

**A STUDY ON THE EFFECT OF ROAD REMEDIAL WORK ON
ROAD ACCIDENT FREQUENCY**



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ABSTRACT

Reducing road accident frequency is an endeavor of national importance. From the various approaches available, the engineering approach is often preferred due to its ease of implementation as well as its cost effectiveness. Road remedial work is one of the methods, under the engineering approach, that are normally used to overcome road accidents.

The use of road remedial work to mitigate road accidents has its limitation. Due to its ease of implementation, road remedial work has often been the 'prescribed solution', whenever an accident prone site needs to be treated. This –plus the factor of visibility to the public eyes when undertaking road remedial work– leads to it becoming the first choice option for accident mitigation.

This 'blanket approach' to road accident mitigation may not be appropriate because the occurrence of accidents on the other hand often have specific causes. Due to its widespread implementation, it is now necessary to verify the effectiveness of the remedial work undertaken. As such, there is a need for the ability to perform an objective assessment (road auditing) for all road remedial work.

This paper studies the use of the Poisson probability distribution as a tool to objectively measure the impact of road remedial work. On the basis that all accidents occurrence conform to a Poisson process, it is suggested that the Poisson distribution can be used to approximate future accident frequency at a selected site and to measure the effectiveness of any road remedial work.

From the research undertaken, it was found out that the accident process for the selected sites do conform to the Poisson distribution and therefore indicates the appropriateness of its' use as a tool to measure the effect of road remedial work. Tests using the Poisson distribution on the selected sites however, found that the road remedial works undertaken were not able to reduce the mean accident frequency. This study concludes that the use of the Poisson distribution is appropriate and should be used as a basis to measure the effect of road remedial work.

CHAPTER 1

INTRODUCTION

1.1 OVERVIEW OF RESEARCH

Road deaths are a persistent anomaly. It is a trend that has blighted most countries and has continued to confound many transport experts and policymakers alike. It has been noted that road deaths unlike diseases tend to increase as the economy develops (Kopits & Cropper, 2003). This fundamental truth is hard to ignore as can be seen from the case of our country. As our country becomes richer, the rate of motorization also grows and the end result, so do deaths from road accidents.

Road accidents or more specifically road fatalities are a serious matter. It is not something that can be merely accepted as the unfortunate effect of development. Preventing road accidents should be a major concern for governments as according to the World Health Organization, traffic fatalities or road deaths are expected to be the sixth leading cause of death worldwide and the second leading cause of disability-adjusted life years lost in developing countries by 2020 (Murray & Lopez, 1996). This is disconcerting, as rampant road fatalities rob countries of valuable manpower (an important economic asset) and thus subject the country not only to social and personal anguish but also disastrous economic consequences.

Road accident is considered a national issue in our country. This is so not only because of our high motorization rate but also due to our relatively high road accident and fatality