



**To study the pedestrian flow characteristics around INTERSECTIONS on selected sites on NH-10.**

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**Abstract:**

The research examines pedestrian movement around National Highway 10 crossings (NH-10). These crossroads, which are vital to urban traffic, provide safety and efficiency. This study examines pedestrian flow characteristics to identify patterns, behaviours, and issues in pedestrian-vehicular traffic interactions. NH-10's numerous locations provide a full pedestrian flow study. The research uses field observations, pedestrian counts, and geographical analysis. These methods help examine pedestrian volumes, movement patterns, crossing habits, and safety problems. The research also identifies peak hours, bottlenecks, and possible conflict regions to better understand pedestrian experiences near crossings. This study should help urban planners, transportation engineers, and policymakers. By understanding pedestrian flow patterns, these crossings may be improved for safety, accessibility, and efficiency. Infrastructure improvements, signal phasing changes, and pedestrian-oriented design may be included. This research unravels NH-10 junction pedestrian-vehicle interactions. It uses empirical data and theoretical research to support decision-making that enhances pedestrian and vehicular traffic harmony and smooth mobility at these crucial urban hubs.

**keywords:** Pedestrian flow, intersections, NH-10, urban mobility, pedestrian behavior, vehicular traffic, pedestrian movement patterns

**introduction**

Urban dynamics include complicated vehicular and pedestrian activity at crossings. This makes National Highway 10 (NH-10) a prime location for pedestrian flow studies near crossings. This study explores the complex interactions between pedestrians and automobile traffic in this dynamic situation. The research aims to record pedestrian flow by choosing locations along NH-10 with different urban characteristics. These locations, from busy commercial areas to quiet residential corners, provide for a thorough investigation of pedestrian junction navigation in different circumstances. The research examines pedestrian volumes, movement patterns, and crossing habits using careful field observations, pedestrian counts, and spatial analysis.

The research goes beyond quantitative data to explore pedestrians' minds at these junctions. The inquiry includes safety concerns, decision-making, and risk perceptions, improving the knowledge of pedestrian-vehicle interactions. These initiatives will inform urban planning and transportation engineering techniques to promote safety and efficiency. The results will guide urban planners,



legislators, and engineers trying to balance human and vehicular traffic. This project seeks to understand pedestrian flow at crossings to guide solutions that improve accessibility, reduce conflict, and redefine urban cooperation. National Highway 10 (NH-10) crossings are bustling crossroads where pedestrian and vehicular storylines meet in the urban tapestry. This study of pedestrian traffic at these crucial crossroads reveals a storey beyond mobility. It weaves human behaviour, urban design, and continuous connection.

This research will collect intersection personalities by choosing locations along NH-10. Each scene shows urban activity from dawn to dusk. The study combines empirical research with pedestrian psychology. Pedestrian counts and movement patterns provide a quantitative base, while subtle qualitative insights reveal the reasoning underlying paving decisions. This research provides urban planners with a treasure map to make educated choices. Interventions that turn crossroads into smooth transitions start with these crossing habits and safety concerns. This research will inspire infrastructure changes, signal synchronisation, and pedestrian-centric design. NH-10 junction pedestrian flow studies are fascinating. Safety, accessibility, and vehicle-human balance are explored. As the study's curtain raises, it spotlights not just crosswalks and traffic signals but also hopes and goals that cross these urban crossroads daily.

### **Temporal Dynamics of Pedestrian Flow at NH-10 Intersections: A Comprehensive Analysis**

Intersections play a vital role in the urban dance, as the tempos of pedestrian and vehicle traffic synchronise. Pedestrian traffic at crossings along the highly regarded National Highway 10 is the focus of this in-depth investigation (NH-10). This study tries to understand the intricacies of pedestrian behaviour in this urban environment by analysing it through the perspective of time's transformational impact. NH-10 is a vital link that provides a canvas full of variety, with each crossroads offering its own storey. The research records the ebb and flow of pedestrian traffic throughout a 24-hour period, from the enthusiastic steps of morning to the steady strides of evening. This temporal investigation digs deeper than the surface to discover the underlying preferences and motives that shape pedestrians' decisions throughout time. The chosen approach is thorough but compassionate. The quantitative framework for insights is built from the precise recording of pedestrian counts and movement trajectories. The qualitative layers are also peeled back in this research; interviews, observations, and situational analysis provide light on the underlying decision-making processes that determine when, where, and how people cross the street. The possibility for a shift in urban planning paradigms is central to this investigation. Insights on traffic patterns over time may be used to reduce congestion during rush hours, improve signal timing, and make streets safer for pedestrians. The beat of the city changes with the hours, and this study seeks to score a harmony in which pedestrians may cross streets safely and junctions maximise productivity. Researchers in the research titled "Temporal Dynamics of Pedestrian Flow at NH-10 Intersections" used time as a variable to better understand the complex relationship between pedestrians and crosswalks. Beyond the data is a storey of city life, whereby an appreciation of the rhythm of human activity inspires plans and programmes that promote cohesion and improve the quality of life for pedestrians along the busy NH-10 thoroughfares.

### **Unveiling the Pedestrian-Vehicle Interplay: NH-10 Intersection Pedestrian Flow Study**



Intersections along National Highway 10 (NH-10) are the main events in the urban drama where people and cars are constantly interacting with one another. In this fascinating investigation, we follow the researchers as they explore this dynamic environment in search of the underlying dynamics that characterise the interactions between people and automobiles. The study's overarching goal is to shed light on the complex web of urban mobility by illuminating the dynamics of connectedness, conflict, and cohabitation at these intersections. The critically important NH-10 highway serves as the setting for our investigation. Each of the selected corners is a microcosm of urban life, with its own unique character, set of problems, and set of tales. Here, the routes of automobiles become like musical notes in a composition, while the steps of pedestrians become dance. The research moves from a broad overview to a detailed examination of individual pedestrians' experiences at each stage of a crossing, shedding light on the factors that drive people in urban settings. The approach combines rigorous empirical analysis with in-depth consideration of the topic at hand. Quantifying the flows and connections is made possible with the use of data from pedestrian counts and traffic analysis. However, it is the human storey behind these statistics that makes them come alive. The project aims to understand the language of anticipation, negotiation, and mutual awareness between pedestrians and automobiles using interviews, behavioural observations, and geographical studies.

These findings have far-reaching ramifications that go beyond the crossings themselves. The findings may influence approaches to city planning, methods of traffic control, and preventative measures. The study's findings may be used to improve pedestrian access, eliminate disputes, and promote a feeling of security by shedding light on the dynamics between pedestrians and vehicles. In "Unveiling the Pedestrian-Vehicle Interplay: NH-10 Intersection Pedestrian Flow Study," we delve into the dance that takes place between pedestrians and motorists. This discovery not only clarifies the complexities of urban transportation, but also paves the way for a more peaceful cohabitation, in which crossings are seen as shared areas and the narrative of pedestrian-vehicle interactions is framed as one of cooperation rather than competition.

### **Research methodology**

Empirical data, quantitative analysis, and qualitative insights were used to examine pedestrian movement at selected NH-10 crossings. This method seeks to understand the complex dynamics that govern pedestrian behaviour and interactions at urban crossroads. The research starts by carefully selecting crossings along NH-10 with a variety of urban environments, traffic levels, and pedestrian activities. This selection guarantees that the research covers a representative cross-section of situations, improving analytical depth and breadth. Field observations at various times and days of the week measure pedestrian traffic. Observations include pedestrian counts, movement trajectories, and crossing behaviours. This empirical data helps measure flow dynamics by revealing pedestrian numbers, peak hours, and movement patterns. Quantitative and qualitative methods are used to examine pedestrian decision-making and experiences. Interviews, surveys, and direct contacts with pedestrians reveal their choices, safety concerns, and crossing site and mode preferences. Spatial analysis overlays factual and qualitative data on geographic maps to identify pedestrian hotspots, possible conflict locations, and pedestrian infrastructure improvements. Visualizing pedestrian-vehicle interactions in relation to the physical environment enhances the analysis. The research contextualises pedestrian movement using historical traffic data, weather, and urban development plans. This contextualization helps detect pedestrian behaviour and flow

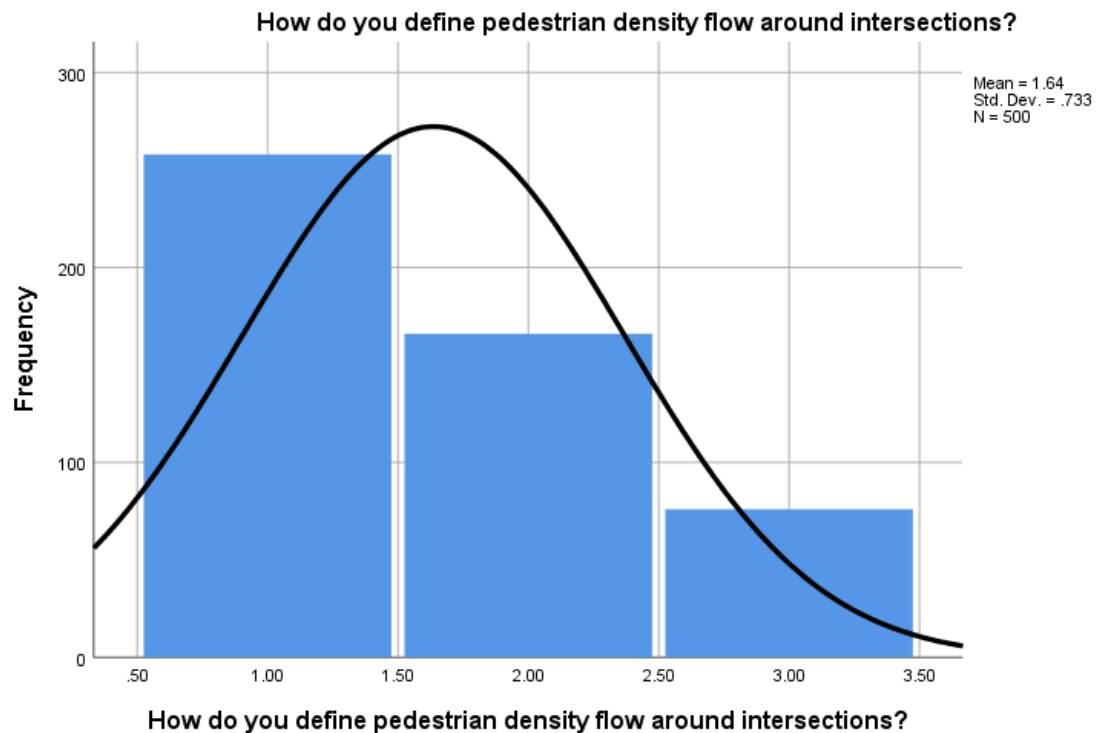
dynamics-affecting trends, patterns, and anomalies. This study uses a multi-dimensional approach. Empirical data, quantitative analysis, qualitative insights, and geographical visualisation reveal NH-10 junction pedestrian traffic patterns. The research triangulates these varied techniques to provide a full and nuanced knowledge of pedestrian circulation in these urban locations.

**Data analysis**

**Table 1**

How do you define pedestrian density flow around intersections?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Low	258	51.6	51.6	51.6
	Moderate	166	33.2	33.2	84.8
	High	76	15.2	15.2	100.0
	Total	500	100.0	100.0	

**Garph 1**

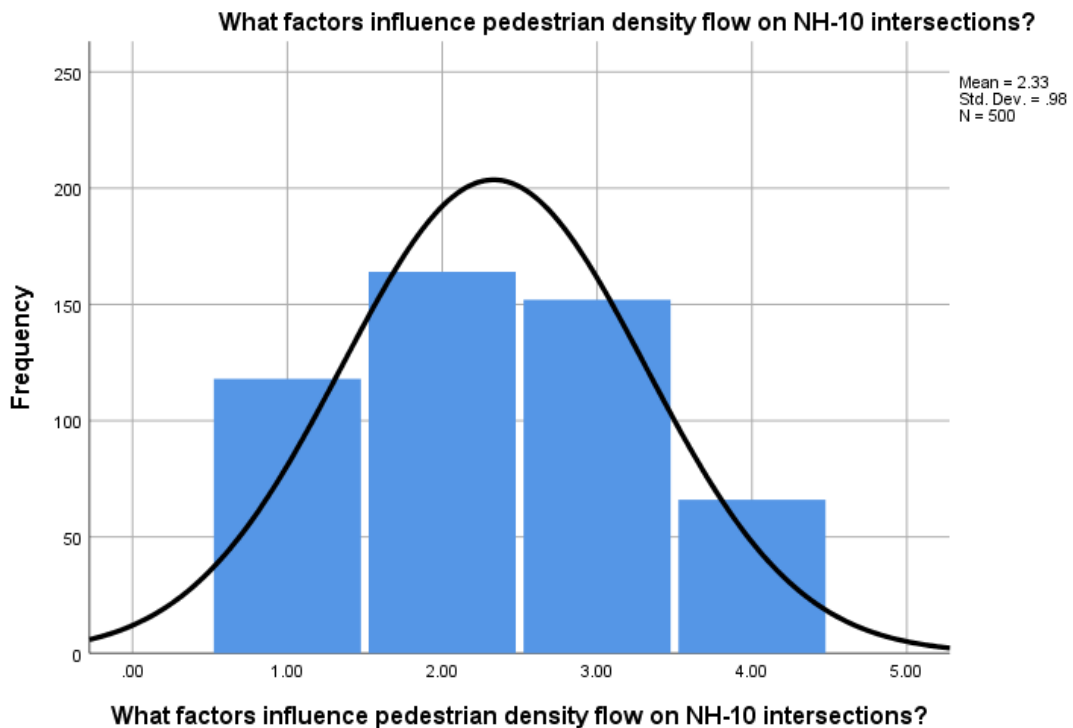


From the analysis we have found the details mentioned in the above graph and table and it states that the sample data is concerned about 500 respondents. It was asked "How do you define pedestrian density flow around intersections?" 258(51.6%) respondents responded as Low, and 166(33.2%) respondents responded as Moderate, whereas 76(15.2%) respondents responded as High

**Table 2**

What factors influence pedestrian density flow on NH-10 intersections?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Time of Day	118	23.6	23.6	23.6
	Land Use and Surroundings	164	32.8	32.8	56.4
	Pedestrian Facilities	152	30.4	30.4	86.8
	Seasonal and Weather Conditions	66	13.2	13.2	100.0
	Total	500	100.0	100.0	

**Graph 2**

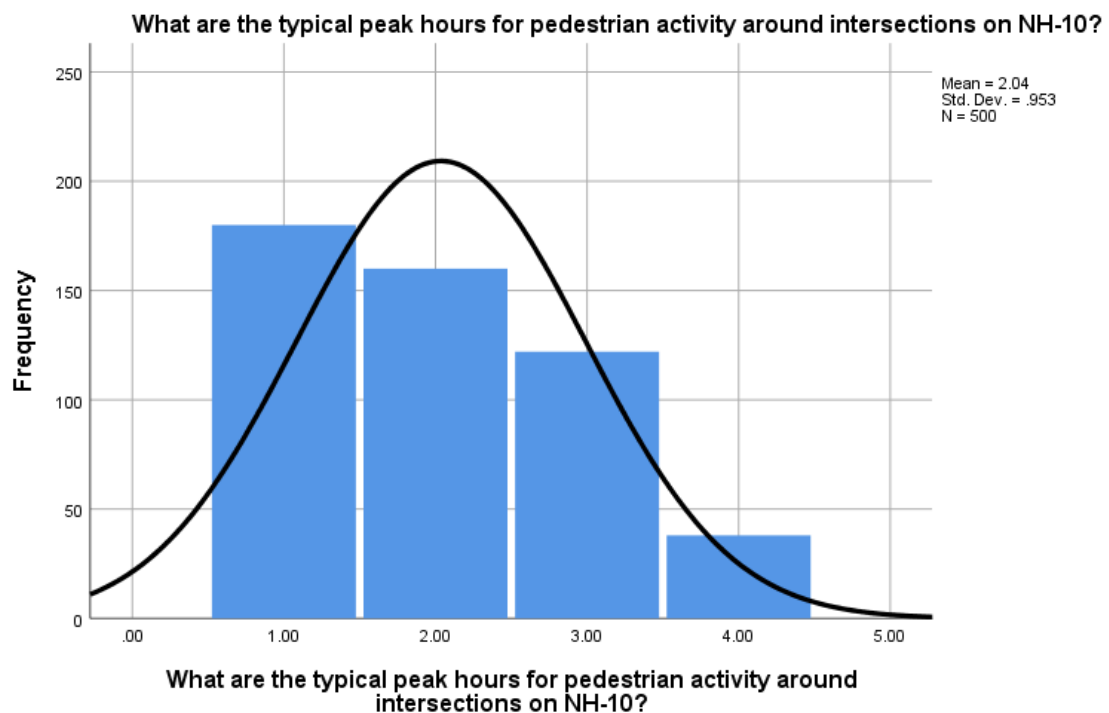


From the analysis as discussed randomly with people as respondents, we observed their opinion and the details mentioned in the above graph and table is concerned about 500 respondents . It was observed about "What factors influence pedestrian density flow on NH-10 intersections?" 118(23.6%) respondents responded Time of Day, 164(32.8%) respondents responded Land Use and Surroundings and 152(30.4%) respondents responded Pedestrian Facilities whereas 66(13.2%) respondents responded Seasonal and Weather Conditions.

**Table 3**

What are the typical peak hours for pedestrian activity around intersections on NH-10?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Morning (6 am - 9 am).	180	36.0	36.0	36.0
	Afternoon (12 pm - 3 pm).	160	32.0	32.0	68.0
	Evening (5 pm - 8 pm).	122	24.4	24.4	92.4
	Night (9 pm - 12 am).	38	7.6	7.6	100.0
	Total	500	100.0	100.0	

**Graph 3**

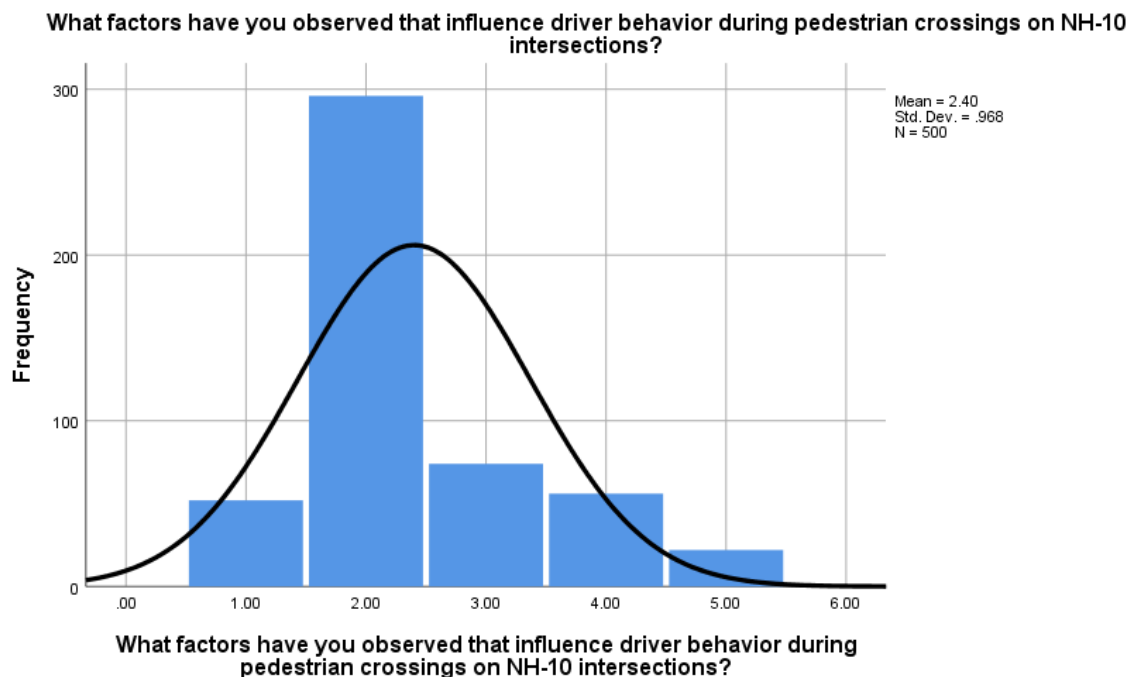


From the analysis as discussed randomly with people as respondents, we observed their opinion and the details mentioned in the above graph and table is concerned about 500 respondents . It was observed about "What are the typical peak hours for pedestrian activity around intersections on NH-10?" 180(36%) respondents responded Morning (6 am - 9 am)., 160(32%) respondents responded Afternoon (12 pm - 3 pm). and 122(24.4%) respondents responded Evening (5 pm - 8 pm). whereas 38(7.6%) respondents responded Night (9 pm - 12 am)..

**Table 4**

What factors have you observed that influence driver behavior during pedestrian crossings on NH-10 intersections?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Traffic volume and congestion.	52	10.4	10.4	10.4
	Time of day (peak vs. off-peak hours).	296	59.2	59.2	69.6
	Pedestrian density and crossing speed.	74	14.8	14.8	84.4
	Presence of traffic enforcement.	56	11.2	11.2	95.6
	Other (please specify): _	22	4.4	4.4	100.0
	Total	500	100.0	100.0	

**Graph 4**



From the analysis we have found the details mentioned in the above graph and table and it states that the sample data is concerned about 500 respondents . "What factors have you observed that influence driver behavior during pedestrian crossings on NH-10 intersections?" 52(FALSE%) respondents responded Traffic volume and congestion., 296(59.2%) respondents responded Time of day (peak vs. off-peak hours)., 74(14.8%) respondents responded Pedestrian density and crossing



speed. and 56(11.2%) respondents responded Presence of traffic enforcement. and 22(4.4%) respondents responded Other (please specify): \_.

### conclusion

NH-10 pedestrian flow patterns near crossings have shown urban mobility dynamics. This research has illuminated how pedestrians manage complicated vehicular traffic junctures, revealing patterns, preferences, and obstacles that define their interactions in these key urban hubs. The pulse of pedestrian activity has been shown by empirical data on pedestrian counts, movement trajectories, and crossing behaviours. Traffic management tactics are optimised based on quantitative study of peak hours, bottlenecks, and future congestion. Qualitative research has also shown pedestrians' crossing motives and decision-making processes. The pedestrian experience is better understood with this qualitative layer. Hotspots and probable conflict zones have been identified through geographical analysis of pedestrian-vehicle interactions in the urban environment. This spatial viewpoint has enabled targeted infrastructure improvements and signal phasing modifications to improve pedestrian safety and accessibility. This work adds to urban mobility scholarship and urban planning and transportation engineering by combining these different results. Designing safe, efficient pedestrian-friendly junctions is aided by the findings. As urban centres expand and embrace sustainable transportation, this study's findings might inform future programmes that make junctions smooth transitions rather than hurdles. Limitations exist in this investigation. Findings may be limited by the selected sites and observation window. For a more complete picture of pedestrian behaviour, future study may include additional junctions and a longer monitoring time. This research guides urban planners, legislators, and engineers to balance pedestrian and car traffic. As cities grow, these crossroads may become symbols of coexistence and connectedness. Understanding pedestrian flow patterns along NH-10 junctions is not simply an academic pursuit—a it's step toward creating urban areas that respect utility and the human aspect, maintaining a flourishing urban environment for centuries to come.

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