



STUDY ON PEDESTRIANS WALKING PATH CONFLICT WITH REFERENCE TO COIMBATORE

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Abstract

Due to the continuous growth of cities and transportation, walking becomes a challenging aspect in cities and hence need to be taken care due to its serious impacts like pedestrian's fatality and accidents. Coimbatore being a rapidly growing city in Tamilnadu, it is essential to understand the walking path conflict of the pedestrians. The total of 595 data was collected from the pedestrians by including three areas namely residential, educational and transit hub, using purposive sampling technique. The findings revealed that, significant walking path conflict was found among considerable amount of pedestrians in their walking. It was also found that, adequate measures are taken by the government in addressing the same through their on-going infrastructure development projects in the city.

Introduction

In the rapid growing urban environment, pedestrians face many challenges while walking in sidewalks and walkways. Walking path conflict denotes to the hurdles, conflict and hazards faced by the pedestrians with other pedestrians, vehicles, cyclists, etc which affects their mobility and safety. Thus, this conditions will significantly influence the walkability of the pedestrians and hence to be addressed immediately.

Due to the continuous growth of cities and transportation, walking becomes a challenging aspect in cities and hence need to be taken care due to its serious impacts like pedestrian's fatality and accidents. Thus, the policy makers, urban planners and researchers have to focus on this topic to find a adequate measures to handle the same and provide safe environment to the pedestrians.

Walking is been recognized by the people today due to its health and economic benefits. Today, people prefer to walk instead of depending on other modes of travel. On the other side, due to the unsafe environment and inadequate facilities in the pathways and sideways, they tend to avoid walking. Coimbatore being a rapidly growing city in Tamilnadu, it is essential to understand the walking path conflict of the pedestrians and to take adequate measures to combat the issue, thus this piece of study becomes necessary and important at this juncture.

Review of Literature

Neale, J et.al (2022) has conducted a study on the impact of varying environment on the psychophysiological outcomes. Their study found that, urban green and gray environment had a significant influence over the walkability of the participants. Bentley et.al (2018) their study revealed that intersections are found to be the significant place for walking path conflict, especially when both the cyclist and pedestrians share the same path. This conflict can be reduced by provide separate paths



for pedestrians and cyclists. Bhat and Guo (206) found that availability of sidewalks and adequate crossings which influence the accidents rate of pedestrians. Thus, these conflicts can be minimized through improving and providing adequate pedestrians infrastructure. Cui et. al (2017) has identified that there is a significant conflict found between pedestrians and vehicles. Their study suggests implementing traffic calming measures and pedestrians friendly signal s to reduce the conflicts. Nordback and Marshall (2016) their study found a significant conflict between pedestrians and vehicles especially near transit stations. The study also found that mixed traffic transit zones had higher risk of pedestrian accidents. Their study suggested that, dedicated pathways for pedestrians and adequate signage can control these conflicts. Schneider and Kitchen (2017) their study has found a strong relationship between the pedestrians walking path conflict and distraction due to mobile phone. Their study suggested that, awareness campaigns must be conducted among the public to make them more responsible users of mobile phones which can reduce these conflict to a considerable extent. Zahabi et.al (2018) has conducted a study on pedestrian’s facility preferences and found that the facilities like well maintained paths, sidewalks and adequate crossing helps the pedestrians to be have comfortable walking and motivate them to walk more.

Objectives

1. To study the demographic and travel related aspects of the pedestrians.
2. To understand the walking path conflict faced by the pedestrians.

Methodology

Explanatory cross sectional mixed method design is adopted in the present study. A mixed methodology approach is followed to get more insights on the walkability and also to authenticate the data collected through another method. The Purposive sampling technique was used to select the respondents and data was collected accordingly. The Global Walkability Index was used to collect data from the respondents. The data was collected from three areas namely residential, educational and transit hub, using purposive sampling technique. The data was analyzed using simple percentage analysis.

Analysis and Interpretation

Demographic variables

The demographic profile of the respondents reveals that, more than half of the respondents are male; less than half of the respondents (47.7 percent) of them belong to the age group between 26-30 years; walking was the mode of travel for 64.4 percent of the respondents; average travel time for half of the respondents was less than 15 minutes; the length of trip of 45 percent of the respondents was less than 3 kilometers.

Walking path conflict

Table No: 1 Walking Path Conflict

Factors	Items	No. of Resp.	Percent
Availability of Walking	Pedestrians walkways required but not available/Partially available	125	21.0
	Pedestrians walkways available but highly congested, badly maintained and not clean	306	51.3
	Pedestrians walk ways available but congested, need better	133	22.4



	maintenance and cleanliness		
	Pedestrians walk ways available which are sometimes congested and are clean and well maintained	14	2.4
	Pedestrians walk ways not required as people can safely walk around	17	2.9
Availability of Crossing	Average distance of controlled crossings is greater than 500m and average speed is high	188	31.6
	Average distance of controlled crossings is between 500-300m and average speed is around 40 km/h	163	27.4
	Average distance of controlled crossings is 200-300m and average speed is 20-40kmph	211	35.5
	Average distance of controlled crossings is 100-200m and average speed is 20-40 kmph	16	2.6
	There is no need of controlled crossing as pedestrians are safe to cross wherever they like and vehicles and pedestrians coexist	17	2.9
Grade Crossing Safety	Very high probability of accident with very high crossing time	201	33.8
	Dangerous pedestrian faces some risk of being hurt by other modes and crossing time is high	233	39.2
	Difficult to ascertain danger posed to pedestrians about the time available for crossing is less and people have to hurry	125	21.0
	Safe - pedestrian is mostly safe from accident with other modes and exposure time is less and time available for crossing more	28	4.7
	Very safe - other modes present no danger to pedestrians	8	1.3
Motorist Behaviour	High traffic disrespect to pedestrians	157	26.4
	Traffic disrespect and rarely pedestrians get priority	282	47.4
	Motorist sometimes yield	122	20.5
	Motorists usually obey traffic laws and sometime yield to pedestrians	10	1.7
	Motorists obey traffic laws and almost always yield to pedestrians	24	4.0
Amenities	No amenities	171	28.7
	Little amenities at some locations	182	30.6
	Limited number of provisions for pedestrians	207	34.8
	Pedestrians provided some good amenities for major length	17	2.9
	Pedestrians have excellent amenities such as lighting, cover from sun and rain making waking a pleasant experience	18	3.0
Disability Infrastructure	No infrastructure for disabled people is available	208	35.0
	Limited infrastructure for disabled person is available, but is not in usable condition	196	32.8
	Infrastructure for disable person is present but in poor condition and not well placed	158	26.6
	Infrastructure for disabled person is present, in good	16	2.7



	condition, but poorly placed		
	Infrastructure for disabled person is present, in good condition and well placed	17	2.9
Obstructions	Pedestrian infrastructure is completely blocked by permanent obstructions	240	40.3
	Pedestrians are significantly inconvenienced. Effective with less than 1m.	254	42.7
	Pedestrian traffic is mildly inconvenienced; effective with is < or = 1m	69	11.6
	Obstacle present minor inconvenience. Effective with is 1m	17	2.9
	There are no obstructions.	15	2.5
Security from Crime	Environment feels very dangerous - pedestrians are highly susceptible to crime	164	27.5
	Environment feel dangerous- pedestrians are some risk of crime	255	42.9
	Difficult to ascertain perceived degree of security for pedestrians	143	24.0
	Environment feels secure-pedestrians at minimal crime risk	14	2.4
	Environment feels very secure-pedestrians at virtually no risk of crime	19	3.2
Footpath Width	No footpath	232	39.0
	Discontinuity of Footpath	180	30.3
	Availability of footpath yet in a very poor condition	152	25.5
	Good width but no maintenance	20	3.4
	Good footpath	11	1.8

The above table depicts the waling path conflict of the respondents. It shows that, with regard to availability of walking, more than half of them (51.3 percent) have stated that pedestrians walkways available but highly congested, badly maintained and not clean; with regard to availability of crossing, 35.5 percent of them have stated that average distance of controlled crossings is 200-300m and average speed is 20-40kmph and 31.6 percent stated that average distance of controlled crossings is greater than 500m and average speed is high; with regard to grade crossing safety, 39.2 percent of them have stated that dangerous pedestrian faces some risk of being hurt by other modes and crossing time is high and 33.8 percent have stated that very high probability of accident with very high crossing time; with regard to motorist behaviour, 47.4 percent of them have stated that traffic disrespect and rarely pedestrians get priority.

The table also depicts that, with regard to amenities, 34.8 percent of them have stated that limited number of provisions for pedestrians and 30.6 percent of them have stated that little amenities are available at some locations; with regard to disability infrastructure, 35 percent of them have stated that no infrastructure for disabled people is available and 32.8 percent have stated that limited infrastructure for disabled person is available, but is not in usable condition; with regard to obstructions, 42.7 percent of them have stated that pedestrians are significantly inconvenienced. Effective with less than 1m and 40.3 percent of them have stated that pedestrian infrastructure is completely blocked by permanent obstructions; with regard to security from crime; 42.9 percent of them have stated that, environment



feel dangerous- pedestrians are some risk of crime; with regard to footpath width, 39 percent of them have stated that no footpath is available and 30.3 percent of them have stated that discontinuity of footpath.

Table No: 2 Overall Walking Path Conflict

	Items	No. of Resp.	Percentage
Walking Path Conflict	Significant conflict that makes walking impossible	281	47.3
	Significant conflict that makes walking possible, but dangerous and inconvenient	222	37.3
	Some conflict - walking is possible, but not convenient	62	10.4
	Minimal conflict, Mostly between pedestrians and non-motorized vehicles	18	3.0
	No conflict between pedestrians and other modes	12	2.0

The overall walking path conflict of the respondents reveals that, nearly half of the respondents have stated that, significant conflict that makes their walking impossible, 37.3 percent have stated that significant conflict makes their walking possible, but it is dangerous and inconvenient, 10.4 percent of them have stated that there is some conflict in walking but inconvenient, 3 percent of them have state that minimum conflict is there between pedestrians and non-motorized vehicles and 2 percent of them have stated that there is no conflict between pedestrians and other modes.

Discussion

The growth of the Coimbatore city makes it busy always with heavy traffic and congestion. To combat with it, the government has taken serious steps like expanding the roads, building flyovers and installing traffic signals in adequate places through the city. Hence the present condition of the city is highly inconvenient for the pedestrians as walking become impossible or difficult in many of the places in and around the city due to the infrastructure development. Thus, considerable numbers of pedestrians have stated that they have walking path conflict which makes their walking impossible. The local government is taking adequate measures to support the pedestrians where ever possible such that they are comfortable with their walk. Once the infrastructure developments are completed, the city might have conducive environment for pedestrians.

Conclusion

The present study concludes that, pedestrians experience a significant walking conflict with the present conditions of the city. It is suggested that, adequate measures are taken by the local government to manage the same by taking temporary measures till the infrastructure development projects are completed in the city. This can help the pedestrians to avoid conflict and also save them from accidents and fatality.

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