R Assignment

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```
#Importing dependencies
library(dplyr)
```

```
##
## Attaching package: 'dplyr'
```

```
## The following objects are masked from 'package:stats':
##
##     filter, lag
```

```
## The following objects are masked from 'package:base':
##
##     intersect, setdiff, setequal, union
```

```
library(tidyverse)
```

```
## -- Attaching packages --------------------------------------- tidyverse 1.3.1 --
```

```
## v ggplot2 3.3.3     v purrr   0.3.4
## v tibble  3.1.1     v stringr 1.4.0
## v tidyr   1.1.3     v forcats 0.5.1
## v readr   1.4.0
```

```
## -- Conflicts ------------------------------------------ tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()
```

```
library(ggplot2)
library(tinytex)
```

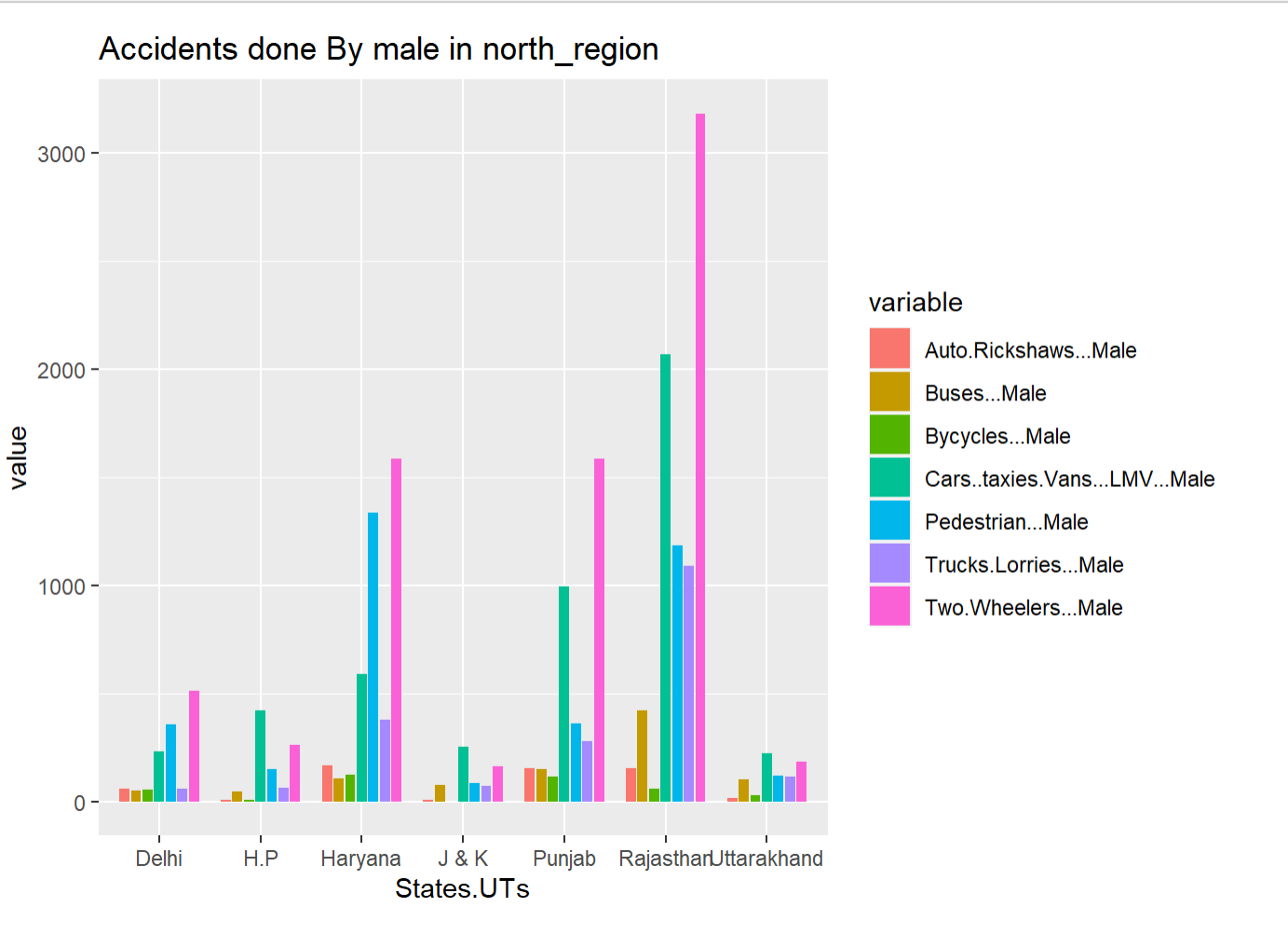
```
#Importing dataset
data <- read.csv("D:\\R Assignment\\Types of vehicle data.csv")
```

```
#Viewing dataset
view(data)
```

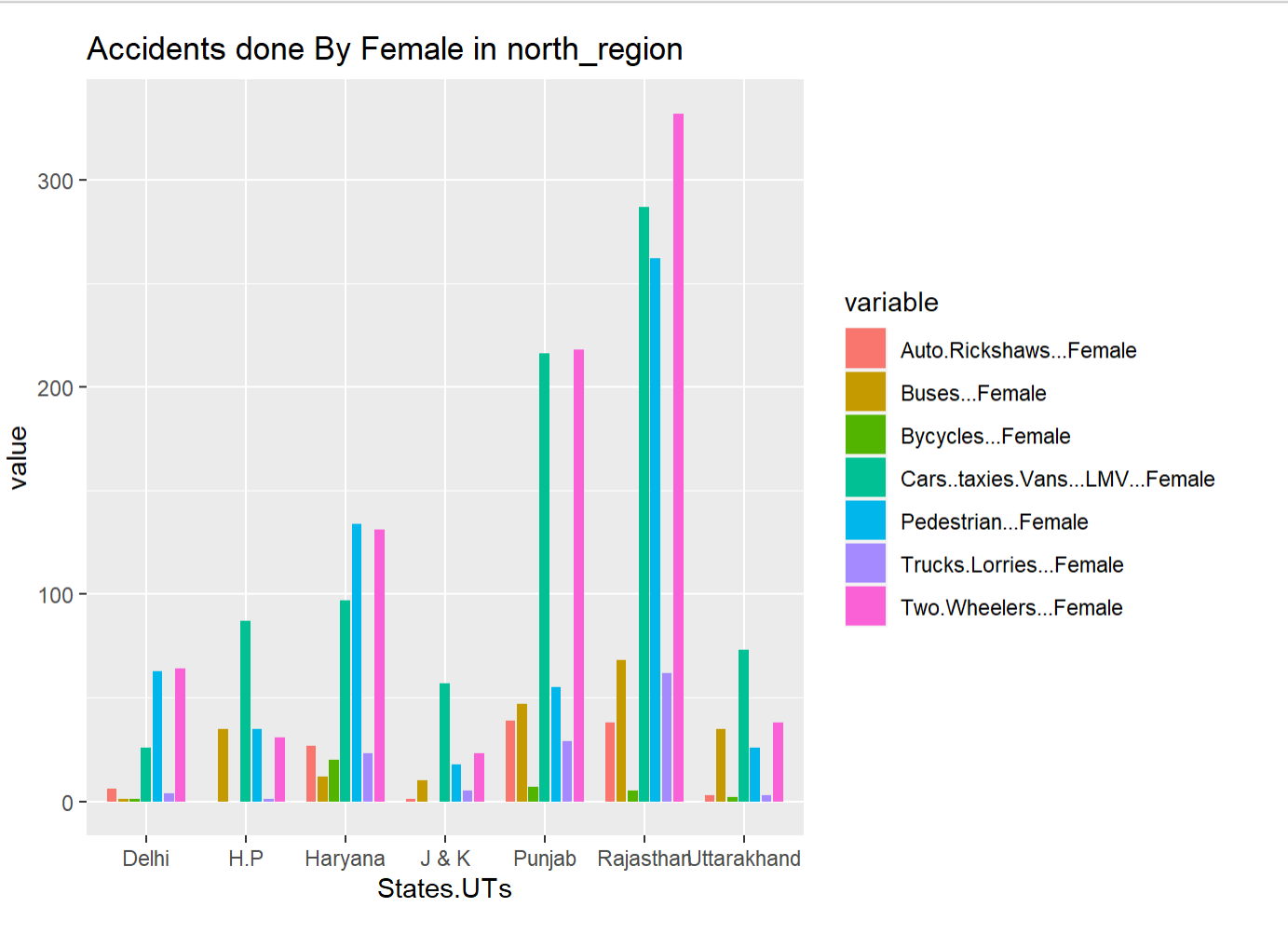
```
#Grouping dataset in region wise
North_region <- filter(data, States.UTs %in% c("Delhi", "Haryana", "H.P", "J & K", "Punjab", "Rajasthan", "Uttara
khand"))
Central_region <- filter(data, States.UTs %in% c("Chandigarh", "Madhya Pradesh", "Uttar Pradesh"))
East_region <- filter(data, States.UTs %in% c("Bihar", "Jharkhand", "Odisha", "West Bengal"))
Northeast_region <- filter(data, States.UTs %in% c("A.P", "Assam", "Assam", "
Meghalaya", "Mizoram", "Nagaland", "Sikkim", "Tripura"))
West_region <- filter(data, States.UTs %in% c("Goa", "Gujarat", "Maharashtra"))
South_region <- filter(data, States.UTs %in% c("Andhra Pradesh", "Karnataka", "Kerala", "Tamil Nadu"))
```

```
#Splitting in Male & female category
##North_male
North_region_male <- select(North_region, States.UTs, Pedestrian...Male, Bycycles...Male, Two.Wheelers...Male, Au
to.Rickshaws...Male, Cars..taxies.Vans...LMV...Male, Trucks.Lorries...Male, Buses...Male)
##North_female
North_region_Female <- select(North_region, States.UTs, Pedestrian...Female, Bycycles...Female, Two.Wheelers...Fe
male, Auto.Rickshaws...Female, Cars..taxies.Vans...LMV...Female, Trucks.Lorries...Female, Buses...Female)
##Central_male
Central_region_male <- select(Central_region, States.UTs, Pedestrian...Male, Bycycles...Male, Two.Wheelers...Mal
e, Auto.Rickshaws...Male, Cars..taxies.Vans...LMV...Male, Trucks.Lorries...Male, Buses...Male)
##Central_female
Central_region_Female <- select(Central_region, States.UTs, Pedestrian...Female, Bycycles...Female, Two.Wheeler
s...Female, Auto.Rickshaws...Female, Cars..taxies.Vans...LMV...Female, Trucks.Lorries...Female, Buses...Female)
##East_male
East_region_male <- select(East_region, States.UTs, Pedestrian...Male, Bycycles...Male, Two.Wheelers...Male, Aut
o.Rickshaws...Male, Cars..taxies.Vans...LMV...Male, Trucks.Lorries...Male, Buses...Male)
##East_female
East_region_Female <- select(East_region, States.UTs, Pedestrian...Female, Bycycles...Female, Two.Wheelers...Fema
le, Auto.Rickshaws...Female, Cars..taxies.Vans...LMV...Female, Trucks.Lorries...Female, Buses...Female)
##Northeast_male
Northeast_region_male <- select(Northeast_region, States.UTs, Pedestrian...Male, Bycycles...Male, Two.Wheelers...
Male, Auto.Rickshaws...Male, Cars..taxies.Vans...LMV...Male, Trucks.Lorries...Male, Buses...Male)
##Northeast_female
Northeast_region_Female <- select(Northeast_region, States.UTs, Pedestrian...Female, Bycycles...Female, Two.Wheel
ers...Female, Auto.Rickshaws...Female, Cars..taxies.Vans...LMV...Female, Trucks.Lorries...Female, Buses...Female)
##West_male
West_region_male <- select(West_region, States.UTs, Pedestrian...Male, Bycycles...Male, Two.Wheelers...Male, Aut
o.Rickshaws...Male, Cars..taxies.Vans...LMV...Male, Trucks.Lorries...Male, Buses...Male)
##West_female
West_region_Female <- select(West_region, States.UTs, Pedestrian...Female, Bycycles...Female, Two.Wheelers...Fema
le, Auto.Rickshaws...Female, Cars..taxies.Vans...LMV...Female, Trucks.Lorries...Female, Buses...Female)
##South_male
South_region_male <- select(South_region, States.UTs, Pedestrian...Male, Bycycles...Male, Two.Wheelers...Male, Au
to.Rickshaws...Male, Cars..taxies.Vans...LMV...Male, Trucks.Lorries...Male, Buses...Male)
##South_female
South_region_Female <- select(South_region, States.UTs, Pedestrian...Female, Bycycles...Female, Two.Wheelers...Fe
male, Auto.Rickshaws...Female, Cars..taxies.Vans...LMV...Female, Trucks.Lorries...Female, Buses...Female)
```

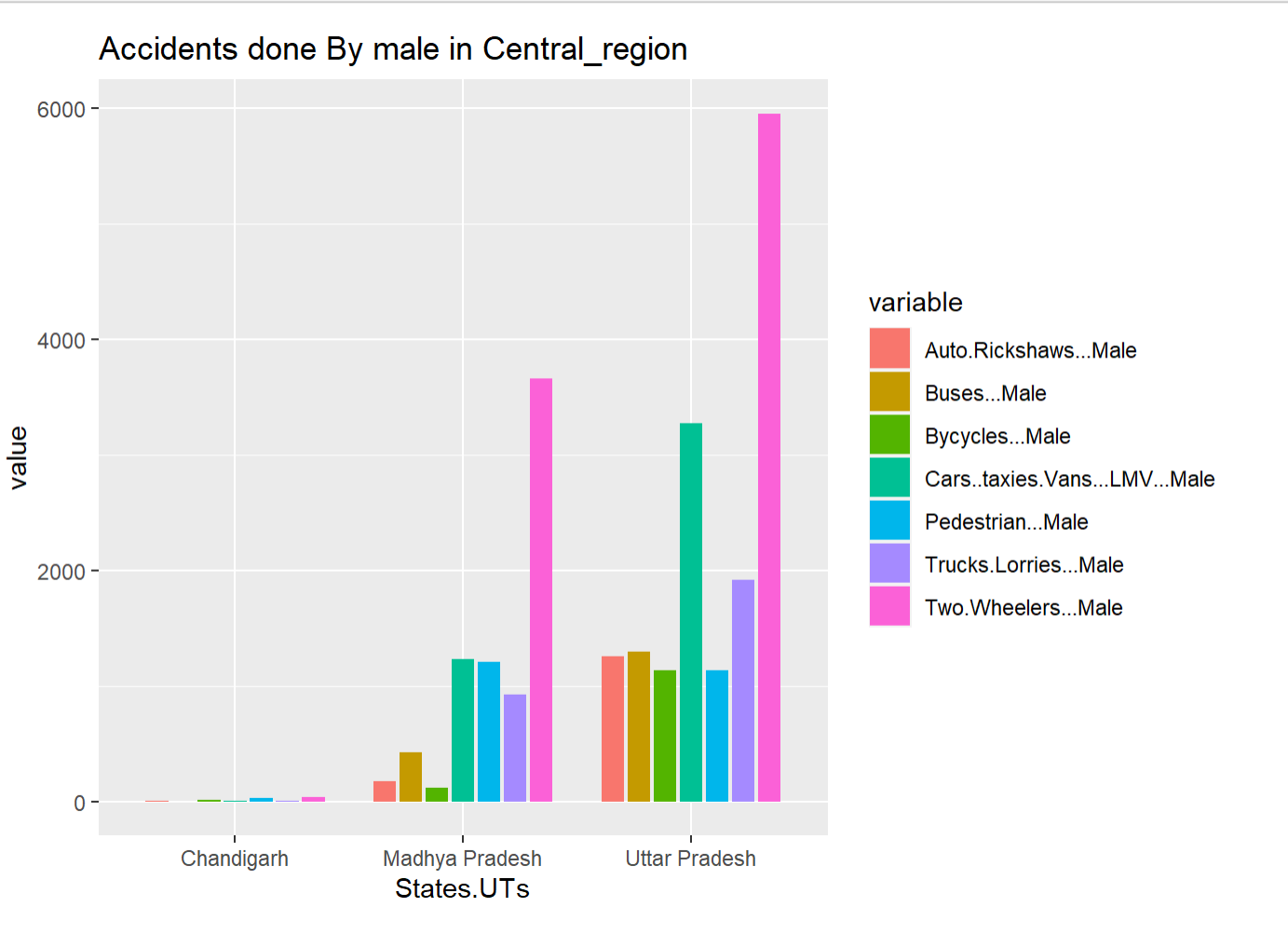
```
#Plotting
North_region_male <- North_region_male %>% select(States.UTs, Pedestrian...Male, Bycycles...Male, Two.Wheelers...
Male, Auto.Rickshaws...Male, Cars..taxies.Vans...LMV...Male, Trucks.Lorries...Male, Buses...Male) %>% gather(key
 = "variable", value = "value", -States.UTs)
ggplot(North_region_male, aes(fill=variable, y=value, x=States.UTs)) + geom_bar(position = position_dodge(0.8),wi
dth = 0.7, stat="identity") + labs(title = "Accidents done By male in north_region")
```



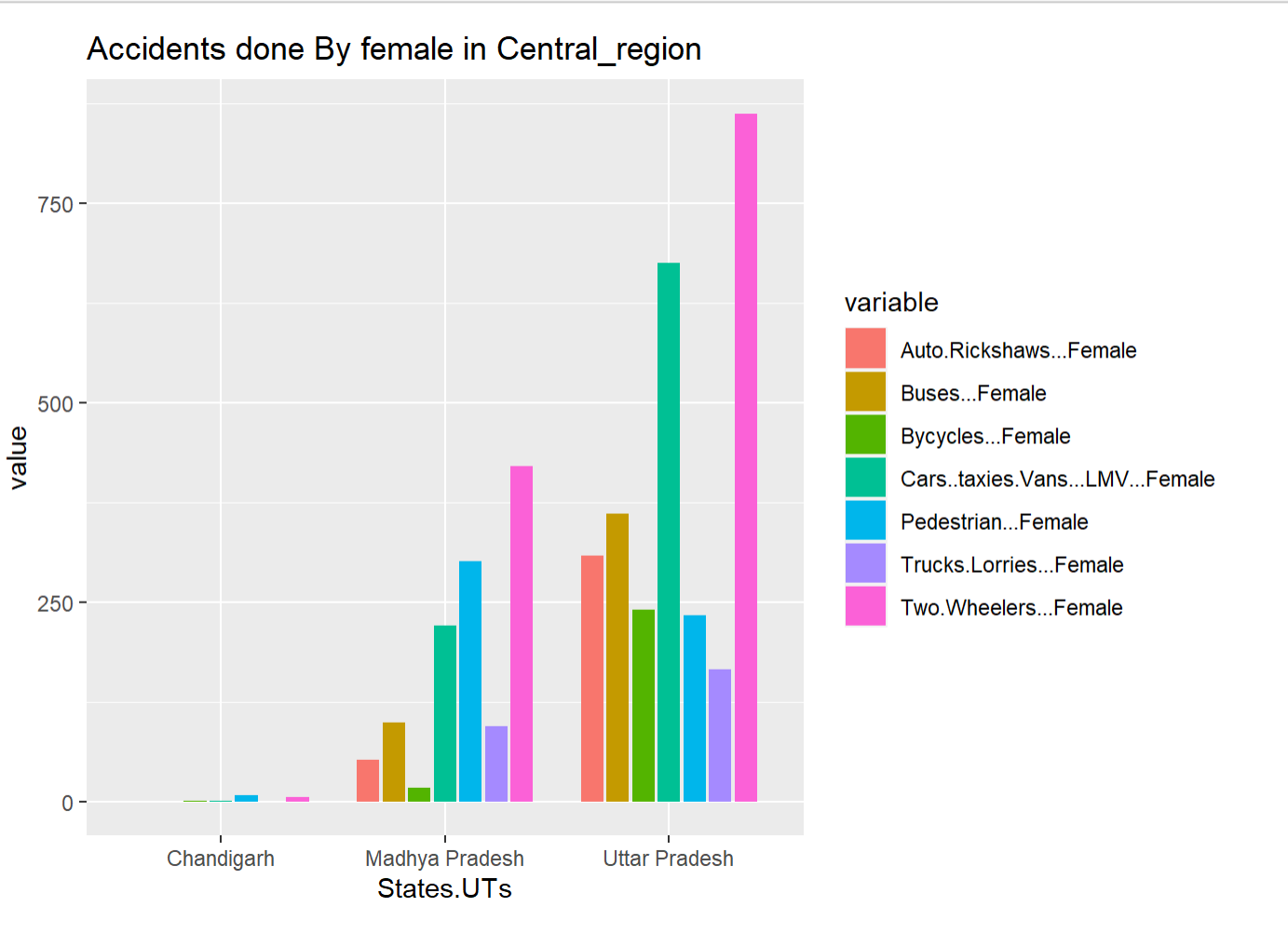

```
North_region_Female <- North_region_Female %>% select(States.UTs, Pedestrian...Female, Bycycles...Female, Two.Whe
elers...Female, Auto.Rickshaws...Female, Cars..taxies.Vans...LMV...Female, Trucks.Lorries...Female, Buses...Femal
e) %>% gather(key = "variable", value = "value", -States.UTs)
ggplot(North_region_Female, aes(fill=variable, y=value, x=States.UTs)) + geom_bar(position = position_dodge(0.8),
width = 0.7, stat="identity") + labs(title = "Accidents done By Female in north_region")
```



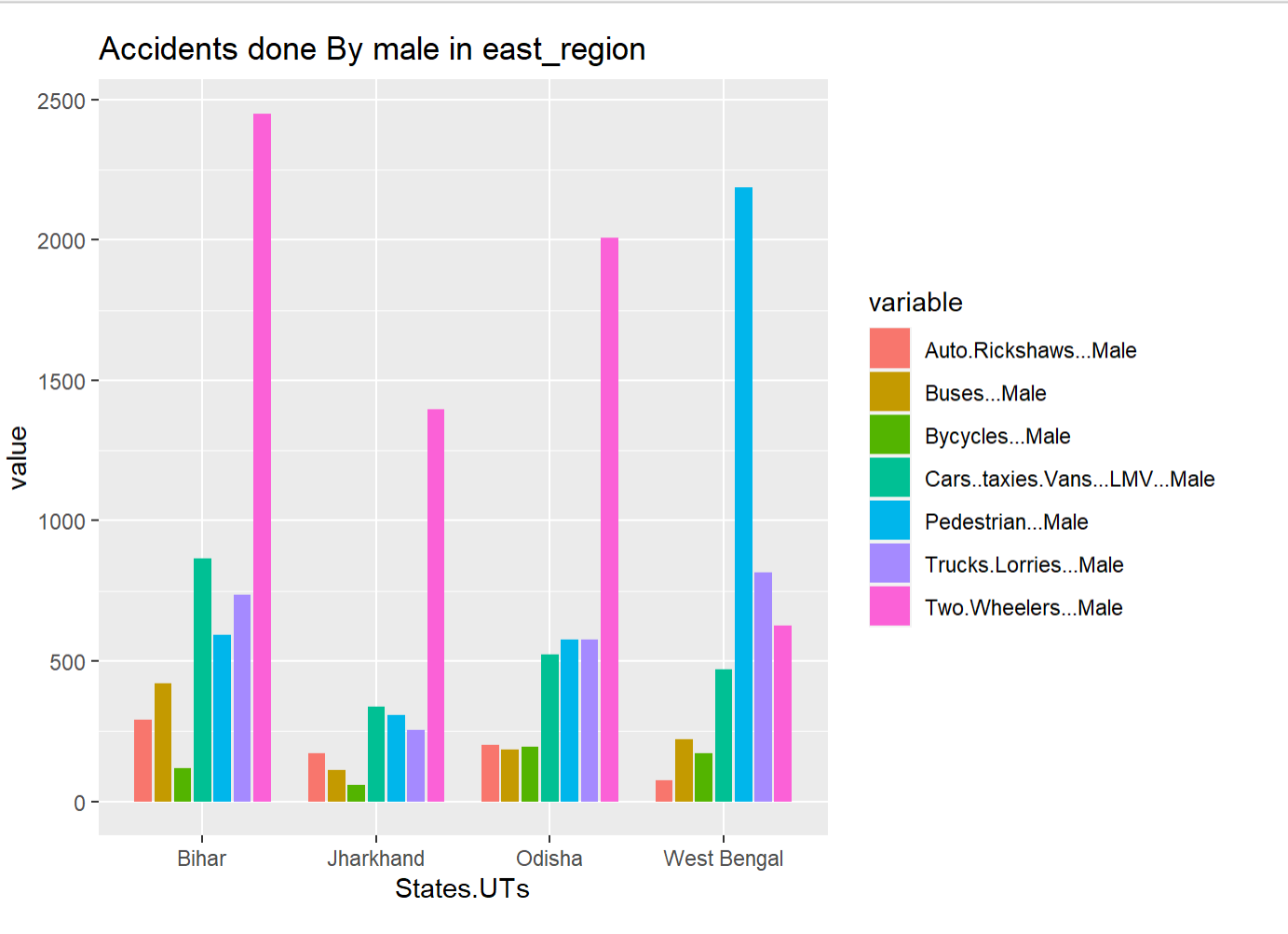

```
Central_region_male <- Central_region_male %>% select(States.UTs, Pedestrian...Male, Bycycles...Male, Two.Wheeler
s...Male, Auto.Rickshaws...Male, Cars..taxies.Vans...LMV...Male, Trucks.Lorries...Male, Buses...Male) %>% gather
(key = "variable", value = "value", -States.UTs)
ggplot(Central_region_male, aes(fill=variable, y=value, x=States.UTs)) + geom_bar(position = position_dodge(0.8),
width = 0.7, stat="identity") + labs(title = "Accidents done By male in Central_region")
```



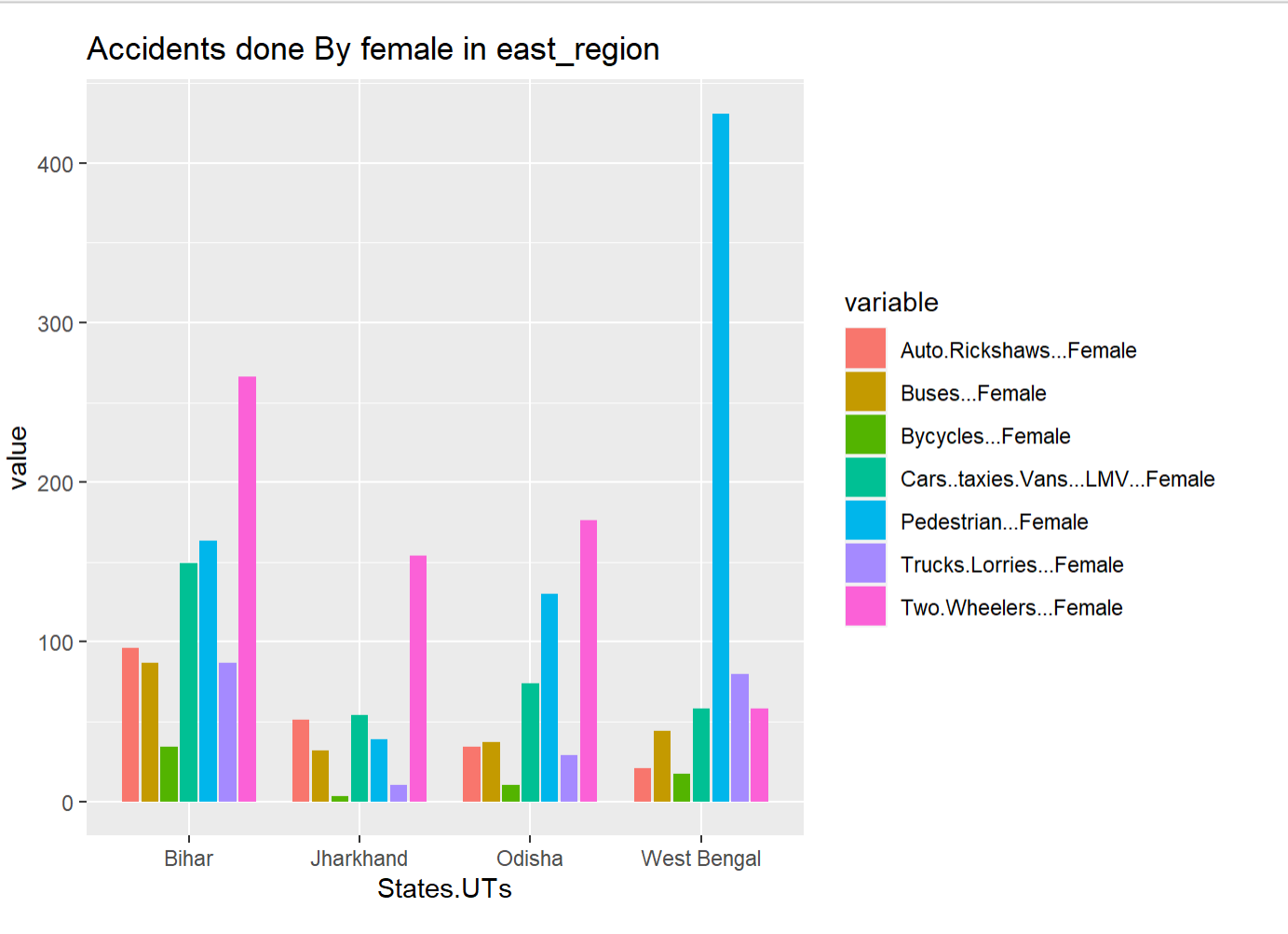

```
Central_region_Female <- Central_region_Female %>% select(States.UTs, Pedestrian...Female, Bycycles...Female, Tw
o.Wheelers...Female, Auto.Rickshaws...Female, Cars..taxies.Vans...LMV...Female, Trucks.Lorries...Female, Buses...
Female) %>% gather(key = "variable", value = "value", -States.UTs)
ggplot(Central_region_Female, aes(fill=variable, y=value, x=States.UTs)) + geom_bar(position = position_dodge(0.8
),width = 0.7, stat="identity") + labs(title = "Accidents done By female in Central_region")
```



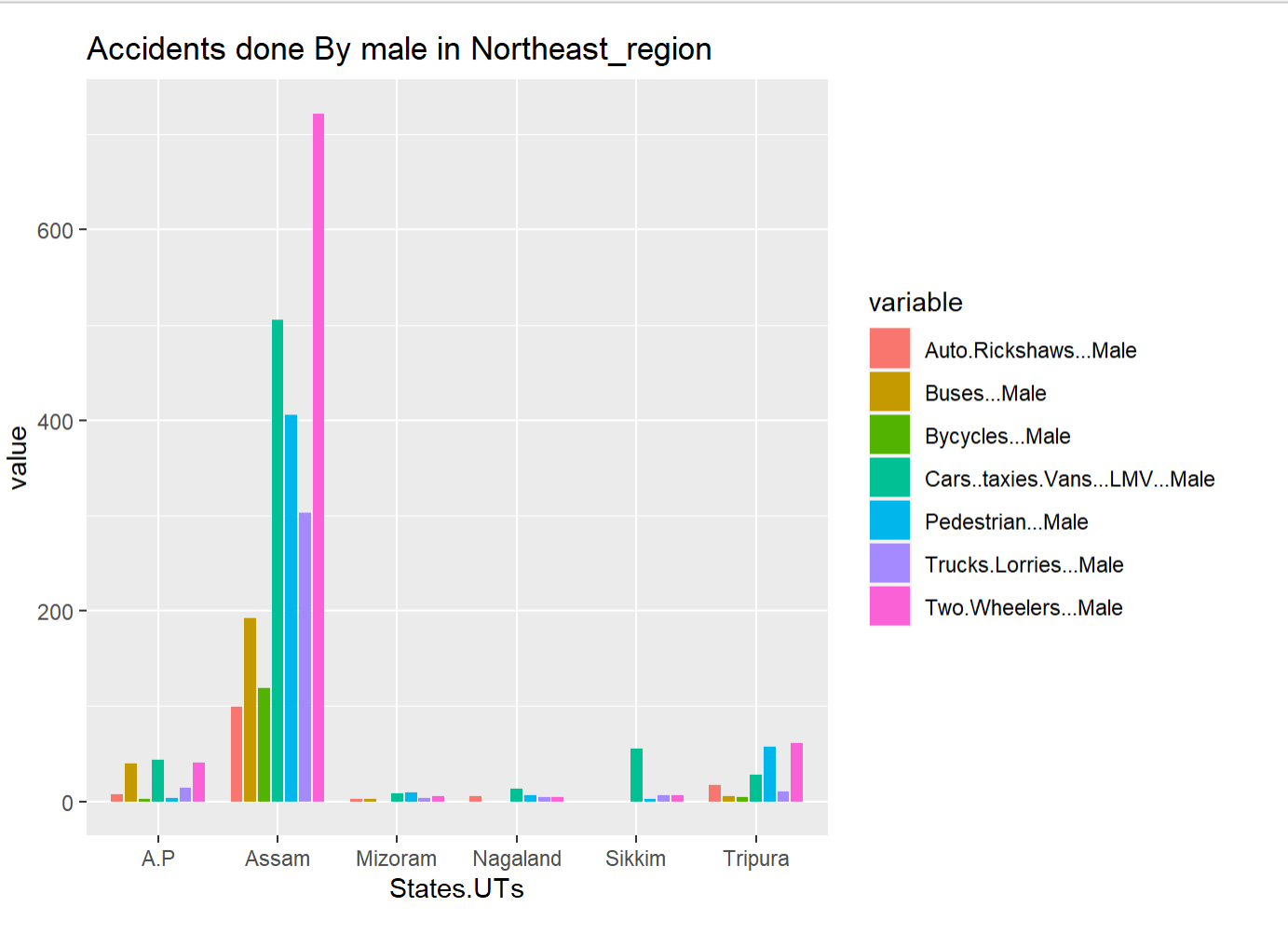

```
East_region_male <- East_region_male %>% select(States.UTs, Pedestrian...Male, Bycycles...Male, Two.Wheelers...Ma
le, Auto.Rickshaws...Male, Cars..taxies.Vans...LMV...Male, Trucks.Lorries...Male, Buses...Male) %>% gather(key =
"variable", value = "value", -States.UTs)
ggplot(East_region_male, aes(fill=variable, y=value, x=States.UTs)) + geom_bar(position = position_dodge(0.8),wid
th = 0.7, stat="identity") + labs(title = "Accidents done By male in east_region")
```



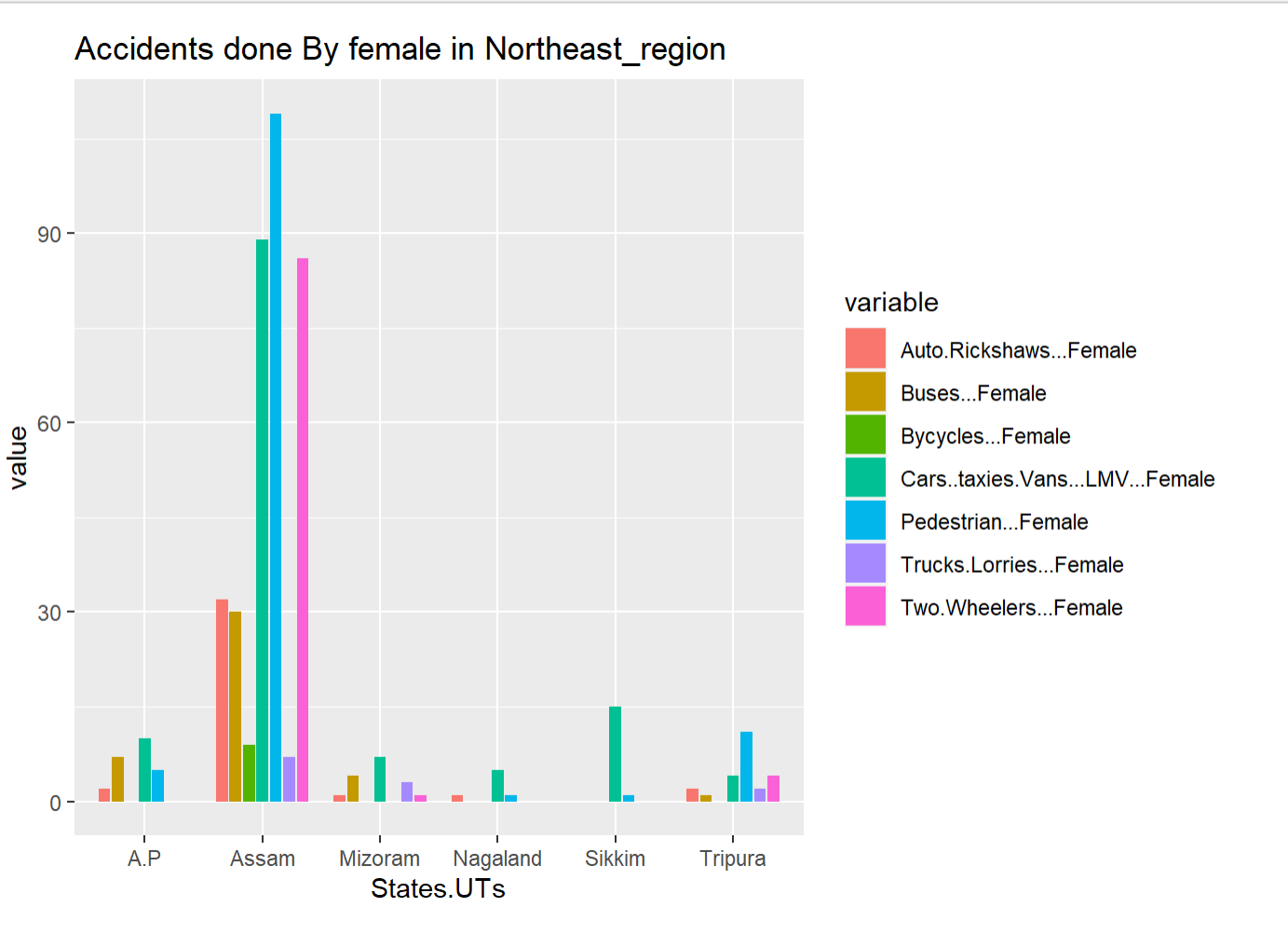

```
East_region_Female <- East_region_Female %>% select(States.UTs, Pedestrian...Female, Bycycles...Female, Two.Wheel
ers...Female, Auto.Rickshaws...Female, Cars..taxies.Vans...LMV...Female, Trucks.Lorries...Female, Buses...Female)
%>% gather(key = "variable", value = "value", -States.UTs)
ggplot(East_region_Female, aes(fill=variable, y=value, x=States.UTs)) + geom_bar(position = position_dodge(0.8),w
idth = 0.7, stat="identity") + labs(title = "Accidents done By female in east_region")
```



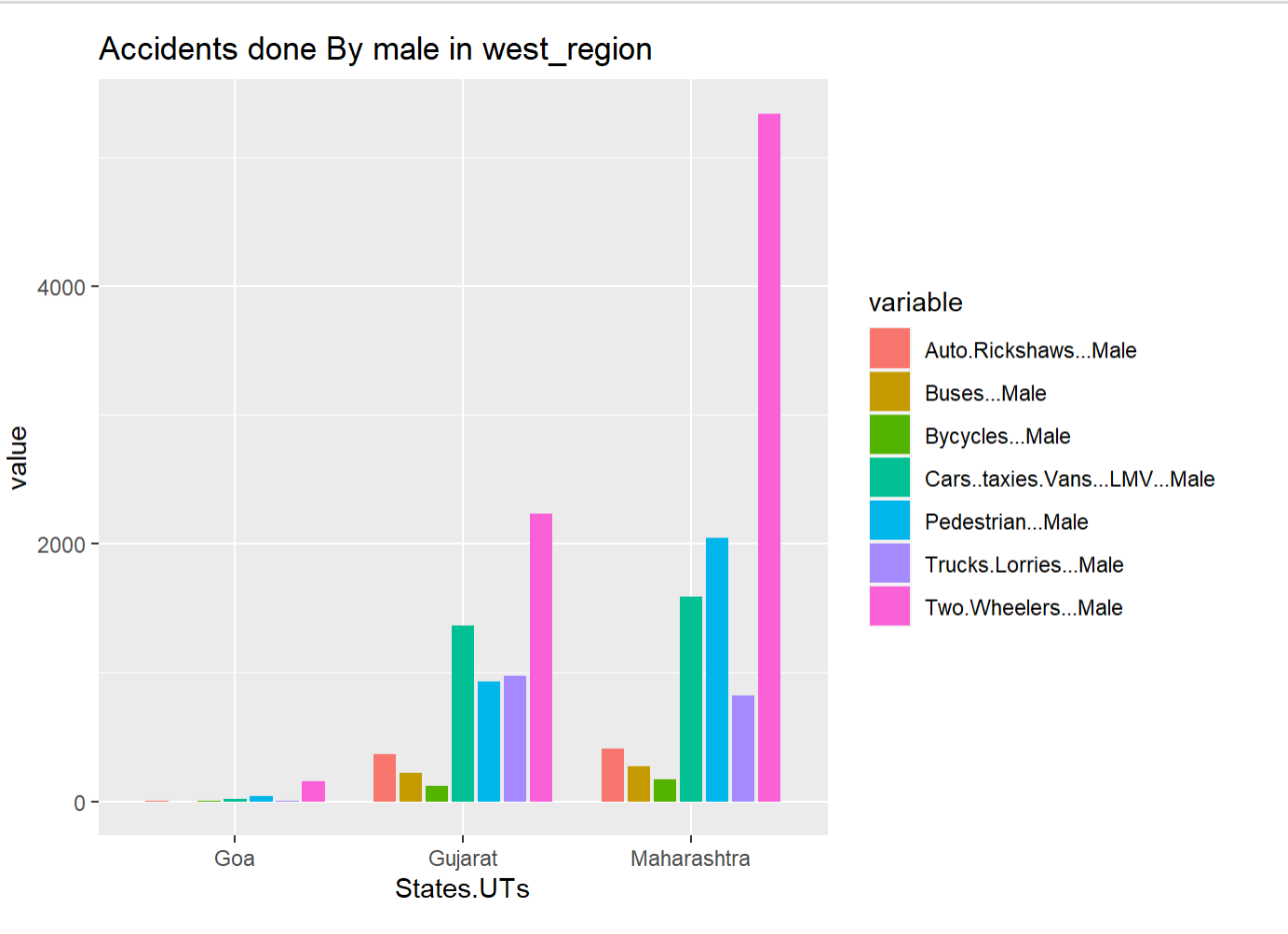

```
Northeast_region_male <- Northeast_region_male %>% select(States.UTs, Pedestrian...Male, Bycycles...Male, Two.Whe
elers...Male, Auto.Rickshaws...Male, Cars..taxies.Vans...LMV...Male, Trucks.Lorries...Male, Buses...Male) %>% gat
her(key = "variable", value = "value", -States.UTs)
ggplot(Northeast_region_male, aes(fill=variable, y=value, x=States.UTs)) + geom_bar(position = position_dodge(0.8
),width = 0.7, stat="identity") + labs(title = "Accidents done By male in Northeast_region")
```



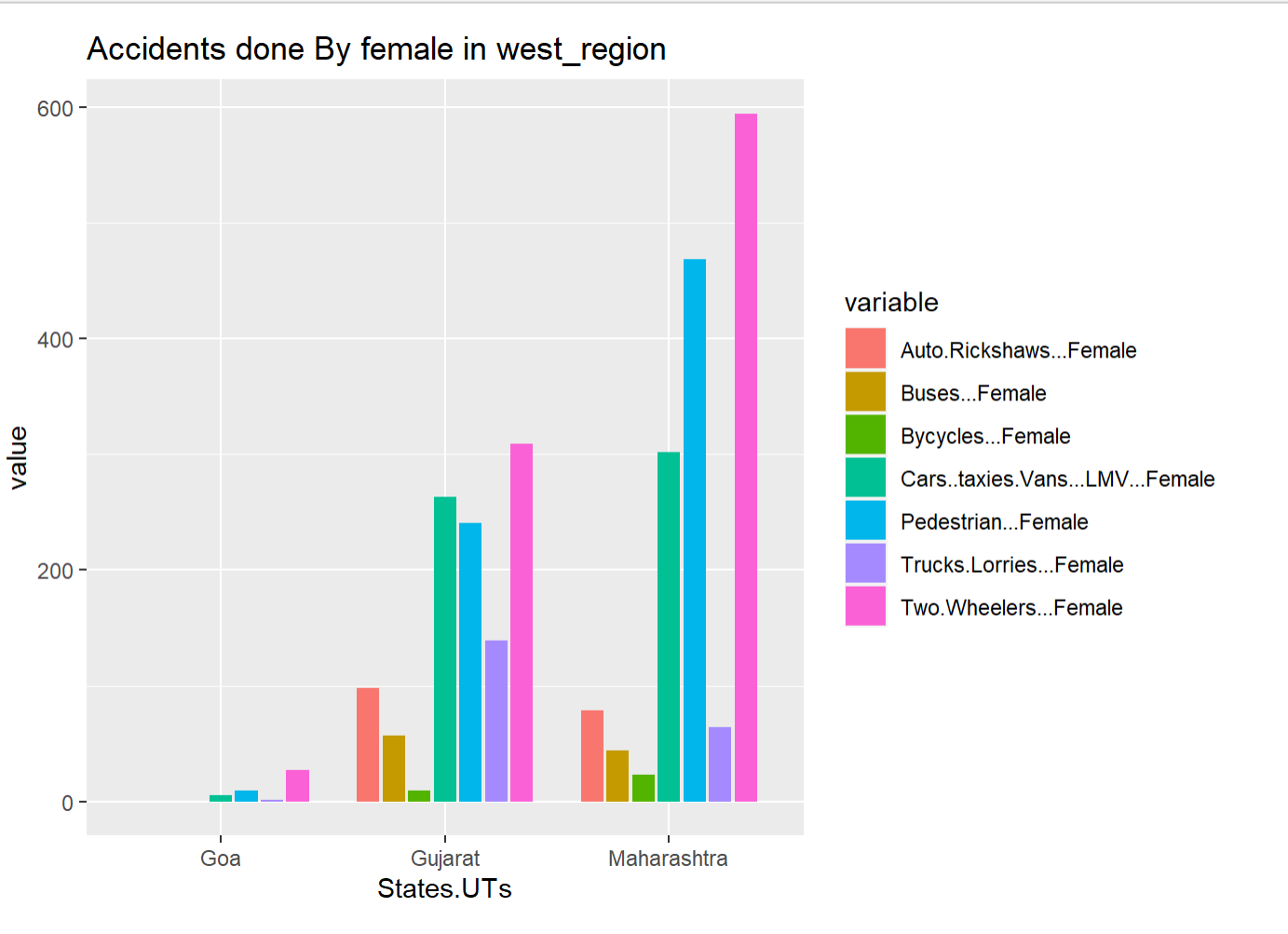

```
Northeast_region_Female <- Northeast_region_Female %>% select(States.UTs, Pedestrian...Female, Bycycles...Female,
Two.Wheelers...Female, Auto.Rickshaws...Female, Cars..taxies.Vans...LMV...Female, Trucks.Lorries...Female, Buse
s...Female) %>% gather(key = "variable", value = "value", -States.UTs)
ggplot(Northeast_region_Female, aes(fill=variable, y=value, x=States.UTs)) + geom_bar(position = position_dodge(
0.8),width = 0.7, stat="identity") + labs(title = "Accidents done By female in Northeast_region")
```



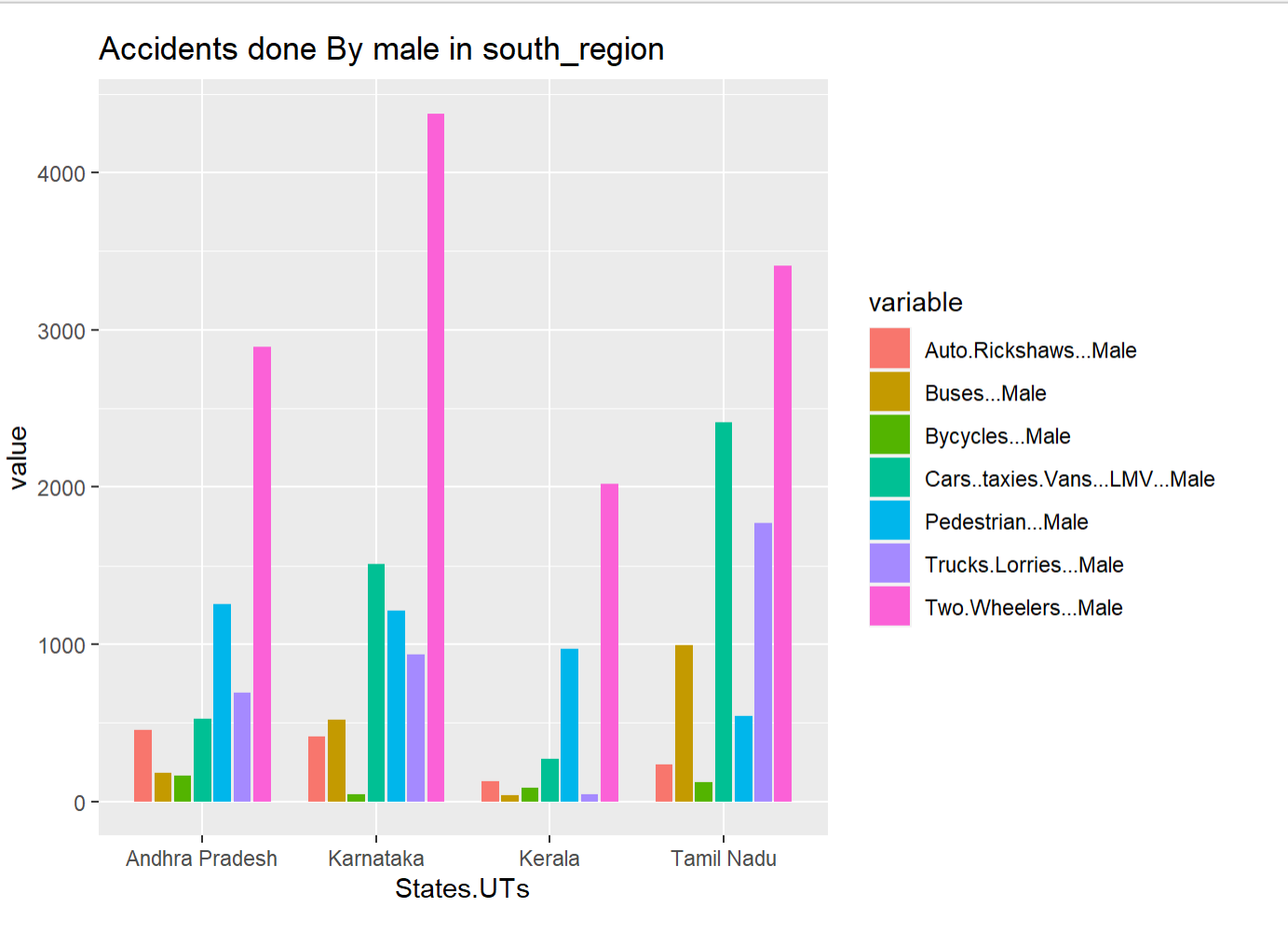

```
West_region_male <- West_region_male %>% select(States.UTs, Pedestrian...Male, Bycycles...Male, Two.Wheelers...Ma
le, Auto.Rickshaws...Male, Cars..taxies.Vans...LMV...Male, Trucks.Lorries...Male, Buses...Male) %>% gather(key =
"variable", value = "value", -States.UTs)
ggplot(West_region_male, aes(fill=variable, y=value, x=States.UTs)) + geom_bar(position = position_dodge(0.8),wid
th = 0.7, stat="identity") + labs(title = "Accidents done By male in west_region")
```




```
West_region_Female <- West_region_Female %>% select(States.UTs, Pedestrian...Female, Bycycles...Female, Two.Wheel
ers...Female, Auto.Rickshaws...Female, Cars..taxies.Vans...LMV...Female, Trucks.Lorries...Female, Buses...Female)
%>% gather(key = "variable", value = "value", -States.UTs)
ggplot(West_region_Female, aes(fill=variable, y=value, x=States.UTs)) + geom_bar(position = position_dodge(0.8),w
idth = 0.7, stat="identity") + labs(title = "Accidents done By female in west_region")
```




```
South_region_male <- South_region_male %>% select(States.UTs, Pedestrian...Male, Bycycles...Male, Two.Wheelers...
Male, Auto.Rickshaws...Male, Cars..taxies.Vans...LMV...Male, Trucks.Lorries...Male, Buses...Male) %>% gather(key
= "variable", value = "value", -States.UTs)
ggplot(South_region_male, aes(fill=variable, y=value, x=States.UTs)) + geom_bar(position = position_dodge(0.8),wi
dth = 0.7, stat="identity") + labs(title = "Accidents done By male in south_region")
```




```
South_region_Female <- South_region_Female %>% select(States.UTs, Pedestrian...Female, Bycycles...Female, Two.Whe
elers...Female, Auto.Rickshaws...Female, Cars..taxies.Vans...LMV...Female, Trucks.Lorries...Female, Buses...Femal
e) %>% gather(key = "variable", value = "value", -States.UTs)
ggplot(South_region_Female, aes(fill=variable, y=value, x=States.UTs)) + geom_bar(position = position_dodge(0.8),
width = 0.7, stat="identity") + labs(title = "Accidents done By female in south_region")
```