

**ESTIMATION OF PERCEIVED AND ACTUAL RISK
FACED BY PEDESTRIANS:
CASE STUDY DELHI, INDIA**

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FACED BY PEDESTRIANS:
CASE STUDY DELHI, INDIA**

by

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CERTIFICATE

This is to certify the thesis entitled “**Estimation of Perceived and Actual risk faced by Pedestrians: Case study Delhi, India**” being submitted by **Ms. Shalini Rankawat** to the Indian Institute of Technology Delhi, India, for the award of the degree of **DOCTOR OF PHILOSOPHY**, is a record of original bona fide research work carried out by her under my guidance and supervision.

To the best of my knowledge, the thesis has reached the requisite standard. The material contained in this thesis has not been submitted, in part or in full to any other University or Institute for the award of any degree or diploma.

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ABSTRACT

Pedestrians continue to face high risk in urban traffic in most cities. In case of Delhi (India), where road space is shared by variety of vehicle types, traffic crash fatalities from 2006-12 show that pedestrians have the largest share in total road fatalities. In an attempt to manage high-speed traffic in the city and safety of pedestrians a large number of pedestrian subways and foot over-bridges have been constructed. However, their usage is poor (Rankavat and Tiwari 2016 (b)).

The focus of this study is to understand pedestrians' perceptions about safety, convenience, security and comfort of different crossing facilities and road infrastructure in the city as well as in their own neighborhood where they are familiar with the surroundings. Since pedestrians' perception of risk also provides important information to identify potential crash risk, the study also explored the pedestrian perception of risk of getting involved in a traffic crash and the impact of built environment features in their risk perceptions. The ordered logit model was used to examine the influence of built environment features on risk perception of respondents. Along with pedestrians' perceptions and preferences, it was also necessary to evaluate the characteristics of the built environment around the high crash location clusters. This study reports an analysis of the built environment (BE) factors influencing the safety of pedestrians.

Further analysis combined these three factors (perceived risk, road crossing behavior/preferences and actual crash risk) associated with pedestrians' risk in path analysis modeling. Results showed potentially useful role that pedestrian perception of risk and preferences of road crossing can play in influencing the actual crashes of pedestrians.

This study evaluates and quantifies the actual risk, perceived risk and road crossing preferences with the built environment features on road segments. Furthermore, the inverse relation between actual crash risk and perceived risk at road segments with and without flyover has been established.

TABLE OF CONTENTS

CERTIFICATE	II
ACKNOWLEDGEMENTS	IV
ABSTRACT	VI
TABLE OF CONTENTS	VIII
LIST OF FIGURES.....	XII
LIST OF TABLES.....	XIV
1 INTRODUCTION	1
1.1 GLOBAL IMPACT OF ROAD ACCIDENTS AND PEDESTRIAN SAFETY	1
1.2 MAGNITUDE OF THE ROAD ACCIDENT PROBLEM IN INDIA	2
1.3 MAGNITUDE OF THE ROAD ACCIDENT PROBLEM IN STUDY AREA- DELHI	3
1.4 RESEARCH MOTIVATIONS.....	5
1.5 AIM OF THE RESEARCH.....	6
1.6 OBJECTIVES OF STUDY	6
1.7 HYPOTHESIS	7
1.8 RESEARCH OUTLINE	7
1.9 BRIEF METHODOLOGY OF THE RESEARCH	9
1.10 SOFTWARE USED.....	9
1.11 STRUCTURE OF THE THESIS	10
1.11.1 Chapter 1: Introduction	10
1.11.2 Chapter 2: Literature review	10
1.11.3 Chapter 3: Database Preparations.....	10
1.11.4 Chapter 4: Actual Risk.....	11
1.11.5 Chapter 5: Perceived Risk	11
1.11.6 Chapter 6: Path Analysis	11

1.11.7	Chapter 7: Conclusions	11
2	LITERATURE REVIEW	13
2.1	TRAFFIC SAFETY THEORY AND PEDESTRIAN BEHAVIOR	13
2.2	BUILT ENVIRONMENT AND TRAFFIC CRASH	15
2.3	EXPOSURE FACTORS AND TRAFFIC CRASHES	17
2.3.1	<i>Pedestrian Volume</i>	17
2.3.2	<i>Traffic Volume</i>	18
2.3.3	<i>Traffic Speed</i>	19
2.4	BUILT ENVIRONMENT, PEDESTRIANS' PERCEPTIONS AND BEHAVIOR.....	20
2.4.1	<i>Perceptions</i>	20
2.4.2	<i>Safety and Convenience</i>	22
2.4.3	<i>Road Crossing Behavior</i>	23
2.4.4	<i>Sidewalks</i>	24
2.5	TRAFFIC CRASH MODELS	27
2.6	ORDINAL SCALE MODELING	29
2.7	STRUCTURAL EQUATION MODELING	30
2.8	SAFETY ANALYSIS USING GIS	33
2.9	SUMMARY	34
3	DATABASE PREPARATIONS.....	37
3.1	STUDY AREA CHARACTERISTICS	37
3.2	FATAL CRASH DATA	42
3.3	USE OF GIS TO FIND HIGH RISK LOCATIONS	42
3.4	PEDESTRIAN SURVEY.....	49
3.4.1.1	<i>Usage of pedestrian facilities</i>	52
3.4.2	<i>Pedestrians' Risk Perceptions</i>	56
3.4.3	<i>Pedestrian Behavior – Crossing the Street</i>	70
3.4.4	<i>Summary</i>	73
3.5	INVENTORY SURVEY.....	74

3.5.1	<i>Empirical Results for the Inventory Survey</i>	79
3.5.2	<i>Summary</i>	84
4	ACTUAL RISK LOCATIONS	87
4.1	ACTUAL RISK	87
4.2	METHODOLOGY	88
4.3	VARIABLES TESTED.....	92
4.4	ACTUAL RISK AT ALL IDENTIFIED LOCATIONS	95
4.4.1	<i>Locations with and without flyover</i>	98
4.4.2	<i>Actual Risk at locations with and without flyover</i>	100
4.5	LIKELIHOOD RATIO TEST.....	109
4.6	SUMMARY	110
5	PERCEIVED RISK AND PEDESTRIAN BEHAVIOR	111
5.1	PEDESTRIAN FACILITIES	112
5.1.1	<i>Preliminary Investigation</i>	112
5.1.2	<i>Predictors of usage of crossing facilities</i>	115
5.1.3	<i>Model Fitting</i>	121
5.2	PEDESTRIANS' RISK PERCEPTIONS.....	122
5.2.1	<i>Preliminary Investigation</i>	123
5.2.2	<i>Predictors of Risk Perceptions</i>	125
5.2.3	<i>Model Fitting</i>	129
5.3	CROSSING BEHAVIOR	131
5.3.1	<i>Preliminary Investigation</i>	131
5.3.2	<i>Predictors of crossing behavior</i>	132
5.3.3	<i>Model Fitting</i>	137
5.4	CONCLUSIONS.....	139
6	PATH ANALYSIS	141
6.1	PATH ANALYSIS	142

6.2	STEPS FOLLOWED IN DEVELOPING A MODEL FOR PATH ANALYSIS.....	145
6.2.1	<i>Model Specification</i>	145
6.2.2	<i>Model Estimation</i>	147
6.2.3	<i>Model Testing</i>	148
6.3	INPUT DATA DESCRIPTION.....	149
6.4	HYPOTHESIZED MODEL AND RESULTS	150
6.4.1	<i>At locations without flyover</i>	152
6.4.2	<i>At locations with flyover</i>	155
6.5	CONCLUSIONS.....	159
7	CONCLUSIONS.....	161
7.1	CONTRIBUTIONS OF THE STUDY.....	161
7.2	KEY FINDINGS	162
7.2.1	<i>Actual Risk</i>	163
7.2.2	<i>Perceived Risk</i>	164
7.2.3	<i>Actual Risk, Perceived Risk and Built Environment Factors</i>	166
7.2.4	<i>Actual Risk, Perceived Risk and Road crossing preferences</i>	167
7.3	LIMITATIONS AND FUTURE STUDIES.....	168
	REFERENCES	171
	ANNEXURES	185
7.4	ANNEXURE 1 : QUESTIONNAIRE SURVEY.....	185
7.5	ANNEXURE 2 : QUESTIONNAIRE SURVEY - PERCEPTIONS	187
7.6	ANNEXURE 3 : INVENTORY SURVEY	190
7.7	ANNEXURE 4 : STATA 13	192
	PUBLICATIONS AND CONFERENCE PAPERS	193
	BIO-DATA OF AUTHOR	194

LIST OF FIGURES

FIGURE 1-1 FATAL CRASHES – DELHI, 2006-12.....	4
FIGURE 1-2 RESEARCH METHODOLOGY	9
FIGURE 3-1 DELHI MODAL SHARE	38
FIGURE 3-2 FATAL LOCATIONS’ PHOTOS IN DELHI	40
FIGURE 3-3 EXISTING INFRASTRUCTURE AT SELECTED LOCATIONS IN DELHI	41
FIGURE 3-4 DENSITY MAP FOR PEDESTRIAN CRASHES IN DELHI, 2006-09.....	47
FIGURE 3-5 PEDESTRIANS’ FATAL CRASH COUNTS AT SELECTED LOCATIONS	49
FIGURE 3-6 USAGE OF ROAD FACILITIES.....	53
FIGURE 3-7 PEDESTRIANS’ PERCEPTIONS FOR ZEBRA-CROSSING AND FOB	54
FIGURE 3-8 PEDESTRIANS’ PERCEPTIONS FOR SUBWAY AND SIDEWALK	55
FIGURE 3-9 PEDESTRIANS’ RISK PERCEPTIONS OF THEIR NEIGHBORHOOD.....	59
FIGURE 3-10 PEDESTRIANS’ RISK PERCEPTIONS OF THE ACTUAL HIGH CRASH LOCATIONS.....	61
FIGURE 3-11 GENDER AND AGE DISTRIBUTION FOR RISK PERCEPTION - NUMBER OF LANES..	63
FIGURE 3-12 GENDER AND AGE DISTRIBUTION FOR RISK PERCEPTION – UNMARKED CROSSWALKS	63
FIGURE 3-13 GENDER AND AGE DISTRIBUTION FOR RISK PERCEPTION – LACK OF LIGHTING ..	64
FIGURE 3-14 GENDER AND AGE DISTRIBUTION FOR RISK PERCEPTION – MEDIAN WIDTH.....	65
FIGURE 3-15 GENDER AND AGE DISTRIBUTION FOR RISK PERCEPTION – PARKED VEHICLES ...	65
FIGURE 3-16 GENDER AND AGE DISTRIBUTION FOR RISK PERCEPTION – TRAFFIC SPEED.....	66
FIGURE 3-17 GENDER AND AGE DISTRIBUTION FOR RISK PERCEPTION – TRAFFIC VOLUME.....	67
FIGURE 3-18 GENDER AND AGE DISTRIBUTION FOR RISK PERCEPTION – SIDEWALK WIDTH	67
FIGURE 3-19 GENDER AND AGE DISTRIBUTION FOR RISK PERCEPTION – SIDEWALK CONTINUITY	68
FIGURE 3-20 GENDER AND AGE DISTRIBUTION FOR RISK PERCEPTION – SIDEWALK MAINTENANCE	69

FIGURE 3-21 GENDER AND AGE DISTRIBUTION FOR RISK PERCEPTION – SIDEWALK SEPARATION FROM TRAFFIC.....	69
FIGURE 3-22 GENDER AND AGE DISTRIBUTION FOR CROSSING AT MIDBLOCKS.....	70
FIGURE 3-23 GENDER AND AGE DISTRIBUTION FOR CROSSING AT INTERSECTIONS	71
FIGURE 3-24 GENDER AND AGE DISTRIBUTION FOR PREFERENCE WITH CONVENIENCE PERCEPTION.....	72
FIGURE 3-25 GENDER AND AGE DISTRIBUTION FOR PREFERENCE WITH SAFETY PERCEPTION	73
FIGURE 3-26 AVERAGE TRAVEL SPEED OF THE MODES	79
FIGURE 3-27 AVERAGE HOURLY TRAFFIC AND PEDESTRIANS VOLUME.....	80
FIGURE 3-28 AVERAGE HOURLY TRAFFIC AND PEDESTRIANS VOLUME AT ISBT.....	80
FIGURE 3-29 AVERAGE TRAFFIC VOLUME - NUMBER OF FATAL PEDESTRIAN CRASHES GRAPH	81
FIGURE 3-30 DISTRIBUTION OF SURVEYED ROAD SEGMENTS - AVERAGE DAILY PEDESTRIAN VOLUME.....	82
FIGURE 3-31 DISTRIBUTION OF PEDESTRIANS’ FATAL CRASHES BASED ON NUMBER OF LANES	82
FIGURE 3-32 DISTRIBUTION OF LAND USE CHARACTERS IN THE SURVEY	83
FIGURE 4-1 FATAL CRASHES’ FREQUENCY OVER ROAD SEGMENTS.....	98
FIGURE 4-2 PEDESTRIAN FATAL CRASHES’ TREND FROM 2006-09	99
FIGURE 6-1 HYPOTHESIZED DIAGRAM OF STUDY	147
FIGURE 6-2 HYPOTHESIZED DIAGRAM AT LOCATIONS WITHOUT FLYOVER.....	154
FIGURE 6-3 HYPOTHESIZED DIAGRAM AT LOCATIONS WITH FLYOVER	155

LIST OF TABLES

TABLE 2-1 PERIODS OF ROAD SAFETY RESEARCH, ACCORDING TO VARIOUS PERSPECTIVES..	13
TABLE 3-1 SURVEY LOCATIONS' NAME.....	48
TABLE 3-2 RISK PERCEPTION DISTRIBUTION WITH BUILT ENVIRONMENT FACTORS	61
TABLE 3-3 LIST OF SURVEY VARIABLES	76
TABLE 4-1 CORRELATION MATRIX – INVENTORY SURVEY VARIABLES	94
TABLE 4-2 NEGATIVE BINOMIAL MODEL FOR FATAL CRASH RISK WITH EXPOSURE FACTORS	95
TABLE 4-3 NEGATIVE BINOMIAL MODELS FOR FATAL CRASH RISK	97
TABLE 4-4 SUMMARY STATISTICS FOR MODEL 1 AND MODEL 2	98
TABLE 4-5 NEGATIVE BINOMIAL MODEL FOR FATAL CRASH RISK WITH EXPOSURE FACTORS AT LOCATIONS WITH AND WITHOUT FLYOVER	100
TABLE 4-6 NEGATIVE BINOMIAL MODEL FOR FATAL CRASH RISK AT LOCATIONS WITH AND WITHOUT FLYOVER	105
TABLE 4-7 SUMMARY STATISTICS FOR MODEL 3 AND MODEL 4.....	106
TABLE 5-1 MEAN RANKS FOR PEDESTRIAN FACILITIES USAGE	113
TABLE 5-2 TEST STATISTICS	113
TABLE 5-3 SPEARMAN'S CORRELATION ANALYSIS FOR PEDESTRIANS' PREFERENCES.....	114
TABLE 5-4 ANALYSIS OF USAGE OF PEDESTRIAN FACILITIES	119
TABLE 5-5 USAGE OF CROSSING FACILITIES MODEL FITTING TEST.....	122
TABLE 5-6 MEAN RANKS OF RISK PERCEPTIONS	124
TABLE 5-7 TEST STATISTICS WITH GROUPING VARIABLE AS GENDER	124
TABLE 5-8 RISK PERCEPTIONS' MEAN RANK FOR BUILT ENVIRONMENT FACTORS	125
TABLE 5-9 RESULTS OF ORDERED LOGIT MODEL OF RISK PERCEPTION.....	128
TABLE 5-10 MODEL FITTING TEST OF RISK PERCEPTION MODEL.....	130
TABLE 5-11 CHI-SQUARE TESTS	132
TABLE 5-12 MODEL FOR ROAD CROSSING BEHAVIOR AT MIDBLOCKS	134
TABLE 5-13 MODEL FOR ROAD CROSSING BEHAVIOR AT INTERSECTIONS.....	135

TABLE 5-14 MODEL FOR ROAD CROSSING BEHAVIOR WITH CONVENIENCE PERCEPTIONS	136
TABLE 5-15 MODEL FOR ROAD CROSSING BEHAVIOR WITH SAFETY PERCEPTIONS	137
TABLE 5-16 MODEL FITTING DETAILS FOR ROAD CROSSING	138
TABLE 6-1 PATH ANALYSIS RESULTS FOR CROSSING AT MIDBLOCKS AND INTERSECTIONS .	154
TABLE 6-2 PATH ANALYSIS RESULTS FOR CROSSING AT LOCATIONS WITH FLYOVER	156
TABLE 6-3 VARIANCES IN THE ENDOGENOUS VARIABLES OF MODELS.....	158
TABLE 7-1 SIGNIFICANT FEATURES WITH ACTUAL AND PERCEIVED RISKS	167