last, First, Middle)						Driver Fleed Scene <input type="checkbox"/>					
Address (Street and Number)						Gender <input type="radio"/> M <input type="radio"/> F					
City						State		ZIP			
Birth Date MM DD YYYY		Drivers License Number		State		DL <input type="radio"/> Y <input type="radio"/> N		CDL <input type="radio"/> Y <input type="radio"/> N			
Safety Equip. Used		Air Bag		Ejected		Date of Death MM DD YYYY		Injury Type		EMS Transport	
Summons Issued As Result of Crash		Offenses Charged to Driver									

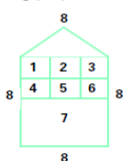
VEHICLE													
Vehicle Owner's Name (Last, First, Middle)										Same as Driver <input type="checkbox"/>			
Address (Street and Number)													
City						State		ZIP					
Vehicle Year		Vehicle Make		Vehicle Model		Disabled <input type="checkbox"/>		CMV <input type="checkbox"/>		Towed <input type="checkbox"/>			
Vehicle Plate Number				State		Approximate Repair Cost							
VIN										Oversize <input type="checkbox"/>		Cargo Spill <input type="checkbox"/>	
Name of Insurance Company (not agent)													
Speed Before Crash		Speed Limit		Maximum Safe Speed		Under 8		ALL Passengers Age Count		Over 21			

VEHICLE													
Vehicle Owner's Name (Last, First, Middle)										Same as Driver <input type="checkbox"/>			
Address (Street and Number)													
City						State		ZIP					
Vehicle Year		Vehicle Make		Vehicle Model		Disabled <input type="checkbox"/>		CMV <input type="checkbox"/>		Towed <input type="checkbox"/>			
Vehicle Plate Number				State		Approximate Repair Cost							
VIN										Oversize <input type="checkbox"/>		Cargo Spill <input type="checkbox"/>	
Name of Insurance Company (not agent)													
Speed Before Crash		Speed Limit		Maximum Safe Speed		Under 8		ALL Passengers Age Count		Over 21			

PASSENGER (only if injured or killed)													
Name of Injured (Last, First, Middle)										EMS Transport <input type="radio"/> Y <input type="radio"/> N		Date of Death MM DD YY	
Position In/On Vehicle		Safety Equip Used		Airbag		Ejected		Injury Type		Birthdate MM DD YYYY		Gender <input type="radio"/> M <input type="radio"/> F	
Name of Injured (Last, First, Middle)										EMS Transport <input type="radio"/> Y <input type="radio"/> N		Date of Death MM DD YY	
Position In/On Vehicle		Safety Equip Used		Airbag		Ejected		Injury Type		Birthdate MM DD YYYY		Gender <input type="radio"/> M <input type="radio"/> F	
Name of Injured (Last, First, Middle)										EMS Transport <input type="radio"/> Y <input type="radio"/> N		Date of Death MM DD YY	
Position In/On Vehicle		Safety Equip Used		Airbag		Ejected		Injury Type		Birthdate MM DD YYYY		Gender <input type="radio"/> M <input type="radio"/> F	

PASSENGER (only if injured or killed)													
Name of Injured (Last, First, Middle)										EMS Transport <input type="radio"/> Y <input type="radio"/> N		Date of Death MM DD YY	
Position In/On Vehicle		Safety Equip Used		Airbag		Ejected		Injury Type		Birthdate MM DD YYYY		Gender <input type="radio"/> M <input type="radio"/> F	
Name of Injured (Last, First, Middle)										EMS Transport <input type="radio"/> Y <input type="radio"/> N		Date of Death MM DD YY	
Position In/On Vehicle		Safety Equip Used		Airbag		Ejected		Injury Type		Birthdate MM DD YYYY		Gender <input type="radio"/> M <input type="radio"/> F	
Name of Injured (Last, First, Middle)										EMS Transport <input type="radio"/> Y <input type="radio"/> N		Date of Death MM DD YY	
Position In/On Vehicle		Safety Equip Used		Airbag		Ejected		Injury Type		Birthdate MM DD YYYY		Gender <input type="radio"/> M <input type="radio"/> F	

Codes



POSITION IN/ON VEHICLE

1. Driver
- 2-6. Passengers
7. Cargo Area
8. Riding/Hanging On Outside
- 9-98. All Other Passengers

SAFETY EQUIPMENT USED

1. Lap Belt Only
2. Shoulder Belt Only
3. Lap and Shoulder Belt
4. Child Restraint
5. Helmet
6. Other
7. Booster Seat
8. No Restraint Used
9. Not Applicable

AIRBAG

1. Deployed - Front
2. Not Deployed
3. Unavailable/Not Applicable
4. Keyed Off
5. Unknown
6. Deployed - Side
7. Deployed - Other (Knee, Air Belt, etc.)
8. Deployed - Combination

EJECTED FROM VEHICLE

1. Not Ejected
2. Partially Ejected
3. Totally Ejected

INJURY TYPE

1. Dead
2. Serious Injury
3. Minor/Possible Injury
4. No Apparent Injury
6. No Injury (driver only)

SUMMONS ISSUED AS A RESULT OF CRASH

1. Yes
2. No
3. Pending

Investigating Officer			Badge/Code Number			Agency/Department Name and Code			Reviewing Officer			Report File Date		
-----------------------	--	--	-------------------	--	--	---------------------------------	--	--	-------------------	--	--	------------------	--	--

Officer Initials _____ Badge # _____

Commonwealth of Virginia • Department of Motor Vehicles



FR300P (Rev 7/07)

Police Crash Report

Revised Report

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CRASH			
Crash Date	MM DD YYYY	MILITARY Time (24 hr clock)	County of Crash
		<input type="radio"/> City of	Local Case Number
		<input type="radio"/> Town of	

CRASH INFORMATION

Location of First Harmful Event in Relation to Roadway C1 <ul style="list-style-type: none"> <input type="radio"/> 1. On Roadway <input type="radio"/> 2. Shoulder <input type="radio"/> 3. Median <input type="radio"/> 4. Roadside <input type="radio"/> 5. Gore <input type="radio"/> 6. Separator <input type="radio"/> 7. In Parking Lane or Zone <input type="radio"/> 8. Off Roadway, Location Unknown <input type="radio"/> 9. Outside Right-of-Way 	Traffic Control Type C5 <ul style="list-style-type: none"> <input type="radio"/> 1. No Traffic Control <input type="radio"/> 2. Officer or Flagger <input type="radio"/> 3. Traffic Signal <input type="radio"/> 4. Stop Sign <input type="radio"/> 5. Slow or Warning Sign <input type="radio"/> 6. Traffic Lanes Marked <input type="radio"/> 7. No Passing Lines <input type="radio"/> 8. Yield Sign <input type="radio"/> 9. One Way Road or Street <input type="radio"/> 10. Railroad Crossing With Markings and Signs <input type="radio"/> 11. Railroad Crossing With Signals <input type="radio"/> 12. Railroad Crossing With Gate and Signals <input type="radio"/> 13. Other <input type="radio"/> 14. Pedestrian Crosswalk <input type="radio"/> 15. Reduced Speed – School Zone <input type="radio"/> 16. Reduced Speed – Work Zone <input type="radio"/> 17. Highway Safety Corridor 	Roadway Description C9 <ul style="list-style-type: none"> <input type="radio"/> 1. Two-Way, Not Divided <input type="radio"/> 2. Two-Way, Divided, Unprotected Median <input type="radio"/> 3. Two-Way, Divided, Positive Median Barrier <input type="radio"/> 4. One-Way, Not Divided <input type="radio"/> 5. Unknown 	Intersection Type C12 <ul style="list-style-type: none"> <input type="radio"/> 1. Not at Intersection <input type="radio"/> 2. Two Approaches <input type="radio"/> 3. Three Approaches <input type="radio"/> 4. Four Approaches <input type="radio"/> 5. Five-Point, or more <input type="radio"/> 6. Roundabout
Weather Condition C2 <ul style="list-style-type: none"> <input type="radio"/> 1. No Adverse Condition (Clear/Cloudy) <input type="radio"/> 3. Fog <input type="radio"/> 4. Mist <input type="radio"/> 5. Rain <input type="radio"/> 6. Snow <input type="radio"/> 7. Sleet/Hail <input type="radio"/> 8. Smoke/Dust <input type="radio"/> 9. Other <input type="radio"/> 10. Blowing Sand, Soil, Dirt, or Snow <input type="radio"/> 11. Severe Crosswinds 	Roadway Alignment C6 <ul style="list-style-type: none"> <input type="radio"/> 1. Straight – Level <input type="radio"/> 2. Curve – Level <input type="radio"/> 3. Grade – Straight <input type="radio"/> 4. Grade – Curve <input type="radio"/> 5. Hillcrest – Straight <input type="radio"/> 6. Hillcrest – Curve <input type="radio"/> 7. Dip – Straight <input type="radio"/> 8. Dip – Curve <input type="radio"/> 9. Other <input type="radio"/> 10. On/Off Ramp 	Roadway Defects C10 <ul style="list-style-type: none"> <input type="radio"/> 1. No Defects <input type="radio"/> 2. Holes, Ruts, Bumps <input type="radio"/> 3. Soft or Low Shoulder <input type="radio"/> 4. Under Repair <input type="radio"/> 5. Loose Material <input type="radio"/> 6. Restricted Width <input type="radio"/> 7. Slick Pavement <input type="radio"/> 8. Roadway Obstructed <input type="radio"/> 9. Other <input type="radio"/> 10. Edge Pavement Drop Off 	Work Zone C13 <ul style="list-style-type: none"> <input type="radio"/> 1. Yes <input type="radio"/> 2. No
Light Conditions C3 <ul style="list-style-type: none"> <input type="radio"/> 1. Dawn <input type="radio"/> 2. Daylight <input type="radio"/> 3. Dusk <input type="radio"/> 4. Darkness – Road Lighted <input type="radio"/> 5. Darkness – Road Not Lighted <input type="radio"/> 6. Darkness – Unknown Road Lighting <input type="radio"/> 7. Unknown 	Roadway Surface Condition C7 <ul style="list-style-type: none"> <input type="radio"/> 1. Dry <input type="radio"/> 2. Wet <input type="radio"/> 3. Snowy <input type="radio"/> 4. Icy <input type="radio"/> 5. Muddy <input type="radio"/> 6. Oil/Other Fluids <input type="radio"/> 7. Other <input type="radio"/> 8. Natural Debris <input type="radio"/> 9. Water (Standing, Moving) <input type="radio"/> 10. Slush <input type="radio"/> 11. Sand, Dirt, Gravel 	Relation to Roadway C11 Interchange Area: <ul style="list-style-type: none"> <input type="radio"/> 1. Main-Line Roadway <input type="radio"/> 2. Acceleration/Deceleration Lanes <input type="radio"/> 3. Gore Area (Between Ramp and Highway Edgelines) <input type="radio"/> 4. Collector/Distributor Road <input type="radio"/> 5. On Entrance/Exit Ramp <input type="radio"/> 6. Intersection at end of Ramp <input type="radio"/> 7. Other location not listed above within an interchange area (median, shoulder and roadside) 	Work Zone C14 Workers Present <ul style="list-style-type: none"> <input type="radio"/> 1. With Law Enforcement <input type="radio"/> 2. With No Law Enforcement <input type="radio"/> 3. No Workers Present
Traffic Control Device C4 <ul style="list-style-type: none"> <input type="radio"/> 1. Yes – Working <input type="radio"/> 2. Yes – Working and Obscured <input type="radio"/> 3. Yes – Not Working <input type="radio"/> 4. Yes – Not Working and Obscured <input type="radio"/> 5. Yes – Missing <input type="radio"/> 6. No Traffic Control Device Present 	Roadway Surface Type C8 <ul style="list-style-type: none"> <input type="radio"/> 1. Concrete <input type="radio"/> 2. Blacktop, Asphalt, Bituminous <input type="radio"/> 3. Brick or Block <input type="radio"/> 4. Slag, Gravel, Stone <input type="radio"/> 5. Dirt <input type="radio"/> 6. Other 	Intersection Area: <ul style="list-style-type: none"> <input type="radio"/> 8. Non-Intersection <input type="radio"/> 9. Within Intersection <input type="radio"/> 10. Intersection-Related - Within 150' <input type="radio"/> 11. Intersection-Related - Outside 150' 	Work Zone C15 Work Zone Location <ul style="list-style-type: none"> <input type="radio"/> 1. Advance Warning Area <input type="radio"/> 2. Transition Area <input type="radio"/> 3. Activity Area <input type="radio"/> 4. Termination Area
		Other Location: <ul style="list-style-type: none"> <input type="radio"/> 12. Crossover Related <input type="radio"/> 13. Driveway, Alley-Access - Related <input type="radio"/> 14. Railway Grade Crossing <input type="radio"/> 15. Other Crossing (Crossings for Bikes, School, etc.) 	Work Zone C16 Work Zone Type <ul style="list-style-type: none"> <input type="radio"/> 1. Lane Closure <input type="radio"/> 2. Lane Shift/Crossover <input type="radio"/> 3. Work on Shoulder or Median <input type="radio"/> 4. Intermittent or Moving Work <input type="radio"/> 5. Other
			School Zone C17 School Zone <ul style="list-style-type: none"> <input type="radio"/> 1. Yes <input type="radio"/> 2. Yes - With School Activity <input type="radio"/> 3. No
			Type of Collision C18 Type of Collision <ul style="list-style-type: none"> <input type="radio"/> 1. Rear End <input type="radio"/> 2. Angle <input type="radio"/> 3. Head On <input type="radio"/> 4. Sideswipe – Same Direction <input type="radio"/> 5. Sideswipe – Opposite Direction <input type="radio"/> 6. Fixed Object in Road <input type="radio"/> 7. Train <input type="radio"/> 8. Non-Collision <input type="radio"/> 9. Fixed Object – Off Road <input type="radio"/> 10. Deer <input type="radio"/> 11. Other Animal <input type="radio"/> 12. Pedestrian <input type="radio"/> 13. Bicyclist <input type="radio"/> 14. Motorcyclist <input type="radio"/> 15. Backed Into <input type="radio"/> 16. Other

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CRASH		Crash Date <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>		MILITARY Time (24 hr clock) <input type="text"/>	County of Crash <input type="text"/>	<input type="checkbox"/> City of <input type="checkbox"/> Town of	Local Case Number <input type="text"/>
--------------	--	--	--	--	--------------------------------------	--	--

VEHICLE #

Fill In Impact Area(s).
Initial Impact.

Veh Dir of Travel--N/S/E/W

CRASH DIAGRAM

VEHICLE #

Fill In Impact Area(s).
Initial Impact.

Veh Dir of Travel--N/S/E/W

VEHICLE #

Fill In Impact Area(s).
Initial Impact.

Veh Dir of Travel--N/S/E/W

Indicate North by Arrow

VEHICLE #

Fill In Impact Area(s).
Initial Impact.

Veh Dir of Travel--N/S/E/W

DAMAGE TO PROPERTY OTHER THAN VEHICLES			
Approx. Repair Cost <input type="text"/>	Object Struck (Tree, Fence, etc.) <input type="text"/>	Property Owners Name (Last, First, Middle) <input type="text"/>	Address (Street and Number) <input type="text"/>
			VDOT Property <input type="checkbox"/> Yes <input type="checkbox"/> No

CRASH DESCRIPTION

CRASH EVENTS

Vehicle #	First Event	Second Event	Third Event	Fourth Event	Most Harmful Event
Vehicle #	First Event	Second Event	Third Event	Fourth Event	Most Harmful Event

- | | | | |
|---|---|--|--|
| <p>First Harmful Event of Entire Crash that Results in First Injury or Damage.</p> | <p>COLLISION WITH FIXED OBJECT</p> <ul style="list-style-type: none"> 1. Bank Or Ledge 2. Trees 3. Utility Pole 4. Fence Or Post 5. Guard Rail 6. Parked Vehicle 7. Tunnel, Bridge, Underpass, Culvert, etc. 8. Sign, Traffic Signal 9. Impact Cushioning Device 10. Other 11. Jersey Wall 12. Building/Structure 13. Curb 14. Ditch 15. Other Fixed Object 16. Other Traffic Barrier 17. Traffic Sign Support 18. Mailbox | <p>COLLISION WITH PERSON, MOTOR VEHICLE OR NON-FIXED OBJECT</p> <ul style="list-style-type: none"> 19. Pedestrian 20. Motor Vehicle In Transport 21. Train 22. Bicycle 23. Animal 24. Work Zone 25. Maintenance Equipment 26. Unknown Movable Object 27. Other | <p>NON-COLLISION</p> <ul style="list-style-type: none"> 28. Ran Off Road 29. Jack Knife 30. Overturn (Rollover) 31. Downhill Runaway 32. Cargo Loss or Shift 33. Explosion or Fire 34. Separation of Units 35. Cross Median 36. Cross Centerline 37. Equipment Failure (Tire, etc) 38. Immersion 39. Fell/Jumped From Vehicle 40. Thrown or Falling Object 41. Non-Collision Unknown 42. Other Non-Collision |
|---|---|--|--|



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CRASH

Crash Date	MM DD YYYY	MILITARY Time (24 hr clock)	County of Crash	<input type="radio"/> City of <input type="radio"/> Town of	Local Case Number
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COMMERCIAL MOTOR VEHICLE SECTION

This form is being completed because the vehicle is:

<input type="radio"/> A Truck or Truck Combination Rating Greater Than 10,000 lbs. (GVWR/GCWR)	<input type="radio"/> Any Motor Vehicle That Seats 9 or More People, Including the Driver	<input type="radio"/> A Vehicle of Any Type with a Hazardous Materials Placard Regardless of Weight
--	---	---

AND The crash resulted in:

<input type="radio"/> A fatality: any person(s) killed in or outside of any vehicle (truck, bus, car, etc.) involved in the crash or who dies within 30 days of the crash as a result of an injury sustained in the crash	OR	<input type="radio"/> An injury: any person(s) injured as a result of the crash who immediately receives medical treatment away from the crash scene	OR	<input type="radio"/> A tow-away: any motor vehicle (truck, bus, car, etc.) disabled as a result of the crash and transported away from the scene by a tow truck or other vehicle
---	----	--	----	---

VEHICLE # _____

Vehicle Configuration V10	Cargo Body Type V11	License Class P8	Commercial Endorsement P9
<input type="radio"/> 1. Passenger Car (Only if Vehicle Has Hazardous Materials Placard) <input type="radio"/> 2. Light Truck (Only if Vehicle Has Hazardous Materials Placard) <input type="radio"/> 3. Bus (Seats 9-15 People, Including Driver) <input type="radio"/> 4. Bus (Seats for 16 People or More, Including Driver) <input type="radio"/> 5. Single Unit Truck (2 Axles, 6 Tires) <input type="radio"/> 6. Single Unit Truck (3 or More Axles) <input type="radio"/> 7. Truck Trailer(s) [Single-Unit Truck Pulling Trailer(s)] <input type="radio"/> 8. Truck Tractor (Bobtail) <input type="radio"/> 9. Tractor/Semi-trailer (One Trailer) <input type="radio"/> 10. Tractor/Doubles (Two Trailers) <input type="radio"/> 11. Other Truck Greater Than 10,000 lbs. (Not Listed Above)	<input type="radio"/> 1. Bus (Seats 9-15 People, Including Driver) <input type="radio"/> 2. Bus (Seats For 16 People or More, Including Driver) <input type="radio"/> 3. Van/Enclosed Box <input type="radio"/> 4. Cargo Tank <input type="radio"/> 5. Flatbed <input type="radio"/> 6. Dump <input type="radio"/> 7. Concrete Mixer <input type="radio"/> 8. Auto Transporter <input type="radio"/> 9. Garbage/Refuse <input type="radio"/> 10. Grain/Chips/Gravel <input type="radio"/> 11. Pole-Trailer <input type="radio"/> 12. Vehicle Towing Another Motor Vehicle <input type="radio"/> 13. Intermodel Container Chassis <input type="radio"/> 14. Logging <input type="radio"/> 15. Other Cargo Body (Not Listed Above) <input type="radio"/> 16. Not Applicable/ No Cargo Body	<input type="radio"/> Class A <input type="radio"/> Class B <input type="radio"/> Class C <input type="radio"/> Class DRL (regular drivers license) <input type="radio"/> Class M	<input type="radio"/> T-Double Trailer <input type="radio"/> P-Passenger Vehicle <input type="radio"/> N-Tank Vehicle <input type="radio"/> H-Required To Be Placarded for Hazardous Materials <input type="radio"/> X-Combined Tank/HAZMAT <input type="radio"/> O-Other
		GVWR/GCWR V12	<input type="radio"/> 1. 10,000 lbs. or Less <input type="radio"/> 2. 10,001-26,000 lbs. <input type="radio"/> 3. Greater Than 26,000 lbs.

Hazardous Material

Hazardous Material Placard: Y N

HM 4-Digit <input type="text"/>	HM Placard Name <input type="text"/>	HM Class <input type="text"/>	HM Cargo Present <input checked="" type="radio"/> Y <input type="radio"/> N	HM Cargo Released <input checked="" type="radio"/> Y <input type="radio"/> N
---------------------------------	--------------------------------------	-------------------------------	---	--

Carrier Identification

Commercial Motor Carrier Name	Address (P.O. Box if No Street Address)			
Carrier's ID Number	State (Intrastate Only)	City	State	Zip
US DOT#				

Commercial/Non-Commercial V13

<input type="radio"/> 1. Interstate Carrier
<input type="radio"/> 2. Intrastate Carrier
<input type="radio"/> 3. Not in Commerce-Government (Trucks and Buses)
<input type="radio"/> 4. Not in Commerce-Other Truck (Over 10,000 lbs.)

VEHICLE # _____

Vehicle Configuration V10	Cargo Body Type V11	License Class P8	Commercial Endorsement P9
<input type="radio"/> 1. Passenger Car (Only if Vehicle Has Hazardous Materials Placard) <input type="radio"/> 2. Light Truck (Only if Vehicle Has Hazardous Materials Placard) <input type="radio"/> 3. Bus (Seats 9-15 People, Including Driver) <input type="radio"/> 4. Bus (Seats for 16 People or More, Including Driver) <input type="radio"/> 5. Single Unit Truck (2 Axles, 6 Tires) <input type="radio"/> 6. Single Unit Truck (3 or More Axles) <input type="radio"/> 7. Truck Trailer(s) [Single-Unit Truck Pulling Trailer(s)] <input type="radio"/> 8. Truck Tractor (Bobtail) <input type="radio"/> 9. Tractor/Semi-trailer (One Trailer) <input type="radio"/> 10. Tractor/Doubles (Two Trailers) <input type="radio"/> 11. Other Truck Greater Than 10,000 lbs. (Not Listed Above)	<input type="radio"/> 1. Bus (Seats 9-15 People, Including Driver) <input type="radio"/> 2. Bus (Seats For 16 People or More, Including Driver) <input type="radio"/> 3. Van/Enclosed Box <input type="radio"/> 4. Cargo Tank <input type="radio"/> 5. Flatbed <input type="radio"/> 6. Dump <input type="radio"/> 7. Concrete Mixer <input type="radio"/> 8. Auto Transporter <input type="radio"/> 9. Garbage/Refuse <input type="radio"/> 10. Grain/Chips/Gravel <input type="radio"/> 11. Pole-Trailer <input type="radio"/> 12. Vehicle Towing Another Motor Vehicle <input type="radio"/> 13. Intermodel Container Chassis <input type="radio"/> 14. Logging <input type="radio"/> 15. Other Cargo Body (Not Listed Above) <input type="radio"/> 16. Not Applicable/ No Cargo Body	<input type="radio"/> Class A <input type="radio"/> Class B <input type="radio"/> Class C <input type="radio"/> Class DRL (regular drivers license) <input type="radio"/> Class M	<input type="radio"/> T-Double Trailer <input type="radio"/> P-Passenger Vehicle <input type="radio"/> N-Tank Vehicle <input type="radio"/> H-Required To Be Placarded for Hazardous Materials <input type="radio"/> X-Combined Tank/HAZMAT <input type="radio"/> O-Other
		GVWR/GCWR V12	<input type="radio"/> 1. 10,000 lbs. or Less <input type="radio"/> 2. 10,001-26,000 lbs. <input type="radio"/> 3. Greater Than 26,000 lbs.

Hazardous Material

Hazardous Material Placard: Y N

HM 4-Digit <input type="text"/>	HM Placard Name <input type="text"/>	HM Class <input type="text"/>	HM Cargo Present <input checked="" type="radio"/> Y <input type="radio"/> N	HM Cargo Released <input checked="" type="radio"/> Y <input type="radio"/> N
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Carrier Identification

Commercial Motor Carrier Name	Address (P.O. Box if No Street Address)			
Carrier's ID Number	State (Intrastate Only)	City	State	Zip
US DOT#				

Commercial/Non-Commercial V13

<input type="radio"/> 1. Interstate Carrier
<input type="radio"/> 2. Intrastate Carrier
<input type="radio"/> 3. Not in Commerce-Government (Trucks and Buses)
<input type="radio"/> 4. Not in Commerce-Other Truck (Over 10,000 lbs.)



Officer Initials _____ Badge # _____

Commonwealth of Virginia • Department of Motor Vehicles



FR300P (Rev 7/07)

Revised Report

Police Crash Report

Page _____ of _____

CRASH

Crash Date	MM DD YYYY	MILITARY Time (24 hr clock)	County of Crash	<input type="radio"/> City of <input type="radio"/> Town of	Local Case Number
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PEDESTRIAN #

Name of Injured (Last, First, Middle)					
Address (Street and Number)					
City		State	ZIP		
Driver's License #				State	
Gender	EMS Transport	Injury Type	Birthdate	Date of Death	
<input type="radio"/> M <input type="radio"/> F	<input type="radio"/> Y <input type="radio"/> N		MM DD YYYY	MM DD YYYY	

PEDESTRIAN #

Name of Injured (Last, First, Middle)					
Address (Street and Number)					
City		State	ZIP		
Driver's License #				State	
Gender	EMS Transport	Injury Type	Birthdate	Date of Death	
<input type="radio"/> M <input type="radio"/> F	<input type="radio"/> Y <input type="radio"/> N		MM DD YYYY	MM DD YYYY	

Ped #	Ped #	Ped #	Ped #
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<input type="radio"/> N/A	<input type="radio"/> N/A	Pedestrian Actions	P10
<input type="radio"/>	<input type="radio"/>	1. Crossing At Intersection With Signal	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	2. Crossing At Intersection Against Signal	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	3. Crossing At Intersection No Signal	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	4. Crossing At Intersection Diagonally	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	5. Crossing Not At Intersection – Rural	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	6. Crossing Not At Intersection – Urban	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	7. Coming From Behind Parked Cars	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	8. Getting Off Or On School Bus	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	9. Playing In Roadway	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	10. Getting Off Or On Another Vehicle	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	11. Hitching On Vehicle	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	12. Walking In Roadway With Traffic – Sidewalks Available	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	13. Walking In Roadway With Traffic – Sidewalks Not Available	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	14. Walking In Roadway Against Traffic – Sidewalks Available	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	15. Walking In Roadway Against Traffic – Side Walks Not Available	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	16. Working In Roadway	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	17. Standing In Roadway	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	18. Lying In Roadway	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	19. Not In Roadway	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	20. Other	<input type="radio"/>

<input type="radio"/> N/A	<input type="radio"/> N/A	Pedestrian Drinking	P11
<input type="radio"/>	<input type="radio"/>	1. Had Not Been Drinking	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	2. Drinking-Obviously Drunk	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	3. Drinking -Ability Impaired	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	4. Drinking -Ability Not Impaired	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	5. Drinking -Not Known Whether Impaired	<input type="radio"/>

<input type="radio"/> N/A	<input type="radio"/> N/A	Method of Alcohol Determination by Police	P13
<input type="radio"/>	<input type="radio"/>	1. Blood	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	2. Breath	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	3. Refused	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	4. No Test	<input type="radio"/>

<input type="radio"/> N/A	<input type="radio"/> N/A	Condition of Pedestrian Contributing to the Crash	P12
<input type="radio"/>	<input type="radio"/>	1. No Defects	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	2. Eyesight Defective	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	3. Hearing Defective	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	4. Other Body Defects	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	5. Illness	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	6. Fatigued	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	7. Apparently Asleep	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	8. Other	<input type="radio"/>

<input type="radio"/> N/A	<input type="radio"/> N/A	Pedestrian Drug Use	P14
<input type="radio"/>	<input type="radio"/>	1. Yes	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	2. No	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	3. Unknown	<input type="radio"/>

<input type="radio"/> N/A	<input type="radio"/> N/A	Pedestrian Wear Reflective Clothing	P15
<input type="radio"/>	<input type="radio"/>	1. Yes	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	2. No	<input type="radio"/>

Use sections below for additional passengers.

VEHICLE #

PASSENGER (only if injured or killed)

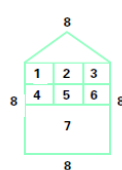
Name of Injured (Last, First, Middle)						EMS Transport	Date of Death
						<input type="radio"/> Y <input type="radio"/> N	MM DD YY
Position In/On Vehicle	Safety Equip Used	Airbag	Ejected	Injury Type	Birthdate	Gender	
					MM DD YYYY	<input type="radio"/> M <input type="radio"/> F	

VEHICLE #

PASSENGER (only if injured or killed)

Name of Injured (Last, First, Middle)						EMS Transport	Date of Death
						<input type="radio"/> Y <input type="radio"/> N	MM DD YY
Position In/On Vehicle	Safety Equip Used	Airbag	Ejected	Injury Type	Birthdate	Gender	
					MM DD YYYY	<input type="radio"/> M <input type="radio"/> F	

Codes



- POSITION IN/ON VEHICLE**
- Driver
 - Passengers
 - Cargo Area
 - Riding/Hanging On Outside
 - All Other Passengers

- SAFETY EQUIPMENT USED**
- Lap Belt Only
 - Shoulder Belt Only
 - Lap and Shoulder Belt
 - Child Restraint
 - Helmet
 - Other
 - Booster Seat
 - No Restraint Used
 - Not Applicable

- AIRBAG**
- Deployed – Front
 - Not Deployed
 - Unavailable/Not Applicable
 - Keyed Off
 - Unknown
 - Deployed – Side
 - Deployed – Other (Knee, Air Belt, etc.)
 - Deployed – Combination

- EJECTED FROM VEHICLE**
- Not Ejected
 - Partially Ejected
 - Totally Ejected
- SUMMONS ISSUED AS A RESULT OF CRASH**
- Yes
 - No
 - Pending

- INJURY TYPE**
- Dead
 - Serious Injury
 - Minor/Possible Injury
 - No Apparent Injury