



How To Reduce Road Accidents 70. Debrabant In Kilwa Road

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Introduction:

The project is on **how to reduce road accidents on Kilwa road**

In this project we have decided to deal with small part of Kilwa road because it was noted through usual observation and data collected from the police reports that, that place experiences many serious accidents compared to other places of Kilwa road in the area of study that is from Bandarini to Mbagala KTM. According to observation and data collected from the police it showed that in the area between Mskitini and KTM most of the accidents occur at night and are very serious accidents. This led us to the hypothesis that it can be because of environmental condition of the place of corners and slope which have no any sign to caution the drivers. If it could be the negligence of the drivers these accidents could be many even during the day time.



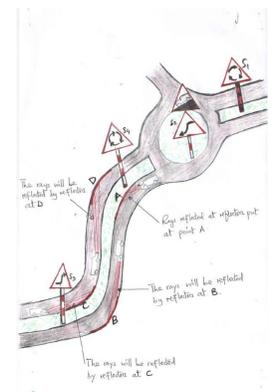
Method:

From this hypothesis we started working on it and planed for putting the signs which will help the drivers to know the conditions ahead.

We did our experiments in four ways and one of them was the best of all, but before that we collected the data from the police about accidents in Kilwa road from Bandarini to KTM for 15 months since January, 2014 to March, 2015. Apart from accident's report we wanted to know whether the area we were planning to deal with has official report of the problems we see when passing. The report revealed that the place gets many serious accidents at night times. It's when we started the experiments to reduce this as follows:-

Experiment 01

We collected the number of accidents for two weeks without any sign as the road was previous it showed to have 15 accidents. These accidents involved the accidents of vehicles and motorcycles hitting the edges of the road. We did that in order to have our own data because the data from the police did not specify the accidents in this area, also the traffics record accidents which they are called for only.



Results:

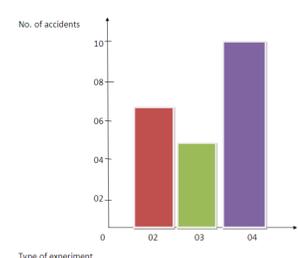
The previous data showed all accidents reported and recorded by the police for 15 months since January,2014 to March,2015. The information showed to have a total of **476** accidents in which out of these **305** accidents were normal accidents, **148** accidents were serious accidents, **23** accidents were FETO accidents and **19** accidents occurred at night and were FETO. Although FETO accidents seem to be few many people are dying because of accidents but an accident is recorded as FETO if a person dies before police's report.

We designed five signs and put them along the road to show the condition of the road ahead. In addition to that we also put reflectors too on road's edges at corners to show the way it is bent before reaching the corner itself. Also all sign had reflecting triangle so as they can be seen easily.

At the end of the project we compared all collected data in each experiment with previous information. We talked to some drivers who said the reflectors showing the bending of corners are very helpful and suggested the TANROADS people to introduce them in all corners. The number of accidents seemed to be reduced by 67% from 15 accidents to 5 accidents in two weeks.

N	Experimental Materials	Result (no. of accident s).	Controlling results	No. of accidents reduced	Fraction reduced	% reduced
1.	Controlling experiment	15	15	0	0	0
2.	When signs $S_1, S_2, S_3,$ and S_4 were put	8	15	7	7/15	47%
3.	When reflectors at A, B, C and D were put	10	15	5	5/15	33.33%
4.	When $S_1, S_2, S_3, S_4, A, B, C$ and D were all put,	5	15	10	10/15	66.6%

THE BAR CHART OF HOW EACH EXP. REDUCED ACCIDENTS



Conclusions

From the results obtained in **experiment 02** it reduced the number of accidents by **47%**. This is the signs helped the drivers to know the environmental conditions ahead before. At the same time in **experiment 03** the accidents were reduced by **33.3%**. The number is small compared to **experiment 02** because the prior information of the condition is there but at time depending on one's speed. On the other hand **experiment 04** reduced the number of accidents by **66.6%**. Here the percentage has increased comparing to **experiments 02 and 03** because this experiment was the combination of two experiments that is **experiment 02 and 03**. This helped the driver to know the condition ahead but at the same time to see the condition especially bending of the corners while driving along those corners. This achieved by the use of signs and reflectors respectively.

References

Advanced Physics by NELKON and PARKER
College Physics (4th Edition) by WILSON BUFFA
Road signs guidance manual.

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