

Effect of Poor Pavememnt Condition on Students’ Academic Activities

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Abstract:- This research aims to point out how academic activities of students are affected as a result of poor pavement condition, it seeks to understand how their daily academic activities are influenced by poor road network, their semester and overall academic performance was investigated. The method employed was through development of questionnaires’ and distributing among University undergraduates who usually travel on a very poor road condition to and fro University for their academic activities. The result shows that the specific academic performance of students due to poor road condition is significantly affected and the general academic activities of students is affected by poor pavement condition.

Key words- Poor Pavement condition, Academic activities, students etc.

I. INTRODUCTION

Advancement in Transportation is closely linked to overall human activities, every nation depends on very good transportation network/ good transportation facilities for effective development, these transportation facilities are for economic, social, industrial and cultural advancement of any country. Educational development is not an exemption, many students travel long distances to study, some daily, the use of highway becomes inevitable as it is the major facility that links people from different geographical locations, since most students travel daily for lectures, this research was conducted with the bias of students and how their specific and general academic activities are influenced as a result of poor pavement conditions.

AIM

This research is aimed at knowing how poor road /pavement condition affects students and their academic activities.

II. METHODOLOGY

The method employed in getting the results presented in this article was through the instrument of questionnaires, about 200 questionnaires were prepared and shared indiscriminately to students of Career Point University Kota, India, out of the 200 pieces, about 188 were successfully received back and analysed carefully. The result obtained are presented in subsequent parts of this article.

III. DATA PRESENTATION

The data obtained from the respondents are presented below in form of pie charts for easy understanding of the data.

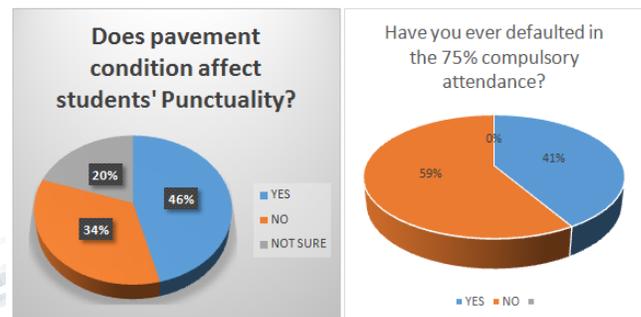


Fig 1. Shows Results of effect of pavement condition
Fig. 2 Presents the result of percentage of students who have defaulted in attendance. on Students’ punctuality.

As seen in Figure 1 above, about 46% of students who responded accepted that their punctuality is affected by road pavement condition, 34% shows that road pavement condition does not affect their punctuality and 20% said there were not sure if poor road pavement condition is responsible for their punctuality at all. Most standard Universities have a requirement of 75% compulsory attendance in a semester for a student to sit for the final semester exams, those who default are forced not to be part of the end of semester exams, With the result in Fig. 2 the question was geared at knowing how many had been victims of this policy due to poor road condition. From the research conducted 41% had defaulted at one point or the other due to poor road condition, 59 % never were victims of the policy. The result shows that 46.81% of those who

have defaulted thought poor pavement condition was responsible ,30.32% felt other factors contributed while the remaining 21.01% were not sure if pavement condition really was responsible for defaulting.

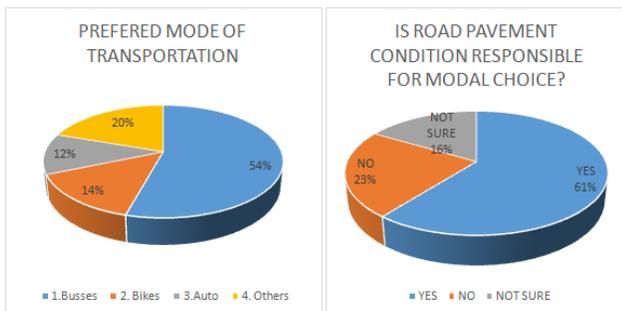


Fig 3. shows preferred mode of Fig 4 shows results of effect of pavement condition on modal Choice.

Transportation As shown in the figure 3. above, most of the students prefer to use busses to and fro University, the reason is that the buses are high, thus, the effect of distresses on the pavement on passengers is just very little compared to the discomfort that is felt travelling on other bad road with other transportation modes, While 54% preferred busses, 14% preferred to use their bikes, 12 % use auto rick shaws to and fro or one way to university or home and 20% preferred to use other means of transportation to and fro University.

As seen above in figure 4, 61% of the respondents thinks the poor pavement condition is responsible for their modal choice, many preferred to use busses because it has minimal fatigue effect on the travellers/students as compared to other means of transportation.

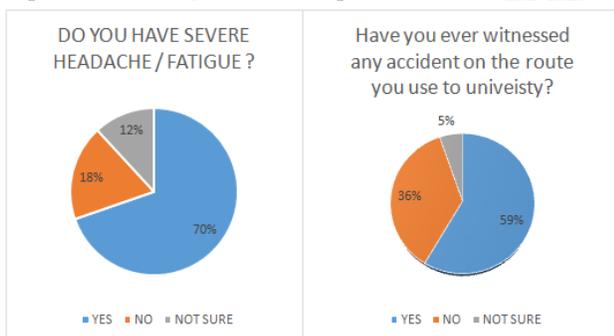


Fig 5. shows the result for those who Fig 6. shows the result for those who have have headache/fatigue witnessed accidents

Fig. 5 shows About 70% of the students witnessed that they had severe head ache/ fatigue due to poor road condition, this in no doubt will affect their academic inputs and thus their grades and results, it is important to state that the productivity in terms of time and inputs will reduce significantly as a result of poor pavement condition. The 18% who felt were not affected by this were considered to be mostly those whose accommodation is in the hostel who do not frequently travel on the route used as case study. From Fig 6. it can be seen that 59% had witnessed accidents on routes they use to and fro University, this could be so discouraging to put in more inputs into academics do to fear of such accidents and probably death, the constant siting of accidents could have a psychological effect on the students' performances. While 36% had not witnessed, 5% were not sure, these five percent were observed to be those who hardly travel on the route, probably only few times in semester and on extreme conditions as they have their accommodation in the hostel.

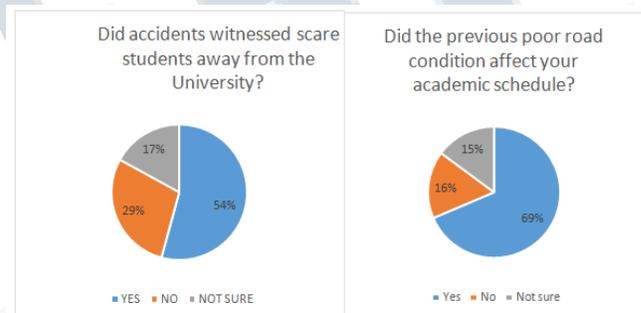


Fig. 7. How many students were scared Figure 8. Show results if the previous poor road schedule affect students daily schedule. of travelling on the same route.

As seen in Fig. 7 above, about 54 % of the respondents gets scared of probably been involved in an accident as well. It scares them, travelling on the same poor road to the University is a night mare to many, however, about 29% have not been scared. From Figure 8 above, it can be seen that 69% seem to be affected by the poor road condition as it affected their daily academic schedule, 16% witnessed that it did not while 15% were not sure if it did.

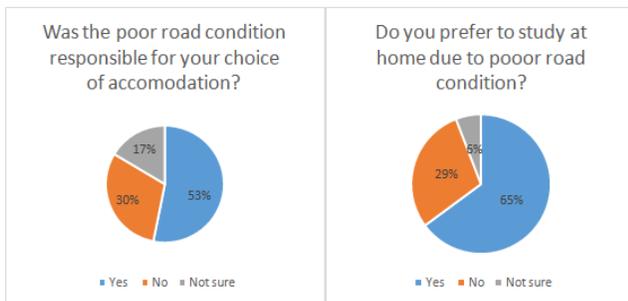


Fig.9 Showing the choice of accommodation Fig.10 showing number of people who prefer to study at home

In Fig.9 While 53% felt their choice of accommodation was guided by the poor road pavement, 30% did not think so and 17% percent maintained a neutral point on this. In Fig.10 Many students, prefer to stay away from lectures and rather study at home due to poor road pavement, as seen above, 65% of the students preferred home study, while 29% did not and 6% were not at all sure.

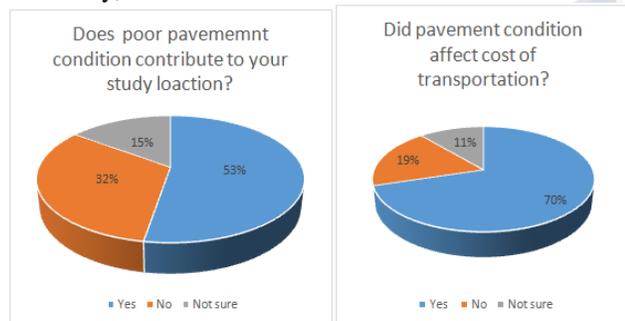


Fig. 11 Shows results if pavement condition Fig, 12 Shows transport cost due to poor contributes students' study location.

As seen in Fig. 11 above, 53% of the respondents affirmed that poor road condition contributes to their decision on study location, 32% thought otherwise and 15% had neutral grounds From figure 12 above, 70% of the respondents felt the poor road condition is a responsible factor for the cost of travelling.

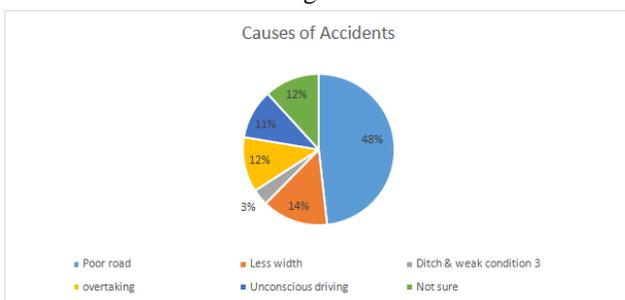


Fig.13 Showing public opinion on Causes of Accidents.

IV. DISCUSSION OF RESULTS

From the study, varying percentages of respondents gave had different percentages in response to the different questions posed before them, 53% of the students said pavement condition was responsible for their study, 70% said poor road condition leads to increase in cost of travelling on such roads, about 53% made their choices for accommodation due to poor pavement condition, 65% do not even like travelling to and fro the route to university, thus, prefer studying at home, 54% who witnessed accidents were scared of travelling on the road, 70% had severe head ache or fatigue which tends to affect their academic activities, due to poor pavement condition, 54% preferred journeying on busses as the effect is more minimal compared to smaller vehicles, poor road pavement was responsible for modal choice of about 61% of respondents, 46% have it that their punctuality has been affected due to poor road condition and 41% had defaulted in 75% compulsory attendance to be eligible to sit for semester exams. On public opinion on what they felt was the major causes of accidents on the road, it was seen that 48% said poor road condition was responsible.

V. RECOMMENDATIONS

From the study, it is recommended that

1. Students may preferably reside in the hostels in order to avoid the daily stress on such bad roads.
2. Use of Busses may reduce the stress/ fatigue of travelling daily.
3. Consistent and frequent maintenance/ rehabilitation of pavements by the authorities in charge.
4. For roads with very limited widths with excessive traffic, upgradation should be done.
5. In order to reduce the rate of accidents, Engineering, Enforcement and Education are ready tools.

VI. CONCLUSION

It is concluded that poor pavement condition has significant responsibility for general academic activities of the students and specific academic performances of the students.

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REFERENCES

1. Agbonkheshe Onoyan-usin, Yisa Godwin Lazhi, & Daudu Paul Itomi-ushi. (2013). Bad Drainage and Its Effects on Road Pavement Conditions in Nigeria. *Civil and Environmental Research*, 3(1), 7-15. .
2. Civil engineering dictionary (2004). highway drainage. <http://www.thefreedictionary.com/drainage> 5. Dipanjan Mukherjee. (2014). Highway Surface Drainage System & Problems of Water Logging In Road Section. *The International Journal Of Engineering And Science (IJES)*, 3(11), 44-51.
3. Ger, F., Donal, B. Kieran, K., John, M., Dominic, M. and Jim, P. (2004). Guidelines for road drainage. Department of the Environment, Heritage and Local Governmen. Roinn- U.S.A.
4. Getachew KebedeWarati, Tamene AdugnaDemissie. Assessment of the Effect of Urban Road Surface Drainage: A Case Study at GinjoGuduruKebele of Jimma Town. *International Journal of Science, Technology and Society*. Vol. 3, No. 4, 2015, pp. 164-173. doi: 10.11648/j.ijsts.20150304.20
5. Jitendra, G., Pradeep, K. A. and Manoj, K. S. (2013). A Framework for quantification of effect of drainage quality on structural and functional performance of pavement. *International Journal of Engineering Research*. Volume No.2, Issue No. 3, pp : 257-263
6. Magdi M. E. Zumrawi. (2016). INVESTIGATING SURFACE DRAINAGE PROBLEM OF ROADS IN KHARTOUM STATE. *International Journal of Civil Engineering and Technology (IJCIET)*,7(3) 91-103.

International Journal of Science, Engineering and Management (IJSEM)
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7. National Cooperative Highway Research Program (1998). Pavement Subsurface Drainage Systems. Road Management & Engineering Journal. <http://www.usroads.com/journals/rmej/9803/rm980304.htm>
8. Owuama C. O, Uja E, & Kingsley C. O. (2014). Sustainable Drainage System for Road Networking. International Journal of Innovation, Management and Technology, 5(2), 83-86.
9. PatilAbhijit, &PatilJalindar. (2011). Effects of Bad Drainage on Roads. Civil and Environmental Research, 1(1), 1-7.
10. Victor K. Rono. (2010). An Investigation into The Adequacy Of The Drainage System On Narok Mai Mahiu Road (Bachelor's thesis, University Of Nairobi, Kenya). Retrieved From <http://realestates.uonbi.ac.ke/sites/default/files/cae/artsdesign/realestates/Final%20project.pdf>
11. Rokade S, Agarwal P.K, &Shrivastava R. (2012). STUDY ON DRAINAGE RELATED PERFORMANCE OF FLEXIBLE HIGHWAY PAVEMENTS. International Journal of Advanced Engineering Technology, 3(1), 334-337.
12. Siddhartha, R., Agarwal, P. K and Rajnish, S. (2012). Drainage and flexible pavement performance. International Journal of Engineering Science and Technology. Vol. 4 No.04 pp. 1308 – 1311
13. Singh, R. R., Navpreet, K. and Er.Nitin, G. (2014). Drainage on roads. International Journal of Progresses in Civil Engineering. Vol. 1(1). Pp. 2394 – 4684
14. Tiza,Michael. Control of Flooding at Banks of Rivers Case Study of River Benue Bordering University of Agriculture Makurdi Water Works, International Journal of Engineering Science and Computing, April 2016. P 4047-4089
15. Tiza Michael, Anand Kumar & Shubham Kumar(2016) “ CHALLENGES AND EFFECTS OF UPGRADING EXISTING HIGHWAYS;A CASE STUDY OF NH-12 KOTA -JHALAWAR SECTION) RAJASTHAN INDIA” International Journal Of Advanced Technology in Engineering and Science (IJATES) 4(19), 550- 557. Retrieved from http://ijates.com/images/short_pdf/1476867975_538ijates.pdf
16. Vandoros, S., Kavetsos, G., & Dolan, P. (2013). Greasy Roads: The Impact of Bad Financial News on Road Traffic Accidents. Risk Analysis, 34(3), 556-566. doi:10.1111/risa.12123.