

# A SECURITY SYSTEM FOR MOTORCYCLE WITH KEYLESS BIOMETRIC SYSTEM

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**Abstract :** Due to the increasing population the demand of motorcycle is been rising. But is your motorcycle is safe because presently available locks does not provides enough security to a motorcycle owner and due to less security system option its is been easy for a thief to access to the key hole or can be easily broken by them. Thus, there is a need for a better security system which should be unique and can be different from the at present key locks. According to a survey conducted its been observed that most of the people suffers from the key hole blockage and many other key related issues. What if there will be no existence of key hole anymore and one can access the motorcycle with the help of fingerprint. As comparing to the past year the sales of motorcycle is been increased upto 15.98% in India in the year 2018 due to which the robbery cases of motorcycles is also been increasing. Around 4,560 and more cases of motorcycle robbery is been recorded by all over India. According to a statistical representation uploaded on the online site "Statista" it is been observed that Delhi and Mizoram are the two places with high statistical value (i.e 609.2 and 90.1) where the motorcycle is been stolen due to the low security and the easily accessible key hole point. This research proposes an Anti-theft security system to the vehicle which only allow access to the motorcycle if the persons finger impression matches to the stored finger impression in the system which also reduce the loss of ones vehicle and can prevent the issues related to the vehicle key.

**Index term – Motorcycle Security, Reduce the chances of road accident, Keyless system to access bike.**

## 1. INTRODUCTION

Due to the increasing population the demand of motorcycle is been rising. But is your motorcycle is safe because presently available locks does not provides enough security to a motorcycle owner and due to less security system option its is been easy for a thief to access to the key hole or can be easily broken by them. Thus, there is a need for a better security system which should be unique and can be different from the at present key locks. According to a survey conducted its been observed that most of the people suffers from the key hole blockage and many other key related issues. What if there will be no existence of key hole anymore and one can access the motorcycle with the help of fingerprint. As comparing to the past year the sales of motorcycle is been increased upto 15.98% in India in the year 2018 due to which the robbery cases of motorcycles is also been increasing.

Around 4,560 and more cases of motorcycle robbery is been recorded by all over India. According to a statistical representation uploaded on the online site "Statista" it is been observed that Delhi and Mizoram are the two places with high statistical value (i.e 609.2 and 90.1) where the motorcycle is been stolen due to the low security and the easily accessible key hole point. This research proposes an Anti-theft security system to the vehicle which only allow access to the motorcycle if the persons finger impression matches to the stored finger impression in the system which also reduce the loss of one vehicle and can prevent the issues related to the vehicle key.

## 2. Literature Survey

Harter<sup>[5]</sup>Keys are unwieldy and might be liable to misfortune. Hence, when the keys are lost, the driver can't work the vehicle. Start switches might be altered to permit robbery of the vehicle. Different kinds of security frameworks are utilized notwithstanding a key to counteract vehicle robbery. Such gadgets incorporate transponders or other electrical circuits that give a code to enable the vehicle to begin. Such hardware is normally given mounted on the key and when the key is lost, the vehicle can't be begun.

Bonder<sup>[1]</sup>Two normal strategies for motorcycle robbery depend upon speed, and incorporate shorting together the wires associated with the start switch or breaking separated the start lock gathering to in this way rout its honesty, and have not changed a lot after some time in spite of numerous advances in innovation. The hazard to a criminal of being gotten increments in extent to the time required to take a vehicle. A third regular strategy for car robbery is just because of the inconsiderateness of a proprietor coincidentally leaving the keys in the start.

Ergui<sup>[3]</sup>The rates of cases about theft of "motorcycle" are high and rates of breaking cases are low. It conveys more prominent weight to the examination organs. It becomes an anticipating wrongdoing issues of criminal offense in the long haul in our country. The youth who are involve in the wrongdoing are mostly the jobless who are in need for money. R.M.Vithlani<sup>[2]</sup> Motorcycle robbery is the most serious issue in the remote area of the city and neither key lock nor Remote keyless framework gives solid arrangement since key can be duplicated all around effectively and remote keyless framework scrambled information utilize radio waves which can be recorded and used to open the vehicle. To structure an extraordinary key which doesn't depend on key or radio wave, biometric arrangement is the main better choice.

## 3. Data collection

To get the latest data and to propose a fresh idea the dataset is been collected by conducting a survey which help us to get the real time data which helps us to get the right information about all the attributes presented in the survey form distributed among the people. The form consist of 12 attributes and box for suggestion for the people if they have any according to their requirement. The dataset is been responded by more then 160 people according to the issues they experienced are mentioned in the form.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Time	City	Age group	Do you use a bike	Do you have it	Have you lost or broke	Did your suffer from the bike	Have you gone through	Have you forgotten your	Have you heard	Do you use a scooter	Would you like	What if your can	Suggestion(if any)																	
2019/02/1	Mumbai	19-25	Yes	Yes	Own	Yes	Yes	Yes	Yes	Yes	Yes	Yes																		
2019/02/1	Yavatmal	19-25	Yes	No	Relative	No	Yes	No	Yes	Yes	Yes	Yes																		
2019/02/1	Pune	15-18	No	No	Family member	Sometimes	No	No	No	Yes	Maybe	Yes																		
2019/02/1	Ranchi	19-25	Yes	Yes	Family member	Yes	Yes	Yes	Yes	Yes	Yes	Yes																		
2019/02/1	Mumbai	19-25	No	No	Family member	No	No	No	No	Yes	Yes	Yes																		
2019/02/1	Mumbai	15-18	Yes	No	Friend	Sometimes	No	No	No	Yes	No	Yes																		
2019/02/1	Mumbai	19-25	No	No	Friend	No	No	Sometimes	No	Yes	Maybe	Yes																		
2019/02/1	Pune	19-25	Yes	Yes	Own	Yes	Yes	Yes	Yes	Yes	Yes	Yes																		
2019/02/1	Mumbai	19-25	Yes	No	Family member	No	No	No	No	Yes	Maybe	Yes																		
2019/02/1	Aurangabad	19-25	Yes	Yes	Own	No	No	Yes	No	Yes	Yes	Yes																		
2019/02/1	Pune	19-25	Yes	Yes	Own	No	No	No	No	Yes	Yes	Yes																		
2019/02/1	Mumbai	19-25	No	No	Friend	No	Sometimes	No	No	Yes	Maybe	Yes																		
2019/02/1	Mumbai	19-25	Yes	Yes	Friend	Yes	No	No	Yes	Yes	Yes	Yes																		
2019/02/1	Mumbai	19-25	No	No	Friend	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes																	
2019/02/1	Mumbai	15-18	Yes	No	Family member	Yes	No	Yes	Yes	Yes	Maybe	Yes																		
2019/02/1	Mumbai	19-25	Yes	Yes	Own	Yes	No	Yes	Yes	Yes	Yes	Yes																		
2019/02/1	Pune	19-25	Yes	Yes	Own	Sometimes	Yes	Yes	Yes	Yes	Yes	Yes																		
2019/02/1	Mumbai	19-25	Yes	Yes	Relative	No	No	No	No	Yes	Yes	Yes	No																	
2019/02/1	Mumbai	19-25	Yes	Yes	Own	Yes	Yes	Yes	No	Yes	Yes	Yes	Good i think																	
2019/02/1	mumbai	19-25	Yes	No	Friend	Sometimes	Sometimes	Yes	No	Yes	No	No																		
2019/02/1	Mumbai	19-25	No	No		No	No	No	Yes	Yes	Yes	Yes																		
2019/02/1	Mumbai	19-25	Yes	Yes	Own	Sometimes	Yes	Yes	Yes	Yes	Yes	Yes																		
2019/02/1	Aurangabad	19-25	Yes	No	Family member	Yes	Sometimes	Yes	Yes	Yes	Yes	Yes																		
2019/02/1	Mumbai	19-25	Yes	Yes	Own	No	Yes	No	No	No	No	No	Nothing																	
2019/02/1	Mumbai	19-25	Yes	Yes	Family member	No	Yes	Yes	No	Yes	Yes	Yes																		
2019/02/1	Goa	15-18	Yes	Yes	Own	Sometimes	No	No	Yes	Yes	Yes	Yes	Nice idea																	
2019/02/1	Pune	19-25	Yes	Yes	Family member	Yes	Sometimes	Sometimes	Yes	Yes	Yes	Yes																		
2019/02/1	Mumbai	19-25	Yes	Yes	Relative	Sometimes	Yes	Yes	Yes	Yes	Yes	Yes	Can add more feature																	
2019/02/1	Jalpur	19-25	Yes	Yes	Own	No	No	Yes	Yes	Yes	Yes	Yes																		
2019/02/1	Aurangabad	19-25	Yes	Yes	Own	Sometimes	No	Sometimes	Yes	Yes	Yes	Yes																		

Fig 1. Dataset

4.Data Visualization.



Have.you.forgotten.your.bike.scooty.key.or.misplaced.it.somewhere.

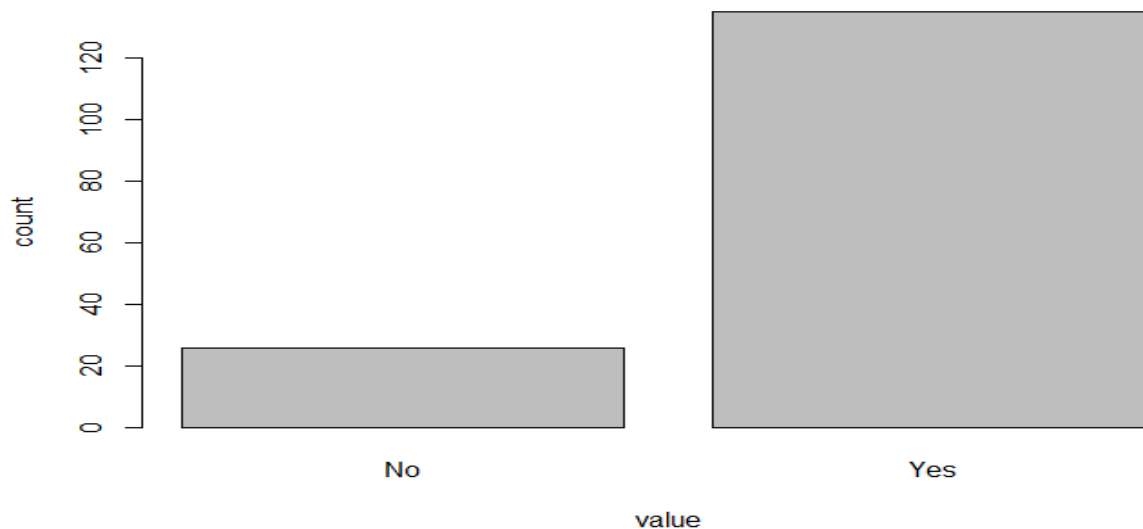
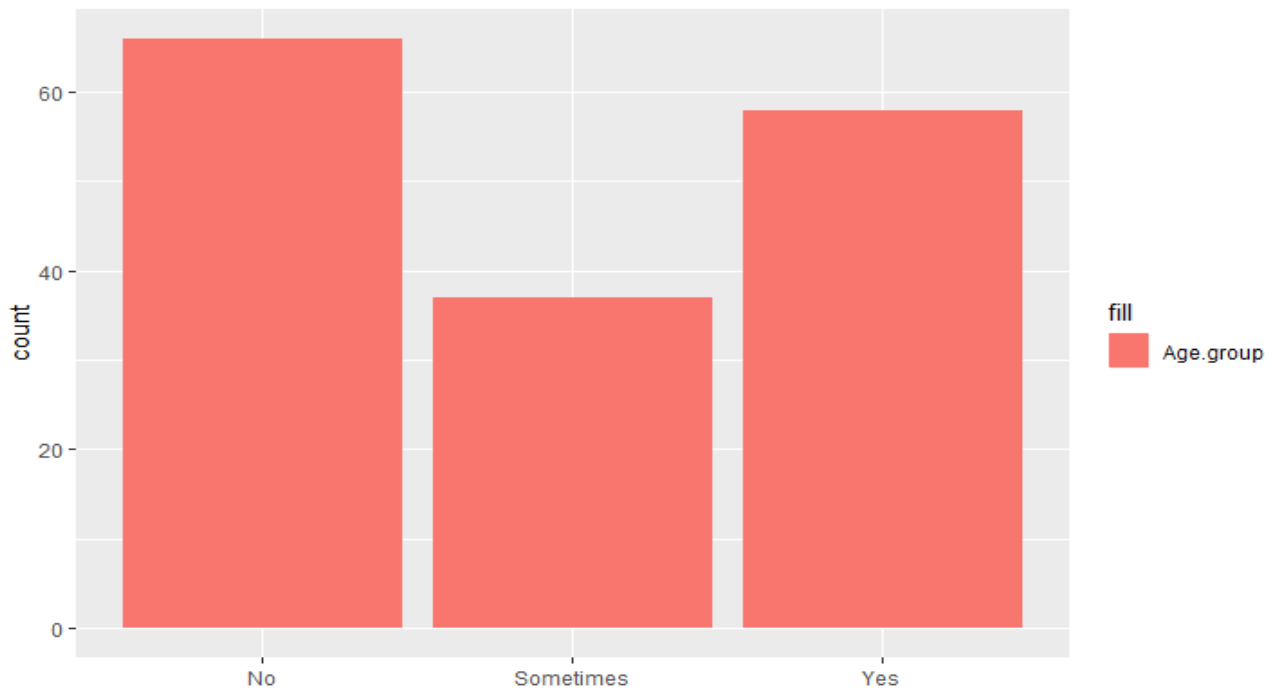
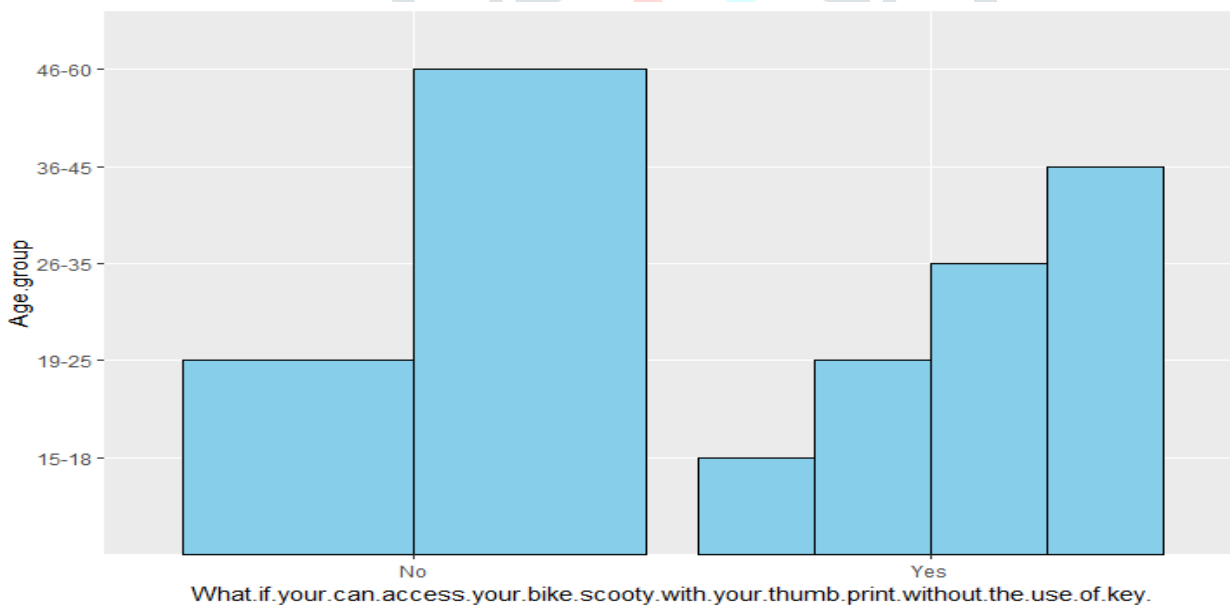


Fig 2. The above bar graph shows the response of the people who has been misplaced or forgotten their key in which the count on the y- axis gives the number of people responded according to their experience as yes and no which is plotted on x- axis.



Did.your.suffer.from.the.blockage.of.bike.scooty.key.hole.in.rainy.season.or.any.other.season.

Fig 3. The people who has experienced the blockage of the key hole can be seen on the above graph.



What.if.your.can.access.your.bike.scooty.with.your.thumb.print.without.the.use.of.key.

Fig 4. The age group who are interested for the proposed idea can be seen in the above plot.

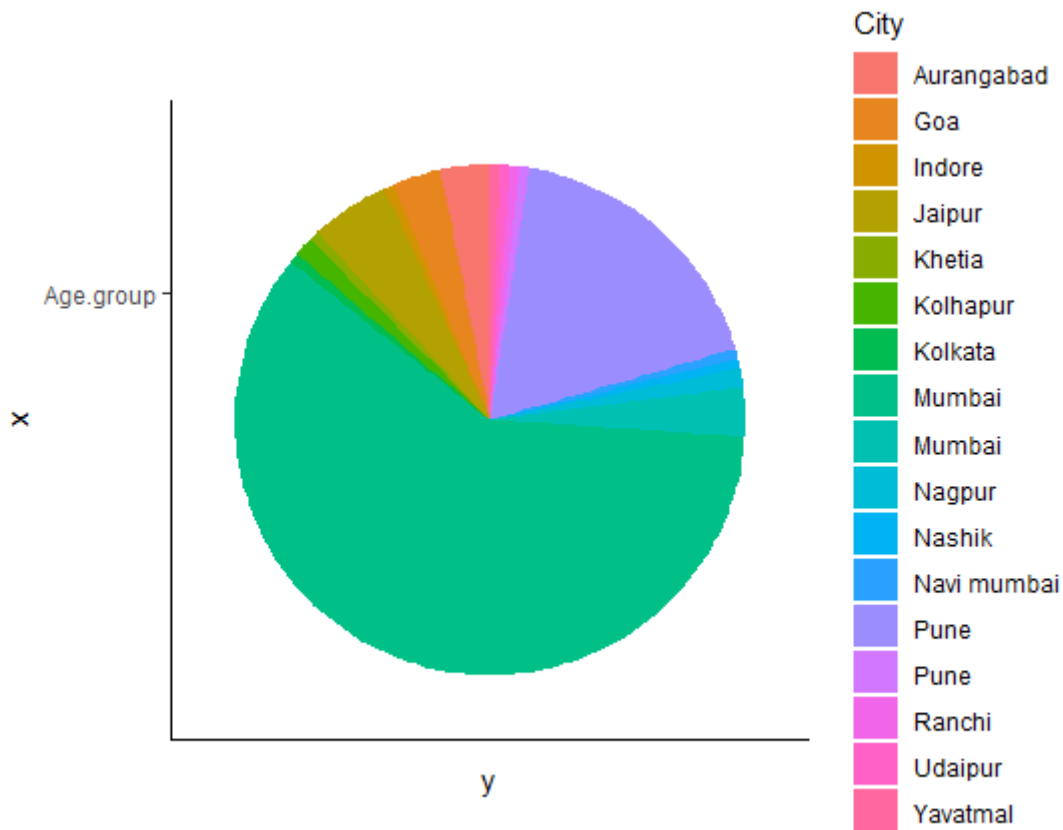


Fig 5. A pie chart having the data of age group from the different city who uses a bike/scooty.

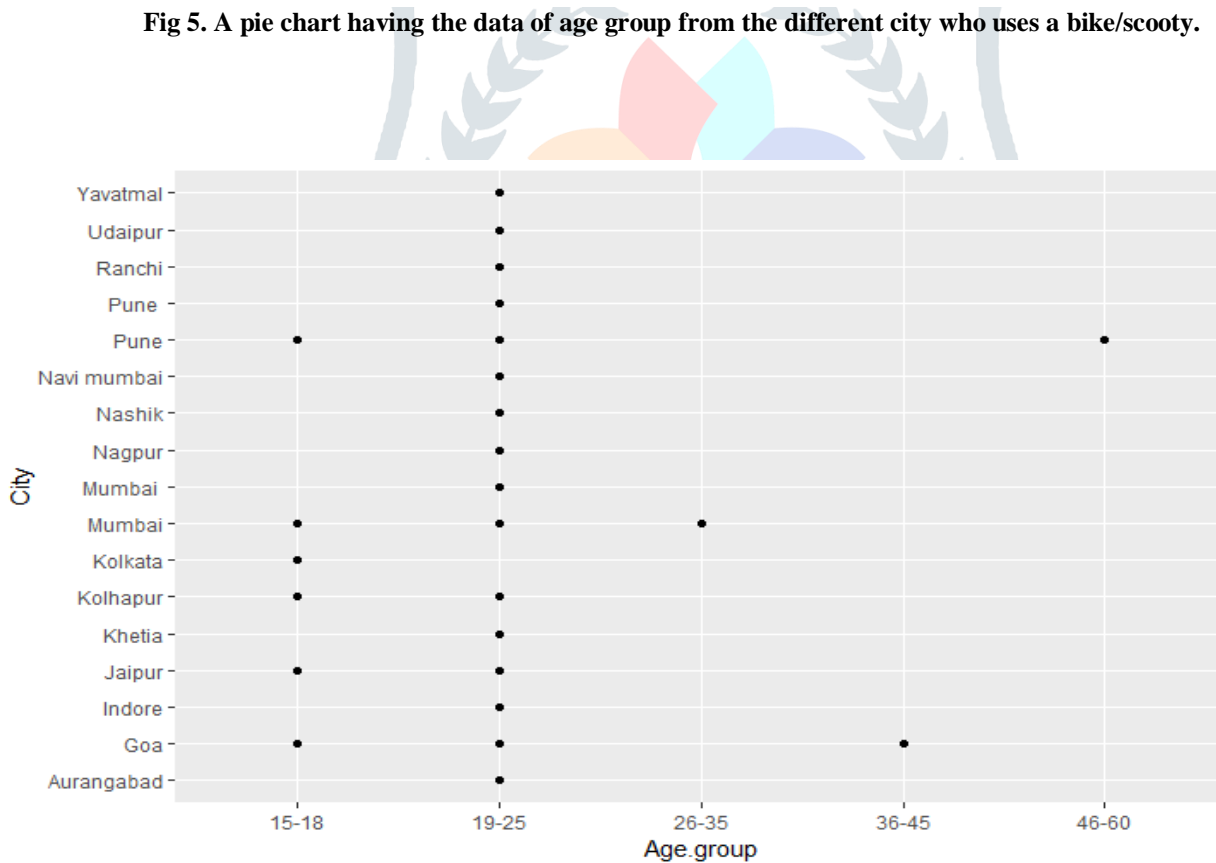


Fig 6. The figure shows the age group how has responded for the conducted survey.

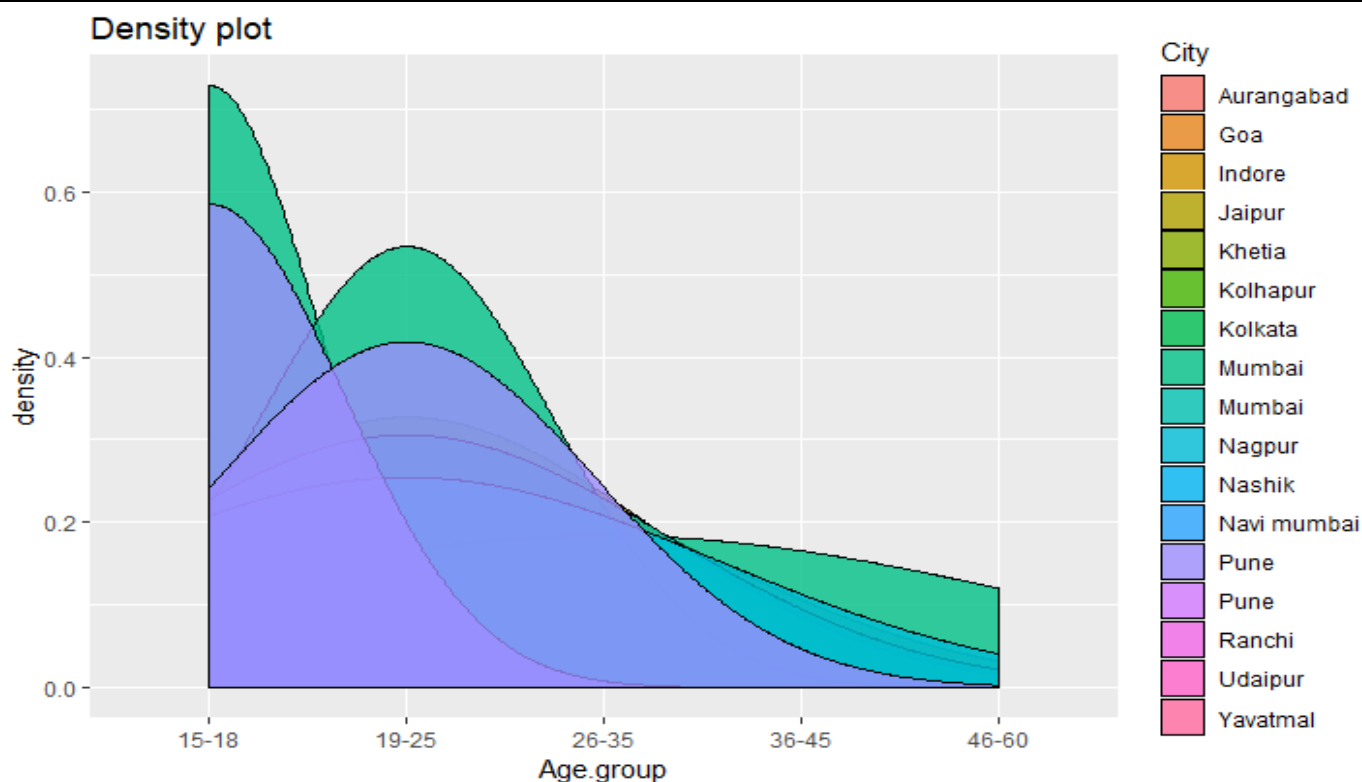


Fig 7. The graph shows the rate of city from where the responses is been received.

## 5. Observation.

As the survey conducted its been observed, there are lot of peoples who are affected by the low security of the motorcycle as well as the issues related to key hole and keys. Due to this research we can also say that there is an increasing demand for the key less and more security vehicle which can be secure and can fulfill the users demand.

## 6. Proposed System.

This project is made to provide security for motorcycle. In this project, the fingerprint sensor detect the finger impression of the person and the scanned impression will compared with registered image, if the both images are same, then the finger sensing device will allow the person to access the vehicle. It will contain a smartphone application which will have a remote access to the security system built in the motorcycle. Some of the related features are mentioned below.

### 6.1 Access only to the authorized person.

As it is based on biometric fingerprint scanner one can only access the bike if their finger impression is been present in the application provided to the owners smartphone. The finger should be placed on the scanner mounted on the bikes dash board to start the engine. The fingerprint scanner then scans the finger impression with the other impression present there in the application if both the impressions matches each other it gives the access to the person or else disallow the person to access the bike. It also has a deactivation code set by the owner in case your finger is hurt or swollen.

### 6.2 Anti-thief.

The concept of key is not provided it cannot be access by any unauthorized person which decreases the chances of motorcycle been stolen.

### 6.3 Speed control function to avoid accidents.

This function is applicable to all authorized riders as it helps the rider to control the speed of the bike and can be lock it to a desire level. A rider can activate and can deactivate this feature according to its will and can set limit in the application by simply typing " 100 miles/hour" or any other limit.

#### 6.4 Location tracking system.

It allows the rider to track the location of the motorcycle using the application provided.

#### 6.5 Easy to handle.

This provides the authorized person to access the bike, unlock the handle bar, open the petrol tank cap just by tapping your finger in the given order to access the motorcycle.

### 7. Conclusion

According to the data collected from the conducted survey its been observed that most of the population suffer from the issues as mention in the dataset which help us to provide a propose system to them which will be an initiative for the people to prevent their motorcycle from being stolen and to kept an eye on the vehicle when away from it. Another importants of the research is to provide security to the rider by preventing the road accident with the help of speed limit meter provided to set the limit according to riders wish. It also makes it easy to the owner to access the motorcycle and also rejecting the unauthorized access to his/her motorcycle.

### 8. Reference

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