

# Data Representation Of Motor Vehicle Accidents For Fiscal Year 2016-2020 In Municipality Of Aurora: Basis For Local Government Unit Intervention Program

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## ABSTRACT

This study aimed to assess the data representation of motor vehicle accidents in the municipality of aurora for fiscal years 2016-2020 in the Municipal Police Station in Aurora Zamboanga del Sur. To find out the trend on the typical motor vehicle accidents from 2016-2020 for possible intervention program for safe driving. Employing descriptive research design, population and sampling, data were obtained from 374 respondents in municipality of Aurora. The data collected were analyzed and interpreted using statistical tools: Frequency and Percentage, Binomial Distributed, Anderson-Darling Normality, and Descriptive Statistics. The study revealed that the motor vehicle accident was not too serious in 2016-2020, but drivers must still be vigilant while driving because the road accident is unpredictable. In addition, the study discovered that there is a trend in the common motor vehicle accidents from the year 2016-2020. Furthermore, the trend results decreased in the year 2016, increased in the year 2017, decreased in the year 2018, increased in the year 2019, and decreased in the year 2020. **Keywords:** *Motor vehicle, Pedestrian, Drivers, Motor vehicle traffic accident, Zamboanga del Sur, Philippines*

## Introduction

To avoid car accidents as they approach a green light, drivers should look both ways for oncoming traffic. Road markings or road signage(s) are important factors in a traffic accident. Another factor that contributes to accidents is the driver's lack of knowledge about road signage—inefficient and ignorant drivers who are inexperienced cause real traffic problems. Drivers who obtained their licenses from bad driving schools or courses cause traffic accidents because they become drivers without understanding of driving and traffic rules (Rolison, 2020).

However, reckless drivers, like aggressive drivers, are frequently impatient in traffic. A violation of the rules can also occur if the driver consumes alcohol prior to driving. Unfortunately, this leads to traffic accidents because the driver is unable to focus on the road after drinking alcohol. The other factor is drowsy drivers. They, like the others, are unable to pay attention to the road and may even fall asleep while driving; drivers who beat the red light risk causing wrongful death because they frequently cause a side-impact collision at high speeds (Worley, 2006).

Furthermore, one of the most serious aspects of car accidents is a violation of traffic rules and regulations, such as speeding, reckless driving, drunk driving, or driving. At the same time, the driver is sleepy or sleepless, tailgating or overtaking. Excessive speeding causes numerous accidents because the speeding driver loses control of his vehicle, resulting in accidents, which can be fatal. Careless driving is one factor; drivers traveling at high speeds changed lanes too quickly or tailgated before causing an accident (Siva, 2020).

Consequently, the causes of motor vehicle collisions are complex, but they are largely determined by the characteristics of the drivers. Young drivers' skill level (McGwin &

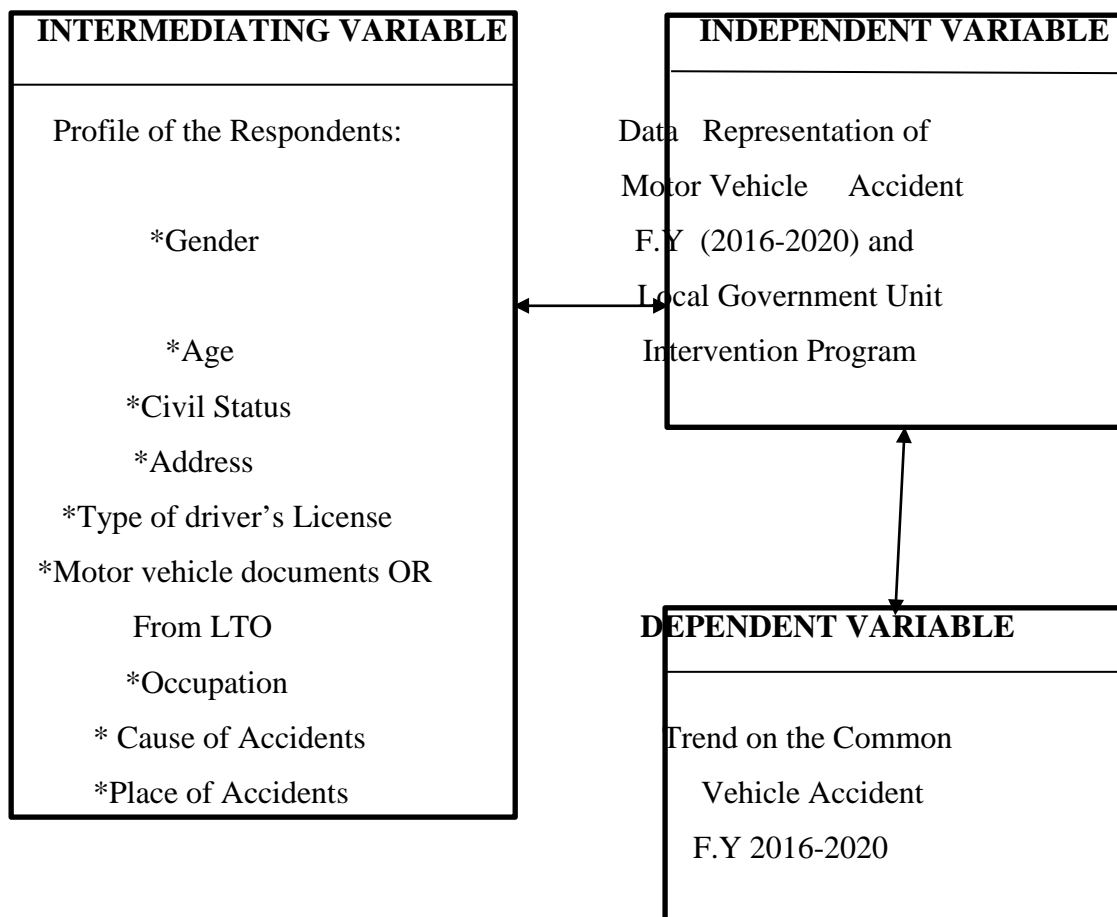
Brown, 1999), inexperience (McCartt, 2003), and risk-taking behavior (Rolison, 2014) have been offered in collisions compared to drivers of other ages. Excessive speed (Gonzales, 2005; Lam, 2003), reckless driving (Lam, 2003), and traffic violations (Gonzales, 2005), as well as drugs and alcohol (Bingham, 2008), have all been implicated in investigations of vehicle collision records involving young drivers. Braitman (2008), for example, interviewed 16-year-old novice drivers who had been in a crash within eight months of receiving their driver's license. The teenagers reported that the primary causes of their collisions were excessive speed, loss of control, and failure to detect another vehicle or traffic control (Braitman, 2008). These findings, taken together, support the role of inexperience, lack of skill, and risk-taking behaviors in young driver collisions. Furthermore, these contributing factors appear to be influenced by the gender of the driver. Young male drivers are more likely than young female drivers to be involved in crashes caused by risk-taking behaviors such as excessive speeding and drug and alcohol impairment.

In the same token, unlike young drivers, older drivers are more likely to be involved in collisions caused by driver error at intersections and turning (Hakamies-Blomqvist, 1993; Langford & Koppel, 2006). Failure to yield right of way, failure to comply with signs and signals, failure to see objects, and improper turns and lane changes were frequently reported in road accident records for collisions involving older drivers, according to G. McGwin and Brown (1999). On the other hand, age-related declines in visual, cognitive, and mobility functioning may contribute to older driver errors (Hu, 1993; Janke, 1991). A substantial body of research has identified poor visual functioning and cognitive abilities as risk factors for older drivers involved in traffic accidents (Ball, 2010; Ball, 2006; Owsley, 1991; Owsley, 1998). Heart disease and stroke have also been linked to an increased risk of collision among older drivers (McGwin, 2000; Anstey, 2005).

### Conceptual Framework

This study focuses on the Data Representation of Motor Vehicle Accident in Aurora Municipality for Fiscal Years 2016-2020 and Possible Solutions.

Republic Act No. 4136, an Act to Compile the Laws Relative to Land Transportation and Traffic Rules to Create a Land Transportation Commission and for other Purposes. This Act shall be known as the “Land Transportation and Traffic Code.” The provisions of this Act shall control, as far as they apply, the registration and operation of motor vehicles and the licensing of owners, dealers, conductors, drivers, and similar matters.



**Figure 1: Schematic diagram of the study**

### Statement of the Problem

This study assesses data representation of motor vehicle accidents in the municipality of aurora for fiscal years 2016-2020 in the Municipal Police Station in Aurora Zamboanga del Sur.

Specifically, this study sought to answer the following question:

1. What is the profile of the respondents in terms of:
  - 1.1. Gender;
  - 1.2. Age;
  - 1.3. Civil status;
  - 1.4. Address;
  - 1.5. Type of driver's license;
  - 1.6. Motor vehicle documents Official Receipt (OR) from LTO;
  - 1.7. Occupation;
  - 1.8. Cause of accident; and
  - 1.9. Place of accident?
2. What are the common vehicle accidents on the following years 2016-2020?
3. Is there a trend on the common motor vehicle accidents from the year 2016-2020?

### **Hypothesis**

1. There is no trend on the common motor vehicle accidents from the year 2016-2020 in Aurora Municipality, Zamboanga Del Sur.

### **Significance of the Study**

The result of the study would be beneficial to the following individuals and groups who are considered as the direct beneficiaries of the results of this research.

**Motor Vehicle Driver.** This study would help to the drivers to give them awareness and information to have a safe driving if ever there is an incident happened.

**Philippine National Police.** This study would help our PNP in implementing the policy in order to follow all single motor drivers enforcing this policy of safe driving and to have a good communication between our police officer and all motorist drivers.

**Police Organization.** This study would help our police organization or a group of trained personnel in the field of public safety administration engaged in the achievement of goals and objectives that promotes the maintenance of peace and order, protection of life and property, enforcement of the laws and the prevention of crimes.

**Local Government Unit 's (LGU) of Aurora.** The findings of this study would also serve as a foundation for intervention program reference and will provide information to the Aurora Local Government Unit (LGU) in order to prevent and reduce the Municipality's motor vehicle accidents.

**Future Researchers.** This study would provide baseline data needed for further study and provide essential information that would be helpful in preparing the criminology students to be good criminologist.

**Criminology Students.** This study would serve as an educational and reference material for future studies and undertaking. This may also give an idea to understand the Philippine Republic Act No. 4136.

### **Scope and Limitation of the Study**

The study mainly focusses to gather data on the Motor Vehicle Accident for Fiscal Year 2016-2020 and Providing Possible Solution conducted in Municipality of Aurora,

Zamboanga Del Sur.

### **Definition of Terms**

**Driver.** This refers to a person who drives a vehicle.

**Driver’s license.** This refers to a license issued under governmental authority that permits the holder to operate a motor vehicle.

**Motor Vehicle.** This refers to a road vehicle powered by an internal combustion engine; an automobile.

**Official Receipt.** This refers to official receipt coming from the Land Transportation Office (LTO).

**Republic Act No. 4136.** This refers to an Act to Compile the Laws Relative to Land Transportation and Traffic Rules to Create a Land Transportation Commission and for other Purposes. This Act shall be known as the “Land Transportation and Traffic Code.”

**Republic Act No. 10586.** This refers to an Act Penalizing Persons Driving under the Influence of Alcohol, Dangerous Drugs, And Similar Substances, and for Other Purposes. Otherwise known as the "Anti-Drunk and Drugged Driving Act of 2013”.

**Tailgating.** This refers to drive too closely behind (another vehicle).

**Traffic signs or road signs.** This refers to signs erected at the side of or above roads to give instructions or provide information to road users.

**Travel Policy.** This refers to the rules and regulation of one ordinance or policy.

**Vehicle Collisions.** This refers to vehicle accident, or vehicle crash, occurs when a vehicle collides with another vehicle, pedestrian, animal, road debris, or other stationary obstruction, such as a tree, pole or building.

## REVIEW OF RELATED LITERATURE

This chapter presents the literature that enlightens the data and information on the study. The information establishment in the survey could give support on how this study related to other data.

### Republic Act No. 4136

An Act to Compile the Laws Relative to Land Transportation and Traffic Rules to Create a Land Transportation Commission and other Purposes. This Act shall be known as the “Land Transportation and Traffic Code.” The provisions of this Act shall control, as far as they apply, the registration and operation of motor vehicles and the licensing of owners, dealers, conductors, drivers, and similar matters (Macapagal, 1970).

Road safety is a significant concern in the present situation. There are many steps required to achieve the road safety measures found a method by which can identify the accident-prone locations on roads commonly termed as accident blackspots. He concluded that the black spot safety work has been effective in reducing the number of causality crashes. So ongoing evaluation is necessary to help governments determine if the benefits from further treatment of black spot sites justify the treatment cost and develop a model to identify black spots on roads using prioritization and Geographical Information Systems (GIS) (Mandloi & Gupta, 2003).



The ofilatots and Yannis (2014) indicated the Effect of Traffic and Weather Characteristics on Road Safety. Despite the existence of generally mixed evidence on the effect of traffic parameters which observe a few patterns. For instance, traffic flow seems to have a non-linear relationship with accident rates, even though some studies suggest a linear relationship with accidents. Regarding weather effects, precipitation is relatively consistent and generally leads to increased accident frequency but does not seem to have a consistent impact in severity. The effect of other weather parameters on safety, such as visibility, wind speed, and temperature, is not found straightforward so far. The increasing use of real-time data makes it easier to identify the safety impact of traffic and weather characteristics. Still, most importantly, it makes possible the identification of their combined effect.

Veeraragavan (2011) was presented Random Parameter Models for Accident Prediction on Two-Lane Undivided Highways in India. Based on three years of accident history, from nearly 200 km of highway segments, calibrating and validating the models is used. The analysis results suggest that the model coefficients for traffic volume, the proportion of cars, motorized two-wheelers and trucks in traffic, and driveway density and horizontal and vertical curvatures are randomly distributed across locations. They have concluded with a discussion on modeling results and the limitations of the present study.

The collision prediction modes (also known as Safety Performance Functions (SPF)) in the HSM were developed using data from multiple states; thus, we must calibrate the models to account for local factors such as weather, road conditions, and driver characteristics. This study created two calibration factors for two different SPFs to better predict crash frequencies on rural two-lane Illinois roadways. The SPF that best indicates that the crashes were developed for rural two-lane two-way roads in Illinois was determined in

this study. When assessing the safety of a roadway, it is recommended that local SPFs be developed and compared to the HSM SPF (William & Zhou, 2012).

More than half of those who die in road accidents in the Philippines are motorcycle riders, according to the World Health Organization's new road safety report (WHO). In its Global Status Report on Road Safety 2015, the WHO said 53% of reported road traffic fatalities in the Philippines are riders of motorized two- or three-wheeled vehicles. Pedestrians make up the second-biggest chunk of road user deaths at 19%, followed by drivers of four-wheeled vehicles at 14% and their passengers at 11%. In its report, the WHO said the number of road traffic deaths globally has remained constant at 1.25 million people. Motorcyclists are among the most vulnerable, comprising 23% of road traffic deaths. The Southeast Asia and Western Pacific regions record the highest proportion in this area, with a third of all road traffic deaths involving motorcycle riders. While the WHO noted progress in arresting the rate of road accident fatalities – suggesting that efforts to boost road safety have saved lives – the agency stressed the need for better law enforcement and providing safe roads for all. Creating safer roads for motorcyclists and pedestrians is also crucial, the WHO said. "Real, sustained successes at reducing global road traffic deaths will only happen when road design takes into consideration the needs of all road users," the agency added.

In drunk driving law enforcement, the Philippines got a dismal 1 out of 10 ratings. Republic Act 10586, or the Anti-Drunk and Drugged Driving Act of 2013, seeks to penalize drivers whose blood alcohol content exceeds the allowable legal limit. Drivers found guilty of violating the law face fines, imprisonment, and revocation of their licenses. In March, the Land Transportation Office procured breath analyzers to conduct spot checks on motorists suspected of driving under the influence of alcohol. The World Health Organization report

also showed that the Philippines still lacks laws mandating restraints for children passengers and banning mobile phones while driving (Francisco, 2015).

## **CHAPTER III**

### **METHODOLOGY**

This chapter presents the methods of research used in the study. This part of the study shows the research design, research environment, sampling design, research respondents, research instrument, and the procedure used in interpreting the data.

#### **Research Design**

In this study, to establish truth, the researchers utilized the descriptive method of research in gathering data and information regarding the Motor Vehicle Accident in the Municipality of Aurora. According to W. Trochim (2005), research design "provides the glue that holds the research project together. The research design provides the components and the plan for

successfully carrying out the study. The research design is the "backbone" of the research protocol.

### **Research Environment**

This study conducted at the Municipality of Aurora, Zamboanga Del Sur. Aurora, Zamboanga del Sur, is within Region IX in the Zamboanga Peninsula. The total land area of the Municipality of Aurora is 18,095 hectares, which is 2.46% of Zamboanga del Sur Province's land area of 735,769 hectares. Aurora is a 2nd class municipality in the province of Zamboanga del Sur, Philippines. According to the 2015 census, it has a population of 50,755 people—the status of aurora was classified as partly urban.

### **Sampling Design**

Questionnaires were used to collect data. The questions were designed to provide answers to the problems that the study would address. The study employed purposive sampling to gather information on the Motor Vehicle Accident Data Presentation for Fiscal Years 2016-2020 in the Municipality of Aurora and Possible Solutions.

### **Research Respondent**

The data and information for this study will be gathered from the PNP office in the Municipality of Aurora, where there were 374 respondents for the fiscal year 2016-2020.

### **Research Instrument**

This study used data collection and information as an instrument to achieve the study's main objectives. Furthermore, this aims to evaluate the Motor Vehicle Accident for fiscal years 2016-2020 to see if there is a common cause of Motor Vehicle Accident, if there is a trend on

common motor vehicle accidents, and what solutions are available for Motor Vehicle Accident.

### **Data Gathering Procedure**

To collect the necessary data, the researchers first sent a letter to the Dean of the College of Criminology, which was noted by the thesis adviser and approved by the Chief of Police, requesting permission to conduct the study. Following approval, the researchers proceed to the Investigation Section, specifically to the assigned investigator Officer Police Corporal Kevin Siva, to collect data for the Narrative Accident Report titled Motor Vehicle Accident Data Presentation for Fiscal Years 2016-2020 and Possible Solutions. To protect the privacy of those involved in a motor vehicle accident, the researcher would never revealed the information gleaned from the narrative accident report from the PNP investigation section to anyone. After obtaining the profile of respondents from the motor vehicle narrative accident report for the years 2016-2020, the researcher collected all of the data gathered and classified the responses as raw data before compiling and classifying all of the questionnaires for analysis and interpretation of the data gathered.

### **Statistical Process**

The following statistical tools were used to analyze and interpret the results of the study.

1. Frequency and Percentage. These tools determined the number of responses and its ratio. These tools were applied in problem 1.

$$\text{Formula: } \frac{x}{n} \times 100\% = P$$

x = number of respondents

n = total number of respondents

P = Percentage

2. The data was properly tabulated, using the following raw data collected from 374 respondents and it was tested by the use of a statistic for **Binomial Distributed, Anderson-Darling Normality and Descriptive Statistics**. This was applied in problem 2 and 3

## CHAPTER IV

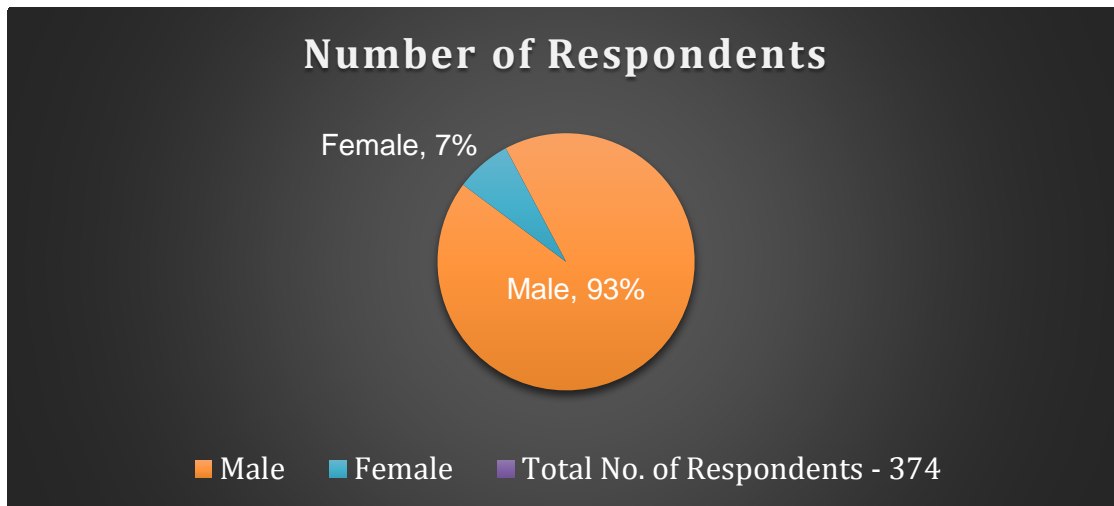
### PRESENTATION, ANALYSIS, AND INTERPRETATION OF DATA

This chapter goes over the information in the tables. The data was analyzed, interpreted, and supported by relevant literature and studies.

#### **Problem 1. What are the demographic profile of the respondents in terms of:**

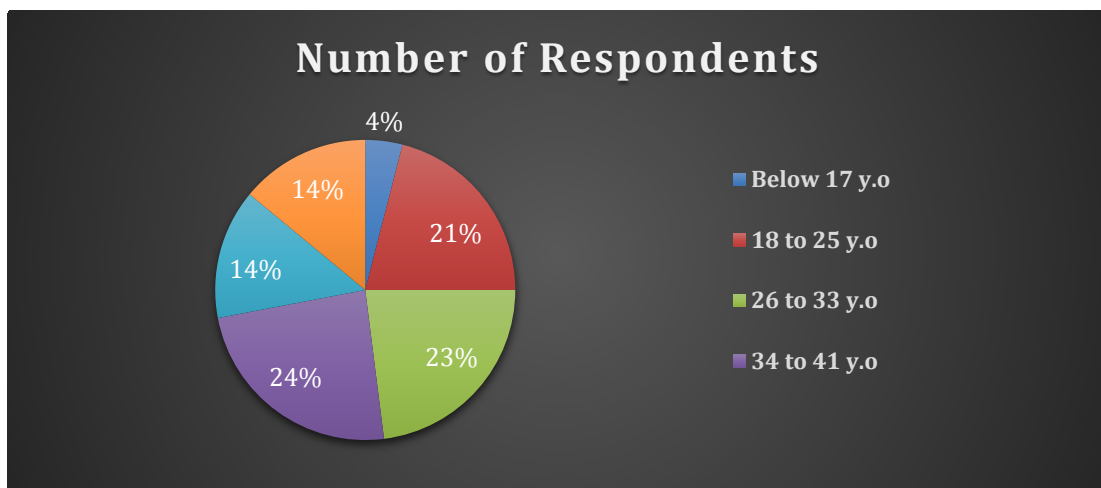
- 1.1. Gender
- 1.2. Age;
- 1.3. Civil status;
- 1.4. Address;
- 1.5. Type of driver's license;
- 1.6. Motor vehicle documents official receipt (OR) from LTO;
- 1.7. Occupation;
- 1.8. Cause of accident; and
- 1.9. Place of accident?

Figure 1.1 shows that 93 percent of respondents are men and 7 percent are women. This implies that men account for the vast majority of respondents. Males have been found to be more vulnerable to car accidents than females. Young (2013) supported the finding, who explained that this phenomenon in his Behind Driving Habits and Related Road Safety Issues that “men are significantly more likely to cause motor vehicle accidents than women.”



**Figure 1.1 Gender of the Respondents**

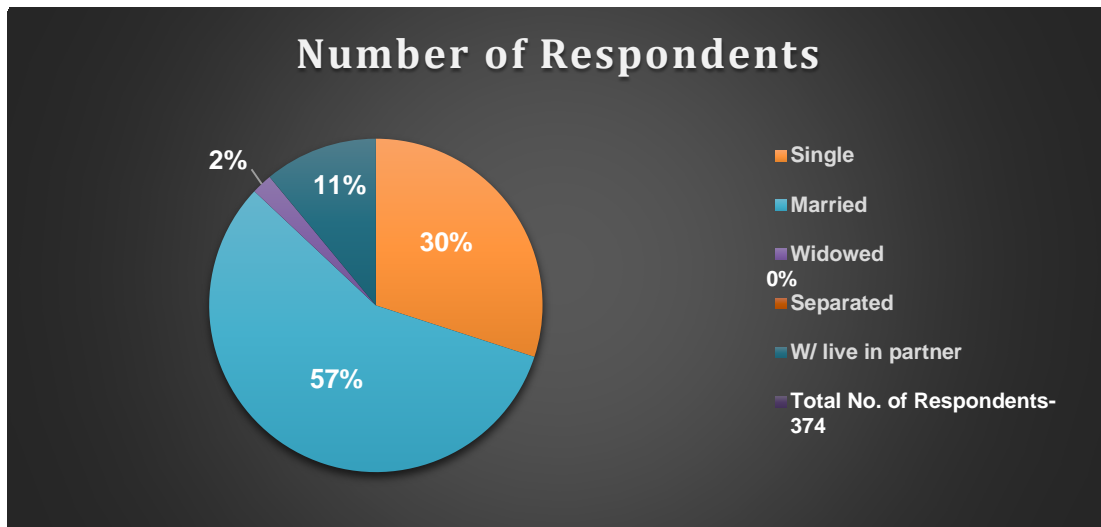
According to, Figure 1.2, 4% of respondents are under the age of 17, 21% are between the ages of 18 and 25, 23% are between the ages of 26 and 33, 24% are between the ages of 34 and 41, 14% are between the ages of 42 and 49, and 14% are 50 and older. Similarly, Weitz (2007) believed that age influences the likelihood of an accident, but the impact of age on driver injuries after an accident is unknown.



**Figure 1.2 Age of the Respondents**

As seen in Figure 1.3. shows that 30% of the respondents are single, 57% are married, 2% of the respondents are widowed, and 11% are live-in partners.

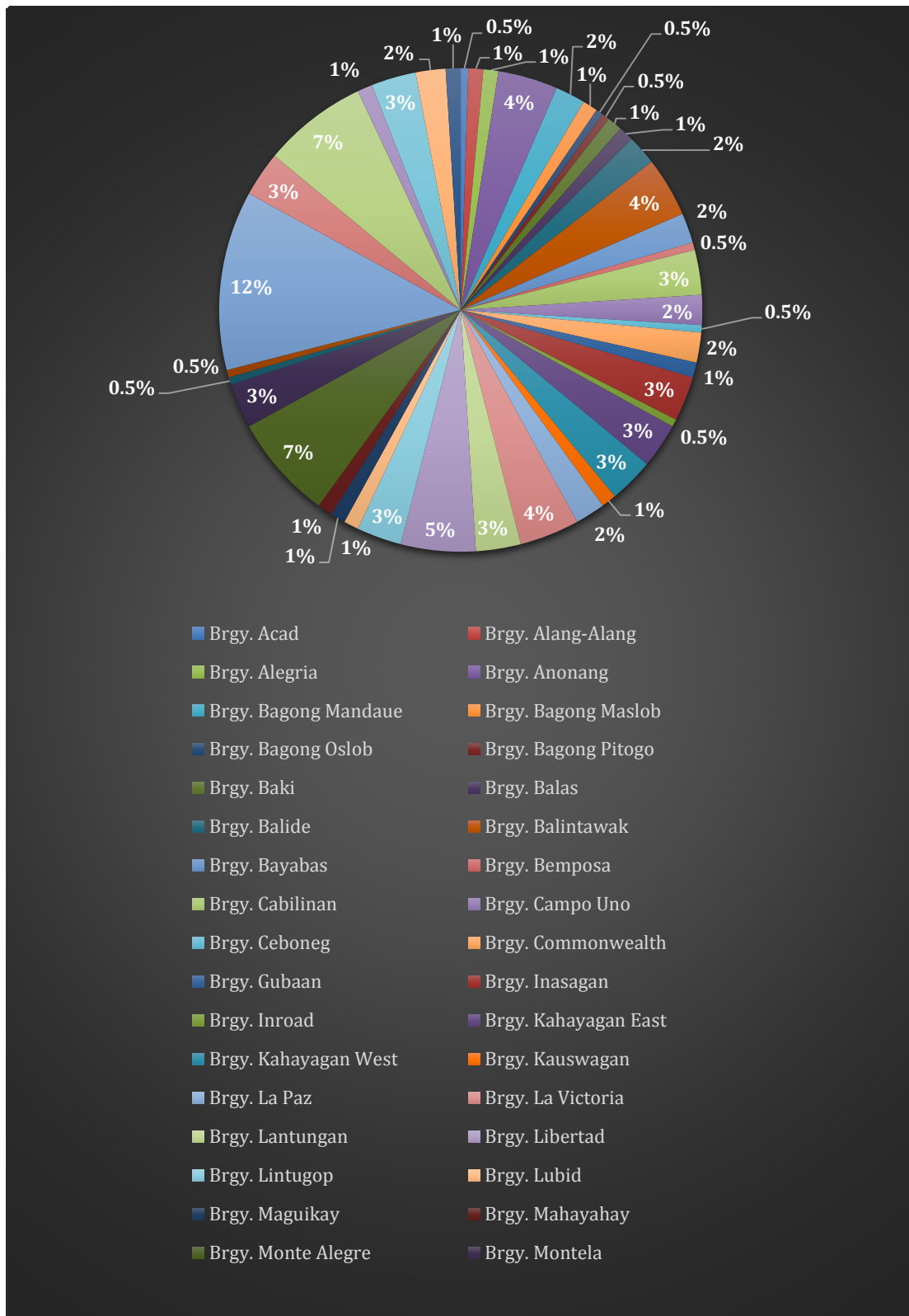




Figure

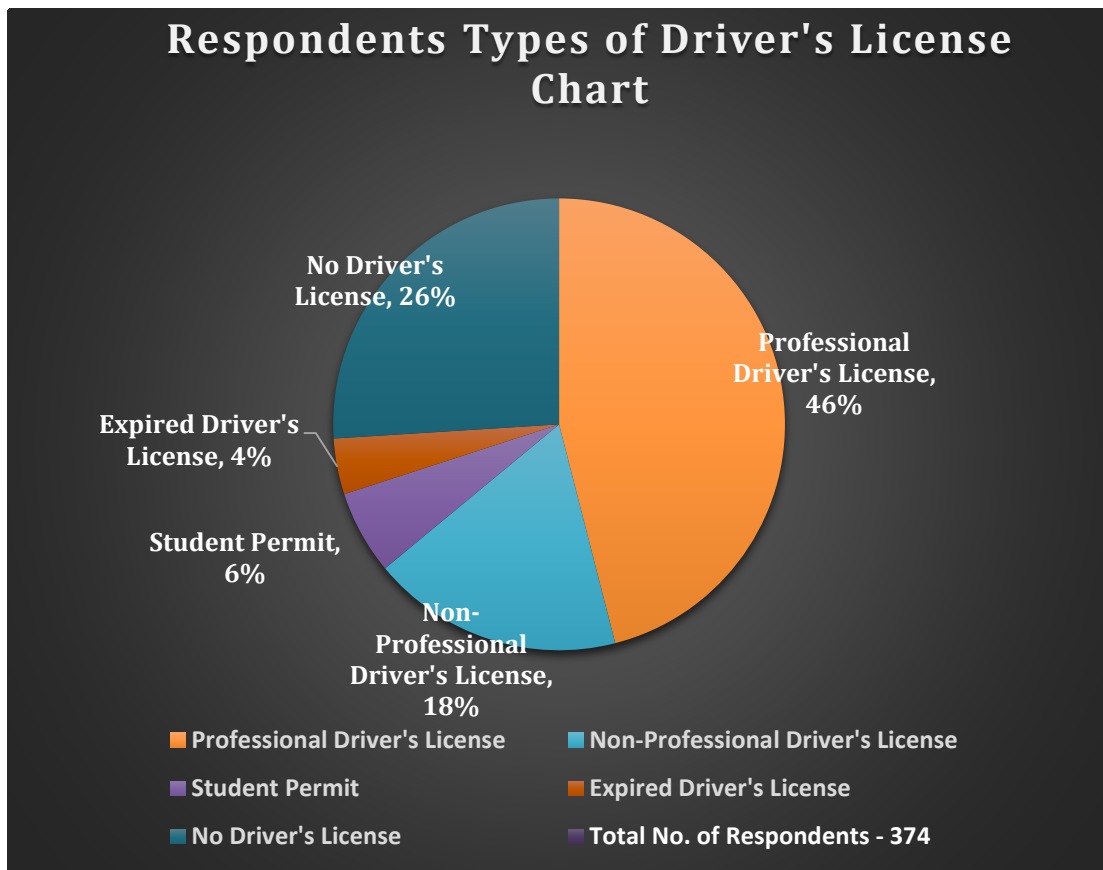
### 1.3 Civil Status of the Respondents

As seen in Figure 1.4. shows that 12% of the respondents live in Brgy. Poblacion, 7% of respondents live in Brgy. Monte Alegre and San Jose, 5% of respondents live in Brgy. Libertad, 4% of respondents live in Brgy. Anonang, Balintawak, and La Victoria, 3% of respondents live in Brgy. Kahayagan West, Lintugop, Montela, Cabilinan, Kahayagan East, Romarate and Sapa Luboc, Inasagan and Lantungan, 2% of respondents live in Brgy. Campo Uno, Bayabas, Commonwealth, Bagong Mandaue, Balide, La Paz, and Tagulalo, 1% of respondents live in Brgy. Bagong Maslob, Gubaan, Kauswagan, Lubid, Maguikay, Mahayahay, San Juan, Alang-alang, Alegria, Baki, Balas and Waterfall, 0.5% of respondents live in Brgy. Acad, Bagong Oslob, Bagong Pitogo, Bemposa, Ceboneg, Inroad, Napo and Panaghiusa, Aurora, Zamboanga del sur.



**Figure 1.4 Address of the Respondents**

According to Figure 1.5, 46 percent of respondents had a professional driver's license, 18 percent had a non-professional driver's license, 6 percent had a student permit, 4 percent had an expired driver's license, and 26 percent had no driver's license. The LTO is regarded as one of the most corrupt government agencies in the Philippines because it accepts extra pay for issuing licenses without properly examining the driver; as a result, many road accidents occur in our country because drivers are unaware of the rules and regulations imposed by our national government on safe driving (Roque, 2020).

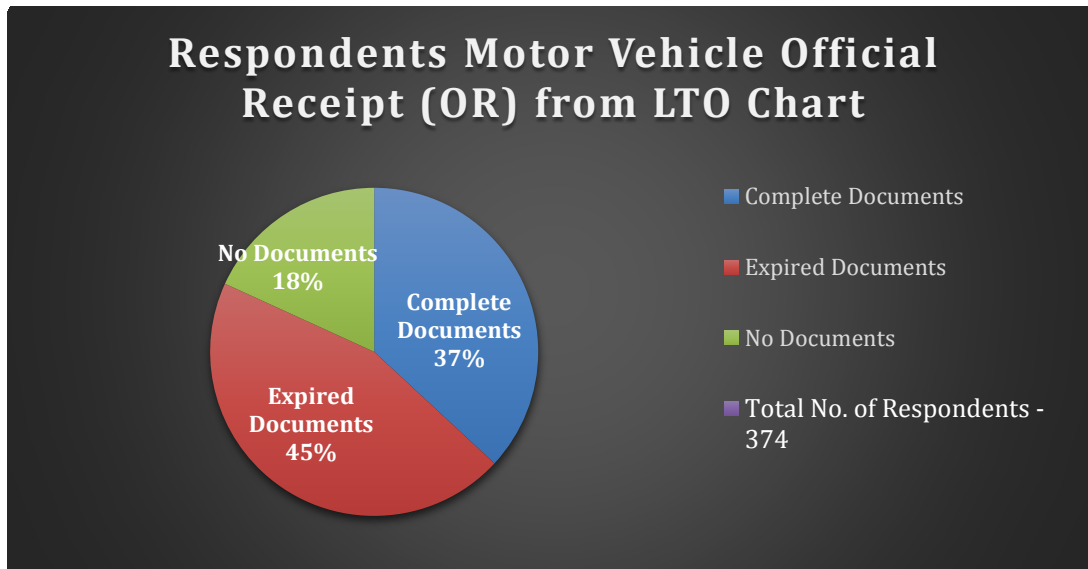


Figure

### 1.5 Types of Driver’s License of the Respondents

As shown in Figure 1.6, 37 percent of respondents carried a complete document, 45 percent carried an expired document, and 18 percent had no papers. Gordon (2021) supported the findings, the LTO's functions include the inspection and registration of motor vehicles, the

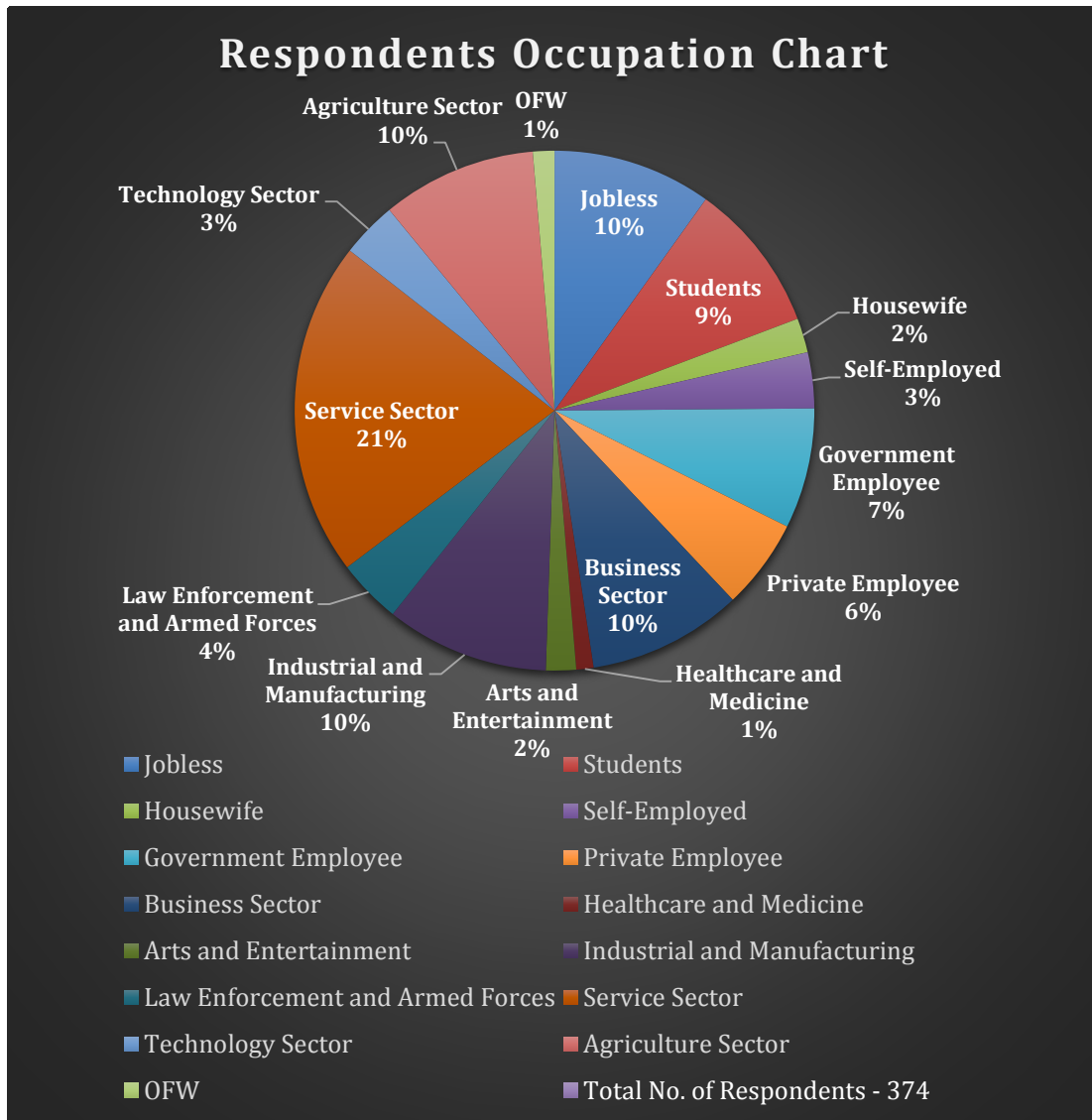
issuance of licenses and permits, the enforcement of land transportation rules and regulations, and the adjudication of traffic cases. However, this function is not well implemented and followed because some LTO Officers are "receiving money" from the driver just to let them go. Road accidents are common in our country as a result of the LTO's negligence.



**Figure 1.6 Motor Vehicle OR from LTO of the Respondents**

According to Figure 1.7, 10% of the respondents were unemployed, 9% were still students, 2% were housewives, 3% were self-employed, 8% were government employees, 6% were employed in private companies, 10% were doing business, and 1% of the respondents were self-employed, 2% of respondents worked in the arts and entertainment industry, 10% in the industrial and manufacturing industry, 4% in law enforcement, 21% in

the service sector, 3% in technology-related fields, 10% in agriculture, and 1% in the abroad.

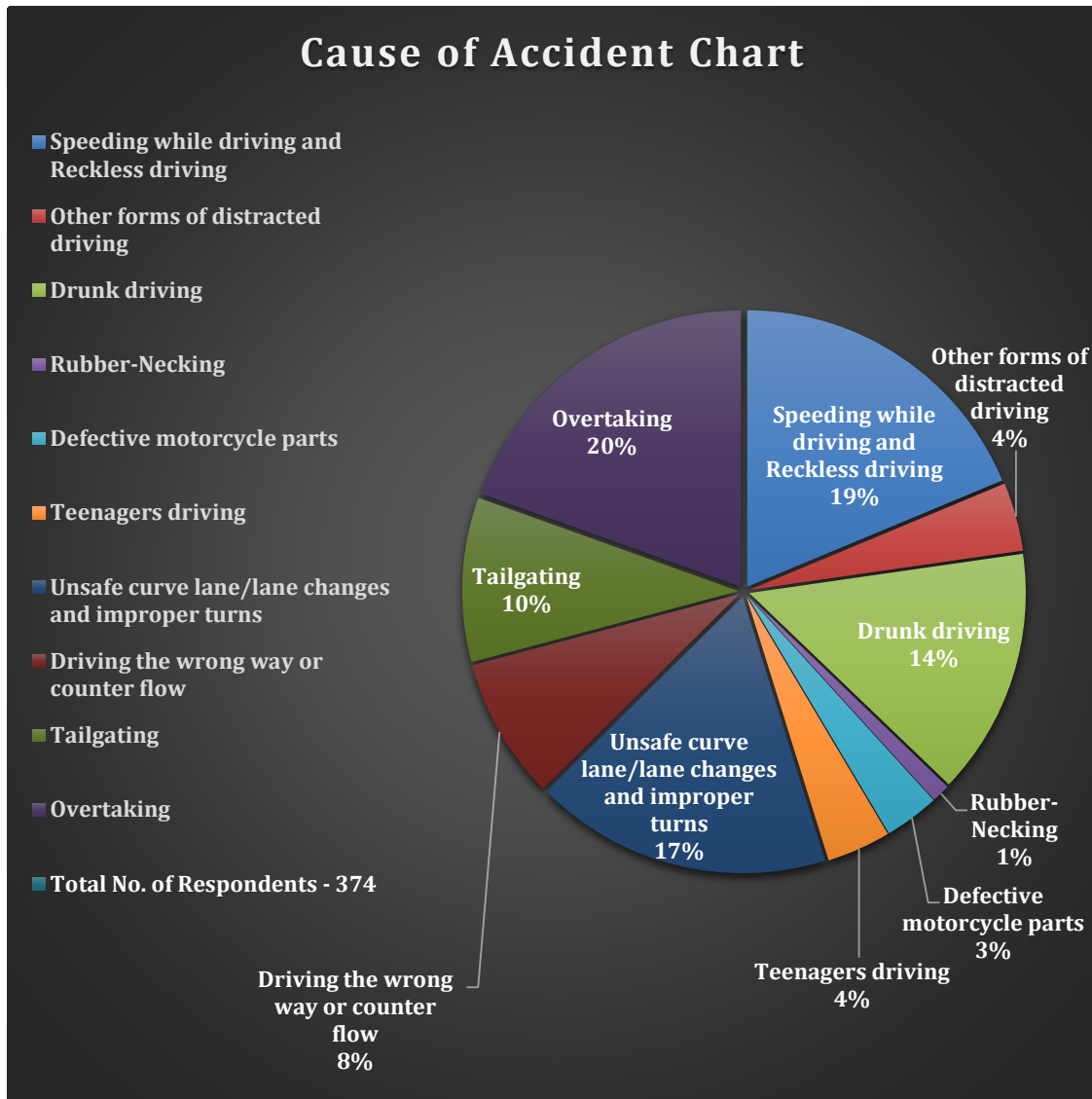


**Figure 1.7 Occupation of the Respondents**

As shown in Figure 1.8, speeding and reckless driving account for 19% of the respondents' causes of accidents. Other forms of distracted driving account for 4% of the respondents' accident causes. Drunk driving is a 14 percent cause of accident for respondents, rubber-necking is a 1% cause of accident for respondents, and defective motorcycle parts are a 3% cause of accident for respondents. Teenagers driving account for 4% of the respondents who cause an accident. Unsafe curve lanes/lane changes and improper turns account for 17%

of respondents' causes of accidents. Driving the wrong way or against the flow is the cause of 8% of respondents' accidents, Tailgating is the cause of 10% of respondents' accidents, and overtaking is the cause of 20% of respondents' accidents. Accidents on the road happen for a variety of reasons. Drivers are frequently distracted, diverting their attention away from the road. In other cases, drivers can become fatigued after spending several hours behind the wheel, leading to avoidable errors. Accidents can happen for a variety of reasons, including poor visibility, poor road design, or other drivers' lack of caution. Accidents can have a variety of causes, but the consequences are often the same, resulting in everything from vehicle and property damage to serious injuries. A road accident is the worst thing that can

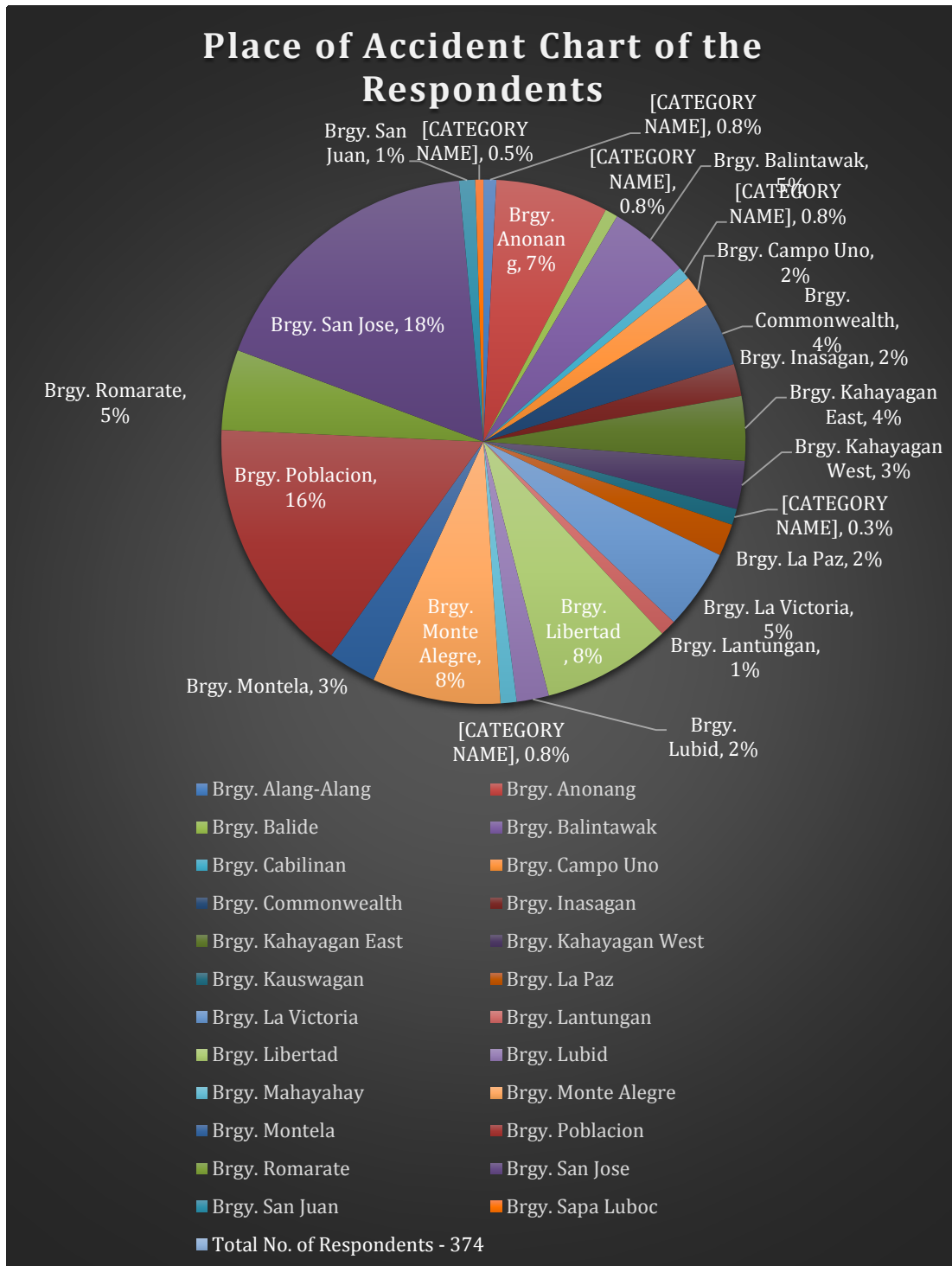
happen to a driver.



**Figure 1.8 Cause of Accident of the Respondents**

According to the data gathered, 18 percent of the 374 respondents had an accident in barangay San Jose, 16 percent had an accident in barangay Poblacion, 8% had an accident in barangay Libertad and Monte Alegre, 7% had an accident in barangay Anonang, and 5% had an accident in barangay Balintawak, La Victoria, and Rom, 4% of them were involved in an accident in barangay Commonwealth and Kahayagan East, 3% in barangay Kahayagan west and Montela, 2% in barangay Campo Uno, Inasagan, La Paz, and Lubid, 1% in barangay

Lantungan and San Juan, and 0.8 percent in barangay Alang-Alang, Balide, cabilinan, and Siva (2021) support the findings, that there were no proper road marking signs erected in all barangays in Aurora Municipality; there is a road that curves in lane, straight yellow lane, double solid yellow lines in center, dashed yellow line in center.

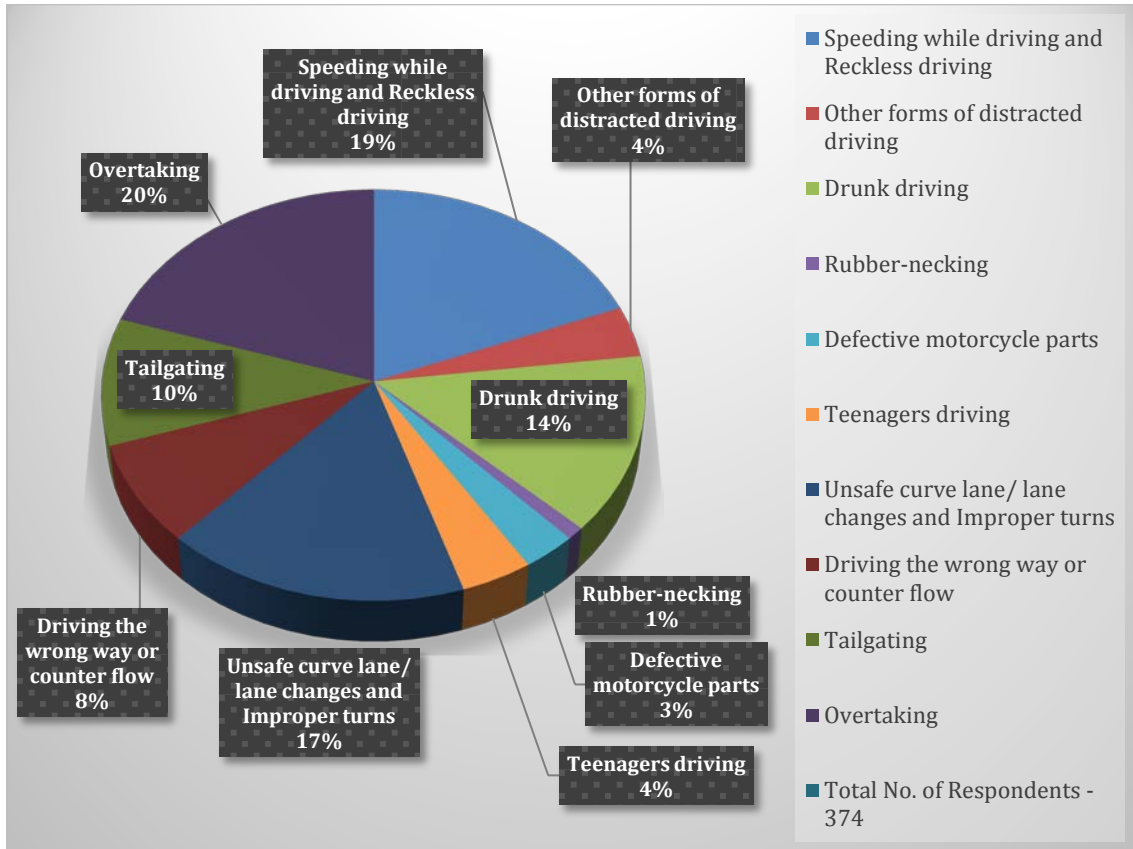




## Figure 1.9 Place of Accident of the Respondents

### Problem No. 2 What are the common vehicle accidents on the following years 2016-2020?

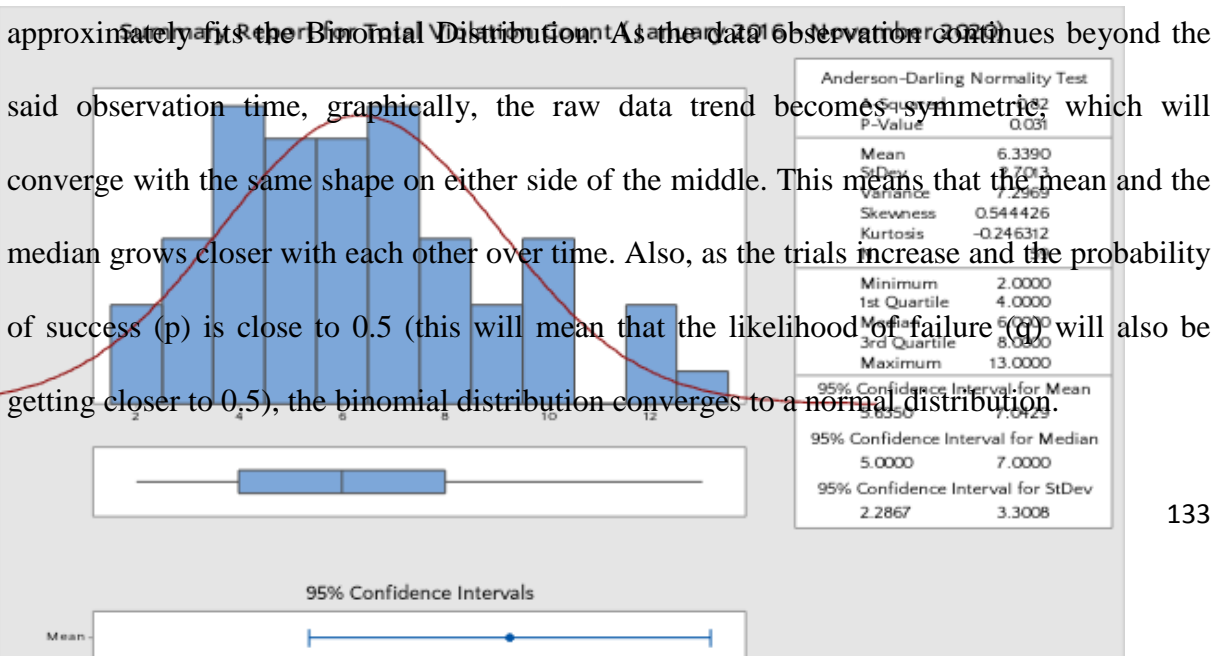
In the table below, based on the data gathered, 19% of the cause of accidents of the respondents are speeding while driving. Reckless driving, 4% cause of accident of the respondents are other forms of distracted driving, 14% cause of casualties of the respondents are drunk driving, 1% cause of accident of the respondents are rubber-necking, 3% cause of accident of the respondents are defective motorcycle parts, 4% cause accident of the respondents are teenagers driving, 17% cause of accident of the respondents are unsafe curve lane/ lane changes and improper turns, 8% cause of accident of the respondents are driving the wrong way or counter flow, 10% cause of accident of the respondents are tailgating, and 20% cause of accident of the respondents are overtaking. Most of the road users are quite well aware of the general rules and safety measures while using roads, but it is only the laxity on the part of road users, which causes accidents and crashes. The main cause of accidents and crashes is due to human errors (Siva, 2021).



**Table 2.1 the common vehicle accidents on the following years 2016-2020 of the Respondents**

**Problem No. 3 is there a trend on the common motor vehicle accidents from the year 2016-2020?**

The table below shows the total violation count from January 2016 to November 2020. The normality test result of pvalue less than 0.05 suggests that the overall total violation count be Non-normal. Visually, according to the histogram shown that the distribution of the raw data



**Table 3.1 trend of the common vehicle accidents on the following years 2016-2020 of the Respondents**

The table below will help with the prediction of each specific violation in the municipality of Aurora, ZDS. The Binomial Distribution Model of each identified violation would show the trend and follow the Binomial Distribution's nature. As the median increases, the direction becomes symmetric on either side of the median, leading to a mirrored shape. Furthermore, it is expected with this limited observation that within January 2016 to November 2020, with 374 counts, will only approximate the shape of the trend to be symmetric.

**Prediction Model/Trend of the Occurrence of Specific Violation in Aurora, ZDS using Binomial Distribution**

Identified Violation (p=probability presence of specified violation per month, q=other violation's presence per month)	Binomial Distribution Model $P_x = \binom{n}{x} p^x q^{n-x}$ , n = total year observation; x = the nth year of observation; $P_x$ = probability of occurrence in a month
Speeding while Driving and Reckless Driving	$P_x = \binom{n}{x} 0.189^x 0.811^{n-x}$
Other forms of Distracted Driving	$P_x = \binom{n}{x} 0.033^x 0.967^{n-x}$

Rubber Necking	$P_x = \binom{n}{x} 0.0125^x 0.9875^{n-x}$
Defective Motorcycle Parts	$P_x = \binom{n}{x} 0.034^x 0.966^{n-x}$
Teenagers Driving	$P_x = \binom{n}{x} 0.0362^x 0.9638^{n-x}$
Unsafe Curve Lane/Lane Changes and Improper Turns	$P_x = \binom{n}{x} 0.1773^x 0.8227^{n-x}$
Driving the Wrong Way/Counter-Flow	$P_x = \binom{n}{x} 0.078^x 0.922^{n-x}$
Tailgating	$P_x = \binom{n}{x} 0.0944^x 0.9056^{n-x}$
Overtaking	$P_x = \binom{n}{x} 0.188^x 0.812^{n-x}$
Drunk Driving	$P_x = \binom{n}{x} 0.158^x 0.842^{n-x}$

**Table 3.1 trend of the common vehicle accidents on the following years 2016-2020 of the Respondents**

## CHAPTER V

### FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

This chapter presents the findings, conclusions, and recommendations of this study, based on the presented results in chapter IV.

**Findings:**

1. Out of three hundred seventy-four (374) respondents, there were three hundred forty-six (346) male respondents and twenty-eight (28) female respondents. This implies that male respondents are more likely to involve in a motor vehicle accident.
2. Based on the evaluation, most of the respondents belong to the age thirty-four to forty-one (34 to 41), twenty-six to thirty-three (26 to 33), and eighteen to twenty-five (18 to 25) years old, it means at this age most of the respondents were involved in a motor vehicle accident.
3. As to the civil status of the respondents, there were a total of one hundred fourteen (114) respondents who were single, two hundred twelve (212) were married, eight (8) were widowed, and forty (40) had live-in partners.
4. Based on the type of driver's license, (173) of respondents are holding a professional driver's license, (66) holding a non-professional driver's license, (21) holding student permit license, (16) holding expired license, and (98) no driver's license.
5. Based on the Motor Vehicle Official Receipt (OR) from LTO, (37%) respondents carried a complete document, (45%) took an expired license and (18%) brought a dead document.
6. From the three hundred seventy-four (374) respondents, the top 6 common causes of vehicular motor accident are: overtaking (73), over speeding while driving and reckless driving (70), unsafe curve lane/ lane changes and improper turns (65), drunk driving (54), tailgating (36) and driving the wrong way or counter flow (31).
7. Based on the data gathered, the following barangays are the barangays where motor vehicle accidents usually happen, from the year 2016-2020: Barangay San Jose had (67) motor accidents, Poblacion (61), Monte Alegre (31), Libertad (31), Anonang (26), Balintawak (20), La Victoria (18), Romarate (18), Kahayagan East (15), Commonwealth

(14), Kahayagan West (12), Montela (12), Campo Uno (7), Lubid (7), Inasagan (6), La Paz (6), San Juan (4), Lantungan (4), Alang-Alang (3), Cabilinan (3), Mahayahay (3), Sapa Luboc (2), and Kauswagan (1), Aurora, Zamboanga Del Sur.

8. Based on the survey, there were a total of sixty-nine (69) accident in the year 2016, ninety-one (91) in the year 2017, seventy-six (76) in the year 2018, one hundred two (102) in the year 2019, and there was a total of thirty-six (36) in the year 2020.

9. Based on the trend of specific violation in Aurora, ZDS, the direction becomes symmetric on either side of the median, showing a mirrored-shape and would only approximate the trend expected with limited observation within January 2016 to November 2020 with a total of 374 counts the shape of the trend to be symmetric. Based on the trend on the common motor vehicle accidents from the year 2016-2020, trend result decreased in year 2016, increased in year 2017, decreased in year 2018, increased in year 2019 and decreased in year 2020.

## **Conclusions**

1. According to the study results, the researcher concluded that drivers who lack experience and who are old enough to drive are pointed out as the cause of escalating accident rates. Our drivers have to bear in mind the safety and security while driving on the road.

2. The researcher concluded that and will only approximate the trend of the occurrence of specific violation in the municipality of Aurora, ZDS, the trend expected with limited observation within January 2016 to November 2020 with a total of 374 counts the shape of the trend to be symmetric by using Binomial Distribution.

3. Drivers who want to obtain the license must have enough experience and knowledge about the traffic signs and rules.

4. Drivers sometimes forget the rules and regulations for safe driving implemented by our National Government.

### **Possible Solution**

1. There is no specific or straightforward solution to the problem of motor vehicle accidents. All of us need to keep the basic rules and laws. People need to be aware of accidents at any time and anywhere. Individuals cannot solve this problem. We all have to work on it as one nation to solve it. Only one or two people keeping the warnings in their mind won't help that much to prevent the accidents. Everyone should obey and follow the rules. That's why there are rules, to keep them. However, people think lightly about the traffic laws. They think of driving as their daily routine. This mistaken thought would lead not only them but other people to death. Drivers sometimes forget the rules and regulations for safe driving implemented by our National Government.

2. Issue that needs to be considered to curb accidents are policies made by the government to make sure that road is well constructed and maintained. In addition, enforcement of appropriate legislation ensures that all commercial and private drivers should be well trained before they attain a driving license to drive on the street. Furthermore, the passenger should also be vigilant enough to check drivers when they are overspeeding and driving under the influence of alcohol. Police can play a pivotal role in decreasing the ratio of accidents.

3. Drivers must see road markings to reduce road accidents, control traffic and obstructions to ensure safe driving. They also support safe pedestrian crossing; that is why all

people driving and who want to learn how to guide should carefully know all the markings, signs, and precautions. It is always important to drive safely.

4. Every driver should do not speed while driving their vehicles. This is the main reason that contributes to road accidents happen in our country. The government should introduce deterrence to reduce the accident on our road. For instance, the government can install speed cameras in accident-prone places. This will help authorities identify and take legal action against the driver who does not follow the speed limit. Besides that, every driver should obey road signs and traffic rules.

5. Police officers should advise every driver to take good care of their vehicle. We have to make sure that our vehicles are in good running condition and rectify them at the earliest before traveling. It's better to be shocked and realize something was wrong while we were in the garage rather than acknowledging the same while driving. If we are not sure about our auto-mobile engineering skills, we should check our vehicle problem by using the help of a mechanic. We should check our vehicle regularly as recommended by the manufacturer. So, we can drive our vehicles and arrive at our destination safely.

### **Recommendations**

Based on the results, the following are recommendations are recommended by the researchers:

1. Introduce Road-safety Education in Schools as a subject right from preschool to University. This approach will produce quality Traffic officers, traffic guides, trainers, Driver Instructors, Online-Traffic monitors, environmentalists, etc.

2. Schools should Introduce Computerized Theory & Hazard Perception test centers nationwide; to test novice drivers before the Practical Test.



3. Successful drivers are then given Certificates that qualify one for the Practical Test on the road. Traffic offenses are recorded against the driver's Certificate/ Permit Number digitally in the database. This measure enhances the need to study the Highway Code (Rules of the Road) and practice the basic skills of a driver before getting on the road for the first time.

4. The Local Government Unit tighten the 'express fine scheme' to violators of the traffic restrictions and rules and; seize defaulters' vehicles. People don't fear the law but fines and losses. Drivers need to abide by the Highway Code.

5. The Local Government Unit Introduce online information free and easily accessible:

- a. For employers to check if a driver is legally fit to drive.
- b. The class of vehicles they can drive, any penalty points, and or disqualifications. Through this, it would minimize and reduce motor vehicle traffic accidents in municipality of aurora, Zamboanga del Sur.

6. Introduce the Mobile Electronic surveillance system "MESS" versus the corruptible, traditional enforcement method of staffing.

7. Citizens who own or drive a single motorcycle in Aurora, Zamboanga Del Sur, should follow the rules and regulations implemented by our National Government.

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