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**DESIGNING GENDER-INCLUSIVE URBAN SPACE: A VISION FOR WOMEN'S SAFETY
CROSS-COUNTRY MOVEMENT AT INDO-NEPAL BORDER CASE OF
BIRATNAGAR/JOGBANI**

By

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SUBMITTED TO THE DEPARTMENT OF ARCHITECTURE
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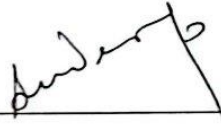
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DECLARATION

I hereby declare that the thesis entitled “**Designing Gender-Inclusive Urban Space: A Vision for Women’s Safety Cross-Country Movement at Indo-Nepal Border Case of Biratnagar/Jogbani**” which is submitted to the Department of Architecture, Pulchowk Campus, Institute of Engineering, Tribhuvan University in partial fulfilment of the requirements for the degree of Master of Science in Urban Planning, is a research work carried out by me, under the supervision of **Dr. Ajay Chandra Lal**. I declare that the work is my own and has not been submitted for a degree of another University.



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ABSTRACT

The border between India and Nepal Biratnagar/Jogbani serves as a hub for economic and cultural exchange. In addition to allowing for the free flow of people and goods. Porous and open borders also make women more vulnerable by increasing their chances of being harassed by local authorities where they have to protect women. On the other hand, drug users are common in this area, which many women feel is unsafe for girls and women. Furthermore, the open-border policy compromises women's safety by making it challenging to regulate trafficking routes. Although the city was meant to serve as a hub for trade and cultural exchange, because of a lack of gender-sensitive urban planning. The study focuses on the border area between Biratnagar and Jogbani, which is marked by a high level of cross-border mobility, informal trade, and serious safety issues for women. In order to improve women's safety and accessibility in public areas, the study intends to pinpoint the weaknesses in the current urban infrastructure and suggest gender-inclusive design solutions. The study uses a mixed-method approach that combines quantitative and qualitative interviews to analyze the difficulties women encounter in public places, especially in Nepali border areas and transit zones. Primary sources such as site observation, key informant interviews, and stakeholder analysis, as well as secondary ones like a literature study, are used to gather the data. Key findings show that women frequently experience unsafe due to poor infrastructure like inadequate lighting, poor sanitation, overcrowd, no dedicated parking system, no CCTV surveillance, no dedicated pathways which contribute to their sense of insecurity. The research also highlights the role of local authorities, NGOs and law enforcement in addressing these issues, by focusing on improving surveillance, lighting and gender-sensitive infrastructure.

Key Words: Gender-Inclusive Design, Women's Safety, Urban Infrastructure, Cross-Border Mobility

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List of Abbreviations

Abbreviations	Full Form
APF	Armed Police Force
BBIN	Bangladesh Bhutan India Nepal
BMC	Biratnagar Metropolitan City
CBCF	Canada-United States Cross-Border Crime Forum
CBP	Customs and Border Protection
CBSA	Canada Border Services Agency
CFC	Child Friendly City
CPTED	Crime Prevention Through Environmental Design
FY	Fiscal Year
GBVAWG	Gender-Based Violence against Women and Girls
IBET	Integrated Border Enforcement Teams
IBET	Integrated Border Enforcement Teams
ICPs	Integrated Check Posts
IFPRI	International Food Policy Research Institute
ILO	International Labor Organization
INGOs	International Non-Governmental Organizations
JNB	Jogbani Station
MoUS	Memoranda of Understanding
NGOs	Non-Governmental Organizations
NPR	Nepalese Rupees
RFID	Registered Frequency Identification
SSB	Sashastra Seema Bal
UN	United Nation
UNICEF	United Nations Children's Fund
WFCC	Women Friendly City Challenge

CHAPTER 1: INTRODUCTION

1.1 Introduction

The rapid pace of urbanization is posing substantial challenges to modern societies. The continuous rise in economic development and urban population is creating a growing demand for effective urban planning and well-structured design. While cities theoretically provide equal opportunities for all, fostering a diverse and economically rewarding life but experience of women has frequently been overlooked by primarily male-centric urban institutions. Inequality and discrimination against women have long existed in sectors including politics, economic opportunities, urban amenities, and mobility, despite making up half of the world's population (Hermaputi & Hua, 2024). Women-friendly cities emerged as a response to conventional urban planning practices. Initiated by the UN in 2006, the Women-Friendly Cities Program strives to create urban spaces that promote women's active participation in decision making and ensure equal access to services (Abdelmoaty et al., 2021). The study shows that majority of women and girls suffer safety concerns while accessing public facilities globally (Winter et al., 2023) encounter significant hurdles in achieving gender equality in the workforce and experience noticeable leadership gap (Hermaputi & Hua, 2024). The research indicates that adequately illuminated pedestrian pathways and the presence of CCTV surveillance significantly enhance women's perception of safety, warranting their prioritization in strategic action plans. In this context, gender safety has become a significant concern, particularly in urban settings where women and young girls frequently face increased risks of violence, harassment, and discrimination. Various studies highlight the issues and challenges women and girls encounter in cities, such as limited access to public amenities, insufficient lighting and visibility, and restricted opportunities for social interaction and community involvement. Research on the intersectional dynamics of gender safety in urban areas, such as the Nepal-India border region of Jogbani, suggests that gender-based violence is influenced by a range of factors, including social norms, infrastructure, and institutional practices (Yadav & Kumari, 2023). A qualitative study with women in Delhi, India, conducted by Jagori, found that women's experiences with violence were influenced by factors like societal gender expectations, limited access to public transportation, and poor

lighting in public areas (UN Women and ICRW, 2012). A similar study by Ramya Subrahmanian and Shilpa Phadke, focusing on women living in Mumbai's slum communities, found that factors like poverty, restricted access to essential services, and the gendered design of public spaces were major contributors to unsafe environments for women in urban areas (Phadke, 2007). Creating safer cities for women is a goal outlined in the United Nations' 2030 Sustainable Development Agenda, as well as in the 2016 New Urban Agenda and other global initiatives like the Safe Cities and Safe Public Spaces for Women and Girls (UN Women, 2019). Gender inclusive public cities concept state the space that should be in four parameters there are a. Access means accessible to all at any time of the day, b. safety means cities where women feel safe and are free from gender-based violence, c. mobility means urban infrastructure that takes into account the mobility of all, and d. Co-design means designing cities that reflect the needs of the people through collaboration and increased representation in planning positions (German et al., 2022). Through the planning and designing approach of Gender-Inclusive design would enhance women's safety access in public space like Border side of Biratnagar.

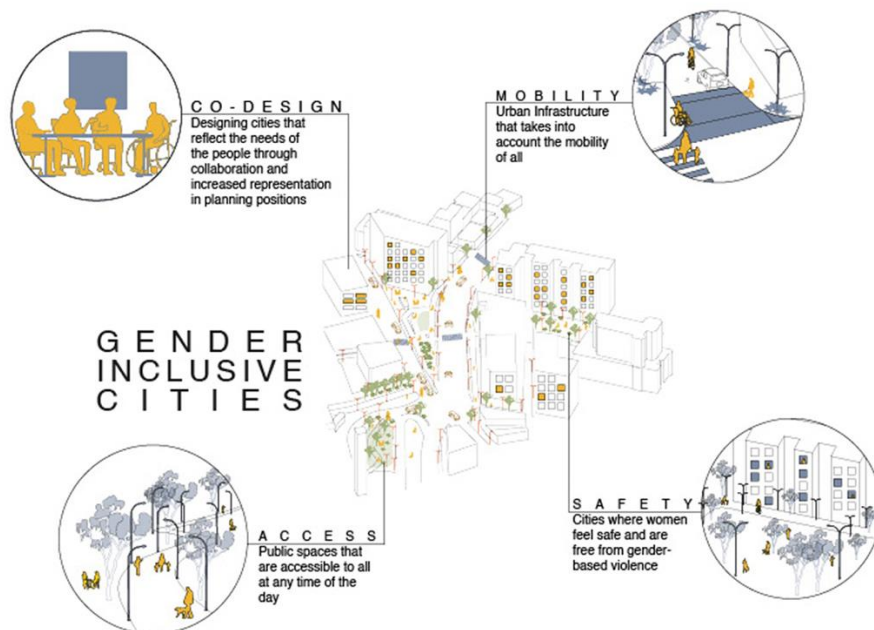


Figure 1: The four principles of gender-inclusive cities, designed according to the concepts of UN Women (2011),

ICLEI and UITP (2020), UN Habitat (2012), World Bank Group (2020) (German et al., 2022).

Source: Intelligent spatial technologies for gender inclusive urban environments in today's smart cities

1.2 Background

The early 1970s were a time of great social upheaval, with new social movements sweeping the metropolitan social scene. Social scientists were experiencing a crisis of relevance, and David Harvey's *Social Justice and the City* was one solution to that issue. Despite the rise of the modern women's movement in the early 1970s, women are virtually absent in the book. This invisibility was common in academic literature at the time, and feminist scholars addressed it in their critiques of classic Marxist theory. Within a broader societal backdrop, women began to problematize the public-private barrier, ushering in a shift towards depictions of women as individuals rather than auxiliaries to men (England, 1994).

The concept of establishing women-friendly, safe cities has evolved over several decades, with key milestones occurring in the early 2000s. These programs intended to tackle issues like public harassment, accessibility, and gender-sensitive urban planning. Women have consistently been one of the most vulnerable groups, regardless of caste, creed, religion, or location. A look at historical records and accounts reveals that gender inequality, both in public spaces and beyond, has been a persistent global issue for many years. Historically, public venues were reserved for men. Many cities globally are extremely gendered settings, with poorly lit streets, alienating vast suburbs, a lack of effective public transportation, and filthy entertainment districts (“16 Actions That Cities Can Take To Become Safer For Women and Girls,” 2019). The MeToo 2024 Report adds to our 2018 and 2019 surveys. The Newcomb Institute at Tulane University led this national study, which received funding from Stop Street Harassment, Valor, and Raliance. NORC conducted a study of over 3,300 US people over the age of 18 in the spring of 2024. The data demonstrate that, despite the MeToo movement's increased awareness and preventative efforts, the majority of women (82%) and nearly half of all men (42%) have experienced sexual harassment or assault in their lives (*National Studies: 2024 RESEARCH ON SEXUAL HARASSEMENT AND ASSAULT*, 2024). Sexual harassment and violence against women and girls are prevalent in public locations worldwide, including rural and urban areas, and even online. A research in Rabat, Morocco found that 92% of women have experienced sexual harassment in their lifetime. In Port Moresby, Papua New Guinea, almost half of female sellers reported experiencing assault in local markets. In Kigali, Rwanda, a baseline research found that 55% of women were concerned about their safety when attending

educational institutions after dark (UN Women, 2017). One of the first big projects was the Safe Cities Free of Violence against Women and Girls Global Programme, which UN Women started in 2010 in conjunction with a number of cities, including Quito, Ecuador, and New Delhi, India. This program aimed to minimize violence against women in urban areas by focusing on public safety, enacting gender-sensitive laws, and engaging local authorities, urban planners, and community organizations in constructing safer urban settings (“16 Actions That Cities Can Take To Become Safer For Women and Girls,” 2019). The Women Friendly Cities Challenge (WFCC) was first announced during the United Nations Habitat III conference in 2016. The initiative was officially launched in 2018 during the World Urban Forum in Kuala Lumpur, resulting in an international online library of "Wise Practices" for gender-friendly urban development around the world. This platform enables global cities to share successful ideas to developing equitable, secure urban areas, emphasizing inclusivity and intersectional approaches to urban design and policy (Women Transforming Cities International Societies, 2024).

It is stated that in newspaper article IFPRI Blog: Research Post due to declining revenues-custom tariffs accounted for 21.7% of the government’s total revenue in FY 2021/22 and fell to 18.1% in FY 2022/23, Ministry of Finance introduced a new provision in its FY 2023/24 budget to charge customs duties on import of any goods valued above NPR 100 (Gupta & Roy, 2023). Many low-income families near the towns along the Nepal-India border now make "carrying" or unofficially transferring items their full-time job. "Carriers," many of whom are women, pick up the items on the Indian side and enter across the open border, avoiding the official customs entry points. They do this at their own risk, sometimes on foot, and other times on bicycles and motorbikes. In certain situations, carriers work independently, delivering bags of goods, such rice, to retail establishments in border towns while maintaining a tiny profit margin; in other situations, they are organized by certain traders on both sides of the border. Women usually commute on foot, carrying smaller products, frequently in groups, whereas men ride bicycles or motorbikes to carry bags of grains or other large-volume goods. Now that the borders are being tightened, It is quite frequent to observe groups of women being questioned by border police officials and having the items they are carrying confiscated (Gupta & Roy, 2023).



Figure 2: A group of women carries items across the border

Source: Picture Courtesy-Shalini Gupta [Informal trade in agricultural commodities along the Nepal-India border | IFPRI](#)

1.3 Problem Statement

The India-Nepal border area, particularly around Jogbani, faces significant challenges related to women's safety. The porous and open border facilitates not only the free movement of goods and people but also contributes to the vulnerability of women to trafficking. In the border town of Jogbani, there have been frequent reports of women being trafficked across the border, often under the guise of migration for employment or medical treatment (Mandal, 2020). On the daily basis women do not feel secure to walk and shop. This has been a persistent issue, with traffickers taking advantage of the lack of strict border control to move women into unsafe conditions, including the sex trade and forced labor (bhawani, 2016). Moreover, women's safety is compromised by the open-border policy, which makes it difficult to control trafficking routes. Human traffickers exploit these loopholes, promising work opportunities in India or further destinations like the Gulf, while often deceiving or coercing women into exploitative situations (Mandal, 2020). Local authorities and organizations like Maiti-Nepal are working to intercept trafficking attempts, but the problem is far from solved. The community's vulnerability is exacerbated by limited education and awareness about the risks of illegal migration and trafficking (Sinha, 2021).

Gender safety research mainly emphasizes qualitative analysis in the social sciences. Although conceptual frameworks such as “Eyes on the Street” and “Crime Prevention through Environmental Design” (CPTED) have tackled gender safety in urban environments, there is a notable absence of empirical and quantitative methods to pinpoint and prioritize factors essential for fostering gender-inclusive urbanism. The interplay between gender safety and urban development presents a complex and multifaceted challenge (Yadav & Kumari, 2023). To tackle these challenges, there's increasing awareness of the importance of building gender-inclusive urban spaces that prioritize the safety and well-being of everyone. Achieving this calls for a comprehensive approach, including significant updates to physical aspects like better lighting, visual connectivity, good mobility and transportation infrastructure (McIlwaine, 2013). Sexual harassment and other forms of sexual violence in public spaces, in urban areas like Border side areas, are an everyday occurrence for women and girls in every day. Women and girls experience and fear different forms of sexual violence in public spaces, from unwelcome sexual remarks and gestures, to rape. It happens on streets, in and around public transportation, schools, workplaces, public toilets, water and food distribution sites, and parks, market areas, shopping areas, congested areas.

City planning often reflects historical patriarchy, where male planners, assuming working men as the standard users, designed public spaces to primarily meet men's needs. This approach, rooted in male-dominated societal norms, led to spaces where men had full public access, while women were confined largely to domestic roles, with limited access to public resources.

Furthermore, the gender gap in urban planning highlights that gender equality doesn't mean treating men and women the same. Women experience cities differently: they are more likely to walk or use public transit, yet public spaces and transportation systems are often safer and more accessible for men. This discrepancy underscores the need for planning that acknowledges and addresses these distinct experiences(Agarwal, 2022).

1.4 Need of the research

The Women Friendly Cities Program has emerged as the most prominent of the six human rights initiatives carried out worldwide. The UN Population Fund conducted an evaluation in honor of the 60th anniversary of the Declaration of Human Rights' adoption, which led to its sustainable and human rights-based strategy (Güney, 2020). Cities that are welcoming to women foster safety and inclusivity, increasing the accessibility and equity of metropolitan areas. According to studies, women perceive public places differently than males do, frequently feeling more exposed to safety hazards and harassment, particularly in transit zones (UN Women, 2020). Because Biratnagar is a border city, the amount of transit activity exacerbates these issues, particularly with regard to harassment on public transportation and in other busy areas where there is frequently a dearth of facilities and services explicitly designed to ensure the safety of women (UNFPA, 2019). Frequent cross-border mobility characterizes border cities like Biratnagar, posing particular difficulties for urban development and local government. The border between Nepal and India allows for a variety of everyday encounters, but if these interactions are not well regulated, crime rates may rise, including assault against women and sexual harassment (K.C., 2019). Planning a women-friendly city here would mean creating environments that address these safety needs while also considering the complexities of cross-border interactions. In Nepal's urban policy framework, gender-sensitive urban planning is still a relatively new area of emphasis. According to research, Nepali cities frequently lack basic amenities that are necessary for women's protection, like well-lit streets, secure transit, and gender-segregated facilities. Given its increasing urbanization and high levels of cross-border interaction, Biratnagar stands to gain a great deal from focused policies and urban planning projects that take into account the particular safety requirements of women in this changing setting. Women are frequently harassed in crowded, poorly controlled transit areas, making public transportation a high-risk environment for harassment worldwide. Creating gender-sensitive public transportation systems can greatly lower risk factors and make the city a safer place for women, especially in Biratnagar, which experiences a lot of inter-country travel. Making such adjustments could act as a template for other Nepali cities dealing with comparable issues.

1.5 Research gap

Different organizations like UN Women, City Alliances, and Cities for women are initiating for inclusive city and climate responsive city for the inclusion in public spaces because due to rapid urbanization and development in the urban areas mostly women feel insecure and they feel unsafe in public spaces. In today's generation majority of women are independent working women but they feel insecure in public spaces while returning to home during evening and night time. The research gap on creating a women friendly city in Biratnagar area particularly for a border city like the Nepal-India region, can be derived from several observations which is highlighted in the articles though the study for Safe cities in the proposed study area. Bala Raju Nikku and Ruja Pokhrel's article "Crafting Child-Friendly Cities: Evidence from Biratnagar Metropolitan City, Eastern Nepal" examines Biratnagar's initiatives to become a kid-friendly city as part of UNICEF's Child-Friendly Cities (CFC) program. By examining nine important CFC indicators—child engagement, child-friendly laws, child rights strategy, coordinating mechanisms, impact evaluation, budgeting, reporting, awareness-building, and advocacy, the study evaluates Biratnagar's success in establishing safe, inclusive environments for kids. Biratnagar has made initial strides toward a child-friendly approach by engaging with children's clubs, implementing child labor codes, and allocating a budget for child-centric activities. However, there are significant gaps in the practical implementation of policies. The city lacks a dedicated women centric spaces and rights unit, the study emphasizes the need for structural reforms, such as establishing separate governance units for gender inclusion and providing greater opportunities for all gender. For a study on creating women-friendly cities in Biratnagar, this article highlights the importance of inclusive urban governance that could similarly apply to women's safety and access. Just as the child-friendly initiative in Biratnagar seeks to provide tailored infrastructure and policy adjustments, a women-friendly city approach could prioritize gender-sensitive planning, particularly in a cross-border setting where safety and mobility are central concerns. This foundation can inform strategies on integrating women's voices and needs in public space design and urban policy in Biratnagar (Nikku & Pokhrel, 2013).

1.6 Research Objectives

The main objective of study is to conduct analysis of cross border movement, identify the gap of the existing condition and propose women-centered improvement focusing on safety in Border area.

Secondary objectives are:

- To examine the challenges faced by women during cross border movement along the Biratnagar-Jogbani border area.
- To propose policy and plans for addressing issue of women's safety and inclusivity in public space along Indo-Nepal border in Biratnagar-Jogbani area.

1.7 Limitation of Research

The limitations of the study are:

- Although the study focuses on Nepal-India border, the research site is limited to area within the Nepal side of the border.
- The study is primarily centered on gender-inclusion (women's safety), does not address individuals with disabilities.
- Criminal activities prevalent in border areas such as human trafficking, crime and smuggling are beyond the scope of this research.

CHAPTER 2: CONCEPTUAL FRAMEWORK AND METHODOLOGY

2.1 Conceptual Framework

The conceptual framework for the thesis "Designing Gender-Inclusive Urban Space: A Vision for Women’s Safety in Cross-Country Movement at the Indo-Nepal Border (Case of Biratnagar/Jogbani)" is structured around key themes influencing women's safety and accessibility in border areas. It integrates urban design principles, gender-sensitive planning, social behaviors, and governance policies to create a holistic approach to gender-inclusive spaces. The framework examines factors such as infrastructure, public transportation, surveillance, social norms, and institutional interventions that impact women's mobility and safety at the Indo-Nepal border. The study employs a mixed-methods approach, incorporating spatial analysis, stakeholder interviews, and survey data to identify risks, challenges, and opportunities for inclusive urban design. The goal is to develop an evidence-based strategy that enhances safe public spaces, gender-sensitive policies, and effective cross-border cooperation to improve the everyday mobility of women.

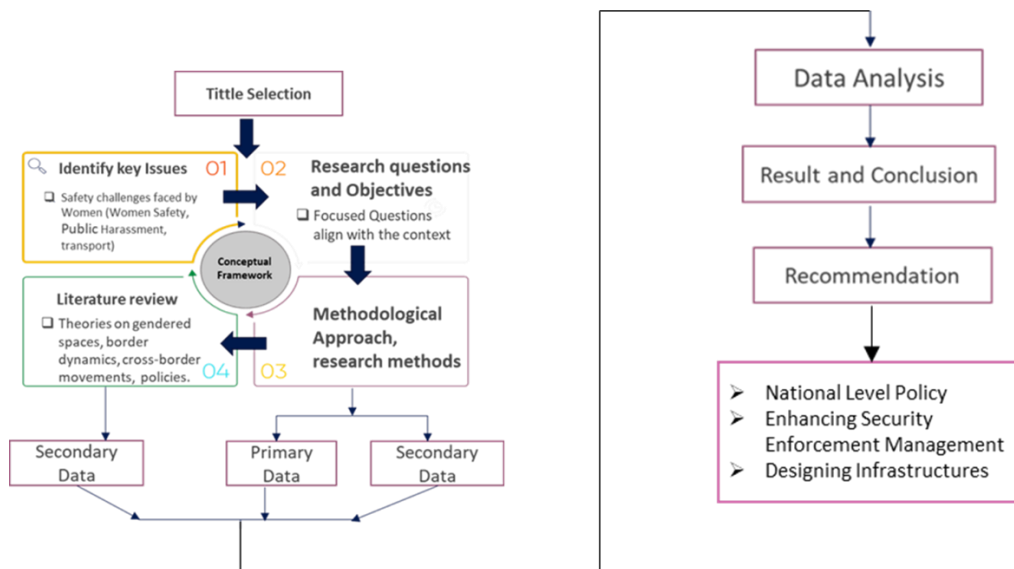


Figure 3: Flow diagram of research process

2.2 Research Paradigm

A paradigm is "a philosophical and theoretical framework of a scientific school or discipline within which theories, laws, and generalizations and the experiments performed in support of them are formulated," according to the Merriam-Webster Dictionary. A research paradigm is a worldview or philosophical framework that directs the research process and includes concepts, beliefs, and prejudices. A study's research methodology is influenced by the research paradigm in which it is positioned (Jennifer Ulz, 2023). Positivism (which emphasizes objective, quantitative methods), interpretivism and constructivism (which emphasize subjective, qualitative methods), pragmatism (which employs a combination of methods to best address the research problem), and critical theory (which seeks to critique and alter societal structures by identifying power dynamics and inequalities) are examples of common research paradigms. Each of these paradigms has a distinct viewpoint on research and is distinguished by philosophical presumptions regarding the nature of knowledge (epistemology), the nature of reality (ontology), and the proper ways to acquire knowledge (methodology)(Turin et al., 2024).

2.3 Positivist Paradigm

It is that there is just one reality that can be quantified and understood; as a result, they are more inclined to measure this reality using quantitative techniques. A paradigm known as positivism holds that there is only one, objective reality that can be empirically measured and witnessed. The positivist worldview holds that reality exists independently of human experience. Knowledge is also said to come from firsthand observations and experiences, which can be accomplished through quantitative techniques like hypothesis testing and figuring out dose-response or cause-and-effect linkages.

2.4 Interpretivist and Constructivist Paradigm

According to the interpretivist and constructivist theories, people create their own subjective, socially constructed world through their experiences and social interactions. Using qualitative approaches, researchers working within these paradigms aim to comprehend the various and varied viewpoints of people or groups. The ontologies of constructivism and interpretivism are similar in that they both hold that people create various realities through their interactions and experiences. Their epistemologies, however,

diverge: constructivism emphasizes how people create their own realities by interactions with others, whereas interpretivism focuses on comprehending how people experience and interpret their world. Furthermore, in terms of their study approach, interpretivism and constructivism are both qualitative research paradigms (Turin et al., 2024).

2.5 Pragmatic Paradigm

The pragmatic paradigm emphasizes useful outcomes and the use of research in the real world to solve issues in an efficient manner. Instead than being constrained by a single philosophical position, pragmatics takes a flexible approach, combining quantitative and qualitative methodologies to best solve the study challenge. For example, research topic on “Designing Gender-Inclusive Urban Space: A vision for women friendly safe city in Cross border movement area at Jogbani” the topic seeks to create actionable strategies and designs for gender-inclusive urban spaces in a specific socio-spatial context. Pragmatic focuses on solving real-world problems making it appropriate for gender safety issues. The pragmatic paradigm is the most appropriate for this subject because it strikes a balance between the necessity of comprehending women's experiences and the need to provide concrete policy and urban design solutions. The multidisciplinary character of gender studies, public safety research, and urban planning is also in line with it.

2.6 Critical Paradigm

Existing power systems, disparities, and social injustices are the main targets of the critical paradigm. In order to identify and address issues of oppression, marginalization, and domination, researchers working within this paradigm frequently combine qualitative and quantitative methodologies. This paradigm might align if the research has an advocacy-oriented focus.

2.7 Ontology (Nature of reality)

Ontology is the starting point of all research, after which one's methodological positions are logically epistemological and follow. A dictionary definition of the term may describe it as the image of social reality upon which a theory is based. Norman Blaikic offers a fuller definition, suggesting that ontological claims are assumptions 'claims and that are made about the nature of social reality. Claims about what exists, what it looks like, what units make it up and how these units interact with each other. In short, ontological assumptions

constitute social reality' concerned with what we believe (Blaikie, 2000, p. 8). The nature of reality and what may be learned about it are topics covered by ontology. This study is predicated on a constructivist ontological viewpoint. Urban areas' inclusion and actuality are socially produced and contingent on their particular setting. In urban settings, experiences of safety and inclusion vary according to cultural norms, socioeconomic level, and gender. These realities are further molded in the Joghani cross-border area by economic activity, migratory patterns, and the sociopolitical dynamics of border districts.

Nature of reality is constructivist ontology which is socially constructed and context-dependent. Safety and inclusivity in that urban spaces are not fixed entities but are shaped by cultural norms, social structures, gender dynamics and individual experiences. The safety of Women depend on the time of the day, mobility of people, strictness of the laws and policies for women.

2.8 Epistemology (Nature of Knowledge)

Epistemology, one of the core branches of philosophy, is concerned with the theory of knowledge, especially in regard to its methods, validation and 'the possible ways of gaining knowledge of social reality, whatever it is understood to be. In short, claims about how what is assumed to exist can be known' (Blaikie, 2000, p. 8). Knowledge in this research is derived from multiple sources, including lived experiences of women, statistical data, and expert insights. It acknowledges the importance of co-creating knowledge with stakeholders, such as women commuters, urban planners, and policymakers. A research paradigm's epistemology describes how we learn something, how we determine reality or the truth. Knowledge sources can be used to determine "how we know the truth or what counts as knowledge." These sources include empirical knowledge, logical knowledge, authoritative information, and intuitive knowledge.

Knowledge is derived from understanding the lived experiences and perceptions of individuals who interact with the urban environment. This perspective values subjective insights and context-specific understandings. The research emphasizes qualitative approaches (e.g., interviews, focus groups) to explore deep insights, complemented by quantitative data (e.g., surveys) to identify patterns. Knowledge about gender inclusivity

and safety emerges from engaging with women's narratives, community perspectives, and their interactions with urban spaces.

2.9 Methodology

By examining and evaluating pertinent materials related to either peer-reviewed research or practice-driven initiatives, the methodology aims to improve understanding of how technologies can aid in characterizing felt safety in the context of gender. Using a variety of instruments, the literature review from secondary sources technique has been used to comprehend how people perceive safety (German et al., 2022). The context of this research study is urban planning, namely its technique. A variety of factors (social, economic, political, etc.) interact with one another within this topic; all of these factors are significant and must be taken into account. However, this study focuses on how gender mainstreaming influences strategic urban planning policies and encourages private sector and community engagement to create a gender-equal inclusive urban environment, thereby benefiting both men and women equally while taking gender differences and needs into account. Its goal is to investigate how women's involvement in strategic urban planning affects things. This study aims to accomplish several goals within this overarching goal. It aims to comprehend the process of gender mainstreaming in urban planning tactics (Abdelmoaty et al., 2021). Methodology can be organized for research project on making Biratnagar a women-friendly city with an emphasis on safety concerns at the Nepal-India border:

2.10 Mixed Research Method

This research proposal uses a mixed method to better understand the research problem by collecting, analyzing, and mixing quantitative and qualitative methodologies in one study or a series of studies (Creswell & Clark, 2011). Both surveys and interviews will be used because sexual harassment is a delicate topic. A thorough understanding of harassment experiences is provided by this mixed-methods approach, which enables the collection of quantitative data through structured questionnaires and qualitative insights through open-ended interviews (Neupane & Chesney-Lind, 2014). In the context of studying the women friendly city, the integration of quantitative and qualitative methodologies forms a synergistic approach that promises a more comprehensive understanding of the study

problem and related questions than either method used in isolation. While quantitative methods offer statistical rigor and the ability to identify broad patterns and trends of public space, qualitative methods contribute invaluable depth and contextual richness by capturing the nuanced experiences, perspectives, and cultural intricacies that quantitative data might overlook. This combined approach enables researchers to not only quantify disparities but also delve into the qualitative aspects, uncovering the intricacies of social dynamics, historical narratives, and individual stories that shape their experiences. The synergy between quantitative and qualitative methodologies ensures a more holistic and nuanced comprehension of the multifaceted challenges and aspirations within the Dalit community, fostering a richer and more meaningful foundation for effective social interventions and policy recommendations.

2.11 Methods

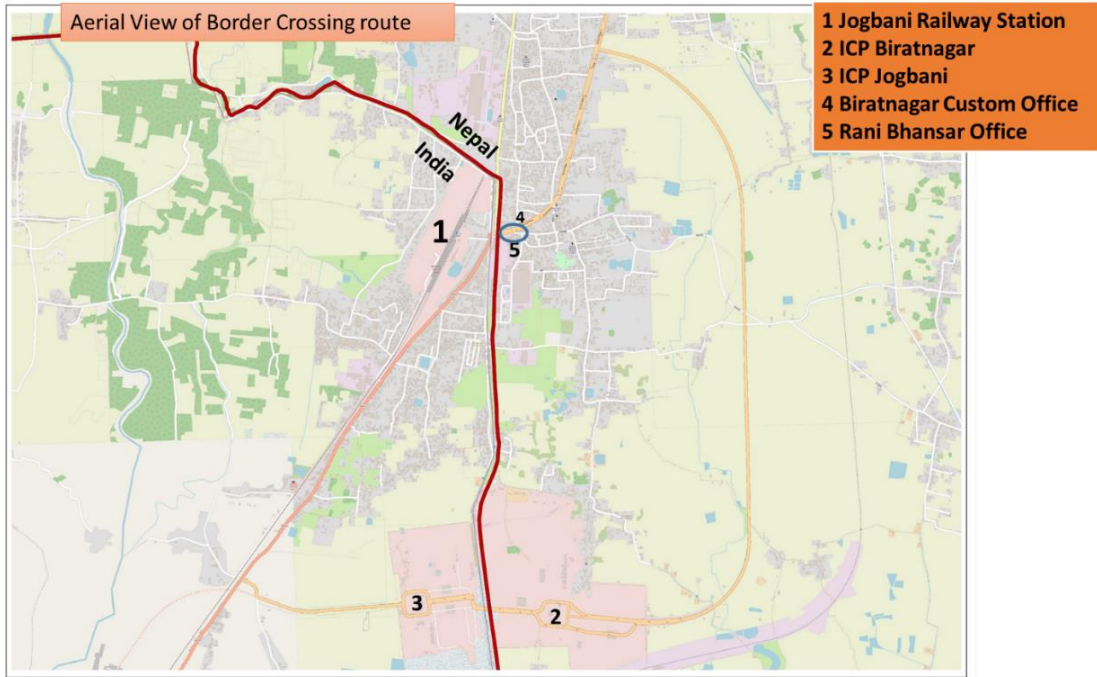
Table 1: Method used for research

Research Method	Primary or Secondary	Qualitative or Quantitative	Remarks
Demographic Information	Secondary	Both	Ethnicity, background, socio-economic details
Literature review & Case Study	Secondary	Qualitative	To gain Women's safety in international context and border dynamics
Case Area Observation	Primary	Quantitative	Transect walk
Mobility Mapping	Primary	Quantitative	Common routes, areas women prefer/avoid
Stakeholder's Analysis	Primary	Quantitative & Qualitative	To gather existing situational analysis of the study area
Key Informant Interview	primary	Quantitative & Qualitative	Engage with local officials, commuters, different NGOs INGOs, APF, Nepal Police, Paryatan Prahari

CHAPTER 3: CASE AREA

The study area selected for this research is Biratnagar Metropolitan City, located in Koshi Province, South-Eastern part of Nepal. It is the largest city and fastest growing city in the province and also the headquarters of Morang district. This region is characterized by high density neighborhood, a diverse population, and significant traffic congestion especially in commercial and border zone. The Nepal-India border region has been selected because of its dense population, diverse community, heavy pedestrian traffic, and well-documented safety concerns, particularly for women. Public spaces and transit hubs in this region frequently see overcrowding and limited security, making it an important area for examining urban planning interventions aimed to enhance safety for women. According to the 2021 census, there are 243927 people living in BMC overall, with roughly equal numbers of men and women (121954, and 121973). The population of this region includes a significant portion of women from different socio-economic backgrounds, many of whom rely on public transportation and shared spaces. High level of street harassment, poorly transit areas and limited safety infrastructure are recurring issues reported by local women. Though some local policies have aimed to improve pedestrian infrastructure and lighting, there is minimal focus on gender specific safety needs in urban design. This gap underlines the need for targeted urban planning approaches to ensure that women feel secure and comfortable in public spaces. This study will focus on key transit corridors, commercial hubs and border areas within BMC, as these locations are hotspots for the congestion and reported safety incidents. By examining that can be implemented to enhance women’s safety in similar high-density urban zones.





Map 1: Open Street Map of Site Surrounding

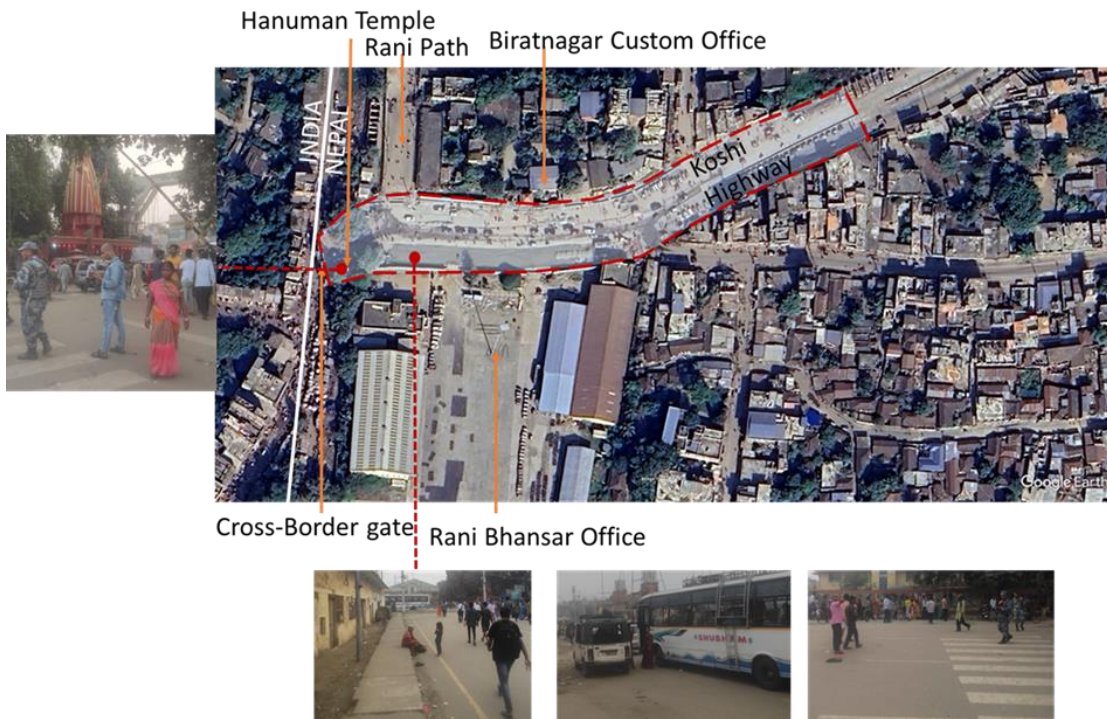


Figure 4: Case Study Area

Source: Google Earth Pro

3.1 Site Boundary

The study area encompasses Ward 15 and Ward 17 of Biratnagar Metropolitan City, which are administratively divided by the Koshi Highway. Ward 15, located on the northern side of the Koshi Highway, is commonly known as China Bazar. This area is characterized by a mixed population, with diverse ethnic and cultural groups residing together. On the southern side of the Koshi Highway lies Ward 17, locally referred to as Dhuniya Tole, where the majority of the population belongs to the Muslim community. This distinct demographic composition creates a unique socio-cultural dynamic between the two wards, influencing their urban development patterns, infrastructure needs, and community interactions. Ward 15 is a bustling commercial and residential area with a mixed population. It serves as a hub for trade and small-scale industries, attracting people from various backgrounds. The area is known for its vibrant markets and relatively higher economic activity compared to Ward 17. Dhuniya Tole Predominantly inhabited by the Muslim community, this ward has a strong cultural identity and close-knit social fabric. The area is primarily residential, with limited commercial activity, and faces challenges related to infrastructure development and access to public services.

The boundary of study area starts at the zero line of India-Nepal border. It extends 400m along the Koshi highway and Rani Path. This specific stretch has been selected due to its strategic significance as a key transit corridor facilitating cross-border movement between Jogbani and Biratnagar. The chosen segment encompasses a highly active zone that includes transportation hub, custom office, and check points, commercial and pedestrian activity. The right-of-way (ROW) for the Koshi Highway, as stipulated by the Department of Roads in Nepal, extends 25 meters on each side from the centerline.

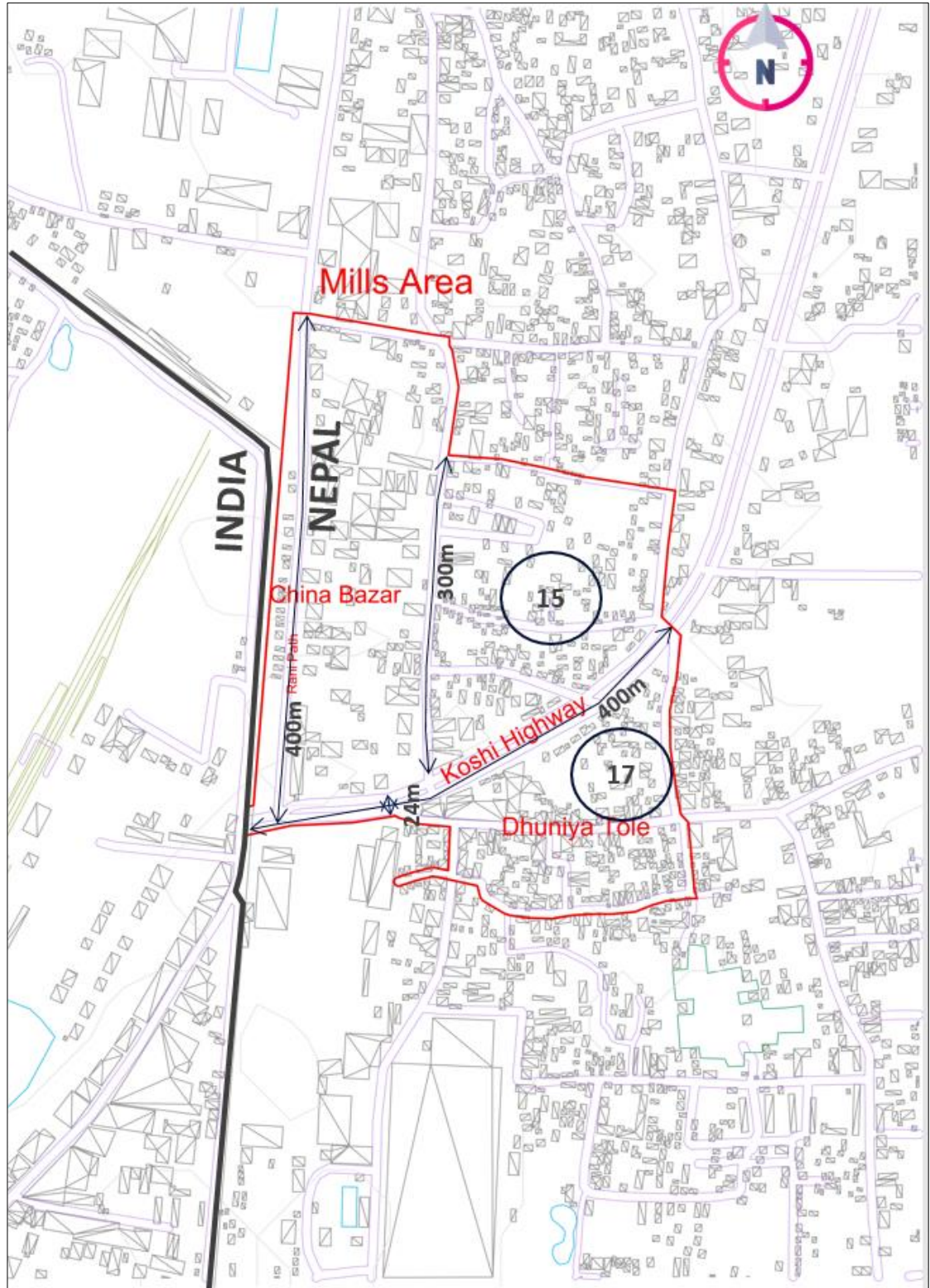


Figure 5: Site Boundary (not in scale)

3.2 Demographic Profile

Population of ward 15 and 17 is projected for the years 2031 on the pattern of arithmetic growth. The total population projected in ward 15 and 17 for 2031 is 31424 while the female population is projected as 17880. The proposals shall be given for the same number of inhabitants.

Table 2: Ward wise Population Projection

Ward	2011			2021			Growth Rate	2031
	Male	Female	Total	Male	Female	Total		Arithmetic
1	5897	6031	11928	7069	7394	14463	0.21	39813
2	4972	4942	9914	4110	4218	8328	(0.16)	-7532
3	7824	8178	16002	10414	10686	21100	0.32	72080
4	7673	7673	15346	10917	11027	21944	0.43	87924
5	7520	7360	14880	8873	8729	17602	0.18	44822
6	9154	8594	17748	10117	9775	19892	0.12	41332
7	4241	4101	8342	3306	3265	6571	(0.21)	-11139
8	7140	6740	13880	9037	9039	18076	0.30	60036
9	3707	3538	7245	2938	2838	5776	(0.20)	-8914
10	6300	5995	12295	5554	5629	11183	(0.09)	63
11	6560	6232	12792	6403	6424	12827	0.00	13177
12	8033	7664	15697	9502	9504	19006	0.21	52096
13	3436	3265	6701	3999	3773	7772	0.16	18482
14	5582	5328	10910	6921	6929	13850	0.27	43250
15	6423	6092	12515	6364	6173	12537	0.00	12757
16	3237	3300	6537	3337	3519	6856	0.05	10046
17	4250	4143	8393	4570	4757	9327	0.11	18667
18	4054	3844	7898	4938	4671	9609	0.22	26719
19	2824	2816	5640	3585	3623	7208	0.28	22888
			214663			243927	0.14	536567

Source: National Population and Housing Census 2021 (Government of Nepal, n.d.)

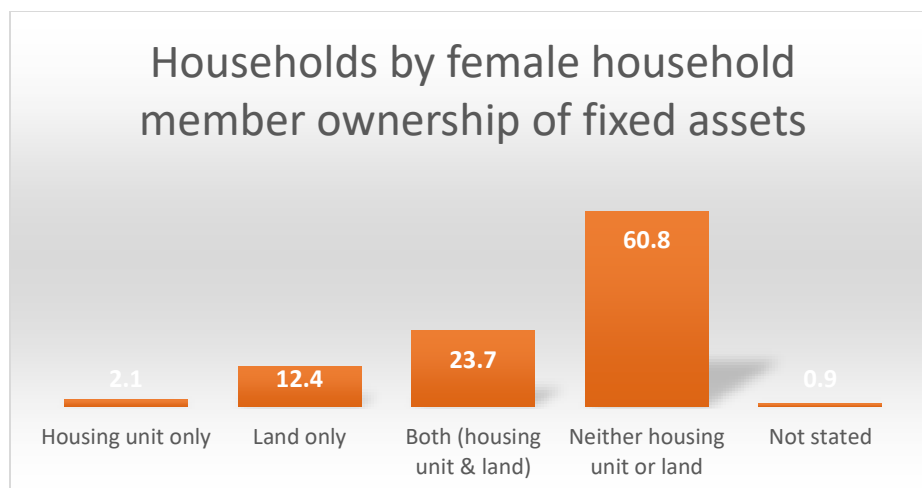


Figure 6: Female ownership of fixed assets

Source: National Population and Housing Census 2021

3.3 Site surrounding overview

Biratnagar is located 7 kilometers (4 miles) north of Nepal's southern border with Bihar, India. Indian and Nepalese nationals can freely cross the border because it is open for local movement. The checkpoint is overseen jointly by the Armed Police Force, the Local Police Unit for overall security, and the Biratnagar Customs Office for administrative and record keeping functions. Jogbani, located in Araria District, India, is served by a train line that ends at Jogbani Station (JBN) in the Katihar Division of Northeast Frontier Railways. Biratnagar is the 4th largest border crossing point, with 11.57% share of total import value. It has 9 sub-custom offices which are as follows: mayaganj, Rangeli, Diniya, madhumalla, Taringa, Kadamaha, Chnuiwari, Doria and Chowkighat sub-custom office.

CHAPTER 4: STAKEHOLDER ANALYSIS

Stakeholder analysis is a systematic process used to identify and assess the interests, influences, roles, and relationships of individuals, groups, or organizations that have a stake in a particular project, policy, or initiative. Stakeholder analysis is a critical tool for understanding the diverse actors involved in shaping urban spaces and ensuring women's safety in cross-border movement areas. Key Objectives of Stakeholder Analysis:

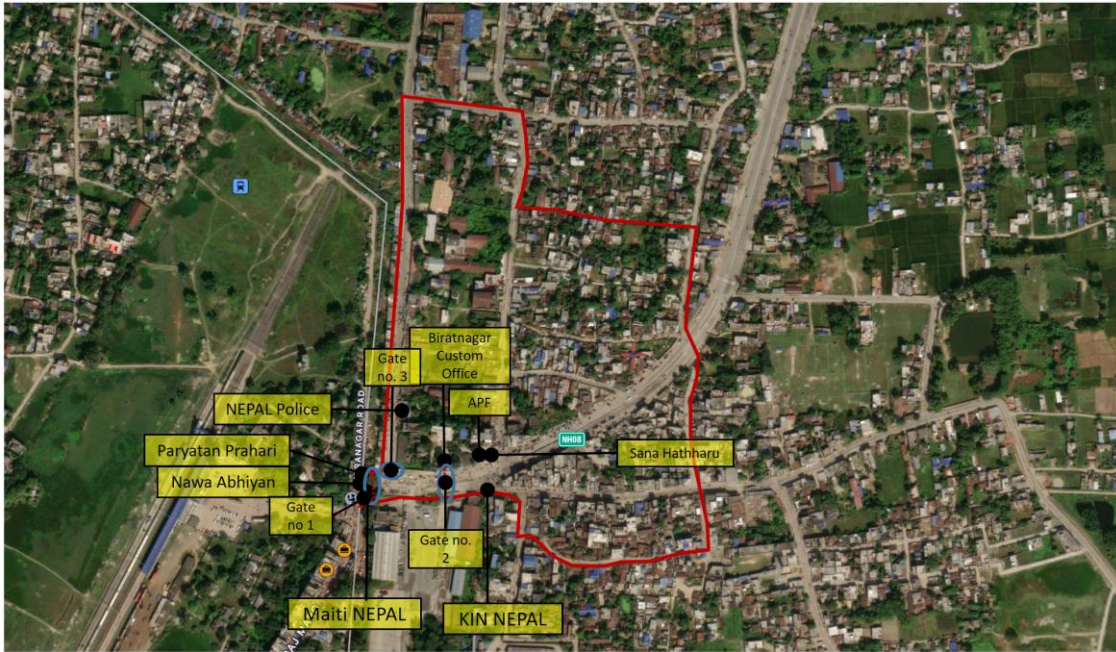
Identify Stakeholders: Determine who the key stakeholders are in the design and implementation of gender-inclusive urban spaces at the Indo-Nepal border.

Understand Interests and Concerns: Analyze the needs, priorities, and concerns of stakeholders, particularly those related to women's safety and cross-border mobility.

Assess Interest and Power: Evaluate the level of influence and power each stakeholder holds in decision-making processes.

Develop Engagement Strategies: Create strategies to involve stakeholders in the planning, design, and implementation of gender-inclusive urban spaces.

4.1 Stakeholder mapping



Map 2:: Stakeholder's Mapping

Table 3: Table showing number of stakeholders with direct and indirect interest group

Institutions (Direct)	Interest Groups (Indirect)	Other Groups (Impact)
Local authority/government	NGOs/INGOs	Commuters/pedestrians (especially women and girls)
Armed police Force	Planners/Researchers	Transport Operators
Border management	Civil Society Organizers	Traders, Business owners

4.2 Power-Interest Matrix

High Power, High Interest: Border management authority holds both significant power and a direct interest in the functioning of the system. APF and Nepal Police play a key role in enforcing security and safety, directly impacting women's safety in border area.

High Power, Low Interest: Custom Office Department have significant power over border operations, their primary focus is on revenue collection and trade regulation not necessarily on women's safety.

Low Power, High Interest: Although NGOs/INGOs do not have decision-making power, they are very interested in advocacy and policy change for women's safety.

Low Power, Low Interest: Traders/Business owners are the part of that area, their direct interest in gender-sensitive design for safety is less compared to other groups.

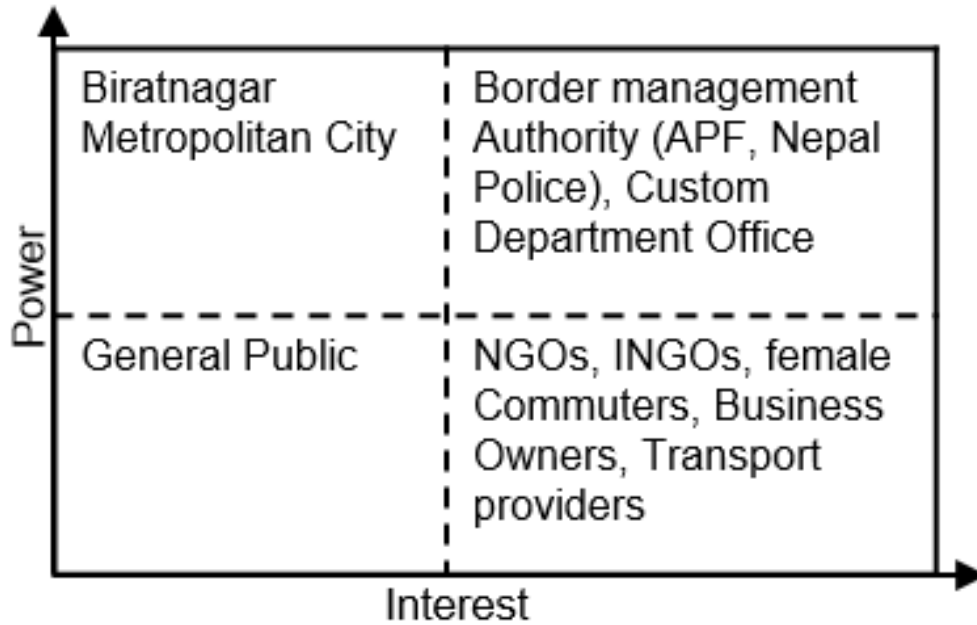


Figure 7: Stakeholder Power-Interest Grid

CHAPTER 5: LITERATURE REVIEW

5.1 Gender-Inclusive Public Space Design

A "safe" urban area is one that has been planned, maintained, and policed to make people feel comfortable enough to visit on a frequent basis. There is less crime and disturbance, and it is acceptable for various groups to use the park in varied ways. There are indicators that a place is safe: Parents bring their kids there; women visit just as frequently as men do; the elderly frequently go there; and employees eat lunch or take breaks there (Braga et al., 2009). An overview of important theories and ideas that combine public urban design and gender inclusivity will be given in this survey of the literature. Popular multidisciplinary approaches that seek to increase safety and lower crime in urban settings include the "Eyes on the Street" hypothesis and "Crime prevention through Environmental Design (CPTED)." This strategy places a strong emphasis on design and the management of social and physical surroundings to discourage criminal activity and improve residents' and tourists' perceptions of safety. Architects, community organizations, law enforcement, and urban planners have all embraced CPTED as a useful tool for improving public safety. Numerous studies have assessed how well these tactics work to increase safety and lower crime rates in cities. In one study, Jeffrey Nassau and Jeffrey LaFrance (2014) looked at how the strategy affected crime rates in 13 American communities. According to this study, 10 out of the 13 cities saw a decrease in crime once CPTED principles were put into practice, with a median crime reduction of 10%. Nevertheless, some research has also expressed worries that CPTED tactics can actually make crime worse rather than better. For instance, Elizabeth Groff's study discovered that when CPTED tactics were applied in one Philadelphia neighborhood, crime moved to other neighborhoods that were not the focus of CPTED initiatives. The table below shows the theories of literature reviews of Gender- Inclusive Urban space, as it is.

Table 4: Chronological Order of different Theories

Year	Theory	Inference	Key Components discussed
1961	Eyes on the Street	According to the "Eyes on the Street" theory, social cohesiveness and safety can be greatly impacted by the physical layout and architecture of the	<ol style="list-style-type: none">1. Active Street Frontages2. Mixed-use developments3. Clear sightlines4. Lighting

		urban environment. The approach places a strong emphasis on the value of natural surveillance in preventing crime and encouraging community involvement.	<ol style="list-style-type: none"> 5. Community engagement 6. Greenery 7. Walkability 8. Pedestrian-friendly streets
1971	CPTED Theory	According to CPTED theory, crime rates and fear of crime can be influenced by the physical environment and design. This theory's four guiding concepts are territoriality, access control, natural monitoring, and maintenance.	<ol style="list-style-type: none"> 1. Natural Surveillance, 2. Territoriality, 3. Access Control, 4. Maintenance.
1972	Defensible space	According to the Defensible Space idea, a well-planned physical environment that offers distinct borders and territorial authority can reduce crime and improve community safety.	<ol style="list-style-type: none"> 1. Territoriality 2. Natural Surveillance 3. Image and Maintenance 4. landscapes 5. Graffiti 6. Physical Barriers 7. Access Control
1980	Gendered space Theory	A feminist urban theory called "Gendered Space Theory" looks at how power, gender, and space interact to create and experience urban environments.	<ol style="list-style-type: none"> 1. Spatial segregation 2. Fear of crime 3. Masculinization of public space 4. Patriarchal power relations 5. Gendered norms and expectations
(Yadav & Kumari, 2023)			

5.1.1 Feminist Movement and theory

The development of the feminist movement in the West is commonly portrayed as "waves of change," which capture the highs and lows of the movement. Ensuring women's voting rights was the main objective of the first wave of feminism, which emerged in the late 1800s and early 1900s. The second wave started in the 1960s, driven by minorities' increasing self-awareness (Chadha, 2022).



Figure 8: : The feminist movements during the 1960s – 70s

(Source: <https://www.femcrunch.com/tracing-history/>)

5.2 Safety in Public Space for women

Women's perceptions of safety in public areas are impacted by a variety of social, personal, and built environment factors in addition to possible crime or accident dangers. Their mobility, general quality of life, and general well-being may all suffer as a result of these effects, which may show up as a disruption of social interaction and outdoor activities. Women's personal safety concerns are a well-established area of study, and there is a substantial body of literature discussing street sexual harassment, gender-based violence, and fear of crime. Numerous behavioral and spatial effects of women's fear have been found in previous research, including avoiding flooded areas, interacting less in public places at night, and having constrained mobility and travel patterns. The reality of women's perceptions of safety is intricate and multifaceted, consisting of interconnected characteristics that all either directly or indirectly improve quality of life. Although women's safety has been the subject of much research over the years, the experiences of women and girls worldwide also pose significant societal problems in upholding their "right to the city." The persistent exposure of attacks, fear of sexual harassment, humiliation, and fear of victimization in public places or when using public transportation are major concerns in the literature and discourses on women's perceived safety and experience in the public sphere; these issues compromise women's personal safety and security and frequently result in limited city participation (Dubey et al., 2024).

5.2.1 Design strategies for safer spaces

When designing safer parks, it's crucial to incorporate the viewpoints and experiences of women and girls. In the UK, sexual harassment in public places is a common occurrence that affects 71% of women and 86% of those aged 18 to 24. Seventy-seven percent of girls

experience unwanted sexual behaviors in public for the first time before they are in their mid-teens. More than half of young women and girls don't feel comfortable going out by themselves. Furthermore, the harassment experienced by women and girls is exacerbated by various facets of their identities, including age, gender identity, sexual orientation, ethnicity, and disability. The literature study defines, the design strategies which come under three theme (*SAFER*, n.d.).



Figure 9: Design Strategies for safer spaces

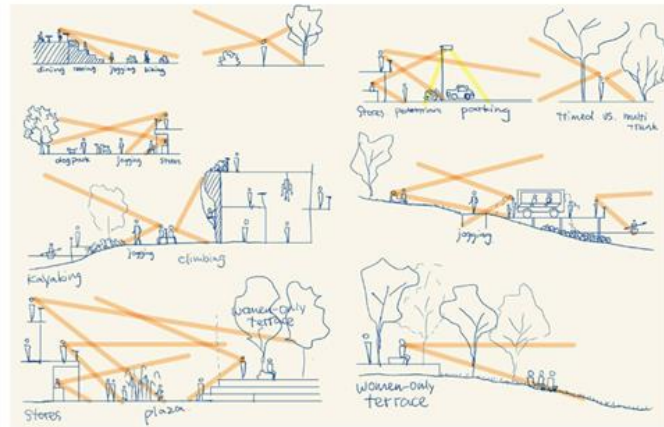


Figure 10: Better visual access for safer place

Source: Safer Parks

5.3 Border Dynamics and cross-border movements

Based on the 1950 India-Nepal Treaty of Peace and Friendship, the historical, cultural, and religious linkages between the two nations are reflected in the passenger movement between India and Nepal. The pact permits unrestricted travel over the open border for both individuals and products. It should be mentioned that around 8 million Nepali nationals reside and work in India and often cross the border. Additionally, movement of people and vehicles between the two nations is governed by the BBIN Motor Vehicles Act and the Regulation for Passenger Traffic between the two countries. Numerous variables, including social and religious links, tourism potential, and economic prospects, affect the bilateral passenger movement between India and Nepal. There are numerous ports of entry and departure where roads link the two nations. The most popular and practical way to travel between India and Nepal is by road because it is accessible, flexible, and reasonably priced. Passengers traveling by foot or by vehicle, such as buses, cars, motorcycles, etc., can obtain

immigration and customs clearance at a number of designated crossing locations along the border. Large passenger volumes can be handled by these land ports. India and Nepal have decided to build Integrated Check Posts (ICPs) at significant border crossings in order to enhance the infrastructure and security at the various ports of entry and exit. These ICPs will offer contemporary amenities and facilities for the efficient and seamless movement of people and products. Nonetheless, there are still certain operational and regulatory barriers that prevent passengers from moving across the border smoothly(Land Ports Authority of India Ministry of Home Affairs, 2023).

5.3.1 Deployment of Security forces

The India-Nepal border, spanning approximately 1,850 km, is characterized by its open and porous nature under the 1950 Treaty of Peace and Friendship, which allows free movement of people and goods. The Armed Police Force Nepal serves as the primary specialized force responsible for border security. While the Nepal Police also maintain a presence in border regions, their function is primarily to support the operations of the Armed Police Force. Additionally, the Nepal Army has established Border Security Directorates dedicated to intelligence gathering, while the National Investigation Department plays a crucial role in collecting, synthesizing, and analyzing information related to national security, including border security. The Sashastra Seema Bal (SSB) of India has a total strength of 94,000 personnel, with 45,000 stationed along the Indo-Nepal border. In comparison, the Armed Police Force (APF) of Nepal comprises 37,000 personnel, of which 22,000—accounting for 59% of its total strength—are assigned to border security operations. While the Government of Nepal has strategically deployed its forces for optimal coverage, the overall deployment along the Indian border remains comparatively lower than that of India. India has strategically positioned the Sashastra Seema Bal (SSB) along the entire Indo-Nepal border, maintaining border outposts at approximately every 3 kilometers. In contrast, the Armed Police Force (APF) of Nepal has been able to establish border posts at intervals of 15 kilometers. Additionally, both the physical condition of barracks and the availability of essential equipment and advanced information technology remain inadequate within the APF, further impacting operational efficiency(Upreti, 2021).

5.3.2 Legal Framework, Treaties and Agreements

The main legislative frameworks, treaties, and agreements that control passenger travel between India and Nepal are highlighted in the section below. The 1950 Treaty of Peace and Friendship fostered harmonious relations between India and Nepal, strengthening bilateral diplomacy and governmental cooperation. Additionally, the treaty facilitated an open-border framework, enabling seamless movement of resources through India, thereby enhancing Nepal's strategic security and economic connectivity. The framework for efficient transit, including passenger movement at defined checkpoints, is provided by the 2006 Treaty of Transit. Furthermore, a number of bilateral agreements including the BBIN of 2015 support the promotion of cross-border travel and improve regional connectivity. The operational framework outlining the modes of vehicle movement and the responsibilities of various departments and stakeholders is provided by the bilateral "Agreement between the Government of the Republic of India and the Government of Nepal for the Regulation of Passenger Traffic between the Two Countries - 2014." Some of the major treaties, agreements and regulations have been summarized below:

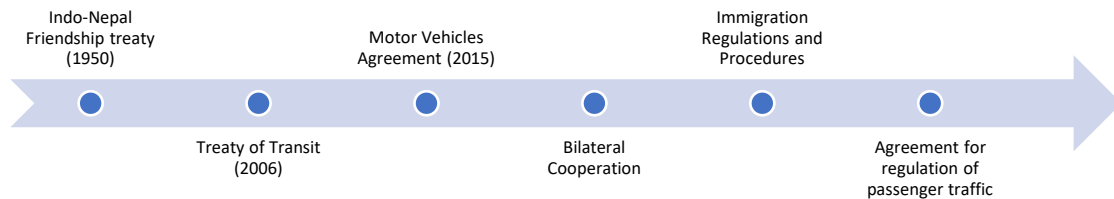


Figure 11: Major Treaties, Agreements and Regulations

Source: Perception Study of Passenger Movement Between India & Nepal Via Land Ports

5.3.3 Procedure for Indian Private Vehicle entering Nepal

The Flow of passengers between India to Nepal using private vehicles is significantly higher from Indian side compared to the Nepali side because an Indian vehicle planning to travel to Nepal's backcountry does not need to complete any paperwork before arriving at the border crossing point. Within minutes of crossing the border, travelers can obtain their permission that same day. After document verification and payment of the Bhansar (duty), Nepal customs issues the permit at the border. Any items in the automobile are examined by Nepal police and customs officials. Customs either seizes the vehicle or charges duties on it if the officials at the site determine that the vehicle is carrying more items than the

traveler would typically utilize. Prior to receiving a travel permit, the owner of the vehicle must pay Bhansar (duty), which is roughly INR 400 per day for a four-wheeler. When an Indian car crosses the zero line, it must pay Bhansar(Land Ports Authority of India Ministry of Home Affairs, 2023).

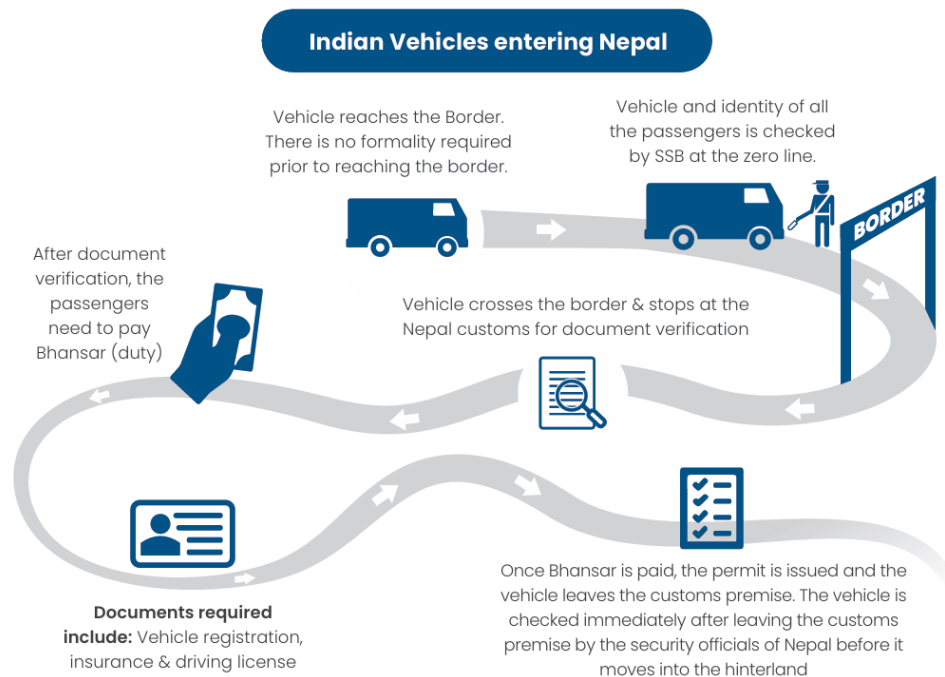


Figure 12: Indian Vehicle entering Nepal procedures

Source: Perception Study of Passenger Movement Between India & Nepal Via Land Ports

5.3.4 Procedure for Nepali Private Vehicle entering India

Due to the lack of a permit issuance facility at the borders, it is quite challenging for Nepali passengers to obtain a permit to drive their own vehicles into the Indian hinterland. They must go to the Indian embassy in Kathmandu to seek for a travel permission. For Nepali travelers taking the road to India, this is the single largest obstacle. Furthermore, according to the responses, the Indian embassy often takes 5-7 days to grant the travel permit, in contrast to Nepali officials who do it on the same day. The Indian embassy wants a bank guarantee of about INR 3 lacs from the applying passengers, which is another reason why Nepali travelers find the permission application process challenging. Five hours journey that takes 8 days for Nepalese Citizen to inter India(Land Ports Authority of India Ministry of Home Affairs, 2023).

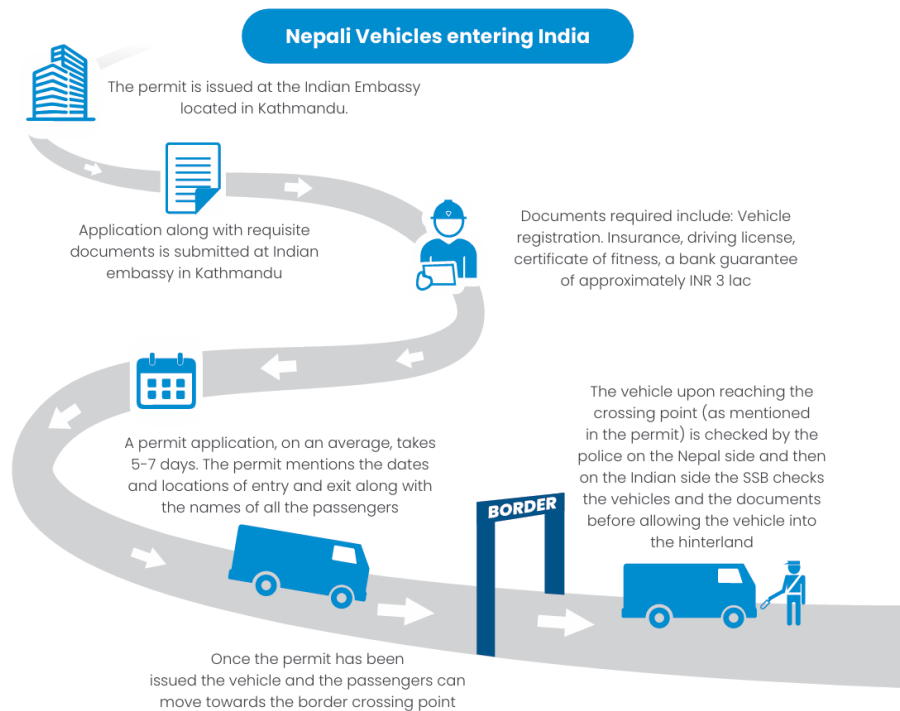


Figure 13: Nepalese Vehicle entering India procedures

Source: Perception Study of Passenger Movement Between India & Nepal Via Land Ports

5.3.5 Women’s experience at borders

A Nepali girl expressed her experience in online Blog platform that “Crossing Nepal’s border alone, either by road or air, as a Nepali woman is often, if not always, an unpleasant experience. Questions asked by border security or immigration officers are downright derogatory, reflecting the patriarchal mindset of the state vested with the power to decide a woman’s mobility.” In the name of protecting Nepali women and their ‘bodies’, we often get harassed by the same forces that are meant to safeguard us. To give you a recent example, I was coming back from India by road after attending a friend’s wedding. I had mehendi on one hand, a box full of sweets on the other and my luggage was full of clothes that I took for the wedding. In short, it was pretty evident that I was back after attending a wedding. The Indian security lady simply looked at my luggage, smiled and said in Hindi, “Oh are you back from a wedding? Hope you had a great time.” As I crossed the border and entered my own country, I geared up to answer some inappropriate questions. My past experience has taught me that crossing the border as a single Nepali woman was always Uncomfortable, to say the least.

The border police looked at me and said, “Why did you go to India, alone?” “I went for a friend’s wedding,” I replied.

“Why would a girl from Nepal have friends in India? Why don’t you make friends in Nepal?” he asked. “Because I studied in India,” I emphasised.

“You must have many friends and boyfriends there. That’s the reason girls like you go to India alone,” he said mockingly.

This is just one of the many examples of harassment Nepali women face at their own borders(Gautam, 2023).



Figure 14: Maiti Nepal organization in Nepal-India border

5.4 Policy framework and governance

Gendered violence against women and girls includes threats of such acts, harassment, coercion, denial of liberty, and acts or inactions that are meant or likely to cause or result in death, physical, sexual, psychological, or economic injury, or suffering for women. One of the most pervasive, systemic, and universal forms of discrimination and human rights violations is GBVAWG. It hinders women and girls from fully engaging in society and has both short-term and long-term physical, sexual, psychological, and financial repercussions. According to the Constitution of Nepal 2072 article 38 Right of women mentions 1. Every

woman shall have equal lineage right without gender-based discrimination. 2. Every woman shall have the right to safe motherhood and reproductive health. 3. No woman shall be subjected to physical, mental, sexual, psychological or other form of violence or exploitation on grounds of religion, social, cultural tradition, practice or on any other grounds. Such act shall be punishable by law, and the victim shall have the right to obtain compensation in accordance with law (*TOOLKIT FOR DEVELOPING GENDER-BASED VIOLENCE AGAINST WOMEN AND GIRLS*, n.d.). The Constitution also protects the freedom to pursue education and work opportunities, as well as rights related to labor. In 2007 and 2008, the government passed the Foreign Employment Act and Regulation, respectively. The problems of Nepalese labor migration to India, however, were not addressed by the Foreign Employment Act (Niraula, 2022).

5.4.1 Migrant domestic workers

Nepal's national law does not regulate the recruitment or activities of informal sector workers, such as domestic workers. As of November 2016, a new labor code has been tabled in Parliament that contains a provision on domestic work but it has not been endorsed or enacted as yet. There is also a provision that directs the development of separate guidelines on setting minimum wage for domestic workers and other entitlements within the country. Non-recognition of domestic workers undermines legal and labor inspectorate protections. The Nepalese government has yet to ratify ILO Convention 189 on domestic workers. Ratifying and reporting. Meeting commitments under the ILO Convention will enhance the legal protection and working conditions for domestic workers (International labor organization 2017, 2017).

MONEY

Border shoppers moan at end of duty-free system

Officials say the new rule has been enforced to discourage illegal cross-border trade and promote local businesses.



Armed Police Force personnel inspect people's bags at a border check point in Biratnagar. POST PHOTO: DEO NARAYAN SHAH

Figure 15: local government role and responsibilities in cross-border Indo-Nepal

Source: <https://kathmandupost.com/money/2023/07/19/border-shoppers-moan-at-end-of-duty-free-system> (Shah, Deo Narayan, Dhungana, Madhav & Poudel, 2023)

5.5 The Death and Life of Great American Cities

"The Death and Life of Great American Cities" is a groundbreaking book by Jane Jacobs, first published in 1961. It is one of the most influential works in urban planning, challenging the prevailing ideas of city design and advocating for vibrant, community-driven neighborhoods. Jacobs' ideas revolutionized urban planning, inspiring movements for walkable cities, mixed-use zoning, and community-driven development. The book challenges the prevailing modernist planning paradigms of the time, which prioritized large-scale redevelopment, highways, and segregated zoning. Instead, Jacobs advocates for a human centred approach to urban design that fosters community, safety, and economic vitality. Key themes and arguments discussed in the book are:

1. Critique of Modernist urban Planning: Jacobs criticizes the urban renewal projects of the 1950s and 1960s, which often involved the demolition of vibrant neighborhoods to make way for high-rise buildings, highways, and sterile public

spaces. She argues that these projects destroyed the social fabric of cities, displacing communities and creating lifeless, unsafe environments.

2. The importance of Mixed-use development: Jacobs emphasizes the value of mixed use neighborhood, where residential, commercial, and recreational spaces coexist. This diversity of uses ensures that streets are active at all times, enhancing safety and fostering a sense of community.
3. Eyes on the Street: one of Jacobs' most influential concepts is the idea of "eyes on the street", she argues that natural surveillance-where residents and passersby observe the street activity-is crucial for maintaining safety in urban areas. Active street life, clear sightlines, and mixed uses contribute to a self-policing environment where crime is deterred.
4. The role of sidewalks and public spaces: Jacobs highlights the importance of sidewalks and public spaces as the lifeblood of the cities. She advocates for wide, well-maintained sidewalks that encourage pedestrian activity and social interaction(Jacobs, 1961).

5.6 Case Study

This section deals with the various gender inclusive urban planning which are relevant to the study area.

5.6.1 The case of Canada-United States open border

The US and Canada share the world's longest undefended border and are known for their strong bilateral security ties. Both countries shares border dynamics of cross-border relationships within international policies by conceptually defining the psychological-cultural, trade-commercial and political strategies. Over time, the US-Canada partnership has evolved into a continental security community. Mutual collaboration has resulted in a deliberate shift away from the real frontier. However, that move had to reconcile an inherent tension between the imperatives of 'economic globalization' and 'territorial security' along the US-Canada border. Both countries have different interests in which Canada is primarily concerned about trade while the United States is more interested on terrorism and illegal migrations. Bilateral cross-border cooperation between the US and Canada has resulted in a compromise between ideals, sovereignty, and pragmatism. Instead

of focusing solely on border security, the two countries have developed a comprehensive security system based on shared interests in policing, counterterrorism, intelligence, and defense to detect, disrupt, and deter threats. On the eve of WWII, the US and Canada agreed that defending the continent was mutually beneficial and would collaborate appropriately. Over time, North America emerged as the world's most prosperous, stable, and harmonious democratic civilization. The two countries created the world's longest undefended border. Bilateral and binational border management policies aim to promote socio-economic prosperity while improving cross-border security cooperation and enforcement. Reciprocal agreements enforce borders within airports, cities, and according to mutually recognized regulatory systems, which may not necessarily be reciprocal. Since the mid-1990s, Canada and the US have worked closely together to combat transnational trade and threats such as terrorism, human trafficking, illicit narcotics, child pornography, counterfeit and dangerous commodities, contaminated food, and cybersecurity. Every day, roughly 400,000 people and USD\$2 billion in commodities cross the shared border via land, sea, and air. This includes over 120 land ports of entry, 200,000 flights annually, and thousands of commercial and recreational vessels every day. The US and Canada have shared infrastructure and interwoven supply chains. Automobiles built in North America often cross the border multiple times during production.

5.6.2 Border Security

Prior to the Smart Border Declaration of 2001, the security relationship between the Canada Border Services Agency (CBSA) and the United States Customs and Border Protection (CBP) was established through a series of bilateral agreements, most notably a 1984 agreement on mutual aid and cooperation. Border security between the two countries is a shared responsibility, focusing on facilitating legitimate travel and trade while preventing illegal activities such as smuggling, human trafficking, and terrorism. Here's an overview of how border security is managed: CBSA and CBP have over 21 customs and immigration agreements to share information, intelligence, and documentation on travelers and commercial items, as well as prevent and investigate customs violations.

Key Aspects of US-Canada Border Security:

- a. **Shared Border Management:** the US and Canada work closely through agencies like US Customs and Border protection (CBP) and Canada Border Services (CBSA) to enforce border security. Both countries prioritize collaboration and information sharing to address cross-border threats.
- b. **Smart Border Declaration (2001):** After the 9/11 attacks, the US and Canada signed the smart border Declaration to enhance security while ensuring the efficient flow of goods and people. The agreement focuses on secure infrastructure at border crossings, sharing intelligence and law enforcement data, coordinating visa and immigration policies.
- c. **Pre-Clearance programs:** Both countries have pre-clearance facilities at major airports and land crossings. This allows travelers to clear customs and immigration before crossing the border, reducing congestion and improving security.
- d. **Integrated Cross-Border law Enforcement:** Programs like Integrated Border Enforcement Teams (IBETs) involve joint efforts by U.S. and Canadian law enforcement agencies to combat cross-border crime, including drug smuggling, human trafficking, and terrorism.
- e. **Technology and Surveillance:** Advanced technologies, such as drones, sensors, and surveillance systems, are used to monitor remote areas of the border. License plate readers, biometric systems, and facial recognition are also employed at border crossings to enhance security.
- f. **Trusted Traveler programs:** Programs like NEXUS and FAST allow pre-approved, low-risk travelers and commercial drivers to cross the border more quickly, reducing wait times and focusing resources on higher-risk individuals.
- g. **Cross-Border Crime and Threats:** Both Countries collaborate to address threats such as Drug trafficking, Human smuggling and trafficking, terrorism and cybercrime, Illegal firearms trafficking
- h. **Border Infrastructure:** There are over 100 official land border crossings between the U.S. and Canada, each equipped with security measures to screen travelers and goods. Remote areas of the border are monitored through patrols and technology, though the vastness of the border makes complete surveillance challenging.

5.6.3 Policing between US-Canada Border

The Canada-United States Cross-Border Crime Forum (CBCF) serves as the foundation for cross-border police collaboration today. Established in 1997, the goal was to combat cross-border crime in the eastern part of both countries. As a priority for both Canada and the US in the global battle against organized crime and, following 9/11, terrorism, the CBCF has enhanced cooperation, coordination, and collaboration between the two nations through greater information sharing and joint operations. Integrated Border Enforcement Teams (IBET) were created in 1996 to fight cross-border crime in the western regions of the US and Canada. IBET was extended to cover the whole Canada–United States border after the events of 9/11 (Leuprecht et al., 2021).

5.7 Vienna, Austria

According to demographic projection, Vienna is expanding and could one again have two million residents by 2030. The diversity of the urban society is increasing. Conflicts between various user groups are frequently caused by divergent interests. For thirty years, the city of Vienna has been implementing "gender mainstreaming," which involves integrating positive gender practices into urban planning and governance. The creation of the Women's Office in 1990 marked the beginning of this initiative to make cities safer and more accessible for women. The method, which is iterative in nature, includes developing gender analysis tools, evaluating actions, and expanding effective policies into urban reforms. This was before "gender mainstreaming" gained international traction as a reform strategy for city planning and policymaking.

5.7.1 Gender Sensitive Transport Planning-Mariahilf district pilot project

Male architects and urban planners predominated in Vienna's urban planning scene 25 years ago. As a result, the city's architecture and urban planning did not sufficiently represent the issues of women, children, and minority groups. When the city embraced gender mainstreaming as a means of establishing an equitable city that all could enjoy, this disparity started to shift (Naiadu et al., 2017).

Challenge

In the middle of 1980s, the European Union and the United Nations adopted "Gender mainstreaming" as a method for gender equality policy. At that time, men continued to

dominate Vienna's urban planning. Despite having a limited role in design and planning of housing projects, female architects have never been asked to take part in urban planning. The City of Vienna conducted research in the early 2000s and found that women made 56% of all foot travels while men made 58% of all car travels. Women, especially those with caring responsibilities, traveled more frequently on foot or by public transportation, completing intricate trip chains where work, caregiving, and errands intertwined, according to the City's assessment of modal split. Furthermore, it was discovered that those with specific mobility needs, elderly people, and children were more reliant on a visually appealing and secure system of bike lanes and walkways.



Figure 16: Unsafe pathways of Mariahilf district

Solution

In 1992, the city established a Women's Office, led by Kail, to investigate planning issues specific to women. Six years later, to guarantee more equitable urban development, a Coordination Office was established, once more under Kail's leadership, to collaborate with 12 planning and traffic departments. The first time the Women's Office tackled the problem of gender-sensitive housing was in 1993, when they put together a group of female architects to create specifications for the first public housing project that catered to women. The City of Vienna implemented a pedestrian enhancement initiative in the Mariahilf pilot

zone. Mariahilf is a compact but heavily populated neighborhood that is close to the heart of Vienna. Approximately 25% of the district's pavements were found to be less than two meters wide, and 50% of all junctions were deemed to be challenging for pedestrians to cross. The district's uneven topography, which has more than 50 public staircases, also affected connection, with a 30-meter gap between its highest and lowest points. A small number of them had ramps installed.

Outcome

The pilot projects in Mariahilf resulted in:

- 60 intersection improvements (new pedestrian crossings, smoothing uneven surfaces etc.)
- Eliminating barriers from sidewalks and implementing a "barrier-free layout."
- Placing elevators and ramps
- Nine more seating places
- Establishing pedestrian lead - time at a number of junctions
- Enhanced illumination in 26 locations
- Pavement widening of greater than 1km



Figure 17: Gender-sensitive park design with features that appeal to female park users.



Figure 18: The streets of Mariahilf today.

5.7.2 Gender Sensitive Master Planning-Aspern Seestadt Challenge

As already mentioned above, women's daily travels are frequently more complicated than men's, involving traveling to and from work, running errands, taking care of dependents, and childcare. The majority of land use and transportation initiatives prioritize commuter travel over the shorter trips that are necessary for daily life.

Solution

In order to evaluate the general liveability of new urban developments and apply it to master plans, the City of Vienna created an "everyday route check." Eight distinct resident categories are taken into account by the route check methodology, along with the usual daily routines and trip chains that these individuals would experience in their neighborhood. The distances between housing complexes and important locations (playgrounds, schools, childcare facilities, public transportation, shops, and amenities) are then measured to visualize these trip chains. The daily route check method is a creative way to consider the diverse needs of the community and make sure the district serves a diverse range of residents. For instance, the typical daily schedule of a working mother with a small child may be: home - office - childcare - market - home - leisure - home, but the routine of any other adult without children might be: home - office - home - restaurant

- home. The planning method for Aspern Seestadt, a brownfield project on the outskirts of Vienna that will cover 240 hectares by 2028, used the daily route inspection.

Outcome

Seestadt was intended to be a "city of short distances," emphasizing travel via public transportation and active transportation. With more than 20,000 residents and the same number of workplaces, the area has established an ambitious modal split for travel: 40% public transportation, 40% walking and bicycling, and only 20% motor vehicles. Seestadt has undergone a thorough investigation and thoughtful deliberation to become an age- and gender-friendly precinct. The City of Vienna's gender mainstreaming guidelines, which include detailed requirements to guarantee the development is constructed to meet the daily needs of all its users, have been incorporated into the masterplan along with the everyday route check. The City of Vienna has persisted in creating gender-sensitive streetscapes, public areas, and housing in Seestadt's planning. The first phase of the development, which was finished in 2015 and currently has 6000 people, features well-known features like broad pavements, street benches, and multipurpose parks.



Figure 19: Application of the City of Vienna's 'Everyday Route Check' Concept



Figure 20: Aspern Seestadt, Vienna (Daniel Hawelka 2017)

5.7.3 Gender-Sensitive park design-Einsiedler Park Pilot

Challenge

According to a Vienna study, teenage boys are more likely to use parks assertively, snatching up space for the games and activities they desire. Girls have less space to use as a result, especially on sports courts where more violent ball games are played. Girls' presence in parks and public playgrounds was observed to dramatically decline starting at age 9, which had an effect on their body awareness and sense of self.

Solution

The City of Vienna developed a gender-sensitive park strategy in response to these findings. The strategy's first milestone was holding a modest contest to redesign Einsiedler Park. Einsiedler Park is situated in a heavily populated area of Vienna where locals have little access to private open space and typically lack the funds for organized physical education programs for kids. A variety of groups vie for use of public parks like Einsiedler Park, which serve as community gathering places.

Outcomes

The park was redesigned with an emphasis on increasing safety and visibility as well as creating places that support the activities that ladies like, like volleyball, rollerblading, and more sedate activities in covered areas. Among the particular traits were:

- Converting the cage-style enclosed ball courts into an open area with numerous large access and exit points
- Splitting the courts into three smaller subareas to allow for numerous groups to occupy them
- Converting one of the ball courts into an open area devoid of athletic apparatus (nets, hoops, etc.) in order to promote less regimented exercise
- Adding an elevated platform to the courts so that people may sit, mingle, and watch other people play, allowing spectators to participate in the action without really playing the game
- establishing an unstructured, open playground with ledges, hammocks, nets, and other features to allow teenage girls to play and converse with one another;
- putting in seats and chairs in the section with the closed-off play equipment so that parents and babysitters may sit and have privacy while keeping an eye on little children(Agarwal, 2022).



Figure 21: Ball cage, Einsiedler park, Vienna



Figure 22: Redesigned Einsiedler Park

CHAPTER 6: DATA AND ANALYSIS

6.1 Observation from Study Area

The survey conducted at the Biratnagar-Jogbani border area highlights significant concerns regarding public safety, mobility, and infrastructure. The respondents, predominantly women, frequently use public transportation, particularly rickshaws and walking, to access markets or employment opportunities across the border. Many report feeling unsafe due to overcrowding, poor lighting, lack of surveillance, and the presence of harassers in public spaces, especially at border checkpoints and market areas. A substantial portion of respondents (38.46%) have experienced or witnessed harassment, with perpetrators including local and Indian police, customs officers, and random individuals. The lack of public toilet facilities near the border further exacerbates safety concerns, with 89.74% of respondents stating their unavailability, and many expressing discomfort in using the existing ones due to poor maintenance and inadequate lighting. Issues at the border crossing include long delays, unmanaged road conditions, and harassment, making travel inconvenient and unsafe. Additionally, the behavior of security personnel received mixed feedback, with some respondents noting their effectiveness in preventing trafficking, while others reported incidents of mistreatment and discriminatory behavior. Recommendations from respondents include improved lighting, CCTV surveillance, increased police patrolling, better road management, and gender-sensitive security personnel. Providing separate female-friendly facilities, designated pedestrian walkways, and organized traffic flow are also suggested to enhance safety and accessibility. These insights emphasize the urgent need for urban planning interventions to create a safer, more inclusive environment at the border.

6.2 Finding of the questionnaire Survey

The image presents a bar graph titled "Number of Survey Conducted," which illustrates the quantity of surveys conducted among three distinct groups: Commuters, Stakeholders, and Service Providers.

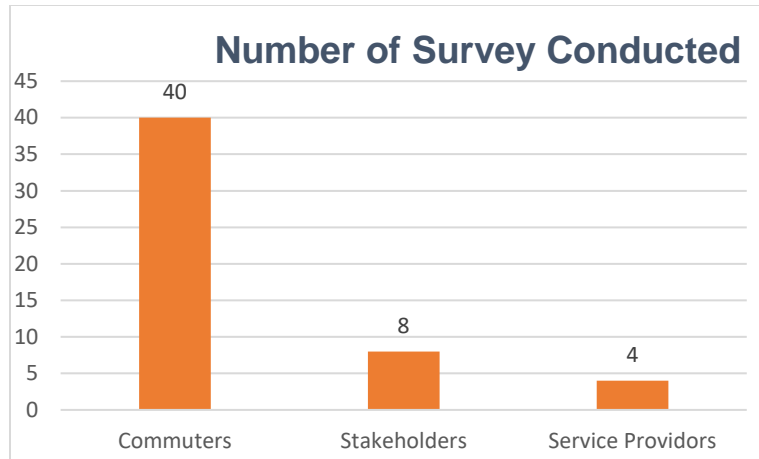


Figure 23: Bar chart showing number of survey conducted

6.3 Gender

Among 52 survey conducted in field, it was observed that 32 of them were female which is 62% of total and 10 of them are male which is 38%.

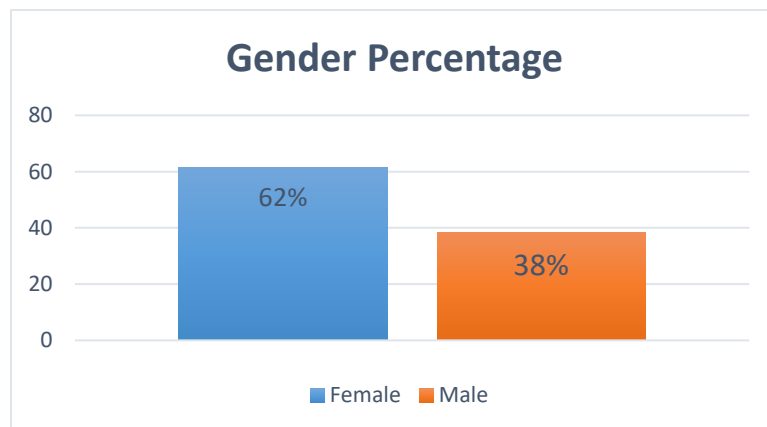


Figure 24: Bar Chart showing Gender group of visitors

The pie chart titled "Age Group Percentage" represents the distribution of respondents based on age categories. It is divided into four segments 15-25, 26-40, 41-60 and >60. It is observed that among 52 respondents, majority of them are 26-40 with 25 which is 47%. Similarly, 18 (35%) of them are 15-25 and 9 (18%) of them are 41-60. Whereas age greater than 61 years old is found null in survey questionnaire.

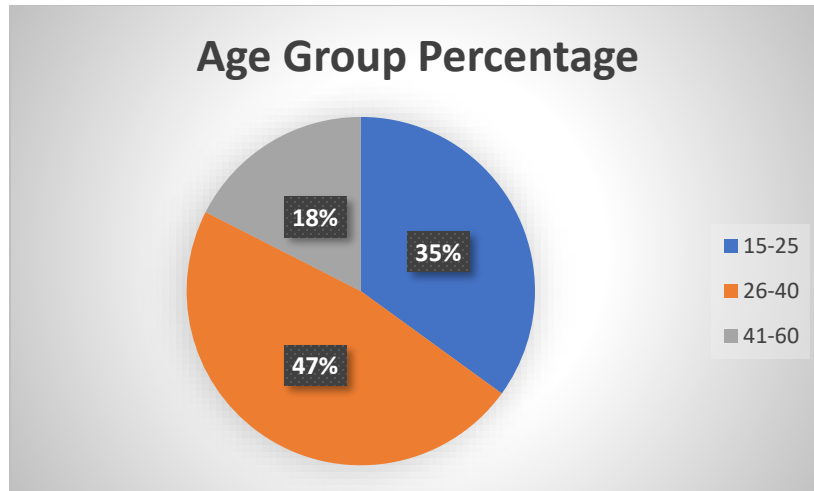


Figure 25: Pie chart showing different age groups of correspondents

6.4 Occupation

The pie chart or a graphical representation showing the distribution of different occupations. The chart includes categories such as "Students," "Working professional," "Other Carrier," and "Homemaker." The percentage for student which is 37%, similarly working professional which is 30%, likewise other (carrier) which is 23% and 10% of the total is homemaker.

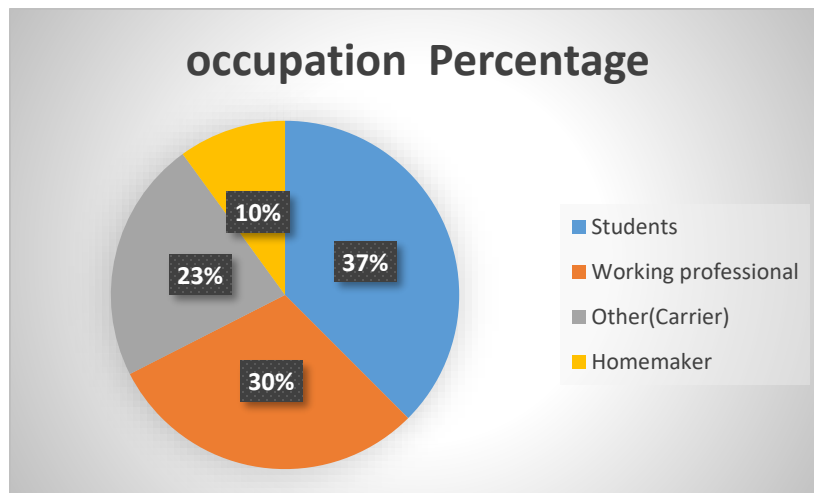


Figure 26: Pie chart showing different occupations of correspondents

6.5 Level of Education

The pie chart showing the distribution of percentage of level of education. The chart includes categories such as "Undergraduate or above," "Not Educated," "Secondary," and

"primary." The percentage for Undergraduate or above which is 60%, similarly not educated which is 27%, likewise Secondary and primary which is 3% each.

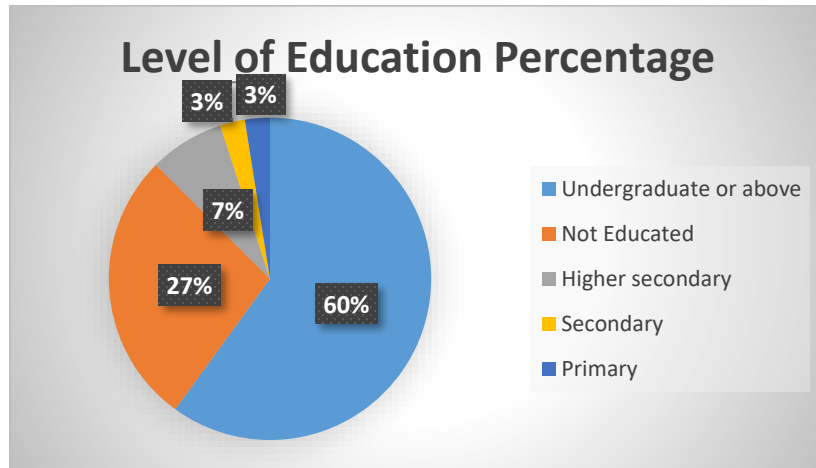


Figure 27: Pie chart showing different level of Education of correspondents

6.6 Frequent use of Public Transport (buses, E-rickshaws, tempo etc..)

The pie chart titled "Frequent use of Public Transport (buses, E-rickshaws, tempo etc..)" represents the distribution of respondents how frequent do they use public transportation. The questionnaire survey was conducted to get the mobility pattern of the people in the site. It is observed that majority of people use transportation daily i.e. 38%, second one is 36% people do not use transportation and equal percentage of people use transportation monthly and weekly.

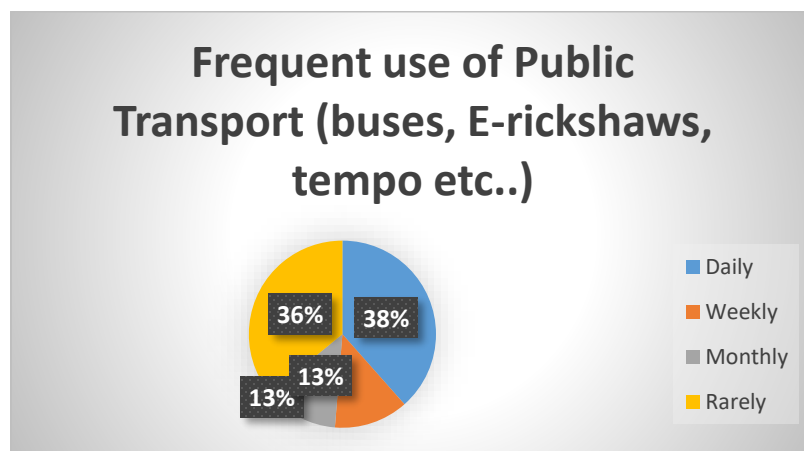


Figure 28: Pie chart showing frequent use of public transport

6.7 Mode of Transportation mostly rely on

The pie chart titled "mode of transportation" represents the distribution of respondents which mode of transportation mostly do they rely on for the movement from their place to Biratnaga/Jogbani border area. The largest group of people, accounting for 36%, rely on E-Rickshaws/Autos for transportation. Buses follow as the second most common mode of transport with 23%, while 21% prefer to travel on foot. Lastly, 20% use private vehicles.

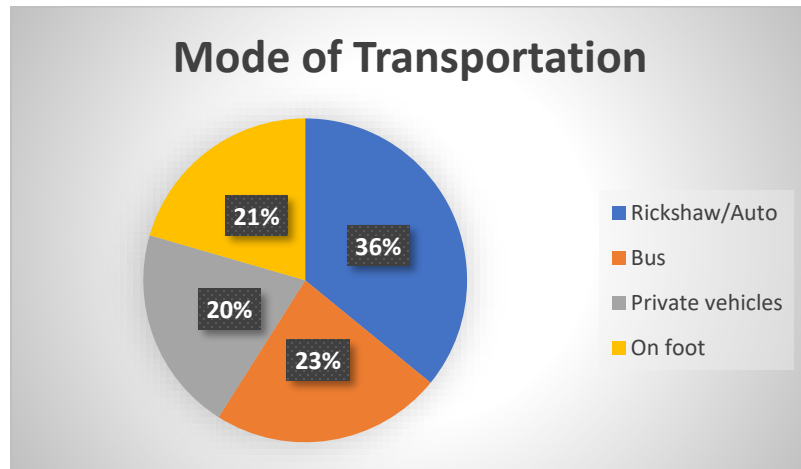


Figure 29: Pie chart showing mode of transportation mostly rely on

6.8 Mobility Pattern

The survey was conducted to get insight the mobility pattern of people. The result is found that the majority of people come from local areas like Biratnagar, Duhabi, Ithari, Dharan. The muslim community women are on “carrying” as they go to and fro whole day to collect the grocery items in bulk from India and then sale in Nepal side. The grocery items as well as vegetables and fruits are lesser price in comparison to Nepal side. Other people like outsider from Biratnagar they usually come for grocery shopping for home use and it is also found that some people from Kathmandu also come for wedding shopping and grocery shopping. They said that it costs in less price and convenient for shopping that is why they travel all the way from Kathmandu.

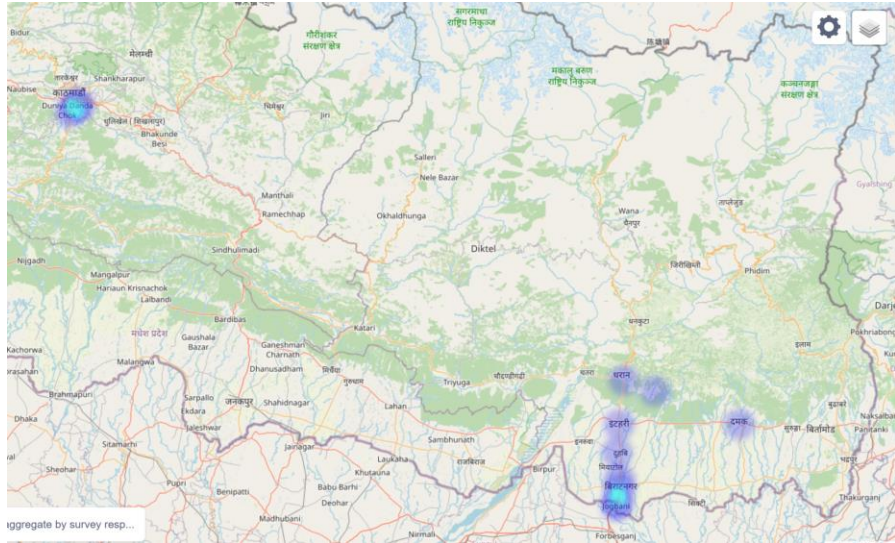


Figure 30: Map showing heatmap map of mobility pattern

6.9 Preferable time to Visit Area

The pie chart titled "Preferable time to visit area" represents the distribution of time of the day when they prefer to visit Jogbani market. Most respondents prefer to visit market in the morning because most of the people come from longer distance so that they enter the market before noon so that they can return to home.

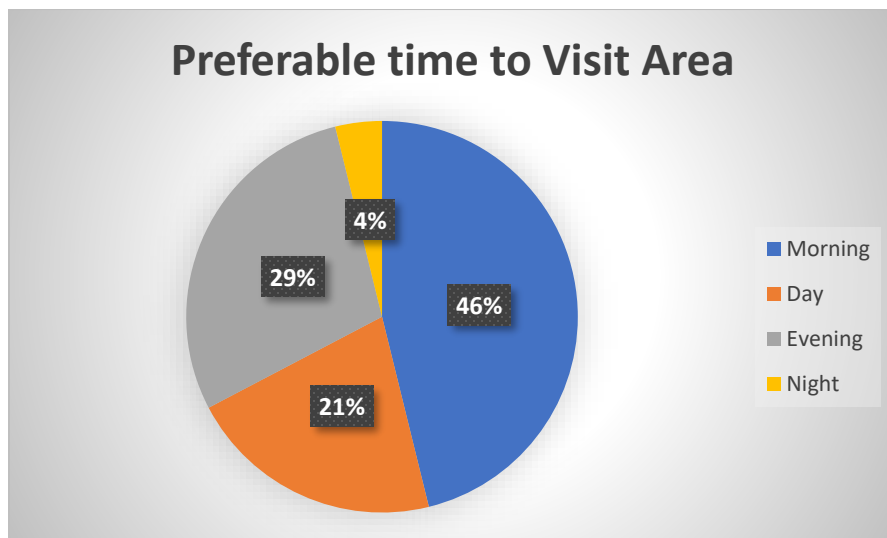


Figure 31: Pie chart showing preferable time to visit area

6.10 Primary Destination after crossing the border

The pie chart titled "primary destination after crossing the border" represents the different purposes for which people cross the border. It is divided into four categories, each represented by a different color. The majority of people cross the border for shopping or market-related activities which is 70%. A significant portion crosses for informal employment, particularly as carriers which is 19%. A smaller percentage crosses for foreign employment which is 3%. The remaining portion falls under the "Others" category. The pie chart visually emphasizes that the primary reason for border crossing is market or shopping-related activities, followed by informal employment. The least common reason is foreign employment.

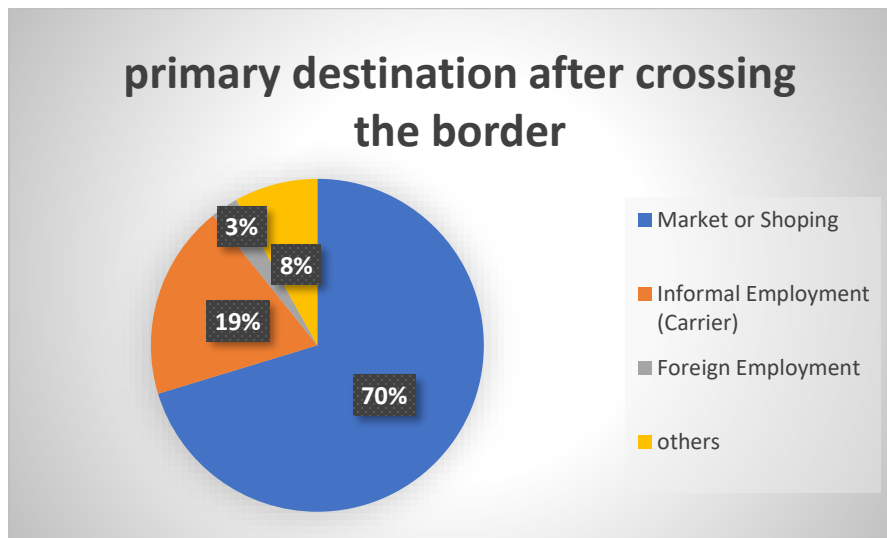


Figure 32: Pie chart showing primary destination after crossing the border

6.11 Experienced or witnessed harassment in public areas

The bar graph illustrates responses to the question, "Have you ever experienced or witnessed harassment in public areas?" It features two bars representing the percentage of respondents who answered "Yes" and "No." The majority, 58.97%, indicated that they have not experienced or witnessed harassment in public spaces, while 38.46% reported that they have encountered such incidents. The graph highlights that although more people have not faced harassment, a significant portion—nearly 40%—has, suggesting that public harassment remains a concern. This data underscores the need for safer public spaces and targeted interventions to reduce harassment in urban areas.

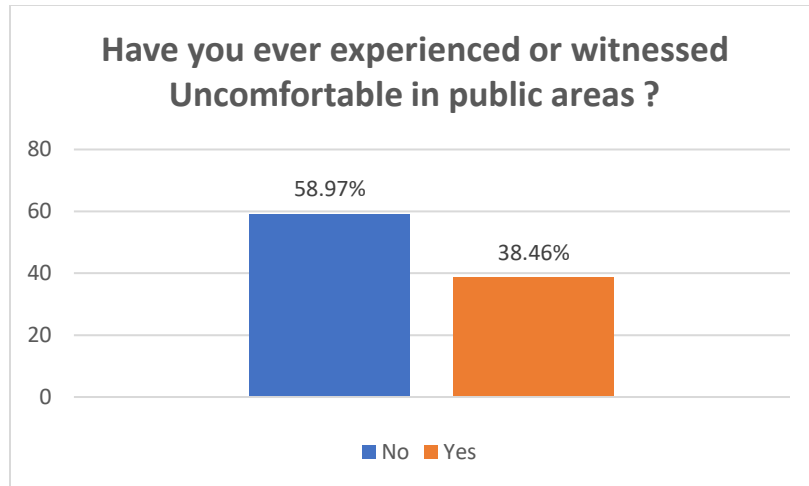


Figure 33: Bar chart showing experienced or witnessed to harassment in public areas

If yes, then by whom have you faced this incident?

The pie chart illustrates the distribution of reported harassment incidents based on the perpetrators, as experienced by respondents. The data is divided into four categories: Nepal Police/Local Authority (31%), Indian Police (23%), Custom Office Department (15%), and Others (31%). The largest proportion of incidents falls under Nepal Police/Local Authority and Others, both at 31%, indicating that harassment is not limited to a single entity but is spread across various groups. Indian Police accounts for 23% of reported cases, while Custom Office Department represents the smallest share at 15%. This chart highlights concerns about harassment from officials and authorities at the Nepal-India border, pointing to the need for improved accountability and protective measures to ensure safer cross-border movement.

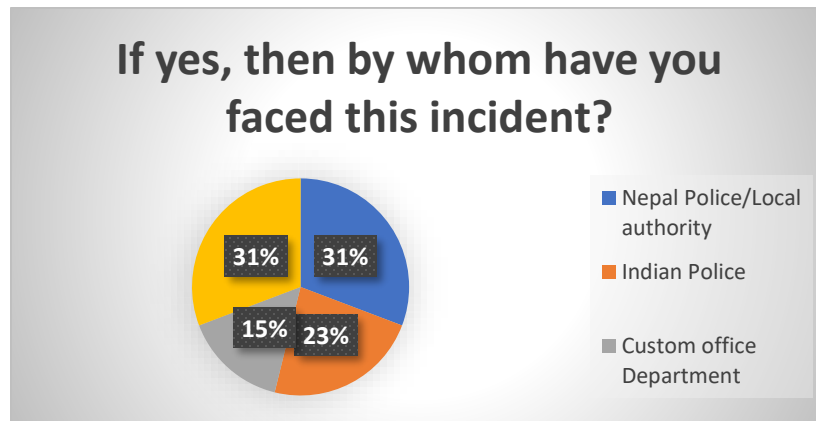


Figure 34: Pie chart showing by whom have you faced the incident?

If yes, then by where have you faced this incident?

The pie chart illustrates the distribution of incidents across different locations in the Nepal-India cross-border area. The largest proportion of incidents, at 48%, occurs at border check points, highlighting the challenges and vulnerabilities faced in these high-traffic zones. Market places account for 25% of the incidents, reflecting the bustling and often crowded nature of these areas. Streets and open spaces represent 14% of the incidents, indicating safety concerns in public thoroughfares. Public transport constitutes the smallest segment at 10%, suggesting relatively fewer incidents but still significant enough to warrant attention. This distribution underscores the need for targeted safety measures and infrastructure improvements across these key locations to enhance security and accessibility, particularly for women.

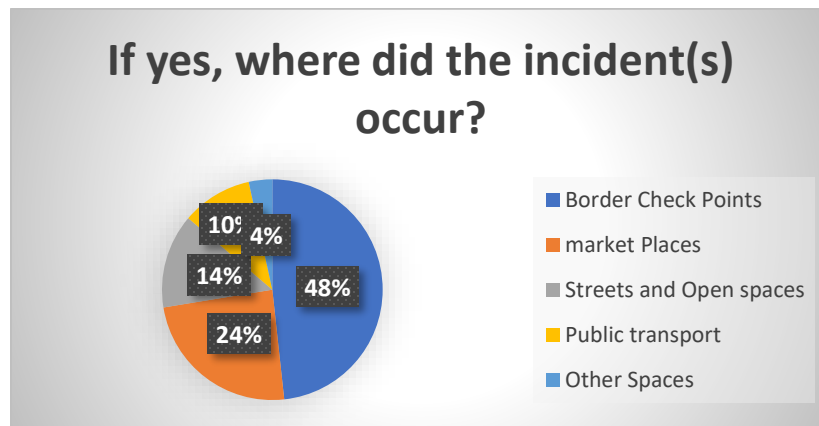


Figure 35: Pie chart showing the place where incident occurred

6.12 Factors make you feel unsafe in public spaces

The pie chart illustrates the factors that contribute to feelings of unsafety in public spaces, divided into four distinct categories. The largest segment, representing 25% of the concerns, is attributed to poor lighting and visibility, which significantly impacts safety perceptions, especially during nighttime. The second largest segment, at 22%, highlights issues related to lack of surveillance (CCTV/Police patrol) which can lead to discomfort and a sense of vulnerability. Another 18% of the concerns are linked to isolated area measures, such as the absence of law enforcement or surveillance. The same number of percentage reported for the lack of safe public transport options and harassment (verbal/physical). The smallest segment, at 1%, accounts for other unspecified factors that

contribute to feelings of unsafety. Overall, the chart emphasizes the importance of addressing these issues through improved lighting, better crowd management, and enhanced security measures to create safer public environments.

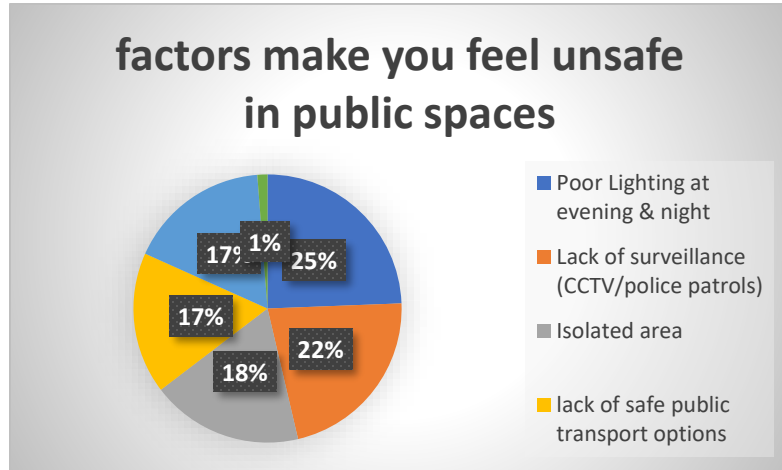


Figure 36: Pie chart showing different factors make you feel unsafe in public

6.13 Difficulties crossing the border

The bar chart illustrates the responses to a survey question about difficulties encountered while crossing the border. The data shows that 58.97% stated that they did not face any difficulties during their border crossings. On the other hand, 38.46% of respondents reported experiencing difficulties when crossing the border, indicating a significant challenge for a majority of individuals. This disparity highlights the varying experiences of people at the border, with a substantial portion encountering issues that could range from bureaucratic delays to infrastructure inadequacies. Addressing these difficulties is crucial to improving the overall efficiency and user experience at border crossings.

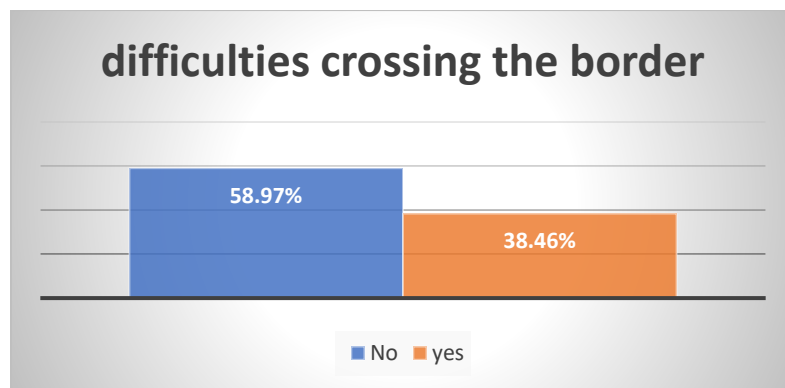


Figure 37: Bar chart difficulties crossing the border

If yes, what are the main issues you face while commuting?

The pie chart outlines the main issues faced by individuals while commuting, divided into four categories. The most significant issue, representing 40% of the responses, is overcrowding, which can lead to discomfort and safety concerns. Long delays at checkpoints account for 25% of the issues, highlighting inefficiencies and potential bottlenecks in the commuting process. Unmanaged road conditions make up 22% of the problems, indicating the need for better infrastructure maintenance. The presence of harassers constitutes 13% of the issues, pointing to safety and security concerns that need to be addressed to ensure a safer commuting environment for all, particularly for women. This distribution underscores the importance of addressing these challenges to improve the overall commuting experience.

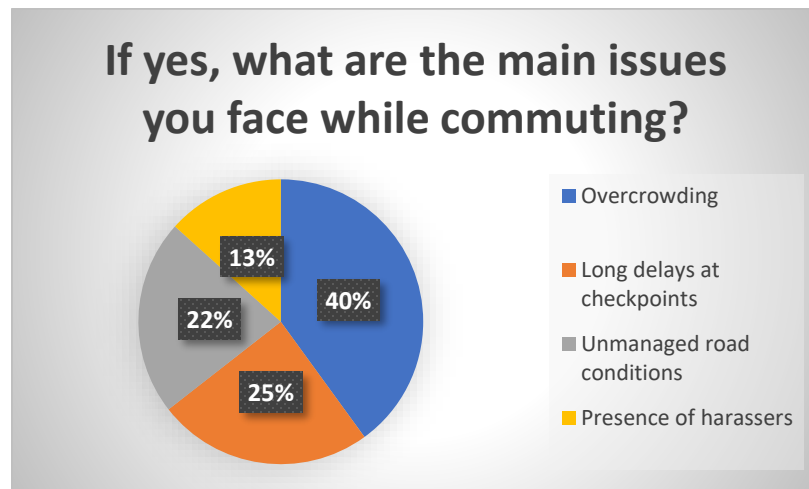


Figure 38: Pie chart showing the main issues face while commuting

6.14 Public toilets available near the border area

The bar chart presents survey responses regarding the availability of public toilets near the border area. The data shows that 89.74% of respondents indicated that public toilets are not available, highlighting a significant lack of essential sanitation facilities in the area. In contrast, only 5.13% of respondents reported the presence of public toilets. This stark disparity underscores a critical gap in infrastructure that affects the comfort and hygiene of individuals, particularly women, who often face greater challenges in accessing safe and clean sanitation facilities. Addressing this issue is vital for improving the overall experience and well-being of people in the border area.

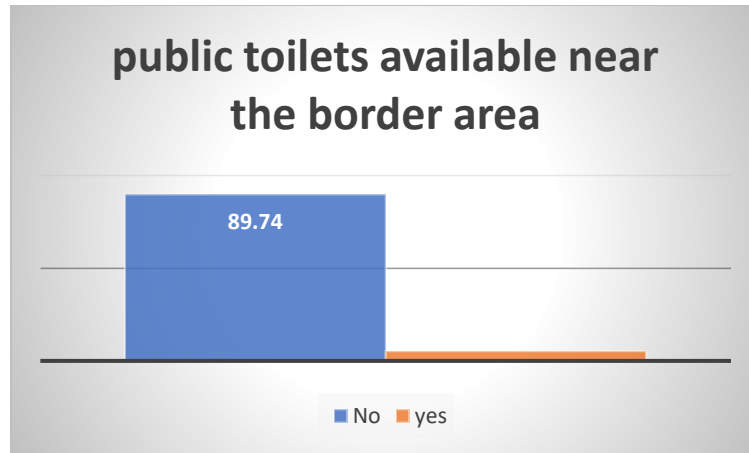


Figure 39: Bar chart showing availability of public toilet near border area

6.15 Findings from Stakeholder’s analysis

The stakeholder analysis questionnaire aimed to gather insights on women's safety in cross-border areas, with responses from five participants representing various organizations. Below is a summary of the key findings and responses to the open-ended questions. Before starting the Key Informant Interview, Stakeholders were identified in site, and then mapping of different stakeholders were conducted through transect walk. Key Informant Interview was conducted with organizations like KIN NEPAL, Nawa Abhiyan, Maiti Nepal, Paryatan Prahari, Nepal Police and other local authorities. The organizations in boarder areas plays a crucial role. The key roles of these organizations are:

6.15.1 Maiti Nepal

Established in 1993, Maiti Nepal focuses on combating human trafficking and supporting survivors. In the border areas, they operate interception units to prevent trafficking, conduct awareness campaigns, and collaborate with law enforcement for rescues. They also provide rehabilitation services, including shelter, counseling, and vocational training, to reintegrate survivors into society. Maiti Nepal actively engages in policy advocacy, contributing to the formulation and implementation of anti-trafficking laws and policies in Nepal.

6.15.2 Nawa Abhiyan

Nawa Abhiyan is a non-governmental organization working towards women's empowerment and safety. In the Nepal-India border areas, they focus on raising awareness about the risks of trafficking and gender-based violence. They conduct educational

programs, community workshops, and collaborate with local authorities to enhance women's safety. While specific details about their policy advocacy efforts are limited, their grassroots initiatives contribute to broader societal change.

6.15.3 KIN NEPAL

KIN Nepal is dedicated to protecting and promoting the rights of women and children. In the border regions, they implement programs aimed at preventing trafficking and providing support to vulnerable populations. Their activities include awareness campaigns, capacity building, and advocacy for policy reforms to strengthen women's safety and rights. KIN Nepal collaborates with governmental and non-governmental stakeholders to influence policy-making processes.

Collectively, these organizations play a crucial role in safeguarding women in the Nepal-India border areas through direct intervention, community engagement, and policy advocacy.

Table 5: Rescued Number of Women and Children last fiscal years

Fiscal year	Women	Children(Male)	Children (Female)	Total
076/077	104	17	117	238
077/078	53	0	31	84
078/079	89	2	70	161
079/080	186	8	103	297
080/081	255	23	181	459
				1239

Source: Nepal Police

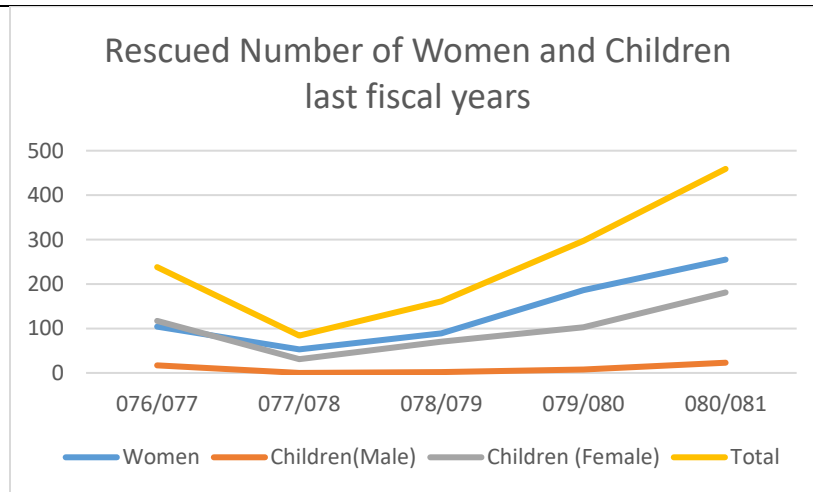


Figure 40: Graph showing Number of Women and Children last fiscal years

6.16 Findings from Service Providers

The questionnaires for service providers aimed to gather insights on their experiences and perspectives regarding women's safety in border areas. All four respondents were male, aged between 26-40, and primarily involved in businesses such as city driving, clothes importing, and restaurant/hotel ownership. They reported daily interactions with women customers or passengers. Awareness of safety concerns was universal, with common issues including theft or robbery (75%) and lack of proper sanitation facilities (75%). Some respondents mentioned harassment by local authorities and the involvement of Indian women in prostitution work. The biggest safety challenges identified were inadequate sanitation facilities (75%) and inappropriate behavior by male police officers towards women. Respondents suggested several measures to improve women's safety, such as providing facilities for lower-income women, ensuring fair customs duties, and increasing patrols to prevent women trafficking. They also emphasized the need for a safe environment for importing goods and reducing illegal payments to police. While some respondents reported incidents of robbery and theft, others had not witnessed any safety issues directly. Overall, the feedback highlighted the need for better infrastructure, stricter law enforcement, and support for women's livelihoods in border areas.

6.17 Findings from the Open-Ended questionnaires

Open-ended questionnaires aimed to gather insight of the facilities should be provided from the local authority for the safety of Women in border areas. Participant responded to given open-ended questions regarding their experiences and suggestions for improving safety, particularly for women in public spaces and border areas. The key facilities responded are:

6.17.1 Surveillance & Security

- CCTV cameras
- 24/7 Mahila Helpline (toll-free)
- Female police patrol
- Police on duty at checkpoints
- Separate male & female security checkpoints
- Surveillance and security personnel presence

6.17.2 Lighting & Infrastructure

- Well-lit public spaces, especially toilets and pedestrian areas
- Properly managed traffic flow and pedestrian pathways
- Sitting/resting spaces near the border area
- Designated footpaths for pedestrians
- Managed rickshaw and private vehicle parking

6.17.3 Public Toilets & Sanitation

- Female-friendly public washrooms
- Well-maintained and well-lit toilets
- Rest spots near public toilets

6.17.4 Checkpoints & Border Control

- Better-managed security screening at gates (especially Gate No. 1)
- Use of scanning machines to reduce manual checking
- Loosening security checks for regular shoppers
- Dedicated spaces for women to facilitate border crossings
- Stricter checks on drug abusers instead of ordinary commuters

6.18 Experience of the participant's in Border areas

Many participants shared experiences where they felt unsafe in public spaces around the Biratnagar-Jogbani area, highlighting recurring themes of fear and insecurity. Overcrowding was a major concern, as it created an environment where harassment, pickpocketing, and unwanted physical contact became commonplace. Several participants mentioned that criminals and harassers took advantage of the chaotic and poorly managed public spaces, making it easier for them to target individuals, especially women. A significant issue raised was the presence of drug abusers who often exhibited abnormal behavior, such as aggressively asking for phones or cash and engaging in eve-teasing, particularly in public transport. Additionally, poor urban design and inadequate infrastructure contributed to safety concerns, with a lack of proper lighting and sanitation further exacerbating the situation. Many women also reported instances of being teased by groups of men, which added to their discomfort and sense of vulnerability. Another

troubling concern was the behavior of Indian police officers at the border, who were described as staring at women in a way that made them feel uneasy, as if they had never seen girls before. These factors collectively created an environment where women frequently felt unsafe while navigating public spaces in the region.

6.19 Behavior of Armed Force towards Women’s safety

The behavior of the Armed Police Force (APF) towards women's safety in the Biratnagar-Jogbani area is perceived as inconsistent, with many participants reporting experiences of mistreatment, aggression, and a general lack of sensitivity. There is a widespread neglect of gender-sensitive safety measures, making women feel unsupported and vulnerable. A key issue highlighted is the lack of gender-sensitive policing, where male officers are responsible for conducting security checks on female travelers. This practice makes women uncomfortable and raises concerns about privacy and dignity. As a result, there is a strong demand for female officers to handle security screenings, especially at border crossings, to ensure a more respectful and secure experience for women. Additionally, participants noted that police officers often prioritize economic interests over public safety. Many reported that officers appeared more focused on taxing and seizing goods rather than protecting women from harassment and violence. This misplaced priority further undermines women's confidence in law enforcement and reinforces the perception that their safety is not a priority.

6.20 Suggestions and solutions from the participant's

Table 6: Table Showing Summary of Suggestions and solutions from the qualitative questionnaires

Urban & Traffic management solutions	Security & law Enforcement Improvement	Public Facilities & Safety Infrastructures	Technology-Based Solutions
Better Traffic flow management to reduce congestion at Gate No. 1	Increased presence of female police officers to handle women's security and border check	Construction of more public toilets	Scanning of travelers' photo IDs at border crossings
Dedicated Pedestrian Footpaths for safer movements	Separate checkpoints for men and female	Well-lit streets and public spaces	Smart bus systems and transport coordination

Designated parking spaces for rickshaws, public buses, private vehicles	more security personnel & CCTV surveillance	Resting spaces and shelters for women travelers	A mobile app or social media platform where people can report safety issues in real time.
Improved road conditions	Strict patrolling and screening tests	Sanitation improvements	
Better organization of transport stops and movement of people	Semi-private booths for women during checking and questioning		

CHAPTER 7: CONCLUSION

The study revealed significant gaps in infrastructure, safety measures, and policy implementation affecting women's mobility at the Indo-Nepal border. Findings indicate that poor lighting, lack of surveillance, and unsafe public transport contribute to the perception of insecurity among women. Overcrowding and harassment were reported as key concerns in commuting, with 38.46% of respondents experiencing difficulties crossing the border. Sanitation facilities, with 89.74% of respondents stating that public toilets were unavailable near the border. Stakeholder analysis further revealed that organizations like Maiti Nepal, Nawa Abhiyan, and KIN Nepal play a crucial role in advocating for women's safety through interventions such as awareness campaigns and rescue operations. However, there remains a gap in coordination between law enforcement agencies and local authorities in addressing gender-sensitive urban planning needs. Ensuring women's safety in cross-border urban spaces requires design intervention, infrastructure improvements, and policy reforms. The study underscores the interventions such as increased surveillance, improved public transportation facilities, and well-lit pedestrian pathways. By fostering cross-border collaboration and gender-inclusive urban design, Biratnagar-Jogbani can serve as a model for safe, accessible, and equitable urban spaces for women.

In conclusion, this research highlights the need to redesign plan and policy with a gender-inclusive perspective, prioritizing safety, accessibility and equity for women. The study advocates for planning interventions that enhance women's movement with safety particularly in cross-border area like Indo-Nepal region. The case of Biratnagar-Jogbani serves as a focal point for understanding the complexities of cross-border mobility, emphasizing the necessity of policy reforms, infrastructural improvements to foster a safer, more inclusive urban spaces.

CHAPTER 8: RECOMMENDATIONS

To address the gaps identified through the findings of the survey on women's safety in cross-border movement areas, the recommendations are centered on three key areas: National level policy recommendation, Enhancing Security enforcement management and Designing Infrastructures. First, it is essential to focus on National level policy recommendation on the policy front, it is recommended to enforce regulations that ensure equal access to public resources, promote safety measures in cross-border movement area, and address challenge related to women's safety. The implementation of these recommendations requires strong collaboration between National policymakers, organizations and local bodies to ensure a comprehensive approach to improving women's safety in these areas. On the other hand designing public spaces and transportation systems to enhance safety and accessibility for women, such as installing better lighting, creating designated safe zones, and improving public transport services. Additionally, the management of these spaces should be strengthened with regular maintenance, and increased surveillance.

8.1 National Level Policy Recommendation

Integrated Border Security technology: Implement biometric verification and RFID-enabled smart cards for pre-verified individuals, reducing manual security checks.

Digital Identity & Border Management System: Introduce a secure, government-issued digital ID for Nepali and Indian citizens frequently crossing the border, similar to the US-Canada NEXUS program.

GPS-Tracked Public Transport: Require all public transport operating at border crossings to be GPS-monitored, ensuring safe transit.

Bilateral Security Cooperation: Data sharing and law Enforcement coordination establish real-time intelligence sharing between Indian and Nepali Security agencies for safety and security of Women.

8.2 Policies Enhancing Women's Safety

Gender-Inclusive Recruitment and Training: Reserving 20% of APF (Armed Police Force) recruitment for women ensures better representation and a more balanced security

force. Establishing gender cells within the force institutionalizes mechanisms to address women's.

Deployment of Female officers in Border Operations: Having female APF personnel stationed at check-posts and inspection points is vital for conducting gender-sensitive screenings and dealing with women-specific cases. Female officers can interact more effectively with women, ensuring that their dignity and privacy are respected during border checks, especially in cases of body searches or interrogations.

Community Engagement and Awareness Programs: Through the Family Women's Association, APF can actively conduct awareness campaigns, safety training, and women's health sessions in border communities. This bridges trust between security forces and the public, helps women identify safe practices.

Policy Revisions for Gender Sensitivity: Implementing and updating legal frameworks to promote gender-sensitive protocols enhances the accountability of the APF. In border zones, this helps establish a transparent and trustworthy environment, where women travelers, migrant workers, or vendors feel protected and are less vulnerable to exploitation.

8.3 Policy enhancing security enforcement management

Strengthen Collaborative Security measures: A key recommendation for enhancing safety in cross-border movement areas providing dedicated female security personnel like the Armed Police Force (APF) and Nepal Police at strategic locations, including border checkpoints and key transit areas. The presence of female officers should be strengthened and organized more systematically to ensure a sense of security especially for females as well as other groups.

Enhance integrated Training for Security Personnel: Establish integrated training programs for the Armed Police Force (APF), Nepal Police, and Sashastra Seema Bal (SSB) focused on gender-sensitive safety protocols. These programs should emphasize how to interact respectfully and effectively with commuters, particularly women engaged in informal employment, as well as other vulnerable groups.

Upgrade Infrastructure and Surveillance: Investing in modern surveillance technologies, such as CCTV cameras, drones, and motion sensors, can significantly

improve security monitoring in cross-border areas. These technologies should be integrated with existing security infrastructure to ensure comprehensive coverage of high-risk zones.

Develop Border Checkpoints with Adequate Facilities: Upgrading border checkpoints to include proper facilities for security personnel, transportation, and safe waiting areas for travelers can streamline operations and reduce congestion, ensuring smoother and safer cross-border movement.

8.4 Designing Infrastructures

8.4.1 Land Management for Security Infrastructure

It is one of the key challenges in implementing infrastructure in security zones, particularly in border areas like Biratnagar/Jogbani. Although many security related infrastructures like proposed area for NGOs, INGOs, Check point, Health desk, etc. are planned in publicly accessible open spaces, these lands may fall under various ownership types like Government owned, municipal, community land or even privately owned. To ensure real-world implementation, a clear land management strategy must be in place. This can be addressed through following approaches:

1. Identification and mapping of land ownership
2. Prioritization of Government and Public land
3. Inter-Agency Coordination and MoUs
4. Temporary Land Acquisition for urgent needs

Zoning: The proposed zoning is based on the movement patterns of people in the area. The Koshi Highway serves as the primary route for individuals traveling to India, while the Rani Path also facilitates significant flow, particularly from the Mills area. Due to the high volume of movement along these corridors, the Transit Zone functions as the initial point of entry for cross-border travelers. Similarly, Zone 2, designated as the Buffer Zone, serves as a transitional space between the Transit Zone and the

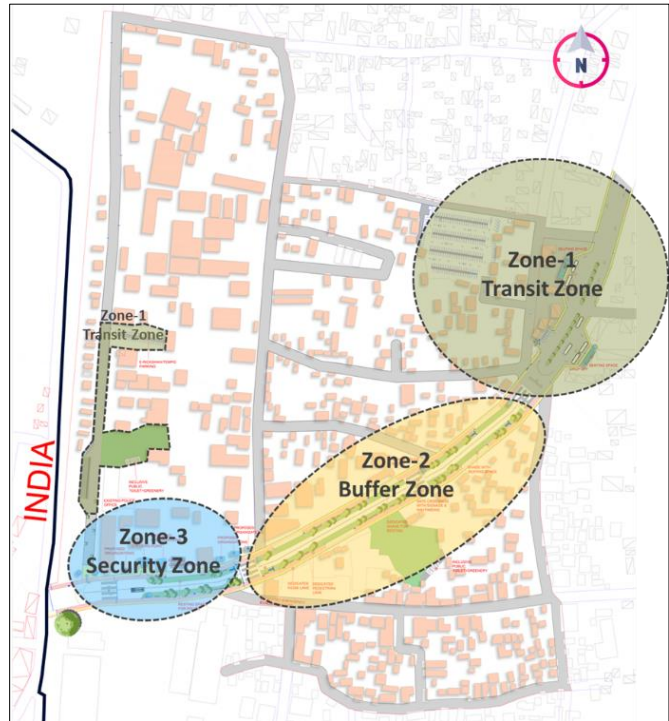


Figure 41: Proposed Zoning

Security Zone. It accommodates recreational and supportive amenities such as safe seating areas, natural surveillance features, gender-inclusive sanitation facilities, and dedicated pedestrian pathways, enhancing both comfort and safety. Zone 3, the Security Zone, is the final checkpoint where individuals traveling along the Koshi Highway and Rani Path converge for security screening and verification procedures. Upon completion of these checks, travelers are permitted to cross into India. The same process is followed for individuals entering Nepal from India, ensuring secure and regulated movement in both directions.

Table 7: Street Design Guidelines for designing of Women’s Safety

Design Component	Program Formulation	Dimension Standards
Roadway for Public Vehicles	Two-way vehicular lane with dedicated bus stops and E-Rickshaw drop-off zones	6.5m (3.25m per lane) + 2.5m bus bay + 2m E-Rickshaw Stop

Pedestrian Pathways	Wide walkways with accessible paving, shaded seating, and safety features	3m minimum per side
Semi-Private Women-Friendly Zones	Reserved areas for women with seating, lighting, and security booths	4m wide
Vendor Spaces (Kiosk Lane)	Movable kiosks and designated vending stalls integrated into walkways	2m wide
Green Buffer & Vegetation	Tree-lined streets, rain gardens, and shaded pedestrian zones	Trees every 6-8m, 1.5m buffer
Seating Spaces (Street Furniture)	Public benches, shaded seating, and gathering spaces for social use	Every 50m along walkways
Sanitation & Safety Facilities	Well-lit public restrooms, security cameras, and help booths	Every 500m
Public Transport Stops	Bus stops with shaded waiting areas and digital wayfinding	Integrated with walkways
Wayfinding & Signage	Informational boards and digital transport displays	At major intersections
Drinking Water Vending Machine	Installation of automated water dispensing units	At major Intersections depending upon foot traffic density
Female Police Booth	Establishment of Women-staffed booths to offer immediate assistance	At major Intersections

8.4.2 Transit Zone: Enhancing Safety and accessibility for Women

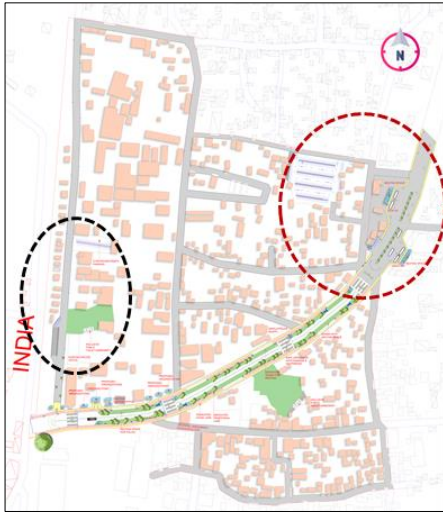


Figure 42: Key Map

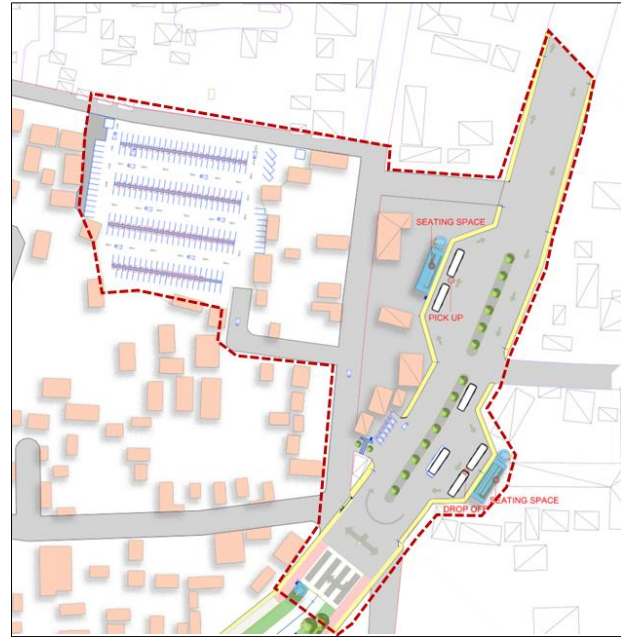


Figure 44: Proposed Transit Zone 1



Figure 43: Designated Transit Zone 2



Figure 45: 3d of proposed Transit zone 1



Figure 46: 3d of proposed Transit zone 2

The Indo-Nepal border crossing at Biratnagar-Jogbani serves a critical transit point for daily commuters, travelers, traders, and people of nearby area. However, the lack of organized parking and pedestrian infrastructure has led to severe congestion, unregulated

movement of vehicles, and increased safety concerns particularly for women. To address these issues, a designated transit zone is proposed with integrated structured parking, pedestrian pathways, Mahila Police Booth for security measures, proper signage, essential infrastructures like street furniture for seating, drinking water vending machines, and other amenities to ensure a safe, accessible, and women-friendly transit environment. Key components of the designated transit zone:

A. Organized Parking Infrastructures

- **E-Rickshaw and Two –Wheeler Parking:** Dedicated zones to streamline vehicle movement and prevent roadside congestion.
- **Drop-off and Pick-up points:** Well-marked areas to facilitate smooth transitions between different modes of transport.

B. Pedestrian-Friendly Infrastructure for Women’s safety

- **Dedicated Pedestrian Pathways:** Clearly marked, shaded walkways to ensure safe movement, separate from vehicular traffic.
- **Safe Crossings with proper Signage:** Well-lit, designated crossing points to protect pedestrians.

C. Women-Centric Safety Measures

- **Mahila Police Booth:** A dedicated women’s police unit to provide security, assist travelers, and respond to emergencies.
- **Waiting areas and seating spaces:** Comfortable, well-monitored zones for women waiting for transport.
- **Drinking Water vending machines:** Access to clean drinking water for travelers, reducing dependence on roadside vendors.

Impact on Safety and Mobility

- Reduction in Congestion by regulating vehicle parking and pedestrian movement
- Improved women’s security through designated safety zones and police presence
- Enhanced accessibility for all

Traffic Management: The Creation of two Separate routes- the Rani Pedestrian route and the ICP Cargo route has significantly helped in traffic congestion. For the improvement of

traffic management upgraded pedestrian infrastructures, dedicated kiosk lane, installation of signage and digital information board on routes for better navigation. Traffic management in the Biratnagar–Jogbani cross-border area is handled through the collaborative efforts of multiple departments and authorities from both Nepal and India. On the Nepalese side, traffic regulation falls primarily under the jurisdiction of the Metropolitan Traffic Police Office, Biratnagar, which operates under the Nepal Police and the Ministry of Home Affairs. This office is responsible for managing vehicular movement, ensuring road safety, and coordinating with other local authorities to maintain smooth traffic flow,

8.4.3 Buffer Zone (Recreational Area)

Kiosk Pathway: It is designed to establish formal vending spaces, preventing encroachments by vendors and commercial shops onto pedestrian pathways. The primary objective of kiosk pathways is to alleviate congestion within dedicated pedestrian zones while also ensuring clear sightlines and enhanced security for women. Strategically positioned, these pathways are equipped with adequate lighting, CCTV surveillance, and natural surveillance, significantly improving safety and accessibility.

Pedestrian pathway: The pedestrian lanes are clearly demarcated and strategically designed to remain completely separate from vehicular traffic, ensuring safe and unobstructed movement for pedestrians. Additionally, shaded walkways with designated resting areas have been incorporated to enhance comfort and convenience, particularly for women travelers and traders, allowing them to navigate the space with ease and security.

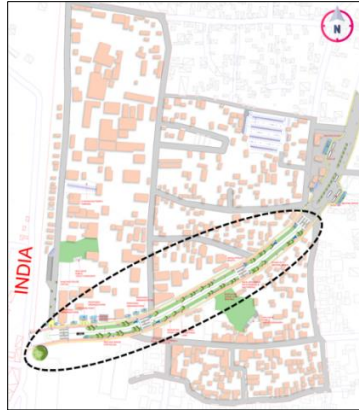


Figure 47: key Map

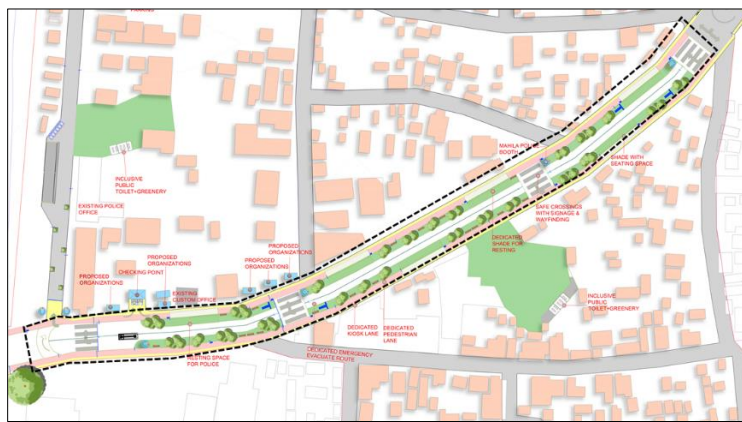


Figure 48: Blow up of dedicated pathways

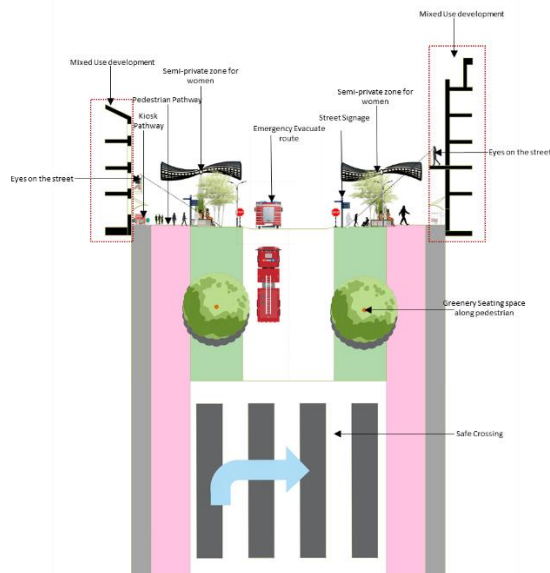


Figure 49: Section of the dedicated pathways

Emergency evacuate route (quick and safe exits): Clearly defined emergency escape routes have been strategically planned to facilitate swift and safe evacuation during stampedes, conflicts, or unforeseen disasters. These routes are situated near Mahila Police Booths and security checkpoints, ensuring immediate assistance when needed. Additionally, the pathways are wide and free from obstructions, providing unhindered access to first-aid kiosks and emergency helplines, further enhancing safety and emergency preparedness.

Semi-private Zones: Safe spaces near transit hubs and waiting areas, including Mahila Police Booths, are designed to offer a secure and supportive environment for women, such as traders, travelers, and professionals. These areas are equipped with essential amenities like seating, drinking water vending machines, and emergency contact points. The focus is on ensuring privacy, safety, and peace of mind, creating a welcoming atmosphere where women can feel protected and have access to necessary resources while navigating public spaces.

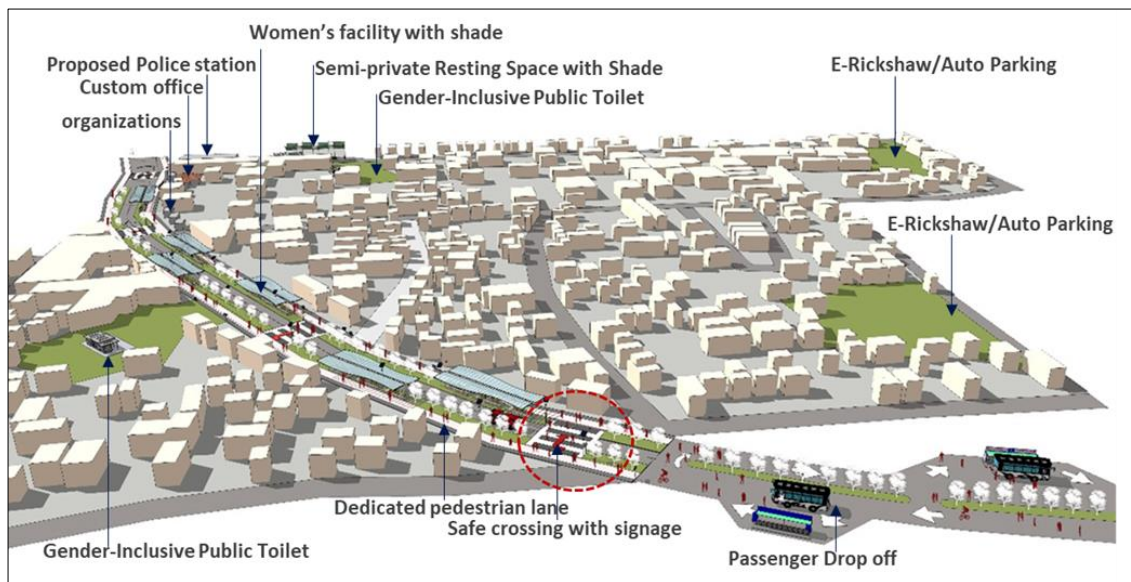


Figure 50: 3d of Dedicated pathways

Gender-Inclusive Sanitation Facilities:

Gender-inclusive sanitation facilities are designed to accommodate the needs of all individuals, providing accessible and safe spaces for everyone, regardless of gender. These facilities include dedicated breastfeeding areas to support nursing mothers, ensuring they

have a private and comfortable space. To maintain hygiene and cleanliness, a pay-for-use system is implemented, ensuring the facilities are regularly maintained and sanitized.



Figure 51: 3d of proposed Gender-Inclusive Toilet facility

8.4.4 Security Zone

Dedicated Custom Department office: The dedicated Customs Office plays a vital role in regulating cross-border trade by ensuring the efficient collection of customs duties, excise taxes, and Value Added Tax (VAT) on goods transported between Nepal and India. It upholds sanitary and phytosanitary (SPS) measures to prevent the entry of harmful agricultural products and chemicals, safeguarding public health and environmental safety.

Organizations: Scattered organizations at the Check points and terminal zone implement safety measures to protect women during cross-border movement. They provide legal aid, assist with travel documentation, and address issues like trafficking and harassment, ensuring a secure and supportive environment for female travelers, traders, and workers.

Health desks: Dedicated health desks provide essential medical assistance, offering immediate healthcare support for travelers, particularly women, children, and elderly individuals. These desks ensure access to first aid, emergency medical services, and health screenings, addressing concerns like fatigue, dehydration, and sudden illness during transit.

Separate male and female check desk: Gender-segregated check-in and security screening desks enhance the comfort and privacy of women during border procedures. Female security personnel assist in conducting checks in a respectful and secure manner,

reducing the risk of harassment or discomfort. This arrangement ensures a more dignified and stress-free experience for women crossing the border.

X-ray security: It helps to detect prohibited or illegal items such as weapons, narcotics, and contraband without the need for manual inspection, reducing delays and ensuring a smoother transit process. These machines contribute to overall safety by preventing smuggling and unauthorized goods from crossing borders, ensuring a secure environment for all travelers.

Waiting areas: Well-equipped waiting areas provide a safe and comfortable space for travelers, especially women, who may need to rest while waiting for transport or completing border formalities. These spaces are furnished with adequate seating, drinking water facilities, and ensuring convenience and security.

Wayfinding and barrier: Clear wayfinding signage and well-placed physical barriers help guide travelers efficiently through the checkpoint process while maintaining security. Properly marked routes minimize confusion, helping women navigate the border area safely without the fear of getting lost or being misled.

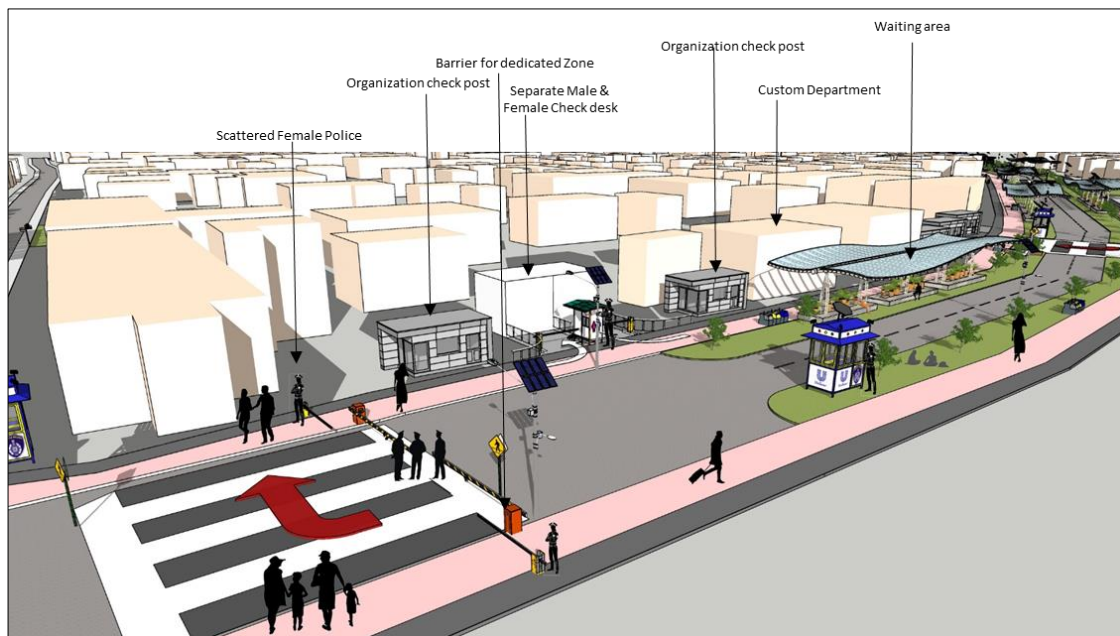


Figure 52: Check point and Terminal Zone

8.4.5 Other Infrastructures

- Solid Waste Management at every 50-100 m

- Street Furniture 50-100m
- Drinking Water Vending Machines 50-100m
- Wayfinding, signage and barriers in different zones
- Traffic management

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ANNEX

ANNEX- I:- Questionnaires For Survey

Section A: Demographics

Identification No.

Date of Interview

Name of Participant's

Gender

Female

Male

Other

Age group

<15

15-25

26-40

41-60

60+

Occupation

Student

Working Professional

Homemaker

Other (please specify)

Level of Education

Not Educated

Primary

Secondary

Higher Secondary

Undergraduate or above

Section B: Movement pattern

- 1. How frequently do you use public transportation (buses, E-rickshaws, Tempo etc..)?**

Daily

Weekly

Monthly

Rarely

2. What mode of transportation do you mostly rely on?

Bus

Rickshaw/Auto

Bicycle/Walking

Private Vehicles

On foot

Other (please specify)

3. Where do you live?

4. Which Time do you mostly prefer to visit this place?

5. What is your primary destination after crossing the border?

Market or shopping

Foreign Employment

Informal Employment (carrier)

Others (Please specify)

6. Have you ever experienced or witnessed harassment in public areas? (Yes/No)

Yes

No

If yes, then by whom have you faced this incident?

Nepal Police/Local authority

Custom office department

Indian Police

Others (please specify)

If yes, where did the incident(s) occur? (Check all that apply)

Public transport

Market places

Border check points

Streets and Open spaces

Other:

Specify the place of incidents

7. What factors make you feel unsafe in public spaces? (select all that apply)

Poor Lighting at evening & night

Lack of surveillance (CCTV/Police patrols)

Isolated areas

Harassment (verbal/physical)

Lack of safe public transport options

Others

8. Do you face difficulties crossing the border? (Yes/No)

Yes

No

If yes, what are the main issues you face while commuting?

Unmanaged road conditions

Overcrowding

Presence of Harassers

Long delays at checkpoints

Section C: Sanitation Facilities

9. Are there public toilets available near the border area? (Yes/No)

Yes

No

If Yes, how far is the public toilet?

<100m

100-500m

> 500m

10. Do you feel safe using the public toilet in this area?

Very safe

Safe

Neutral

Unsafe

Very Unsafe

11. Are the toilets well-lit, especially during nighttime?

Yes

No

Section D: Qualitative Questionnaires (In depth Questions)

12. What facilities should be provided from Local authority for the safety of Women in border areas?

13. Can you share an experience where you felt unsafe in a public space at Biratnagar/Jogbani area?

14. What are the behaviors of Armed Police Force towards Women's Safety?

15. Point out suggestions and solutions from the participant'

ANNEX- II:- Questionnaires For Stakeholder's

Stakeholder's Personal Information

Identification No.

Date of Interview

Name of Participant's

Gender

Age group

Occupation

Level of Education

Section A: Background Information

1. Which organization/department do you represent?

Section B: Existing Plans and Policies

2. Are there specific policies or programs in place to ensure women's safety in the cross-border area? (Yes/No)
3. If yes. Which of the following areas do these policies focus on? (Select all that apply)
4. How effective do you think the existing policies are in addressing women's safety in the border area?

Section C: Suggestions and Recommendations

5. What do you think is the biggest challenges in ensuring women's safety at the border area?
6. Do you have any specific recommendations for making the border area more women-friendly?

**ANNEX- III:- Questionnaires For Service
Providers**

Section A: Demographics

Identification No.

Date of Interview

Name of Participant's

Gender

Age group

Occupation

Level of Education

Section A: Background Information

What types of business/services do you provide?

How long have you been operating in the border area?

How frequently do you interact with women customers/passengers?

Section B: Awareness of Women's Safety Issues

Are you aware of safety concerns faced by women in this border area? (Yes/No)

What are the biggest safety challenges women face in this area? (select all that apply) If yes, which of the following are common issues? (select all that apply)

What additional measures do you think could improve women's safety in the border areas? (select all that apply)

What specific recommendations do you have to make the border area safer for women?

Have you witnessed or experienced any incidents related to women's safety? If yes, please share your experience

ANNEX- IV:- Key Informant Interviews

KII 1

Name: Jiban Chaudhary

Position: Paryatan Prahari

Can you tell the movement of people in a daily basis?

He stated that to and fro movement of people in a day is around 1-1.5 lakh. During the festival season, wedding season 1.5 lakh people visit border. He works as a Paryatan Prahari for counseling of Nepali devotees who go India in an informal way. The post is actively running since 5 months. After entering India there is high chance of getting scammed by International Scammer. He stated that due to the weak economic background many people are forced to work here on daily basis. He mentioned that the people around here are all different you can get different answers of the same questions. There are many polices working in this crowd that we cannot recognize them because they are hiding their identity.

Can you tell about the safety of females in border areas?

From his perspective, everybody are safe inside Nepal but it in India side border we cannot say about it because in India there are many scammers who can manipulate girls for materialistic and then they can take you other parts of India. Despite of Nepalese people go India for job opportunity and shopping, Indian people also come to Nepal, as Biratnagar is a hub for good health facilities for eye operations and medical treatment. Thousands of Indian come here for the eye treatment.

Project under construction of Fly over bridge

He mentioned that the fly over bridge was inaugurated by Chief Minister of Koshi Province Mr. Hitmat Kumar Karki. The project cost is of 1 crore. Construction was started during the Covid-19 but still it is not completed yet.

During the KII one incident happened, it was boy from India and a Girl from Nepal they met on social media and after some time boy convinced a girl to meet in Jogbani border. He also gifted her a phone and Clothes. An Organization called Nawa Abhiyan, organization has doubt of them while crossing the border and after that boy was

encountered to the Nepal Police. He added that these things happen daily, we are habituated here. It is common here.

Suggestions and recommendations from Chaudhary

This is a border the happening issues are never going to be solved ever. He also worked in Kakarvitta Border, he added the example of that border. Jogbani is quite open and loose border it should be like Kakarvitta. To demolish such issues the border should be not open. He also added that Nepal is dependent country so this is no possible at this time.

KII 2

Name: Manu Rana

Organization name: KIN NEPAL (Aaphanta Nepal)

She is working in organization since 13 years. KIN Nepal is an organization established in 2008 AD. It is established to provide shelter, work against human trafficking, domestic violence across border areas like Jogbani and other part. According to Mrs. Rana Jogbani is a place where many girls are working in daily basis so that they can sustain their life. Most of the carriers are women starting age from 15 years to 70 years old lady. She stated that there is Jana Bikash School operating in morning shift only so that the students can do daily carrying after school. Women range between 50-100 women (including girls to old lady) are daily wage employment. Local Women mostly from the Muslim Tole, they are engaged in carrying work.

She also mentioned that school name is Jana Bikash School is run in morning shift only and few girls from that school involved in Carrying work after school. There are four organizations like us who is working for the safety of girls. Organization also works for female who are victim of domestic violence, rape victim. She also mentioned that the rape survivors whose family do not accept then they provide shelter and make them independent by giving different trainings and therapy.

In a Key Informant Interview with Manu Rana from KIN Nepal, she emphasized that organizations like theirs are highly aware and actively engaged in promoting the safety and security of women. However, she also acknowledged that they lack the authority to

implement direct actions, and their role is to collect data and provide information to the District Police Office of Morang. Regarding the Biratnagar Metropolitan City, she noted that while there is awareness of women's safety issues, the matter is not treated as a priority project, and thus, receives limited focus and resources.

Are there specific policies or programs in place to ensure women's safety in the cross-border area?

Yes

If yes. Which of the following areas do these policies focus on?

The responses indicate that there are specific policies or programs in place to ensure women's safety in the cross-border area. These policies primarily focus on three key areas: women's safety in border areas, prevention of harassment (both physical and verbal), and other related interventions. Measures addressing women's safety in border areas include surveillance, security personnel deployment, and improved infrastructure to enhance safety. Policies aimed at preventing harassment focus on legal protections, awareness campaigns, and stricter enforcement against offenders. Additionally, respondents highlighted other areas, such as community engagement, support services, and cross-border cooperation between Nepal and India to ensure a safer environment for women traveling across the border. These efforts collectively aim to create a more secure and gender-inclusive cross-border space.

Suggestions and recommendations

She emphasized the need for a victim-centric approach to women's safety in cross-border areas. Respondents highlighted that the government should take primary responsibility for addressing these issues rather than relying solely on NGOs. Recommendations focused on providing direct support to victims, including counseling services, improved sanitation facilities, designated safe spaces, and enhanced safety measures for women. Strengthening government-led initiatives and ensuring long-term policy implementation were seen as crucial steps in creating a more secure and supportive environment for women in border regions.

What do you think is the biggest challenge in ensuring women's safety at the border area?

Ensuring women's safety at border areas like Biratnagar/Jogbani presents multifaceted challenges, with family issues, economic constraints, additionally, inadequate infrastructure, such as poor lighting, unsafe transportation, and lack of gender-sensitive facilities, creates an environment where women feel unsafe.

KII 3

Name: Bishnu Adhikari

Organization name: Nawa Abhiyan

The interview was conducted with Bishnu Adhikari, a representative from the Nawa Abhiyan Nepal organization. The discussion focused on women's safety in the cross-border area, particularly at the Indo-Nepal border.

Key points:

Existing policies and programs

The participant confirmed that there are specific policies or programs in place to ensure women's safety in the cross-border area. These policies focus on areas such as women's safety in border areas, informal employment (carriers), sanitation facilities for women, and prevention of harassment (physical/verbal).

Effectiveness of Policies

The participant expressed a neutral stance on the effectiveness of existing policies in addressing women's safety, suggesting that while efforts are being made, there is room for improvement.

Challenges in ensuring women's safety

The biggest challenge identified was girls crossing the border without informing their parents, which highlights issues related to family dynamics, lack of communication, and potential risks associated with unsupervised movement.

Recommendations

The participant emphasized the importance of consent as a key factor in ensuring women's safety, suggesting that awareness and education on consent should be prioritized to make the border area more women-friendly.

The interview highlights the need for more effective implementation of existing policies and the importance of addressing family-related challenges and consent issues to improve women's safety in cross-border areas. The insights from this interview can inform future strategies for creating a safer and more inclusive environment for women at the Indo-Nepal border.

KII 4

Name: Tara Dahal

Organization name: Nawa Abhiyan

She confirmed the existence of policies aimed at ensuring women's safety in the cross-border area, specifically addressing women's security, sanitation facilities, and the prevention of physical and verbal harassment. However, she deemed these policies ineffective. She emphasized the need for government agencies to be more responsible, legal processes to be strengthened and properly implemented, strict action against offenders, and a crackdown on corruption. The biggest challenge, according to her, is the lack of strict checkpoints at border crossings, particularly concerning the trafficking of girls. She recommended the establishment of awareness points by relevant organizations, better coordination among law enforcement agencies, and stricter border security to make the area more women-friendly.

KII 5

Name: Sumitra Roka

Organization name: Maiti Nepal

The discussion focused on women's safety in the cross-border area. The participant confirmed that specific policies exist to address this issue, particularly focusing on border

safety and conducting inquiries with women facing risks. She rated these policies as very effective. However, she highlighted significant challenges, including parental consent for women to engage in illegal work in India and the manipulation of young girls. Additionally, she noted trends such as fashion and financial motives as influencing factors. To enhance women's safety in the border area, she recommended uniting women and girls, eliminating corruption, and strictly enforcing government regulations.

ANNEX- V:- Photographs of Study area



Photographs 1: unmanaged Road side parking



Photographs 2: No dedicated pedestrian footpath



Photographs 3: Footpath is used as parking



Photographs 4: Bus Stop



Photographs 5: No dedicated Footpath and Signage wayfinding

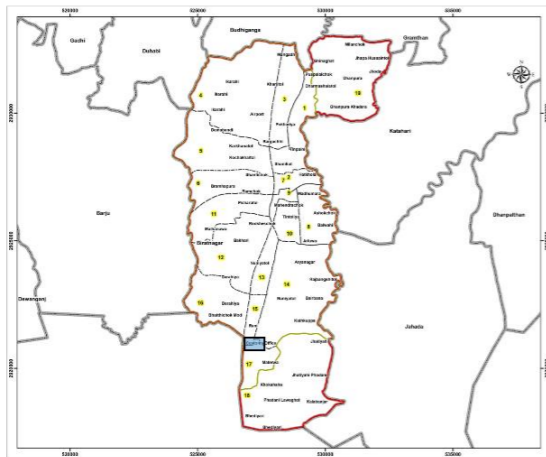
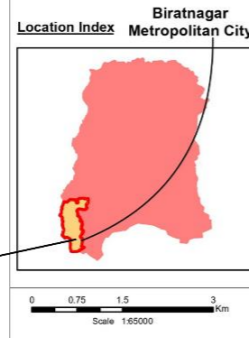


Photographs 6: Checking at Open space

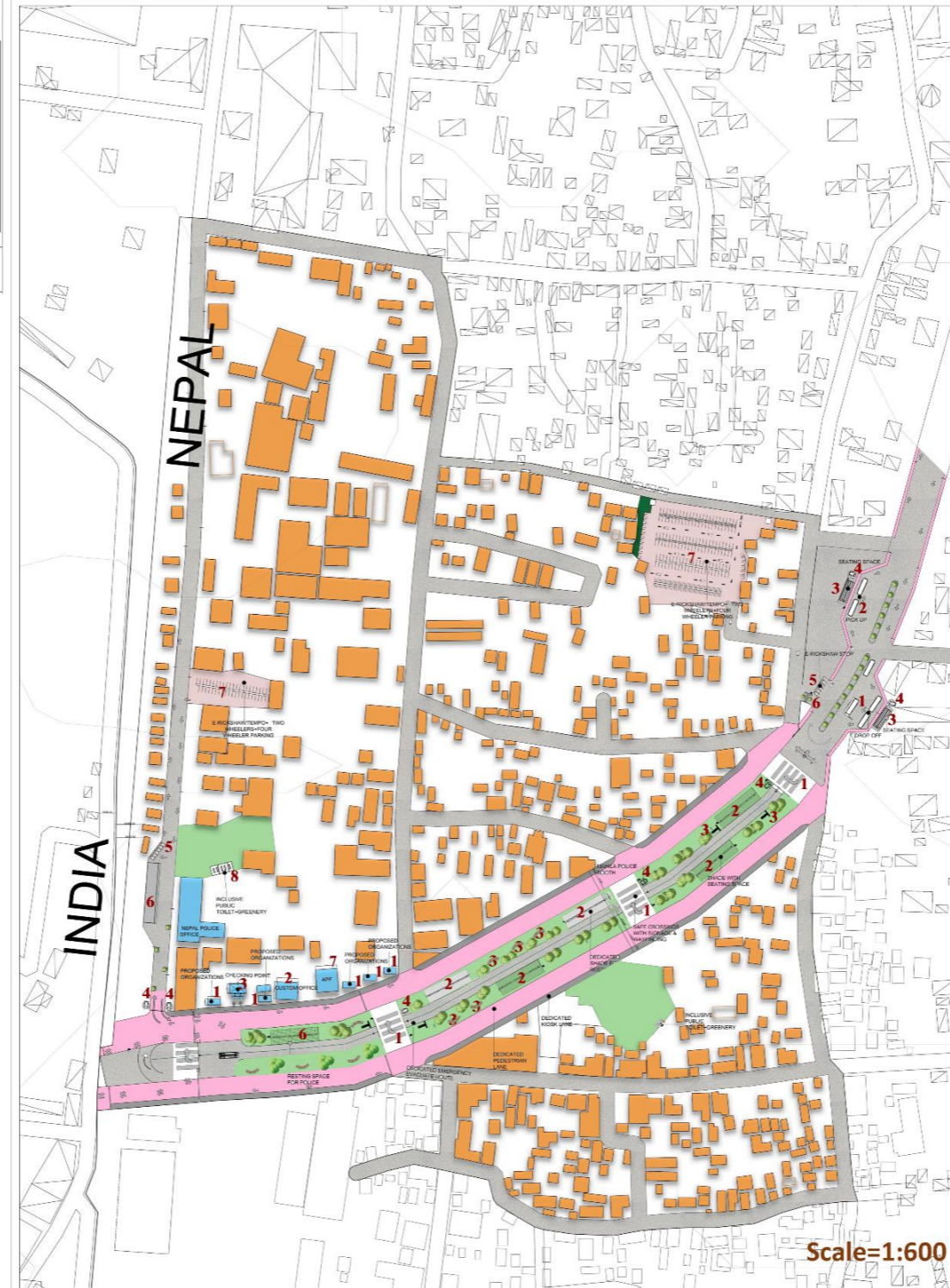
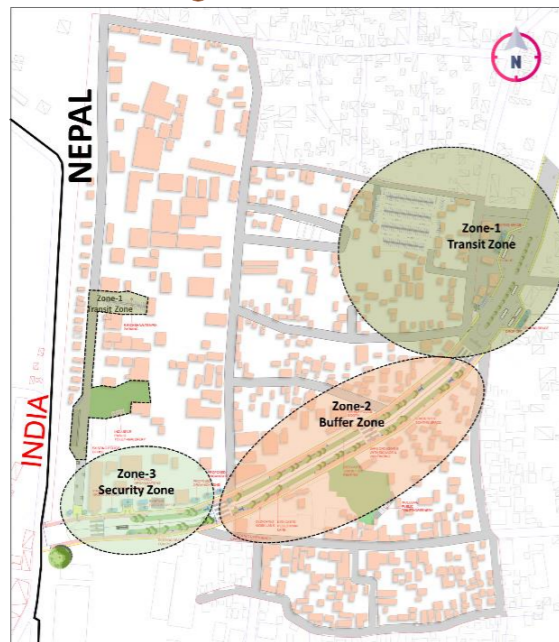
ANNEX- VI:- Drawings and 3d

Designing Gender-Inclusive Urban Space: A vision for Women's safety cross-country movement at Indo-Nepal border case of Biratnagar/Jogbani

The Site Context



Zoning



LEGEND

ZONE 1: TRANSIT ZONE

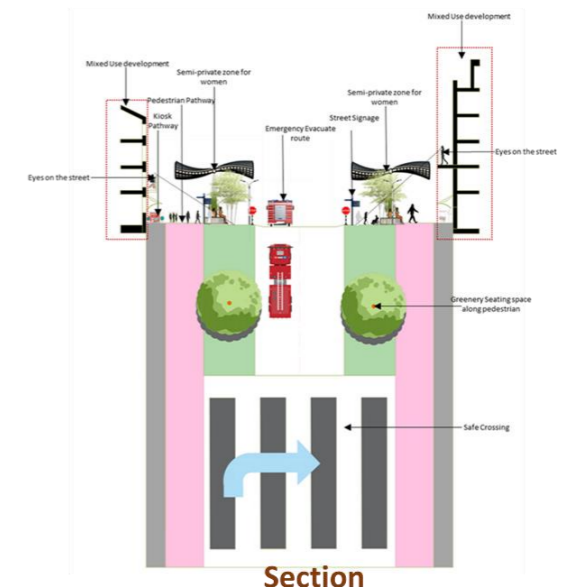
1. Drop Off
2. Pick Up
3. Passenger Waiting Area
4. Female Police Booth
5. E-Rickshaw Stop
6. Waiting Area
7. Parking (E-Rickshaw + Car +Bike)
8. Gender Inclusive Sanitation Facility

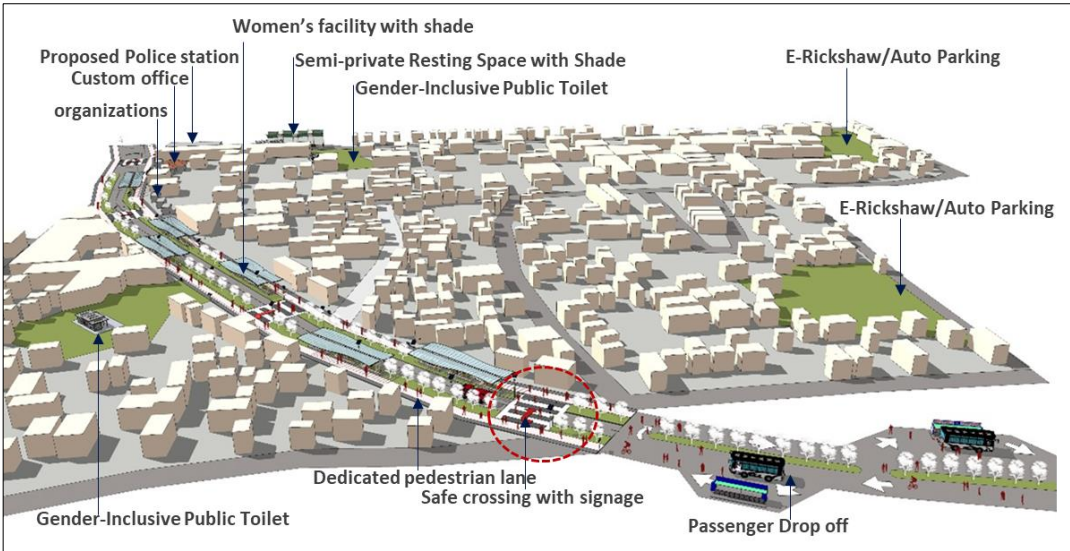
ZONE 2: BUFFER ZONE

1. Safe Crossings
2. Pergola-Safe Seating Space
3. Street Furniture
4. Female Police Booth
8. Gender Inclusive Sanitation Facility

ZONE 3: SECURITY ZONE

1. Proposed Area for Organization
2. Custom Office Department
3. Check Point
 - Separate Male and Female Check desk
 - Health Desk
 - X-ray Security
 - Waiting Areas
 - Wayfinding and barrier
4. Security Booth Station
5. Nepal Police Office
6. Waiting Area
7. APF





Overall 3d of Study Area



Transit Zone and Buffer Zone



Waiting Area in Security Zone



Safe Crossings in Buffer Zone



Security Zone



Traffic Management in Transit Zone

ANNEX-VII:- Plagiarism Check Report





11% Overall Similarity

The combined total of all matches, including overlapping sources, for each database.




Filtered from the Report

- Bibliography
- Quoted Text
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-  **76 Not Cited or Quoted 9%**
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Matches that are still very similar to source material
-  **0 Missing Citation 0%**
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17	Publication	Shreya Dubey, Ajay Bailey, Jinwoo (Brian) Lee. "Women's perceived safety in publi...	<1%
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**ANNEX-VIII:- IOEGC Acceptance Letter and
Paper**



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To Whom It May Concern:

This is to certify that the paper titled "Gender-Inclusive Urban Space: Enhancing Women's Safety in Cross-Border Mobility at the Indo-Nepal Border (Biratnagar-Jogbani)" (Submission# 345) submitted by Sujan Kumari Chaudhary as the first author, which had been accepted for presentation after the peer-review process, has successfully been presented at the 16th IOE Graduate Conference held during April 18 - 20, 2025. Kindly note that the final revision of the papers and publication process of the conference proceedings is still underway and hence inclusion of the accepted manuscript in the conference proceedings is contingent upon timely response to further edits during the publication process.



Dr. Raj Kumar Chaulagain,
Convener,
16th IOE Graduate Conference



Gender-Inclusive Urban Space: Enhancing Women's Safety in Cross-Border Mobility at the Indo-Nepal Border case of Biratnagar-Jogbani

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Abstract

The Biratnagar-Jogbani border serves as a vital trade, market, and cultural hub but lacks gender-sensitive urban planning, making women vulnerable to harassment and insecurity. High cross-border mobility, and informal trade contribute to safety concerns. This study identifies weakness in urban design infrastructure and proposes gender-inclusive solutions to enhance women's safety and accessibility. On the other hand, drug users are common in this area, which many women feel is unsafe for girls and women. The study focuses on the border area between Biratnagar and Jogbani, which is marked by a high level of cross-border mobility, informal trade, and serious safety issues for women. In order to improve women's safety and accessibility in public areas, the study intends to pinpoint the weaknesses in the current urban infrastructure and suggest gender-inclusive design solutions. The study uses a mixed-method approach that combines quantitative and qualitative interviews to analyze the difficulties women encounter in public places, especially in Nepali border areas and transit zones. Primary sources such as site observation, key informant interviews, and stakeholder analysis, as well as secondary sources like a literature study, are used to gather the data. Key findings show that women frequently experience unsafe due to poor infrastructure like inadequate lighting, poor sanitation, overcrowd, no dedicated parking system, no Closed-circuit television (CCTV) surveillance, no dedicated pathways which contribute to their sense of insecurity. The research also highlights the role of local authorities, Non-Governmental organizations (NGOs) and law enforcement in addressing these issues, by focusing on improving surveillance, lighting and gender-sensitive infrastructure.

Keywords

Gender-Inclusive Design, Women's Safety, Urban Infrastructure, Cross-Border Mobility

1. Introduction

Modern societies are facing challenges due to the rapid rate of urbanization. Good urban planning and design are becoming more and more necessary as the economy and urban population develop. Although cities are supposed to give everyone equal chances and promote a varied and prosperous living, women's experiences have often been disregarded by largely male-centric urban institutions. Despite accounting up half of the world's population, women have historically faced discrimination and inequality in a variety of fields, including politics, economic opportunities, urban amenities, and mobility [1]. Conventional urban planning methods led to the emergence of women-friendly cities. Established by

the United Nations in 2006, the Women-Friendly Cities Program aims to provide urban environments that encourage women's active involvement in decision-making and guarantee equitable access to services [2]. According to the research, well-lit pedestrian walkways and CCTV surveillance greatly increase women's sense of safety, hence these should be given top priority in strategic action plans. Given this, gender safety has grown to be a major concern, especially in urban areas where women and young girls are more likely to experience violence, harassment, and discrimination. Numerous studies draw attention to the problems and difficulties that women and girls face in urban areas, including restricted access to public facilities, poor lighting and visibility, and less possibilities for social engagement

and community service. Research on the intersectional dynamics of gender safety in metropolitan settings, like Jogbani, which lies on the border between Nepal and India, indicates that a variety of factors, such as institutional practices, infrastructure, and societal norms, can have an impact on gender-based violence [3]. According to Jagori's qualitative research of women in Delhi, India, issues including gender norms in society, restricted access to public transit, and dim illumination in public spaces all had an impact on women's encounters with violence [4]. According to a related study by Ramya Subrahmanian and Shilpa Phadke, which focused on women residing in slum communities in Mumbai, the gendered design of public places, poverty, and limited access to basic amenities are all significant causes of unsafe urban environments for women [5]. The 2030 Sustainable Development Agenda of the United Nations, the 2016 New Urban Agenda, and other international programs like the Safe Cities and Safe Public Spaces for Women and Girls all include the goal of making cities safer for women [6]. The concept of gender-inclusive public cities outlines four criteria that should be met: a. accessibility, which means that all people can access the space at any time of day; b. safety, which refers to cities where women feel safe and are not subjected to gender-based violence; c. mobility, which refers to urban infrastructure that considers everyone's mobility; and d. co-design, which refers to creating cities that represent the needs of the populace through cooperation and greater representation in planning positions [7].

The objectives of the research are

- To conduct analysis of cross border movement of Biratnagar-Jogbsni area, identify the gap of the existing condition and propose women-centered improvement focusing on safety in Border area
- To examine the challenges faced by women during cross border movement along the Biratnagar-Jogbani border area.

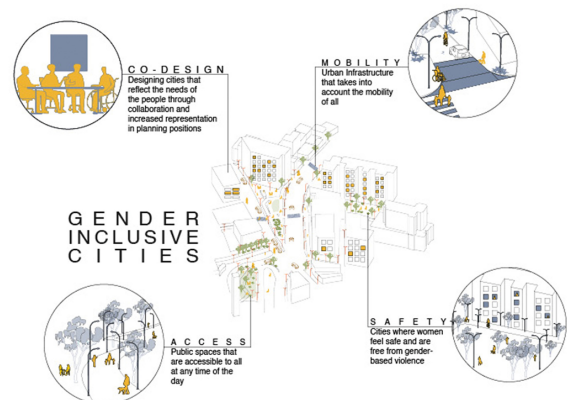


Figure 1: The four principles of gender-inclusive cities, designed according to the concepts of UN Women (2011), ICLEI and UITP (2020), UN Habitat (2012), World Bank Group (2020) [7]

2. Literature Review

2.1 Gender-Inclusive Public Space Design

Urban areas that have been designed, maintained, and policed to make people feel comfortable enough to visit frequently are considered “safe” areas. It is acceptable for different groups to utilize the park in different ways, and there is less crime and disturbance. There are signs that a location is secure: The elderly regularly visit, women visit as often as men, parents bring their children there, and workers eat lunch or take breaks there [8]. This review of the literature will provide an overview of significant theories and concepts that integrate gender inclusion and public urban planning. Popular multidisciplinary strategies like “Crime prevention through Environmental Design (CPTED)” and the “Eyes on the Street” hypothesis aim to improve safety and reduce crime in urban areas. In order to deter crime and enhance the sense of safety for both locals and visitors, this approach heavily emphasizes the management and design of the physical and social environments. Urban planners, police enforcement, community organizations, and architects have all accepted CPTED as a practical instrument for enhancing public safety. This study found that after implementing CPTED principles, crime decreased in 10 of the 13 cities, with a median crime reduction of 10%.

2.2 Feminist Movement and theory

The development of the feminist movement in the West is commonly portrayed as “waves of change,” which capture the highs and lows of the movement. Ensuring women's voting rights was the main objective of the first wave of feminism, which emerged in the late

1800s and early 1900s. The second wave started in the 1960s, driven by minorities' increasing self-awareness [9].

2.3 Safety in Public Space for Women

A number of social, personal, and built environment elements, in addition to potential risks of crime or accidents, influence women's sense of safety in public spaces. These impacts could manifest as a disruption of social contact and outside activities, so affecting their mobility, overall quality of life, and overall well-being. Street sexual harassment, gender-based violence, and fear of crime are all well-documented, and research on women's personal safety concerns is well-established. Studies have identified a wide range of behavioral and spatial implications of women's fear, such as avoiding flooded areas, experiencing limited mobility and travel patterns, and engaging less in public locations at night. The reality of women's safety perceptions is complex and multidimensional, with interrelated traits that all either directly or indirectly enhance quality of life. Despite the fact that women's safety has been extensively studied over the years, women's and girls' experiences around the world nevertheless present serious societal challenges in defending their "right to the city." Major concerns in the literature and discourses on women's perceived safety and experience in the public sphere include the ongoing exposure of attacks, fear of sexual harassment, humiliation, and fear of victimization in public places or when using public transportation; these issues jeopardize women's personal safety and security and often lead to limited city participation [10].

2.4 Border Dynamics and cross-border movements

Based on the 1950 India-Nepal Treaty of Peace and Friendship, the passenger travel between India and Nepal reflects the two countries' historical, cultural, and religious ties. A free flow of people and goods over the open border is allowed by the agreement. Approximately 8 million Nepali nationals live, work, and frequently cross the border into India. Furthermore, the BBIN Motor Vehicles Act and the Regulation for Passenger Traffic between the two countries regulate the flow of people and automobiles between them. India-Nepal bilateral passenger movement is influenced by a number of factors, such as social and religious ties, tourism possibilities, and

economic opportunities. The two countries are connected by highways at a number of ports of entrance and exit. Due to its accessibility, flexibility, and affordability, road travel is the most widely used and viable method of transportation between India and Nepal. There are several approved crossing points along the border where passengers can get immigration and customs clearance whether they are walking or driving a vehicle, such as a bus, automobile, motorcycle, etc. These land ports can accommodate high passenger volumes. India and Nepal have agreed to improve the infrastructure and security at the several ports of entry and exit by constructing Integrated Check Posts (ICPs) at key border crossings. For the smooth and effective flow of people and goods, these ICPs will provide modern conveniences and services. However, some operational and legal obstacles still stand in the way of passengers' seamless border crossing [11].

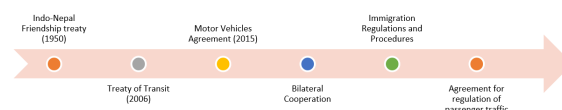


Figure 2: Major Treaties, Agreements and Regulations [11]

2.5 The case of Canada-United States open border

The United States and Canada have a strong bilateral security relationship and share the longest undefended border in the world. Through conceptually defining the psychological-cultural, trade-commercial, and political tactics, both nations share the border dynamics of cross-border partnerships within international policies. The alliance between the United States and Canada has developed into a continental security community over time. This cooperative effort has led to a conscious retreat from the true frontier. But along the US-Canada border, that action had to resolve an underlying conflict between the demands of "economic globalization" and "territorial security." Both nations have distinct interests; the United States is more engaged in illegal immigration and terrorism, while Canada is mostly focused on commerce.

Key Aspects of US-Canada Border Security:

a) Shared Border Management: the US and Canada work closely through agencies like US Customs and Border protection (CBP) and Canada Border Services (CBSA) to enforce border security. Both countries prioritize collaboration and information sharing to address cross-border threats.

b) Smart Border Declaration (2001): After the 9/11 attacks, the US and Canada signed the smart border Declaration to enhance security while ensuring the efficient flow of goods and people. The agreement focuses on secure infrastructure at border crossings, sharing intelligence and law enforcement data, coordinating visa and immigration policies.

c) Pre-Clearance programs: Both countries have pre-clearance facilities at major airports and land crossings. This allows travelers to clear customs and immigration before crossing the border, reducing congestion and improving security.

d) Integrated Cross-Border law Enforcement: Programs like Integrated Border Enforcement Teams (IBETs) involve joint efforts by U.S. and Canadian law enforcement agencies to combat cross-border crime, including drug smuggling, human trafficking, and terrorism.

e) Technology and Surveillance: Advanced technologies, such as drones, sensors, and surveillance systems, are used to monitor remote areas of the border. License plate readers, biometric systems, and facial recognition are also employed at border crossings to enhance security.

f) Trusted Traveler programs: Programs like NEXUS and FAST allow pre-approved, low-risk travelers and commercial drivers to cross the border more quickly, reducing wait times and focusing resources on higher-risk individuals.

g) Cross-Border Crime and Threats: Both Countries collaborate to address threats such as Drug trafficking, Human smuggling and trafficking, terrorism and cybercrime, Illegal firearms trafficking

h) Border Infrastructure: There are over 100 official land border crossings between the U.S. and Canada, each equipped with security measures to screen travelers and goods. Remote areas of the border are monitored through patrols and technology, though the vastness of the border makes complete surveillance challenging [12].

2.6 Vienna, Austria

Challenge

A study conducted in Vienna found that forceful park use is more common among teenage boys, who take over areas for the sports and activities they want. As a result, girls have less area to use, particularly on sports grounds where more aggressive ball games are practiced. Girls' body awareness and feeling of self were impacted by the sharp drop in their presence in parks and public playgrounds that began at age 9.

Solution

In response to these findings, the City of Vienna created a gender-sensitive park strategy. Organizing a small competition to redesign Einsiedler Park was the strategy's first significant achievement. Einsiedler Park is located in a densely populated part of Vienna where residents generally lack the resources for structured physical education programs for children and have limited access to private open space. Numerous organizations compete for access to public parks, such as Einsiedler Park, which are hubs for community gatherings.

Outcome

In addition to developing spaces that promote activities that women like, such as volleyball, rollerblading, and more subdued activities in covered areas, the park was rebuilt with a focus on improving safety and visibility. Among the specific characteristics were:

- Converting the cage-style enclosed ball courts into an open area with numerous large access and exit points.
- Splitting the courts into three smaller subareas to allow for numerous groups to occupy them.
- Converting one of the ball courts into an open area devoid of athletic apparatus (nets, hoops, etc.) in order to promote less regimented exercise.
- Adding an elevated platform to the courts so that people may sit, mingle, and watch other people play, allowing spectators to participate in the action without really playing the game.
- establishing an unstructured, open playground with ledges, hammocks, nets, and other features to allow teenage girls to play and converse with one another;
- putting in seats and chairs in the section with the closed-off play equipment so that parents and babysitters may sit and have privacy while keeping an eye on little children [13].

3. methodology

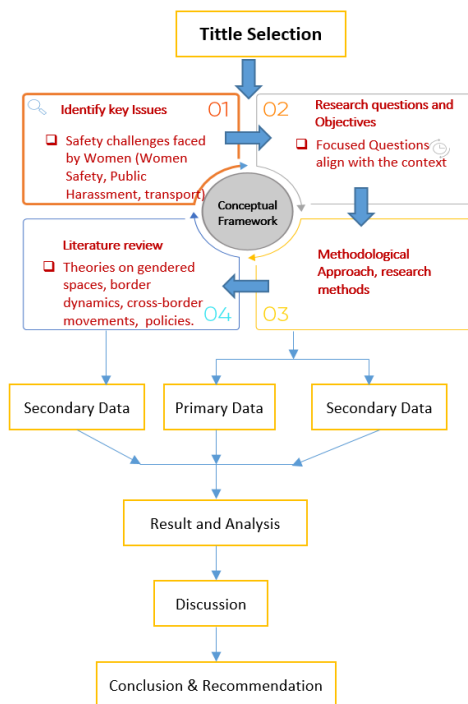


Figure 3: Conceptual Framework flow diagram

The methodology's goal is to increase knowledge of how technologies might help define felt safety in relation to gender. The literature review from secondary sources as well as primary technique have been used to understand how people perceive safety using a range of tools [7]. This research proposal collects, analyzes, and combines quantitative and qualitative approaches in one study or a series of studies in order to better understand the research problem [14]. This research paper deploys the pragmatic paradigm which emphasizes useful outcomes and the use of research in the real world to solve issues in an efficient manner. Pragmatics adopts a flexible approach, mixing quantitative and qualitative approaches to best answer the study challenge, rather than being limited by a particular philosophical perspective. Pragmatic focuses on solving real-world problems making it appropriate for gender safety issues. The pragmatic paradigm is the most appropriate for this subject because it strikes a balance between the necessity of comprehending women's experiences and the need to provide concrete policy and urban design solutions. Because women's safety is a sensitive subject, both surveys and interviews will be employed. This mixed-methods approach provides a comprehensive knowledge of harassment experiences by allowing for the collection

of both qualitative insights through open-ended interviews and quantitative data through structured questionnaires [15]. Combining quantitative and qualitative methods creates a synergistic approach that promises a more thorough comprehension of the study in the context of researching the women-friendly city. titlesec

3.1 Ontology

Nature of reality is constructivist ontology which is socially constructed and context-dependent. Safety and inclusivity in that urban spaces are not fixed entities but are shaped by cultural norms, social structures, gender dynamics and individual experiences. The safety of Women depend on the time of the day, mobility of people, strictness of the laws and policies for women.

3.2 Epistemology

Knowledge is derived from understanding the lived experiences and perceptions of individuals who interact with the urban environment. This perspective values subjective insights and context-specific understandings. The research emphasizes qualitative approaches (e.g., interviews, focus groups) to explore deep insights, complemented by quantitative data (e.g., surveys) to identify patterns. Knowledge about gender inclusivity and safety emerges from engaging with women's narratives, community perspectives, and their interactions with urban spaces.

3.3 Method

A mixed-methods approach that allows for the gathering of quantitative data via structured surveys and qualitative insights through unstructured interviews. In the context of studying the women friendly city, the integration of quantitative and qualitative methodologies forms a synergistic approach that promises a more comprehensive understanding of the study.

Gender-Inclusive Urban Space: Enhancing Women’s Safety in Cross-Border Mobility at the Indo-Nepal Border case of Biratnagar-Jogbani

Research Method	Primary or Secondary	Qualitative or Quantitative	Remarks
Demographic Information	Secondary	Both	Ethnicity, background, socio-economic details
Literature review & Case Study	Secondary	Qualitative	To gain Women’s safety in international context and border dynamics
Case Area Observation	Primary	Quantitative	Transect walk
Mobility Mapping	Primary	Quantitative	Common routes, areas women prefer/avoid
Stakeholder’s Analysis	Primary	Quantitative	To gather existing situational analysis of the study area
Key Informant Interview	primary	Quantitative	Engage with local officials, commuters, different NGOs INGOs

Figure 4: Table showing methods used in research

4. Site Context

The study area chosen for this investigation is the Biratnagar Metropolitan City, which is situated in the Koshi Province in the southeast region of Nepal. It serves as the district headquarters for Morang and is the province’s largest and fastest-growing city. High neighborhood density, a diversified population, and heavy traffic, particularly in the commercial and border zones, are characteristics of this area. The high population density, diversified population, and recognized safety issues, particularly for women, are the reasons this region was selected. Examining urban design solutions targeted at improving women’s safety is crucial because this region’s public areas and transit hubs are often overcrowded and have inadequate security. The distance between Biratnagar and the southern border of Nepal and Bihar, India, is 7 kilometers (4 miles) north. The border is open to local movement, allowing Indian and Nepalese citizens to traverse it freely. Together, the Armed Police Force, the Local Police Unit, and the Biratnagar Customs Office are in charge of the checkpoint’s general security, administration, and documentation.

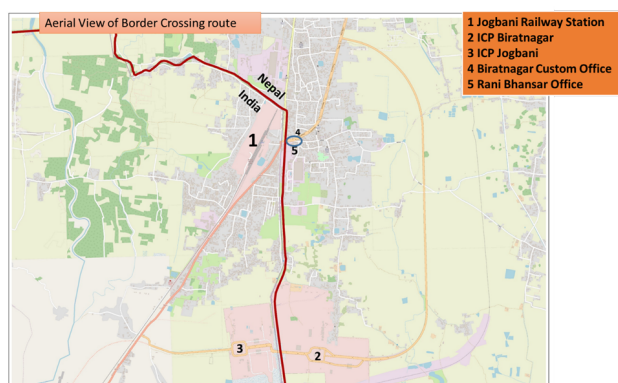


Figure 5: Open Street Map of Site Surrounding

5. Findings and discussion

The survey conducted at the Biratnagar-Jogbani border area highlights significant concerns regarding public safety, mobility, and infrastructure. The respondents, predominantly women, frequently use public transportation, particularly rickshaws and walking, to access markets or employment opportunities across the border. The survey conducted focusing on parameters like Study on use of public transportation and mode of transportation, Primary Destination after crossing the border, Experienced or witnessed harassment in public areas-if yes then by whom and where have you faced this incident?, Factors make you feel unsafe in public spaces, Difficulties crossing the border. The specific objectives for conducting this survey:

- To assess transportation pattern, challenges, and safety perceptions among women in the cross-border movement area at Biratnagar-Jogabni.
- To understand mobility patterns and assess safety concerns in cross-border movement areas by identifying key destinations, this survey aims to reveal potential risks areas.
- To gain a comprehensive understanding of the challenges faced by individuals especially women during ccross-border movement. The survey aimed to assess the prevalence and infrastructure safety concerns. By capturing the lived experiences of commuters, traders, and particularly women.
- To assess their availability, accessibility, and safety, particularly for women. Survey focused on identifying key facilities like sanitation facilities near border area focusing on safety of these facilities.

5.1 Study on use of public transportation and mode of transportation

Survey questionnaires on frequent use of Public transportation (Buses, E-rickshaw, Tempo etc..) and mode of Transportation mostly rely on conducted on site suggests that survey was conducted to get the mobility pattern of the people in the site. It is observed that majority of people use transportation daily i.e. 38%, second one is 36% people do not use transportation and equal percentage of people use transportation monthly and weekly. Mode of transportation represents the distribution of respondents which mode of transportation mostly do they rely on for the movement from their place to Biratnagar/Jogbani border area. Majority of people

use E-Rickshaw/Auto which is 36%, transportation by bus is second majority which is 23% and then on foot which is 21% and at last private vehicles which is 20%.

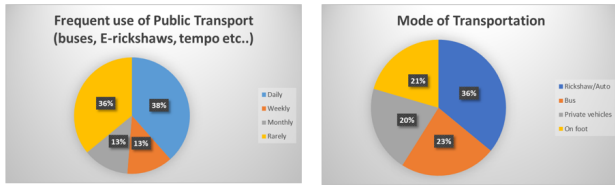


Figure 6 : Pie Chart showing frequent use of transportation and mode of transportation mostly rely on

5.2 Primary Destination after crossing the border

The pie chart titled "primary destination after crossing the border" represents the different purposes for which people cross the border. The majority of people cross the border for shopping or market-related activities which is 70%. A significant portion crosses for informal employment, particularly as carriers which is 19%. A smaller percentage crosses for foreign employment which is 3%. The remaining portion falls under the "Others" category. The pie chart visually emphasizes that the primary reason for border crossing is market or shopping-related activities, followed by informal employment. The least common reason is foreign employment.

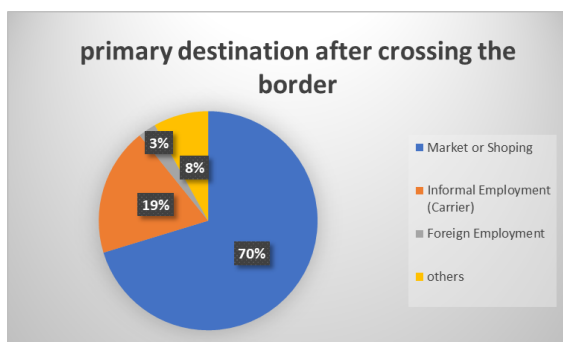


Figure 7 : Pie chart showing primary destination after crossing the border

5.3 Experienced or witnessed harassment in public areas

The bar graph illustrates responses to the question, "Have you ever experienced or witnessed harassment in public areas?" It features two bars representing the percentage of respondents who answered "Yes" and

"No." The majority, 58.97%, indicated that they have not experienced or witnessed harassment in public spaces, while 38.46% reported that they have encountered such incidents. The graph highlights that although more people have not faced harassment, a significant portion—nearly 40%—has, suggesting that public harassment remains a concern. This data underscores the need for safer public spaces and targeted interventions to reduce harassment in urban areas.

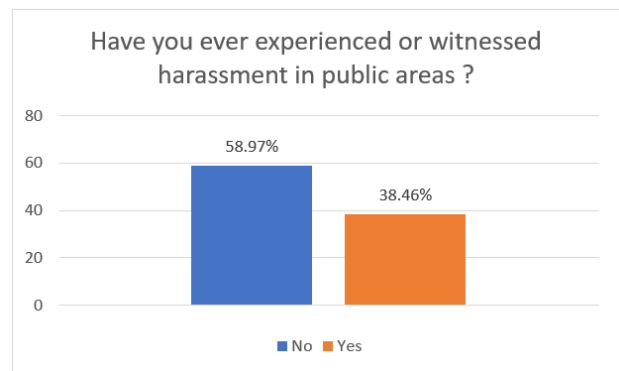


Figure 8 : Bar chart showing experienced or witnessed to harassment in public areas

If yes, then by whom have you faced this incident?

The pie chart illustrates the distribution of reported harassment incidents based on the perpetrators, as experienced by respondents. The data is divided into categories: Nepal Police/Local Authority (31%), Indian Police (23%), Custom Office Department (15%), and Others (31%). The largest proportion of incidents falls under Nepal Police/Local Authority and Others, both at 31%, indicating that harassment is not limited to a single entity but is spread across various groups. Indian Police accounts for 23% of reported cases, while Custom Office Department represents the smallest share at 15%. This chart highlights concerns about harassment from officials and authorities at the Nepal-India border, pointing to the need for improved accountability and protective measures to ensure safer cross-border movement.

If yes, then where have you faced this incident?

The pie chart illustrates the distribution of incidents across different locations in the Nepal-India cross-border area. The largest proportion of incidents, at 40%, occurs at border check points, highlighting the challenges and vulnerabilities faced in these high-traffic zones. Market places account for 25% of the incidents, reflecting the bustling and often

crowded nature of these areas. Streets and open spaces represent 20% of the incidents, indicating safety concerns in public thoroughfares. Public transport constitutes the smallest segment at 15%, suggesting relatively fewer incidents but still significant enough to warrant attention. This distribution underscores the need for targeted safety measures and infrastructure improvements across these key locations to enhance security and accessibility, particularly for women.



Figure 9: Pie chart showing by whom have you faced the incident? And the place where incident occurred

5.4 Factors make you feel unsafe in public spaces

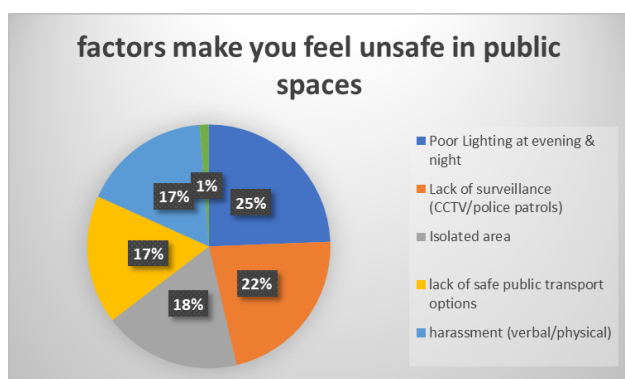


Figure 10: Pie chart showing different factors make you feel unsafe in public

Questionnaire Survey presents the factors contributing to feelings of unsafety in public spaces, divided into four categories. The largest segment, at 22%, represents concerns related to poor lighting and visibility, which significantly impact perceptions of safety, especially during nighttime. The second largest segment, at 18%, highlights issues of overcrowding and lack of personal space, which can lead to discomfort and vulnerability. Another 17% of the concerns are attributed to inadequate security measures, such as the absence of law enforcement or surveillance. The smallest segment, at 1%, indicates other unspecified factors that contribute to feelings of unsafety. This distribution emphasizes the need for

improved lighting, crowd management, and enhanced security measures to create safer and more welcoming public spaces.

5.5 Difficulties crossing the border

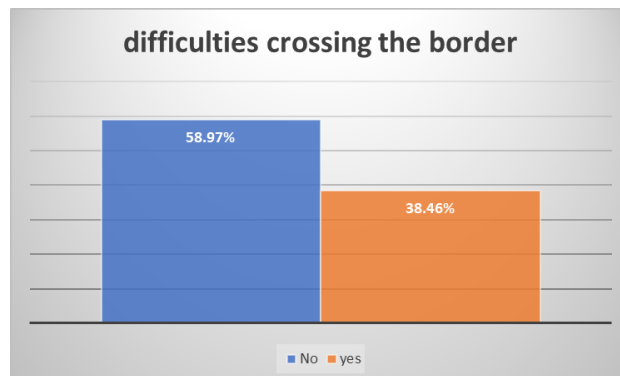


Figure 11: Bar chart difficulties crossing the border

The bar chart illustrates the responses to a survey question about difficulties encountered while crossing the border. The data shows that 58.97% of respondents reported experiencing difficulties when crossing the border, indicating a significant challenge for a majority of individuals. On the other hand, 38.46% of respondents stated that they did not face any difficulties during their border crossings. This disparity highlights the varying experiences of people at the border, with a substantial portion encountering issues that could range from bureaucratic delays to infrastructure inadequacies. Addressing these difficulties is crucial to improving the overall efficiency and user experience at border crossings.

If yes, what are the main issues you face while commuting?

The main issues faced by individuals while commuting, the most significant issue, representing 40% of the responses, is overcrowding, which can lead to discomfort and safety concerns. Long delays at checkpoints account for 30% of the issues, highlighting inefficiencies and potential bottlenecks in the commuting process. Unmanaged road conditions make up 17% of the problems, indicating the need for better infrastructure maintenance. The presence of harassers constitutes 13% of the issues, pointing to safety and security concerns that need to be addressed to ensure a safer commuting environment for all, particularly for women. This distribution underscores the importance of addressing these challenges to improve the overall commuting experience.

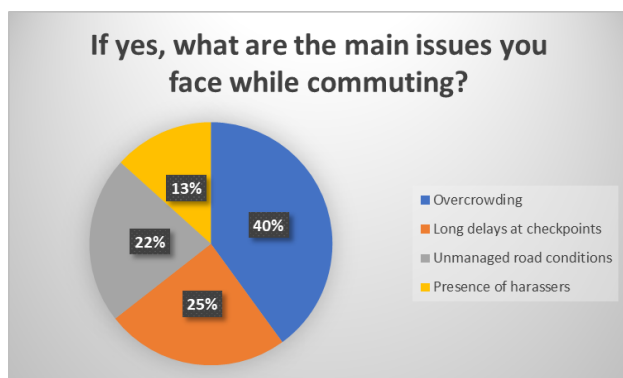


Figure 12: Pie chart showing the main issues face while commuting

5.6 Public Toilet available near the border area

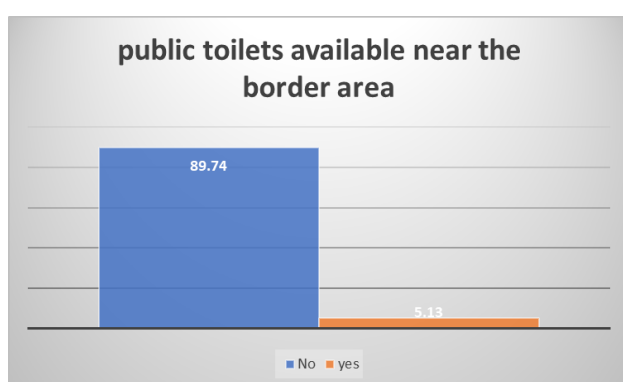


Figure 13: Bar chart showing availability of public toilet near border area

Survey responses regarding the availability of public toilets near the border area. The data shows that 89.74% of respondents indicated that public toilets are not available, highlighting a significant lack of essential sanitation facilities in the area. In contrast, only 5.13% of respondents reported the presence of public toilets. This stark disparity underscores a critical gap in infrastructure that affects the comfort and hygiene of individuals, particularly women, who often face greater challenges in accessing safe and clean sanitation facilities. Addressing this issue is vital for improving the overall experience and well-being of people in the border area.

6. Conclusion and Recommendation

Conclusion: The findings from the questionnaire surveys, stakeholder analysis, and open-ended questionnaires reveal significant challenges and gaps in ensuring women's safety and inclusivity in the Biratnagar-Jogbani border area. According to the survey, there are several safety issues that women

must deal with, such as harassment, dim lighting, inadequate restrooms, and crowding in public areas. These problems are made worse by the absence of gender-sensitive infrastructure, such as clean restrooms, secure walkways, and security cameras. Further adding to women's unease and vulnerability is the conduct of security guards, especially the lack of female officers. The stakeholder analysis emphasizes how important it is for community organizations, NGOs, and local government to solve these issues. Maiti Nepal, Nawa Abhiyan, and KIN Nepal are among the organizations that are actively fighting human trafficking, spreading awareness, and helping women who are at risk. However, a lack of coordination among parties, a lack of funding, and a lack of government participation frequently make these initiatives less successful. The open-ended surveys offer insightful information about the real-life experiences of women living along the border. Because of harassers, bad infrastructure, and insufficient protection, many respondents said they felt unsafe. One persistent issue was the absence of well-lit areas and public restrooms, particularly at night. In order to provide a safer environment for women, participants also emphasized the necessity of gender-sensitive policing, better traffic management, and enhanced collaboration between Nepali and Indian authorities.

Recommendation: Based on the findings of the research, recommendations are to enhance women's safety and inclusivity in the Biratnagar-Jogbani border area, several key recommendations have been proposed. Key recommendations are Strengthening surveillance and security is essential, which includes the installation of CCTV cameras and the establishment of a 24/7 Mahila Helpline (toll-free) to assist women in distress. Additionally, female police patrols, police presence at checkpoints, and the implementation of separate male and female security checkpoints will ensure a safer and more organized border-crossing experience. The overall security can be further enhanced by increasing the presence of surveillance teams and security personnel throughout the area. Improvements in lighting and infrastructure are also crucial in making public spaces safer and more accessible for women. Ensuring well-lit pedestrian areas and public toilets will significantly reduce security risks. Additionally, a properly managed traffic flow, along with designated footpaths and organized parking for rickshaws and private

vehicles, will contribute to a more structured and less chaotic environment. The provision of sitting and resting spaces near the border will further enhance comfort for travelers, especially for women. Another major area of focus is public toilets and sanitation, as the availability of female-friendly public washrooms is critical for women's safety and convenience. These facilities must be well-maintained, well-lit, and complemented by nearby rest spots to ensure hygiene and security.

In other hand National-level policy recommendations for improving safety and security in the Indo-Nepal cross-border movement area:

Integrated Border Security Technology: Deploy biometric verification and RFID-enabled smart cards for pre-verified individuals, streamlining security checks and reducing manual interventions.

Digital Identity Border Management: Introduce a government-issued digital ID for Nepali and Indian citizens frequently crossing the border, similar to the US-Canada NEXUS program, to enhance border efficiency and security.


GPS-Tracked Public Transport: Mandate GPS monitoring for all public transport operating at border crossings, ensuring safe transit and accountability.

Bilateral Security Cooperation: Facilitate real-time data sharing and law enforcement coordination between Indian and Nepali security agencies, focusing on women's safety and cross-border security threats.

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ANNEX-IX:-Final Presentation Slides



A
Thesis
on
"Designing Gender-Inclusive Urban Space: A vision for women's safety cross-country movement at Indo-Nepal border case of Biratnagar/Jogbani"
April, 2025

Submitted By:
Sujan Kumari Chaudhary
(079msurp022)

Submitted To:
Department of Architecture
Supervisor: Dr. A.C. Lal
Co-Supervisor: Sudeep Sharma Paudyal

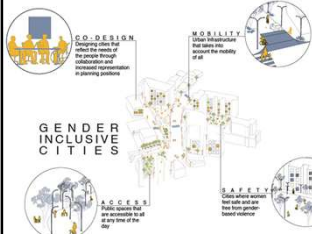
- Introduction
- Research methodology
- Literature Review
- Case Area-Biratnagar/Jogbani
- Data and Analysis
- Recommendation and Conclusion

INTRODUCTION

- Background
- Problem Statement
- Need
- Research Gap
- Research Objectives
- Limitations

INTRODUCTION

The four principles of *gender-inclusive space*, designed according to the concepts of UN Women (2011), ICLEI and UITP (2020), UN Habitat (2012), World Bank Group (2020)



INTERNATIONAL INITIATIVES for Safer Cities for Women

- UN's 2030 Sustainable Development Agenda
 - Goal 5: Achieve Gender Equality and empower all women and Girls
 - Goal 11: make Cities Inclusive, Safe, resilient, and Sustainable
- New urban Agenda 2016
 - Inclusive Urban Development
 - Gender-responsive Urban Planning
- Safe Cities and Public Spaces for Women and Girls Initiatives
 - UN Women to Combat Sexual harassment and violence in public spaces

BACKGROUND


- ❑ The Concept of Women-friendly safe cities evolved in early 2000s (*"16 Actions That Cities Can Take To Become Safer For Women and Girls," 2019*)
- ❑ The Women Friendly Cities Challenge first announced during United Nation Habitat III Conference in 2016
- ❑ Cities 4 Women Project in Nepal (2023-2027) aims to solve challenges that are Gender responsive and climate resilient
- ❑ Study shows Gender Based Violence is prevalent across different regions of Nepal
- ❑ National Demographic Survey 2016 shows 1 in 5 women in Nepal Experienced Violence in their lifetime (*Research on GBV in Public Space Focusing on the Public Space of Elected Women Representatives, Access of Women to Public Resources and Health Facilities, n.d.*)
- ❑ Nepal-India border is open allowing unrestricted cross-border movement of people
- ❑ However, **Being Women** they face difficulties during cross-border movement
- ❑ Therefore, Biratnagar/Jogbani border area has been selected as the study area.

PROBLEM STATEMENT

- ❑ **Dark streets:** creating fear of unsafe and Insecurity
- ❑ **Haphazard parking** of Bus, E-Rickshaw, Motorbikes creates problem like crowd of people and vehicles
- ❑ Due to crowd Pickpocketing happens
- ❑ **Misbehavior** of Male Police towards women
- ❑ While Using public transport, conflicts between E-Rickshaw drivers where women are pulled towards them
- ❑ Lacking **Sanitation Facilities**
- ❑ Especially these problems are faced by women, feel unsafe, experience inappropriate touch in crowd



NEED OF THE RESEARCH



India to Nepal Overland Routes Map

- ❑ **Biratnagar/Jogbani:** Second most busiest cross-movement point of Nepal.
- ❑ Biratnagar/Jogbani connects the linkage with Bengal, Bihar, Delhi of India and with Koshi Province of Nepal.
- ❑ People from India Side as well as Nepal (Biratnagar, Itahari, Dharan etc.) come regular basis especially for shopping.
- ❑ High footfall in public spaces and transport systems increases vulnerability for women.
- ❑ Many low-income women near the Nepal-India border rely on informal cross-border trade ("carrying") as a primary source of income, facing frequent questioning by border authorities.
- ❑ Therefore, for the safety of Women, this research is needed

Figure 1: A group of women carrying items across the border.
Source: Pioneer Group/ Author/ Copied. Retrieved from <https://www.researchgate.net/publication/351841403>

RESEARCH GAP

- ❑ Organization like Cities Alliance, UN Habitat Nepal, and UNOPS Nepal are actively promoting gender-sensitive and Climate-resilient urban planning in Nepal
- ❑ However, there has been lack of focused **studies or initiatives** in the cross-border areas.
- ❑ Literature review shows there is no research regarding **gender-inclusive urban design, cross-border facilities planning, standard norms** in cross-border area.
- ❑ Existing urban policies lack focus on safety and inclusivity for women
- ❑ Existing data primarily more focused on human trafficking in cross-border regions.
- ❑ But no **segregated data & information** regarding violence against women while moving across border.

RESEARCH OBJECTIVES

- ❑ **General Objectives**
 - The main objective is to conduct analysis of cross border movement, identify the gap of the existing condition and propose women-centered improvement focusing on safety in Border area.
- ❑ **Specific Objectives**
 - To examine the challenges faced by women during cross border movement along the Biratnagar/Jogbani border area.
 - To propose plans and Policy for addressing issue of women's safety and inclusivity in public space along Indo-Nepal border in Biratnagar/Jogbani area.

LIMITATIONS

- ❑ Although the study focuses on Nepal-India border, the research site is limited to area within the Nepal side of the border.
- ❑ The study is primarily centered to Gender-Inclusion (women),
- ❑ Criminal activities prevalent in border areas as human trafficking, crime and smuggling are beyond the scope of this research.

RESEARCH METHODOLOGY

- Conceptual Framework
- Research Paradigm
- Ontology
- Epistemology
- Methodology
- Methods

CONCEPTUAL FRAMEWORK

❑ Conceptual Framework refers to the theoretical understanding of Theories

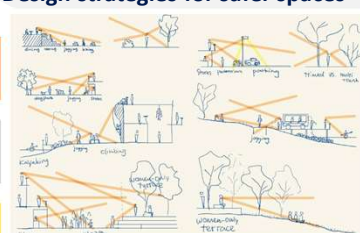
Design strategies for safer spaces

- **Eyes on the Street theory**
- **CPTED Theory**

Eyes on the Park reflects that the presence of the others make women and girls safer

Awareness addresses design issues that can help women and girls feel secure

Inclusion considers the importance of bringing a diverse cross-section of women and girls into our parks and designing spaces with their input



DHARA BIRNIGRAH NAGAR
The workshop explores the possible combinations of programs and settings offered
Department of Urban Design and Planning

RESEARCH PARADIGM

Pragmatic Paradigm

- It emphasizes useful outcomes and use of research in the real world to solve problems.
- Research topic seeks to create actionable strategies and design for gender-inclusive urban space.
- Pragmatic focuses on solving real-world problems like gender safety issues to provide concrete policy and urban design solutions.

Ontology

Nature of reality >>> socially constructed, patriarchal society, shaped by gender dynamics

Epistemology

Nature of knowledge >>> context specific, different perception about gender, perception of individual

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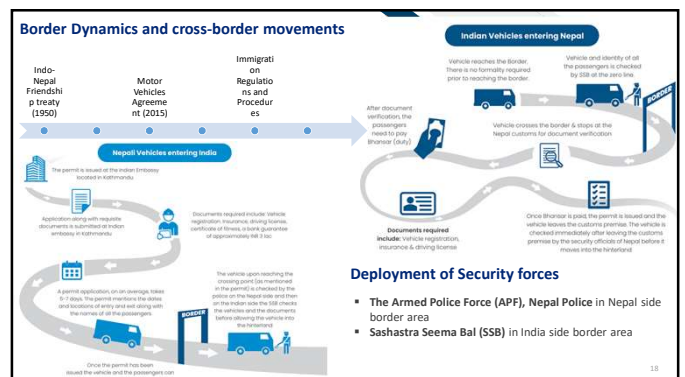
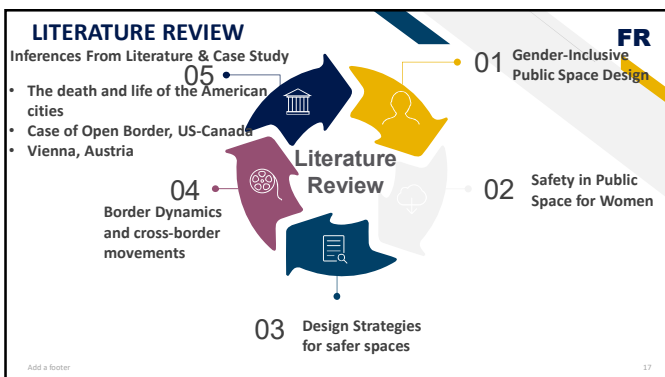
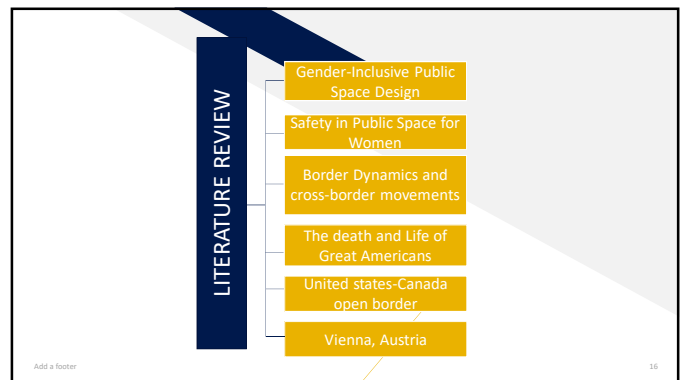
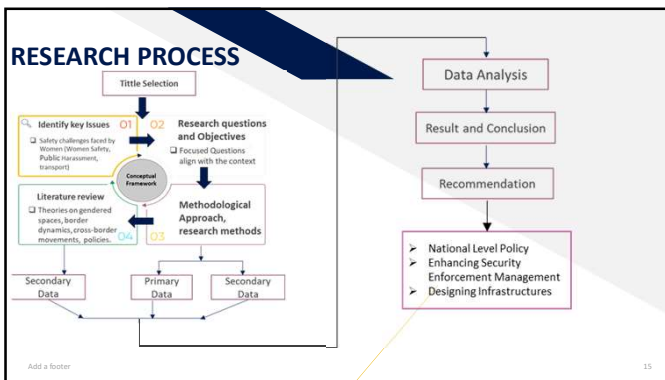
METHODOLOGY (Mixed Research Method)

Survey Structure

Research Method	Primary or Secondary	Qualitative or Quantitative	Remarks
Demographic Information	Secondary	Both	Ethnicity, background, socio-economic details
Literature review & Case Study	Secondary	Qualitative	To gain Women's safety in international context and border dynamics
Case Area Observation	Primary	Quantitative	Transect walk
Mobility Mapping	Primary	Quantitative	Common routes, areas women prefer/avoid
Stakeholder's Analysis	Primary	Quantitative	To gather existing situational analysis of the study area
Key Informant Interview	primary	Quantitative	Engage with local officials, commuters, different NGOs INGOs

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Inferences from Literature and Case Study

INFERENCES FR

The Death and Life of Great American Cities (Jane Jacobs, 1961)

- ❑ Jacobs advocates for a human centered approach to urban design that fosters community, safety, and economic vitality.
- ❑ Key themes discussed in the book are:
 1. **The importance of Mixed-use development:** the value of residential, commercial, and recreational spaces ensures that the streets are active at all times, enhancing safety and fostering a sense of community.
 2. **Eyes on the street:** eyes on the street means natural surveillance- where residents and passersby observe the street activity for maintaining safety in urban spaces. Active street life, clear sightlines, and mixed uses contribute to a self-policing environment where crime is deterred.
 3. **The role of sidewalks and public spaces:** well-maintained sidewalks that encourage pedestrian activity and social interaction.

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INFERENCES FR

The Case of Open Border United States-Canada

- ❑ The US-Canada share the world's longest undefended border, known for strong bilateral security ties.
- ❑ Both countries have different interests, Canada is primarily concerned about Trade, while US is more interested on terrorism and illegal migrations.
- ❑ Key aspects of US-Canada Border Security
 1. Shared Border management:
 2. Smart Border Declaration:
 3. Pre-clearance programs
 4. Technology and Surveillance
 5. Trusted traveler programs
 6. Border Infrastructures



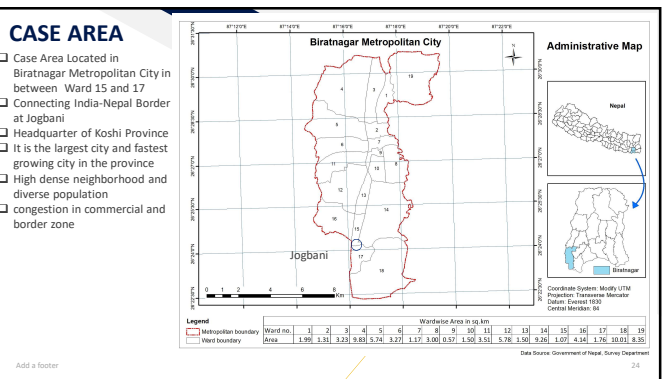
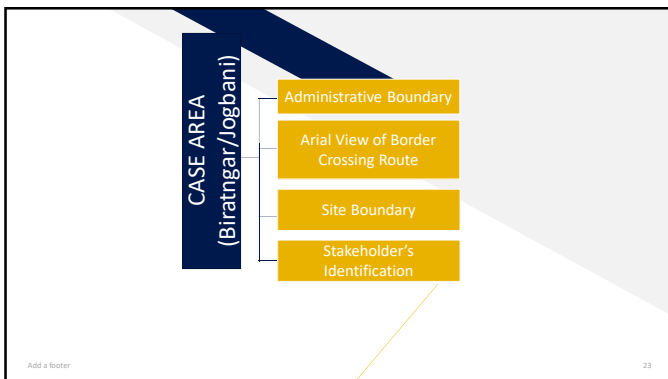

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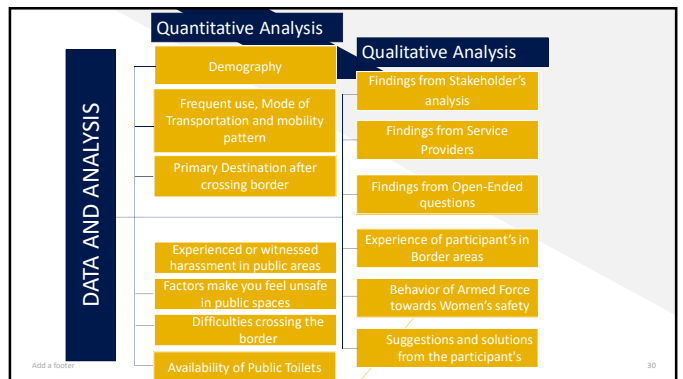
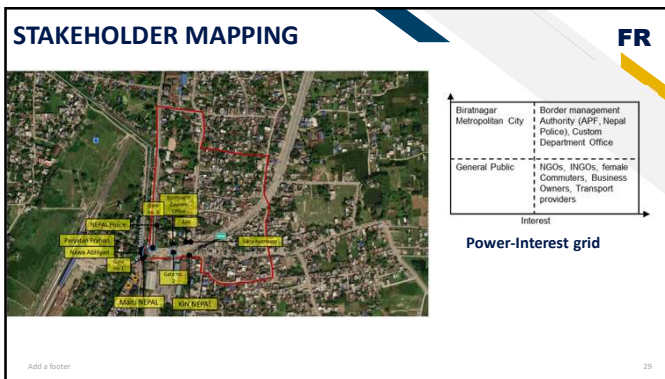
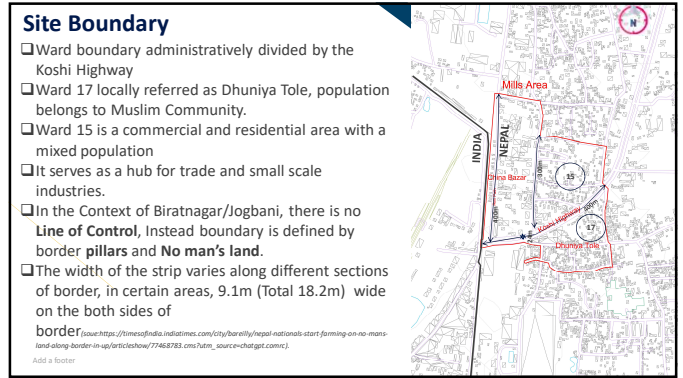
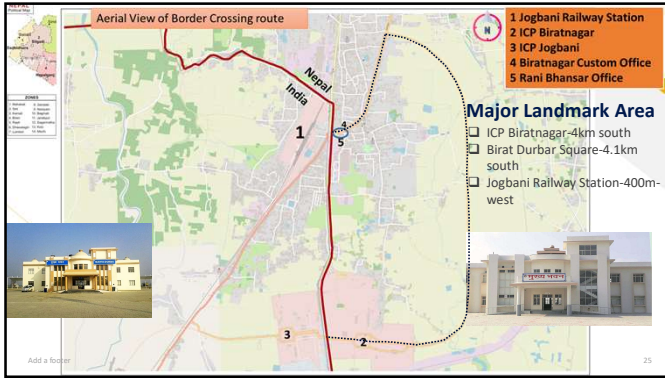
INFERENCES

Gender Mainstreaming in Urban Design-Vienna, Austria

- ❑ Safe Pathways and Walkability
 - Wider-Sidewalks, better Lighting, Benches, Avoid Dead Zones
- ❑ Lighting and Visibility
- ❑ Mixed-Use buildings
 - Encouraged mixed-use buildings to keep streets populated at all hours (shops, housing, services).
- ❑ Public Transport equity
- ❑ Gender-Sensitive Toilets & Facilities
 - well-maintained public toilets, with better lighting, hygiene, and design for women.

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Quantitative Analysis

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Demography

Number of Survey Conducted

Category	Count
Commuters	40
Vehicle Holders	8
Service Providers	4

Occupation Percentage

Occupation	Percentage
Students	25%
Working professional	30%
Homemaker	15%
Other	30%

Level of Education Percentage

Education Level	Percentage
Undergraduate or above	40%
Not Educated	10%
Higher secondary	20%
Secondary	15%
Primary	15%

Gender Percentage

Gender	Percentage
Female	52%
Male	38%

Age Group Percentage

Age Group	Percentage
15-20	15%
21-30	47%
31-40	38%

Inferences

- Stratified Sampling is done
- Respondents are selected random sampling,
- demographic factors are number, Gender, Age group, Occupation and Level of Education

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Frequent use of Public Transport (buses, E-rickshaws, tempo etc...)

Frequency	Percentage
Daily	35%
Weekly	15%
Occasionally	30%
Rarely	20%

Inferences

- Frequent use of public transportation, majority of people use transportation daily, similarly second one is they rarely use transportation
- Mode of transportation mostly they rely on E-Rickshaw/auto, than Bus, and then preceding private vehicles and on foot
- To get insight mobility pattern of people
- Mass number of people informally in the morning enter to India to take grocery and vegetables in bulk, this pattern repeat whole day.
- Commuters prefer to come in day and evening time for shopping.

Mode of Transportation

Mode	Percentage
E-Rickshaw/Auto	25%
Other	15%
Private vehicles	30%
E-Rickshaw	30%

Preferable time to Visit Area

Time	Percentage
Morning	46%
Day	29%
Evening	15%
Night	10%

Frequent use, Mode of Transportation and mobility pattern

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primary destination after crossing the border

Destination	Percentage
Market or Shopping	70%
Informal Employment (Carrier)	19%
Foreign Employment	3%
others	8%

Inferences

- The most common reason for crossing the border indicates market /shopping.
- Informal employment (carrying) is also a significant number

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Uncomfortable Faced by Women

Have you ever experienced or witnessed Uncomfortable in public areas?

Response	Percentage
Yes	58.33%
No	41.67%

If yes, then by whom have you faced this incident?

Authority	Percentage
Nepal Police/Local authority	31%
Indian Police	23%
Custom office department	15%
Others	31%

If yes, where did the incident(s) occur?

Location	Percentage
Border Check Points	10%
Market Place	46%
Green and Open spaces	24%
Public transport	20%
Other Service	0%

Inferences

- The graph highlights that although more people have not faced harassment, a significant portion nearly 40% has suggested experience or witnessed Uncomfortable in public areas.
- The data underscores need for safer public spaces and targeted interventions to reduce harassment in urban space.
- 31% have experienced Uncomfortable by Nepal Police/Local authority, 23% by Indian Police, 15% by custom office department and 31% by others (people around border area)
- highlight a need for policy interventions, increased accountability, and protective mechanisms to improve safety and transparency in cross-border interactions.
- The incident occurs reported at Border checkpoints, market places, public transport

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Feeling of Unsafe by Women

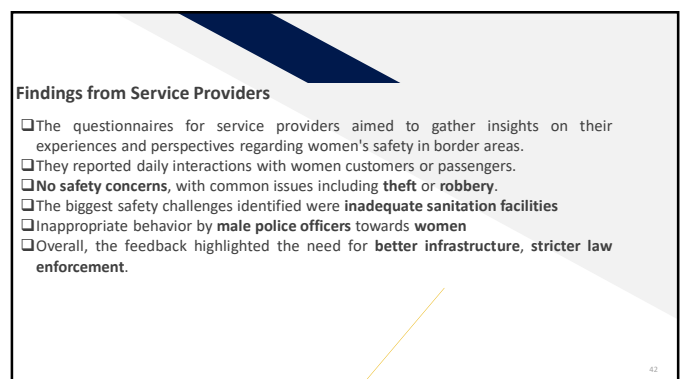
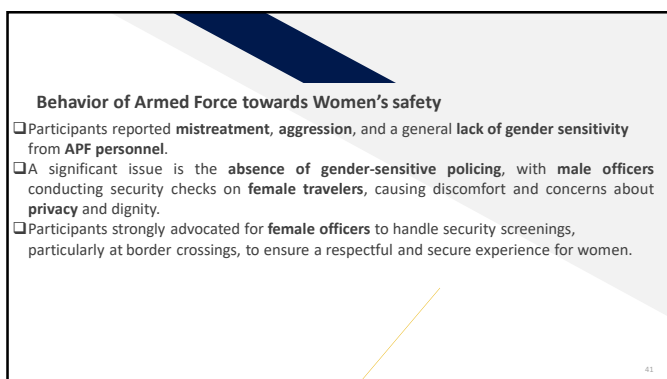
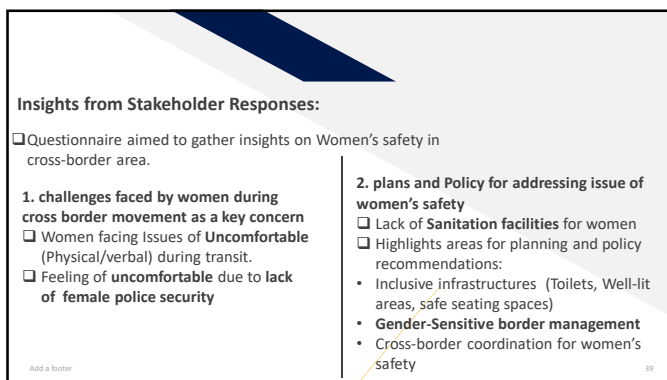
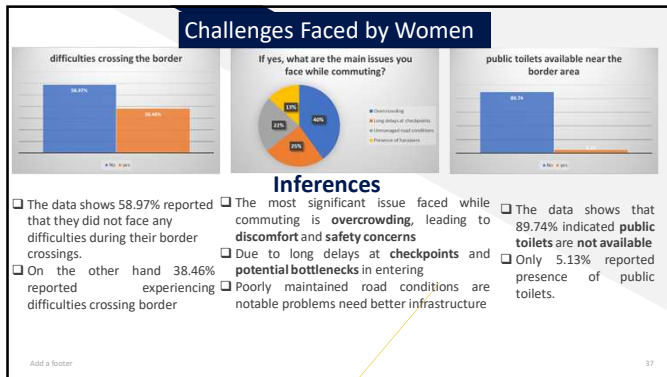
Inferences

- The largest factors contributing to feeling of unsafety in public spaces is poor lighting at evening & night
- The second major concern is lack of surveillance (CCTV/police patrol), which can cause fear and sense of unsafety.
- concerns are linked to isolated area measures, such as the absence of Female Police.
- A significant portion of concerns due to lack of safe public transport options.

factors make you feel unsafe in public spaces

Factor	Percentage
Poor lighting at evening & night	25%
Lack of surveillance (CCTV/police patrol)	17%
Isolated area	22%
Lack of safe public transport options	18%
Harassment (verbal/physical)	20%

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Findings from the Open-Ended questionnaires

1. Surveillance & Security

- CCTV cameras
- 24/7 Mahila Helpline (toll-free)
- Female police patrol
- Police on duty at checkpoints
- Separate male & female security checkpoints
- Surveillance and security personnel presence

2. Lighting & Infrastructure

- Well-lit public spaces, especially toilets and pedestrian areas
- Properly managed traffic flow and pedestrian pathways
- Sitting/resting spaces near the border area
- Designated footpaths for pedestrians
- Managed rickshaw and private vehicle parking

3. Public Toilets & Sanitation

- Female-friendly public washrooms
- Well-maintained and well-lit toilets
- Rest spots near public toilets

4. Checkpoints & Border Control

- Better-managed security screening at gates
- Use of scanning machines to reduce manual checking
- Dedicated spaces for women to facilitate border crossings
- Stricter checks on drug abusers instead of ordinary commuters

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Major Issues

Policy making	Infrastructure	Design
Lack of Gender Sensitization among Service providers	Insufficient Safety Infrastructures	No designated Space
Absence of Gender-Sensitive Training Programs	Unprotected Checking areas	No designated Parking facilities for E-rickshaws, hence roads are covered by E-Rickshaws all the way.
No Clear Gender-Inclusive Mobility framework	Lack of Female Security Personnel	No Gender-Inclusive Sanitation facilities

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RECOMMENDATIONS

- National Level Policy Recommendation
- Enhancing Security enforcement management
- Designing Infrastructures

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National Level Policy Recommendation

Integrated Border Security Technology

- Implement **policy of biometric verification** and RFID-enabled smart cards for pre-verified individuals, **reducing manual security checks**

Digital Identity & Border management System

- Introduce a secure, government—issued digital ID for Nepali and Indian citizen frequently crossing the border, similar to the US-Canada **NEXUS** program.

GPS-Tracked Public Transport

- Require all public transport operating at border to be GPS-monitored, ensuring safe transit.

Bilateral Security Cooperation

- Data sharing and law Enforcement coordination establish **real-time intelligence** sharing between **Indian and Nepali Security agencies** for safety and security of Women.

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Policies Enhancing Women's Safety

Gender-Inclusive Recruitment and Training:

- 20% APF recruitment reserved for Women, gender cells for Women's rights and protections

Deployment of Female Officers in Border Operations:

- Female APF personnel deployed to handle women-specific checks and cases

Community Engagement and Awareness programs:

- APF conducts community outreach and women's health/safety training via Family Women's Association

Policy Revisions for Gender Sensitivity

- Ongoing legal amendments to enhance APF's gender sensitivity and accountability

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Enhancing Security enforcement management

Strengthen Collaborative Security measures

- **Female Security** personnel at strategic locations, including check points and key transit areas
- The presence of female officers strengthen a sense of security and safety

Enhance Integrated Training for Security Personnel

- Establish integrated training programs for **APF, Nepal Police** and **SSB** focused on **gender-safety protocols**
- It emphasizes how to interact respectfully and effectively with people around there

Upgrade Infrastructures and Surveillance

- Investing in modern surveillance technologies such as CCTV, drones and motion sensors to improve security monitoring in cross-border areas

Develop Border Checkpoints with Adequate Facilities

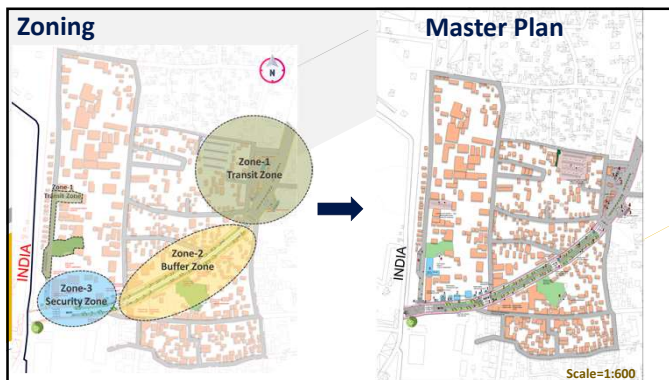
- upgrading checkpoints to include proper facilities for security personnel and safe waiting areas can streamline operators and reduce congestion, ensuring smoother and safer cross-border movement.

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Design Component	Program Formulation	Dimension Standards
Roadway for Public Vehicles	Two-way vehicular lane with dedicated bus stops and E-Rickshaw drop-off zones	6.5m (3.25m per lane) + 2.5m bus bay + 2m E-Rickshaw Stop
Pedestrian Pathways	Wide walkways with accessible paving, shaded seating, and safety features	3m minimum per side
Semi-Private Women-Friendly Zones	Reserved areas for women with seating, lighting, and security booths	4m wide
Vendor Spaces (Kiosk Lane)	Movable kiosks and designated vending stalls integrated into walkways	2m wide
Green Buffer & Vegetation	Tree-lined streets, rain gardens, and shaded pedestrian zones	Trees every 6-8m, 1.5m buffer
Seating Spaces (Street Furniture)	Public benches, shaded seating, and gathering spaces for social use	Every 50m along walkways
Sanitation & Safety Facilities	Well-lit public restrooms, security cameras, and help booths	Every 500m
Public Transport Stops	Bus stops with shaded waiting areas and digital wayfinders	Integrated with walkways



1. Transit zone

- Drop Off
- Pick Up
- Passenger Waiting Area
- Female Police Booth
- E-Rickshaw Stop
- Waiting Area
- Parking (E-Rickshaw + Car +Bike)
- Gender Inclusive Sanitation Facility

Impact on Safety and Mobility

- Reduction in Congestion by regulating vehicle parking and pedestrian movement
- Improved women's security through designated safety zones and police presence
- Enhanced accessibility for all

2. Buffer Zone(recreational)

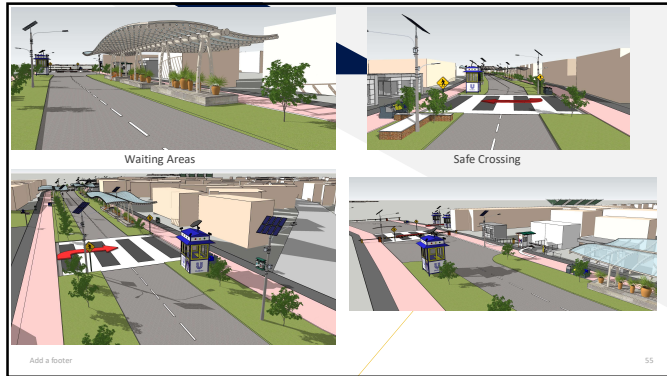
- Safe Crossings
- Pergola-Safe Seating Space
- Street Furniture
- Female Police Booth
- Gender Inclusive Sanitation Facility

3. Security Zone

- Proposed Area for Organization
- Custom Office Department
- Check Point
 - Separate Male and Female Check desk
 - Health Desk
 - X-ray Security
 - Waiting Areas
 - Wayfinding and barrier
- Security Booth Station
- Nepal Police Office
- Waiting Area
- APF

Other Infrastructures

- Trash bins at every 50-100 m
- Street Furniture 50-100m
- Drinking Water Vending Machines 50-100m
- Wayfinding, signage and barriers for dedicated zones
- Traffic management



CONCLUSION

- ❑ Findings indicate that **poor lighting**, **lack of surveillance**, and **unsafe public transport**, **bad behavior of Armed Police force**, **lack of Female Polices** contribute to the perception of insecurity among women.
- ❑ However, there remains a gap in coordination between **law enforcement agencies** and **local authorities** in addressing **gender-sensitive** urban planning needs.
- ❑ Ensuring women's safety in cross-border urban spaces requires **design interventions and policy reforms**.
- ❑ This research highlights the need to **design plan**, enhancing **security enforcement** management and **policy** with a **gender-inclusive perspective**, **prioritizing safety**, **accessibility for women**.
- ❑ The case of Biratnagar/Logbani serves as a focal point for understanding the complexities of cross-border mobility, necessity of policy reform, infrastructural improvements to foster a safer and more inclusive urban space, can serves as a model for **safe and accessible urban space** for women.

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THANK YOU !