Distracted Driving Experiences between Uber/Lyft Drivers and Recreational Drivers and Impacts to Traffic Safety Part 2

Riya Young

riyasuising@berkeley.edu University of California, Berkeley

UC Berkeley Safe Transportation and Research Education Center (SafeTREC) Collaborative Sciences Center for Road Safety (CSCRS) Graduate Student Fellowship March 24, 2020 (Summer 2019)

ACKNOWLEDGMENTS

Funding for this project was provided by UC Berkeley Safe Transportation and Research Education Center (SafeTREC) and the Collaborative Sciences Center for Road Safety (CSCRS), a U.S. Department of Transportation-funded National University Transportation Center led by the University of North Carolina at Chapel Hill's Highway Safety Research Center.

I wish to also thank Professor Offer Grembek and Professor David Ragland of UC Berkeley SafeTREC for their support and guidance in the Spring and Summer 2019 research projects, in providing inputs and feedback on the original study survey instrument, and in guidance through the UC Berkeley IRB process.

ABSTRACT

Over 30,000 people are killed each year in unintentional injury deaths in motor vehicle traffic, the first or second leading cause of injury deaths in the United States, only after unintentional poisoning for most adults. About 9% of traffic injury deaths are related to distracted driving, a frequent and growing behavior among many drivers. What are people doing when engaging in distracted driving? How does driver behavior affect attentiveness while driving and overall traffic safety? Are Uber and Lyft drivers at more risk in distracted driving due to the nature of their multitasking job?

In my spring 2019 class on Traffic Safety and Injury Control at the University of California, Berkeley, I conducted a primary research survey to compare Uber and Lyft drivers with recreational drivers to discover what they do behind the wheel that may affect driving attention and possibly increase traffic safety risk. In summer 2019 I undertook a research project to continue the spring 2019 research by analyzing the spring research dataset in greater detail to understand more specific cases where driving distractions may occur and conduct further research to find more specific details of distracted driving behavior.

REVIEW OF SPRING 2019 RESEARCH and SCOPE OF SUMMER 2019 RESEARCH

In spring 2019 as a class project for my Traffic Safety and Injury Control class at UC Berkeley, I conducted a primary research survey and collected over 100 responses in an online survey with drivers nationwide about their driving behaviors and actions. About one third of the respondents were identified as Uber or Lyft drivers, and the remainder as recreational, or casual drivers who spend almost all their time driving unpaid, for commuting or for family or personal travel. The objective of the study was to determine if there were any specific differences in results between the two groups, that might suggest Uber/Lyft drivers to be safer or less safe than recreational drivers based on their driving behaviors and actions.

The spring 2019 study received 157 responses from drivers age 18 and over across the Unites States, mostly in California, but some on the east coast. 46 of the responses were incomplete due to ending the survey before finishing or missing a significant number of responses, as the

survey took an estimated 15-20 minutes to complete. Only 108 responses were further analyzed, with the resulting group including 33 respondents identified as Uber/Lyft drivers, 75 as recreational drivers, and one driver clearly identified as a commercial (truck or other commercial vehicle) driver and excluded from the analysis. Table 1 shows a breakdown of the drivers by gender. Figures and totals in the table are lower than the 33 and 75 reported as some drivers did not indicate their genders.

The summary of results after analyzing the respondents' data led to the following findings: **Uber/Lyft drivers, compared to Recreational drivers:**

- Have less overall driving experience
- Drive A LOT more each day and every week
- Pay MORE attention to external events in traffic
- Pay LESS attention to internal events, EXCEPT for passenger interaction (MORE)
- Use Navigation and Other Apps MORE, but email, text, and phone LESS
- Use Phone Mounts MORE, and Cup Holders and Purse LESS for phone placement
- Uber/Lyft Driver App requires significant attention, used OFTEN WHILE driving
- Encounter MORE "conflicts" and "near misses" daily

These findings suggest that Uber/Lyft drivers MIGHT be safer than recreational drivers, or at least exhibit safer driving behaviors and practices, likely due to their obligation to professionally and responsibly in the presence of paid passengers.

The spring 2019 research survey included questions in the categories of:

- Demographics
- # of hours driven per day and per week
- % Attention required in specific External events 12 events
- % Attention required in specific Internal events, and while Moving, Stopped, Parked, or Never done 12 events
- % Attention required in specific Mobile Phone actions, and while Moving, Stopped, Parked, or Never done 7 actions
- % Attention required in specific Uber/Lyft Driver App actions (U/L drivers only), and while Moving, Stopped, Parked, or Never done 7 actions
- Frequency of Traffic Conflicts or Near Misses (# incidents / day)
- Frequency of Collisions with Objects, Pedestrians, Bicycles/Scooters, Vehicles (# incidents / last 3 years)

The spring 2019 study analyzed basic statistics of averages and highlights of responses in the above categories. The study did not include:

- Analysis of Demographics
- Analysis of While Driving, While Stopped, While Parked, Never fields

This summer 2019 research study uses the same dataset from the spring 2019 research and continues analysis and reporting where the spring 2019 study stopped, in analysis of the following areas:

- Correlations between all fields
- Correlations within and across usage types, for example, External-External, Internal-Mobile Phone Usage, etc.
- PivotTable Analysis into While Driving, While Stopped, While Parked, Never fields
- Correlation and Regression Analysis into Collisions results fields

The dataset exists as a single Microsoft Excel workbook with the survey data contained in a single table. Multiple "tabs" were created to clean up and normalize the data into quantitative values acceptable for statistical analysis tools. The Microsoft Excel Data Analysis Toolpak was and basic Excel functions were used in the analysis of the dataset.

FINDINGS OF SUMMER 2019 RESEARCH

Correlations Between All Fields

The first set of analysis looked into correlations between all fields in the entire dataset.

Figure 2 shows an overall view of a table of resulting cross-correlations computed between all the fields against each other. Cells were automatically color-coded to indicate magnitudes of strong correlation (blue, closer to 1.0) or negative correlation (red, closer to -1.0). Areas of interest were circled to be analyzed and discussed further.

This section noted that all correlations found were mostly mild, with the notable correlation coefficients mostly in the ranges of -0.5 to -0.3, and 0.3 to 0.5. Only in a few cases were the correlation coefficients strong, with values less than -0.7 or greater than 0.7.

The following sections were noted to be of possible interest:

In Figure 3, Correlations (1), we see the following: Fields:

- Q7_REC Recreational Driver. 1 or 0.
- Q7_UL Uber/Lyft Driver. 1 or 0.

With fields:

- Q10 For a typical week of driving, about how many hours do you drive on average? (number of hours/week)
- Q10_HRSWK Hours per Week Driving
- Q11_1 Hours Monday
- Q11_2 Hours Tuesday
- Q11_3 Hours Wednesday
- Q11_4 Hours Thursday
- Q11_5 Hours Friday
- Q11_6 Hours Saturday
- Q11_7 Hours Sunday

Drivers identified as Recreational Drivers (value 1 in field Q7_REC) had negatively correlated and lower values for hours driving per week and per each day of the week. Drivers identified as Uber/Lyft Drivers (value 1 in field Q7_UL) had positively correlated and higher values for hours driving per week and per each day of the week.

In Figure 4, Correlations (2), we see the following:

For Fields:

- Q9 About how many years have you been actively driving, including all forms of driving, recreational and for-hire?
- Q9_YD Years Driving

With fields:

٠

- Q32 Age First Driver License
 - Q33 Age Now

Drivers reporting a higher number of years driving were negatively correlated with their Age at First Driver License, i.e. more years driving meant smaller age at first driver license. Drivers reporting a higher number of years driving were positively correlated with their Age Now, e.g. more years driving meant a higher age now.

In Figure 5, Correlations (3), we see the following: For Field:

Q26 Collision Object

With field:

• Q29 Collision Other Vehicle

These two fields with positively correlated. Drivers who responded with higher numbers of Collisions with Objects also responded with higher numbers of Collisions with Other Vehicles.

In Figure 6, Correlations (4), we see the following: For Field:

• Q14_10 Internal Events 10. Talking to or caring for other passengers

With fields:

- Q7_UL Uber/Lyft Driver. 1 or 0.
- Q10 For a typical week of driving, about how many hours do you drive on average? (number of hours/week)
- Q10_HRSWK Hours per Week Driving
- Q11_1 Hours Monday
- Q11_2 Hours Tuesday
- Q11_3 Hours Wednesday
- Q11_4 Hours Thursday
- Q11_5 Hours Friday
- Q11_6 Hours Saturday
- Q11_7 Hours Sunday
- Q23 Conflicts per Day

• Q24 Near Misses per Day

The internal event of Talking to or Caring for Other Passengers was positively correlated with all the other named fields. Drivers who spent more attention for this activity are likely having a higher distraction level for this activity, indicating that they are likely an Uber/Lyft Driver, tend to report a higher number of hours driven per week and per day, and indicating they are likely to encounter a higher number of Conflicts per day and Near Misses per day.

In Figure 7, Correlations (5), we see the following: For Fields:

- Q9 About how many years have you been actively driving, including all forms of driving, recreational and for-hire?
- Q9_YD Years Driving

With fields:

- Q16_1 Mobile Phone Usage 1. Making or receiving phone calls
- Q16_2 Mobile Phone Usage 2. Reading email messages
- Q16_3 Mobile Phone Usage 3. Sending email messages by typing or voice
- Q16_4 Mobile Phone Usage 4. Reading text messages
- Q16_5 Mobile Phone Usage 5. Sending text messages by typing or voice
- Q16_6 Mobile Phone Usage 6. Using navigation apps
- Q16_7 Mobile Phone Usage 7. Using other apps
- Q20_1 UL Driver App 1. Setting a destination in the Uber/Lyft driver app.
- Q20_2 UL Driver App 2. Looking at the Uber/Lyft driver app to watch for new ride requests.
- Q20_3 UL Driver App 3. Looking at the Uber/Lyft driver app to understand rider and pickup address details.
- Q20_4 UL Driver App 4. Looking at the Uber/Lyft driver app to follow navigation directions.
- Q20_5 UL Driver App 5. Using the Uber/Lyft driver app to contact rider by phone or text message.
- Q20_6 UL Driver App 6. When arriving at the pickup address, locating the rider and finding a safe place to park.
- Q20_7 UL Driver App 7. When arriving at the destination, finding a safe place to stop to drop off rider.

We see that the number of years driving is negatively correlated with responses to the questions in the Mobile App Usage and Uber/Lyft Driver App Usage categories. A higher number of years driven, perhaps indicating longer driving experience, corresponds to a slightly negative correlation, or lower attention required for actions involved in using Mobile Apps or the Driver App.

In Figure 8, Correlations (6), we see the following: For Fields:

Q23 Conflicts per Day

Q24 Near Misses per Day

With Fields:

٠

- Q14_10 Internal Events 10. Talking to or caring for other passengers
- Q14_11 Internal Events 11. Getting and using other items inside the car
- Q14_12 Internal Events 12. Thinking about other things besides driving
- Q16_2 Mobile Phone Usage 2. Reading email messages
- Q16_3 Mobile Phone Usage 3. Sending email messages by typing or voice
- Q16_4 Mobile Phone Usage 4. Reading text messages
- Q16_5 Mobile Phone Usage 5. Sending text messages by typing or voice
- Q16_6 Mobile Phone Usage 6. Using navigation apps
- Q16_7 Mobile Phone Usage 7. Using other apps
- Q20_3 UL Driver App 3. Looking at the Uber/Lyft driver app to understand rider and pickup address details.
- Q20_4 UL Driver App 4. Looking at the Uber/Lyft driver app to follow navigation directions.
- Q20_5 UL Driver App 5. Using the Uber/Lyft driver app to contact rider by phone or text message.
- Q20_6 UL Driver App 6. When arriving at the pickup address, locating the rider and finding a safe place to park.

We see that the number of Conflicts and Near misses per day are slightly positively correlated with certain responses in the Internal Events, Mobile Phone Usage, and Uber/Lyft Driver App Usage categories. This implies that a higher percentage of attention required for these Internal Events and for taking certain actions in Mobile Phone and Driver App Usage may related to a higher level of collisions and near misses experienced by the driver.

In Figure 9, Correlations (7), we see the following: For Field:

- Q28 Collision Bicycle Scooter Skateboard
 With Fields:

 Q13_12 External Events 12. Looking at interesting cars, objects, or people alongside the roadway.
 Q14_1 Internal Events 1. Setting internal temperature or climate (AC, fan,
 - defroster)
 - Q14_2 Internal Events 2. Adjusting mirrors
 - Q14_3 Internal Events 3. Using windshield wipers
 - Q14_4 Internal Events 4. Following directions on the car navigation system (not mobile phone)
 - Q14_5 Internal Events 5. Using voice commands to control car features
 - Q14_6 Internal Events 6. Using voice commands to listen/dictate email messages (not using phone directly)
 - Q14_7 Internal Events 7. Eating food or drinks
 - Q14_8 Internal Events 8. Grooming yourself or using makeup

- Q14_9 Internal Events 9. Listening to the radio, news, music or other passive sounds
- Q14_10 Internal Events 10. Talking to or caring for other passengers
- Q16_1 Mobile Phone Usage 1. Making or receiving phone calls
- Q16_2 Mobile Phone Usage 2. Reading email messages
- Q16_3 Mobile Phone Usage 3. Sending email messages by typing or voice
- Q16_4 Mobile Phone Usage 4. Reading text messages
- Q16_5 Mobile Phone Usage 5. Sending text messages by typing or voice
- Q16_6 Mobile Phone Usage 6. Using navigation apps
- Q16_7 Mobile Phone Usage 7. Using other apps
- Q20_1 UL Driver App 1. Setting a destination in the Uber/Lyft driver app.
- Q20_2 UL Driver App 2. Looking at the Uber/Lyft driver app to watch for new ride requests.
- Q20_3 UL Driver App 3. Looking at the Uber/Lyft driver app to understand rider and pickup address details.
- Q20_4 UL Driver App 4. Looking at the Uber/Lyft driver app to follow navigation directions.
- Q20_5 UL Driver App 5. Using the Uber/Lyft driver app to contact rider by phone or text message.
- Q20_6 UL Driver App 6. When arriving at the pickup address, locating the rider and finding a safe place to park.
- Q20_7 UL Driver App 7. When arriving at the destination, finding a safe place to stop to drop off rider.

We see that the number of Collisions with a bicycle, scooter, or skateboard is slightly positively correlated to the responses, or attention required for the questions in the Internal Events, Mobile Phone Usage, and Uber/Lyft Driver App Usage categories. A higher attention required is being reported in these categories along with slightly higher numbers of collisions with a bicycle, scooter, or skateboard.

In Figure 10, Correlations (8), we see the following:

For Fields:

- Q29 Collision Other Vehicle
- Q31 Gender Response Male or Female or Other
- Q32 Age First Driver License
- Q33 Age Now

With Fields:

- Q16_6 Mobile Phone Usage 6. Using navigation apps
- Q16_7 Mobile Phone Usage 7. Using other apps
- Q20_1 UL Driver App 1. Setting a destination in the Uber/Lyft driver app.
- Q20_2 UL Driver App 2. Looking at the Uber/Lyft driver app to watch for new ride requests.
- Q20_3 UL Driver App 3. Looking at the Uber/Lyft driver app to understand rider and pickup address details.

- Q20_4 UL Driver App 4. Looking at the Uber/Lyft driver app to follow navigation directions.
- Q20_5 UL Driver App 5. Using the Uber/Lyft driver app to contact rider by phone or text message.
- Q20_6 UL Driver App 6. When arriving at the pickup address, locating the rider and finding a safe place to park.
- Q20_7 UL Driver App 7. When arriving at the destination, finding a safe place to stop to drop off rider.

We see that the first four fields above are slightly negatively correlated with the responses for app usage in Mobile Phone Usage and all responses for Uber/Driver App Usage. That suggests that a lower attention required for app usage is related to a higher response of Collisions with Other Vehicles, female gender (2, vs. 1 for male), a higher age at time receiving the driver license and a higher age now, perhaps suggesting less experience driving.

In Figure 11, Correlations (9), we see the following:

For Fields:

- Q16 2 Mobile Phone Usage 2. Reading email messages Q16 3 Mobile Phone Usage 3. Sending email messages by typing or voice With Fields: Q13_1 External Events 1. Watching the road and surroundings in light traffic during daytime. External Events 2. Watching the road and surroundings in heavy Q13 2 ٠ traffic during peak rush hour. External Events 3. Making a left turn at an intersection with Q13 3 moderate traffic. Q13 4 External Events 4. Making a right turn at an intersection with pedestrian traffic.
 - Q13_5 External Events 5. Merging into traffic from on onramp or another street with moderate traffic.

We see that the attention required in reading or sending email messages in Mobile Phone Usage is negatively correlated with most of the External Events, suggesting that a higher attention required for reading or sending email is correlated with a lower attention required for most of the driving events in navigating around the roads. This finding may suggest that normal driving is easier to achieve with lower attention required, but reading or sending emails while driving would require more attention.

In Figure 12, Correlations (10), we see the following: For Fields:

- Q13_6 External Events 6. Maneuvering among other vehicles.
- Q13_7 External Events 7. Maneuvering among pedestrians.
- Q13_8 External Events 8. Maneuvering around potholes or objects on the road.

• Q13_9 External Events 9. Encountering and reacting to sudden traffic changes.

With Fields:

- Q16 7 Mobile Phone Usage 7. Using other apps • • Q20 1 UL Driver App 1. Setting a destination in the Uber/Lyft driver app. • Q20_2 UL Driver App 2. Looking at the Uber/Lyft driver app to watch for new ride requests. Q20 3 UL Driver App 3. Looking at the Uber/Lyft driver app to understand rider and pickup address details. • Q20 4 UL Driver App 4. Looking at the Uber/Lyft driver app to follow navigation directions. Q20_5 UL Driver App 5. Using the Uber/Lyft driver app to contact rider by
- Q20_6 UL Driver App 6. When arriving at the pickup address, locating the rider and finding a safe place to park.

We see that these four External Events of maneuvering in traffic is negatively correlated with using other apps while driving and most of the Uber/Lyft Driver App actions. This suggests that even with lower attention required when maneuvering around roads while driving, more attention is still required for most app usage while driving.

In Figure 13, Correlations (11), we see the following:

For Fields:

- Q13_11 External Events 11. Looking at billboards or advertisements along the roadway.
- Q13_12 External Events 12. Looking at interesting cars, objects, or people alongside the roadway.
- Q14_1 Internal Events 1. Setting internal temperature or climate (AC, fan, defroster)
- Q14_2 Internal Events 2. Adjusting mirrors
- Q14_3 Internal Events 3. Using windshield wipers

With Fields:

- Q14_10 Internal Events 10. Talking to or caring for other passengers
- Q14_12 Internal Events 12. Thinking about other things besides driving
- Q16_4 Mobile Phone Usage 4. Reading text messages
- Q16_5 Mobile Phone Usage 5. Sending text messages by typing or voice
- Q16_6 Mobile Phone Usage 6. Using navigation apps
- Q16_7 Mobile Phone Usage 7. Using other apps
- Q20_1 UL Driver App 1. Setting a destination in the Uber/Lyft driver app.
- Q20_2 UL Driver App 2. Looking at the Uber/Lyft driver app to watch for new ride requests.
- Q20_3 UL Driver App 3. Looking at the Uber/Lyft driver app to understand rider and pickup address details.

- Q20_4 UL Driver App 4. Looking at the Uber/Lyft driver app to follow navigation directions.
- Q20_5 UL Driver App 5. Using the Uber/Lyft driver app to contact rider by phone or text message.
- Q20_6 UL Driver App 6. When arriving at the pickup address, locating the rider and finding a safe place to park.
- Q20_7 UL Driver App 7. When arriving at the destination, finding a safe place to stop to drop off rider.

We see that these particular External Events, looking at distractions along roadside, are positively correlated with Internal Events of taking care of passengers, thinking about other things, and most of the Mobile Phone Usage and Uber/Lyft Driver App actions, as all these events and actions become more involved and require more attention to process.

Correlations Across Groups / Categories

Figures 13 to 21 show the correlation results across categories or groups of questions. Specific blocks of correlation coefficients were highlighted where noticeable trends were visible, both positively and negatively correlated. Most noticeable correlations were mild, with coefficient magnitudes between -0.5 and 0.5.

Only in a few areas mentioned below were the correlations considered stronger, with absolute values greater than 0.5:

In Figure 16, Uber/Lyft Driver App Usage vs. External Events: Field:

• Q13_12 External Events 12. Looking at interesting cars, objects, or people alongside the roadway.

With Fields:

- Q20_1 UL Driver App 1. Setting a destination in the Uber/Lyft driver app.
- Q20_2 UL Driver App 2. Looking at the Uber/Lyft driver app to watch for new ride requests.
- Q20_3 UL Driver App 3. Looking at the Uber/Lyft driver app to understand rider and pickup address details.

These fields appear to be positively correlated with coefficients at least 0.5. This trend suggests that drivers who spend more attention looking at objects on the roadside may also spend more attention looking at the Uber/Lyft Driver App when using the specified features.

In Figure 19, Mobile Phone Usage vs. Internal Events: Fields:

• Q14_5 Internal Events 5. Using voice commands to control car features

- Q14_6 Internal Events 6. Using voice commands to listen/dictate email messages (not using phone directly)
- Q14_8 Internal Events 8. Grooming yourself or using makeup
- Q14_11 Internal Events 11. Getting and using other items inside the car

With Fields:

- Q16_1 Mobile Phone Usage 1. Making or receiving phone calls
- Q16_2 Mobile Phone Usage 2. Reading email messages
- Q16_3 Mobile Phone Usage 3. Sending email messages by typing or voice
- Q16_4 Mobile Phone Usage 4. Reading text messages
- Q16_5 Mobile Phone Usage 5. Sending text messages by typing or voice
- Q16_6 Mobile Phone Usage 6. Using navigation apps
- Q16_7 Mobile Phone Usage 7. Using other apps

These specific fields in Internal Events appear to be strongly correlated with most of the Mobile Phone Usage actions, with coefficients greater than 0.5 in many cases. This trend suggests that certain events, like using voice commands within the car, grooming oneself, or getting and using items within the car are more likely to require more attention to process, as well as requiring more attention in most actions using the mobile phone, for the same drivers.

In Figure 20, Uber/Lyft Driver App Usage vs. Internal Events: Fields:

- Q14_1 Internal Events 1. Setting internal temperature or climate (AC, fan, defroster)
- Q14_2 Internal Events 2. Adjusting mirrors
- Q14_3 Internal Events 3. Using windshield wipers
- Q14_5 Internal Events 5. Using voice commands to control car features
- Q14_9 Internal Events 9. Listening to the radio, news, music or other passive sounds

With Fields:

- Q20_1 UL Driver App 1. Setting a destination in the Uber/Lyft driver app.
- Q20_2 UL Driver App 2. Looking at the Uber/Lyft driver app to watch for new ride requests.
- Q20_3 UL Driver App 3. Looking at the Uber/Lyft driver app to understand rider and pickup address details.
- Q20_4 UL Driver App 4. Looking at the Uber/Lyft driver app to follow navigation directions.

These fields show strong correlation with each other, with coefficients greater than 0.5, especially with the action for following navigation directions in the Uber/Lyft Driver App. This trend suggests more attention is required for all these events and actions together within the same driver, and that such events and actions are more likely to be related in terms of attention required.

In Figure 21, Uber/Lyft Driver App Usage vs. Mobile Phone Usage: Fields:

- Q16_1 Mobile Phone Usage 1. Making or receiving phone calls
- Q16_2 Mobile Phone Usage 2. Reading email messages
- Q16_4 Mobile Phone Usage 4. Reading text messages
- Q16_5 Mobile Phone Usage 5. Sending text messages by typing or voice
- Q16_6 Mobile Phone Usage 6. Using navigation apps
- Q16_7 Mobile Phone Usage 7. Using other apps

With Fields:

- Q20_1 UL Driver App 1. Setting a destination in the Uber/Lyft driver app.
- Q20_2 UL Driver App 2. Looking at the Uber/Lyft driver app to watch for new ride requests.
- Q20_3 UL Driver App 3. Looking at the Uber/Lyft driver app to understand rider and pickup address details.
- Q20_4 UL Driver App 4. Looking at the Uber/Lyft driver app to follow navigation directions.
- Q20_5 UL Driver App 5. Using the Uber/Lyft driver app to contact rider by phone or text message.

We see that there is strong correlation noted between these fields, with coefficients greater than 0.5. This suggests that more attention is required between certain pairs of these fields in actions in Mobile Phone Usage and Uber/Lyft Driver App Usage, according to Figure 21. This trend suggests that more attention is required from the driver from using the apps, taking away some attention from simple driving on the road.

Pivot Table Analysis on Movement Actions

Figures 22 to 29 show results from Pivot Table analysis on Internal Events, Mobile Phone Usage, and Uber/Lyft Driver App Usage across the fields While Moving, While Stopped in Traffic, While Parked at Curb, or Never Do While Driving, which are asked for each question in those categories.

The Pivot Table results show for each Movement Action (Moving, Stopped, Parked, or Never), the corresponding average attention required for that question, and the average counts for Questions 23-29 which directly asks the respondents about their histories of:

- Q23 Number of Conflicts/Day encountered
- Q24 Number of Near Misses/Day encountered
- Q26 Number of Collisions w/Objects in past 3 years
- Q27 Number of Collisions w/Pedestrians in past 3 years
- Q28 Number of Collisions w/Bikes/Scooters/Skateboards in past 3 years
- Q29 Number of Collisions w/Other Vehicles in past 3 years

All results are also detailed according to Recreational/Casual drivers vs. Uber/Lyft drivers to compare the differences.

A few minor trends were observed in these Pivot Table analyses and were highlighted in the Figures. Such trends are noted as follows:

Figure 22 Internal Events (1-3) shows some basic trends on responses for Internal Events:

- Most people do these actions (Internal Events) While Driving in Traffic
- Fewer people do these actions While Stopped in Traffic
- Even fewer people do these actions While Parked at the Curb
- Very few people Never Do these actions while driving
- This is expected as Internal Events are generally defined as actions done within the car while driving.

Figure 22 Internal Events (1-3) also shows that for Conflicts and Near Misses/Day:

• Uber/Lyft drivers have a higher number of Conflicts and Near Misses/Day compared to Recreational/Casual drivers.

Figure 23 Internal Events (4-6) shows that for the action of Using Voice Commands to Control Car Features or to Do Email, most Recreational/Casual drivers Never use Voice Commands while driving at all, especially when compared to Uber/Lyft drivers.

Figure 24 Internal Events (7-9) shows several interesting trends:

For Q14_7 Eating or Drinking in the Car:

• Many Recreational/Casual drivers report Eating or Drinking in the car While Moving, While Stopped, and While Parked, while very few Uber/Lyft drivers report doing so while driving, as doing so appears unprofessional in the presence of a paid passenger, according to driver protocol.

For Q14_8 Grooming or Doing Makeup in the Car:

- Uber/Lyft drivers report a higher Collision rate with Objects and with Other Vehicles while doing this action While Driving, While Stopped, and While Parked, compared to Recreational/Casual drivers.
- Many more Recreational/Casual drivers do report doing this action While Driving, While Stopped, and While Parked, compared to Uber/Lyft drivers, as doing this action is considered unprofessional in the presence of a paid a passenger, according to driver protocol.

Figure 26 Mobile Phone Usage (1-3) shows that for the actions of Reading or Sending Email:

• Most Recreational/Casual drivers Never Read or Send Email while driving, compared to Uber/Lyft drivers.

Figure 27 Mobile Phone Usage (4-7) shows that for the actions of Reading or Sending Text Messages:

• Even though many more Recreational/Casual drivers Never Read or Send Text Messages while driving, compared to Uber/Lyft drivers.

• But still many more Recreational/Casual drivers do the action While Driving, While Stopped, and While Parked, compared to Uber/Lyft drivers. This action is also considered unprofessional by Uber/Lyft drivers in the presence of a paid passenger.

Figure 27 Mobile Phone Usage (4-7) shows that for the actions of Using Other Mobile Phone Apps:

• Many more Recreational/Casual drivers Never Use Other Apps while driving, compared to Uber/Lyft drivers.

Regression Analysis on Collisions Fields

A number of Linear Regressions were also performed on the following fields:

- Q31 Gender Response Male or Female or Other
- Q31_3_TEXT Gender Other Text
- Q32 Age First Driver License
- Q33 Age Now
- While Driving
- While Parked
- While Stopped
- Never While Driving

To determine if they have any effect or contribution to the resulting fields:

- Q23 Conflicts per Day
- Q24 Near Misses per Day
- Q26 Collision Object
- Q27 Collision Pedestrian
- Q28 Collision Bicycle Scooter Skateboard
- Q29 Collision Other Vehicle

13 regression result tables were generated across these field combinations. In some cases the contributing fields showed P-values <0.05, indicating possible significance. However, in many cases, the corresponding coefficients for the field variables showed values extremely small, close to 0, because many values for Collisions in the dataset were small and close to 0. Therefore, the regression analysis did not show any significant or meaningful results to suggest or predict any relationship between the gender, age, or Movement fields with the Collision fields.

SUMMARY

This study in summer 2019 was conducted as a follow-up project to the spring 2019 research project that collected a dataset from drivers nationwide to analyze their driving behaviors and actions to determine if there were any relationships that might suggest the presence of distracted driving.

The findings in this summer 2019 research from the additional analysis of the original dataset suggests mostly the same findings as from spring 2019, but with additional detail on the same trends, describing which particular actions or behaviors are more responsible for those trends.

Many correlations were observed, although most correlations found were mild, with correlation coefficients between -0.5 and 0.5, not strong enough to suggest a strong correlation between fields.

Some of the major findings from this summer 2019 analysis are summarized below:

Correlations across All Fields showed some pockets of trends

• Conflicts/Day, Near Misses/Day, and Collisions with Bike/Scooter/Skateboard fields were all **positively correlated** with Internal Events, Mobile Phone Usage, and Uber/Lyft Driver App Usage fields, suggesting that more attention required in these events and phone actions also correspond to a higher number of collisions and near misses.

Correlations across Groups/Categories of questions show Mild trends

- Reading and Sending Emails <u>negatively correlated</u> with events involved in Watching the Road while driving.
- Looking at Objects on the Road while driving <u>positively correlated</u> with using the Uber/Lyft Driver App, suggesting more attention is required in doing both types of actions.
- Using Voice Commands, Doing Grooming or Makeup, and Grabbing Objects in the Car while driving **positively correlated** with Mobile Phone actions, suggesting more attention is required in doing all these types of actions together.

<u>Pivot Table Analysis on Movement Actions (Driving, Stopped, Parked, Never) showed</u> <u>interesting trends:</u>

- Recreational/Casual drivers Eat or Drink While Driving much more than Uber/Lyft drivers do.
- Recreational/Casual drivers do Grooming or Makeup While Driving, Stopped, and Parked much more than Uber/Lyft drivers do.
- Many Recreational/Casual drivers Claim to Never Do Email or Text Messages while driving, compared to Uber/Lyft Drivers, but many of them still Do Email or Text Messages While Driving, Stopped, or Parked anyway.
- Total Movement Actions are **positively correlated** with Conflicts/Day and Lower Age Today.
- Never Movement Actions are <u>negatively correlated</u> with Conflicts/Day and Lower Age Today.

<u>Regressions on Conflicts, Near Misses, Collisions try to predict from Gender, Age, Total</u> <u>Movement Actions but did not show noticeable results:</u>

• Some regressions showed low P-values, but also low coefficient values.

• Many responses were mostly or too close to 0 to be meaningful.

This study showed that some additional details were discovered through correlation, pivot table, and regression analyses. However, most of the time, results were mild without strong inferences found. Additional details were found which proved interesting and supported the same findings from the spring 2019 research.

For future studies on the same topic, a larger dataset would be helpful in providing more detailed analysis results. More time to administer such a survey, as well as designing a more detailed survey to capture more qualitative feedback from drivers' perspectives on what they value more as distraction-related events would be helpful to identify.

Furthermore, in-car observation studies would also be interesting and helpful to objectively measure drivers' behaviors and actions to determine which events and actions have greater effect on drivers' attention during driving.

Distracted driving remains an important part of traffic safety, as it contributes to a significant share of traffic accidents and fatalities. We should continue the research to discover more events that contribute to distractions and continue to educate the driving public on methods to reduce their distractions.

APPENDICES

Table 1: Response Breakdown by Gender

Gender Count	Uber/Lyft	Recreational	TOTAL
Male	15	35	50
Female	10	36	46
Other (Gender Fluid)		1	1
TOTAL	25	72	97

Some respondents did not report their gender.

Figure 2: Correlations Between All Fields



Figure 3: Correlations (1)



Figure 4: Correlations (2)



Figure 5: Correlations (3)





								C	214_10	Interr	nal Eve	nts 10. Talki	ing to or c	aring fo	or other pa	ssengers				
	~					/ •	、			Q7_UL		Uber/Lyft D	river. 1 or	0.						
	()	orr	ela	tin	ns	14)		Ť	010		For a typical	l week of	drivi						
					115	1.	/			010 HRS	W/K	Hours per M	look Drivir	חס						
										011 1	, wwik	Hours Mond		15						
	-	-	-	_	_	-							ay .						_	
23 U13 3	B-0.10	C -0.03	D 0.01	E -0.02	F 0.00	-0.13	-0.12			Q11_2		Hours Tuesc	lay					S #DIV/U:	T 0.01	-0.13
30 Q13_6	-0.06	-0.07	0.04	0.04	0.06	-0.10	-0.09	-		Q11_3		Hours Wedr	nesday					#DIV/0!	0.06	-0.07
31 Q13_7	-0.10	-0.12	0.06	0.04	0.11	-0.06	-0.05	-	\checkmark	Q11 4		Hours Thurs	day					#DIV/0!	0.07	-0.08
32 Q13_8	-0.10	-0.05	0.05	-0.04	-0.01	-0.04	-0.04	-		011 5		Hours Eriday						#DIV/0!	0.06	-0.01
33 Q13_9	-0.11	-0.11	0.07	0.00	0.03	-0.08	-0.07	- 1				Hours Friday	y	_				#DIV/0!	0.02	-0.06
34 Q13_10	0.02	0.08	-0.06	0.09	0.10	-0.09	-0.09			Q11_6		Hours Satur	day					#DIV/0!	0.03	-0.07
36 013 12	0.18	0.19	-0.14	0.09	0.02	-0.19	-0.19			Q11_7		Hours Sunda	ay					#DIV/01	0.3	-0.02
37 014 1	0.11	0.15	-0.11	-0.03	0.00	-0.14	-0.14											#DIV/01	0.33	-0.02
38 Q14 2	0.09	0.12	-0.14	-0.16	-0.05	-0.06	0.06	-		023		Conflicts pe	r Dav					#DIV/0!	0.31	0.04
39 Q14_3	0.05	0.10	-0.07	-0.03	-0.01	-0.13	-0.13	-		024		Nere Mirer						#DIV/0!	0.34	-0.03
40 Q14_4	0.13	0.12	-0.11	0.01	-0.02	-0.08	-0.08		\checkmark	Q24		Near Misses	s per Day					#DIV/0	0.10	0.01
41 Q14_5	0.06	0.05	-0.08	-0.12	-0.17	-0.06	-0.07	-(_				#DIV/C	0.35	0.11
42 Q14_6	0.05	0.08	-0.11	-0.08	-0.20	-0.04	-0.04	0.05	0.00	0.01	0.01	0.06	0.07	0.02	-0.18	-0.15	-0.16	#DIV/CI	0.08	-0.10
43 Q14_7	0.04	0.00	0.00	-0.01	-0.14	-0.08	-0.08	-0.02	-0.04	-0.04	-0.06	0.03	0.00	-0.15	0.16	-0.01	-0.07	#DIV/	0.30	-0.16
44 Q14_8	0.42	0.27	0.20	0.00	-0.04	-0.21	-0.21	-0.20	-0.18	-0.21	-0.17	-0.21	0.00	-0.23	J.27	-0.14	0.08	#DIV/)!	0.17	0.01
45 Q14 Q	-0.10	-0.04	0.08	-0.12	-0.07	0.10	0.10	0.16	0.08	0.23	0.15	0.18	0.17	0.26	0.18	0.14	-0.06	#DIV/J!	0.09	-0.04
46 Q. 4 10	-0.27	-0.32	-0.15	-0.19	-0.15	-0.09	-0.09	-0.05	-0.03	-0.08	-0.07	-0.12	-0.15	-0.12	0.29	0.34	0.03	#DIV/01	0.31	-0.04
48 014 12	-0.08	-0.04	0.12	0.00	-0.01	-0.05	-0.05	-0.05	-0.05	-0.00	-0.07	0.12	0.07	0.10	0.22	0.33	-0.08	#DIV 01	0.04	-0.03
49 Q16 1	0.13	0.05	-0.09	-0.08	-0.18	-0.03	-0.03	0.02	-0.01	-0.05	-0.06	-0.05	-0.10	-0.04	0.15	0.06	-0.02	#DIV, 0!	0.32	-0.03
50 Q16_2	0.15	0.03	-0.08	-0.12	-0.21	-0.02	-0.02	0.00	0.03	-0.03	0.03	-0.05	-0.16	- 1.13	0.07	0.18	-0.03	#DIV, 0!	0.09	0.00
51 Q16_3	0.16	0.02	-0.05	-0.06	-0.22	-0.05	-0.05	-0.06	0.00	-0.08	0.01	-0.07	-0.13	0.14	0.14	0.22	-0.08	#DIV, 0!	0.04	0.06
52 Q16_4	0.11	0.02	-0.0/	-0.17	-0.21	-0.02	-0.02	0.06	-0.03	0.00	-0.10	-0.07	-0.09	0.03	0.13	0.03	-0.06	#DIV/0!	0.23	-0.09
53 Q16_5	0.08	-0.01	-0.(7	-0.10	-0.19	0.01	0.00	0.02	0.02	-0.07	-0.04	-0.05	-0.09	0.00	0.13	0.25	0.06	#DIV/)!	0.20	-0.08
54 Q16_6	0.00	-0.09	0.)8	-0.40	-0.37	0.08	0.08	0.13	0.00	0.09	0.00	-0.03	-0.04	0.03	0.09	0.05	0.16	#DIV/)!	0.21	0.03
55 Q16_7	-0.11	-0.17	0.15	-0.33	-0.36	0.21	0.21	0.24	0.14	0.24	0.17	0.17	0.12	0.25	0.15	0.28	-0.01	#DIV/ 1	0.09	0.04
56 Q20_1	0.07	-0.02	#DIV/0	-0.39	-0.27	0.04	0.05	-0.03	-0.29	0.13	-0.20	-0.05	0.01	0.03	0.20	0.06	-0.13	#DIV/CI	0.48	-0.22
57 Q20_2	0.02	0.16	#DIV/01	-0.20	-0.34	0.12	0.13	0.02	-0.23	0.02	-0.26	0.13	0.23	0.11	0.12	0.13	-0.24	#DIV/0	0.08	-0.20
59 020 4	-0.13	0.08	#DIV/01	-0.50	-0.50	0.25	0.27	0.28	-0.01	0.24	0.00	0.18	0.09	0.06	0.27	0.27	0.15	#DIV/0	0.04	0.13
60 Q20 5	-0.10	-0.12	#DIV/0!	-0.15	-0.30	0.18	0.17	0.16	-0.04	0.19	-0.02	0.27	0.15	0.1	0.30	0.33	-0.25	#DIV/0!	0.29	-0.22
61 Q20_6	0.19	-0.11	#DIV/0!	-0.12	-0.24	0.02	0.02	-0.17	-0.25	-0.15	-0.22	-0.03	0.17	0.11	-0.04	0.22	-0.09	#DIV/0!	0.20	-0.27
62 Q20_7	0.15	-0.05	#DIV/01	-0.21	-0.27	0.02	0.03	-0.23	-0.23	-0.12	-0.12	0.05	0.30	0.19	-0.04	-0.01	-0.15	#DIV/01	0.1	-0.28
63																			14	
64																				

Figure 7: Correlations (5)

	Сс	orr	ela	tio	ns	(5)													
						Q9		About h	iow many v	ears ha										
A	В	с	D	E	F	09 YE)	Years D	riving											
23 413_3	-0.10	-0.03	0.01	-0.02	0.00		_													
30 Q13_6	-0.06	-0.07	0.04	0.04	0.06		Q16_1		Mobile Pho	one Usage	e 1. Makiı	ng or rece	iving pho	ne calls						
32 013 8	-0.10	-0.12	0.05	-0.04	-0.01		016 2		Mobile Pho	one Usage	e 2. Read	ing email	message	s						
33 013 9	-0.11	-0.11	0.07	0.00	0.03		010.0		Markila Dha		- 2. C			- ha sharata						
34 Q13 10	0.02	0.08	-0.06	0.09	0.10		Q16_3		wobile Pho	one Usage	e 3. Sendi	ng email	message	s by typin	ig or voice					
35 Q13_11	0.16	0.19	-0.14	0.11	0.01		Q16_4		Mobile Pho	one Usage	e 4. Read	ing text m	nessages							
36 Q13_12	0.09	0.12	-0.08	0.09	0.02		Q16 5		Mobile Pho	one Usage	e 5. Sendi	ng text m	essages	by typing	or voice					
37 Q14_1	0.11	0.15	-0.11	-0.03	0.00		016 6		Mobile Phy		- E Using	novigatie	an anno	.,.,						
38 Q14_2	0.09	0.12	-0.14	-0.16	-0.05		Q10_0		wobile Pho	Jie Usage	e o. Using	inavigatio	Jirapps							
39 Q14_3	0.05	0.10	-0.07	-0.03	-0.01		Q16_7		Mobile Pho	one Usage	e 7. Using	; other ap	ps							
40 Q14_4	0.13	0.12	-0.11	0.01	-0.02									4. 6. 1						
1 Q14_5	0.06	0.05	-0.08	-0.12	-0.17		Q20_1		UL Driver A	App 1. Set	ting a de	stination i	n the Ub	er/Lyft dr	iver app.					
13 014 7	0.03	0.08	-0.11	-0.08	-0.20		Q20_2		UL Driver A	App 2. Loo	king at th	ne Uber/L	yft driver	app to w	atch for r	new ride i	request	s.		
14 014 8	0.42	0.00	0.00	-0.01	-0.14		020 3		III Driver /		king at th	a llhar/l	vft drivor	ann to ur	dorstand	l ridor and	d nickur	addross	details	
15 014 9	-0.10	-0.04	0.08	-0.12	-0.07		020_3		OL DIIVEI /	hpp 5. L00		ie obei/L	yrt uriver	app to u				auuress	uctans.	_
46 4.4 10	-0.27	-0.32	0.35	-0.19	-0.15		Q20_4		UL Driver A	App 4. Loo	king at th	ne Uber/L	yft driver	app to fo	llow navi	gation di	rections	i.		
47 Q14_11	0.10	0.11	-0.15	0.07	-0.01		Q20_5		UL Driver A	App 5. Usi	ng the UI	ber/Lyft d	river app	to contac	t rider by	phone or	r text m	essage.		
8 Q14_12	-0.08	-0.04	0.12	0.00	-0.19		020 6		III Driver	Nnn 6 Wh	on arrivir	a at the r	aickun ad	drass loc	ating the	rider and	finding	t a cafo r	lace to pr	rk
9 Q16_1	0.13	0.05	-0.09	-0.08	-0.12		Q20_0		OL DIIVEL A	http://		ig at the p	Jickup au	uiess, ioc	ating the	nuer and	1 munit	s a saie p	iace to pa	.1 K.
0 Q16_2	0.15	0.03	-0.08	-0.12	-0.21		Q20_7		UL Driver A	App 7. Wh	ien arrivir	ng at the d	destinatio	on, finding	g a safe p	lace to st	op to d	rop off ri	der.	
51 Q16_3	0.16	0.02	-0.05	-0.06	-0.22		Q21 1		UL Driver A	App Scena	rio 1. Set	ting a des	stination	in the Ub	er/Lyft dr	iver app.				
2 Q16_4	0.11	0.02	-0.07	-0.17	-0.21															
3 Q16_5	0.08	-0.01	-0.07	-0.10	-0.19	0.00		0.12	0.00	0.00	0.00	0.03	0.04	0.02	0.00	0.05	0.16	#D0///01	0.21	
4 Q10_6	0.00	-0.09	0.18	-0.40	-0.37	0.08	0.08	0.13	0.00	0.09	0.00	-0.03	-0.04	0.03	0.09	0.05	0.16	#DIV/)!	0.21	
6 020 1	-0.11	-0.17	#DIV/0	-0.33	-0.36	0.21	0.05	-0.03	-0.29	0.24	-0.20	-0.05	0.12	0.03	0.15	0.28	-0.01	#DIV/0	0.09	
7 020 2	0.02	0.16	#DIV/0	-0.26	-0.34	0.12	0.13	0.02	-0.23	0.02	-0.26	0.13	0.23	2.11	0.12	0.13	-0.24	#DIV/01	0.08	
8 Q20 3	0.01	0.08	#DIV/0!	-0.16	-0.27	0.18	0.18	0.11	-0.10	0.14	-0.12	0.18	0.21	.20	0.27	0.27	-0.26	#DIV/0	0.17	
9 Q20_4	-0.13	0.13	#DIV/01	-0.50	-0.50	0.25	0.27	0.28	-0.01	0.24	0.00	0.19	0.09	0 06	0.27	0.29	0.15	#DIV/01	0.04	
0 Q20_5	-0.10	-0.12	#DIV/0!	-0.15	-0.30	0.18	0.17	0.16	-0.04	0.19	-0.02	0.27	0.15	0.01	0.30	0.33	-0.25	#DIV/0!	0.29	-
51 Q20_6	0.19	-0.11	#DIV/0!	-0.12	-0.24	0.02	0.02	-0.17	-0.25	-0.15	-0.22	-0.03	0.17	0.11	-0.04	0.22	-0.09	#DIV/0!	0.20	-
52 Q20_7	0.15	-0.05	#DIV/0!	-0.21	-0.22	0.02	0.03	-0.23	-0.23	-0.12	-0.12	0.05	0.30	0.19	-0.04	-0.01	-0.15	#DIV/0!	0.1	-(
53 54																			15	

Figure 8: Correlations (6)

	Сс	orrela	tio	ns	(6)														
Q23	Con	flicts per Day											0	Р	Q	R	S	т	U
Q24	Nea	ir wisses per Day											-0.00	-0.15	-0.13	-0.03	#DIV/01	0.01	-0.13
	014 10	Internal Events	s 10. Talk	ing to or o	aring for	other pa	ssengers						0.00	-0.10	-0.13	0.01	#DIV/0!	0.00	-0.08
	014 11	Internal Events	11 Cot	ling and u	aing atha	itomo in	sside the er						-0.03	-0.04	-0.18	0.13	#DIV/01	0.06	-0.01
	Q14_11	Internal Events	s 11. Get	ting and u	sing other	ritems ir	iside the ca	ar					-0.08	-0.13	-0.24	0.05	#DIV/0!	0.02	-0.06
	Q14_12	Internal Events	s 12. Thin	iking abou	t other th	ings besi	des driving						-0.13	-0.14	-0.16	-0.02	#DIV/0!	0.03	-0.07
													-0.26	-0.13	-0.13	-0.10	#DIV/0!	0.13	0.00
	Q16_2	Mobile Phone	Usage 2.	Reading (email mes	ssages							-0.10	0.03	-0.04	-0.12	#DIV/01	0.2	-0.02
	016 3	Mobile Phone	Usage 3.	Sending e	email mes	sages by	typing or v	voice					-0.07	0.05	-0.05	0.02	#DIV/0!	0.33	-0.05
	016 4	Mahila Dhana	Licogo A	Pooding (out moss		-,,						-0.03	-0.11	-0.10	0.02	#DIV/01	0.31	0.04
	Q16_4	wobile Phone	Usage 4.	Reading	ext mess	ages							-0.04	-0.01	-0.04	0.02	#DIV/0	0.34	-0.03
	Q16_5	Mobile Phone	Usage 5.	Sending t	ext messa	ages by t	yping or vo	ice					-0.05	-0.03	0.00	0.15	#DIV/C	0.35	0.11
	Q16 6	Mobile Phone	Usage 6.	Using nav	vigation a	ada							0.02	-0.18	-0.15	-0.16	#DIV/CI	0.08	-0.10
	016.7	Mobile Phone	licago 7	Licing oth	or appr								- 15	0.16	-0.01	-0.07	#DIV/ I	0.30	-0.16
	Q16_7	Wobile Phone	Usage 7.	Using ou	ier apps								-0 3	J.27	-0.14	0.08	#DIV/)!	0.17	0.01
													0.26	0.18	0. 14	-0.06	#DIV/)!	0.09	-0.04
	Q20_3	UL Driver App	3. Lookin	g at the U	ber/Lyft c	friver app	o to unders	tand	rider and pie	ckup addr	ess detai	ls.	0.28	0.29	0.34	5 .09	#DIV, 0!	0.31	-0.04
	Q20 4	UL Driver App	4. Lookin	g at the U	ber/Lvft d	river app	to follow	navig	ation direct	ions.			-0.1	0.15	0.23	0.02	#DIV, 0!	0.31	-0.07
	020 5	LIL Driver App	5 Using	tha Ubar/	Luft drivor	ann to d	ontact ride	r hv	, nhong or toy	t mossa	10		00	0.22	0.33	-0.08	#DIV, 0!	0.04	-0.03
1	Q20_5	OL DIIVEI App	J. Using	the ober	Lynt unver	appion	Jontact nue	i by j		t messag	se.		-0.04	0.15	0.06	-0.02	#DIV, 0!	0.32	-0.03
	Q20_6	UL Driver App	6. When	arriving a	t the pickı	up addres	ss, locating	the r	rider and fin	ding a sa	fe place f	to park.	- 1.13	0.07	0.18	-0.03	#DIV, U!	0.09	0.00
52 016 4	0.11	0.02 -0.07	-0.17	-0.21	-0.02	-0.02	0.05	-0.03	0.00	-0.10	-0.07	-0.09	0.03	0.14	0.03	-0.08	#DIV, DI	0.04	-0.08
53 016 5	0.08	-0.01 -0.07	-0.10	-0.19	0.01	0.02	0.02	0.02	-0.07	-0.04	-0.05	-0.09	0.00	0.13	0.25	0.06	#DIV/ 2!	0.20	-0.08
54 Q16 6	0.00	-0.09 0.18	-0.40	-0.37	0.08	0.08	0.13	0.00	0.09	0.00	-0.03	-0.04	0.03	0.09	0.05	0.16	#DIV/)!	0.21	0.03
55 Q16_7	-0.11	-0.17 0 15	-0.33	-0.36	0.21	0.21	0.24	0.14	0.24	0.17	0.17	0.12	0.25	0.15	0.28	-0.01	#DIV/ 1	0.09	0.04
56 Q20_1	0.07	-0.02 #DIV/0	-0.39	-0.27	0.04	0.05	-0.03	-0.29	0.13	-0.20	-0.05	0.01	0.03	0.20	0.06	-0.13	#DIV/CI	0.48	-0.22
57 Q20_2	0.02	0.16 #DIV/0	-0.26	-0.34	0.12	0.13	0.02	-0.23	0.02	-0.26	0.13	0.23	0.11	0.12	0.13	-0.24	#DIV/C	0.08	-0.20
58 Q20_3	0.01	0.08 #DIV/0!	-0.16	-0.27	0.18	0.18	0.11	-0.10	0.14	-0.12	0.18	0.21	.20	0.27	0.27	-0.26	#DIV/0	0.17	-0.13
59 Q20_4	-0.13	0.13 #DIV/0!	-0.50	-0.50	0.25	0.27	0.28	-0.01	0.24	0.00	0.19	0.09	0 06	0.27	0.29	0.15	#DIV/01	0.04	0.28
60 Q20_5	-0.10	-0.12 #DIV/0!	-0.15	-0.30	0.18	0.17	0.16	-0.04	0.19	-0.02	0.27	0.15	0.01	0.30	0.33	-0.25	#DIV/0!	0.29	-0.22
61 Q20_6	0.19	-0.11 #DIV/0!	-0.12	-0.24	0.02	0.02	-0.17	-0.25	-0.15	-0.22	-0.03	0.17	0.11	-0.04	0.22	-0.09	#DIV/0!	0.20	-0.27
62 420_7	0.15	-0.05 #DIV/0!	-0.21	-0.2/	0.02	0.03	-0.23	-0.23	-0.12	-0.12	0.05	0.30	0.19	-0.04	-0.0.	-0.15	#017/01	0.17	-0.28
164				1											1			10	

Figure 9: Correlations (7)



Figure 10: Correlations (8)



Figure 11: Correlations (9)

		Сс	orre	ela	tio	ns	(9))													
	т	U	v	w	x	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN
30	0.06	-0.07	0.08	0.06	0.22	0.49	0.51	0.62	0.71	0.76	1.00										
31	0.07	-0.08	0.09	0.05	0.22	0.38	0.36	0.78	0.83	0.70	0.73	1.00									
32	0.06	-0.01	0.12	0.11	0.25	0.48	0.50		0.00	0.62	0.00	0.50	4.00								_
33	0.02	-0.06	0.14	0.08	0.20	0.31	0.33	016	,	Mobile	Phone II	2002	anding or	nail mores	ITOS						
34	0.03	-0.07	0.06	0.03	0.21	0.48	0.43	Q16_4	-	woblie	Phone U	sage Z. R	eaung er	nan nessa	iges						
35	0.03	0.00	0.12	0.10	-0.06	0.21	0.11	Q16_3	3	Mobile	Phone U	sage 3. S	ending er	nail messa	ges by	typing or v	/oice				
36	0.22	-0.02	0.05	0.13	-0.02	0.16	0.10		_												
37	0.33	-0.05	-0.04	0.05	-0.03	0.05	0.08		Q13_1	1	Externa	Events	 Watchi 	ng the road	d and si	urrounding	gs in light tr	affic du	ring dayti	me.	
38	0.31	0.04	0.02	0.08	0.00	-0.14	-0.08		013	2	Externa	Events	2 Watchi	ng the road	d and si	irrounding	s in heavy	traffic d	iring nea	k rush ho	
39	0.34	-0.03	-0.11	0.08	-0.07	0.04	0.05		015_1		Externu	= ·	2	ing the rout					anng peu	K Tush no	
40	0.10	0.01	0.24	0.12	0.00	-0.17	-0.20		Q13_3	3	Externa	Events	3. Making	a left turn	i at an i	ntersectio	on with mod	erate tr	affic.		1.00
41	0.35	0.11	0.21	0.12	-0.15	-0.27	-0.28	Λ —	Q13 4	4	Externa	Events	4. Making	a right tur	m at an	intersecti	on with peo	destrian	traffic.		0.53
42	0.08	-0.10	0.00	0.06	-0.19	-0.28	-0.28	-	012		Extorna	Evente	E Morgin	a into troff	ic from	on onran	n or anoth	r ctroot	with mo	dorato tr	0.35
45	0.30	-0.16	-0.19	-0.11	-0.19	-0.21	-0.22		Q15_3	,	Externa	Evenus	5. Weigin	g into tran	IC HOIII	on onian		er street	withino	uerate tra	0.21
45	0.09	-0.04	-0.13	0.04	-0.04	0.09	000	-0.27	-0.09	-0.23	-0.15	-0.20	-0.08	-0.15	0.02	-0.05	0.08	0.29	0.10	0.49	0.10
46	0.31	-0.04	-0.10	-0.22	-0.18	-0.12	0.08	-0.21	-0.15	-0.24	-0.04	-0.13	-0.11	-0.01	-0.22	-0.19	0.05	0.25	0.27	0.24	0.05
47	0.31	-0.07	-0.16	-0.07	0.02	-0.23	-0.15	-0.08	-0.04	-0.17	-0.01	-0.04	0.02	0.03	-0.12	-0.02	0.27	0.59	Unit	0.40	0.33
48	0.04	-0.03	-0.07	-0.10	-0.20	-0.10	-0.10	-0.14	-0.12	-0.19	-0.06	-0.15	-0.15	-0.02	0.00	C.U2	0.11	0.21	0.09	0.33	0.12
49	0.32	-0.03	-0.16	-0.08	-0.16	-0.05	0.00	0.02	0.02	0.01	0.01	-0.01	0.04	0.01	0.03	0.19	0.39	0.57	0.42	1.38	0.20
50	0.09	0.00	-0.05	0.01	-0.40	-0.46	-0.33	-0.23	-0.30	-0.25	-0.23	-0.19	-0.30	-0.23	-0.28	0.04	0.13	0.15	0.23	-0.67	0.46
51	0.04	0.06	0.01	-0.01	-0.22	-0.52	-0.44	-0.33	-0.27	-0 20	-0.13	-0.18	-0.21	-0.13	-0.21	0.03	0.10	0.17	0.19	-0.02	0.43
52	0.23	-0.09	-0.04	-0.05	-0.19	-0.25	0.11	0.02	-0.10	-0.10	-0.18	-0.16	-0.17	-0.09	-0.1 1	0.03	0.26	0.53	0.42	0.36	0.36
53	0.20	-0.50	0.01	-0.08	-0.15	-0.30	-0.15	-0.04	-0.09	-0.09	-0.07	-0.08	-0.07	-0.06	-0.45	0.00	0.18	0.51	0.38	0.29	0.41
54	0.21	0.03	0.09	0.17	~ 26	0.08	0.09	0.11	0.14	0.05	-0.01	0.08	0.10	0.02	0 08	0.19	0.34	0.43	0.29	0.40	0.32
55	0.09	0.04	-0.06	-0.03	-0.38	-0.25	-0.24	-0.11	-0.07	-0.19	-0.21	-0.02	-0.18	-0.09	-0 23	0.04	0.17	0.25	0.28	0.18	0.38
56	0.03	-0.22	-0.30	0.11	-0.29	-0.05	-0.04	0.14	0.17	-0.01	-0.29	0.14	-0.24	-0.25	-0.11	0.09	0.50	0.51	0.56	0.42	0.35
57	0.18	-0.20	-0.10	-0.13	-0.64	0.08	0.04	-0.06	0.02	-0.09	-0.40	-0.03	-0.29	-0.38	0.0	0.39	0.60	0.78	0.63	0.66	0.08
50	0.1	-0.15	-0.26	-0.25	-0.56	0.15	-0.12	-0.01	0.17	-1.11	-0.45	-0.08	-0.33	-0.38	(16	0.32	0.55	0.70	0.50	0.64	-0.06
60	0.2	-0.28	-0.35	-0.25	-0.45	-0.36	-0.28	0.01	-0.13	-0.5	-0.22	0.03	-0.09	-0.15	0.24	0.14	0.45	0.45	0.41	0.43	0.00
61	0.20	-0.27	-0.27	-0.32	-0.5	-0.02	-0.07	0.27	0.13	0.08	-0.24	0.02	-0.03	-0.23	-0.15	0.35	0.36	0.49	0.36	10 0.47	0.08
62	0.19	-0.28	-0.14	-0.37	-0.31	0.24	0.16	0.20	0.26	0.29	-0.02	0.20	0.12	0.05	0.19	0.25	0.26	0.44	0.31	0.37	0.13
62					-			-						and the second s					and the second se	-	-

Figure 12: Correlations (10)

		Сс	orre	ela	tio	ns	(1	0)													
							Q13_6	E	kternal I	Events 6.	Maneuveri	ing amor	ng other ve	ehicles.							
							013 7	E	kternal B	Events 7.	Maneuveri	ing amor	ng pedestr	ians.							
	-		v	14/	v	v	013 8	E	tornal	vonte 8	Manouvori	ing arour	d nothole	s or objec	ts on the	road					
		U	V	vv	X	T	Q15_8	-	ktemart	venus o. i	vianeuven	ing arour	iu potriole	s or objec	LS OIT LITE	roau.					
30	0.06	-0.07	0.08	0.06	0.22	0.49	Q13_9	E	kternal I	Events 9.	Encounteri	ing and r	eacting to	sudden ti	raffic cha	anges.					
31	0.07	-0.08	0.09	0.05	0.22	0.38															
32	0.06	-0.01	0.12	0.11	0.25	0.48		016 7		Mobile Ph		7 Using	other an								
34	0.02	-0.08	0.14	0.08	0.20	0.31	M	Q10_/		VIODILE FII	one Osage	7. Using	other ap								
35	0.03	0.00	0.12	0.10	-0.06	0.21															
36	0.22	-0.02	0.05	0.13	-0.02	0.16		Q20 1		JL Driver A	App 1. Sett	ing a de	stination i	n the Ube	r/Lvft dr	iver app.					
37	0.33	-0.05	-0.04	0.05	-0.03	0.05		020.2		II Drivor /	nn 2 Lool	king at th	o Ubor/U	ft drivor -	nn to w	atch for r	ow rido r	aulocto			
38	0.31	0.04	0.02	0.08	0.00	-0.14		Q20_2		JL Driver A	App 2. Looi	king at ti	le ober/L	it unver a	ipp to w	attention	lew nue re	equests.			_
39	0.34	-0.03	-0.11	0.08	-0.07	0.04		Q20_3		JL Driver A	App 3. Lool	king at th	ne Uber/Ly	/ft driver a	app to ur	nderstand	l rider and	pickup a	ddress d	etails.	
40	0.10	0.01	0.24	0.12	0.00	-0.17		Q20 4		JL Driver A	App 4. Lool	king at th	ne Uber/Ly	/ft driver a	app to fo	llow navi	gation dire	ections.			00
41	0.35	0.11	0.21	0.12	-0.15	-0.27		020 5			mm E. Llain					*	mhana ar				53
42	0.08	-0.10	0.00	0.06	-0.19	-0.28		Q20_5		JL Driver A	App 5. Usir	ig the Ut	ber/Lyrt ar	iver app t	o contac	t nder by	phone or	text mes	ssage.		35
43	0.30	-0.16	-0.19	-0.11	-0.19	-0.21		Q20_6		JL Driver A	App 6. Whe	en arrivir	ng at the p	ickup add	ress, loc	ating the	rider and	finding a	a safe pla	ice to park	21
44	0.17	0.01	-0.20	0.02	-0.04	-0.35	0.00	0.17	0.000			13-103	11.11.97	0.35		0.05			0.50		26
45	0.09	-0.04	-0.13	0.04	-0.14	0.09	0.00	-0.27	-0.09	-0.23	-0.15	-0.20	-0.08	-0.15	0.02	-0.06	0.08	0.29	0.10	0.49	-0.10
40	0.31	-0.04	-0.10	-0.22	-0.18	-0.12	-0.05	-0.08	-0.15	-0.24	-0.04	-0.13	0.02	-0.01	-0.22	-0.13	0.27	0.59	0.27	0.24	0.03
48	0.04	-0.03	-0.07	-0.10	-0.20	-0.10	-0.10	-0.14	-0.12	-0.19	-0.06	-0.15	-0.15	0.02	0.00	5.02	0.11	0.21	0.09	0.33	0.12
49	0.32	-0.03	-0.16	-0.08	-0.16	-0.05	0.00	0.02	0.02	0.01	0.01	-0.01	0.04	0.01	0.03	0.19	0.39	0.57	0.42	3,38	0.20
50	0.09	0.00	-0.05	0.01	-0.40	-0.46	-0.33	-0.23	-0.30	-0.25	-0.23	-0.19	-0.30	-0.23	-0.28	0.04	0.13	0.15	0.23	-0.67	0.46
51	0.04	0.06	0.01	-0.01	-0.27	-0.52	-0.44	-0.33	-0.27	-0.35	-0.13	-0.18	-9.21	-0.13	-0.21	0.03	0.10	0.17	0.19	-0.02	0.43
52	0.23	-0.09	-0.04	-0.05	-0.19	-0.25	0.11	0.02	-0.10	-0.10	-0.18	-0.16	-0.17	-0.09	-0.1 3	0.03	0.26	0.53	0.42	0.36	0.36
53	0.20	-0.00	0.01	-0.08	-0.15	-0.30	-0.15	-0.04	-0.09	-0.09	-0.07	-0.08	-0.07	-0.06	-0.15	0.00	0.18	0.51	0.38	0.29	0.41
54	0.21	0.03	0.09	0.17	-2 26	0.08	0.09	0.11	0.14	0.05	-0.01	0.08	0.10	0.02	0 08	0.19	0.34	0.43	0.29	0.40	0.32
55	0.09	0.04	-0.06	-0.03	-0.38	-0.25	-0.24	-0.11	-0.07	-0.19	-0.21	-0.02	-0.18	-0.09	-0 23	0.04	0.17	0.25	0.28	0.18	0.38
56	0.43	-0.22	-0.30	0.11	-0.29	-0.05	-0.04	0.14	0.17	-0.01	-0.29	0.14	-0.24	-0.25	-0.11	0.09	0.50	0.51	0.56	0.42	0.35
5/	0.18	-0.20	-0.10	-0.13	-0.64	0.08	0.04	-0.06	0.02	-0.09	-0.40	-0.03	-0.29	-0.38	0.04	0.39	0.60	0.78	0.63	0.66	0.08
50	0 1/	-0.13	-0.26	-0.25	-0.56	-0.15	-0.12	-0.01	-0.01	- 1.11	-0.45	-0.06	-0.33	-0.38	0.16	0.32	0.55	0.70	0.56	0.64	0.20
60	0.2	-0.22	-0.35	-0.25	-0.35	-0.36	-0.28	0.01	-0.13	-0.5	-0.41	0.02	-0.41	-0.36	-0.24	0.14	0.55	0.45	0.49	0.43	0.17
61	0.20	-0.27	-0.27	-0.32	-0.5	-0.02	-0.07	0.27	0.13	0.08	-0.24	0.05	-0.03	-0.23	-0.15	0.35	0.36	0.49	0.36	20 0.47	0.08
62	0.19	-0.28	-0.14	-0.37	-0.31	0.24	0.16	0.20	0.26	0.29	-0.02	0.20	0.12	0.05	0.19	0.25	0.26	0.44	0.31	0.37	0.13
63		-		-	-									-			and the second se		-		

Figure 13: External vs. External Events

External vs. External Events

Q13_1	External Events 1. Watching the road and surroundings in light traffic during daytime.
Q13_2	External Events 2. Watching the road and surroundings in heavy traffic during peak rush hou
Q13_3	External Events 3. Making a left turn at an intersection with moderate traffic.
Q13_4	External Events 4. Making a right turn at an intersection with pedestrian traffic.
Q13_5	External Events 5. Merging into traffic from on onramp or another street with moderate tra
Q13_6	External Events 6. Maneuvering among other vehicles.
Q13_7	External Events 7. Maneuvering among pedestrians.
Q13_8	External Events 8. Maneuvering around potholes or objects on the road.
Q13_9	External Events 9. Encountering and reacting to sudden traffic changes.
Q13_10	External Events 10. Reading roadway signs.
Q13_11	External Events 11. Looking at billboards or advertisements along the roadway.
Q13_12	External Events 12. Looking at interesting cars, objects, or people alongside the roadway.

	1. Watching	2. Watching	3. Making a	4. Making a	5. Merging i	6. Maneuvei	7. Maneuve	8. Maneuver	9. Encounter	10. Reading	11. Looking	12. Looking a
	Q13_1	Q13_2	Q13_3	Q13_4	Q13_5	Q13_6	Q13_7	Q13_8	Q13_9	Q13_10	Q13_11	Q13_12
1. Watching Q13_1	1.000											
2. Watching Q13_2	0.892	1.000										
3. Making a Q13_3	0.492	0.514	1.000									
4. Making a Q13_4	0.532	0.516	0.857	1.000								
5. Merging i Q13_5	0.614	0.654	0.799	0.781	/ 1.000							
6. Maneuvei Q13_6	0.495	0.505	0.617	0.711	0.757	1.000						
7. Maneuvei Q13_7	0.380	0.357	0.783	0.830	0.705	0.732	1.000					
8. Maneuvei Q13_8	0.477	0.498	0.542	0.627	0.620	0.685	0.588	1.000				
9. Encounter Q13_9	0.315	0.326	0.628	0.652	0.627	0.736	0.697	0.712	1.000			
10. Reading Q13_10	0.481	0.431	0.474	0.574	0.532	0.538	0.414	0.655	0 548	1.000		
11. Looking Q13_11	0.213	0.111	0.195	0.245	0.213	0.245	0.165	0.263	0.153	0.400	1.000	
12. Looking Q13_12	0.161	0.104	0.181	0.202	0.132	0.161	0.176	0.197	0.100	0.214	0.758	1.000
												23

Internal vs. External Events

Q14_1	Internal Events 1. S	etting internal temp	perature or climat	e (AC, fan, defros	iter)		Q13_1	External Events	1. Watching th	e road and surr	oundings in ligh	nt traffic during	daytime.
Q14_2	Internal Events 2. A	djusting mirrors					Q13 2	External Events	2. Watching th	e road and surr	oundings in hea	avy traffic durin	g peak rush ho
Q14_3	Internal Events 3. U	ollowing directions	on the car naviga	tion system (not)	mohile nhone)		013_3	External Events	3. Making a let	t turn at an inte	ersection with r	noderate traffic	
014 5	Internal Events 5. U	Ising voice comman	ds to control car i	eatures	nobile phone;		012 4	Extornal Events	4 Making a ric	ht turn at an in	torsoction with	nodostrian traf	fic
Q14 6	Internal Events 6. U	Ising voice comman	ds to listen/dicta	te email message	s (not using phon	e directly)	Q15_4	External Events	4. WIAKING A NE		tersection with	peuestriantra	
Q14_7	Internal Events 7. E	ating food or drinks					Q13_5	External Events	5. Merging inte	o traffic from or	n onramp or an	other street wit	n moderate t
Q14_8	Internal Events 8. G	rooming yourself or	using makeup				Q13_6	External Events	6. Maneuverin	g among other	vehicles.		
214_9	Internal Events 9. Li	istening to the radio	, news, music or	other passive sou	inds		Q13_7	External Events	7. Maneuverin	g among pedest	trians.		
214_10	Internal Events 10.	Talking to or caring	for other passeng	gers			013 8	External Events	8. Maneuverin	g around pothol	es or objects or	n the road.	
214_11	Internal Events 11.	Getting and using of Thinking about othe	ther items inside	the car			013.9	External Events	9 Encounterin	g and reacting t	o sudden traffi	c changes	
417_12	internal Events 12.	miniming about othe	r things besides t	and the second sec			013 10	External Events	10 Reading ro	adway signs		e enangeer	
							013 11	External Events	11 Looking at	hillhoards or ad	vertisements a	long the roadw	21/
							Q15_11	External Events	11. LOOKing at		ivertisements a	iong the roadw	1y.
							Q13_12	External Events	12. Looking at	interesting cars	, objects, or pe	ople alongside i	he roadway.
Using CORF	REL() - Externa	l Events (acros	s) vs Interna	l Events (dow	/n)								
		1. Watching	2. Watching	3. Making a	4. Making a	5. Merging i	6. Maneuve	i 7. Maneuvei	8. Maneuver	9. Encounter	10. Reading	11. Looking	12. Lookin
		Q13_1	Q13_2	Q13_3	Q13_4	Q13_5	Q13_6	Q13_7	Q13_8	Q13_9	Q13_10	Q13_11	013_12
1. Setting ir	nt Q14_1	0.053	0.078	0.050	0.081	0.015	-0.033	0.029	0.048	0.023	0.075	0.095	0.39
2. Adjusting	Q14_2	-0.143	-0.079	0.051	-0.005	-0.108	-0.164	0.058	-0.150	-0.120	-0.141	-0.083	0.19
3. Using wi	n Q14 3	0.038	0.053	0.048	0.095	-0.011	-0.153	0.014	-0.001	-0.078	0.073	0.122	0.34
1. Following	g Q14_4	-0.171	-0.204	0.139	0.150	0.019	0.008	0.151	0.048	0.156	0.111	0.1 /2	0.22
5. Using voi	ic Q14 5	-0.266	-0.282	U.U28	0.017	-0.126	-0.091	0.029	-0.018	0.093	-0.033	0.111	0.34
5. Using voi	ic Q14_6	-0.278	-0.278	-0.342	-0.332	-0.253	-0.127	-0.163	-0.186	0.004	-0.169	-0.(58	0.01
7. Eating fo	o Q14_7	-0.214	-2.271	0.178	0.065	-0.051	0.052	0.027	0.002	0.148	-0.043	0.1 <mark>4</mark> 9	0.24
8. Groomin	g Q14 8 (-0.354	-0.323	-0.281	-0.079	-0.244	-0.101	-0.072	-0.176	-0.198	-0.179	0.C <mark>7</mark> 8	0.16
9. Listening	t Q14_9	0.089	0.005	-0.275	-0.086	-0.226	-0.154	-0.201	-0.076	-0.148	0.021	-0.004	0.08
10. Talking	t Q14_10	-0.116	-0.079	-0.208	-0.153	-0.240	-0.045	-0.128	-0.106	-0.013	-0.219	-0.195	0.05
11. Getting	a Q14_11	-0.230	-0.145	-0.079	-0.041	-0.173	-0.009	-0.038	0.024	0.029	-0.118	-0.021	0.20
12. Thinking	014 12	-0.097	-0.099	-0 139	-0 125	-0 192	-0.063	-0 151	-0 146	-0.018	-0.002	0.016	24 0.10
				0.100	0.110	0.152	0.005	0.151	0.140	0.010	0.002	0.010	0.10

Figure 15: Mobile Phone Usage vs. External Events

Mobile Phone Usage vs. External Events

Q16_1	Mobile Phone Usage 1. Making or receiving phone calls	Q13_1	External Events 1. Watching the road and surroundings in light traffic during daytime.
Q16 2	Mobile Phone Usage 2. Reading email messages	Q13_2	External Events 2. Watching the road and surroundings in heavy traffic during peak rush hou
Q16 3	Mobile Phone Usage 3. Sending email messages by typing or voice	Q13_3	External Events 3. Making a left turn at an intersection with moderate traffic.
016 4	Mobile Phone Usage 4 Reading text messages	Q13_4	External Events 4. Making a right turn at an intersection with pedestrian traffic.
016 5	Mobile Phone Usage 5. Sending text messages by typing or voice	Q13_5	External Events 5. Merging into traffic from on onramp or another street with moderate tra
016 6	Mobile Phone Usage 6. Using navigation appr	Q13_6	External Events 6. Maneuvering among other vehicles.
016_0	Nobile Phone Usage 6. Using navigation apps	Q13_7	External Events 7. Maneuvering among pedestrians.
Q16_/	Mobile Phone Usage 7. Using other apps	Q13_8	External Events 8. Maneuvering around potholes or objects on the road.
Q17_1	Mobile Phone Usage Scenarios 1. Making or receiving phone calls	Q13_9	External Events 9. Encountering and reacting to sudden traffic changes.
		Q13_10	External Events 10. Reading roadway signs.
		Q13 11	External Events 11. Looking at billboards or advertisements along the roadway.

Q13_12 External Events 12. Looking at interesting cars, objects, or people alongside the roadway.

Using CORREL	L() - External	Events (acros	s) vs Mobile	Phone Usage	(down)								
		1. Watching	2. Watching	3. Making a	4. Making a	5. Merging i	6. Maneuvei	7. Maneuve	8. Maneuver	9. Encounter	10. Reading	11. Looking	12. Looking a
		Q13_1	Q13_2	Q13_3	Q13_4	Q13_5	Q13_6	Q13_7	Q13_8	Q13_9	Q13_10	Q13_11	Q13_12
1. Making or 0	Q16_1	-0.052	0.053	0.021	0.021	0.007	0.006	-0.012	0.044	0.008	0.035	0.1 <mark>9</mark> 3	0.385
2. Reading e	Q16_2 🧹	-0.464	-0.328	-0.232	-0.295	-0.290	-0.234	-0.187	-0.302	-0.227	-0.277	0. <mark>0</mark> 35	0.130
3. Sending er	Q16_3 🔍	-0.517	-0.442	-0.335	-0.274	-0.375	-0.127	-0.182	-0.206	-0.134	-0.208	0. <mark>)</mark> 26	0.096
4. Reading t∈	Q16_4	-0.254	-0.114	-0.034	-0.103	-0.100	-0.176	-0.156	-0.165	-0.086	-0.191	0. <mark>)</mark> 27	0.264
5. Sending te 0	Q16_5	-0.300	-0.148	-0.044	-0.091	-0.092	-0.073	-0.077	-0.069	-0.062	-0.151	-0. <mark>0</mark> 05	0.183
6. Using navi (Q16_6	0.078	0.093	0.113	0.137	0.046	-0.005	0.085	0.101	0.079	0.080	0.1 <mark>8</mark> 7	0.337
7. Using othe	Q16_7	-0.248	-0.235	-0.106	-0.074	-0.189	-0.207	-0.021	-0.181	-0.093	-0.233	0.0 <mark>.</mark> 7	0.168
													25

Figure 16: Uber/Lyft Driver App Usage vs. External Events

Uber/Lyft Driver App Usage vs. External Events

							Q13_1	External Eve	ents 1. Watching	g the road and su	urroundings in Ii	ght traffic during	g daytime.
							Q13_2	External Eve	ents 2. Watching	g the road and su	urroundings in h	eavy traffic durin	ng peak rush hou
							Q13_3	External Eve	ents 3. Making a	left turn at an i	ntersection with	moderate traff	ic.
							Q13_4	External Eve	ents 4. Making a	right turn at an	intersection wit	h pedestrian tra	ffic.
							Q13_5	External Eve	ents 5. Merging	into traffic from	on onramp or a	nother street wi	th moderate tra
							Q13_6	External Eve	ents 6. Maneuve	ring among othe	er vehicles.		
							Q13_7	External Eve	ents 7. Maneuve	ring among ped	estrians.		
							Q13_8	External Eve	ents 8. Maneuve	ring around poth	noles or objects	on the road.	
							Q13_9	External Eve	ents 9. Encounte	ring and reacting	g to sudden traf	fic changes.	
							Q13_10	External Eve	ents 10. Reading	g roadway signs.			
20_1	UL Driver App	1. Setting a d	lestination in	the Uber/Lyf	t driver app.		Q13_11	External Eve	ents 11. Looking	at billboards or	advertisements	along the roadw	/ay.
20_2	UL Driver App	2. Looking at	the Uber/Lyf	t driver app to	o watch for n	ew ride reque	sts. Q13_12	External Eve	ents 12. Looking	at interesting ca	ars, objects, or p	eople alongside	the roadway.
20_3	UL Driver App	3. Looking at	the Uber/Lyf	t driver app to	o understand	rider and pick	up address d	etails.					
20_4	UL Driver App	4. Looking at	the Uber/Lyf	t driver app to	o follow navig	gation directio	ns.						
20_5 1	UL Driver App	5. Using the	Uber/Lyft driv	er app to cor	ntact rider by	phone or text	message.						
					11	the state of the state							
20_6	UL Driver App	When arriv	ing at the pic	kup address,	locating the	rider and findi	ng a safe pla	ice to park.					
20_6 0 20_7 1	UL Driver App UL Driver App	6. When arriv 7. When arriv	ing at the pic ing at the de	kup address, stination, find	ding a safe pl	ace to stop to	ng a sate pla drop off ride	r.					
20_6 20_7 U Using CORRE	UL Driver App UL Driver App E L() - External	 When arrive When arrive When arrive Events (acrossion) 	ving at the pic ving at the de ss) vs Uber/Ly	kup address, stination, find /ft Driver Ap l	locating the i ding a safe pl p Usage (dow	ace to stop to n) - Uber/Lyft	ng a sate pla drop off ride t drivers ONL	r. Y, IDs 1-33.					\frown
20_6 20_7 I Using CORRE	UL Driver App UL Driver App EL() - External	 When arrive 	ving at the pic ving at the de ss) vs Uber/Ly 2. Watching	kup address, stination, find /ft Driver Ap 3. Making a	ding a safe pl p Usage (dow 4. Making a	ace to stop to n) - Uber/Lyft 5. Merging i	ng a sate pla drop off ride t drivers ONL 6. Maneuvei	r. Y, IDs 1-33. 7. Maneuvei	8. Maneuvei	9. Encountei	10. Reading	11. Lookinr,	12. Looking
20_6 20_7 Using CORRE	UL Driver App UL Driver App E L() - External	 6. When arrive 7. When arrive Events (acrossing) 1. Watching Q13_1 	ving at the pic ving at the de ss) vs Uber/Ly 2. Watching Q13_2	kup address, stination, find /ft Driver Ap 3. Making a <i>Q13_3</i>	ding a safe pl p Usage (dow 4. Making a Q13_4	ace to stop to m) - Uber/Lyft 5. Merging i Q13_5	ng a safe pla drop off ride t drivers ONL 6. Maneuver Q13_5	ice to park. er. . Y, IDs 1-33. 7. Maneuvei 	8. Maneuvei Q13_8	9. Encounter	10. Reading Q13_10	11. Lookinr, Q13_11	12. Looking Q13_12
20_6 20_7 Using CORRE 1. Setting a c	UL Driver App UL Driver App EL() - External	 6. When arrive 7. When arrive Events (across 1. Watching Q13_1 -0.048 	ving at the pic ving at the de ss) vs Uber/Ly 2. Watching Q13_2 -0.039	kup address, stination, find /ft Driver Ap 3. Making a <u>Q13_3</u> 0.144	ding a safe pl p Usage (dow 4. Making a Q13_4 0.168	ace to stop to m) - Uber/Lyft 5. Merging i Q13_5 -0.01.5	ng a safe pla drop off ride t drivers ONL 6. Maneuver Q13_5 -0.288	ice to park. er. . Y, IDs 1-33. 7. Maneuver <u>Q13_</u> 7 0.139	8. Maneuver <i>Q13_8</i> -0.240	9. Encounter 213 9 -0.252	10. Reading <u>Q13_10</u> -0.109	<u>11. Lookin</u> , <u>Q13_11</u> 0.(87	12. Looking <u>Q13_</u> 12 0.499
20_6 20_7 Using CORRE 1. Setting a c 2. Looking at	UL Driver App UL Driver App EL() - External Q20_1 Q20_2	 6. When arrive 7. When arrive Events (across 1. Watching 0.13_1 -0.048 0.077 	ving at the pic ving at the de is) vs Uber/Ly 2. Watching Q13_2 -0.039 0.044	kup address, stination, find /ft Driver Ap <u>3. Making a</u> <u>Q13_3</u> 0.144 -0.058	ding a safe pl p Usage (dow 4. Making a Q13_4 0.168 0.025	ace to stop to m) - Uber/Lyft 5. Merging i <u>Q13_5</u> -0.010 -0.090	ng a sare pla drop off ride t drivers ONL 6. Maneuver 013_0 -0.288 -0.403	ice to park. er. Y, IDs 1-33. 7. Maneuvei Q13_7 0.139 -0.031	8. Maneuver Q13_8 -0.240 -0.286	9. Encounter 213 9 -0.252 -0.378	10. Reading <u>Q13_10</u> -0.109 0.040	11. Lookiny, <u>Q13_11</u> 0.(87 0. 9 0	12. Looking Q13_12 0.499 0.595
20_6 20_7 Using CORRE 1. Setting a c 2. Looking at 3. Looking at	UL Driver App UL Driver App EL() - External Q20_1 Q20_2 Q20_2 Q20_3	 6. When arrive 7. When arrive 7. When arrive Events (acrossing) 1. Watching 0.013_1 -0.048 0.077 -0.148 	ving at the pic ving at the de ss) vs Uber/Ly 2. Watching Q13_2 -0.039 0.044 -0.116	kup address, stination, find /ft Driver Ap 3. Making a 0.144 -0.058 -0.007	ding a safe pl p Usage (dow 4. Making a Q13_4 0.168 0.025 -0.013	ace to stop to rn) - Uber/Lyfi 5. Merging i <u>Q13_5</u> -0.010 -0.090 -0.114	ng a sare pla drop off ride t drivers ONL 6. Maneuver -0.288 -0.403 -0.454	r. Y, IDs 1-33. 7. Maneuver 213_7 0.139 -0.031 -0.057	8. Maneuver <u>Q13_8</u> -0.240 -0.286 -0.327	9. Encounter 213 9 -0.252 -0.378 -0.382	10. Reading <u>Q13_10</u> -0.109 0.040 -C.089	11. Lookiny, <u>Q13_11</u> 0.(87 0. 90 0. 322	12. Looking Q13_12 0.499 0.595 0.548
20_6 20_7 Using CORRE 1. Setting a c 2. Looking at 3. Looking at 4. Looking at	UL Driver App UL Driver App EL() - External Q20_1 Q20_2 Q20_2 Q20_3 Q20_4	 6. When arrive 7. When arrive 7. When arrive 1. Watching 0.13_1 -0.048 0.077 -0.148 0.100 	ving at the pic ving at the de is) vs Uber/Ly 2. Watching Q13_2 -0.039 0.044 -0.116 0.104	kup address, stination, find /ft Driver Ap <u>3. Making a</u> <u>Q13_3</u> 0.144 -0.058 -0.007 -0.151	ding a safe pl p Usage (dow 4. Making a Q13_4 0.168 0.025 -0.013 0.169	ace to stop to rn) - Uber/Lyfi 5. Merging i <u>Q13_5</u> -0.015 -0.090 -0.114 -0.040	ng a sare pla drop off ride t drivers ONL 6. Maneuver 013_5 -0.288 -0.403 -0.454 -0.220	ce to park. rr. Y, IDs 1-33. 7. Maneuver <u>Q13_7</u> 0.139 -0.031 -0.057 0.030	8. Maneuver Q13_8 -0.240 -0.286 -0.327 -0.094	9. Encounter 213 9 -0.252 -0.378 -0.382 -0.132	10. Reading Q13_10 -0.109 0.040 -C.089 9.157	11. Lookiny, Q13_11 0.(87 0. 90 0. 322 0. 41	12. Looking Q13_12 0.499 0.595 0.548 0.331
20_6 20_7 Using CORRE 1. Setting a c 2. Looking at 3. Looking at 4. Looking at 5. Using the	UL Driver App UL Driver App EL() - External Q20_1 Q20_2 Q20_3 Q20_4 Q20_5	0.6. When arriv 7. When arriv Events (across 1. Watching <u>Q13_1</u> -0.048 0.077 -0.148 0.100 -0.364	Ving at the pic ving at the de (s) vs Uber/L 2. Watching Q13_2 -0.039 0.044 -0.116 0.104 -0.283	kup address, stination, find /ft Driver Ap 3. Making a Q13_3 0.144 -0.058 -0.007 -0.151 0.006	locating the l ding a safe pl p Usage (dow 4. Making a Q13_4 0.168 0.025 -0.013 0.169 -0.127	Ace to stop to (m) - Uber/Lyfit 5. Merging i 0.015 0.090 -0.114 -0.040 -0.062	ng a sare pia drop off ride t drivers ONL 6. Maneuver Q13_5 -0.288 -0.403 -0.454 -0.220 -0.414	ce to park. r. Y. JDs 1-33. 7. Maneuver Q13_7 0.139 -0.031 -0.057 0.030 0.021	8. Maneuver Q13_8 -0.240 -0.286 -0.327 -0.094 -0.411	9. Encounter 213 9 -0.252 -0.378 -0.382 -0.132 -0.362	10. Reading Q13_10 -0.109 0.040 -C.089 9.157 -0.237	11. Lookin; <u>Q13_11</u> 0.(87 0.990 0.322 0.41 0.15	12. Looking Q13_12 0.499 0.595 0.548 0.331 0.446
20_6 20_7 Using CORRE 1. Setting a c 2. Looking at 3. Looking at 4. Looking at 5. Using the 6. When arrii	UL Driver App UL Driver App EL() - External Q20_1 Q20_2 Q20_3 Q20_4 Q20_5 Q20_6	 When arrive When arrive When arrive Events (acrossing) Watching Q13_1 -0.048 0.077 -0.148 0.100 -0.364 -0.024 	ving at the pic ving at the de s;) vs Uber/Ly 2. Watching 0.13_2 -0.039 0.044 -0.116 0.104 -0.283 -0.065	kup address, stination, fin (ft Driver App 3. Making a Q13_3 0.144 -0.058 -0.007 -0.151 0.006 0.271	ding a safe pl p Usage (dow 4. Making a Q13_4 0.168 0.025 -0.013 0.169 -0.127 0.125	nder and findi ace to stop to 5. Merging i <u>Q13_5</u> -0.015 -0.016 -0.114 -0.040 -0.040 -0.062 0.081	ng a sare pia drop off ride t drivers ONL 6. Maneuven 013_5 -0.288 -0.403 -0.454 -0.254 -0.214 -0.238	ce to park. r. Y, IDs 1-33. 7. Maneuver Q13_7 0.139 -0.031 -0.057 0.030 0.021 0.046	8. Maneuver <u>Q13_8</u> -0.240 -0.286 -0.327 -0.094 -0.0411 -0.027	9. Encounter 213 9 -0.252 -0.378 -0.382 -0.132 -0.362 -0.362	10. Reading <u>Q13_10</u> -0.109 0.040 -C.089 9.157 -0.237 -0.149	11. Lookin; Q13_11 0.(87 0. 90 0. 322 0. 41 0.: 15 0.3 17	12. Looking Q13_12 0.499 0.595 0.548 0.354 0.446 0.358
20_6 20_7 Using CORRE 1. Setting a c 2. Looking at 3. Looking at 4. Looking at 5. Using the 6. When arri 7. When arri	UL Driver App UL Driver App EL() - External Q20_1 Q20_2 Q20_3 Q20_4 Q20_5 Q20_6 Q20_6 Q20_7	 b. When arriv c. When arriv Events (across 1. Watching Q13_1 -0.048 0.077 -0.148 0.100 -0.364 -0.024 0.236 	Ving at the pic ving at the de is) vs Uber/Ly 2. Watching 0.13_2 -0.039 0.044 -0.116 0.104 -0.283 -0.065 0.163	kup address, stination, fin (ft Driver App 3. Making a Q13_3 0.144 -0.058 -0.007 -0.151 0.006 0.271 0.203	locating the l ding a safe pl p Usage (dow 4. Making a 0.168 0.025 -0.013 0.169 -0.127 0.125 0.255	ace to stop to m) - Uber/Lyft 5. Merging i 0.015 -0.015 -0.015 -0.016 -0.114 -0.040 -0.062 0.081 0.293	ng a sare pia drop off ride t drivers ONL 6. Maneuver 013_5 -0.288 -0.403 -0.454 -0.220 -0.414 -0.238 -0.016	ce to park. rr. 7. Maneuver 0.139 -0.031 -0.057 0.030 0.021 0.046 0.120	8. Maneuver Q13_8 -0.240 -0.286 -0.327 -0.094 -0.411 -0.027 -0.121	9. Encounter 213 9 -0.252 -0.378 -0.382 -0.132 -0.362 -0.227 -0.048	10. Reading Q13_10 -0.109 0.040 -C.089 (J.157 -0.237 -0.149 0.192	11. Lookin; Q13_11 0.(87 0. 90 0. 322 0. 41 0.: 15 0.3 17 0.251	12. Looking Q13_12 0.499 0.595 0.548 0.354 0.446 0.358 0.258

Figure 17: Internal vs. Internal Events

Internal vs. Internal Events

Q14_1	Internal Events 1. Setting internal temperature or climate (AC, fan, defroster)
Q14_2	Internal Events 2. Adjusting mirrors
Q14_3	Internal Events 3. Using windshield wipers
Q14_4	Internal Events 4. Following directions on the car navigation system (not mobile phone)
Q14_5	Internal Events 5. Using voice commands to control car features
Q14_6	Internal Events 6. Using voice commands to listen/dictate email messages (not using phone directly
Q14_7	Internal Events 7. Eating food or drinks
Q14_8	Internal Events 8. Grooming yourself or using makeup
Q14_9	Internal Events 9. Listening to the radio, news, music or other passive sounds
Q14_10	Internal Events 10. Talking to or caring for other passengers
Q14_11	Internal Events 11. Getting and using other items inside the car
014 12	Internal Events 12. Thinking about other things besides driving

	1. Setting int 2	2. Adjusting	3. Using win	4. Following	5. Using voic	Using voic	7. Eating foo	8. Grooming	9. Listening t	10. Talking to	Getting a	12. Thinking
	<u>Q11_1</u>	Q14_2	Q14_3	Q14_4	Q14_5	Q14_6	Q14_7	Q14_8	Q14_9	Q14_10	Q14_11	Q14_12
1. Setting int Q14_1	1.000											
2. Adjusting Q14_2	0.651	1.000										
3. Using win Q14_3	0.706	0.516	1.000									
4. Following Q14_4	0.201	0.388	0.092	1.000								
5. Using voic Q14_5	0.424	0.388	0.496	0.529	1.000							
6. Using voic Q14_6	0.119	0.360	-0.119	0.354	0.504	1.000						
7. Eating foo Q14_7	0.301	0.200	0.306	0.210	0.405	0.340	1.000					
8. Grooming Q14_8	0.232	0.426	0.086	0.265	0.336	0.466	0.274	1.000				
9. Listening t Q14_9	0.287	0.101	0.490	-0.099	0.239	0.002	0.109	-0.105	1.000			
10. Talking t(Q14_10	0.270	0.268	0.243	0.050	0.391	0.248	0.406	0.101	0.439	1.000		
11. Getting a Q14_11	0.585	0.547	0.403	0.325	0.424	0.382	0.533	0.458	0.134	0.424	1.000	
12. Thinking Q14_12	0.214	0.093	0.333	0.121	0.116	0.048	0.203	-0.174	0.401	0.540	0.148	27 1.000

Figure 18: External vs. Internal Events

External vs. Internal Events

- Q13_1
 External Events
 1. Watching the road and surroundings in light traffic during daytime.

 Q13_2
 External Events
 2. Watching the road and surroundings in heavy traffic during peak rush hou
- Q13_3 External Events 3. Making a left turn at an intersection with moderate traffic.
- Q13_4 External Events 4. Making a right turn at an intersection with pedestrian traffic.
- Q13_5 External Events 5. Merging into traffic from on onramp or another street with moderate trai
- Q13_6 External Events 6. Maneuvering among other vehicles.
- Q13_7 External Events 7. Maneuvering among pedestrians.
- Q13_8 External Events 8. Maneuvering around potholes or objects on the road.
- Q13_9 External Events 9. Encountering and reacting to sudden traffic changes.
- Q13_10 External Events 10. Reading roadway signs.
- Q13_11 External Events 11. Looking at billboards or advertisements along the roadway.
- Q13_12 External Events 12. Looking at interesting cars, objects, or people alongside the roadway.

Internal Events 2. Adjusting mirrors
Internal Events 3. Using windshield wipers
Internal Events 4. Following directions on the car navigation system (not mobile phone)
Internal Events 5. Using voice commands to control car features
Internal Events 6. Using voice commands to listen/dictate email messages (not using phone
Internal Events 7. Eating food or drinks
Internal Events 8. Grooming yourself or using makeup
Internal Events 9. Listening to the radio, news, music or other passive sounds
Internal Events 10. Talking to or caring for other passengers
Internal Events 11. Getting and using other items inside the car
Internal Events 12. Thinking about other things besides driving

irectly)

Internal Events 1. Setting internal temperature or climate (AC, fan, defroster)

Using CORREL() - Internal Events (across) vs External Events (down)

	1. Setting int	2. Adjusting	3. Using win 4	1. Following	5. Using voic 6	5. Using voic 7	7. Eating foo	8. Grooming 9	. Listening t	10. Talking te	11. Getting a	12. Thinking
	Q14_1	Q14_2	Q14_3	Q14_4	Q14_5 🥖	Q14_6	Q14_7	Q14_8	Q14_9	Q14_10	Q14_11	Q14_12
1. Watching Q13_1	0.053	-0.143	0.038	-0.171	-0.2 <mark>6</mark> 6	-0.278	-0.7.14	-0.354	0.089	-0.116	-0.230	-0.097
2. Watching Q13_2	0.078	-0.079	0.053	-0.204	-0. <mark>282</mark>	-0.278	-021	-0.323	0.003	-0.079	-0.145	-0.099
3. Making a Q13_3	0.050	0.051	0.048	0.139	0. <mark>)</mark> 28	-0.342	-0.128	-0.281	-0.275	-0.208	-0.079	-0.139
4. Making a Q13_4	0.081	-0.005	0.095	0.150	0.617	-0.332	-0.065	0.079	-0.086	-0.153	-0.041	-0.125
5. Merging i Q13_5	0.015	-0.108	-0.011	0.019	-0.126	-0.253	-0.051	-0.244	-0.226	-0.240	-0.173	-0.192
6. Maneuvei Q13_6	-0.033	-0.164	-0.153	0.008	-0.091	-0.127	0.052	-0.101	-0.154	-0.045	-0.009	-0.063
7. Maneuvei Q13_7	0.029	0.058	0.014	0.151	0.029	-0.163	0.027	-0.072	-0.201	-0.128	-0.038	-0.151
8. Maneuvei Q13_8	0.048	-0.150	-0.001	0.048	-0.018	-0.186	0.002	-0.176	-0.076	-0.106	0.024	-0.146
9. Encounter Q13_9	0.023	-0.120	-0.078	0.156	0.093	0.004	0.148	-0.198	-0.148	-0.013	0.029	-0.018
10. Reading Q13_10	0.075	-0.141	0.073	0.111	-0.033	-0.169	-0.043	-0.179	0.021	-0.219	-0.118	-0.002
11. Looking Q13_11	0.095	0.083	0.122	0.142	0.111	-0.058	0.149	0.078	-0.004	-0.105	0.021	0.016
12. Looking Q13_12	0.394	0.191	0.348	0.225	0.349	0.017	0.244	0.166	0.084	0.056	0.266	0.106

Q14_1 Q14_2 Q14_3 Q14_4 Q14_5 Q14_6 Q14_7 Q14_8 Q14_9

Q14_10 Q14_11 Q14_12

Figure 19: Mobile Phone Usage vs. Internal Events

Mobile Phone Usage vs. Internal Events

Q16_1	Mobile Phone Usage 1. Making or receiving phone calls	Q14_3
Q16_2	Mobile Phone Usage 2. Reading email messages	Q14_ Q14
Q16_3	Mobile Phone Usage 3. Sending email messages by typing or voice	Q14_
Q16_4	Mobile Phone Usage 4. Reading text messages	Q14_
Q16_5	Mobile Phone Usage 5. Sending text messages by typing or voice	Q14_
Q16_6	Mobile Phone Usage 6. Using navigation apps	Q14_8
Q16_7	Mobile Phone Usage 7. Using other apps	Q14_9
017 1	Mobile Phone Usage Scenarios 1. Making or receiving phone calls	014

14_1	Internal Events 1. Setting internal temperature or climate (AC, fan, defroster)	
14_2	Internal Events 2. Adjusting mirrors	
14_3	Internal Events 3. Using windshield wipers	
14_4	Internal Events 4. Following directions on the car navigation system (not mobile phone)	
14_5	Internal Events 5. Using voice commands to control car features	
14_6	Internal Events 6. Using voice commands to listen/dictate email messages (not using phone directly)	
14_7	Internal Events 7. Eating food or drinks	
14_8	Internal Events 8. Grooming yourself or using makeup	
14_9	Internal Events 9. Listening to the radio, news, music or other passive sounds	
14_10	Internal Events 10. Talking to or caring for other passengers	
14_11	Internal Events 11. Getting and using other items inside the car	
14 12	Internal Events 12. Thinking about other things besides driving	

Using CORREL() - Internal Evants (across) vs Mobile Phone Usage (down)

	1. Setting int 2	2. Adjusting	3. Using win	4. Following	5. Using void	o. Using voic	7. Eating for	8 Grooming	9. Listening	t 10. Talking t	11. Getting a	12. Thinking
	Q14_1	Q14_2	Q14_3	Q14_4	Q14_5	Q14_6	Q14_7	Q14_8	Q14_9	Q14_10	Q14_11	Q14_12
1. Making or Q16_1	0.568	0.418	0.385	0.195	0.338	0.312	0.436	0.396	0.091	0. <mark>2</mark> 80	0.726	0.132
2. Reading e Q16_2	0.148	0.225	-0.020	0.462	0.436	0.593	0.180	0.584	-0.142	0. <mark>.</mark> 37	0.466	0.042
3. Sending ei Q16_3	0.167	0.186	-0.023	0. <mark>4</mark> 33	0.526	0.609	0.102	0.563	-0.079	0. <mark>1</mark> 67	0.541	0.154
4. Reading te Q16_4	0.535	0.416	0.356	0. <mark>3</mark> 57	0.536	0.388	0.328	0.479	0.065	0.204	0.645	0.045
5. Sending te Q16_5	0.508	0.381	0.286	0. <mark>4\</mark> 08	0.597	0.376	0.343	0.507	-0.043	0.277	0.733	0.124
6. Using navi Q16_6	0.429	0.294	0.399	0.3 <mark>2</mark> 0	0.392	-0.095	0.275	0.035	0.259	0.318	0.320	0.301
7. Using othe Q16_7	0.252	0.280	0.184	0.382	0.606	0.594	0.268	0.380	0.372	0.243	0.481	0.217
												29

Figure 20: Uber/Lyft Driver App Usage vs. Internal Events

Uber/Lyft Driver App Usage vs. Internal Events

						Q	14_1 Inte	ernal Events 1. S	etting internal te	mperature or cli	mate (AC, fan, de	efroster)	
						Q	14_2 Inte	ernal Events 2. A	djusting mirrors				
						Q	14_3 Inte	ernal Events 3. U	sing windshield	wipers			
						Q	14_4 Inte	ernal Events 4. F	ollowing directio	ns on the car nav	igation system (not mobile phone)
						Q	14_5 Inte	ernal Events 5. U	sing voice comm	ands to control of	ar features		
						Q	14_6 Inte	ernal Events 6. U	sing voice comm	ands to listen/di	ctate email mess	sages (not using p	phone directly)
						Q1	14_7 Inte	ernal Events 7. E	ating food or drir	nks			
						Q	14_8 Inte	ernal Events 8. G	rooming yourself	f or using makeu	p		
						Q	14_9 Inte	ernal Events 9. Li	istening to the ra	dio, news, music	or other passive	sounds	
						0	14_10 Inte	ernal Events 10.	Cotting and using	ng for other pass	ide the car		
						01	14_11 Inte	ernal Events 12	Thinking about of	ther things hesid	es driving		
020 1	UI Driver An	n 1 Setting a (destination ir	the Uber/Lyft	t driver ann	4			Thinking about of	ther things besid	co uning		
020_1		n 2 Looking at	the liber/ly	ft driver ann te	watch for	ou rido roque	ete						
Q20_2	OL Driver Ap	p 2. LOOKING at	the Ober/Ly	it unver app to	wateriori	lew nue reque							
Q20_3	UL Driver Ap	p 3. Looking at	the Uber/Ly	ft driver app to	ounderstand	I rider and pick	up address d	etails.					
Q20_4	UL Driver Ap	p 4. Looking at	the Uber/Ly	ft driver app to	o follow navi	gation direction	ons.						
Q20_5	UL Driver Ap	p 5. Using the	Uber/Lyft dr	iver app to con	tact rider by	phone or text	message.						
Q20_6	UL Driver Ap	p 6. When arri	ving at the p	ickup address,	locating the	rider and find	ing a safe pla	ce to park.					
Q20_7	UL Driver Ap	p 7. When arri	ving at the d	estination, find	ding a safe p	lace to stop to	drop off ride	er.					
Using CORR	EL() - Internal	Events (acros	s) vs Uber/Ly	ft Driver App	Usage (dow	n) - Uber/Lyft	drivers ONLY	, IDs 1-33.					
		1. Setting int	2. Adjusting	3. Using win 4	4. Following	5. Using voic	6. Using voic	7. Eating foo	8. Grooming	9. Listening 1	10. Talking to	11. Getting a	12. Thinking
		Q14_1	Q14_2	Q14_3	Q14_4	Q14_5	Q14_6	Q14_7	Q14_8	Q14_9	Q14_10	Q14_11	Q14_12
1. Setting a	Q20_1 🥖	0.514	0.559	0.422	0.351	-0.301	-0.338	-0.175	0.391	0.184	-0.213	-0.169	-0.136
2. Looking at	t Q20_2 🧹	0.778	0.630	0.660	0.083	0.296	-0.038	0.096	0.272	0.517	0.173	0.146	0.255
3. Looking at	t Q20_3	0.700	0.564	0.642	0.202	0.218	-0.109	0.181	0.044	0.375	0.137	0.341	0.399
4. Looking at	t Q20_4	0.558	0.411	0.467	-0.0.8	0.641	0.146	0.077	0.3.12	0.683	0.204	0.062	0.126
5. Using the	Q20_5	2.447	0.492	0.433	0.173	0.055	-0.132	0.283	0.340	0.025	0.017	0.489	0.172
6. When arri	020 6	0.485	0.364	0.470	0.084	0.320	-0.157	0.106	0.101	0.236	0.269	0.251	0.254

Figure 21: Uber/Lyft Driver App Usage vs. Mobile Phone Usage

0.368

0.132

Uber/Lyft Driver App Usage vs. Mobile Phone Usage

-0.006

0.178

-0.045

0.101

Q16_1	Mobile Phone Usage 1. Making or receiving phone calls
Q16_2	Mobile Phone Usage 2. Reading email messages
Q16_3	Mobile Phone Usage 3. Sending email messages by typing or vo
Q16_4	Mobile Phone Usage 4. Reading text messages
Q16_5	Mobile Phone Usage 5. Sending text messages by typing or void
016 6	Mobile Phone Usage 6. Using navigation apps

0.410

0.368

0.104

0.258

ic€

Q10_0	woone Phone Usage 6. Using havigation apps
Q16_7	Mobile Phone Usage 7. Using other apps

Q20_1	UL Driver App 1. Setting a destination in the Uber/Lyft driver app.
020.2	III Driver App 2 Leaking at the Ilber/Left driver app to watch for new rid

0.435

0.308

7. When arri Q20_7

- Q20_2
 UL Driver App 2. Looking at the Uber/Lyft driver app to watch for new ride requests.

 Q20_3
 UL Driver App 3. Looking at the Uber/Lyft driver app to understand rider and pickup address details.
- Q20_4 UL Driver App 4. Looking at the Uber/Lyft driver app to follow navigation directions.
- Q20_5 UL Driver App 5. Using the Uber/Lyft driver app to contact rider by phone or text message.
- Q20_6 UL Driver App 6. When arriving at the pickup address, locating the rider and finding a safe place to park.
- Q20_7 UL Driver App 7. When arriving at the destination, finding a safe place to stop to drop off rider.

		1. Making or	2.	Reading e	3. Sending e	4. Reading te	5. Sending te	6. Using navi	7. Using cthe	
		Q16_1		Q16_2	Q16_3	Q16_4	Q16_5	Q16_6	Q16_7	
1. Setting a cQ20_1		0.448		0.357	-0.03	0.584	0.173	0.658	0.390	
2. Looking at Q20_2		0.661		0.110	-0.0 <mark>!</mark> 6	0.646	0.569	0.536	0.697	
3. Looking at Q20_3		0.693		0.296	0.05t	0.692	0.613	0.528	0.716	
4. Looking at Q20_4		0.412	_	0.222	0.057	0.496	0.325	0.452	0.732	
5. Using the Q20_5	<	0.623		0.616	0.284	0.548	0.496	0.373	0.524	
6. When arri Q20_6		0.401		U.U57	-0.002	0.309	0.467	0.359	0.514	
7. When arri Q20_7		0.422		-0.031	-0.193	0.181	0.261	0.360	0.443	
7. When arri Q20_7		0.422		-0.031	-0.193	0.181	0.261	0.360	0.443	

Using CORREL() - Mobile Phone Usage (across) vs Uber/Lyft Driver App Usage (down), Uber/Lyft drivers ONLY, IDs 1-

Internal Events 1-3 – Moving, Stopped, Parked, Never Q14_1 Attn Setting Internal Temp/Climate While Moving While Stopped While Parked Never Q14_3 Attn Using Wipers While Moving While Stop Q14_2 Attn Adjusting Mirrors While Moving While Stopp: While Parke: Never While Parked ed Never Average of Question Casual Uber/Lyft 27.07 19.55 24.04 14.12 26.90 No Data 13.33 No Data 30.56 25.67 12.50 15.33 17.50 16.96 15.00 16.29 14.55 13.04 6.67 30.00 0.00 20.00 23.00 Q23 Conflicts/Day Casual Uber/Lyft 6.57 5.50 10.11 No Data 6.32 11.17 6.55 10.30 6.33 11.75 5.84 12.67 6.06 11.13 6.07 6.59 6.28 6.38 10.00 12.14 11.30 No Data 11.15 Q24 Near Misses/Day Casual Uber/Lyft 4.40 4.87 6.43 4.21 5.00 6.00 No Data 4.61 5.67 4.31 6.30 4.31 7.25 4.42 6.67 4.74 6.22 4.28 7.00 4.21 5.40 No Data Q26 Collisions w/Objects Casual Uber/Lyft Q27 Collisions w/Peds 1.46 2.20 1.54 2.29 1.45 1.50 2.89 No Data 1.84 3.00 1.57 2.30 1.42 2.88 No Data For Conflicts and Near Misses, Casual 1.00 1.00 1.00 1.00 1.00 1.00 1.00 higher #/day for Uber/Lyft drivers^o Uber/Lyft Q28 Collisions w/Bike/Scooter/Skateboard 1.00 1.00 1.00 No Data 1.00 1.00 1.00 No Data vs. Casual drivers for all Events Casual Uber/Lyft Q29 Collisions w/Vehicle 1.03 1.00 1.11 1.02 1.03 1.00 1.00 1.05 1.00 1.00 No Data 1.00 1.10 1.00 No Data 1.00 1.72 2.04 1.50 1.78 3.00 1.65 1.67 1.89 2.00 1.75 1.83 3.60 2.24 Casual 1.89 1.67 1.80 1.40 Uber/Lyft 3.00 No Data 2.22 No Data Count of Driver Casual 59 49 30 2 25 37 Casual Uber/Lyft Total Question Average Total Q23 Conflicts/Day Total Q24 Ear Misses/Day Total Q24 Collisions w/Objects Total Q27 Collisions w/Neds Total Q29 Collisions w/Net/Left Total Q29 Collisions w/Vehicle Total Count of Drivers For Internal Events: 23 18 12 12 21.41 7.88 5.23 1.71 25.00 7.37 ∠4.00 13.00 5.87 7.37 0.00 11.72 7.00 4.41 1.47 1.00 1.00 1.73 32.00 Most people do while Moving in Traffic 7.43 No Data 4.65 1.79 1.00 1.03 5.60 1.60 1.00 1.00 4.87 Fewer do while Stopped in Traffic 4.87 1.66 1.00 1.02 1.85 49.00 1.65 1.00 Even Fewer do while Parked at Cub 1.00 1.04 1.02 1 Very Few NEVER do 2.15 67.00 1.82 2.05 42.00 82.00 6.00 26.0

Figure 22: Internal Events (1-3) on Movement Actions

Figure 23: Internal Events (4-6) on Movement Actions

						UVITE	, 5101	peu,	Parke	u, ne	ver	
Q14_4 Attn F	ollowing N	lav System	While Darked	Never	Q14_5 Attn Using	Voice to Control Ca	Mhile Derked	Never	Q14_6 Attn Using \	oice to Do Email	While Darked	Never
while wovin	g whi	le stopped	while Parked	Never	while woving	while Stopped	while Parked	Never	while woving	while Stopped	while Parked	Never
	28.48	27.39	32.50	11.58	33.68	40.00	45.00	9.35	35.71	32.86	30.00	15.00
	22.35	30.00	31.67	0.00	21.00	27.14	30.00	3.33	20.00	16.00	16.00	12.50
											-	
<u> </u>	6.00	6.50	6.00	5.96	6.05	7.00	7.38	5.98	5.29	5.00	4.75	6.14
-	10.24	11.25	12.00	15.29	10.64	10.00	7.50	13.64	11.67	10.40	10.40	11.94
	4 36	5 17	4 17	4.65	4.62	4 25	4.29	4.82	4 71	4 38	4 25	4 80
i	5.82	6.88	6.20	7.14	6.09	7.17	6.00	6.64	6.17	6.80	6.80	6.19
	1.57	1.29	1.23	1.42	1.77	1.44	1.50	1.44	1.86	1.25	1.25	1.49
I	2.18	3.38	3.60	1.86	2.55	3.83	1.50	1.73	1.50	3.80	3.80	1.75
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	1.00	1.00	1.00	1.08	1.09	1.00	1,00	1.00	1.14	1.00	1.00	1.02
	1.00	1.00	1.00	Most	CASUAL D	rivers NEV	R 1.00	1.09	1.00	1.00	1.00	1.06
					laica Com	aands to d	- Email					
	1.82	1.83	2.25	USE	ore comi	nanus to u	2 Email 1.75	1.65	1.86	1.75	2.00	1.71
<u> </u>	2.31	3.43	3.60	1.43	2.73	3.50	1.25	1.50	1.83	3.80	3.80	1.53
_	47	25	12	24	22	10		50				57
	21	10	7	9	13	7	4	13	2 8	6		19
	26.83	28.13	32.22	9.57	29.31	34.38	40.00	0.82	29.17	25.83	22.22	14.47
	7.14	7.69	7.67	8.13	7.63	8.20	7.42	7.38	8.23	7.08	7.89	7.43
	4.76	5.61	4.76	5.23	5.13	5.50	4.91	5.15	5.38	5.31	5.67	5.11
	1.73	1.81	1.89	1.52	2.03	2.40	1.50	1.49	1.69	2.23	2.67	1.55
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	1.00	1.00	1.00	1.10	1.06	1.00	1.00	1.02	1.08	1.00	1.00	1.03
	1.95	2.19	2.65	1.61	2.55	2.40	1.58	1.62	1.85	2.54	3.00	76.00

	Int	erna	l Event	s 7-9	9 – Mo	oving	, Stop	ped,	Parke	d, Ne	ver	
Q14	7 Attn Eating or Drinki	ing topped Wi	hile Parked Never	Q14_	8 Attn Grooming	or Makeup ile Stonned M	/bile Parked	lever	Q14_9 Attn Listen to	o Radio News Musi While Stopped	C While Parked	Never
	ine woving write 5	topped wi			e woving wi	ne stopped	nine Farked	evei	winne wiowing	white Stopped	while Farked	ivevei
	21.30	21.46	21.15	7.50	22.50	19.23	30.00	12.96	24.41	20.00	19.12	No Data
	21.05	18.46	14.4	45.00	6.67	10.00	6.67	0.00	28.00	28.24	30.00	
											_	
16- A	6.28	6.37	6.75	4.80	8.50	7.06	7.50	5.74	6.07	6.34	6.41	5.00
P-	Uber/Lyft D	rivers al	most NEVER	8.00	12.00	11.00	11.00	11.74	11.13	12.14	11./3	
	Fat/Drink w	hile driv	ing or have	4.40	4.75	4.59	4.17	4.77	4.75	4.36	4.29	4.00
	633	7.00	6.25	4.00	5.33	7.00	7.00	6.26	6.22	6.79	6.82	
	HIGH % Atte	ention if	doing									
	1.59	1.47	1.28	1.00	2.00	1.29	1.00	1.49	1.53	1.59	1.64	1.00
<u>.</u>	1.78	2.42	2.75	1.00	1.90	7.00	7.00	1.74	2.13	2.29	2.55	
-								(
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	Higher	COLLISION	rate with	1.00	1.00
	1.00			1.00	1.00	1.00	1.00	OBJECT	S and VEHI	CLES for	1.00	
	Much hi	igher # c	of CASUAL driv	/ers _{1.00}	1.25	1.12	1.00	1.11-1.70	1.03		1.03	1.00
	Eat/Drin	k while	Moving ¹⁰ Ston	ned1.00	1.00	1.00	1.00	Uber/L	yft Drivers v	while Groo	ming 1.00	
		IK WITHE	wowing, stop	peu,				While S	Stopped or	Parked		
	or Parke	ed vs. Ub	per/Lyft Driver	S 1.80	2.00	1.81	2.00	1.70	1.90	2.09	2.21	1.00
	1.65	2.55	2.75	1.00	1.57	6.50	6.50	1.61	2.00	2.31	2.60	
	21	52	26	5	4	1/	/	55	74	4/	3/	1
	21 22	20.82	19 39	20.00	15 71	18.00	4	9.72	25 38	22.33	13	No Data
T	7.63	7.61	7.63	5.33	10.00	7.47	8.38	Much h	higher # of (CASUAL dri	vers do 7.71	5.00
1	4.94	5.21	4.74	4.33	5.00	4.84	4.88	Groom	ing while St	onned or P	arked 4.89	4.00
	1.64	1.65	1.64	1.00	1.57	1.89	2.50	1.55	1.68	1.75	1.85	1.00
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	vs. Ube	r/Lyft Drive	ers 1.00	1.00	1.00
	1.04	1.03	1.00	1.00	1.14	1.11	1.00	1.01	1.03	1.03	1.02	1.00
	1.76	2.00	2.09	1.67	1.86	2.33	3.29	1.68	1.92	2.14	2.30	1.00
	76.00	66.00	37.00	9.00	7.00	19.00	11.00	77.00	101.00	65.00	52.00	1.00

Figure 24: Internal Events (7-9) on Movement Actions

Figure 25: Internal Events (10-12) on Movement Actions

	Inter	nal E	vents	s 10-1	l2 – M	oving,	Stopp	oed, Pa	arked,	Never	,
Q14_10 Attn Tall	king to Passengers			Q14_11 Attn Getti	ng Items in Car			Q14_12 Attn Thinking	about Things		
While Moving	While Stopped	While Parked	Never	While Moving	While Stopped	While Parked	Never	While Moving	While Stopped	While Parked	Never
25.5	2 27.56	29.68	0.00	30.00	29.25	26.76	18.00	24.31	25.48	24.24	No Data
40.3	7 38.24	36.67	No Data	26.00	21.33	22.73	23.33	30.87	30.00	31.54	0.00
6.2	2 6 23	6.60	E 14	6.72	6.24	6 37	E 63	E 13	E 40	6.42	E 00
11.3	6 12.62	2 12.73	6.00	13.60	11.33	13.50	9.33	11.00	12.08	12.64	12.50
4.5	1 4.3:	L 4.33	7.29	4.55	4.37	4.29	5.50	4.46	4.81	4.24	4.00
6.2	7 6.92	6.82	5.00	7.00	6.40	7.30	5.83	6.33	6.75	6.91	5.00
1.5	7 1.53	3 1.52	1.29	1.70	1.55	1.56	1.19	1.51	1.50	1.53	1.00
2.1	4 2.3	2.27	2.00	1.50	2.53	2.70	1.50	2.19	1.58	1.55	1.50
1.0	0 1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
1.0	0 1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
10	3 1.03	1.03	1.00	1.09	1.02	1.03	1.00	1.03	1.02	1.00	1.00
1.0	0 1.00	1.00	2.00	1.00	1.02	1.10	1.00	1.05	1.02	1.00	1.00
1.9	7 1.80	1.90	1.71	2.05	1.83	1.84	1.57	1.76	1.79	1.82	1.50
2.0	5 2.4	2 2.40	1.00	1.67	2.21	2.89	1.50	2.00	1.55	1.00	2.00
6	2 44	32	7	23	43	40	21	68	45	35	2
2	7 1	7 15	1	12	16	11	9	25	15	14	3
30.2	4 30.69	31.96	0.00	28.79	27.09	25.83	19.23	26.02	26.61	26.30	0.00
7.6	9 7.8	8.24	5.25	8.88	7.68	7.85	6.44	7.28	7.64	7.98	8.75
4.9	9 4.9	5.00	7.00	5.31	4.91	4.92	5.58	4.91	5.24	4.91	4.67
1.7	1.7	1./1	1.38	1.64	1.81	1.80	1.26	1.6/	1.52	1.53	1.25
1.0	2 1.0	1.00	1.13	1.00	1.00	1.00	1.00	1.03	1.00	1.00	1.00
1.9	9 1.94	2.03	1.63	1.94	1.93	2.04	1.56	1.81	1.74	1.77	1.75
80.0	61.00	47.00	8.00	35.00	59.00	51.00	30.00	93.00	60.00	49.00	5.00

Figure 26: Mobile Phone Usage (1-3) on Movement Actions

IVIODIIC I I	none	USUEC	тЭ	'	viovii	16, -	τορρ	cu, ru	INCO	, 1400		
	Q16_1 Attn Phon	e Making Calls			Q16_2 Attn Pho	ne Reading Ei	mail	Q16_	3 Attn Phone 9	ending Email		
	While Moving	While Stopped	While Parked	Never	While Moving W	/hile Stopp W	/hile Parke Never	While	e Moving	While Stopped	While Parked	Never
Average of Question												
Casual	35.2	2 37.21	35.24	20.00	52.00	38.75	46.00	22.31	42.50	61.00	46.92	23.70
Uber/Lyft	32.5	32.22	33.75	25.00	34.00	37.00	34.44	0.00	35.00	36.67	42.86	10.00
Q23 Conflicts/Day												
Casual	6.0	6.10	6.20	6.11	5.60	6.67	7.00	5.67	5.50	5.92	6.75	5.86
Uber/Lyft	11.2	5 11.44	12.00	10.00	12.60	12.00	12.92	8.67	11.50	12.58	12.93	10.83
Q24 Near Misses/Day												
Casual	4.4	1 4.83	4.29	4.63	4.40	4.48	4.38	4.84	4.25	4.71	4.31	4.80
Uber/Lyft	6.3	7 6.50	6.75	4.50	6.60	6.71	6.85	5.33	7.50	7.33	6.93	4.83
Q26 Collisions w/Objects												
Casual	1.5	5 1.58	1.55	1.56	2.80	1.50	1.59	1.46	2.25	1.79	1.76	1.40
Uber/Lyft	1.7	4 2.17	2.25	1.50	1.60	2.29	2.31	1.50	2.00	2.58	2.43	1.00
Q27 Collisions w/Peds												
Casual	1.0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uber/Lyft	1.0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q28 Collisions w/Bike/Scooter/Skateboard								Most	CASLIAI	Drivers N		
Casual	1.0	2 1.05	1.02	1.00	1.00	1.05	1.00	1.02	1.00	1.07	1.00	1.02
Uber/Lyft	1.0	5 1.06	1.00	1.00	1.00	1.07	1.00	Read	or Send	Email whi	le drivingo	1.00
Q29 Collisions w/Vehicle												
Casual	1.9	1 1.88	1.88	1.38	3.00	1.95	2.00	1.84	2.00	2.14	1.94	1.86
Uber/Lyft	1.5	2.25	2.43	2.00	1.33	2.31	2.55	1.50	1.29	2.64	2.67	1.33
Count of Drivers								And in case of the local division of the loc				and the second se
Casual	4	7 43	42	9	5	22	72	46	4	14	1	52
Uber/Lyft	2	19	18	3	10	14	13	9 🗾	8	12	4	9
Total Question Average	34.3	35.74	34.83	22.00	40.00	38.08	41.67	10.53	37.50	49.47	45.50	22.55
Total Q23 Conflicts/Day	7.5	4 7.70	7.82	6.82	10.27	8.80	9.26	6.02	9.50	9.12	9.63	6.39
Total Q24 Near Misses/Day	4.9	B 5.33	4.98	4.60	5.87	5.37	5.32	4.90	6.42	5.92	5.53	4.81
Total Q26 Collisions w/Objects	1.6	1 1.75	1.74	1.55	2.00	1.81	1.86	1.46	2.08	2.15	2.06	1.36
Total Q27 Collisions w/Peds	1.0	0 1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Total Q28 Collisions w/Bike/Scooter/Skateboard	1.0	3 1.05	1.02	1.00	1.00	1.06	1.00	1.02	1.00	1.08	1.00	1.02
Total Q29 Collisions w/Vehicle	1.8	0 1.98	2.02	1.50	1.85	2.09	2.19	1.80	1.55	2.36	2.24	1.80
Total Count of Drivers	67.0	0 62.00	<u>60</u> .00	12.00	15.00	36.00	35.00	55.00	12.00	26.00	31.00	<mark>6</mark> 1.00

Mobile Phone Usage 1-3 – Moving, Stopped, Parked, Never

Figure 27: Mobile Phone Usage (4-7) on Movement Actions

		Mob	oile P	hone	e Usa	ge 4	-7 — [Novi	ing, S	Stopp	oed, l	Parke	ed, N	ever		
Q16_4 Attn While Movi	Phone Rea	idng Text Message	While Parked	Never	Q16_5 Attn Phone S While Moving \	ending Text Messa While Stopped V	ge Vhile Parked N	ever	Q16_6 Attn Phone	Using Navigation Ap While Stopped	ps While Parked	Never	Q16_7 Attn Phone While Moving	Using Other Apps While Stopped	While Parked	Never
	45.00	37.95	35.16	17.50	46.25	44.55	40.00	26.67	39.62	42.83	43.06	5.00	40.00	42.78	45.33	17.60
	43.08	34.00	36.92	13.33	43.08	38.57	42.50	15.00	44.58	43.68	46.25	30.00	54.55	42.50	38.57	15.00
	5 71	6.72	6.35	5.99	5.94	6.47	6.40	5.78	5.98	6.17	6.38	5.00	7.09	6.79	7.25	5.86
	13.00	12.06	12.24	6.33	12.79	11.88	12.24	6.33	11.64	11.56	12.47	6.00	13.30	12.54	12.00	8.40
	4.39	4.43	4.26	5.76	4.35	4.50	4.30	5.29	4.72	4.46	4.32	4.33	4.40	4.39	4.27	4.50
•	6.69	6.81	6.71	4.00	6.93	6.69	6.71	4.00	6.36	6.50	6.93	4.00	7.10	7.23	6.63	4.80
L	1.67	1.53	1.66	1.39	1.41	1.49	1.68	1.50	1.47	1.43	1.67	1.29	1.45	1.32	1.63	1.42
<u> </u>	1.//	2.25	2.18	1.00	1.93	2.25	2.18	1.00	2.18	2.11	2.27	1.00	1.90	2.54	2.19	1.20
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	1.00	1.00	1.00	N 4 500	CACLUA	Duti 140		1.00	1.00	1.00	1.00	Made	CACLIAN	Duringende		1.00
				Ivian	y CASUA	L Drivers	SNEVER					IVIOSU	CASUAL	Drivers	NEVER	
	1.06	1.04	1.03	Read	or Sand	Toyte	hile driv	ing ¹ 00	1.02	1.04	1.00		ther An	ns while	drivind	1.04
L	1.00	1.06	1.00	neau	ror seniu	TEXIS W	me unv	100	1.05	1.06	1.00	Use C	A A A	ps write		1.00
-	2.00	4.70			1.02	1.02	4.00		4 70	1.00						1.00
	1.67	1.76	1.85	2.39	1.63	1.82	1.90	1.00	1.70	1.88	2.24	1.43	2.10	2.00	2.27	1.60
	1.07	2.29	2.33	1.00	1.09	2.23	2.33	1.00	2.10	2.13	2.30	1.00	1.07	2.50	2.25	1,40
-	18	47		18	17	39	4	24	55	49	39	7	11	19	- :a	45
-	13	18	- 17	3	14	17	8	3	25	20	17	1	11	13		6
	44.19	36.95	35.6	16.3	44.83	42.77	40.75	25.00	41.18	43.08	44.04	13.33	47.27	42.67	42.07	17.4*
	8.87	7.73	8.33	5.95	9.03	8.07	8.51	5.85	7.62	7.64	8.13	5.13	10.05	9.13	9.63	6.12
	5.35	5.05	5.08	5.50	5.52	5.15	5.17	5.15	5.20	5.02	5.06	4.29	5.75	5.58	5.48	4.53
	1.00	1./1	1.83	1.33	1.65	1.71	1.85	1.44	1.68	1.61	1.83	1.25	1.6/	1.8	1.91	1.40
1	1.03	1.00	1.00	1.00	1.00	1.05	1.02	1.00	1.00	1.00	1.00	1.00	1.00	1.00	381.00	1.00
	1.86	1.88	2.02	2.19	1.66	1.94	2.04	2.08	1.81	1.94	2.27	1.38	1.89	2.21	2.28	1.58
	21.00	CT 00	F2.00	21.00	21.00	56.00	40.00	27.00	00.00	CO 00	FC 00	0.00	22.00	22.00	22.00	51.00

Uber/Lyft	App	Usage	e 1-3	- 1	Movir	ng, S	Stopp	bed, l	Parkeo	d, Nev	er	
	O20 1 Attn Drive	r Ann Setting De	stination		O20 2 Attn Drive	er Ann Watc	h for Ride Requ	lests	020 3 Attn Driver	App Understand Pi	kun Details	
	While Moving	While Stopped	While Parked	Never	While Movine W	hile Stopp V	Vhile Parker Nev	ver	While Moving	While Stopped	While Parked	Never
Average of Question												
Uber/Lyft	39.0	50.00	37.00	5.00	31.82	37.33	35.33	No Data	42.17	48.75	48.46	6
Q23 Conflicts/Day												
Uber/Lyft	13.2	5 12.82	11.71	9.71	11.73	12.27	12.33	5.00	11.52	12.06	12.85	i
Q24 Near Misses/Day												
Uber/Lyft	6.5	3 7.00	6.64	5.43	6.32	6.67	6.67	4.00	6.26	6.81	6.85	i
Q26 Collisions w/Objects												
Uber/Lyft	1.4	2 2.64	2.21	2.29	2.18	2.20	2.13	1.00	2.13	2.25	2.31	
Q27 Collisions w/Peds												
Uber/Lyft	1.0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1
Q28 Collisions w/Bike/Scooter/Skateboard												
Uber/Lyft	1.0	1.09	1.00	1.00	1.05	1.07	1.00	1.00	1.04	1.06	1.00	1
Q29 Collisions w/Vehicle												
Uber/Lyft	1.6	2.89	2.42	1.71	2.10	2.31	2.31	1.00	2.05	2.29	2.55	i
Count of Drivers												
Uber/Lyft	1	2 📒 11	14	7	22	15	15	1	23	16	13	1
Total Question Average	39.0	ə 50.00	37.00	5.00	31.82	37.33	35.33	No Data	42.17	48.75	48.46	i
Total Q23 Conflicts/Day	13.2	5 12.82	11.71	9.71	11.73	12.27	12.33	5.00	11.52	12.06	12.85	
Total Q24 Near Misses/Day	6.5	3 7.00	6.64	5.43	6.32	6.67	6.67	4.00	6.26	6.81	6.85	
Total Q26 Collisions w/Objects	1.4	2 2.64	2.21	2.29	2.18	2.20	2.13	1.00	2.13	2.25	2.31	
Total Q27 Collisions w/Peds	1.0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00)
Total Q28 Collisions w/Bike/Scooter/Skateboard	1.0	1.09	1.00	1.00	1.05	1.07	1.00	1.00	1.04	1.06	1.00)
Total Q29 Collisions w/Vehicle	1.6	2.89	2.42	1.71	2.10	2.31	2.31	1.00	2.05	2.29	2.55	i
Total Count of Drivers	12.0	11.00	14.00	7.00	22.00	15.00	15.00	1.00	23.00	16.00	13.00	0.0

Figure 28: Uber/Lyft Driver App Usage (1-3) on Movement Actions

Figure 29: Uber/Lyft Driver App Usage (4-7) on Movement Actions

	Ube	r/Lyf	t Ap	o Usa	age 4	-7 –	Mov	ing, S	Stopp	oed,	Parke	ed, N	ever		
Q20_4 Attn Drive	App Follow Navigati	on .		Q20_5 Attn Drive	App Contact Rider			Q20_6 Attn Driver	App Locate Pickup	Rider		Q20_7 Attn Driver	App Drop Off Rider		
while woving	while Stopped	while Parked	Never	while moving	while Stopped	while Parked	Never	while woving	while Stopped	while Parked	Never	while Moving	while Stopped	while Parked	Never
37.7	46.67	58.89	5.00	45.00	48.13	40.00	0.00	62.38	68.46	61.33		59.55	55.00	58.00	
			_												
11.7	12.40	12.56	6.00	12.06	12.06	12.78	6.00	11.76	13.00	12.20		11.50	13.33	12.50	
67	68	7 11	5.50	6.50	6.81	6 33	4.00	6.24	7.23	6.80		6.09	7.42	7.40	
0.2	0.07			0.50	0.81	0.33	4.00	- 0.24	1.23	0.80			- 7.42	- 7.40	
1.9	2.27	2.67	4.00	1.72	2.25	2.00	1.00	2.14	2.46	2.27		2.05	2.58	2.90	
1.0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	
1.0	1.07	1.00	1.00	1.00	1.06	1.00	1.00	1.05	1.00	1.00		1.05	1.00	1.00	
	-	1													
2.0	2.25	2.75	1.00	1.56	2.29	2.31	1.00	2.11	2.64	2.38		2.05	2.80	3.13	
2	1	5	5.00	18	16	18	1	21	13	15		22	12	10	
11.7	12.40	12.56	6.00	12.06	12.06	12.78	6.00	11.76	13.00	12.20		11.50	13.33	12.50	
6.2	6.87	7.11	5.50	6.50	6.81	6.33	4.00	6.24	7.23	6.80		6.09	7.42	7.40	
1.9	2.27	2.67	4.00	1.72	2.25	2.00	1.00	2.14	2.46	2.27		2.05	2.58	2.90	
1.0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	
1.0	1.07	1.00	1.00	1.00	1.06	1.00	1.00	1.05	1.00	1.00		1.05	1.00	1.00	
2.0	2.25	2.75	1.00	1.56	2.29	2.31	1.00	2.11	2.64	2.38		2.05	2.80	3.13	

REFERENCES

Young, Riya, (9 May, 2019). Distracted Driving Experiences Between Uber/Lyft Drivers and Recreational Drivers and Impacts to Traffic Safety. Microsoft PowerPoint Presentation. University of California, Berkeley.

Young, Riya, (14 May, 2019). Distracted Driving Experiences Between Uber/Lyft Drivers and Recreational Drivers and Impacts to Traffic Safety. University of California, Berkeley.

Young, Riya, (20 March, 2020). Distracted Driving Experiences Between Uber/Lyft Drivers and Recreational/Casual Drivers and Impacts to Traffic Safety, Part 2. Microsoft PowerPoint Presentation. University of California, Berkeley.