

**AIN SHAMS UNIVERSITY**  
**FACULTY OF ENGINEERING**

**MODEL TO DETERMINE THE EFFECT OF  
SPEED ON TRAFFIC ACCIDENTS**

BY

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A thesis

submitted in partial fulfillment for the  
requirements of the Degree of Doctor of Philosophy  
in Civil Engineering

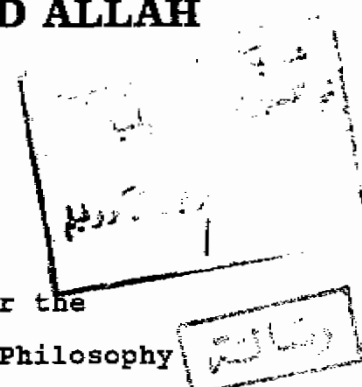
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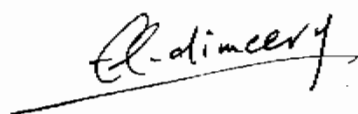
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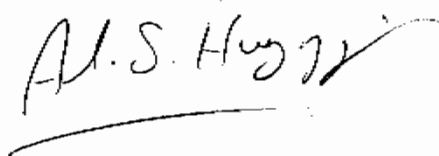
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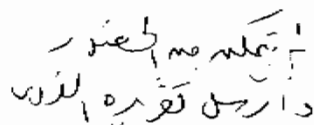
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### STATEMENT

This dissertation is submitted to Ain Shams University for the degree of Doctor of Philosophy in Civil Engineering.

The work included in this dissertation was carried out from 1989 to 1993 under the channel system between the department of Public Works, Ain Shams University and Department of Urban and Regional Planning, Texas A & M University.

No part of this dissertation has been submitted for a degree or a qualification at any other University or Institution.

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## TABLE OF CONTENTS

CHAPTER 1 INTRODUCTION . . . . .	8
1.1 Introduction . . . . .	8
1.2 Objectives and Scope . . . . .	10
1.3 Research Hypotheses . . . . .	10
1.4 Data Collection . . . . .	11
1.5 Methodology . . . . .	12
CHAPTER 2 Literature Review . . . . .	15
2.1 Introduction . . . . .	15
2.2 Statistics on accidents . . . . .	15
2.2.1 Accident Severity . . . . .	19
2.2.2 Collision Type . . . . .	19
2.2.3 Road surface conditions . . . . .	22
2.2.4 Accident Weekly Distribution . . . . .	23
2.2.5 Summary . . . . .	24
2.3 Accidents as related to traffic flow features	25
2.3.1 Traffic Volume . . . . .	225
2.3.1.1 Rural Undivided Tangent	
Sections . . . . .	25
2.3.1.2 Rural Signalized Intersections	
. . . . .	26
2.3.1.3 Rural Non - Signalized	
Intersections . . . . .	27
2.3.2 Traffic Speed . . . . .	29
2.4 Accidents as related to Geometric design	
characteristics . . . . .	36
2.5 Accidents as related to a combination of	
variables . . . . .	37
2.6 Models for Truck Accidents: . . . . .	53
2.6.1 Multiple Linear Regression model . . . . .	54
2.6.2 Poisson Regression Models . . . . .	56



2.6.3 Loglinear Models . . . . .	57
2.7 Accidents on Urban Areas . . . . .	58
2.8 Comments . . . . .	71
CHAPTER 3 Modelling . . . . .	73
3.1 Data Collections and Computation of the variables . . . . .	73
3.1.1 The Cairo- Alexandria Agricultural Road . . . . .	73
3.1.2 Accident Data . . . . .	76
3.2 The Independent Variables . . . . .	77
3.2.1 Traffic flow characteristics . . . . .	77
3.2.2 Geometric design characteristics . . . . .	78
3.2.3 Roadside Activity . . . . .	79
3.3 Multiple Regression Analysis . . . . .	81
3.3.1 Model Development . . . . .	81
3.3.2 Model Validation . . . . .	82
3.3.3 Model Analysis . . . . .	85
3.3.3.1 The Effect of Traffic Flow Parameters . . . . .	85
3.3.3.2 The Effect of Pavement Width . . . . .	87
3.3.3.3 The Effect of roadside activity . . . . .	87
3.4 Prediction of the Hazard Limit (HL) . . . . .	88
3.4.1 Introduction. . . . .	88
3.4.2 The hazard Limit Procedure . . . . .	89
3.4.3 Traffic Speed As A Control Parameter . . . . .	90
3.4.4 Pavement Width As a Control Parameter . . . . .	91
3.5 Comments . . . . .	97
3.6 Discriminant Analysis Procedure . . . . .	97
3.6.1 Background: . . . . .	97

3.6.1.1 Direct Method . . . . .	99
3.6.1.2 Stepwise Method . . . . .	99
3.6.2 The predictive ability of the function . . . . .	100
3.6.2.1. The Resubstitution Method .	100
3.6.2.2. The Hold Out Method . . . .	100
3.6.3 Adequacy of The Technique . . . .	102
3.7 Model Estimation . . . . .	103
3.7.1 Inequality of Group Means . . . . .	104
3.7.2 Equality of Variance Covariance Matrices . . . . .	104
3.8 Model Analysis . . . . .	108
3.9 Variables Contributions to the Model . . .	108
3.10 Alternative Policies For Accident Reductions . . . . .	112
3.11 Results and conclusions . . . . .	118
3.12 General Comments . . . . .	120
CHAPTER 4 The Non-parametric Model . . . . .	122
4.1 Introduction . . . . .	122
4.2 Philosophy of The Non-parametric Model. . .	122
4.3 Binary decision tree Algorithm . . . . .	125
4.3.1 Tree Construction . . . . .	125
4.3.2 Classification Rule . . . . .	127
4.4 The Proposed Model . . . . .	128
4.5 Developing The Computer Program . . . . .	131
4.6 Model Analysis . . . . .	137
4.7 The Classification Tree Analysis . . . . .	139
4.7.1 Between Nodes Analysis . . . . .	139
4.7.2 Within Nodes Analysis: . . . . .	146
4.8 Summary of The Non-parametric Model Results	151

4.9 Advantages of The Non-parametric Model over the Other Two Models . . . . .	153
4.9.1 The Non-parametric Model and The Discriminant Model . . . . .	154
4.9.2 The Non-parametric Model and The Regression Model . . . . .	157
CHAPTER 5 Summary, Conclusions and Recommendations .	161
5.1 SUMMARY . . . . .	161
5.2 Results and Conclusions . . . . .	166
5.2.1 Regression and Discriminant Models . .	166
5.2.2 The Non-parametric model . . . . .	168
5.2.3 Cairo-Alexandria Agricultural Road . .	169
5.2.4 Models' comparisons . . . . .	170
5.3 Recommendations . . . . .	171
REFERENCES . . . . .	173
APPENDICES . . . . .	182
APPENDIX 1 . . . . .	182
1.1 THE STATISTICAL ANALYSIS AND RESULTS OF THE REGRESSION MODEL . . . . .	183
1.2 THE CORRELATION MATRIX OF THE VARIABLES . .	185
APPENDIX 2 . . . . .	186
2.1 THE DISCRIMINANT ANALYSIS PROCEDURE PROGRAM	187
2.2 ADEQUACY OF THE MODELS . . . . .	212
APPENDIX 3 . . . . .	214
THE FORTRAN PROGRAM OF THE Non-parametric MODEL 'HAMADA.FOR' . . . . .	216
APPENDIX 4 . . . . .	228
THE STATISTICAL RESULTS OF THE Non-parametric MODEL WITH TERMINAL CRITERION ( $\alpha=2\%$ ) OF THE TRAINING SAMPLE . .	229

## LIST OF FIGURES

Figure	Figure Contents	Page
2.1	Greater Cairo Zones That Included In The Accident Study	17
2.2	Highway System Of Arab Republic Of Egypt	18
2.3	Relationship between Speed and Accident Involvement Rate	32
3.1	Relationship between Speed and Accident rate	94
3.2	Relationship between Pavement Width and Accident Rate	94
3.3	Relationship between Speed and Accident rate	95
3.4	Relationship between Pavement Width and Accident Rate	95
3.5	Relationship between Speed and Accident rate	96
3.6	Relationship between Pavement Width and Accident Rate	96
3.7	Graphical Representation of Two Groups and Two Variables	101
3.8	Probability of Case Membership to The Hazard Group	114
4.1	The Model Flow Charts	134
4.2	Test Feature (T) Computation Procedure	135
4.3	Classification Procedure of The Test Data	136
4.4	Construction of The classification Tree ( $\alpha=2\%$ )	144

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### LIST OF TABLES

Tables	Table Contents	Page
1.1	Total Accidents Cost in 1988	9
2.1	Accident Severity on the Intercity Roads	20
2.2	Collision types of accidents on 1988	21
2.3	Urban / Rural Accidents on 1988	22
2.4	Accidents and Road Surface Conditions on 1988	23
2.5	Accident Distribution Among The Weekdays	24
3.1	Accidents on the Six Intercity Roads in Egypt	75
3.2	Accidents Number Per Site for The Study Period	77
3.3	Ranges of the Observed Data of the Independent Variables (All Sites)	80
3.5	Level of Significance of the Predictors in the Models	84
3.6	Resubstitution Classification of the Quadratic Model	106
3.7	Resubstitution Classification of the Linear Model	106
3.8	Hold out Classification of the Linear model	107
3.9	Hold out Classification of the Quadratic Model	108
3.10	Model Coefficients in Standardized and Unstandardized Form	109
3.11	Variables Contribution in the Model	111
3.11	Alternative Policies For Accidents' Reduction (case A)	116
3.11	Alternative Policies For Accidents' Reduction (case B)	117
4.1	Classification Matrix of The Training Sample (alpha = 2%)	137

4.2	Classification Matrix of The Training Sample (alpha = 5%)	137
4.3	Classification Matrix of The Test Sample (alpha = 2%)	138
4.4	Classification Matrix of The Test Sample (alpha = 5%)	138
4.5	Classification Conditions at The Intermediate Nodes	145
4.6	Split Process Inside Node 1	147
4.7	Split Process Inside Node 2	148
4.8	Split Process Inside Node 3	149
4.9	Split Process Inside Node 4	149
4.10	Split Process Inside Node 7	149
4.11	Comparison between Model "B" and Model "C"	159

## CHAPTER 1

### INTRODUCTION

#### 1.1 Introduction

Analysis of traffic accidents is of a vital importance to traffic engineers. The tremendous cost of motor vehicle accidents causes not only much suffering and misery but also large economic losses. For instance the average economic losses in Egypt due to fatalities in traffic accidents on Cairo-Alexandria Agricultural Road exceeded one hundred and fifty million Egyptian pounds during 1988 while the costs of the total accidents were about two hundred million Egyptian pounds (see Table 1.1 which shows the total costs due to accidents on the Egyptian Intercity Road Network [1]). The figures included in this table are a part of a study carried out in the early of 1980's on six intercity roads in Egypt as well as the street system in three urban areas in Greater Cairo. A summary of this study will be illustrated in chapter 2.

Table 1.1 reveals that the total cost of accidents in 1988 on the six roads, under study, was about four hundred fifty million pounds of which 44% was incurred on the Cairo-Alexandria Agricultural road (AlxAgr.). This reflects considerable economic losses due to traffic accidents. It is believed that accidents' studies on the Egyptian Highway Network are limited. A comprehensive investigation of this serious problem and its possible remedies has yet to be undertaken. This research represents an attempt towards that end.