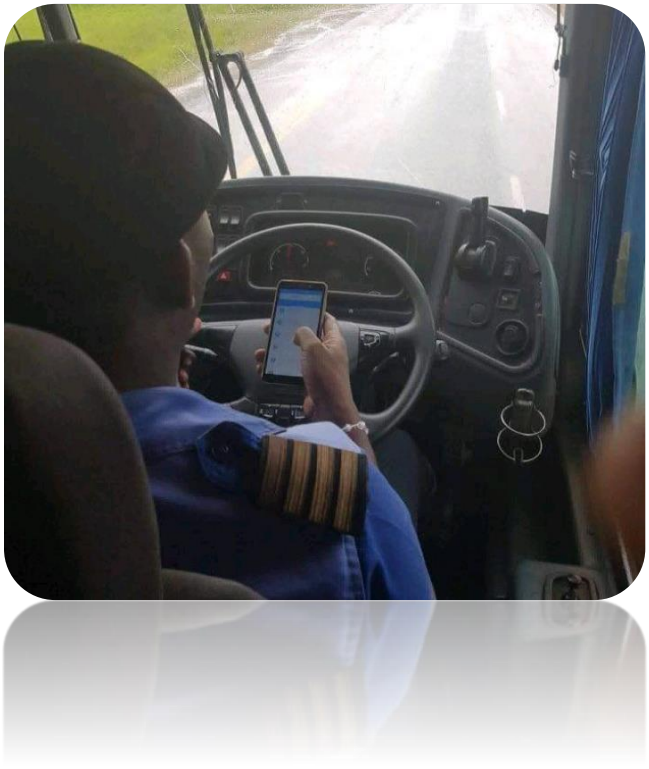
The Road Transport and Safety Agency

Department of Research and Statistics

The Prevalence of Mobile Phone Use While Driving in Zambia



Research Report

Summary

Mobile phone use while driving is a common yet preventable driving risk. Mobile phones have become increasingly integrated into all aspects of our business and personal lives, making it harder to achieve the essential cultural shift towards accepting the dangers of using mobile phones when driving. This observational study was conducted to establish the prevalence of seatbelt use in seven towns in Zambia.

A total of 9,715 vehicles were observed in seven main towns in Zambia. The data was analyzed using descriptive techniques and the chi-square test of independence was used to establish association between variables. Results of the study show that 943 (9.6%) were observed to be using hand held mobile phones while driving. Lusaka City has the highest rates of mobile phone use by drivers in the country. The further revealed that people were more likely to use a mobile phone while the vehicle is in a traffic Jam (56%) than in fast (11%) or moderate (10%) moving traffic. The data reveals that drivers of commercial vehicles had a lower rate of mobile phone usage (7%) than drivers of private vehicles (11%).

Other forms of driver distraction observed during the study include eating or drinking, applying makeup, combing hair, reading, adjusting temperature controls or radio, moving an object in the vehicle, talking to other vehicle occupants, smoking, using devices such laptop computers or tablets.

In order to address this problem, there is need for a well-balanced mix of enforcement, publicity and education in order to bring about the proper risk assessment by drivers of the dangers and consequences of mobile phone use while driving,

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1.0 Introduction

Factors contributing to road traffic crashes (RTCs) generally fall into three categories: environmental, vehicle, and human. The human factor appears in the literature as being the most prevalent. Human factor includes both driving behavior such as speeding, drinking and driving, traffic law violations and impaired skills such as inattention, fatigue, physical disabilities, impaired sensory perception, and so on (Nabi, et al., 2005). Driver distraction has been defined as any activity that can divert a person's attention from the primary purpose of driving (NHTSA, 2015). These activities may include eating, talking to passengers in a vehicle, reading a newspaper, book or text message, adjusting a radio, smoking and using a mobile phone among others. Research conducted in the area of traffic safety indicates that about 25% of car crashes have been caused by driver distraction (Goodman, et al., 1997), furthermore distracted driving has been suggested as a possible contributor to the increase in fatal crashes (Dingus, et al., 2016), and more generally is a source of growing public concern.

According to Regan (2007) driver distractions are classified into the following four categories: visual (e.g. looking away from the road for a non-driving-related task); cognitive (e.g. reflecting on a subject of conversation as a result of talking on the phone – rather than analyzing the road situation); physical (e.g. when the driver holds or operates a device rather than steering with both hands, or dialling on a mobile phone or leaning over to tune a radio that may lead to rotating the steering wheel); auditory (e.g. responding to a ringing mobile phone, or if a device is turned up so loud that it masks other sounds, such as ambulance sirens).

Among the different types of distracted driving, mobile phone use while driving is increasingly becoming a source of concern (WHO, 2011). Despite increasing evidence that mobile phone use while driving presents a risk to both driver and passenger safety many drivers in and around the country, in the context of this research, regularly engage in this behavior (Törnros & Bolling, 2006). Mobile phone use while driving, irrespective of type of handset, is an unsafe driving practice. Some motorists have resorted to the use of mobile phones as hands free devices but research shows that even though drivers consider hands-free mobile phone use as safer than hand-held (White, et al., 2004), it has been found that using a hands-free mobile phone is not significantly safer than using a hand-held mobile phone while driving (McEvoy, et al., 2005).

Studies explain that interacting with a mobile cause's impairment of the driver in a tactical and operational sense as this may lead to a loss of attention, cause inattention blindness, increase mental workload, and decrease vehicle control. Furthermore, the ability to maintain lane discipline is reduced when a driver is using a mobile phone. Driving simulator research has also shown that mobile phone use as one drives can negatively impact the

stability and flow of traffic by increasing reaction (drivers are 50% slower to react when using a mobile phone (Farmer, et al., 2010) and brake response times in unforeseen circumstances (Lamble, et al., 1999), in addition it prompts inappropriate variability in vehicle following distance (Drews, et al., 2009)and increased fluctuations in driving speed (Saifuzzaman, et al., 2015). The stimulation further shows that at the operational level, drivers tend to pay less attention to the vehicle controls and spend less time checking their mirrors when using a mobile phone (Harbluk, et al., 2002)

Various researches have shown that the proportion of drivers using mobile phones while driving has increased over the past 5–10 years, ranging from 1% to up to 11%. The use of hands-free mobile phones is likely to be higher, but this figure is more difficult to ascertain. In many countries the extent of this problem remains unknown, as data on mobile phone use is not routinely collected when a crash occurs.

To combat this unsafe driving practice, Zambian road safety interventions have typically used a deterrence-based approach comprising the combined use of enforcement and educational campaigns. Enforcement in Zambia includes section 69 of the Road Traffic Act No. 11 of 2002, which states that it is an offence to use a handheld mobile phone or any other communication device. The agency has to this effect embarked on a number of measures to curb the use of mobile phones by motorists, sensitization campaigns that attempt to impart motorists with the knowledge of the dangers of using a mobile phone will driving coupled with stricter enforcement of the act such as fast track courts.

The study focuses on the use of mobile phones as a form of driver distraction. The study therefor attempted to establish the mobile phone use prevalence rate amongst drivers in selected towns and cities in Zambia. Results from this study can inform targeted campaigns designed to minimise the occurrence of this illegal and unsafe driving practice.

2.0 Methodology

An observational study was conducted in selected towns of Lusaka, Central, Southern, Copperbelt and Eastern Provinces. This design enabled the researchers to observe the behaviour and situational processes that contribute to unsafe traffic events, while minimising the possible behavioural adaptations due to the road users' recognition of being observed (Haperena, et al., 2018). The study was designed to cover a range of road types and locations. A team consisting of 5 observers was trained and subsequently deployed at each sampling point to ensure a consistent approach to data collection. The observations were done only in the daytime due to security reasons but observation times were spread out throughout the day.

Sites were chosen for the ease with which they allow the survey staff to observe and record mobile phone usage among drivers. For example, sites where traffic lights are installed allow survey staff time to view vehicle occupants clearly.

This helps to ensure that results can be generalized to represent different vehicles and different journeys. This need to observe the car occupants is a limiting factor in carrying out surveys on high-speed roads such as motorways. Five sampling stations per town will be selected to represent the typical community. At each sampling station, every third car will be observed as a means of systematic sampling. A total of 9,715 vehicles were sampled in seven towns. Data will be analyzed using Microsoft Excel and Statistical Package for Social Sciences Software (SPSS).

3.0 Results

3.1 Countrywide Mobile phone prevalence rates

A total of 9,715 vehicles were observed in seven towns in Zambia. Of these 943 (9.6%) were observed to be using hand held mobile phones while driving. Drivers were observed either calling or talking on the phone, holding the phone or texting or surfing. Other forms of distraction such as eating, drinking, smoking, putting on make-up or reading newspapers were also being observed in the study.

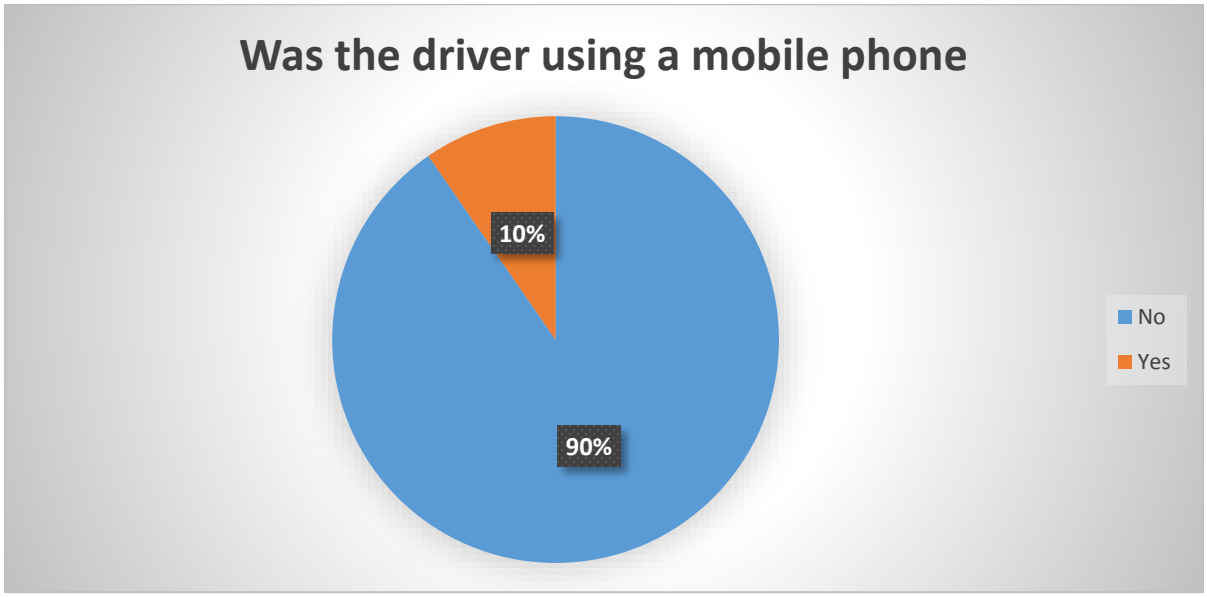

Figure 1:Mobile phone usage rates in Zambia

3.2 Mobile phone use by town

Table 1: Mobile phone usage rates by town

Was the driver using a mobile phone			
Row Labels	No	Yes	Grand Total
Chipata	582	28	610
Choma	972	51	1023
Kabwe	714	101	815
Kitwe	1007	78	1085
Livingstone	1539	105	1644
Lusaka	2477	463	2940
Ndola	1494	104	1598
Grand Total	8785	930	9715

Of the towns observed, Lusaka City recorded the highest rate of mobile phone use while driving. Kabwe, Kitwe and Ndola were in second, third and fourth place respectively. Choma and Chipata recorded the lowest mobile phone use prevalence rate.

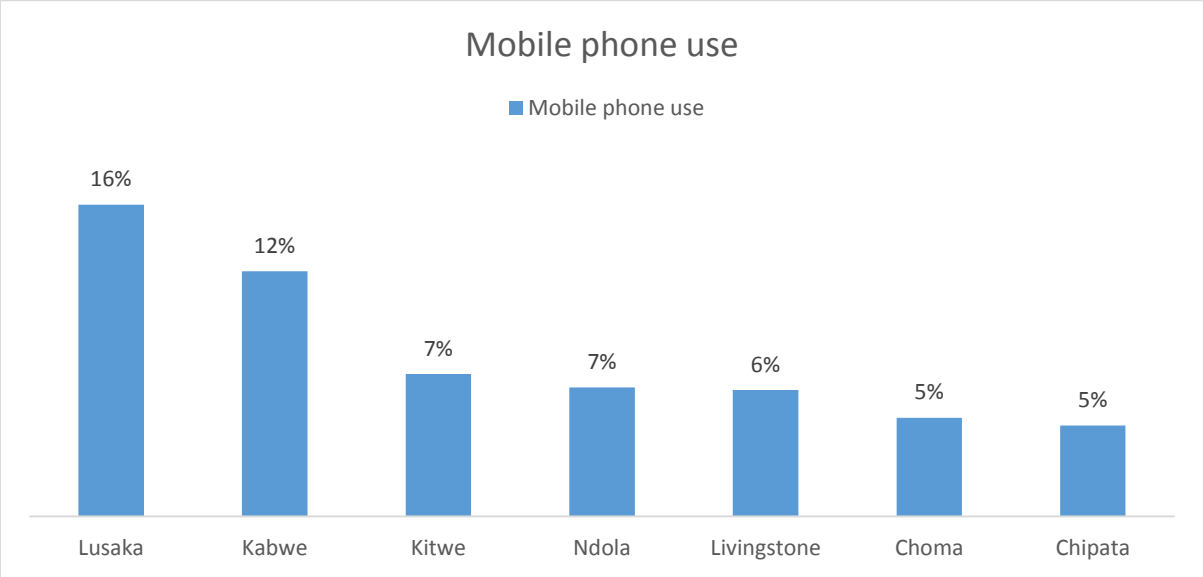

Figure 2: Percentage of mobile phone use be b drivers in Zambia

3.3 Gender

Table 2: Count of mobile phone use by gender

Was the driver using a mobile phone			
Row Labels	**No**	**Yes**	**Grand Total**

Female	1418	176	1594
Male	7354	755	8109
Grand Total	8772	931	9703

The study revealed that 11% (n=176, N=1594) of female drivers were observed to use mobile phones while driving as compared to the 9% (n=755, N=8109) male drivers. Results of the Chi-Square test (χ^2 =4.600324, df = 1, P =0.031966, α = 0.05) also shows that there is significant association between the driver using a mobile phone while driving and the gender of the driver.

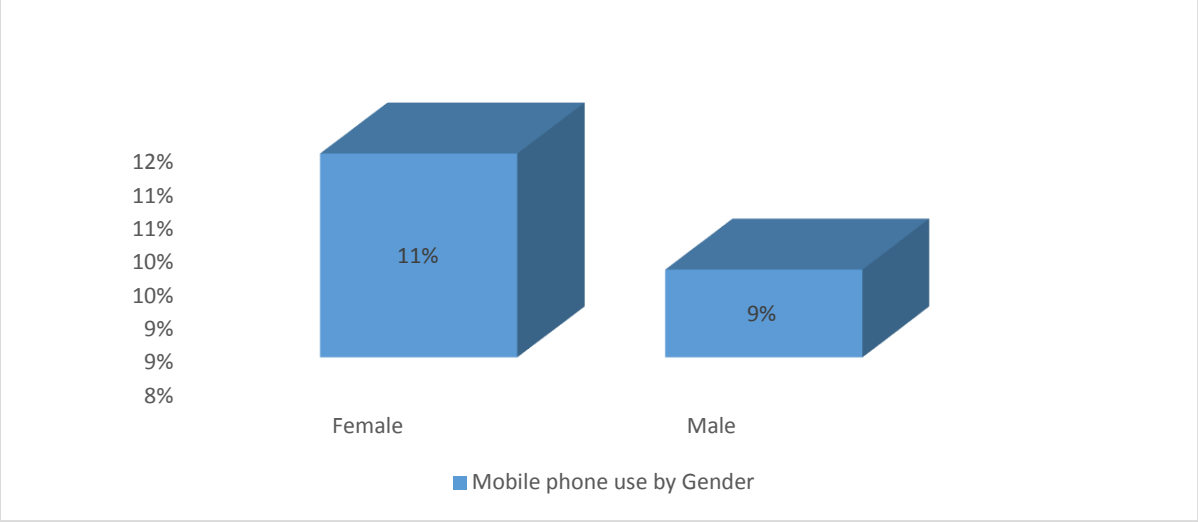

Figure 3: Percentage of mobile phone use by gender

3.4 Traffic Flow

Table 3: Mobile phone use by traffic flow

Row Labels	No	Yes	Grand Total
Jam	13	11	24
Slow	476	111	587
Moderate	2683	254	2937
Fast Moving	5606	555	6161
Grand Total	8778	931	9709

The data collected shows that people were more likely to use a mobile phone while the vehicle is in a traffic Jam (56%) than in fast (11%) or moderate (10%) moving traffic.

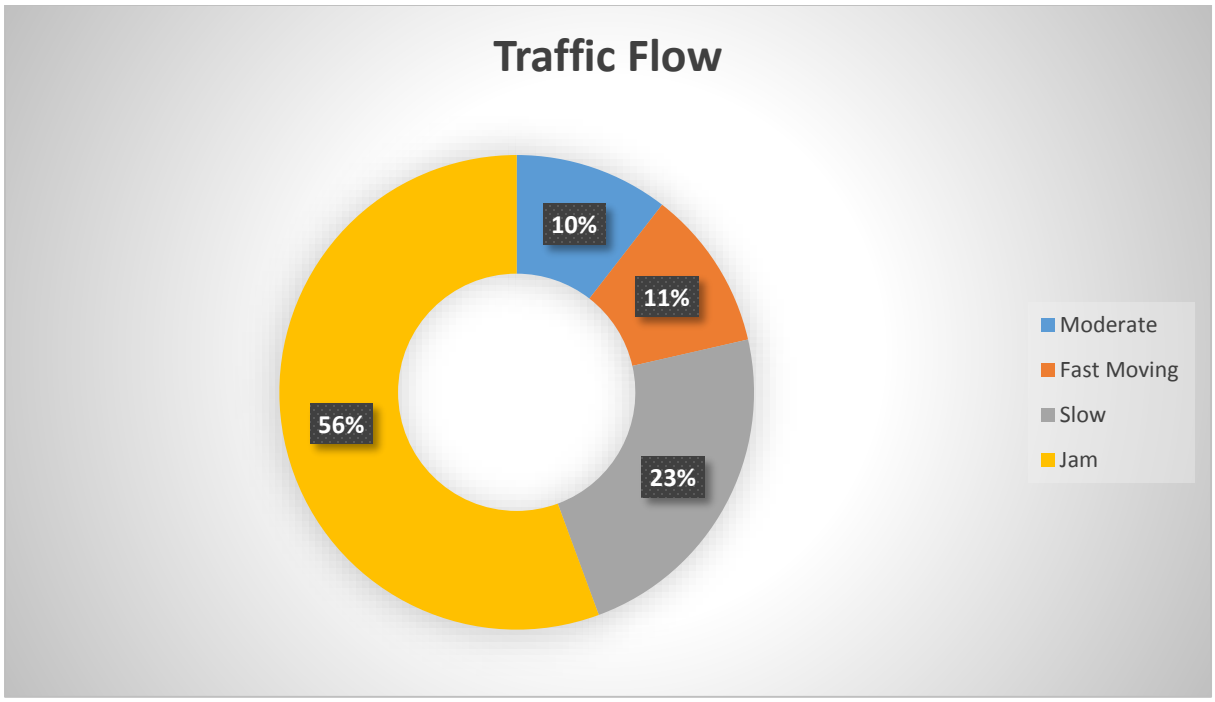

Figure 4: Percentage of mobile phone use by traffic flow

3.5 Type of Vehicle

Table 4: Mobile phone use by type of motor vehicle

Was the driver using a mobile phone					
Row Labels	No		Yes		Grand Total
	Count	%	Count	%	
Commercial/ PSV	2406	93%	173	7%	2579
Private	6425	89%	770	11%	7195

Table 5: Mobile phone use by type of commercial vehicle

Was the driver using a mobile phone			
Row Labels	No	Yes	Grand Total
Goods	816	51	867
Passenger Bus	1054	87	1141
Passenger Taxi	518	33	551
Grand Total	2388	171	2559

The data reveals that drivers of commercial vehicles had a lower rate of mobile phone usage (7%) than drivers of private vehicles (11%). A Chi-Square test ($\chi^2 = 34.73892565, df = 1, P = 3.77017\text{E} - 09, \alpha = 0.05$) also shows that there is significant

association between the driver using a mobile phone while driving and the type of motor vehicle.

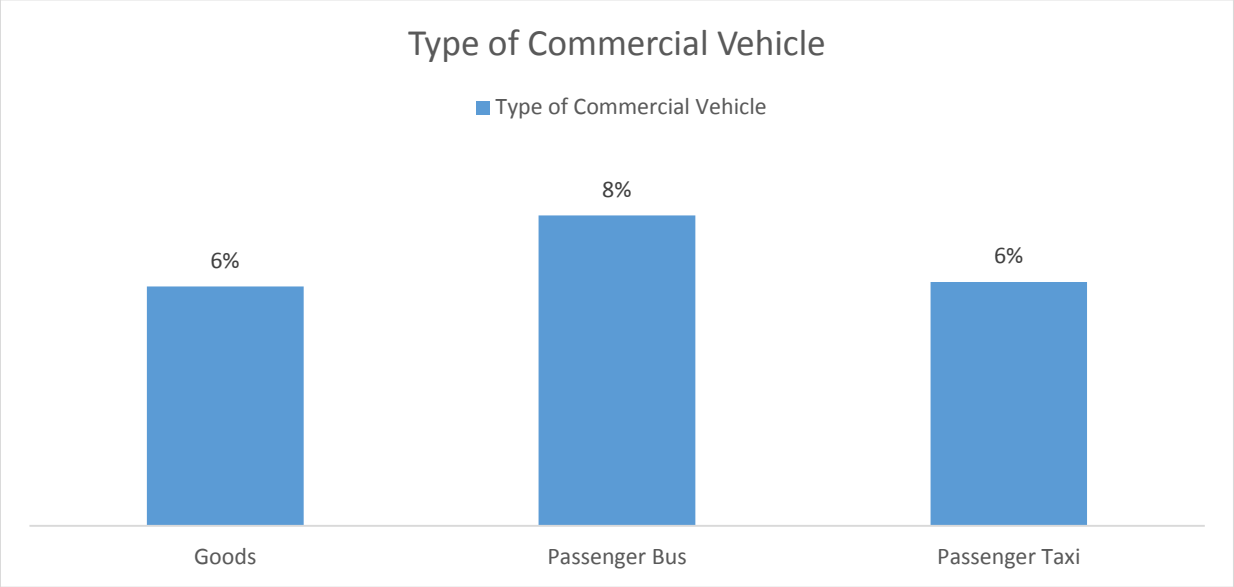

Figure 5: Mobile use among various types of commercial vehicles

Commercial vehicles were further classified as passenger bus, taxi and goods vehicles. Figure 5 above shows that bus drivers had a higher rate of mobile phone use while driving that taxi and goods vehicle drivers.

3.6 Observed use of phone

Table 6: Types of phone uses observed

What was the driver doing on the phone?		
	Count	%
Calling	462	52%
Just holding the phone	189	21%
Texting or surfing	236	27%
Grand Total	887	100%

Table 6 shows that the majority (52%) of drivers were observed calling on the phone. Other phone uses observed were drivers just holding the phone with no observed use (21%) and drivers texting or surfing (27%).

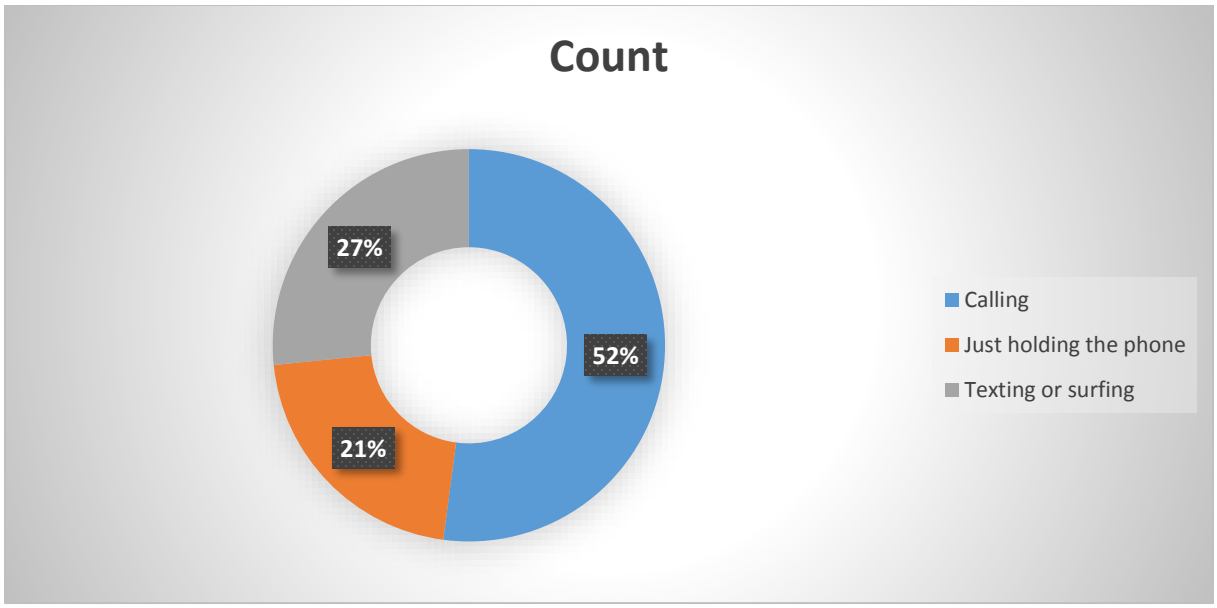

Figure 6: Observed use of mobile device

3.7 Other forms of distraction

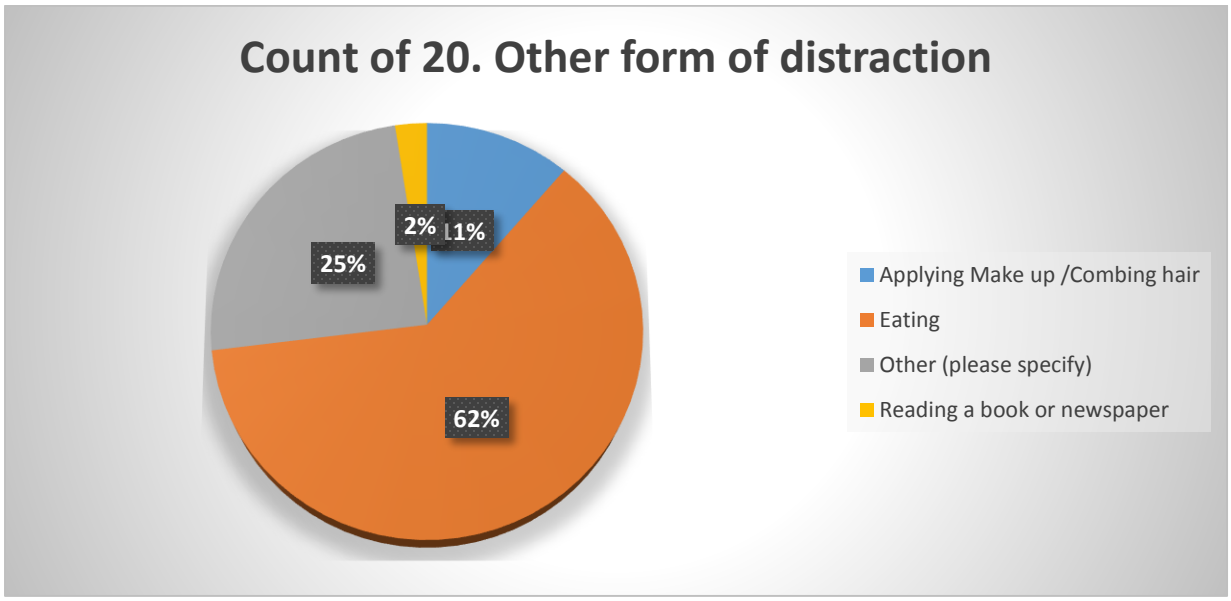

Figure 7: Other forms of driver distraction.

Other forms of driver distraction observed during the study include eating or drinking, applying makeup, combing hair, reading, adjusting temperature controls or radio, moving an object in the vehicle, talking to other vehicle occupants, smoking, using a device such laptop computers or tablets.

4.0 Discussions

The study sort to assess the magnitude of the problem of drivers using hand held mobile phones while driving. The study revealed that 9.6% of drivers across the country were observed to be using hand held mobile phones while driving. This figure is higher than 7.8% prevalence rate in South Africa and the 5% observed in Australia and some other European Countries (WHO, 2011).

Lusaka City has the highest mobile phone prevalence rates in the country. This is due to the fact that Lusaka has the highest vehicle population and as such has more traffic congestion than any other city in Zambia.

The study also revealed that people were more likely to use a mobile phone while the vehicle is in a traffic Jam (56%) than in fast (11%) or moderate (10%) moving traffic. This behavior is natural as people in traffic Jams perceive the risk of being in a crash as low and they seek to perform an activity to entertain themselves.

The data reveals that drivers of commercial vehicles had a lower rate of mobile phone usage (7%) than drivers of private vehicles (11%). Figure 5 above shows that bus drivers had a higher rate of mobile phone use while driving that taxi and goods vehicle drivers.

The majority (52%) of drivers were observed calling on the phone. Other phone uses observed were drivers just holding the phone with no observed use (21%) and drivers texting or surfing (27%). Text messaging or the use of social media in particular result in considerable physical and cognitive distraction, and reduced driving performance (WHO, 2011).

Other forms of driver distraction observed during the study include eating or drinking, applying makeup, combing hair, reading, adjusting temperature controls or radio, moving an object in the vehicle, talking to other vehicle occupants, smoking, using a device such laptop computers or tablets.

5.0 Conclusion and Recommendation

Using a mobile phone while driving has been shown to have a number of detrimental effects on driving behaviour. This is because drivers are not only physically distracted by phoning and driving simultaneously, but they are also cognitively distracted by having to divide their attention between the conversation they are involved in and tasks relating to driving. Mobile phones have become increasingly integrated into all aspects of our business and personal lives, making it harder to achieve the essential cultural shift towards accepting the dangers of using mobile phones when driving.

The study recommends the following:

1. More research be conducted around legislative measures, creative ways of enforcement to ensure a degree of cooperation and a shift in societal perceptions about what behaviour is "acceptable" behind the wheel.
2. Companies and organizations can be encouraged to develop and implement policies on distracted driving for all their employees using company vehicles.
3. Restructure enforcement strategies to take advantage of technologies to support automated enforcement through the detection of radio frequencies and camera detection.
4. Educational campaigns could be designed to clearly define 'distracted driving' and consequences for violations

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