
Road Traffic accidents in North Goa: Issues and Challenges

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INTRODUCTION

Fatalities and injuries resulting from road traffic accidents are a major and growing public health problem in Goa. The roads in Goa have been causing a lot of problems to vehicle owners. It has become very difficult for people to travel. The roads have been dug up and left open without proper packing after the work is done. Or, the roads have been left in ruins and not fixed at all. These defects are seen in almost the entire state. As and when the problems come to our attention, we bring it to the notice of the public works department, Road Engineering continues to be one of the common causes of accidents in Goa. This research paper tries bring out issues and challenges about road accidents in Goa.

OBJECTIVES OF THE STUDY

- To identify the causes of road accident in North Goa and compare the number of fatalities/deaths.
- To ascertain whether the causes of road accident are related with vehicles.
- To analyse the road accidents in North Goa varies according to age, gender, month and time
- To investigate whether there is any seasonal pattern of occurrence of road accidents.
- To observe the road accident taken place over the two years in Goa.

METHODOLOGY

For the purpose of study both primary and secondary data has been used . Primary data was generated through survey of common public from all taluka's in north Goa . Secondary data has been collected from various websites , research papers and RTO office.

LIMITATIONS OF THE STUDY

- This study is confined to North Goa only, therefore the opinion and responses are limited.
- Most of the respondents found it very inconvenient to answer the questionnaires due to lack of awareness.

Goa Accident Scenario in the Year 2016-2017

While statistics for 2017 are yet to be tabulated, one cannot ignore the fact that citizens continue to take traffic rules lightly, leading to violations and fatal accidents. "After the recently-held district road safety meeting, we have been stringent in cracking down various violations in the state. While citizens are now being careful and are riding with helmets and driving with seatbelts, violations like the use of mobile phone while riding/driving and drunken driving is still rampant," a transport department official said.

Goa Accident Scenario in the Year 2017-2018

The month of June saw Goan roads claim a life every two days. Figures available with the directorate of transport show that the month saw a total of 306 road accidents — over ten a day — and 14 deaths, 11 of whom were riders. Apart from the 14 fatal accidents, the directorate reported 15 grievous accidents, 57 minor accidents and 220 'non-injury' accidents. Of the 14 fatalities, three occurred in June also left 16 people grievously injured on the state's roads, while 74 suffered minor injuries. The figures represent a substantial reduction as compared to May, which saw 37 grievous injuries and 139 minor injuries.

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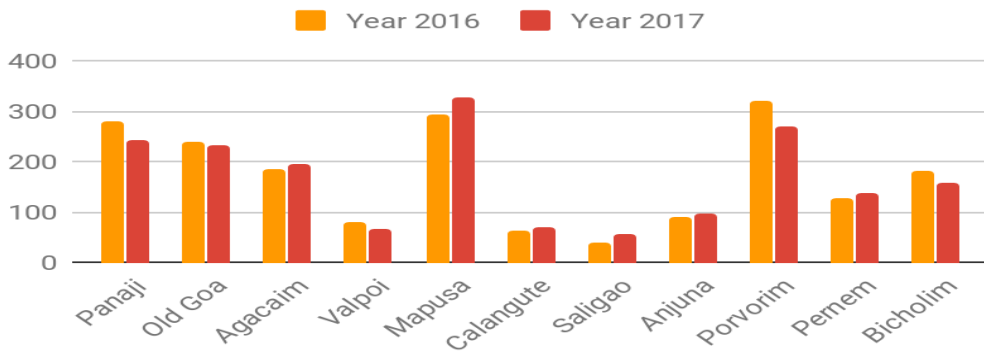
STATISTICAL DATA ANALYSIS ON SECONDARY DATA:

A.1 Table showing total number of accidents and fatalities in the year 2016 and 2017

Police Station	No. of Accidents		No. of Fatalities	
	Year 2016	Year 2017	Year 2016	Year 2017
Panaji	280	243	5	9
Old Goa	240	233	16	17
Agacaim	186	195	14	7
Valpoi	80	68	6	10
Mapusa	292	327	28	29
Calangute	64	69	6	4
Aligao	41	57	0	2
Anjuna	89	98	8	13
Porvorim	321	268	19	17
Pernem	128	137	24	25
Bicholim	180	158	22	21
TOTAL	1901	1853	148	154

Source : Secondary data

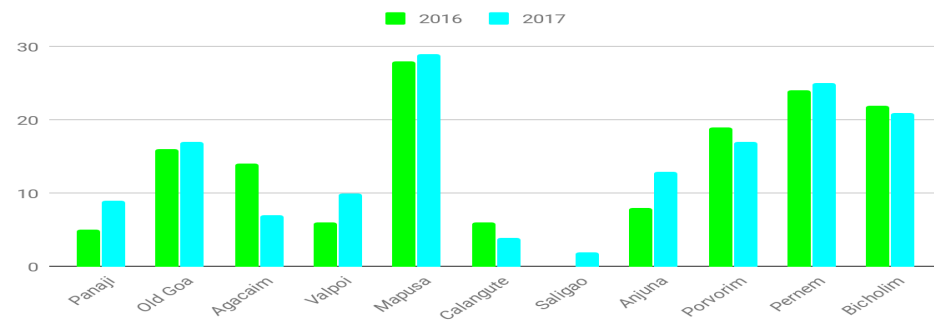
Number of accidents



Source : Secondary data

Fig A.1 showing total number of accidents in the year 2016 -17

Number of fatalities



Source : Secondary data

Fig A.1 showing total number of fatalities in the year 2016 -17

The table A.1 compares the number of accidents and fatalities in all taluka's of north Goa in the year 2016 and 2017. As we can observe that total number of accidents in all talukas in the year 2016 were more than in the year 2017. On the other hand number of fatalities also increased to 154 as compare to 148 in the year 2017.

TABLE A.2 ACCIDENT SCENARIO IN GOA 2016-2017

Particulars	Year 2016	Year 2017
Total Accidents	4304	3917
Fatal Accidents	316	306
Grievous Accidents	187	237
Minor Injury Accidents	1202	926
Non Injury Accidents	2599	2448

Source : Secondary data

Figure A.2
Showing accident scenario in the year 2017



Source : Secondary data

In figure A.2 the total number of accidents is compared it can be seen that in year 2016 the total number of accidents were more than 2017.

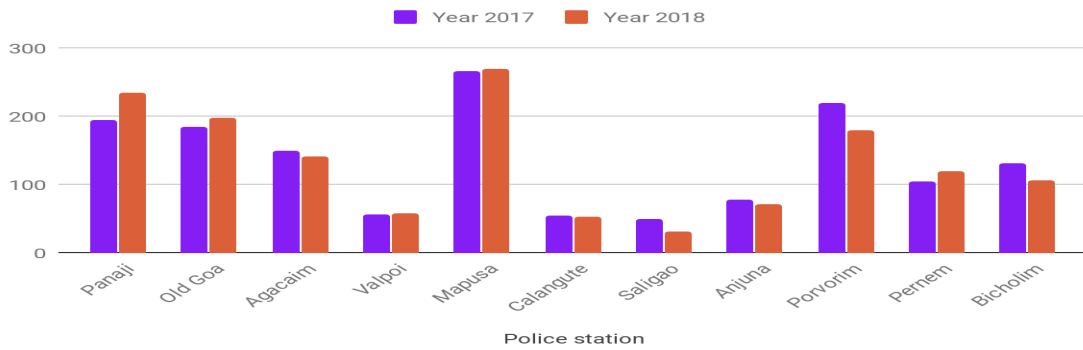
A.3 Table showing total number of accidents and fatalities in the year 2017 and 2018

	No. of Accidents		No. of Fatalities	
	Year 2017	Year 2018	Year 2017	Year 2018
Police Station				
Panaji	194	234	9	7
Old Goa	184	198	20	13
Agacaim	149	142	9	5
Valpoi	57	59	10	7
Mapusa	266	269	21	21
Calangute	55	53	4	4
Saligao	50	31	0	2
Anjuna	78	72	2	12
Porvorim	219	180	4	12
Pernem	105	119	16	22
Bicholim	132	106	5	20
TOTAL	1489	1463	100	125

Source : Secondary data

Fig A.3 showing total number of accidents in the year 2017 -1

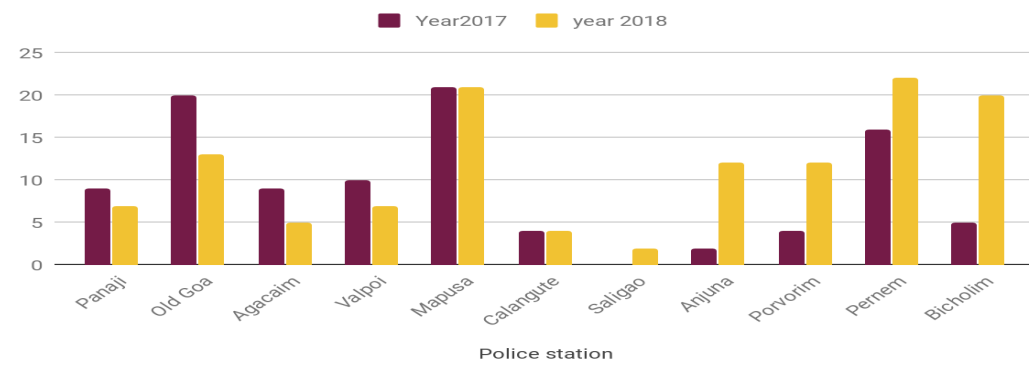
number of accidents in the year 2017and 2018



Source : Secondary data

Fig A.3 showing total number of fatalities in the year 2017-18

Number of fatalities in the year 2017-2018



Source : Secondary data

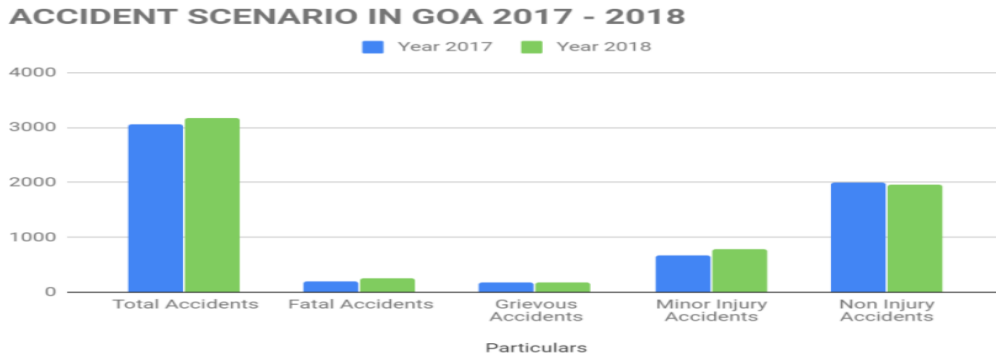
The table A.3 compares the number of accidents and fatalities in all taluka’s of north Goa in the year 2017 and 201. As we can see that total number of accidents in all talukas in the year 2017 were more than in the year 2018. On the other hand number of fatalities also increased to 125 as compare to 100 in the year 2018.

TABLE A.4 ACCIDENT SCENARIO IN GOA 2017-2018

Particulars	Year 2017	Year 2018
Total Accidents	3057	3163
Fatal Accidents	190	249
Grievous Accidents	188	174
Minor Injury Accidents	679	779
Non Injury Accidents	2000	1961

source : Secondary data

Figure A.4 Showing accident scenario in the year 2018



Source : Secondary data

In figure A.4 the total number of accidents is compared it can be seen that in year 2018 the total number of accidents were more than 2017

ANALYSIS AND INTERPRETATION:

The study was an attempt to analyse issues and challenges on road accidents in Goa particularly in the North-Goa district. A survey was conducted whereby 210 vehicle owners from six talukas of North-Goa were randomly picked and close ended questionnaire was administered. Analysis is depicted by bar graphs and percentages.

Options	Taluka						Total in North Goa	%tage
	Bardez	Tiswadi	Ponda	Bicholim	Pernem	Sattari		
Responsible in most cases	12	13	16	12	14	15	82	39.05%
Responsible in few cases	20	16	15	19	17	14	101	48.10%
Responsible not at all	3	6	4	5	7		25	11.90%
							208	99.05%

Source: Primary data

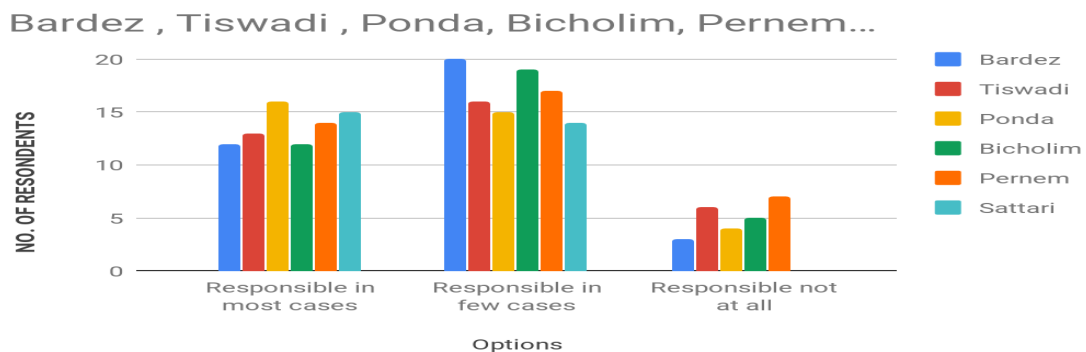


Fig B.1 Mechanical fault of the vehicle

As it can be clearly noted in the table B.1, Almost 48% of people feel that mechanical fault of the vehicle is responsible in few cases. A significant group which constitutes 39% of people says that in most of cases mechanical fault is responsible . A very few respondents of 12% people believe that mechanical fault is not at all responsible

Table B.2 Opinion regarding action taken by police towards traffic awareness

Options	Taluka						Total in North Goa	%tage
	Bardez	Tiswadi	Ponda	Bicholim	Pernem	Sattari		
Accidents will reduce very much	17	11	11	14	13	10	76	36.19%
Accidents will reduce much	8	11	10	13	12	8	62	29.52%
Accidents will reduce to some extent	6	9	11	10	10	6	52	24.76%
Accidents will not reduce at all	1	1	3	5	2	8	20	9.52%
							210	100.00%

Source: Primary data

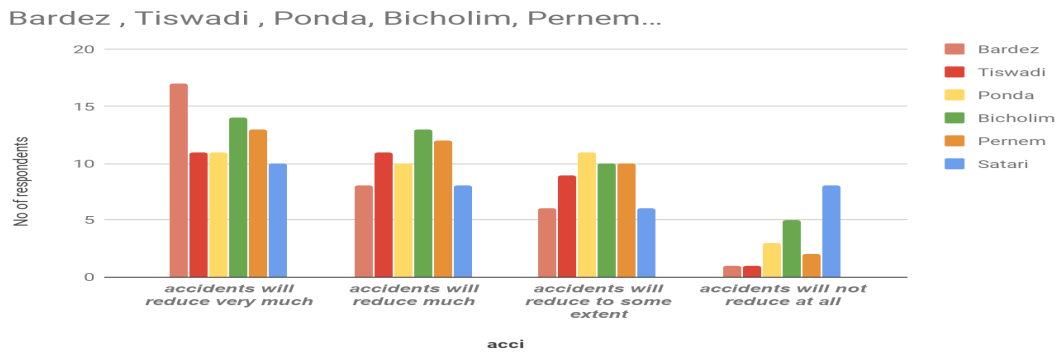


Fig B.2 Opinion regarding action taken by police towards traffic awareness

There are different views of respondents about the reduction of accidents ,if police will takes actions for traffic accidents .The table illustrates that according to 36% of respondents believe that the accidents will reduce very much. Around 29% of respondents say that it will reduce considerably 25% of respondents say that it will reduce to some extent . A very few percentage of respondents believe that it will not reduce at all.

Table B.3 Age groups mainly prone to accidents : opinion by public

Options	Taluka						Total in North Goa	%tage
	Bardez	Tiswadi	Ponda	Bicholim	Pernem	Sattari		
0-15 yrs	1	2	1	2	1	1	8	3.81%
16-30 yrs	19	16	14	15	17	18	99	47.14%
31-45 yrs	11	14	13	12	15	11	76	36.19%
> 45 yrs	4	3	6	2	5	7	27	12.86%
							210	100.00%

Source: Primary data

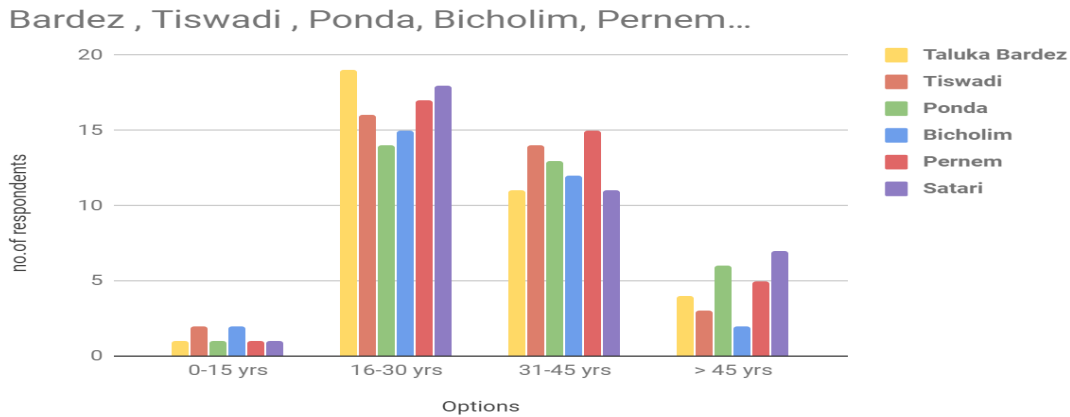


Fig B.3 Age groups which are prone to accidents; opinion by respondents

Table B.3 demonstrates different age groups which constitutes to the majority of road accidents. Age group 0-15 appears to be marginal, account only 4% of people that are prone to road accidents. Majority of people who are prone to accidents are in the age group of 16-30 yrs. And around 36% of age group 31-45 yrs met with accidents yearly. A very few percentage of respondents who are in age group of 45yrs and above are only 13% that met with road accidents.

Options	Taluka						Total in North Goa	%tage
	Bardez	Tiswadi	Ponda	Bicholim	Pernem	Sattari		
Male	10	12	9	11	8	12	62	29.52%
Female	11	8	13	14	7	8	61	29.05%
Both male and female	17	12	18	15	12	13	87	41.43%
							210	100.00%

Source: Primary data

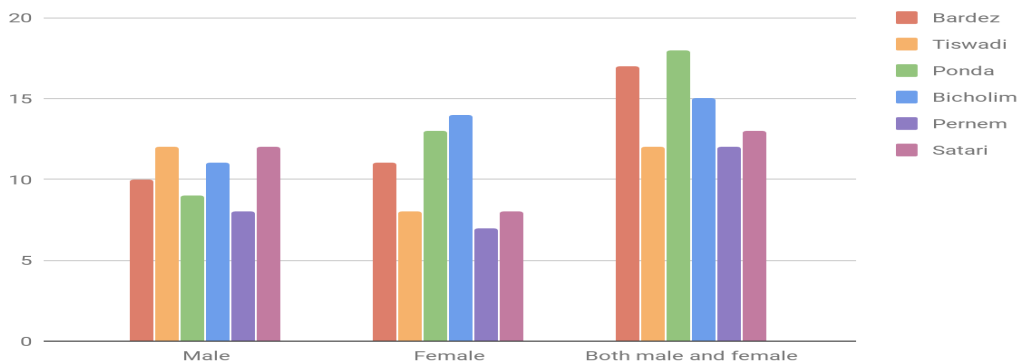


Fig B.4 Gender based opinion by respondents prone to accidents

Table B.4 is gender based opinion that constitutes to road accidents. At most 40% of respondents believe that both male and female are prone to accidents. Around 30% says that only males met with majority of accidents and with the same percentage respondents feel that only females are prone to road accidents.

Taluka								
Options	Bardez	Tiswadi	Ponda	Bicholim	Pernem	Sattari	Total in North Goa	%tage
Very much	11	9	11	15	8	10	64	30.48%
Much	15	19	16	14	12	13	89	42.38%
To some extent	3	8	5	4	6	7	33	15.71%
Not at all	2	3	6	5	4	4	24	11.43%
							210	100.00%

Source: Primary data

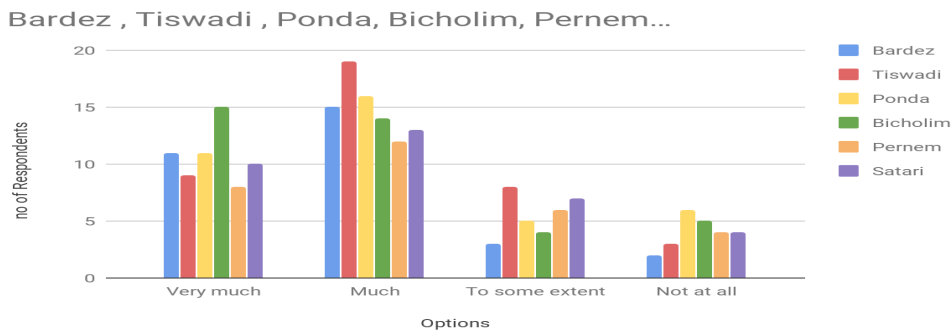


Fig B.5 Opinion by respondents in context of increase in number of accidents

Table B.5 illustrates that by what extent accidents increase in festive season. 43% of people believe that accidents increase in festive season at fast rate. And 31% of people assume that it increases very much. Very few people believe that it will increase to some extent.

Taluka								
Options	Bardez	Tiswadi	Ponda	Bicholim	Pernem	Sattari	Total in North Goa	%tage
Very much	7	4	8	3	5	6	33	15.71%
Much	4	6	7	5	3	7	32	15.24%
To some extent	19	11	15	14	11	13	83	39.52%
Not at all	11	14	12	15	5	5	62	29.52%
							210	100.00%

Source: Primary Data

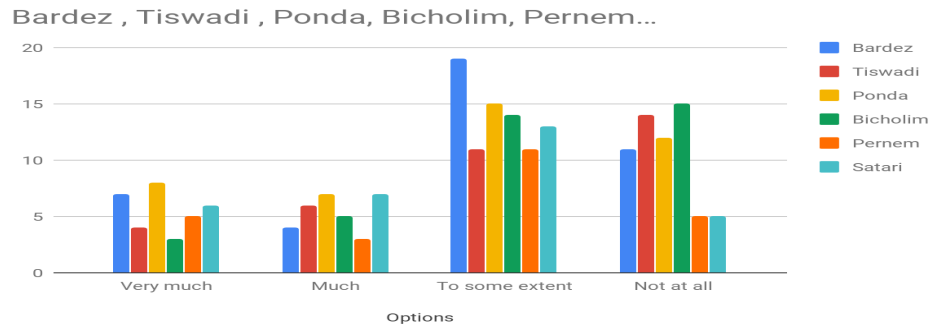


Fig B.6: Decline in the the number of accidents as compare to last year Opinion of respondents

According to response from public, one can clearly observe that around 40% respondents have seen decline in road accidents to some extent as compared to the last year. A slightly smaller group of 30% of the respondents say that there is no improvement to the condition at all. Two equally strong groups of 15% each have felt a large improvement in the situation, although they individually look to be minor groups, but their opinion is more or Less related so they can be considered as a whole of 30%

Table B.7 Drivers negotiation of traffic leading to accidents

Taluka								Total in North Goa	%tage
Options	Bardez	Tiswadi	Ponda	Bicholim	Pernem	Sattari			
Very much	10	12	11	14	16	18	81	38.57%	
Much	9	14	13	12	11	10	69	32.86%	
To some extent	3	2	4	6	3	5	23	10.95%	
Not at all	6	4	3	7	9	8	37	17.62%	
							210	100.00%	

Source :Primary data

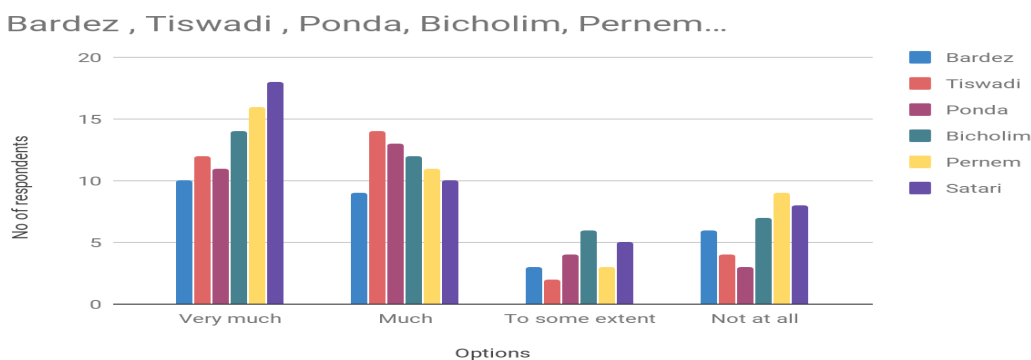


Fig B.7 Drivers negotiation of traffic rules leading to accidents

This table illustrates that 39% of the people who negotiate Traffic rules that lead to accidents. Some respondents say that about 33% who considerably negotiate Traffic rules . Only 10% of respondents feels that to some extent people negotiate rules and regulations. And there are a few respondents who negotiate Traffic rules.

		Taluka						
Options	Bardez	Tiswadi	Ponda	Bicholim	Pernem	Sattari	Total in North Goa	%tage
0% to 20%	3	5	2	6	1	3	20	9.52%
20% to 40%	6	7	7	10	9	8	47	22.38%
40% to 60%	14	16	15	10	12	10	77	36.67%
> than 60%	11	13	14	11	8	9	66	31.43%
							210	100.00%

Source : Primary Data

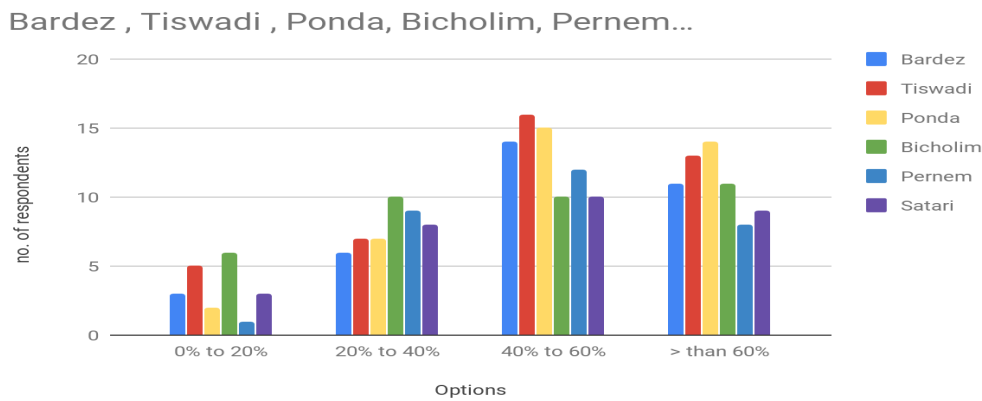


Fig B.8 Percentage of rash drivers under influence of alcohol

This table demonstrates how many drivers admit to drive under influence of liquor. It clearly shows that only around 10% of respondents feel that less than 20% of drivers do so. Rest all the answers are supported by equal groups of 30% each, all of them having different opinion to the question. First group feels that around 20% - 40% of drivers do so, while the second the second group says that more than 40% but less than 60% drivers admit to drive under such situation. The last group feels that more than 60% of drivers admit to drive under influence if drugs or liquor.

		Taluka						
Options	Bardez	Tiswadi	Ponda	Bicholim	Pernem	Sattari	Total in North Goa	%tage
all the time	7	6	8	5	9	7	42	20.00%
some time	10	13	11	15	11	9	69	32.86%
Often	16	17	14	16	14	13	90	42.86%
Never	3	1	0	1	2	2	9	4.29%
							210	100.00%

Source: Primary Data

Bardez , Tiswadi , Ponda, Bicholim, Pernem...

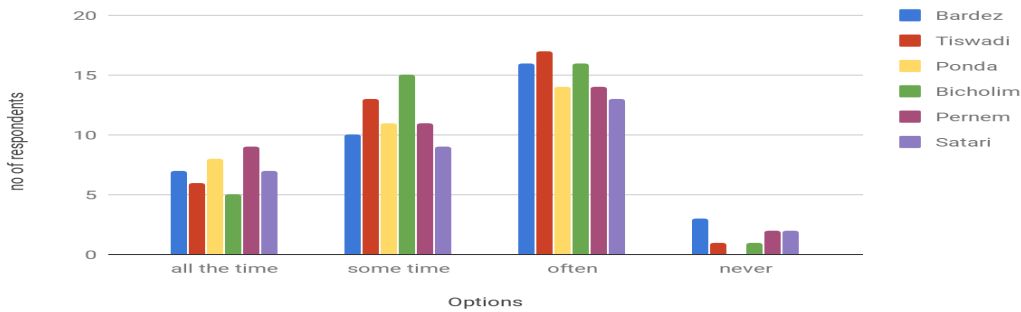


Fig B.9 People who listen to music while walking

The Table above describes that around 40% percent of respondents or respondents often listen to music while walking on the road. While around 30% respondents do this sometimes. A minority of 20% all the time listen to music while on the roads. Only a negligible group of 4% of respondents take things seriously and never listen to music while walking on roads.

Taluka							Total in North Goa	%tage
Options	Bardez	Tiswadi	Ponda	Bicholim	Pernem	Sattari		
<100	5	8	7	6	9	10	45	21.43%
100-200	4	3	5	7	5	4	28	13.33%
200-300	13	15	16	14	10	10	78	37.14%
>300	12	10	13	12	7	5	59	28.10%
							210	100.00%

Source: Primary Data

Bardez , Tiswadi , Ponda, Bicholim, Pernem...

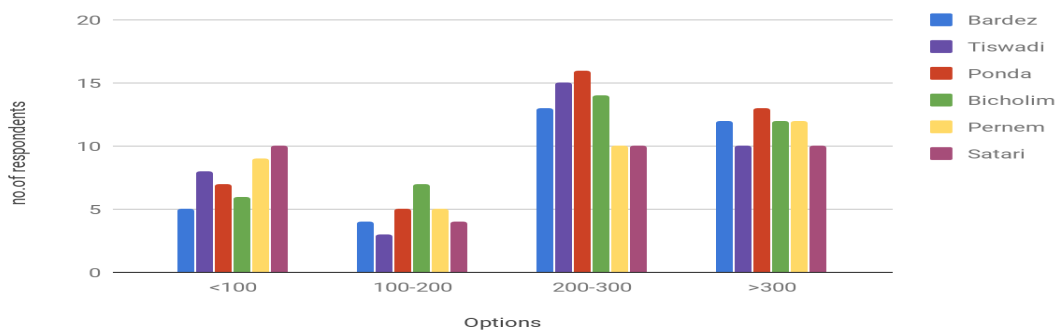


Fig B.10 People killed on road accidents every year

The table above shows how many people are killed in road accidents according to the respondents. Around 22% of the respondents feel that less than 100 victims are killed in road accidents every year. This group is compelled by another a group of 31% respondents, who believe that more than 200 but less than 300 people die in road accidents every year. An equally strong group subtled that more than 300 victims die in accidents. A small but considerable group of around 15% of respondents seem to say that the rate of deaths is between 100 and 200.

Table B.11 Had an experience of nearly being hit by a vehicle due to lack of concentration								
Taluka								
Options	Bardez	Tiswadi	Ponda	Bicholim	Perne m	Sattari	Total in North Goa	%tage
Yes	21	24	26	18	19	17	125	59.52%
No	15	14	18	17	11	10	85	40.48%
							210	100.00%

Source: Primary Data

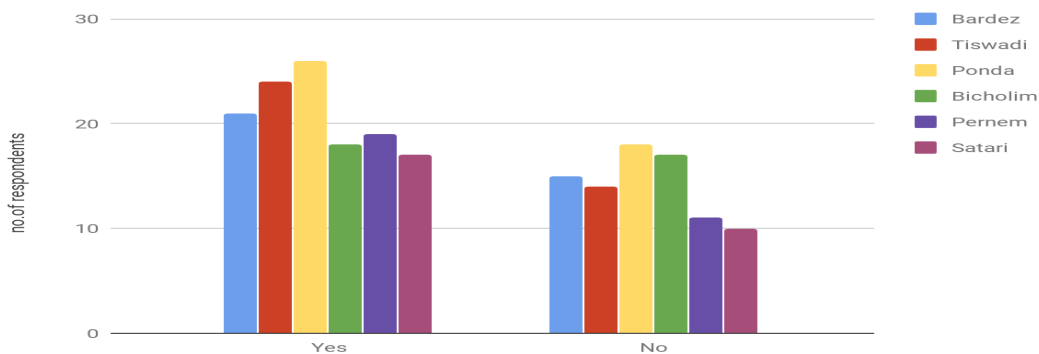


Fig B.12 No. of persons nearly being hit by vehicle due to lack of concentration

This table interprets response on the question that either respondents ever had an experience of nearly being hit by a moving vehicle due to lack on concentration. Surprisingly, around 60% of respondents had such an experience, balanced by 40% who never had such an experience.

Table B.12 Do more deaths occur on highways than on internal roads								
Taluka								
Options	Bardez	Tiswadi	Ponda	Bicholim	Perne m	Sattari	Total in North Goa	%tage
Yes	25	21	21	17	16	19	119	56.67%
No	16	15	19	16	13	12	91	43.33%
							210	100.00%

Source: Primary Data

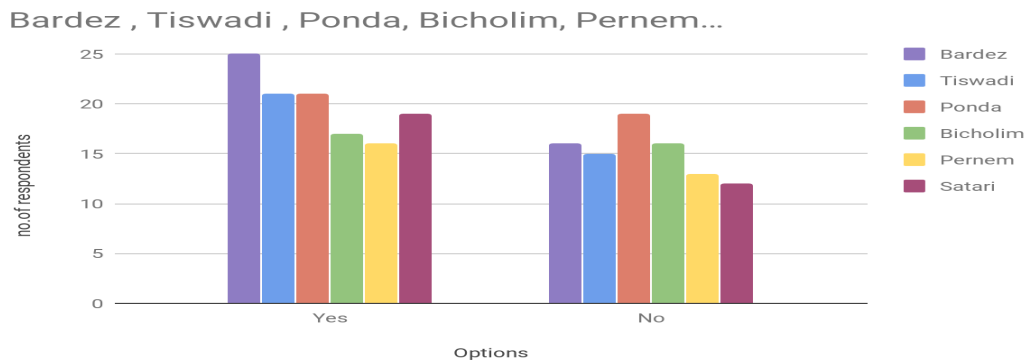


Fig B.12 Comparison of no. of deaths are more on highways or roads

The above table shows the response about the statement that more deaths occur on internal roads than highways. To our expectation, around 60% of respondents feel that more deaths occur on internal roads than the highways, while a significant group of 40% of respondents think in a completely different way, saying that more deaths occur on highways.

Table B.13 Percentage of drivers admitting to drive under influence of liquor and other illegal drugs

Options	Taluka						Total in North Goa	Percentage
	Bardez	Tiswadi	Ponda	Bicholim	Pernem	Sattari		
0%-20%	2	5	3	1	2	4	17	8.10%
20%-40%	13	11	12	11	8	9	64	30.48%
40%-60%	12	17	16	10	7	7	69	32.86%
>60%	14	12	11	6	9	8	60	28.57%
							210	100.00%

Source: Primary Data

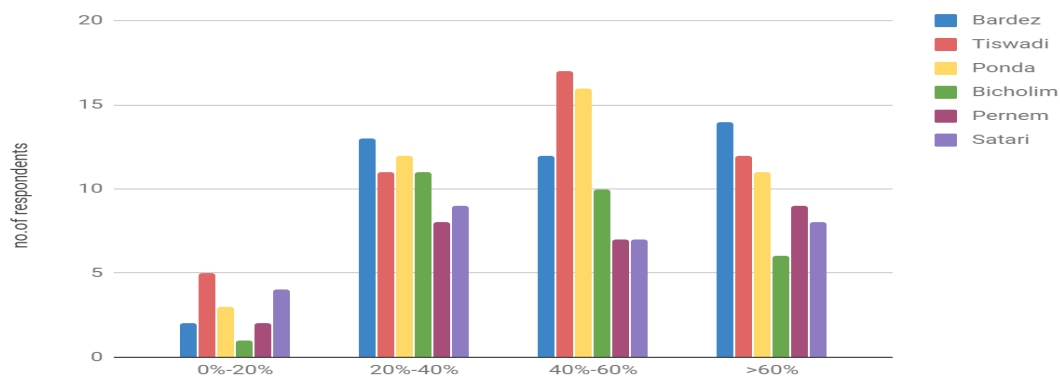


Fig B.13 Percentage of rash drivers under influence of liquor and illegal drugs

The table describes respondents opinion about the fact that How many drivers admit to drive under influence of liquor and other illegal drugs. It clearly shows that only around 10% of respondents feel that less than 20%of drivers do so. Rest all the answers are supported by equal groups of 30% each, all of them having different opinion to the question. First group feels that around 20% - 40% of drivers do so, while the second the second group says that more than 40 % but less than 60% drivers admit to drive under such situation. The last group feels that more than 60% of drivers admit to drive under influence if drugs or liquor.

Findings of the study:

- It is observed that in the last calendar year 2017, 262 persons lost their lives in fatal road accidents in comparison with 328 deaths in 2017. “The 2018’s figures on fatal accidents are the lowest .
- It is noticed that a series of steps by the Goa Police and Traffic Police, and efforts by Traffic Sentinels have led to this success. Dedicated efforts were made to reduce fatalities.
- During the last year intensive traffic enforcement under Traffic Sentinel Scheme was launched that also led to identifying 51,597 traffic violators. A total amount of Rs 66.43 lakh approximately was collected as fine from the traffic offenders.
- Road traffic fatalities and injuries are, to a great extent, preventable, since the risk of incurring injury in an accident is largely predictable and many countermeasures, proven to be effective, exist.
- It is observed that road accidents and related injuries and fatalities are highly dependent on the speed of motor vehicles.
- Factors such as age and experience of driver, alcohol and drug use, fatigue, acute psychological stress, and enforcement of traffic laws are the key determinants of accident and fatality risk.
- Drivers’ speed choice is influenced not only by the legal speed limit but also by age and experience of driver, alcohol and drug use, psychological condition, road layout, traffic density, road surface condition, and the level of enforcement of speed limits.
- It is observed that there is still a lack of acceptance among drivers that their choice of speed may increase accident risk not only for themselves but also for other road users.
- The problem of road accidents in India also gets aggravated due to mixed nature of road traffic on its roads – with pedestrians, bicycles, mopeds, scooters, motorcycles, auto-rickshaws, taxis, vans, cars, trucks, and buses sharing the same road space.

SUGGESTIONS:

- The Government should also introduce the globally accepted point system where offenders lose points on their driving licence and repeated offenders should be disqualified from obtaining a driving licence again.
- The Government must also disallow plying of heavy vehicles like trucks, tankers, earthmoving equipments in villages and in the city centers and if any designated project is being executed, than vehicles should be accompanied with a police escort to warn oncoming traffic.
- There needs to be a strong focus on educating individuals on road safety measures.
- The RTO’s procedure for obtaining a driving licence is in suspect and several drivers have been issued licences through touts and agents. Individuals need to be sensitized on the do’s and don’ts of road safety and understand safety measures.
- To reduce the exposure to risk, there is a need not only to segregate fast moving from slow moving vehicles and heavy from light vehicles but also enforce speed limit on fast moving vehicles.

CONCLUSION:

Goa being the tiny state has no good infrastructure to compensate the tremendous growth in the vehicles which also includes the huge amount of tourists pour into the state during the vacations from the nearby states.

According to the sources, the analysis of the road accident statistics for 2015 shows the maximum numbers of accidents in the months of January, May, November and December, a time when the tiny state observes an influx of tourists, and during 6 p m and 9 p m.

The paper also revealed that more than half of the accidents were attributed to dangerous or careless driving, including overtaking, while more than one-third were due to over speeding, where two wheelers were responsible for one-fourth of the fatalities. This is not surprising considering 200 vehicles on an average are registered in the small state each day with two wheelers accounting for 69% of the vehicles.

Despite the growing burden of road traffic fatalities and injuries, road safety has received insufficient attention at the central, state, and local government levels. The main reason for this is that the problem of road traffic accidents does not belong to any specific agency, either at central or state or local government levels.

The responsibility of dealing with the various aspects of problems including road worthiness test for vehicles, the design of road networks and roads, urban planning, the introduction and enforcement of road safety legislations, and post-crash medical care is divided among many different agencies, sectors, and groups.

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