Cairo Road in Lusaka, Zambia

WALKABILITY APP

Walkability Safety Assessment of City Road Corridors

Lusaka, Zambia

May 2024

WALKABILITY

WALK21
LEADING
THE WALKING
MOVEMENT

ZAMBIA
ROAD
SAFETY
TRUST

TRANS
SAFE
TRANSFORMING ROAD
SAFETY IN AFRICA

About Trans-Safe

The TRANS-SAFE (Transforming Road Safety in Africa) project involves national, regional, and city-level demonstrations to test different types of innovative and integrated approaches to sustainable road safety solutions, complemented by a comprehensive toolbox, capacity development, policy support and replication activities. To maximise impact, the project brings together a consortium of highly committed cities (Lusaka, Zambia; Cape Town, South Africa; Kigali, Rwanda; Kumasi, Ghana), road safety agencies and experts from both Europe and Africa.

Road safety systems and interventions from this project deliver on the recommendations of the Road Safety Cluster of the African-EU Transport Task Force, adopted in 2020. The project will also help deliver on the Joint EU-Africa Strategy (JAES) and advance countries' progress towards the 2030 Agenda for Sustainable Development and the Sustainable Development Goals (SDGs).

The vision of TRANS-SAFE includes five main aims:

Inform: Enhance knowledge of road crashes' causes and risk factors among relevant stakeholders and improve their capabilities to practically use tools to plan, assess, implement and operate road safety solutions.

Inspire: Promote the integration of the Safe System approach into local, regional and national road safety strategies by providing the needed guidance on data, methodologies and best practices.

Initiate: Strengthen road safety assessment and management systems by guiding relevant stakeholders in partner cities and countries to adopt internationally established system standards.

Implement: Create reference models for road safety innovations with a high level of replicability by implementing demonstration actions to test innovative, safe system technologies and services.

Impact: Contribute to regional and global sustainable road safety goals by evaluating the project`s demonstration actions and deriving implementable recommendations that can be integrated into policy, funding, operation, research and business practice.

About Zambia Road Safety Trust

The Zambia Road Safety Trust (ZRST) is the leading NGO for Road Safety and Sustainable Transport in Zambia, charity No: 101/0503/15 is registered under the Zambian Government NGO Act of 2009. ZRST is a dedicated organisation committed to making roads safer, promoting responsible behaviour on the streets of Zambia, and actively contributing to climate mitigation efforts through low-carbon transportation initiatives and Car Free Day activities.

The vision of ZRST is transform Zambia's roads into safer, more secure spaces for all road users while also contributing to environmental sustainability. The goal is a Zambia where road accidents are rare; every journey is a safe one; and sustainable transportation practices are addressing climate change.

The mission of Zambia Road Safety Trust is multifaceted:

1. **Raise Awareness**: We strive to educate Zambians about the importance of road safety through various programmes, campaigns, and initiatives, fostering a culture of responsible road use.
2. **Advocate for Change**: We work closely with government agencies, law enforcement, and other stakeholders to advocate for improved road infrastructure, stricter enforcement of traffic laws, and the implementation of innovative safety measures.
3. **Support Victims and Families**: We provide support to victims of road accidents and their families, offering assistance in times of crisis and helping them navigate the challenges that often follow such incidents.
4. **Climate Mitigation**: We actively promote low-carbon transportation solutions to reduce greenhouse gas emissions, contributing to Zambia's efforts in mitigating climate change.
5. **Car Free Day Activities**: We organise and participate in Car Free Day activities across Zambia, encouraging citizens to leave their cars at home, reduce emissions, and explore sustainable transport alternatives.

Our Approach

- **Education and Awareness**: We conduct workshops, seminars, and community outreach programmes to educate people about the risks associated with unsafe road behaviour, the importance of adhering to traffic rules, and the environmental benefits of sustainable transportation.
- **Policy Advocacy**: We engage with policymakers and government agencies to advocate for policies that prioritise road safety, sustainable transportation, and climate mitigation.
- **Research and Data Analysis**: We collect and analyse data on road accidents, their causes, and emissions to better understand the challenges and develop evidence-based solutions.
- **Support and Rehabilitation**: We collaborate with healthcare providers and offer support to accident victims, both in terms of medical assistance and emotional support, while also promoting eco-friendly transportation alternatives.

About Walk21 Foundation

Walk21 Foundation is a charity registered in the United Kingdom that works internationally to support everyone's right to walk in a safe, inclusive, and welcoming environment by providing evidence, tools, training and accreditation to a global network of concerned communities, politicians, academics and practitioners.

Walk21 helps make cities more walkable to increase access to basic services; enhance road safety and public health; improve gender equality; and ensure accessible, equitable, sustainable transport systems.

The key work streams of Walk21 includes:

Advocacy: representing the voice of pedestrians at key global forums to support the delivery of the sustainable development goals and Paris climate agreement target.

Knowledge: supporting governments with the development of effective policies and projects that impact positively on the safety, accessibility and comfort of people walking.

Network: Coordinating a global community of politicians, academics, advocates, engineers, planners, health professionals, architects, artists, and sociologists to advance the agenda for walking and liveable communities globally.

Acknowledgments

Executive Summary

As part of the Trans Safe project, Walk21 and Zambia Road Safety conducted a walkability study in Lusaka, Zambia, in December 2023. The main aim of the project was to better understand pedestrian experiences in Lusaka and see how some elements and characteristics of the public space (environmental determinants) influenced such experiences, both in a positive and negative way. This information can greatly assist policy making to prioritise interventions that create safer walking environments.

At the beginning of the project, Walk21 delivered a three-hour online training session to the Zambia Road Safety organisation on the use of the Walkability App as a survey tool to conduct walking interviews in Lusaka. With the use of the Walkability App, ten trained surveyors interviewed 1,137 participants who shared 1,401 experiences related to 4,719 environmental determinants, between the 19th and 23rd of December 2023. The data collection was distributed across ten different study areas in Lusaka, covering road corridors, city areas and neighbourhoods with different types of public spaces and transport systems.

Participants were asked to share positive experiences, concerns and negative experiences while walking. Overall, the share of different experiences in all Lusaka was rather balanced, with around one-third positive (35.1%), one-third concerns (31%) and one-third negative experiences (33.9%). Although the most frequent type of experience was positive, the combination of concerns and negative experiences resulted in two-thirds of all experiences. This shows that Lusaka has some pedestrian-friendly areas related to positive pedestrian experiences that can be considered as good examples of how to cater for walking safety, accessibility and comfort. However, there are also other areas related to concerns and negative experiences that require attention and improvement, as they fail to cater for walking safety, accessibility and comfort.

Once participants shared their experiences, they were asked to identify the environmental determinants that influenced them, from some predefined categories included in the Walkability App. Overall, the five most relevant environmental determinants in Lusaka related to all type of experiences were 'pedestrian crossings', 'path quality and space', 'traffic speed', 'lighting, seating or ramps', and 'personal security'. Differentiating between positive and negative experiences, the top-5 determinants related to positive experiences were 'sufficient space and path quality', 'safe crossings', 'lighting, seating or ramps´, ´secure' and ´clean air and peaceful'. Whereas the top-5 determinants related to concerns and negative experiences were 'unsafe crossings', 'poor drainage or protection from weather', 'speed of traffic', `driver behaviour' and 'fear of crime'.

The share of different pedestrian experiences varied considerably amongst study areas, showing a relevant difference in walkability across Lusaka. Three study areas presented more positive experiences and can be considered places with good walkability (Great East Rd., Chilimbulu Rd. and Tokyo Rd.), whereas two study areas presented more concerns (Leopards Hills Rd. and Los Angeles Rd.), and five study areas presented more negative experiences, which can be considered areas with poor walkability (Katima Mulilo Rd., Lumumba Rd., Great north Rd., Cairo Rd. and Railway Station).

The most relevant environmental determinants related to different experiences also varied amongst study areas. This highlights the need to conduct specific walkability interventions in each study area.

As an example, the study area of Katima Mulilo Rd. had the highest share of negative experiences, mainly related to 'drive behaviour', 'unsafe crossings' and 'speed of traffic'. However, the study area Leopard Hills Rd. had the highest share of concerns, mainly related to 'poor drainage and weather protection', 'no lighting seating or ramps' and 'insufficient space or poor path quality'. This shows that there is no one-size-fits-all solution or suitable intervention to improve the walkability of each study area.

Finally, participants were asked to share their age, gender and ability to walk and interact with the environment. This provided relevant insights on how different pedestrians might have different experiences of the same place based on their specific needs and concerns. By gender, men and women had similar experiences, with slightly more positive experiences shared by men and more concerns shared by women. The main difference amongst pedestrians were found when looking at age and ability. By age, children (<12 years old) and old people (>65 years old) shared more negative experiences than teenagers and adults, specially related to 'crossings', 'traffic speed' and 'driver behaviour'. Similarly, assisted and impaired pedestrians shared more negative experiences and concerns, specially related to 'street design', 'lighting, seating or ramps', absence of footpath' and 'crossings'. Consequently, it is important to consider the needs and concerns of specific types of pedestrians, especially children, old people and pedestrians with disabilities, when creating safe, accessible and comfortable walking environments for all.

As a recommendation, all data collected in the project were georeferenced and mapped across Lusaka to identity clusters of positive and negative experiences, while locating the most relevant environmental determinants that influenced such experiences. This can greatly assist Zambia Road Safety Trust to learn about the areas that were related to positive experiences and consider them as best practices to extend and implement in other places. On the other hand, the study also identified areas related to concerns and negative experiences that can be prioritised for future interventions. The results of this study can also guide the type interventions that are needed to improve these areas. Some places with negative experiences were related to traffic safety issues, such as ´traffic speed´, ´driver behaviour´ and 'unsafe crossing', while others were related to poor pedestrian infrastructure and equipment, such as ´insufficient space or poor path quality', 'poor drainage and protection from weather' and `no lighting, seating or ramps'.

Key recommendations

The Walkability App is being proved to be an easy tool, which local surveyors can be trained to use and apply it in walkability assessments quickly and affordably by conducting walking interviews and surveys.

Data analysis and representation provided three main results. Firstly, an overall outcome on the walkability of the city of Lusaka. Secondly, separated walkability outputs amongst study areas. And thirdly, specific micro-scale outputs for certain street segments or intersections within each study areas. Not all places across Lusaka and at different scales presented the same perceived walkability, and each case identified specific environmental determinants as the most relevant for each type of experience.

Walkability outcomes differed when analysed based on pedestrian profiles. Children, the elderly and pedestrians with difficulties to move and interact with the environment shared more concerns and negative experiences than the rest of pedestrians, especially when sharing experiences related to crossings, exposure to traffic and the quality of footpaths. Special attention must be paid to the need and concerns of these types of pedestrians.

Conclusions and discussion

1. THE APP IS ACCESSIBLE AND QUICK TO USE: It took 2 hours to train the team online and they were then able to engage 1,000+ people in only 5 days.

- ZRST should consider using the app in a systematic way in more places across the city to establish a base map of the pedestrian experience.
- Walk21 should consider making the tool accessible off-line to keep the impact on mobile data minimal and add a photo function so that the detail of the pedestrian experiences can be captured visually too.
- Other advocacy groups in Africa and globally should consider using the walkability app as an affordable and practical way to help capture and visualise the needs of people in public space.

2. ROAD SAFETY IS NOT AFFECTING EVERYONE EQUALLY: Children, the elderly and people with disabilities clearly perceive more risk and problems. Especially when dealing with traffic speed, driver behaviour and road crossings. In response, we need to ensure drivers are more considerate and respectful; street designs give priority to pedestrians everywhere; and crossings are designed with longer crossing times and shorter wait times etc.

- ZRST should develop a list of specific actions that can be taken to address the local concerns that have been mapped and shared. Campaigns need to target driver behaviour as well as improve infrastructure and ensure the needs of children, the elderly and people with disabilities are included as a priority.
- Walk21 should consider further studies that target the needs of children, the elderly and people with disabilities. If necessary, taking these people to areas where they may not currently feel able to walk and recording what changes are urgently required to ensure they are included.
- Other Trans-safe partners should consider how to promote the approach showcased in this project as a model that could be adopted by others to help rapidly transform better road safety outcomes across Africa.

3. THERE IS GOOD AND BAD EVERYWHERE: Lusaka has safe crossings and unsafe crossings. Appropriate traffic speeds but also places where speed is a problem. The data lets us pinpoint where new solutions are needed most. The important part is knowing where the difference is and where to target resources in response.

- ZRST should share the findings of the report with Lusaka City Council and other relevant authorities who have the responsibility for making lives safer, easier and more enjoyable to inspire actions on the ground that deliver better road safety outcomes as a priority.
- Walk21 should maintain the partnership with ZRST to ensure the database of experiences continues to grow and be updated, post interventions, to help evaluate the impact of the works.
- Other cities across Africa, should learn from the Lusaka experience of using the app as a foundation to inspiring more targeted road safety improvements.

List of Contents

1. Introduction

1.1. Background and context of the study

1.1.1. Importance of walkability in Lusaka Zambia

Lusaka, the capital of Zambia, holds a pivotal position as a strategic hub, interconnected by major highways that link it to neighbouring countries like the Democratic Republic of the Congo (DRC), Tanzania, Malawi, Zimbabwe, Namibia, and Angola. The city is experiencing rapid population growth, characterised by an annual population growth rate of five per cent, marking it as one of the fastest developing urban centres in Southern and Central Africa. Currently, the population of Zambia stands at about 20 million people and 17% of this population resides in Lusaka City (ZSA Census, 2022)[1].

In Lusaka, mobility is a cornerstone of economic and social prosperity, connecting people, goods, and places (Kett et al, 2019)[2]. However, mobility is hindered by road network shortcomings, public transport deficiencies, and a lack of sufficient Non-Motorized Transport (NMT) infrastructure. This affects marginalised groups, especially women, children, youths, older persons, and persons with disabilities.

1.1.2. Current state of walkability and pedestrian safety in Lusaka, Zambia

In Lusaka, most residents walk and cycle as their daily mode of transport. In the case of Lusaka, UNEP noted that the modal split of journeys includes walking (65%) playing a major role in daily mobility and 24% Public Transport, 10% Private Cars and 1% Cycling. However, Lusaka faces various challenges in getting these pedestrians safely and affordably between their homes, schools, and workplaces due to increased safety risks, harassment and theft, insufficient investments in safer NMT infrastructure and low priority given to low-carbon transport (Sumper, 2017)[3].

Although a significant number of Lusaka residents rely on walking as their primary mode of transportation, the Road Transport and Safety Agency's (RTSA, 2022)[4] accident report indicates that approximately three-quarters of all road traffic fatalities involve pedestrians. This is particularly true for women, children, and youths aged between 15 and 45.

1.1.3. Improving walkability and pedestrian safety in Lusaka, Zambia

Walking and cycling in Lusaka is increasingly being recognized as a clean, affordable and sustainable mode of transport and an essential part of rural and urban travel. With the many environmental and

---

[1] Zambia Statistics Agency, 2022 Census of Population and Housing.

[2] Kett, M, Cole, E, Turner, J (2019). "Disability, mobility and transport in low- and middle-income countries: a thematic review

[3] Sumper E and Barker M (2017). Sustainable Urban Transport: Improving Mobility Conditions for Vulnerable Road Users in Sub-Saharan Africa. In: Leal Filho W, Belay S, Kalangu J, Menas W, Munishi P, Musiyiwa K (eds) Climate Change Adaptation in Africa. Climate Change Management. Springer, Cham.

[4] Road Transport and Safety Agency (2022), Annual Accidents Report

public health benefits that walking cycling offers, there is increased investments in several projects and programs to improve the safety, accessibility, and walkability experience of pedestrians.

The Ministry of Transport and Communications (MOTC, 2019)[5] developed the Non-Motorised Transport (NMT) Strategy. This strategy serves as a valuable tool to facilitate the transition to a low-carbon transport system and provide guidance for the implementation of high-quality non-motorised transport systems. The NMT Strategy aligns with the National Road Traffic Safety Policy and Action Plan, which aims to establish a safe road network for all road users.

In the last decade ZRST, in partnership with various stakeholders have increased investments in the implementation of safer road infrastructure to optimize the efficiency of the mobility systems.

Figure 1. Pedestrian sidewalks implemented along Lusaka's primary school.

Through an assessment of the current walkability within public transit catchments, with input from transit users, a responsive program of safer infrastructure improvements can be formulated. This program will strategically target areas with the highest need, aiming to enhance walkability and facilitate increased ridership. The ultimate objective is. By directing investments to areas where they are most critical and impactful.

---

[5] Zambia Non-Motorised Transport Strategy (2019). Ministry of Transport and Communications, United Nations Environment Programme, Institute for Transportation and Development Policy.

Zambia intends to construct 40 km of complete pedestrian facilities and 20 km of cycle tracks across ten key cities and towns (MOLG, 2020)[6]. The Map below shows some of the proposed cycling lanes in Lusaka.
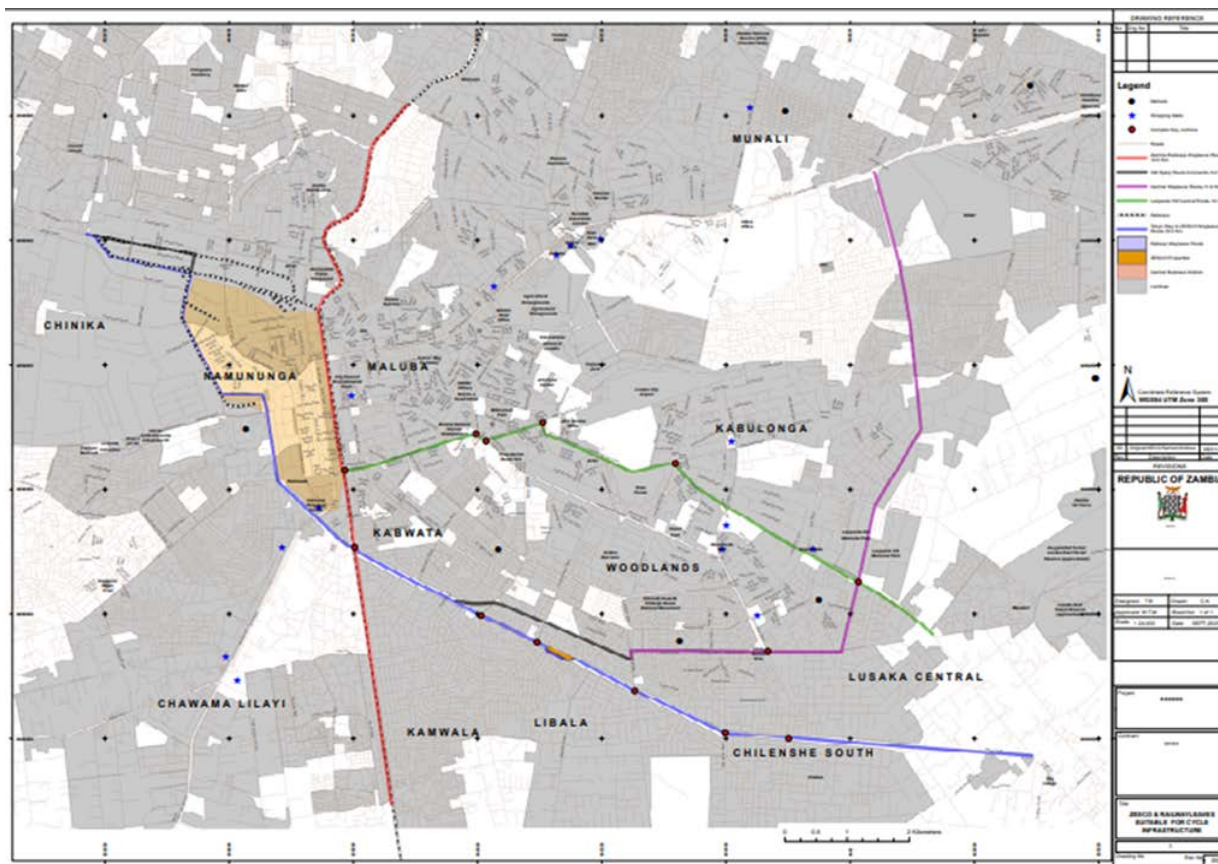
Figure 2. Proposed cycling lanes in Lusaka.

1.2.   Project scope

Mobility plays a vital role in economic and social prosperity, connecting people, goods and places. Recent studies emphasize the importance of considering distinct factors when examining the utilization and perceptions of public transport by various road users (Bakker, 2020)[7]. These studies have demonstrated that various factors, including the availability of transportation options, the purpose of the trip, the presence of companions, and vulnerability to crime (such as harassment), contribute to disparities in travel choices and experiences among different demographic groups based on gender, age, and personal abilities.

However, poorly planned transport systems negatively affect everyone, whether they are driving a car, using public transport, walking or cycling (WHO, 2018)[8]. The Walk21 Foundation and Zambia Road Safety Trust, consortium partners in TRANS-SAFE, have collaborated to initiate a project aimed at mapping and analysing the road safety concerns of pedestrians regarding walking and cycling in

---

[6] Ministry of Local Government and Urban Development (2020). Proposed cycling lanes in Lusaka.

[7] Bakker, S, Haq, G, Peet, K, Gota, S, Medimorec, N, Yiu, A, Jennings, G, Rogers, J (2019). Low carbon quick wins: integrating short-term sustainable transport options in climate policy in low-income countries.

[8] WHO (2018). Global status report on road safety (2018).

13

Lusaka. To enable this, the project will utilize the walkability application to collect location-based information on pedestrians' experiences while identifying the elements and characteristics of the public space that influence such experiences. A field survey will be carried out. In which, 200 pedestrians will share 1,000 walking experiences, linked to 800 observations of the public space.

Based on the collected data, a comprehensive ranking of the most reported positive and negative concerns will be developed to create crash risk/hotspot maps. This ranking will provide valuable insights into the key areas of improvement required to address the concerns of pedestrians and cyclists in Lusaka.

1.3. Project Objectives

The goal of the project is to understand and locate pedestrians' road safety concerns, especially women, children, young people and persons with disabilities while walking around Lusaka. The project has the following objectives:

- To examine the walking experiences of pedestrians in Lusaka.

- To map and assess the existing walkability conditions at ten major public transit nodes including bus stops, road intersections, junctions and school zones.
  This assessment will analyse and evaluate factors such as pedestrian infrastructure (sidewalks, seating, urban greenery), accessibility (ramps, path space), safety (pedestrian crossings, lighting, traffic speed and driver behaviour).

- To identify areas with clusters of positive experiences to learn from them (as best practices), while also identifying areas with clusters of negative experiences that require safer road improvement, and prioritised road safety interventions to enhance the pedestrian experience.

2. Methodology and Approach

2.1. Data collection tool: Walkability App

The Walkability App is a participatory mapping tool that enables pedestrians to share their positive and negative walking experiences and identify the environmental factors that influenced them. Users can provide additional information such as age, gender, purpose of the walk, and familiarity with the area. Each observation includes details such as time, date, location, and weather conditions.

Designed to support walkability research and policy, the app offers valuable insights into the relationship between public spaces and pedestrians' experiences, both positive and negative. The fine-grained and geolocated data generated by the app enables the development of detailed and up-to-date walkability assessments, highlighting pedestrian-friendly areas and the reasons behind their positive experiences. This information aids policymakers in promoting and replicating successful areas while identifying and prioritizing locations in need of specific interventions and improvements.

Furthermore, the app allows for the segmentation of observations by age, gender, and personal abilities, facilitating a better understanding of the unique needs and barriers faced by different populations. This inclusive approach assists policymakers in designing and managing interventions in the public space that cater to diverse groups. The app's systematic data collection, analysis, and presentation methods, tailored to the specific population and location, make it a valuable tool for walkability case studies and reassessing the impact of walkability interventions. There are 12 categories linked to positive experiences and 12 for negative experiences and concerns. Refer to Figure X.

Figure 3. Pre-defined environmental determinants of perceived walkability.

Ten members of the Zambia Road Safety Trust were trained in a three-hour online session about the Walkability App. Trained surveyors had the app installed on their mobile phones to conduct walking interviews in Lusaka and input the necessary data for the study as participants respond to the surveyors´ questions. A Walkability App tutorial and training material with information on how to conduct walking interviews can be found in Appendix 1 and 2.

Figure 4. Trained surveyors at the online training session (left) and conducting walking interviews with the app (left).

2.2.Data collection strategy

2.2.1. Selection of study areas

The study took place in the inner-city area of Lusaka, Zambia. Lusaka has 3,079,964 inhabitants, with 81.7% of people living in its urban areas and 18.5% in rural areas (ZSA Census data, 2022). Lusaka's transport modal share in 2021 showed a 64% for walking, 24% for public transport, 10% for cars, and 2% for cycling (SEI, 2021). Ten (10) areas with heavy foot traffic. Consideration has been given to main destinations that attract transit users, such as nearby healthcare, education, sports and leisure facilities, retail areas, and employment zones were pre-identified for the non-motorized user safety survey in Lusaka, a section of the TAZARA rail line running North (Area Y), and a part of the Southern section of the inner ring Road (Area X).

2.1.2. Time and data frames for data collection

The data collection phase took place during four consecutive days, from December 20, 2023, to December 23, 2023. Walking interviews were scheduled during three different time periods: morning (07:00 am to 10:00 am), afternoon (2:00 pm to 5:00 pm), and evening peak hour (6:00 pm to 8:00 pm). These time slots have been chosen to capture a comprehensive representation of pedestrian experiences throughout different parts of the day.

2.1.3. Population sampling

The target population for this study includes pedestrians, who are the most vulnerable road users in Lusaka, with a focus on women, children, young people, the elderly and persons with disabilities between the ages of 7 and 65 years old. The study will employ a stratified sampling method to ensure the representation of different age groups and genders from various areas in the selected locations.

The field researchers will be deployed in ten locations to capture the diverse experiences of pedestrians. The surveyors will walk together with the pedestrian and record perception intercepts or relevant experiences identified by the participant, both positive and negative.
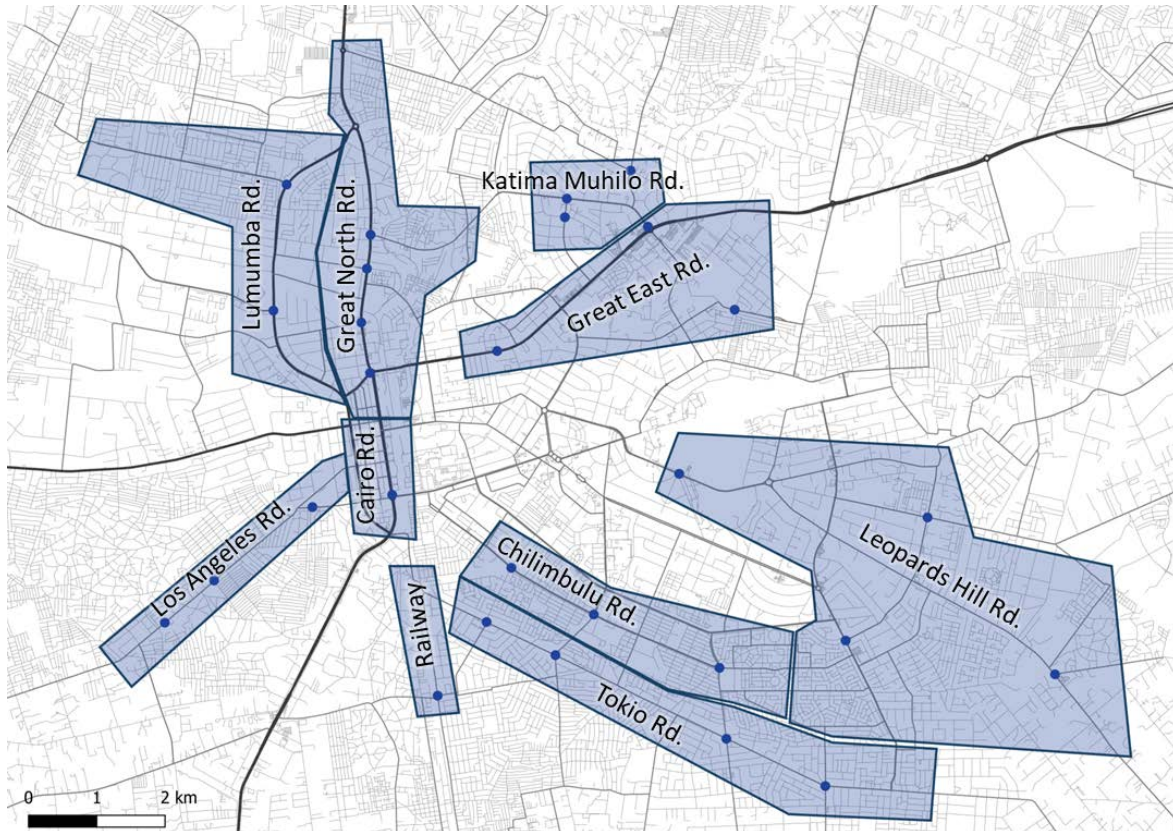
Figure 5. The ten study areas in Lusaka.

2.1.4. Description of areas selected for the study.

The ten (10) pre-identified locations emerged as the highest-ranking areas in terms of foot traffic within both the rural and urban areas of Lusaka city. Through extensive analysis and evaluation, these locations have been identified as the focal points of pedestrian activity and the convergence of multiple pedestrian pathways witnessing a significant volume of people moving on foot. The selected areas represent diverse settings within Lusaka, including urban centres, commercial districts, and key transport hubs.

Addressing the needs of these high-foot-traffic areas can have a cascading effect, positively influencing adjacent regions and contributing to the overall walkability and liveability of Lusaka city. This targeted approach allows for a more focused implementation of interventions and improvements to enhance the pedestrian experience, ensuring that the most heavily frequented locations receive the necessary attention.

Study area 1: Katima Mulilo Road

Kwacha Rd-Katima Mulilo Rd Junction at Olympia Park School	-15.385707, 28.306857
Cnr Mapepe Rd and Kwacha Rd	-15.388090, 28.306567
Kasangula Rd-Zambezi Rd Junction at Bus Stop	-15.382003, 28.315553

Aerial Image	*Map*
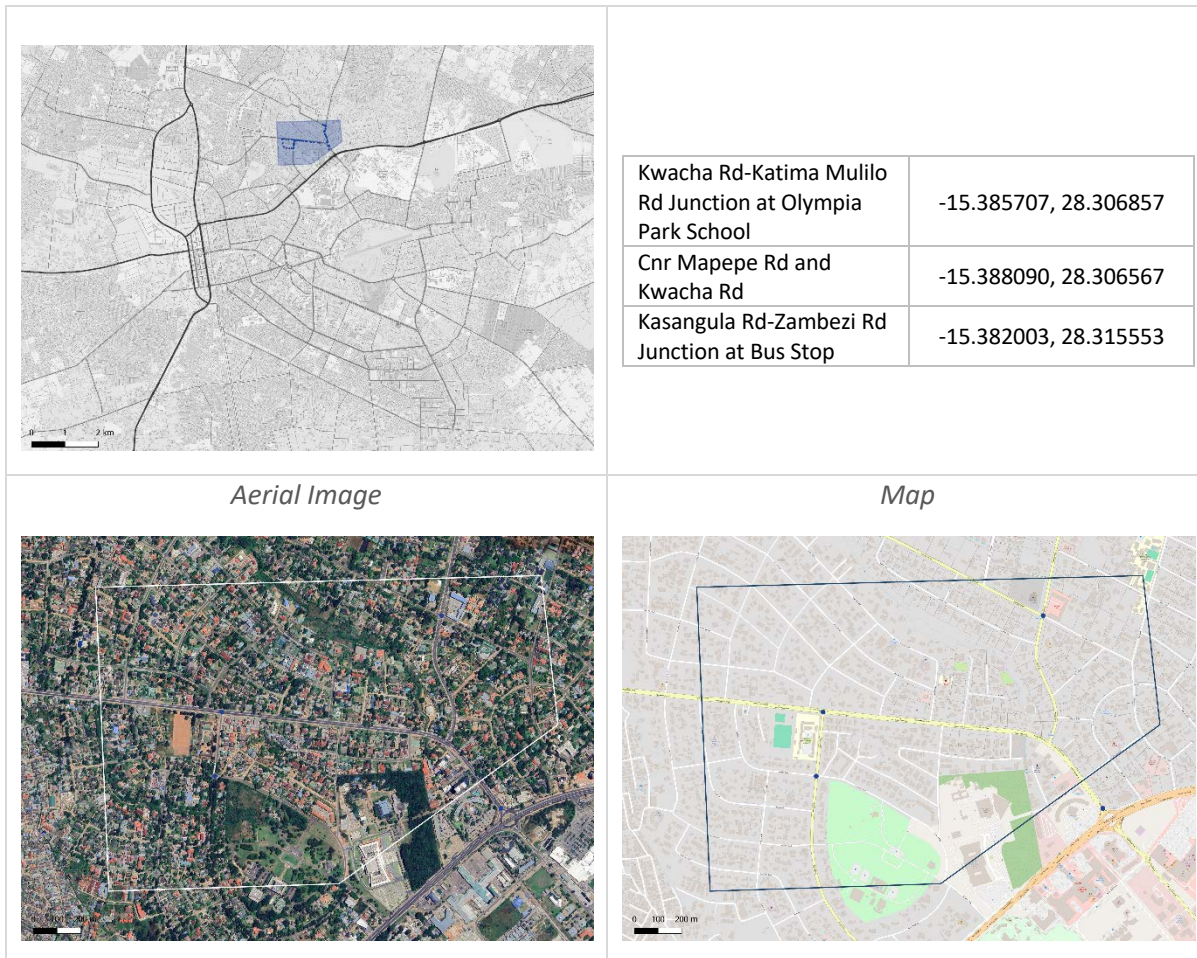
Figure 6. Katima Mulilo Road.

Katima Mulilo Road, unfortunately, presents a concerning landscape when it comes to road safety. The thoroughfare, characterized by its suboptimal conditions, poses a myriad of hazards for motorists and pedestrians alike. One of the primary issues plaguing Katima Mulilo Road is the lack of proper signage and road markings. Insufficient and faded signage fail to adequately guide drivers, leading to confusion and potential accidents. This lack of clarity exacerbates the risk factor, especially for those unfamiliar with the road.

Study area 2: Great East Road

Katimamulilo-GER roundabout	-15.389524, 28.317899
UNZA Student Walkway Nangwenya Road	-15.400267, 28.329739
LCC Carpark Cnr Great East Rd and Landa Rd	-15.405673, 28.297351

Aerial image	*Map*
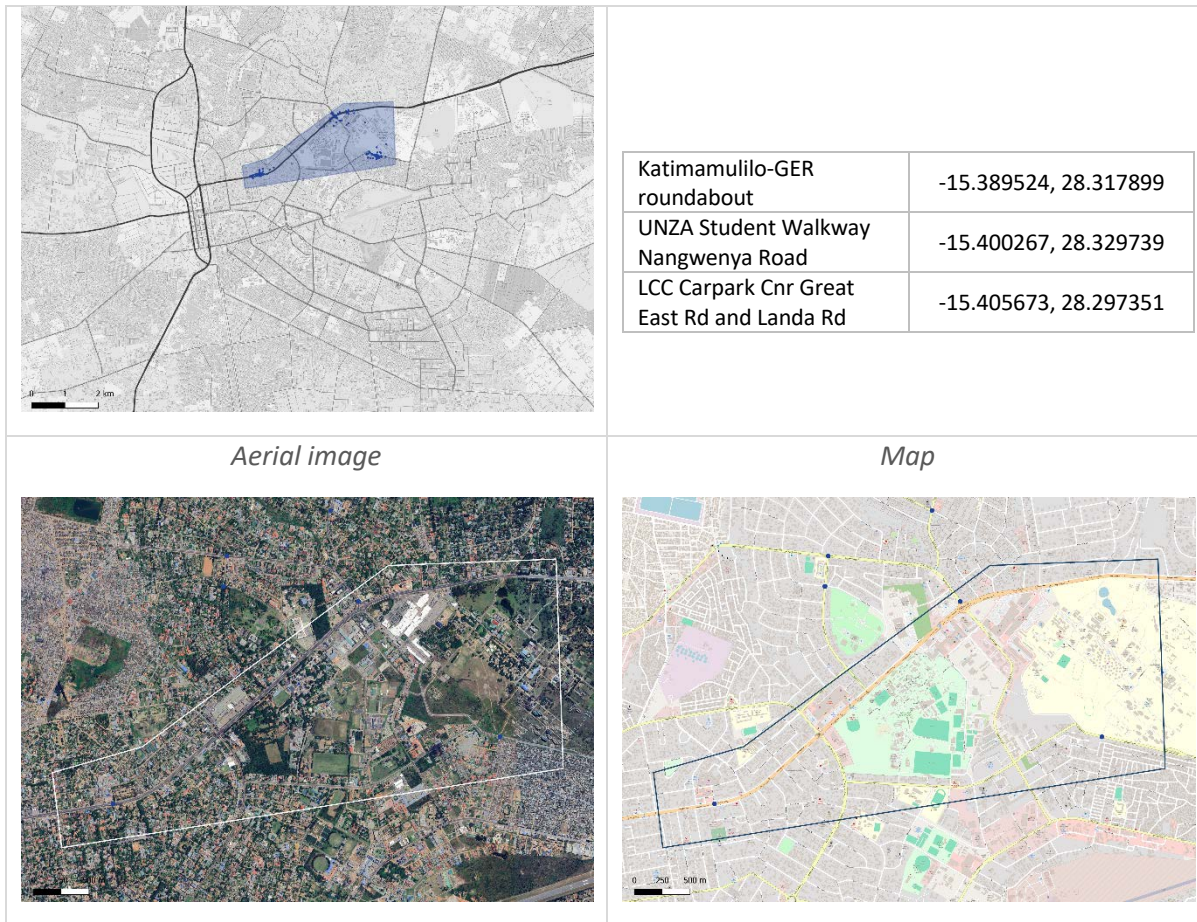
Figure 7. Great East Road.

Great East Road in Lusaka unfortunately stands out as a concerning example of compromised road safety. Various factors contribute to the hazardous conditions, making it a challenging route for both drivers and pedestrians. One glaring issue is the state of the road surface itself. Potholes and uneven patches are pervasive, creating a perilous driving experience. These road conditions not only pose a threat to vehicle integrity but also increase the risk of accidents as drivers navigate through unpredictable terrain. The lack of proper signage and road markings further exacerbates the safety concerns on Great East Road. Inadequate and poorly maintained signage fails to provide clear guidance to drivers, leading to confusion and potential hazards, especially for those unfamiliar with the area.

WALK21
LEADING
THE WALKING
MOVEMENT

ZAMBIA
ROAD
SAFETY
TRUST

TRANS
SAFE
TRANSFORMING ROAD
SAFETY IN AFRICA

Study area 3: Leopards Hill Road

Junc Los Angeles Boulevard and Leopards Hill Road	-15.422096, 28.322764
Cnr Twin Palm Road and Lake Road	-15.427602, 28.356070
Mwapona Rd and Mosi-0-tunya Road Junction	-15.443691, 28.345061
Leopards Hill and Bauleni Junction	-15.448108, 28.373669

Aerial image	*Map*
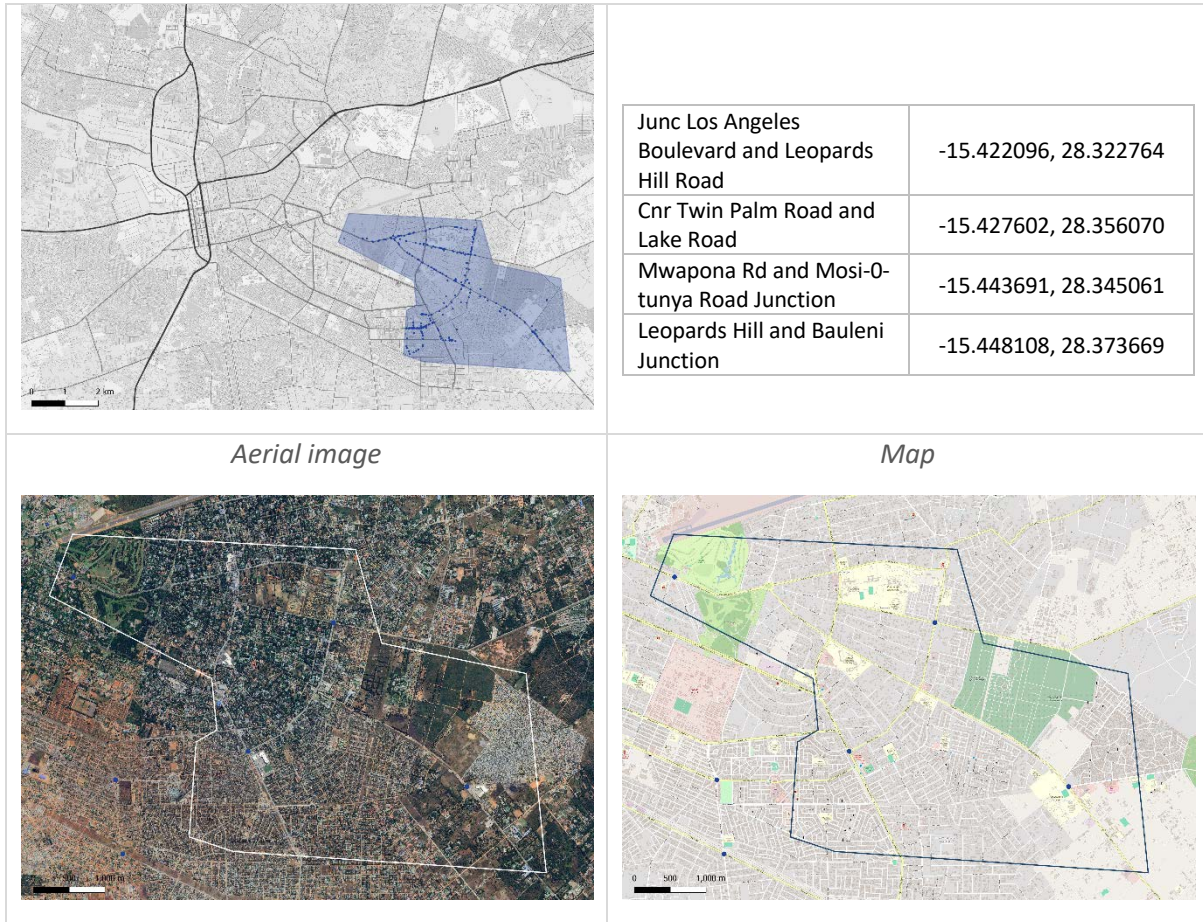
Figure 8. Leopards Hill Road.

Leopards Hill Road in Lusaka epitomizes a disturbing disregard for road safety, presenting a host of issues that make it a hazardous thoroughfare for all who traverse it. The litany of concerns associated with this road compounds to create an environment fraught with peril.

Study area 4 Lumumba Road

Common Wealth Rd & Lumumba Rd Intersection	-15.383854, 28.268651
Cnr Mungwi Rd and Lumumba Rd	-15.400358, 28.266805

Aerial mage	*Map*
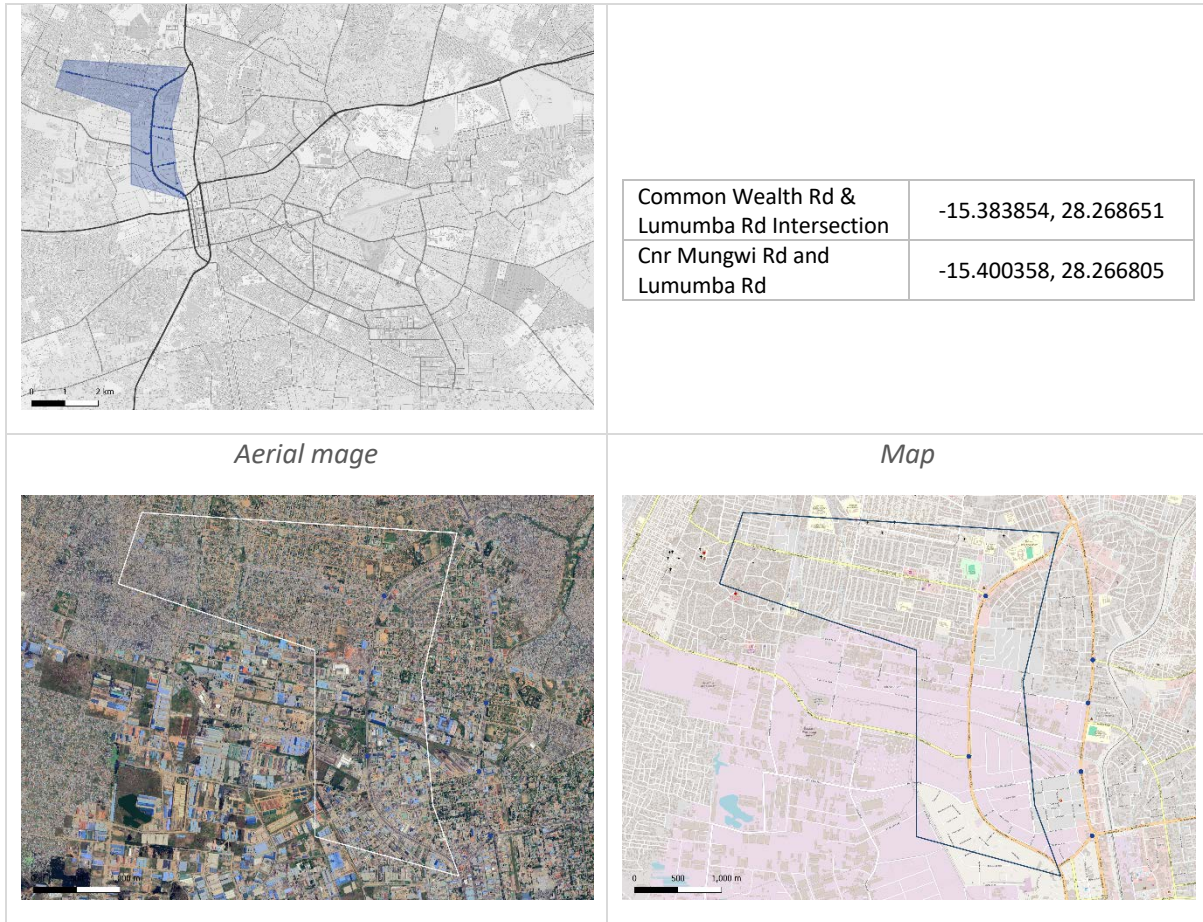
Figure 9. Lumumba Road.

Lumumba Road in Lusaka is unfortunately marked by a series of road safety deficiencies, creating an environment that poses significant risks to both motorists and pedestrians. First and foremost, the road surface on Lumumba Road is in a state of disrepair. Potholes and uneven sections mar the journey, not only causing damage to vehicles but also elevating the potential for accidents. The neglect of road maintenance transforms Lumumba Road into a hazardous path, where drivers must constantly contend with unpredictable and treacherous conditions. A notable issue exacerbating road safety concerns is the absence of clear signage and proper road markings. Drivers are left without adequate guidance, leading to confusion and an increased likelihood of wrong turns and collisions. This lack of directional information contributes significantly to the unsafe nature of Lumumba Road.

Study area 5: Great North Road

Kalambo Rd-Great North Rd roundabout at ZRA	-15.408608, 28.279917
Chandwe Musonda Rd-Great North Rd Junction	-15.401951, 28.278720
Sheki sheki Rd-Great North Road Junction	-15.394902, 28.279559
Katima Mulilo Rd-Great North Road Junction	-15.390437, 28.280073

Aerial image	*Map*
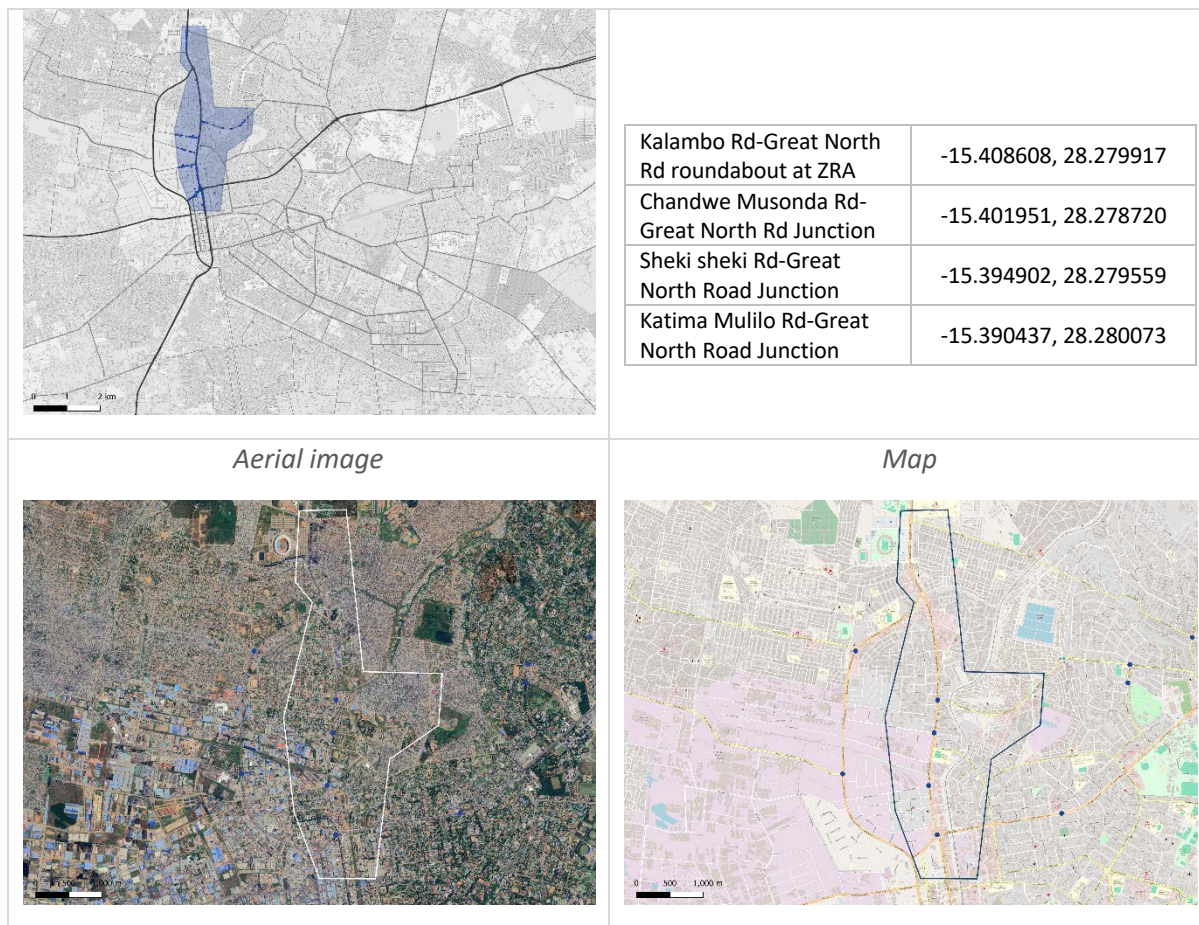
Figure 10. Great North Road.

Great North Road in Lusaka presents a disconcerting scenario when it comes to road safety, with several factors converging to create a hazardous environment for both drivers and pedestrians. A striking concern is the insufficient signage and road markings along Great North Road. This lack of clear guidance creates an atmosphere of confusion for drivers, increasing the likelihood of wrong turns, sudden stops, and overall unsafe driving practices. The absence of proper directional indicators exacerbates the dangers associated with this thoroughfare.

Inadequate lighting compounds the safety issues on Great North Road, particularly during nighttime. Insufficient visibility poses a significant threat, making it challenging for drivers to anticipate obstacles or pedestrians, thereby elevating the risk of accidents and collisions. Enforcement of traffic regulations appears to be lax, allowing for the prevalence of reckless driving behaviours. Speeding, overtaking in unsafe conditions, and a lack of adherence to traffic rules contribute to an environment of chaos on Great North Road, further compromising the safety of road users.

Study area 6: Chilimbulu Road

Paul Ngozi Street, Chibwa Rd Intersection at St Patricks	-15.434156, 28.299272
Cnr Chilimbulu and Sandulula Rd at Engen Filling Station	-15.447347, 28.327640
Ekaluwa Fitment Centre JunctionMoon Pharmacy Junction	-15.440378, 28.310485

Aerial image	*Map*

Figure 11. Chilimbulu Road.

Chilimbulu is a notable street in Lusaka, featuring residential properties, including standalone houses and flats. It is characterised by its tarred surface, indicating a well-maintained road suitable for regular vehicular and pedestrian traffic. The presence of educational institutions like Kamwala Secondary School and St Patrick Girls School along Chilimbulu Road serves as a significant route for locals, and businesses, providing access to essential services and amenities.

Study area 7: Los Angeles Road

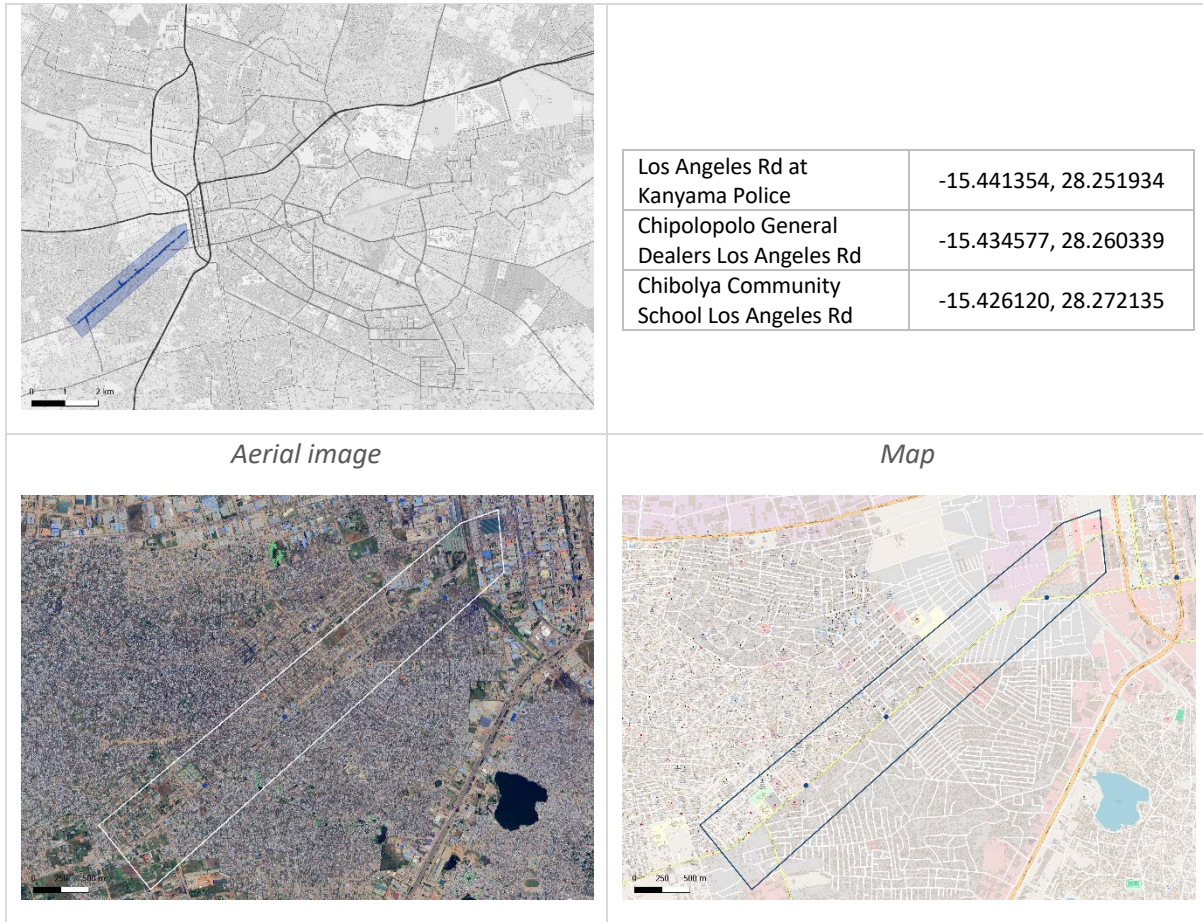| Los Angeles Rd at Kanyama Police	-15.441354, 28.251934
Chipolopolo General Dealers Los Angeles Rd	-15.434577, 28.260339
Chibolya Community School Los Angeles Rd	-15.426120, 28.272135

Aerial image	*Map*

Figure 12. Los Angeles Road.

Los Angeles is a secondary Rd, estimated at 2 km length. The road covers part of Lusaka's CBD of City market and covers mostly the residential places of Kanyama Compound.

Tokyo Way and Paul Ngozi Intersection at Goldcrest Mall	-15.441388, 28.295913	
Cnr Nationalist Rd and Tokyo Way	-15.445720, 28.305262	
Tokyo way and Kasama Rd Junction	-15.456678, 28.328585	
Shantumbu Rd-Tokyo way Junction	-15.461774, 28.339606	

Aerial image	Map
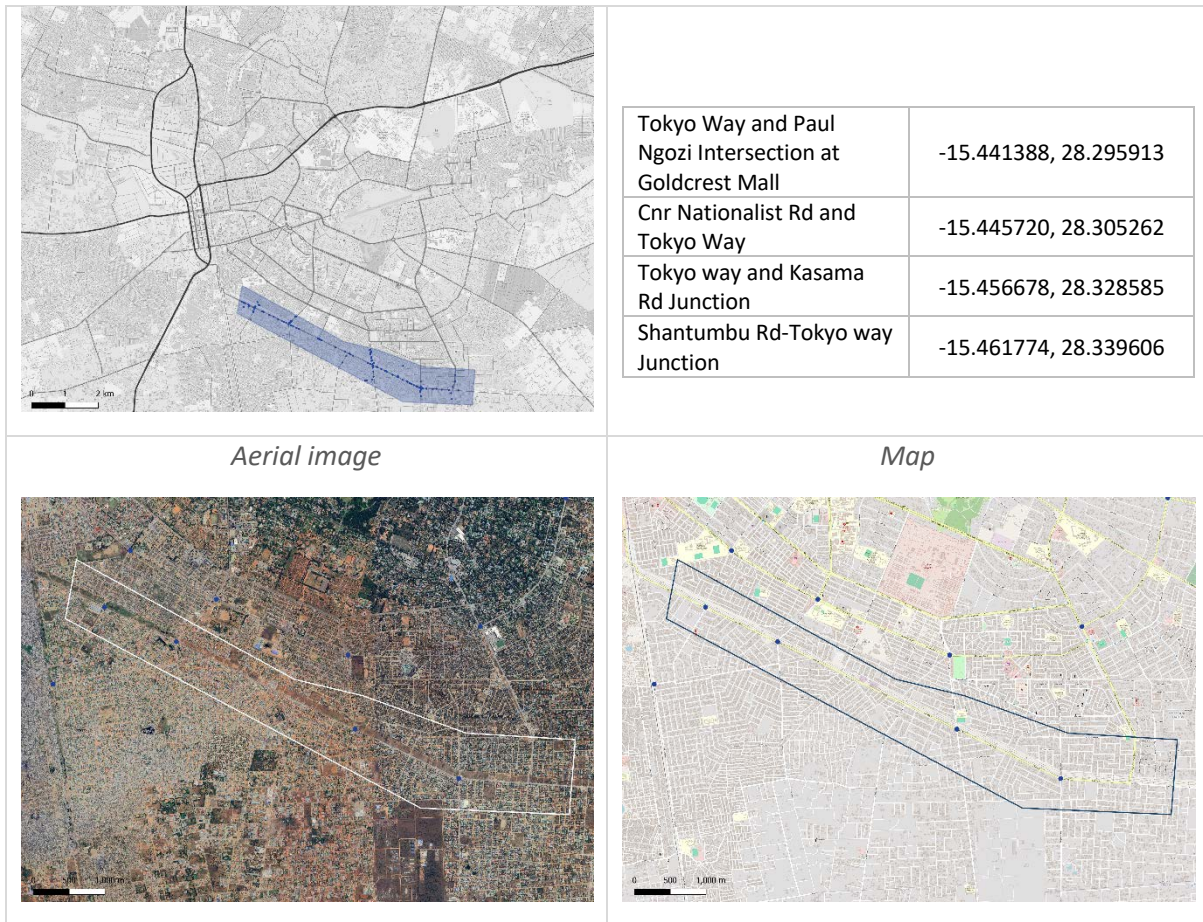
Figure 13. Tokyo Road.

Tokyo Way Rd., also called Inner Ring Rd, situated in Lusaka, is a secondary road. It boasts an asphalt surface and comprises two lanes, designed for one-way traffic. The road includes turn lanes, specifically designed for merging to the right or proceeding straight characterised with a high vehicular and pedestrian traffic. The road covers mostly residential places like Libala South, Kamwala South, Chawama and Misisi Compounds.

| Cairo Road and Kafue Roundabout | -15.424633, 28.2830241 |

| Aerial image | Map |

Figure 14. Cairo Road.

Cairo Road is the main thoroughfare of Lusaka and serves as the principal business, financial hub, retail, and service centre of the City of Lusaka. The Road spans approximately 1.8 km in length, running north-south and is one of the oldest streets in Lusaka, reflecting the city's urbanism and architectural history. Cairo Road's prominence in the central business district (CBD) makes it a focal point for both locals and visitors, offering a glimpse into the city's evolution and its status as a bustling urban centre. The road is a key connector within the city's road network, linking various other important streets and avenues, and the city's points of interest.

Study area: 10 Railway Corridor

	Cnr Esther Lungu Rd and Chawama Rd : -15.451047, 28.289212
Aerial image	*Map*

Figure 15. Railway corridor.

The railway corridor near Moyos Primary School in Lusaka presents a concerning scenario in terms of safety, with various factors contributing to potential hazards for both students and the local community. One of the primary safety concerns is the lack of proper fencing or barriers along the railway corridor. Without sufficient protective measures, there is a heightened risk of unauthorized access, particularly by curious children. This lack of physical separation between the railway and the school poses a danger, as students may inadvertently wander onto the tracks.

3. Data analysis and findings

3.1. Summary of data collected in Lusaka

From the 19th to the 23rd of December in 2023 (5 days), 10 trained surveyors interviewed 1,137 participants in ten study areas in Lusaka. The 1,137 participants shared a total of 1,401 walking experiences, linked to a total of 4,719 environmental determinants.

Figure 16. Number of surveyors trained, participants engaged, walking experiences shared and observations taken.

3.2. Pedestrian profiles in Lusaka

From the 1,137 participants engaged in the study, 631 were men (55.5%), 447 were women (39.3%9 and 59 did not specified their gender – no answer (5.2%). Regarding age, 87 were children (7.7%), 161 were teenagers (14.2%), 564 were adults (49.6%), and 325 were elders (28.6%). Regarding ability to walk and interact with the environment, 995 were able to walk and interact with the environment (87.5%), 60 were assisted (5.3%), and 82 were impaired (7.2%).
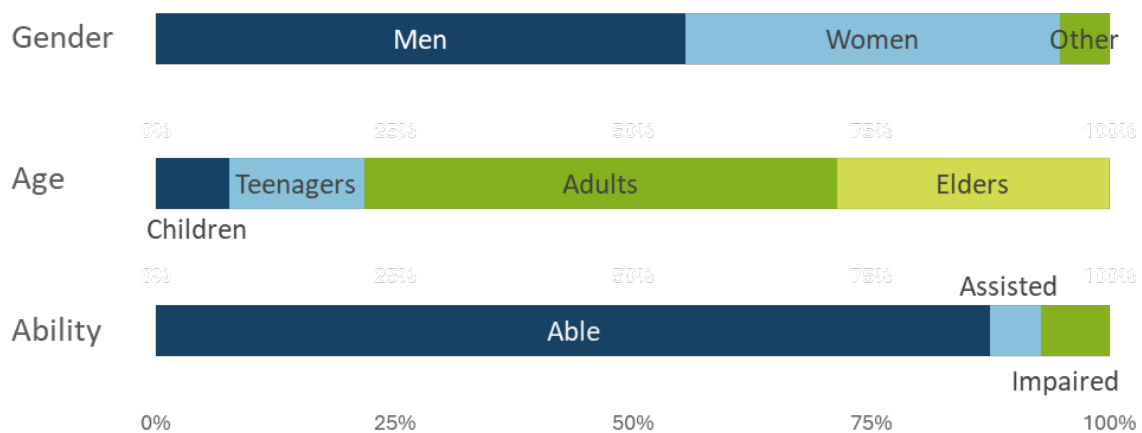

Figure 17. Pedestrian profile of participants.

3.3. Walk context in Lusaka

From the 1,137 walks captured in the walking interviews, 720 pedestrians walked out of necessity (63.3%) and 417 by choice (63.7%). Regarding the purpose of the walk, 877 were for transport (77.1%) and 260 as a leisure activity (22.9%). Regarding company, 826 pedestrians were alone (72.6%), 100 with a dependent (8.8%), and 211 in a group (18.6%). Finally, regarding the familiarity with the place, 861 pedestrians were by locals (75.5%9 and 276 by visitors (24.3%).
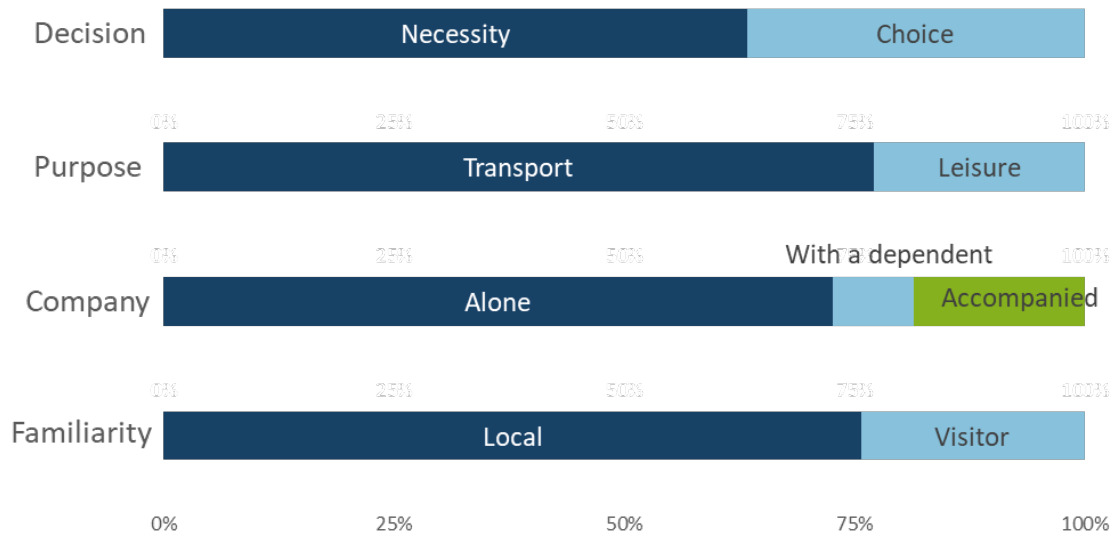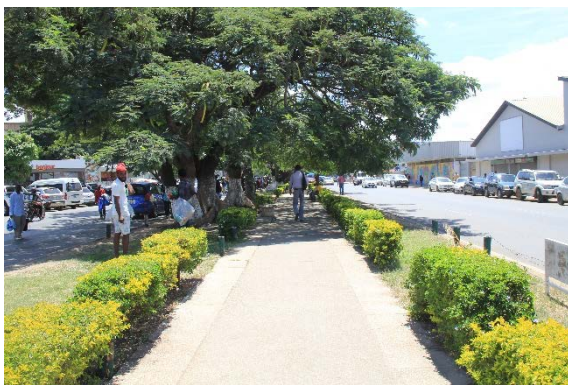

Figure 18.Walk contexts shared by participants.

3.4. Pedestrian experiences in Lusaka

From the 1,401 walking experiences shared in the whole region of Lusaka, the most frequent types of experiences were positive (35.1%), followed by negative experiences (33.9%) and concerns (31%). However, the combination of negative experiences and concerns (64.9%) were more frequent than the positive experiences (35.1%).

Experience	N	%
Positive	492	35.1
Concern	434	31
Negative	475	33.9
Total	1401	100

- Positive experience
- Concern
- Negative experience

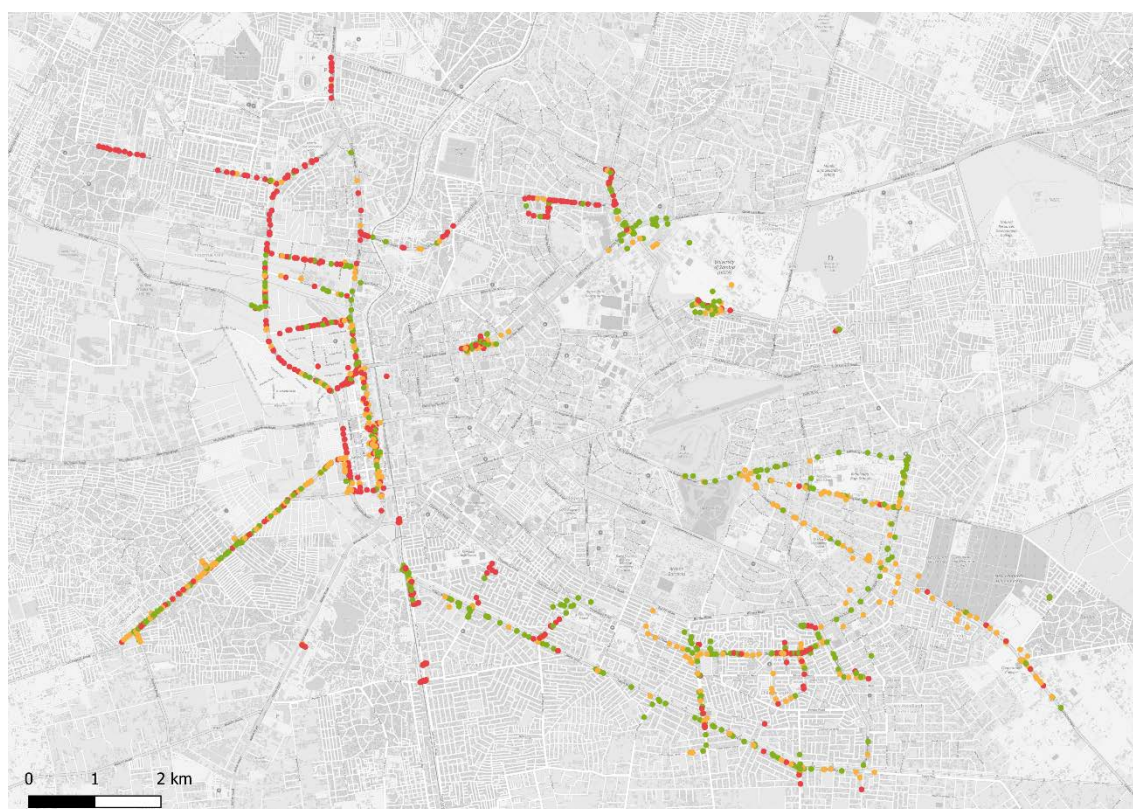*Table 1. Walking experiences in Lusaka.*

Figure 20. All experiences shared in Lusaka during the study.

3.5. Environmental determinants in Lusaka

The 1,401 walking experiences collected through interviews were linked to 4,719 observations on environmental determinants included in the Walkability App as predefined categories.

1. Pedestrian crossings

The most frequent determinant that influenced walking experiences in Lusaka were 'pedestrian crossings', with 615 observations (13%). Of which, 241 observations (3.6%) were related to positive experiences due to 'safe crossings', while 169 observations (3.6%) and 205 observations (4.3%) were respectively related to concerns and negative experiences due to 'unsafe crossings´.

2. Path quality and space

The second most frequent determinant was `path space and quality' with 529 observations (11.2%). Of which 285 observations (6%) were related to positive experiences due to ´sufficient space and path quality', while 97 observations (2.1%) and 147 observations (3.1%) were respectively related to concerns and negative experiences due to insufficient space and poor path quality'

3. Traffic speed

The third most frequent determinant was 'traffic speed' with 517 observations (11%). Of which, 168 observations (3.6%) were related to positive experiences due to 'appropriate traffic speed', while 141 observations (3%) and 208 observations (4.4%) were respectively related to concerns and negative experiences due to 'traffic speed'.

4. Lighting, seating or ramps

The fourth most frequent determinant was ´lighting, seating or ramps´ with 482 observations (10.2%). Of which, 217 observations (4.6%) were related to positive experiences due to the presence of ´lighting, seating or ramps´, while 123 observations (2.6%) and 142 observations (3%) were respectively related to concerns and negative experiences related to 'no lighting, seating or ramps'.

5. Personal security

The fifth most frequent determinant was 'personal security' with 471 observations (10%). Of which, 204 observations (4.3%) were related to positive experiences due to 'secure places', while 121 observations (2.6%) and 146 observations (3.1%) were respectively related to concerns and negative experiences due to 'fear of crime'.

6. Protection from weather

The sixth most frequent determinant was 'protection from weather' with 414 observations (8.7%). Of which, 44 observations (0.9%) were related to positive experiences due to 'good protection from weather`, while 204 observations (4.3%) and 166 observations (3.5%) were respectively related to concerns and negative experiences due to 'poor drainage and protection from weather'.

Environmental determinants related to positive and negative experiences

For **negative experiences and concerns**, **"Unsafe crossing"** was the most frequent with 208 observations (4.4%) linked to negative experiences and 169 (3.6%) to concerns, with a total of 374 observations (7.9%). Secondly, **"Poor drainage or protection from weather"** was the second most frequent, with 204 observations (4.3%) related to concerns and 166 (3.5) to negative experiences, 370 observations (7.8%) in total. The data collection was conducted during a rainy week. Thirdly, **"Speed of traffic"** had 141 observations (3%) linked to concerns and 208 (4.4%) to negative experiences, with

a total of 349 (7.4%). This top-3 determinants were followed by **"Driver behaviour"**, with 114 observations (2.4%) related to concerns and 180 (3.8%) to negative experiences, 294 observations (6.2%) in total, and **"Fear of crime"**, with 121 observations (2.6%) related to concerns and 146 (3.1%) to negative experiences, 267 observations (5.7%) in total. The rest of observations related to concerns and negative experiences in all Lusaka can be seen in Table X.

In the case of the most relevant determinants related to **positive experiences**, "**Sufficient space and path quality**" was the most frequent one with 285 observations (6%). The second most frequent determinant linked to positive experiences was **"Safe crossing"** is also the most frequent one with 241 observations (5.1%), which shows that participants did not only raise concerns about unsafe crossings, but also praised the safe ones, highlighting the importance of pedestrian crossings in walking experiences. The third most frequent determinant linked to positive experiences was **"Lighting, seating or ramps"** with 217 observations (4.6%) and the fourth was **"Secure"** with 204 observations (4.3%). The last determinant of this top-5 was **"Clean air and peaceful"** with 171 observations (3.6%). The rest of observations related to positive experiences in all Lusaka can be seen in the following graph and table.
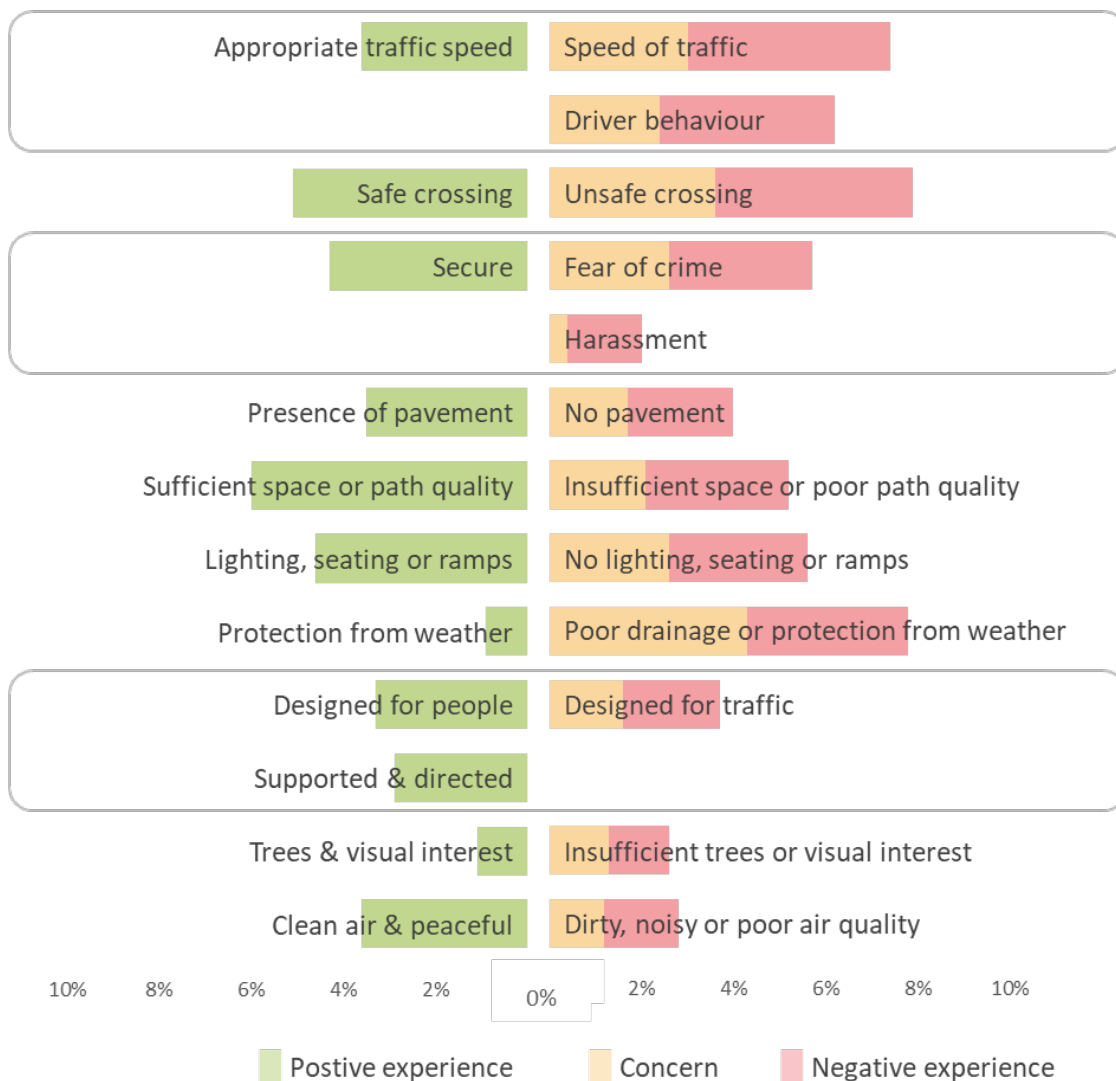

Figure 21. Observations on environmental determinants by type of experience in Lusaka.

	All environmental determinants linked to all experiences	N	%
P o s i t i v e e x p e r i e n c e s	Safe crossing	241	5.1
	Lighting, seating or ramps	217	4.6
	Secure	204	4.3
	Sufficient space	172	3.6
	Clean air & peaceful	171	3.6
	Appropriate traffic speed	168	3.6
	The path	165	3.5
	Designed for people	155	3.3
	Supported & directed	136	2.9
	Path quality	113	2.4
	Trees & visual interest	54	1.1
	Protection from weather	44	0.9
C o n c e r n s	Poor drainage or protection from weather	204	4.3
	Unsafe crossing	169	3.6
	Speed of traffic	141	3
	No lighting, seating or ramps	123	2.6
	Fear of crime	121	2.6
	Driver behaviour	114	2.4
	Insufficient space or poor path quality	97	2.1
	No path	82	1.7
	Designed for traffic not people	75	1.6
	Insufficient trees or visual interest	60	1.3
	Dirty, noisy or poor air quality	57	1.2
	Harassment	19	0.4
N e g a t i v e e x p e r i e n c e s	Speed of traffic	208	4.4
	Unsafe crossing	205	4.3
	Driver behaviour	180	3.8
	Poor drainage or protection from weather	166	3.5
	Insufficient space or poor path quality	147	3.1
	Fear of crime	146	3.1
	No lighting, seating or ramps	142	3
	No path	110	2.3
	Designed for traffic not people	101	2.1
	Dirty, noisy or poor air quality	75	1.6
	Harassment	74	1.6
	Insufficient trees or visual interest	63	1.3
	TOTAL	4719	100

Table 2. Observations on environmental determinants by type of experience in Lusaka.

3.6. Walking experiences and relevant environmental determinants by study area

The ten study areas selected in Lusaka showed a relevant heterogeneity in walking experiences and relevant environmental determinants. The following table and graph show the number and percentage of participants' observations related to each type of experience in each study area.

	Corridor	Positive experience	Concern	Negative experience	Total observations
1	Katima Mulilo Rd.	11	6	52	69
2	Great East Rd.	73	52	22	147
3	Leopards Hill Rd.	107	131	35	273
4	Lumumba Rd.	25	16	84	125
5	Great Noth Rd.	35	30	92	157
6	Chilimbulu Rd.	32	23	14	69
7	Los Angeles Rd.	61	74	28	163
8	Tokyo Rd.	75	35	26	136
9	Cairo Rd.	20	55	57	132
10	Railway Station	48	10	59	117
	TOTAL	487	432	469	1388

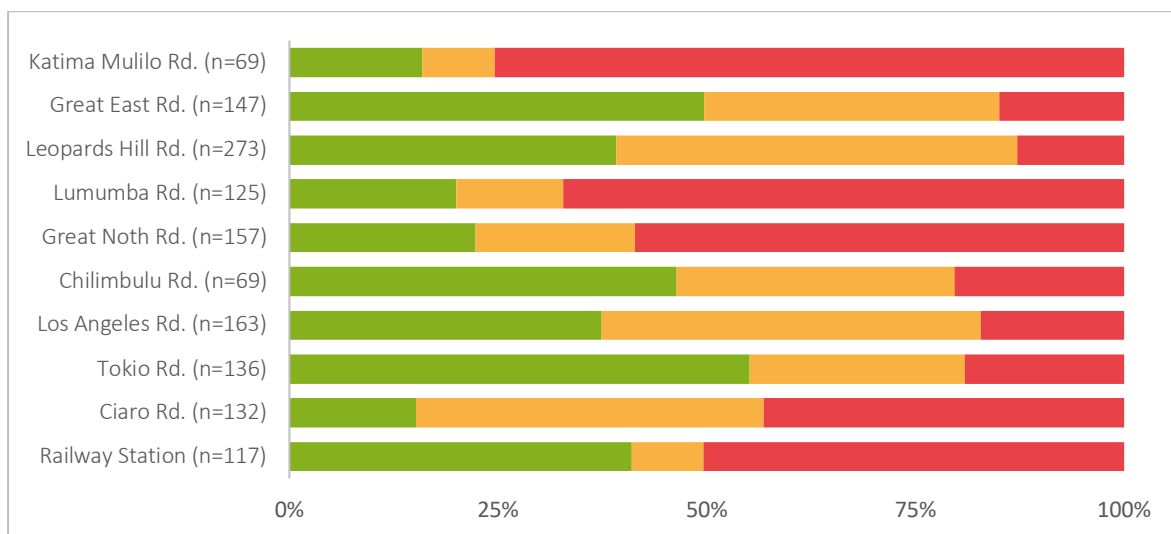*Table 3. Positive, concerns and negative experiences by study area.*

Figure 22. Percentage of positive, concerns and negative experiences by study area.

From the ten study areas, there are three places with more positive experiences (Tokyo Rd., Great East Rd. and Chilimbulu Rd.), two places with more concerns (Leopards Hill Rd. and Los Angeles Rd.), and five places with more negative experiences (Katima Mulilo Rd., Lumumba Rd., and Great North Rd. and Cairo Rd.)

The three places with more positive experiences were Tokyo Rd., Great East Rd. and Chilimbulu Rd., with 55.1%, 49.7% and 46.4% of positive experiences respectively. The two places with more concerns were Leopards Hill Rd. and Los Angeles Rd. with 48% and 45.4% respectively. Finally, the five places with more negative experiences were Katima Mulilo Rd., Lumumba Rd., Great North Rd. and Railway Station, with 75.4%, 67.2%, 58.6% and 50.4% of negative experiences respectively.
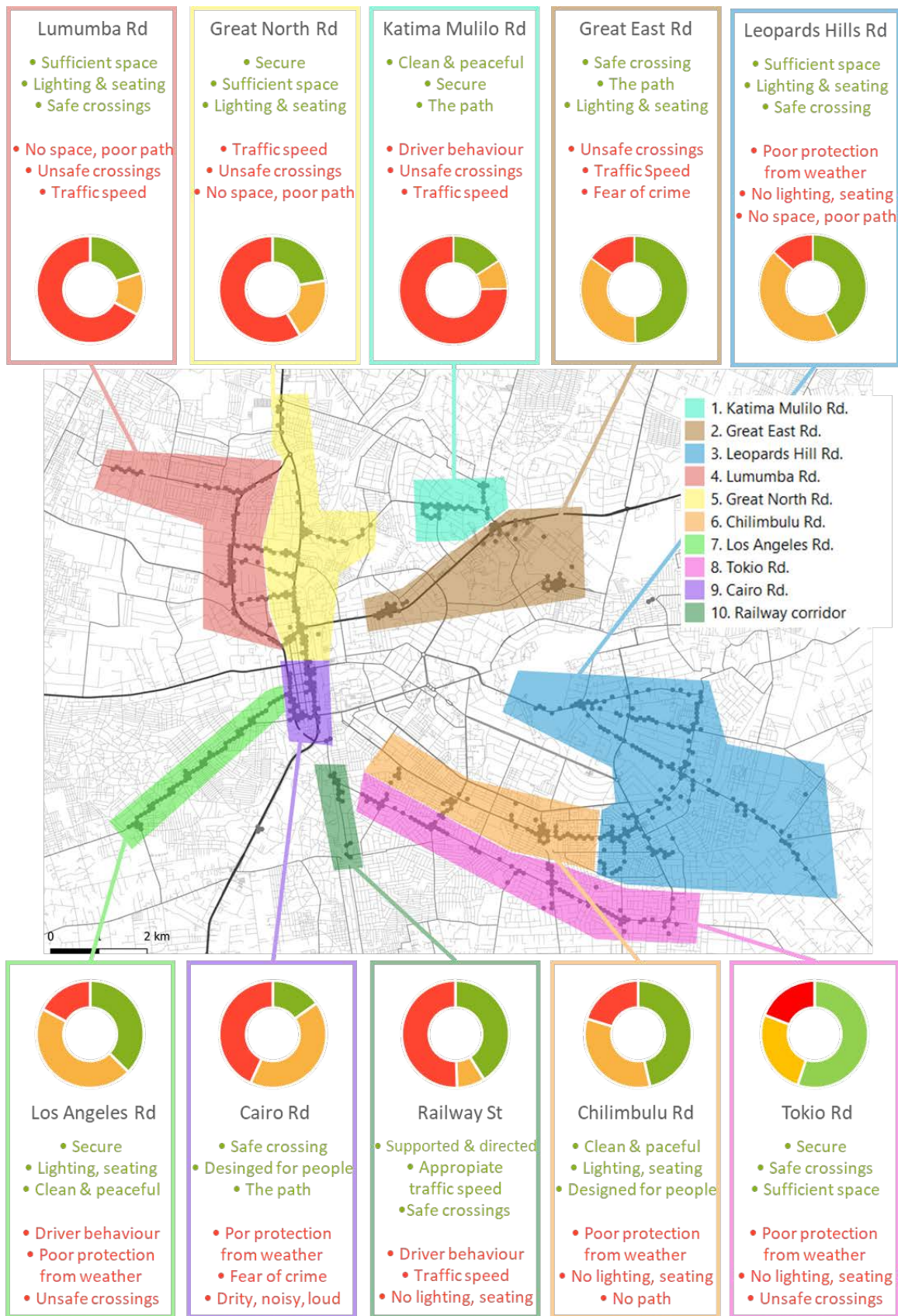
Lumumba Rd
- Sufficient space
- Lighting & seating
- Safe crossings

- No space, poor path
- Unsafe crossings
- Traffic speed

Great North Rd
- Secure
- Sufficient space
- Lighting & seating

- Traffic speed
- Unsafe crossings
- No space, poor path

Katima Mulilo Rd
- Clean & peaceful
- Secure
- The path

- Driver behaviour
- Unsafe crossings
- Traffic speed

Great East Rd
- Safe crossing
- The path
- Lighting & seating

- Unsafe crossings
- Traffic Speed
- Fear of crime

Leopards Hills Rd
- Sufficient space
- Lighting & seating
- Safe crossing

- Poor protection from weather
- No lighting, seating
- No space, poor path

1. Katima Mulilo Rd.
2. Great East Rd.
3. Leopards Hill Rd.
4. Lumumba Rd.
5. Great North Rd.
6. Chilimbulu Rd.
7. Los Angeles Rd.
8. Tokio Rd.
9. Cairo Rd.
10. Railway corridor

Los Angeles Rd
- Secure
- Lighting, seating
- Clean & peaceful

- Driver behaviour
- Poor protection from weather
- Unsafe crossings

Cairo Rd
- Safe crossing
- Desinged for people
- The path

- Por protection from weather
- Fear of crime
- Drity, noisy, loud

Railway St
- Supported & directed
- Appropiate traffic speed
- Safe crossings

- Driver behaviour
- Traffic speed
- No lighting, seating

Chilimbulu Rd
- Clean & paceful
- Lighting, seating
- Designed for people

- Poor protection from weather
- No lighting, seating
- No path

Tokio Rd
- Secure
- Safe crossings
- Sufficient space

- Poor protection from weather
- No lighting, seating
- Unsafe crossings

Figure 23. Share of walking experiences and top-3 environmental determinants linked to positive and negative experiences, by study area.

35

Study area 1: Katima Mulilo Road

In Katima Mulilo Rd., most of the walking experiences were negative (75.4%) and related to 'Driver behaviour' (16%), `Speed of traffic' (12.6%) and 'Unsafe crossing`(12.6%). Followed by positive experiences (15.9) related to 'Clean air and peaceful' (3.8%), 'Secure' (3.4%) and 'Designed for people' (3.4%) . And finally, concerns (8.7%), related to 'No lighting, seating or ramps' (2.1%), 'Driver behaviour' (1.7%) and 'Unsafe crossing' (1.7%).

Figure 24. Main walkability outcomes in Katima Mulilo Road.

Katima Mulilo Rd.
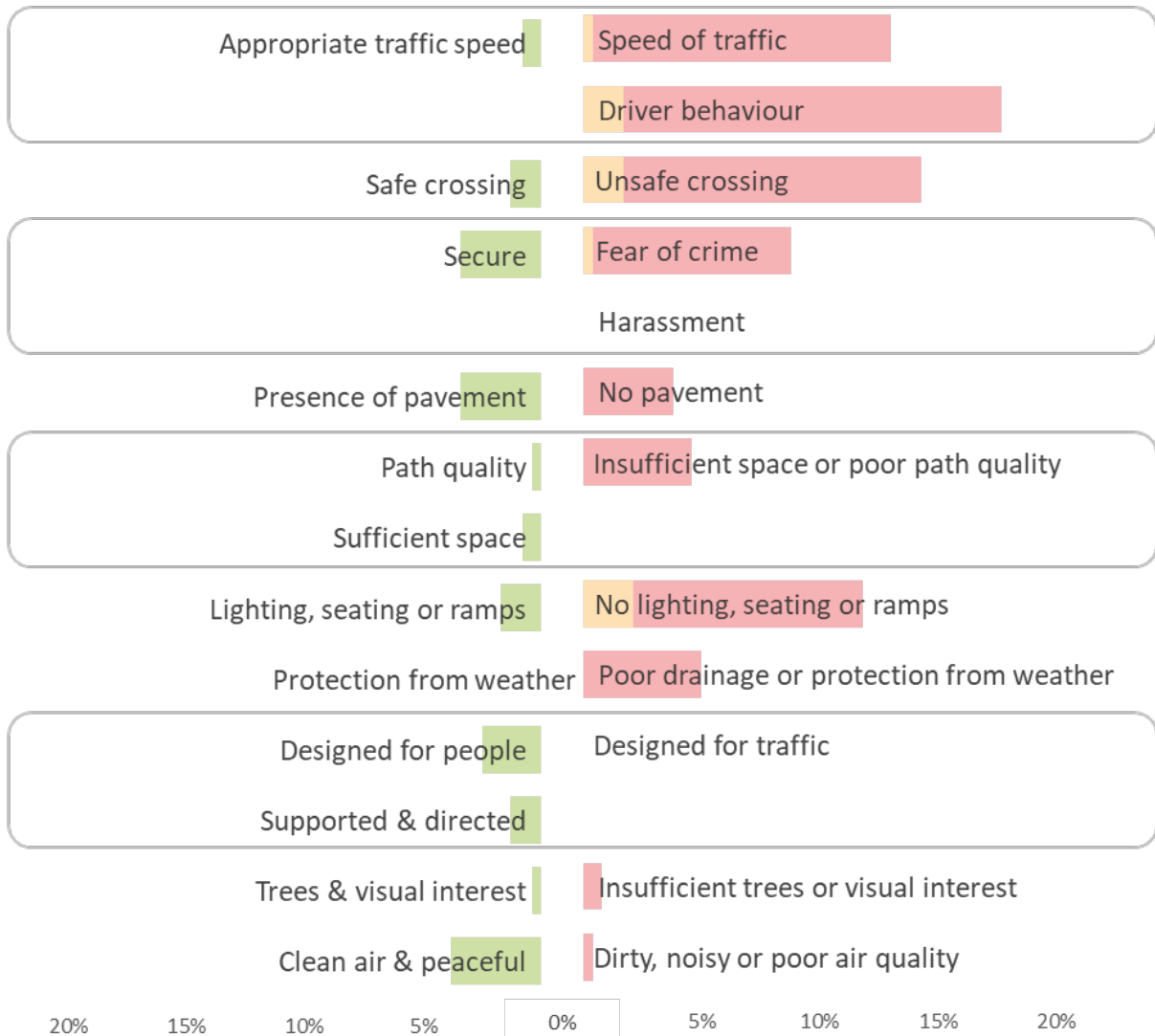
Figure 25. Relationships between environmental determinants and walking experiences in Katima Mulilo Rd.

Proposed intervention in Katima Mulilo Rd.

The most frequent determinants related to negative experiences and concerns in Katima Mulilo Rd. were related to 'Speed of traffic', 'Driver behaviour' and 'Unsafe crossing'. This is a map that shows where these experiences were collected and highlights two areas with a hight concentration of these negative experiences, coinciding with two road intersections: Kasangula Rd. with Zambezi Rd. and Katima Mulilo Rd. with Kwacha Rd.

(-15.381990596719694, 28.31555355078536) (-15.385677447313785, 28.306901964365768)

Figure 26. Areas for proposed intervention in Katima Mulilo Rd.

	All environmental determinants linked to all experiences	N	%
Positive experiences	Clean air & peaceful	9	3.8
	Secure	8	3.4
	The path	8	3.4
	Designed for people	6	2.5
	Lighting, seating or ramps	4	1.7
	Safe crossing	3	1.3
	Supported & directed	3	1.3
	Appropriate traffic speed	2	0.8
	Sufficient space	2	0.8
	Path quality	1	0.4
	Trees & visual interest	1	0.4
	Protection from weather	0	0
Concerns	No lighting, seating or ramps	5	2.1
	Driver behaviour	4	1.7
	Unsafe crossing	4	1.7
	Fear of crime	1	0.4
	Speed of traffic	1	0.4
	Designed for traffic not people	0	0
	Dirty, noisy or poor air quality	0	0
	Harassment	0	0
	Insufficient space or poor path quality	0	0
	Insufficient trees or visual interest	0	0
	No path	0	0
	Poor drainage or protection from weather	0	0
Negative experiences	Driver behaviour	38	16
	Speed of traffic	30	12.6
	Unsafe crossing	30	12.6
	No lighting, seating or ramps	23	9.7
	Fear of crime	20	8.4
	Poor drainage or protection from weather	12	5
	Insufficient space or poor path quality	11	4.6
	No path	9	3.8
	Insufficient trees or visual interest	2	0.8
	Dirty, noisy or poor air quality	1	0.4
	Designed for traffic not people	0	0
	Harassment	0	0
	TOTAL	238	100

Table 4. Observations on environmental determinants by type of experience in Katima Mulilo Rd.

In Great East Rd., most of the walking experiences were positive (49.7%) and related to 'Safe crossing' (14.4%), `Presence of footpath (13.8%) and 'Lighting, seating or ramps`(6.9%). Followed by concerns (35.4%) related to 'Unsafe crossing' (10.2%), 'Speed of traffic' (9.4%) and 'Fear of crime' (1.9%) . And finally, negative experiences (15%), related to 'Unsafe crossing' (4.4%), 'Speed of traffic' (3.6%) and 'Fear of crime' (3%).
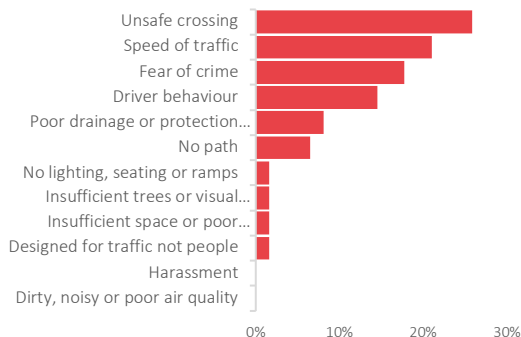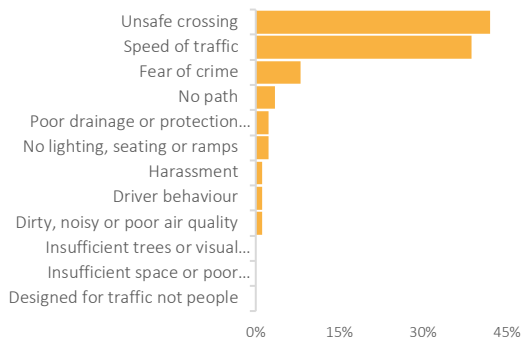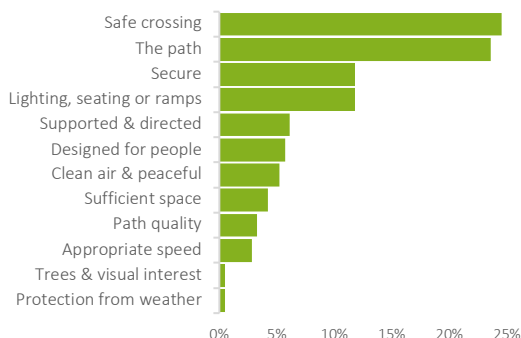

Figure 27. Main walkability outcomes in Great East Road.

Great East Rd.
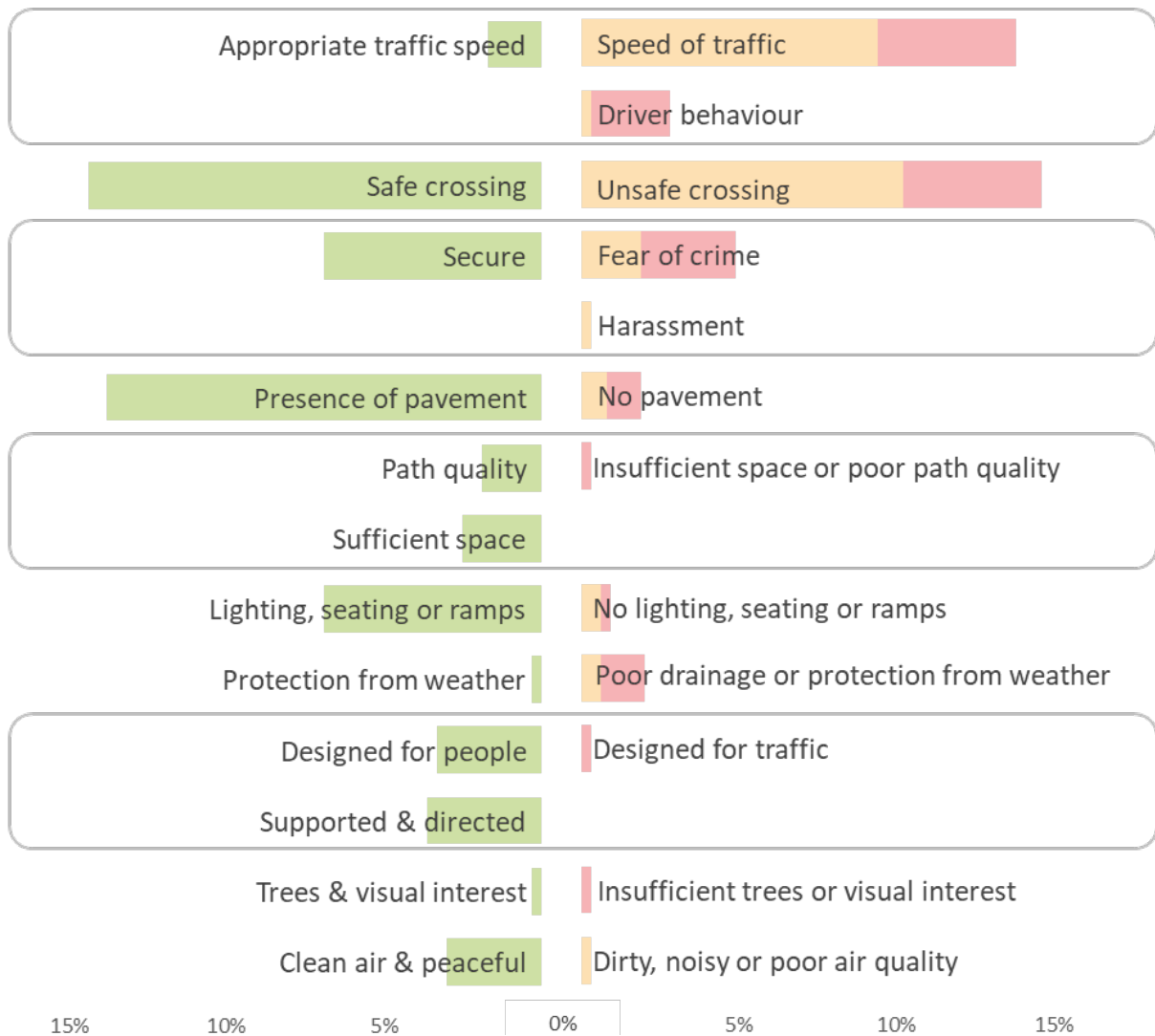
Figure 28. Relationships between environmental determinants and walking experiences in Great East Rd.

Proposed intervention in Great East Rd.

Assess places with positive (best practices) and negative (for interventions) pedestrian crossings.

Figure 29. Areas for proposed intervention in Great East Rd.

	All Environmental determinants linked to all experiences	N	%
Positive experiences	Safe crossing	52	14.4
	The path	50	13.8
	Lighting, seating or ramps	25	6.9
	Secure	25	6.9
	Supported & directed	13	3.6
	Designed for people	12	3.3
	Clean air & peaceful	11	3
	Sufficient space	9	2.5
	Path quality	7	1.9
	Appropriate traffic speed	6	1.7
	Protection from weather	1	0.3
	Trees & visual interest	1	0.3
Concerns	Unsafe crossing	37	10.2
	Speed of traffic	34	9.4
	Fear of crime	7	1.9
	No path	3	0.8
	No lighting, seating or ramps	2	0.6
	Poor drainage or protection from weather	2	0.6
	Dirty, noisy or poor air quality	1	0.3
	Driver behaviour	1	0.3
	Harassment	1	0.3
	Designed for traffic not people	0	0
	Insufficient space or poor path quality	0	0
	Insufficient trees or visual interest	0	0
Negative experiences	Unsafe crossing	16	4.4
	Speed of traffic	13	3.6
	Fear of crime	11	3
	Driver behaviour	9	2.5
	Poor drainage or protection from weather	5	1.4
	No path	4	1.1
	Designed for traffic not people	1	0.3
	Insufficient space or poor path quality	1	0.3
	Insufficient trees or visual interest	1	0.3
	No lighting, seating or ramps	1	0.3
	Dirty, noisy or poor air quality	0	0
	Harassment	0	0
	TOTAL	362	100

Table 5. Observations on environmental determinants by type of experience in Great East Rd.

Study area 3: Leopards Hill Road

In Leopards Hill Rd., most of the walking experiences were concerns (48%) and related to 'Poor drainage or protection from weather' (8.6%), 'No lighting, seating or ramps' (7.9%) and 'insufficient space or poor path quality' (4.1%). Followed by positive experiences (39.2%) related to 'Sufficient space' (6.5%), `Lighting, seating or ramps' (5.2%) and 'Safe crossing` (4.9%). And finally, negative experiences (12.8%), related to 'Poor drainage or protection from weather' (2.1%), 'No footpath' (1.7%) and 'No lighting, seating or ramps' (1.6%).
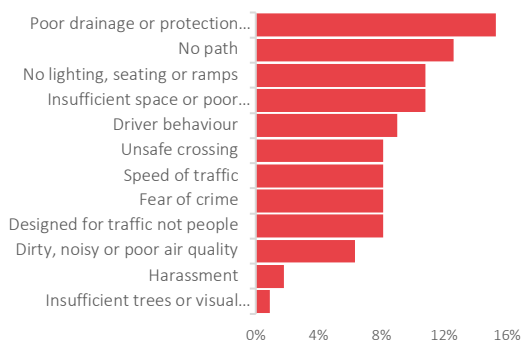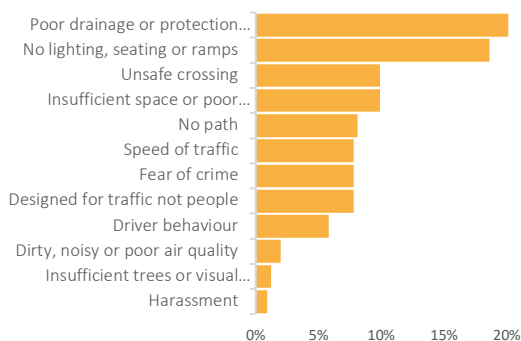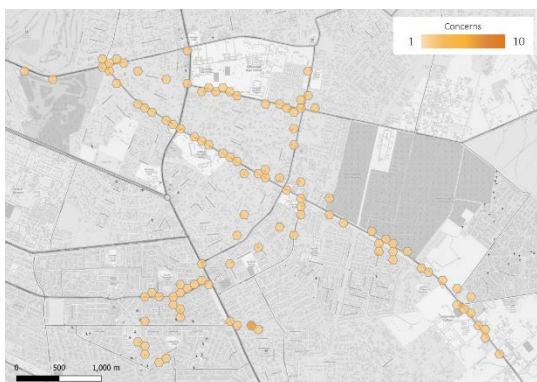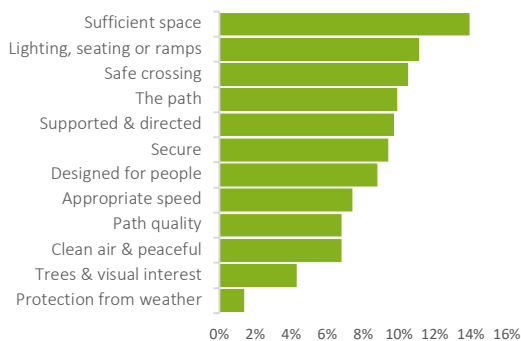
Figure 30. Main walkability outcomes in Leopards Hill Road.
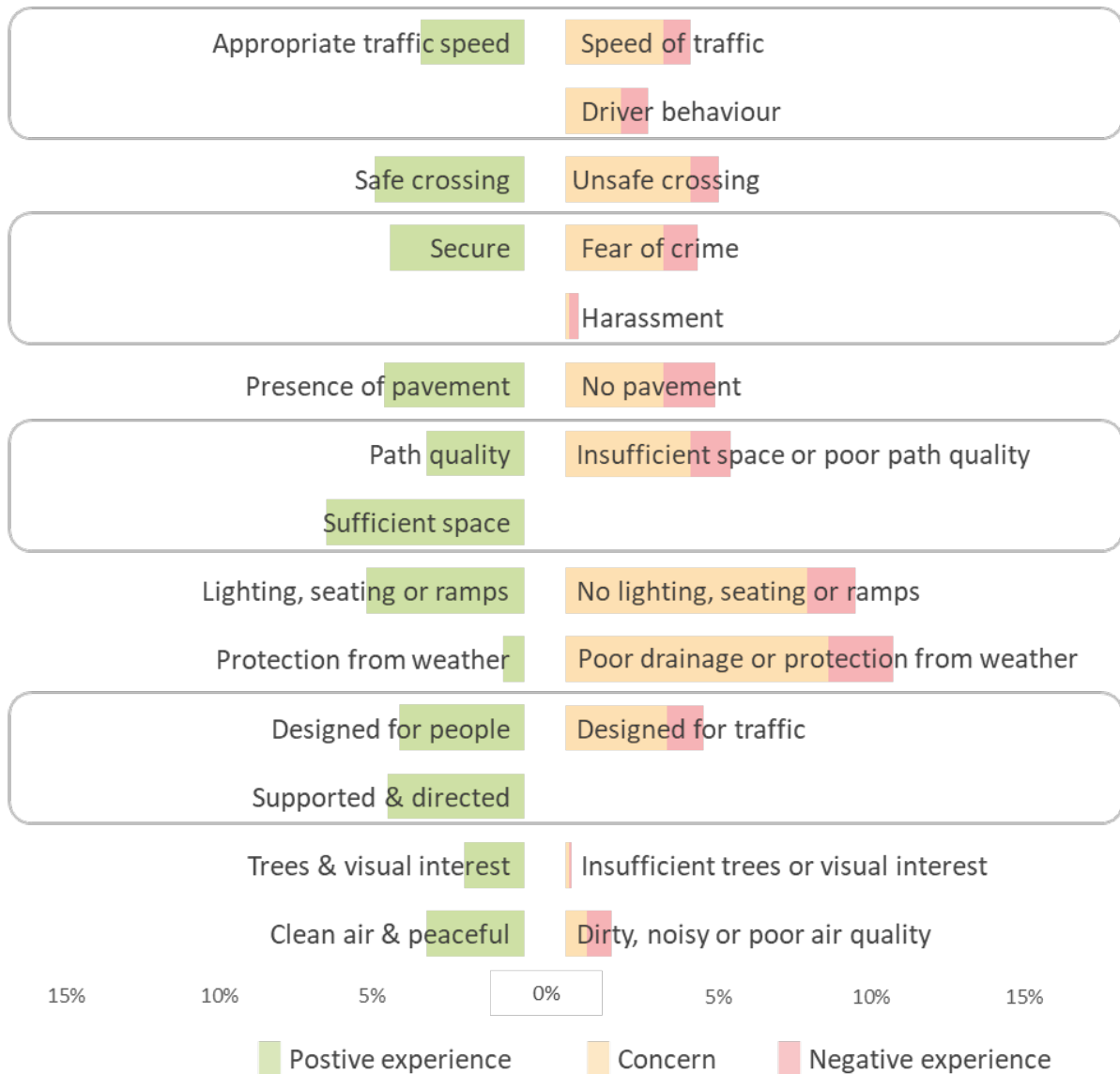
44

Leopards Hill Rd.

Figure 31. Relationships between environmental determinants and walking experiences in Leopards Hill Rd.

Proposed intervention in Leopards Hill Rd.

Assess the places with negative experiences and concerns related to 'Poor drainage or protection from weather', 'No lighting, seating or ramps', and 'Insufficient space or poor path quality'.

Figure 32. Areas for proposed intervention in Leopards Hill Rd.

	All Environmental determinants linked to all experiences	N	%
P o si ti v e e x p e ri e n c e s	Sufficient space	49	6.5
	Lighting, seating or ramps	39	5.2
	Safe crossing	37	4.9
	The path	35	4.6
	Supported & directed	34	4.5
	Secure	33	4.4
	Designed for people	31	4.1
	Appropriate traffic speed	26	3.4
	Clean air & peaceful	24	3.2
	Path quality	24	3.2
	Trees & visual interest	15	2
	Protection from weather	5	0.7
C o n c e r n s	Poor drainage or protection from weather	65	8.6
	No lighting, seating or ramps	60	7.9
	Insufficient space or poor path quality	31	4.1
	Unsafe crossing	31	4.1
	Designed for traffic not people	25	3.3
	Fear of crime	24	3.2
	No path	24	3.2
	Speed of traffic	24	3.2
	Driver behaviour	14	1.8
	Dirty, noisy or poor air quality	5	0.7
	Harassment	1	0.1
	Insufficient trees or visual interest	1	0.1
N e g a ti v e e x p e ri e n c e s	Poor drainage or protection from weather	16	2.1
	No path	13	1.7
	No lighting, seating or ramps	12	1.6
	Insufficient space or poor path quality	10	1.3
	Designed for traffic not people	9	1.2
	Speed of traffic	9	1.2
	Fear of crime	8	1.1
	Driver behaviour	7	0.9
	Unsafe crossing	7	0.9
	Dirty, noisy or poor air quality	6	0.8
	Harassment	2	0.3
	Insufficient trees or visual interest	1	0.1
	TOTAL	757	100

Table 6. Observations on environmental determinants by type of experience in Leopard Hills Rd.

Study area 4: Lumumba Road

In Lumumba Rd., most of the walking experiences were negative (67.2%) and related to 'Insufficient space or poor path quality' (2.4%), 'Unsafe crossing' (2.4%) and 'Fear of crime' (1.7%). Followed by positive experien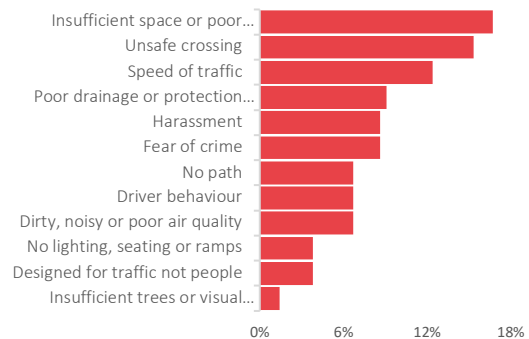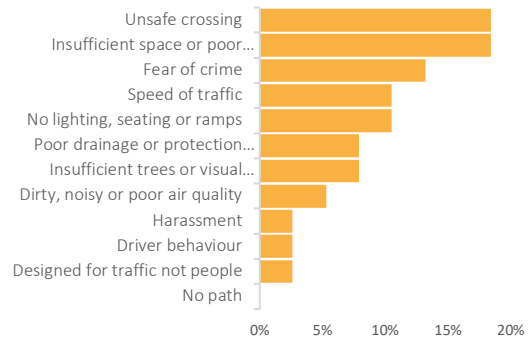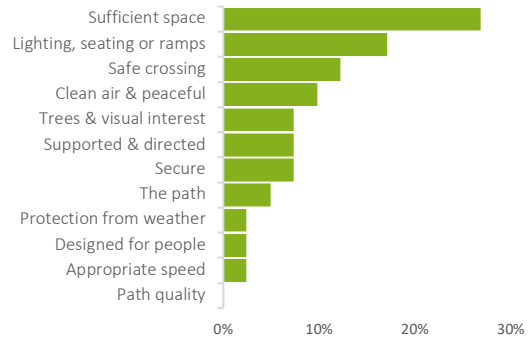ces (20%) related to 'Sufficient space' (3.8%), `Lighting, seating or ramps' (2.4%) and 'Safe crossing` (1.7%).. And finally, concerns (12.8%), related to 'Insufficient space or poor path quality' (2.4%), 'Unsafe crossing' (2.4%) and 'Fear of crime' (2.4%).

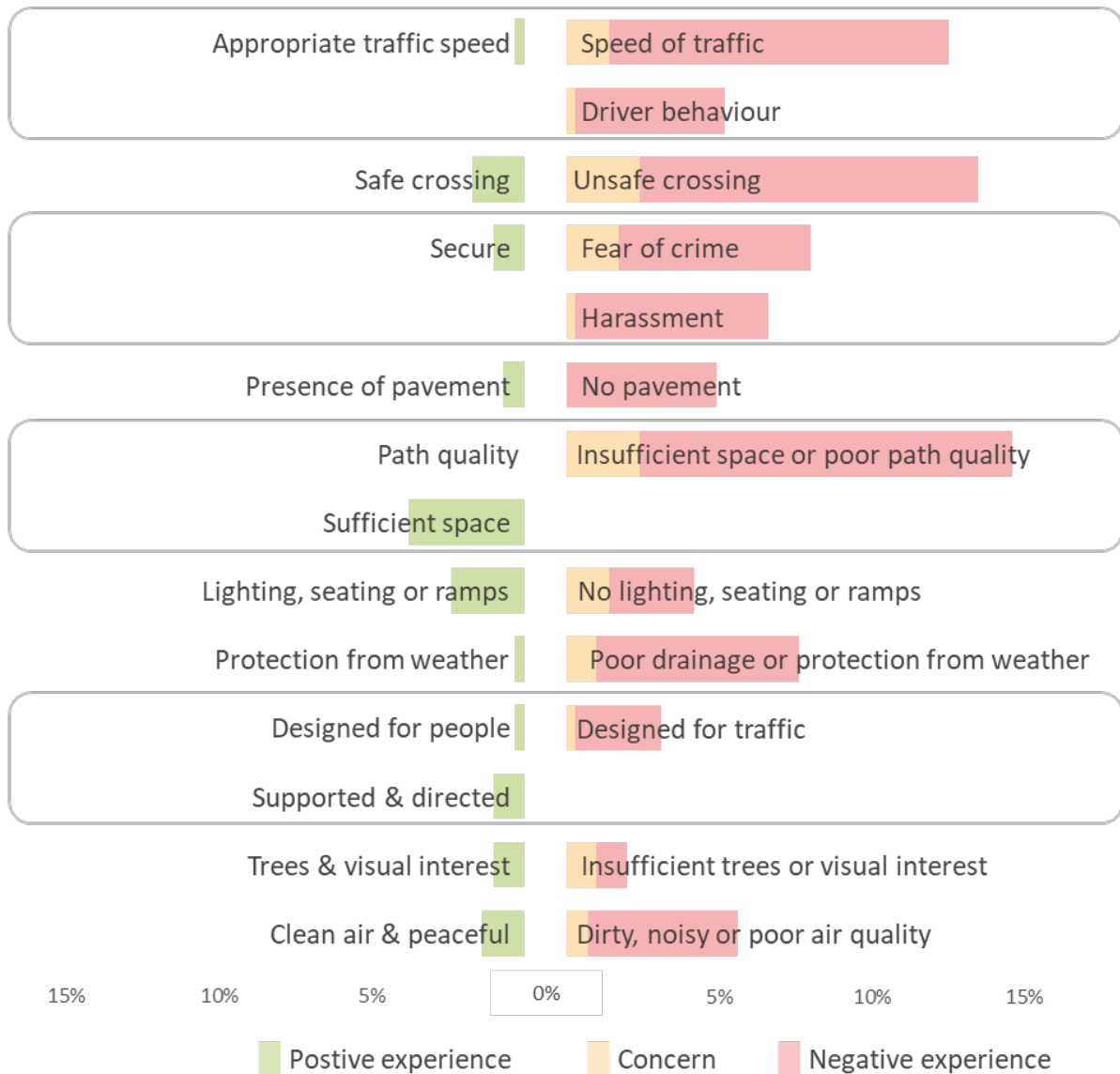*Figure 33. Main walkability outcomes in Lumumba Road.*

Lumumba Rd.

Figure 34. Relationships between environmental determinants and walking experiences in Lumumba Rd.

Proposed intervention in Great East Rd.

Assess places with positive experiences related to sufficient space and path quality (as best practices) and negative experiences and concerns related to insufficient space and poor path quality (for interventions).
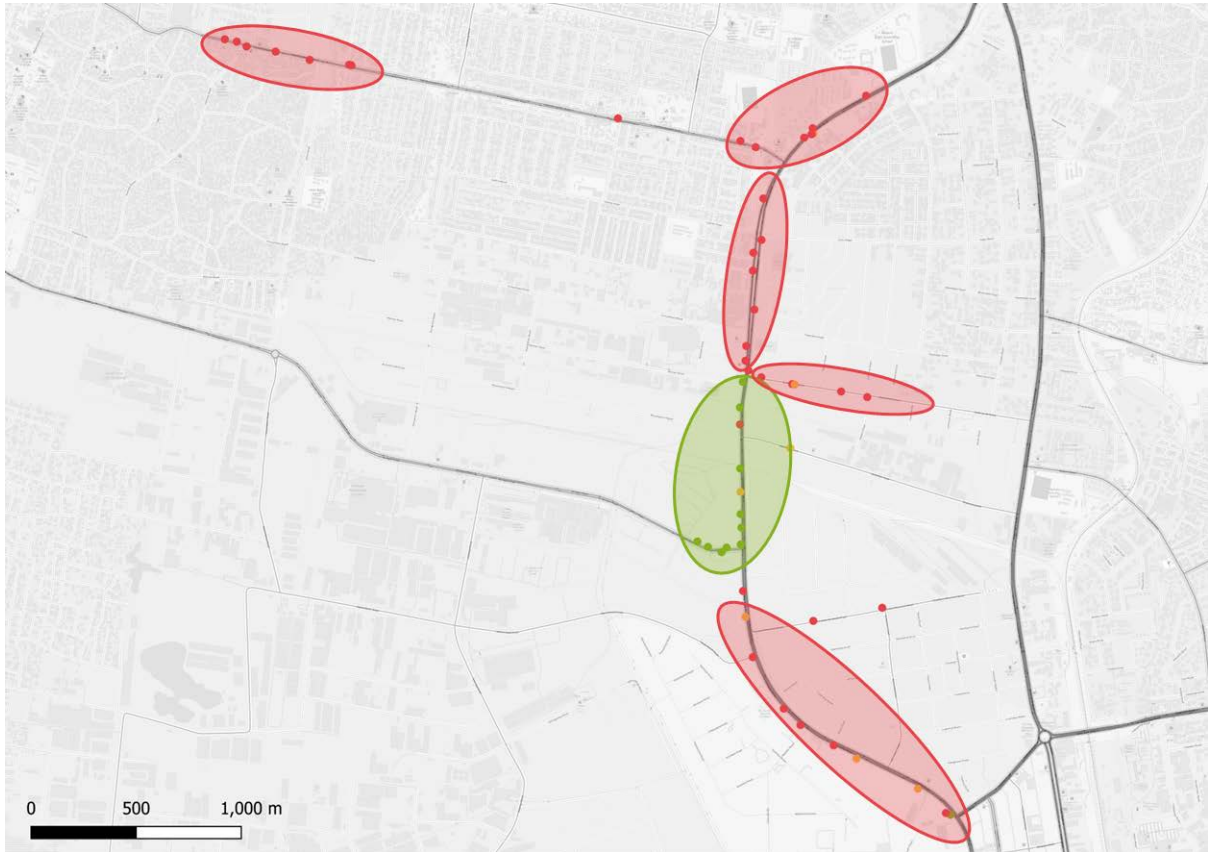

Figure 35. Areas for proposed intervention in Great East Rd.

All Environmental determinants linked to all experiences		N	%
Positive experiences	Sufficient space	11	3.8
	Lighting, seating or ramps	7	2.4
	Safe crossing	5	1.7
	Clean air & peaceful	4	1.4
	Secure	3	1
	Supported & directed	3	1
	Trees & visual interest	3	1
	The path	2	0.7
	Appropriate traffic speed	1	0.3
	Designed for people	1	0.3
	Protection from weather	1	0.3
	Path quality	0	0
Concerns	Insufficient space or poor path quality	7	2.4
	Unsafe crossing	7	2.4
	Fear of crime	5	1.7
	No lighting, seating or ramps	4	1.4
	Speed of traffic	4	1.4
	Insufficient trees or visual interest	3	1
	Poor drainage or protection from weather	3	1
	Dirty, noisy or poor air quality	2	0.7
	Designed for traffic not people	1	0.3
	Driver behaviour	1	0.3
	Harassment	1	0.3
	No path	0	0
Negative experiences	Insufficient space or poor path quality	35	12.2
	Unsafe crossing	32	11.1
	Speed of traffic	26	9
	Poor drainage or protection from weather	19	6.6
	Fear of crime	18	6.3
	Harassment	18	6.3
	Dirty, noisy or poor air quality	14	4.9
	Driver behaviour	14	4.9
	No path	14	4.9
	Designed for traffic not people	8	2.8
	No lighting, seating or ramps	8	2.8
	Insufficient trees or visual interest	3	1
	TOTAL	288	100

Table 7. Observations on environmental determinants by type of experience in Lumumba Rd.

In Great North Rd., most of the walking experiences were negative (58.6%) and related to 'Speed of traffic' (11.6%), `Unsafe crossing' (10.4%) and 'insufficient space or poor path quality `(9.9%). Followed by positive experiences (22.3%) related to 'Secure' (3%), 'Sufficient space' (3%) and 'Lighting, seating or ramps' (2.3%) . And finally, concerns (19.1%), related to 'Driver behaviour' (1.5%), 'Poor drainage or protection from weather' (1.5%) and 'Unsafe crossing' (1.5%).
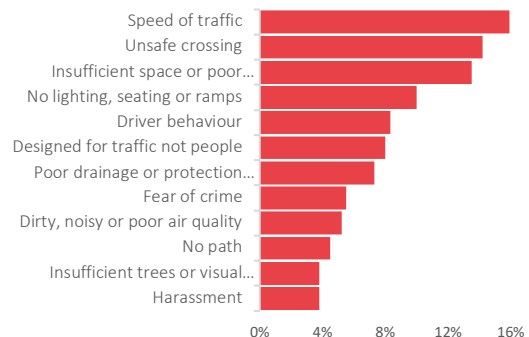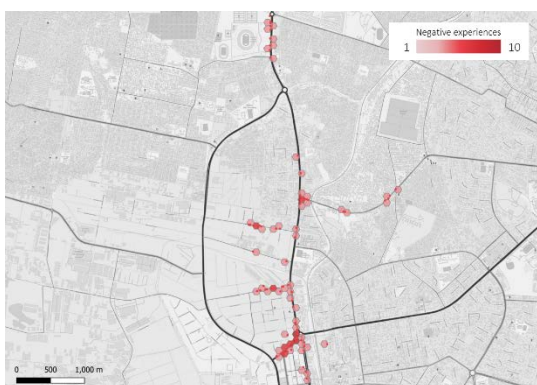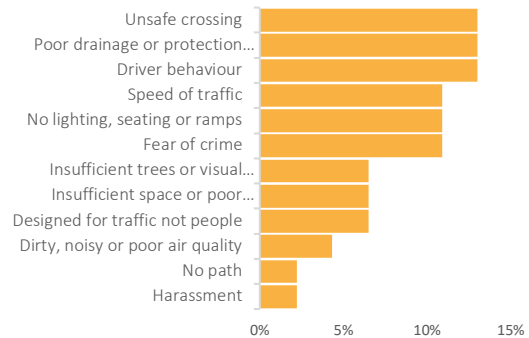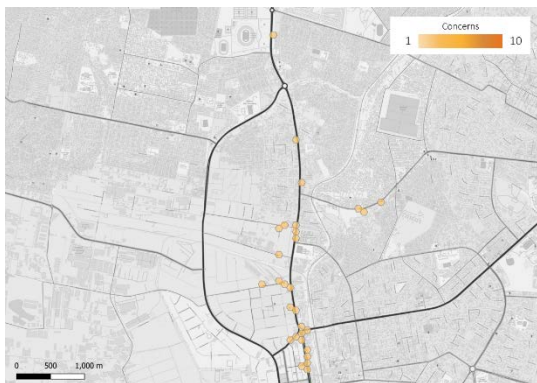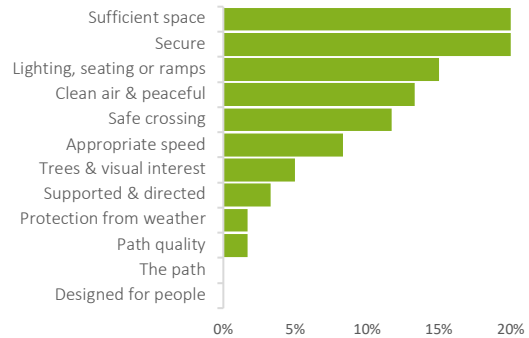

Figure 36. Main walkability outcomes in Great North Road.

Great North Rd.

Appropriate traffic speed	Speed of traffic
	Driver behaviour
Safe crossing	Unsafe crossing
Secure	Fear of crime
	Harassment
Presence of pavement	No pavement
Path quality	Insufficient space or poor path quality
Sufficient space	
Lighting, seating or ramps	No lighting, seating or ramps
Protection from weather	Poor drainage or protection from weather
Designed for people	Designed for traffic
Supported & directed	
Trees & visual interest	Insufficient trees or visual interest
Clean air & peaceful	Dirty, noisy or poor air quality

15%   10%   5%   0%   5%   10%   15%

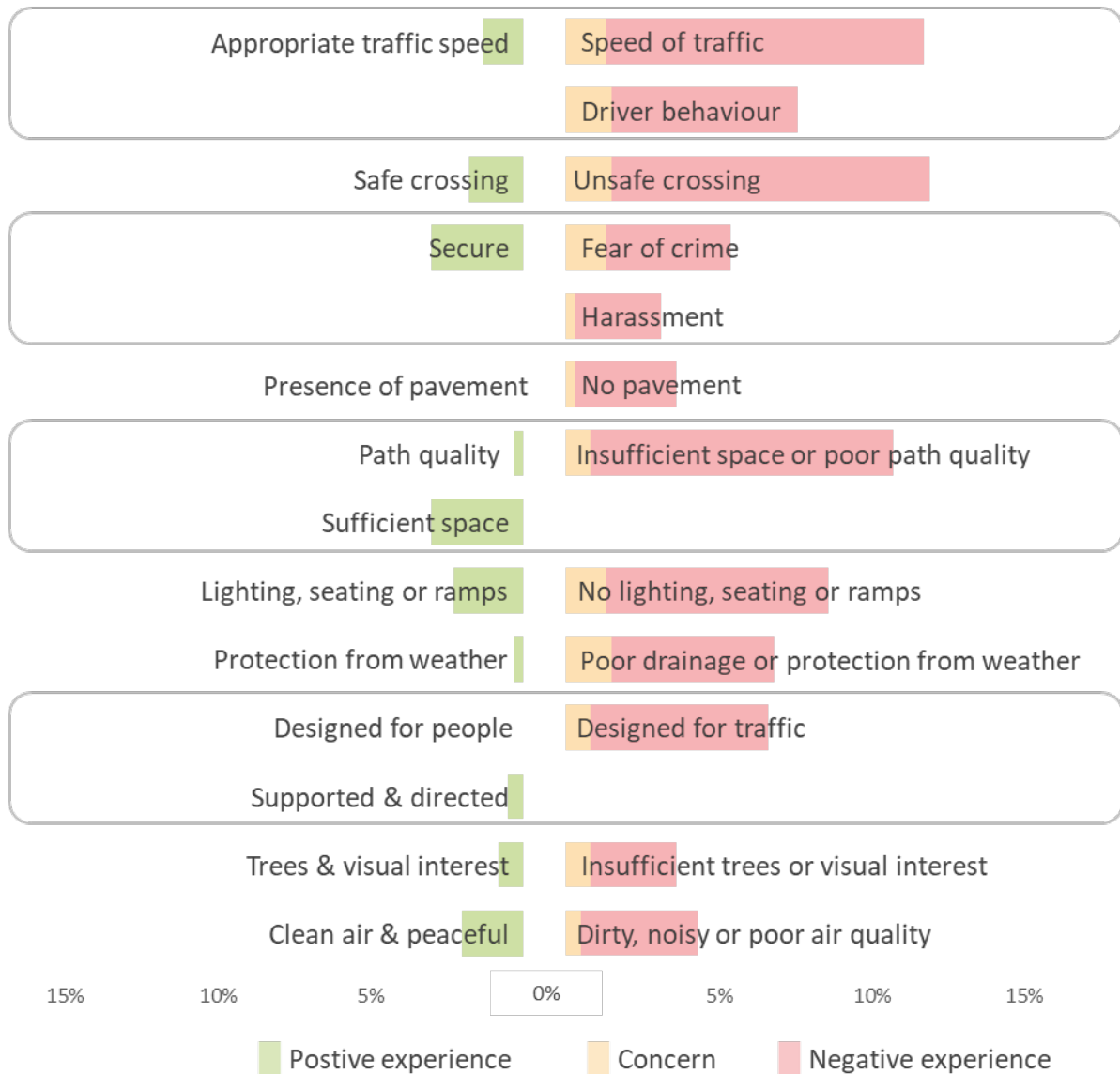☐ Postive experience   ☐ Concern   ☐ Negative experience

Figure 37. Relationships between environmental determinants and walking experiences in Great North Rd.

Proposed intervention in Great North Rd.

Assess the places with negative experiences and concerns related to 'Fast traffic', 'Driver behaviour' and 'Unsafe crossings' for future interventions.
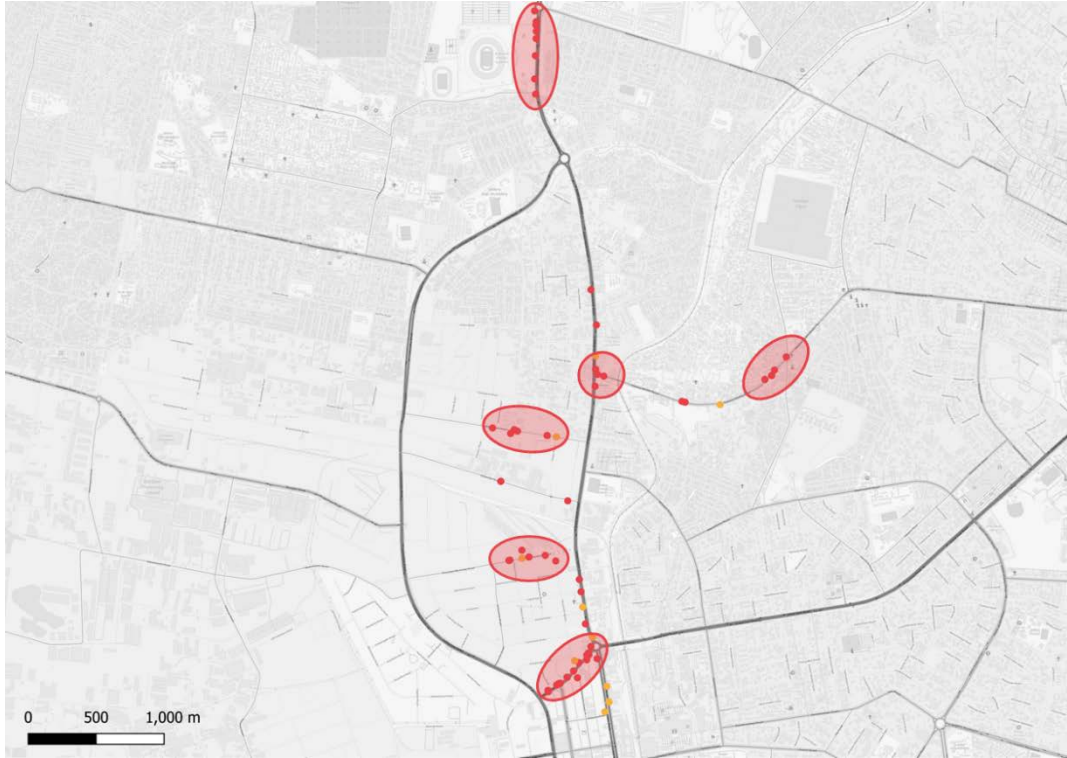

Figure 38. Areas for proposed intervention in Great North Rd.

All Environmental determinants linked to all experiences		N	%
P o s i t i v e e x p e r i e n c e s	Secure	12	3
	Sufficient space	12	3
	Lighting, seating or ramps	9	2.3
	Clean air & peaceful	8	2
	Safe crossing	7	1.8
	Appropriate traffic speed	5	1.3
	Trees & visual interest	3	0.8
	Supported & directed	2	0.5
	Path quality	1	0.3
	Protection from weather	1	0.3
	Designed for people	0	0
	The path	0	0
C o n c e r n s	Driver behaviour	6	1.5
	Poor drainage or protection from weather	6	1.5
	Unsafe crossing	6	1.5
	Fear of crime	5	1.3
	No lighting, seating or ramps	5	1.3
	Speed of traffic	5	1.3
	Designed for traffic not people	3	0.8
	Insufficient space or poor path quality	3	0.8
	Insufficient trees or visual interest	3	0.8
	Dirty, noisy or poor air quality	2	0.5
	Harassment	1	0.3
	No path	1	0.3
N e g a t i v e e x p e r i e n c e s	Speed of traffic	46	11.6
	Unsafe crossing	41	10.4
	Insufficient space or poor path quality	39	9.9
	No lighting, seating or ramps	29	7.3
	Driver behaviour	24	6.1
	Designed for traffic not people	23	5.8
	Poor drainage or protection from weather	21	5.3
	Fear of crime	16	4.1
	Dirty, noisy or poor air quality	15	3.8
	No path	13	3.3
	Harassment	11	2.8
	Insufficient trees or visual interest	11	2.8
	TOTAL	395	100

Table 8. Observations on environmental determinants by type of experience in Great North Rd.

In Chilimbulu Rd., most of the walking experiences were positive (46.4%) and related to 'Clean and peaceful' (9.5%), `Lighting, seating or ramps' (9.5%) and 'Designed for people`(8.5%). Followed by concerns (33.3%) related to 'Poor drainage or protection from weather' (4.7%), 'Fear of crime' (2.8%) and 'No lighting, seating or ramps' (2.8%) . And finally, negative experiences (20.3%), related to 'No lighting, seating or ramps' (3.3%), 'Poor drainage or protection from weather' (3.3%) and 'Speed of traffic' (3.3%).
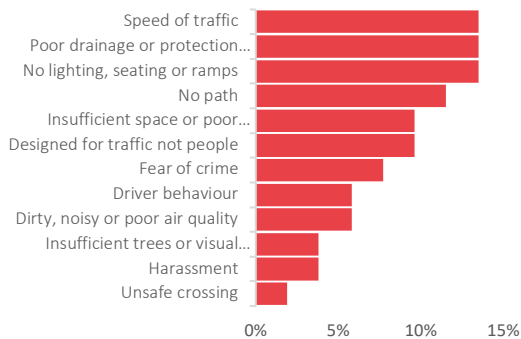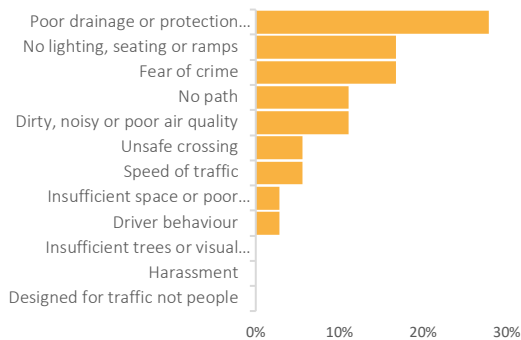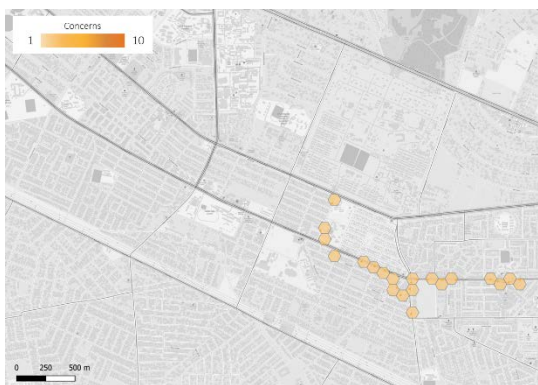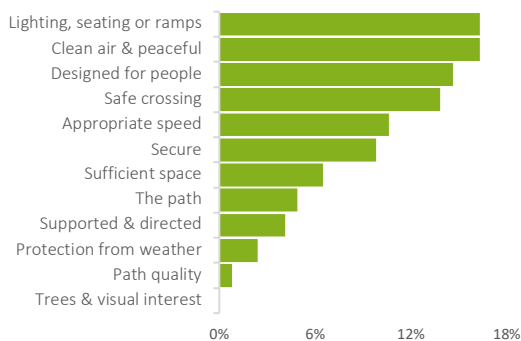

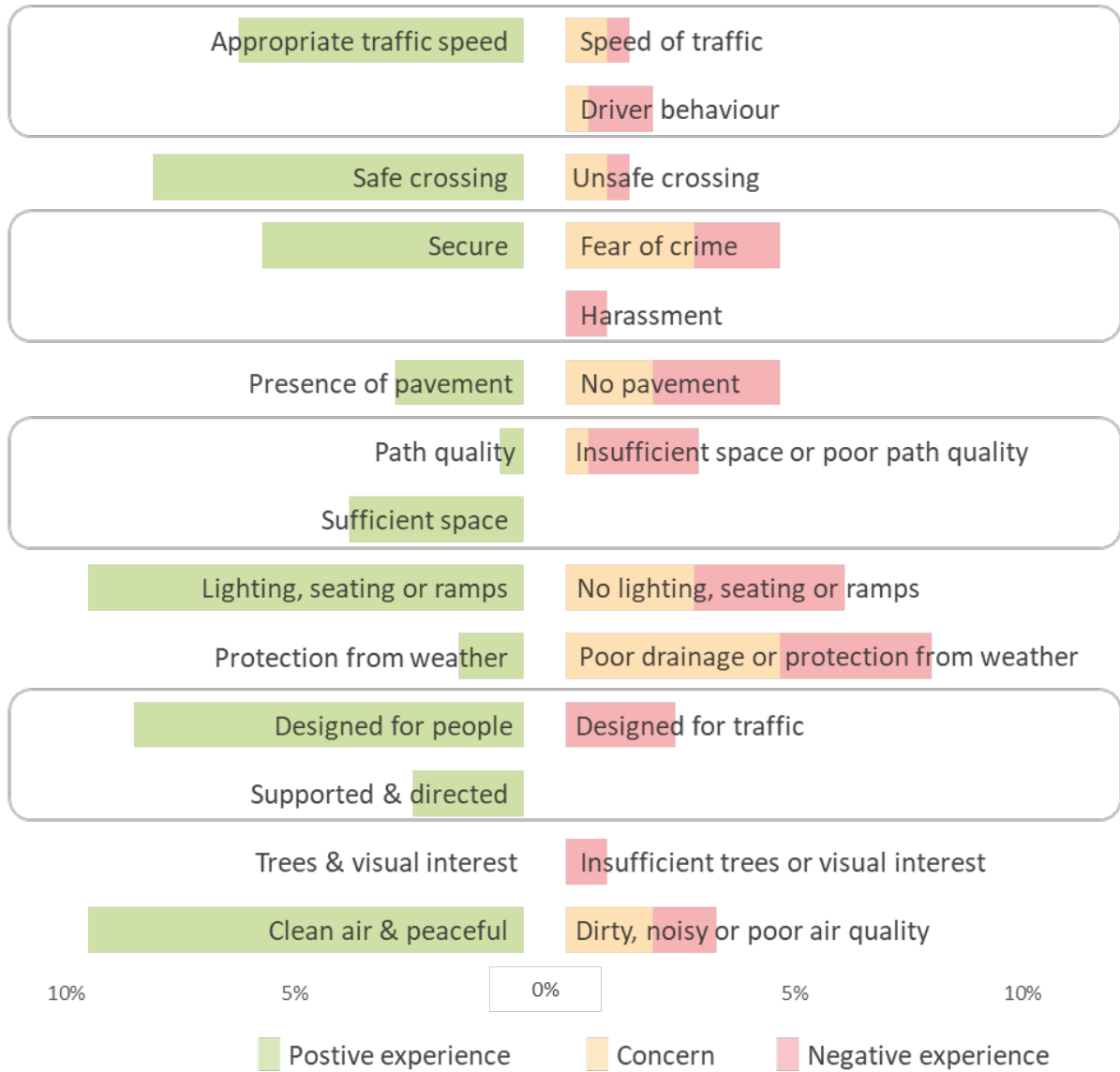*Figure 39. Main walkability outcomes in Chilimbulu Road.*

Chilimbulu Rd.

Appropriate traffic speed	Speed of traffic
	Driver behaviour
Safe crossing	Unsafe crossing
Secure	Fear of crime
	Harassment
Presence of pavement	No pavement
Path quality	Insufficient space or poor path quality
Sufficient space	
Lighting, seating or ramps	No lighting, seating or ramps
Protection from weather	Poor drainage or protection from weather
Designed for people	Designed for traffic
Supported & directed	
Trees & visual interest	Insufficient trees or visual interest
Clean air & peaceful	Dirty, noisy or poor air quality

10%   5%   0%   5%   10%

Postive experience   Concern   Negative experience

Figure 40. Relationships between environmental determinants and walking experiences in Chilimbulu Rd.

Proposed intervention in Great North Rd.

Assess place with positive experiences related to 'Drainage and protection from weather' and 'Lighting, seating or ramps' (for best practices) and negative experiences and concerns related to 'Poor drainage and protection from weather' and 'Poor lighting, seating or ramps' (for future interventions).

Figure 41. areas for proposed intervention in Great North Rd.

All Environmental determinants linked to all experiences		N	%
Positive experiences	Clean air & peaceful	20	9.5
	Lighting, seating or ramps	20	9.5
	Designed for people	18	8.5
	Safe crossing	17	8.1
	Appropriate traffic speed	13	6.2
	Secure	12	5.7
	Sufficient space	8	3.8
	The path	6	2.8
	Supported & directed	5	2.4
	Protection from weather	3	1.4
	Path quality	1	0.5
	Trees & visual interest	0	0
Concerns	Poor drainage or protection from weather	10	4.7
	Fear of crime	6	2.8
	No lighting, seating or ramps	6	2.8
	Dirty, noisy or poor air quality	4	1.9
	No path	4	1.9
	Speed of traffic	2	0.9
	Unsafe crossing	2	0.9
	Driver behaviour	1	0.5
	Insufficient space or poor path quality	1	0.5
	Designed for traffic not people	0	0
	Harassment	0	0
	Insufficient trees or visual interest	0	0
Negative experiences	No lighting, seating or ramps	7	3.3
	Poor drainage or protection from weather	7	3.3
	Speed of traffic	7	3.3
	No path	6	2.8
	Designed for traffic not people	5	2.4
	Insufficient space or poor path quality	5	2.4
	Fear of crime	4	1.9
	Dirty, noisy or poor air quality	3	1.4
	Driver behaviour	3	1.4
	Harassment	2	0.9
	Insufficient trees or visual interest	2	0.9
	Unsafe crossing	1	0.5
	TOTAL	211	100

Table 9. Observations on environmental determinants by type of experience in Chilimbulu Rd.

Study area 7: Los Angeles Road

In Los Angeles Rd., most of the walking experiences were concerns (45.4%) and related to 'Driver behaviour' (6.6%), `Poor drainage or protection from weather' (6.6%) and 'Unsafe crossing`(6%). Followed by positive experiences (37.4%) related to 'Secure' (5.2%), 'Lighting, seating or ramps' (4.8%) and 'Clean air and peaceful' (4.7%) . And finally, negative experiences (17.2%), related to 'Driver behaviour' (2.5%), 'Poor drainage or protection from weather' (2.3%) and 'Unsafe crossing' (2.1%).
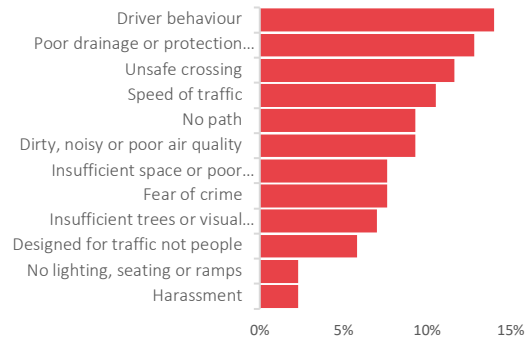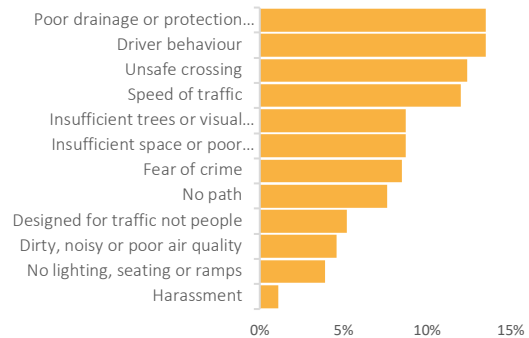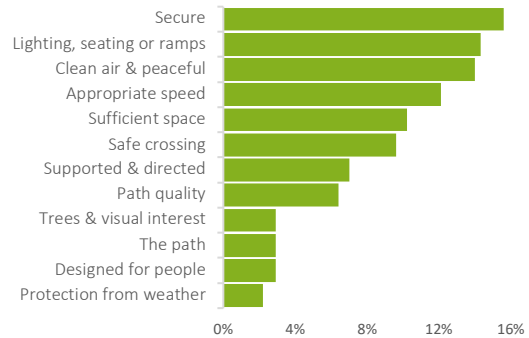
Figure 42. Main walkability outcomes in Los Angeles Road.
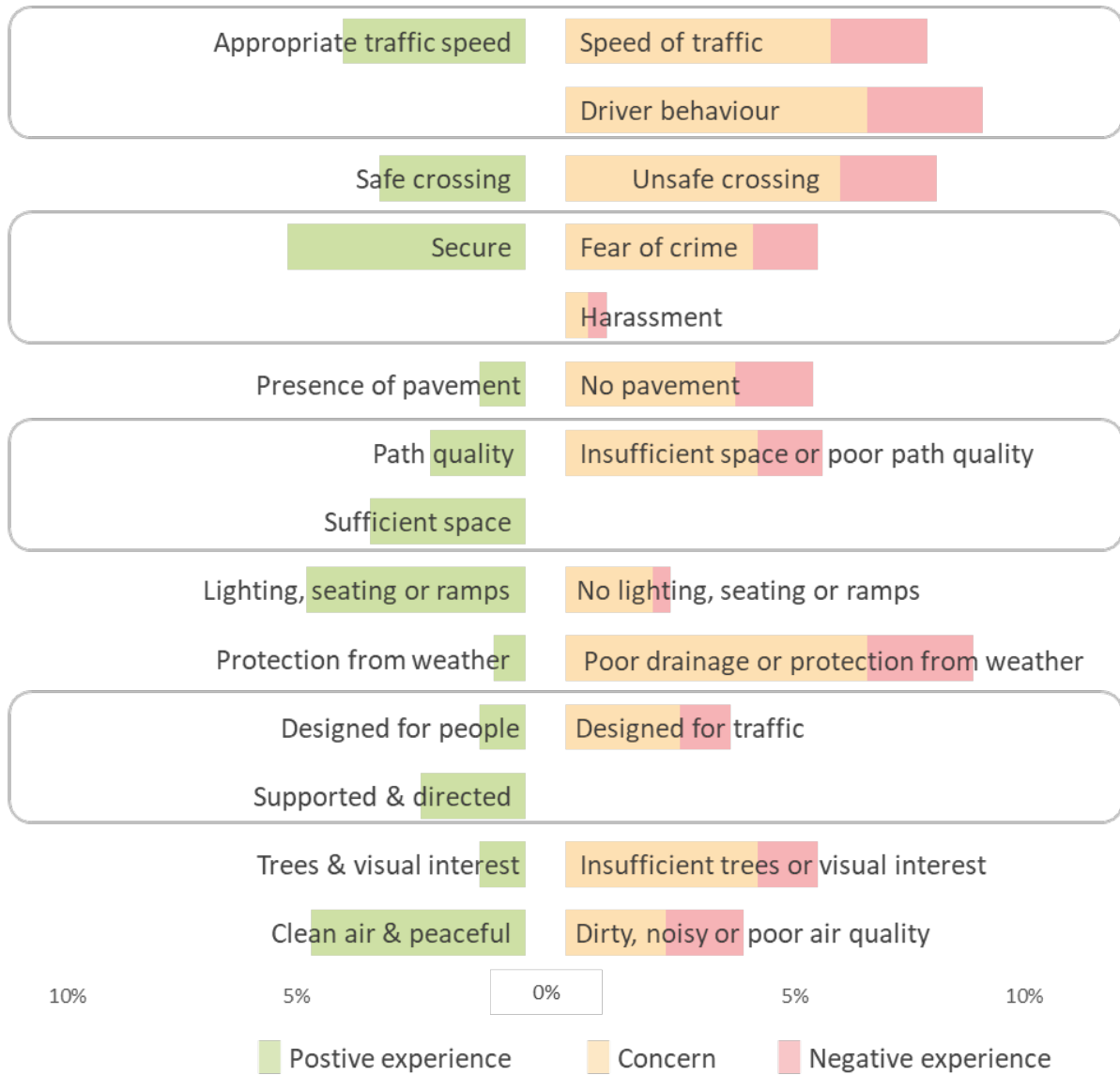
Figure 43. Relationships between environmental determinants and walking experiences in Los Angeles Rd.

Proposed intervention in Los Angeles Rd.

Assess the places with positive experiences related to safe crossings (for best practices) and the negative experiences and concerns related to unsafe crossings for future interventions.
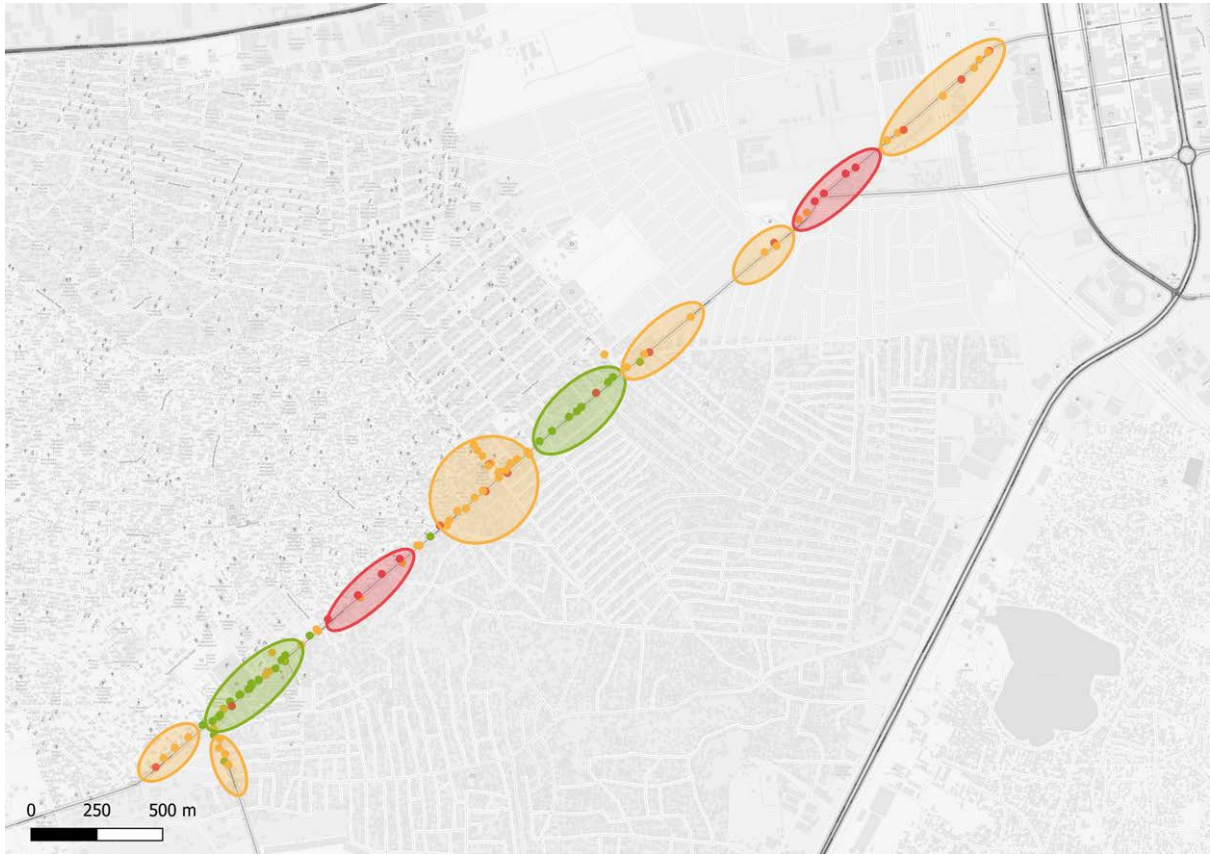

Figure 44. Areas for proposed intervention in Los Angeles Rd.

All Environmental determinants linked to all experiences		N	%
Positive experiences	Secure	49	5.2
	Lighting, seating or ramps	45	4.8
	Clean air & peaceful	44	4.7
	Appropriate traffic speed	38	4
	Sufficient space	32	3.4
	Safe crossing	30	3.2
	Supported & directed	22	2.3
	Path quality	20	2.1
	Designed for people	9	1
	The path	9	1
	Trees & visual interest	9	1
	Protection from weather	7	0.7
Concerns	Driver behaviour	62	6.6
	Poor drainage or protection from weather	62	6.6
	Unsafe crossing	57	6
	Speed of traffic	55	5.8
	Insufficient space or poor path quality	40	4.2
	Insufficient trees or visual interest	40	4.2
	Fear of crime	39	4.1
	No path	35	3.7
	Designed for traffic not people	24	2.5
	Dirty, noisy or poor air quality	21	2.2
	No lighting, seating or ramps	18	1.9
	Harassment	5	0.5
Negative experiences	Driver behaviour	24	2.5
	Poor drainage or protection from weather	22	2.3
	Unsafe crossing	20	2.1
	Speed of traffic	18	1.9
	Dirty, noisy or poor air quality	16	1.7
	No path	16	1.7
	Fear of crime	13	1.4
	Insufficient space or poor path quality	13	1.4
	Insufficient trees or visual interest	12	1.3
	Designed for traffic not people	10	1.1
	Harassment	4	0.4
	No lighting, seating or ramps	4	0.4
	TOTAL	944	100

Table 10. Observations on environmental determinants by type of experience in Los Angeles Rd.

In Tokyo Rd., most of the walking experiences were positive (55.1%) and related to 'Secure' (7.3%), `Safe crossing` (7%) and 'Sufficient space` (7%). Followed by concerns (25.7%) related to 'Poor drainage or protection from weather' (3.4%), 'No lighting, seating or ramps' (2.2%) and 'Unsafe crossing' (2.2%) . And finally, negative experiences (19.1%), related to 'No footpath' (2.5%), 'No lighting, seating or ramps' (2.3%) and 'Insufficient space or poor path quality' (2%).
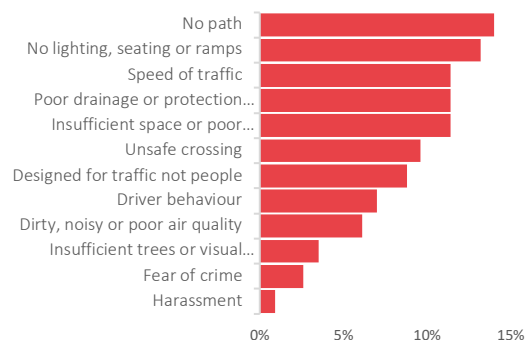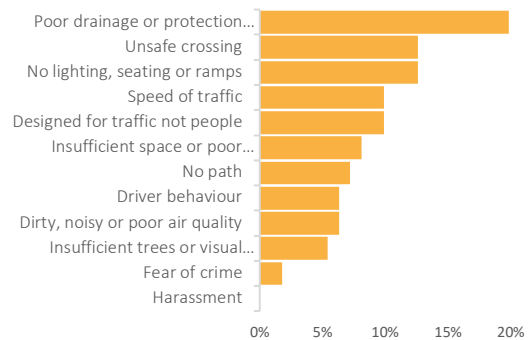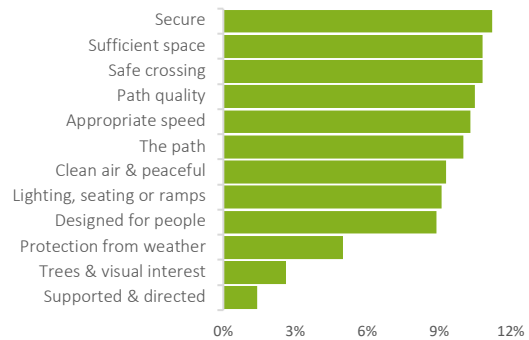

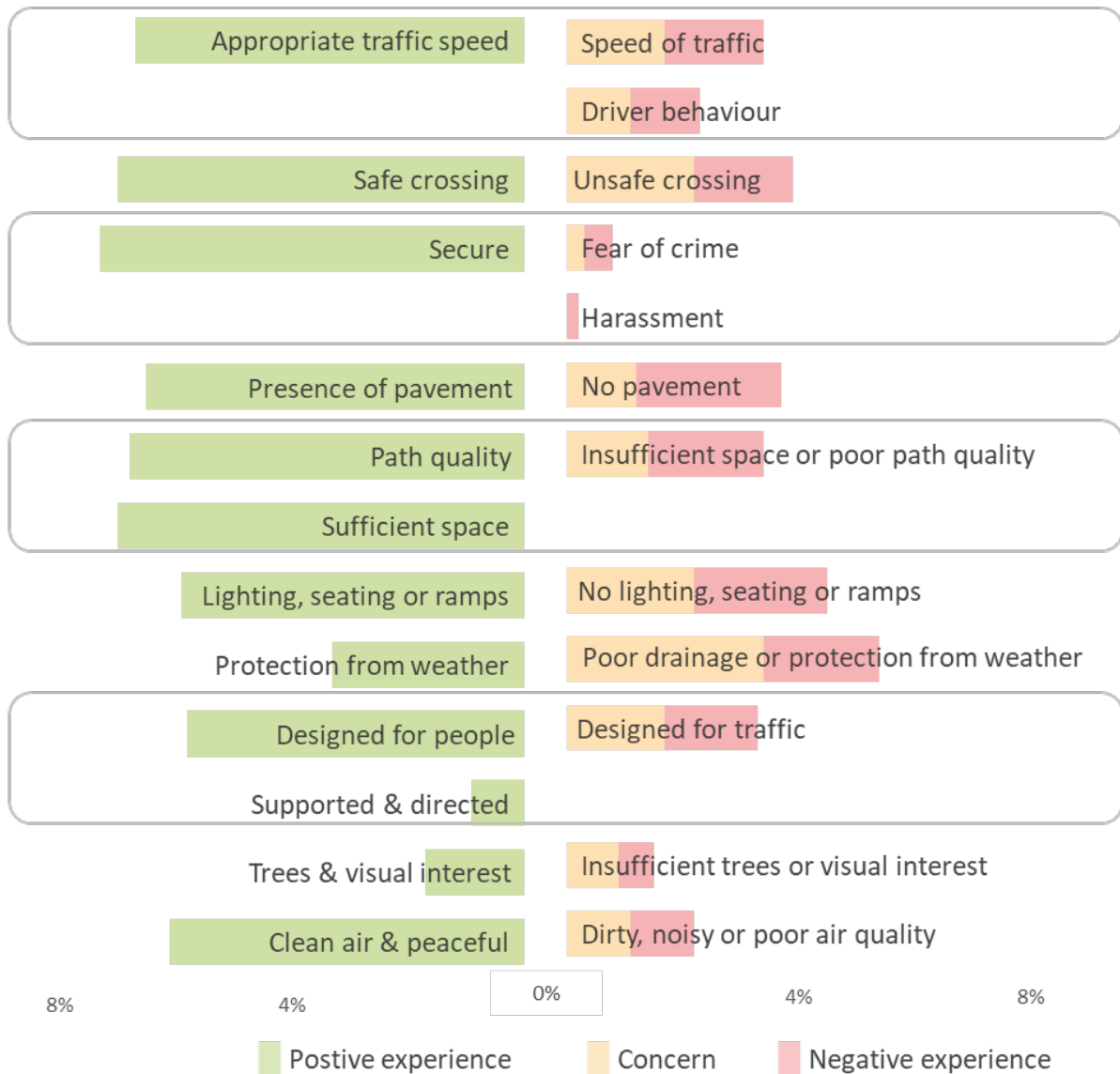Figure 45. Main walkability outcomes in Tokyo Road.

Tokyo Rd.

Appropriate traffic speed	Speed of traffic			
	Driver behaviour			
Safe crossing	Unsafe crossing			
Secure	Fear of crime			
	Harassment			
Presence of pavement	No pavement			
Path quality	Insufficient space or poor path quality			
Sufficient space				
Lighting, seating or ramps	No lighting, seating or ramps			
Protection from weather	Poor drainage or protection from weather			
Designed for people	Designed for traffic			
Supported & directed				
Trees & visual interest	Insufficient trees or visual interest			
Clean air & peaceful	Dirty, noisy or poor air quality			

8%   4%   0%   4%   8%

■ Postive experience   ■ Concern   ■ Negative experience

Figure 46. Relationships between environmental determinants and walking experiences in Tokyo Rd.

Proposed intervention in Tokyo Rd.

Assess the places with positive experiences related to 'Good drainage and protection from weather' and 'Lighting, seating or ramps' (for best practices), and the negative experiences and concerns related to 'No drainage or poor protection from weather' and "No lighting, seating or ramps" for future interventions.

Figure 47. Areas for proposed intervention in Tokyo Rd.

All Environmental determinants linked to all experiences		N	%
P o s i t i v e e x p e r i e n c e s	Secure	47	7.3
	Safe crossing	45	7
	Sufficient space	45	7
	Path quality	44	6.8
	Appropriate traffic speed	43	6.7
	The path	42	6.5
	Clean air & peaceful	39	6.1
	Lighting, seating or ramps	38	5.9
	Designed for people	37	5.8
	Protection from weather	21	3.3
	Trees & visual interest	11	1.7
	Supported & directed	6	0.9
C o n c e r n s	Poor drainage or protection from weather	22	3.4
	No lighting, seating or ramps	14	2.2
	Unsafe crossing	14	2.2
	Designed for traffic not people	11	1.7
	Speed of traffic	11	1.7
	Insufficient space or poor path quality	9	1.4
	No path	8	1.2
	Dirty, noisy or poor air quality	7	1.1
	Driver behaviour	7	1.1
	Insufficient trees or visual interest	6	0.9
	Fear of crime	2	0.3
	Harassment	0	0
N e g a t i v e e x p e r i e n c e s	No path	16	2.5
	No lighting, seating or ramps	15	2.3
	Insufficient space or poor path quality	13	2
	Poor drainage or protection from weather	13	2
	Speed of traffic	13	2
	Unsafe crossing	11	1.7
	Designed for traffic not people	10	1.6
	Driver behaviour	8	1.2
	Dirty, noisy or poor air quality	7	1.1
	Insufficient trees or visual interest	4	0.6
	Fear of crime	3	0.5
	Harassment	1	0.2
	TOTAL	643	100

Table 11. Observations on environmental determinants by type of experience in Tokyo Rd.

Study area 9: Cairo Road

In Cairo Rd., most of the walking experiences were negative (43.2%) and related to 'Poor drainage or protection from weather' (8%), `Fear of crime' (5%) and 'Driver behaviour` (3.4%). Followed by concerns (41.7%) related to 'Poor drainage or protection from weather' (10.2%), 'Fear of crime' (6.8%) and 'Dirty, noisy or poor air quality' (4.6%) . And finally, positive experiences (15.2%), related to 'Safe crossing' (5%), 'Designed for people' (4.3%) and 'Presence of footpath' (3.4%).
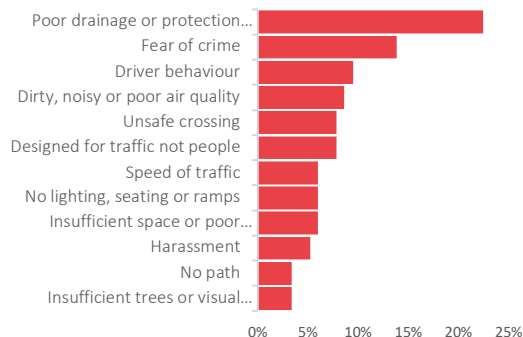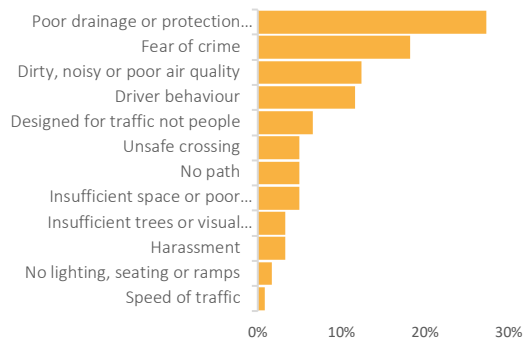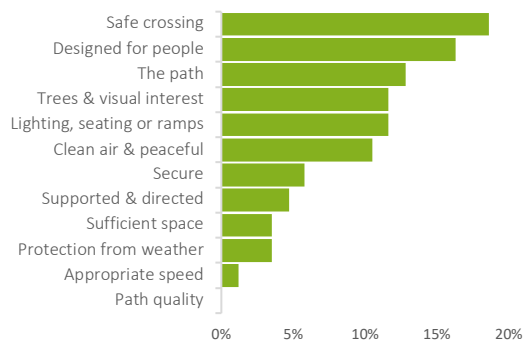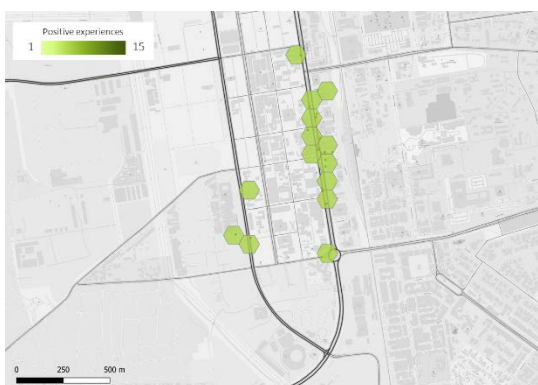
Figure 48. Main walkability outcomes in Cairo Road.
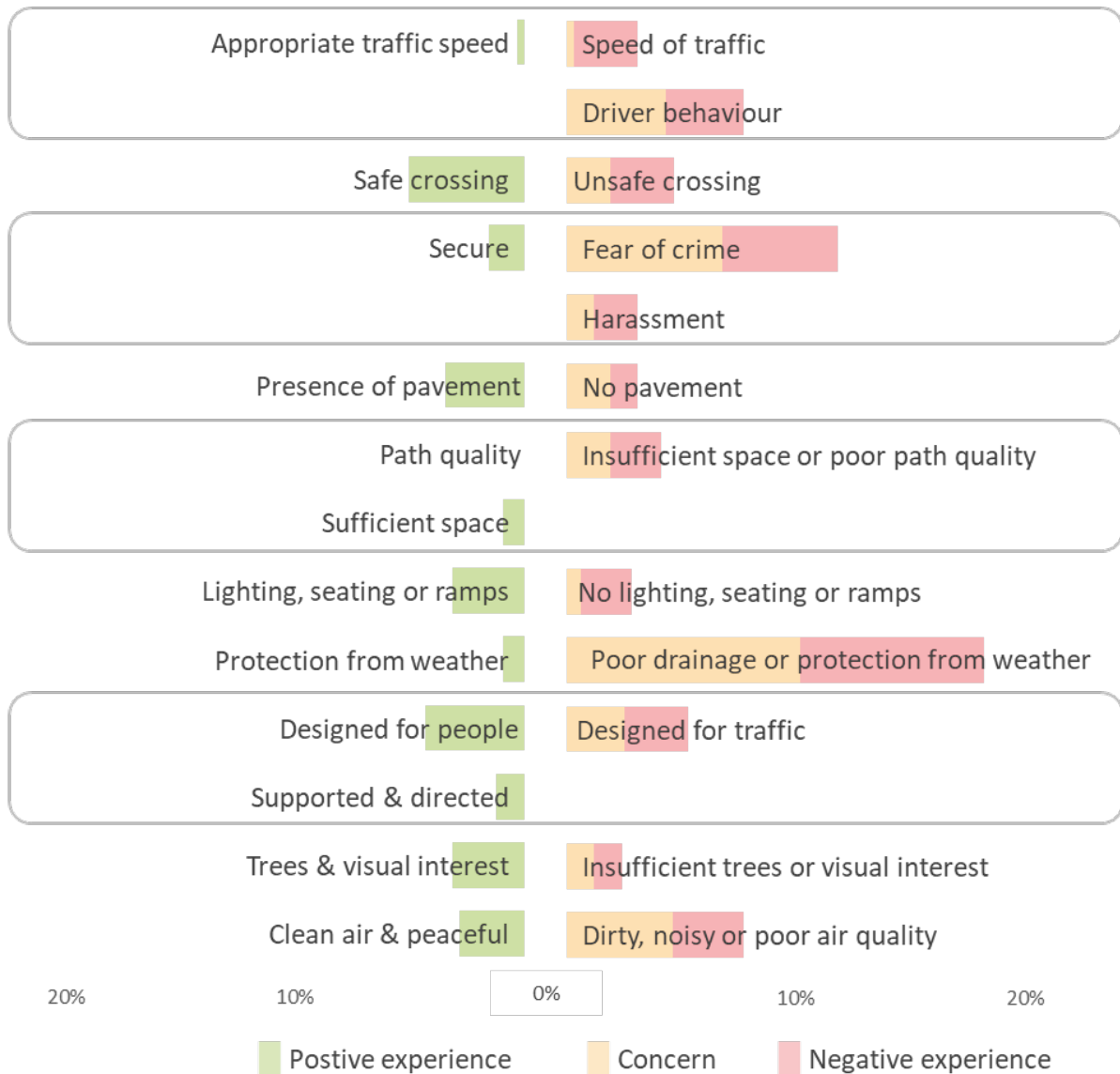
Figure 49. Relationships between environmental determinants and walking experiences in Tokyo Rd.

Proposed intervention in Cairo Rd.

Assess the places with negative experiences and concerns related to 'No drainage or poor protection from weather' for future interventions.
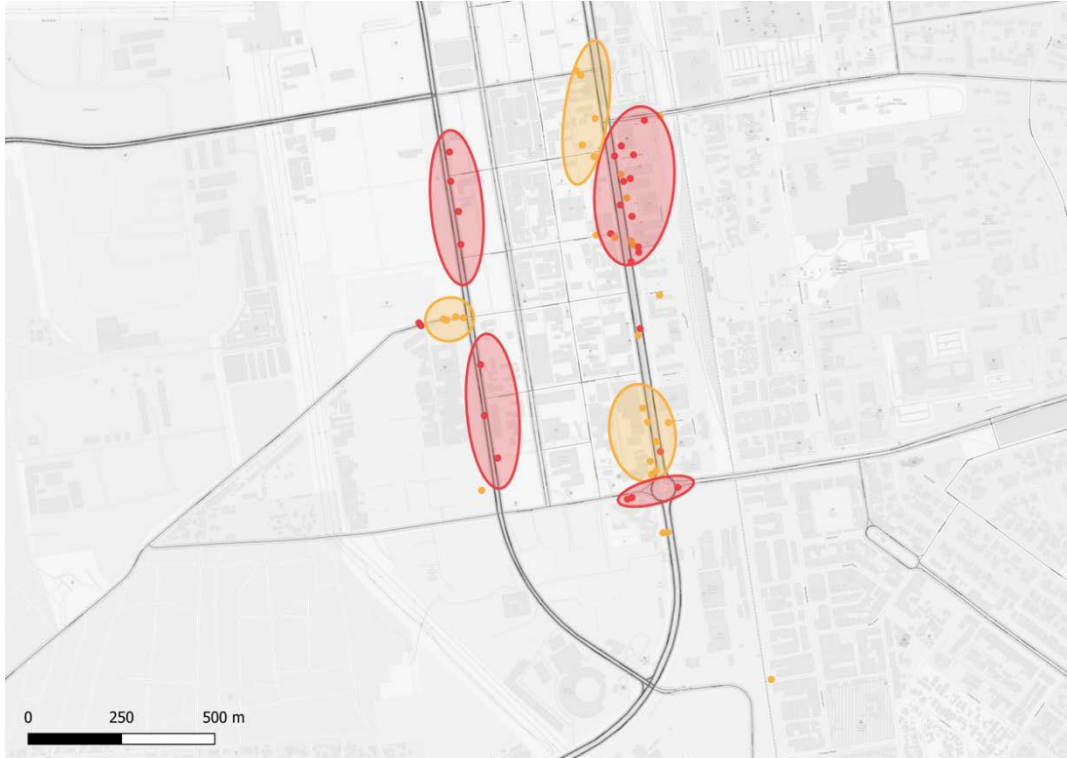

Figure 50. areas for proposed intervention in Cairo Rd.

All Environmental determinants linked to all experiences		N	%
P o s i t i v e e x p e r i e n c e s	Safe crossing	16	5
	Designed for people	14	4.3
	The path	11	3.4
	Lighting, seating or ramps	10	3.1
	Trees & visual interest	10	3.1
	Clean air & peaceful	9	2.8
	Secure	5	1.5
	Supported & directed	4	1.2
	Protection from weather	3	0.9
	Sufficient space	3	0.9
	Appropriate traffic speed	1	0.3
	Path quality	0	0
C o n c e r n s	Poor drainage or protection from weather	33	10.2
	Fear of crime	22	6.8
	Dirty, noisy or poor air quality	15	4.6
	Driver behaviour	14	4.3
	Designed for traffic not people	8	2.5
	Insufficient space or poor path quality	6	1.9
	No path	6	1.9
	Unsafe crossing	6	1.9
	Harassment	4	1.2
	Insufficient trees or visual interest	4	1.2
	No lighting, seating or ramps	2	0.6
	Speed of traffic	1	0.3
N e g a t i v e e x p e r i e n c e s	Poor drainage or protection from weather	26	8
	Fear of crime	16	5
	Driver behaviour	11	3.4
	Dirty, noisy or poor air quality	10	3.1
	Designed for traffic not people	9	2.8
	Unsafe crossing	9	2.8
	Insufficient space or poor path quality	7	2.2
	No lighting, seating or ramps	7	2.2
	Speed of traffic	7	2.2
	Harassment	6	1.9
	Insufficient trees or visual interest	4	1.2
	No path	4	1.2
	TOTAL	323	100

Table 12. Observations on environmental determinants by type of experience in Cairo Rd.

In Railway corridor, most of the walking experiences were negative (50.4%) and related to 'Driver behaviour' (7.4%), `Speed of traffic` (7.2%) and 'Unsafe crossing` (7%). Followed by positive experiences (41%) related to 'Supported and directed' (8.2%), 'Appropriated traffic speed' (6.2%) and 'Safe crossing' (5.5%) . And finally, concerns (8.5%), related to 'Fear of crime' (1.8%), 'No lighting, seating or ramps' (1.4%) and 'Harassment' (1.2%).
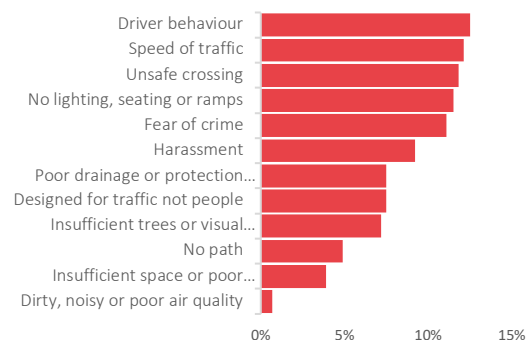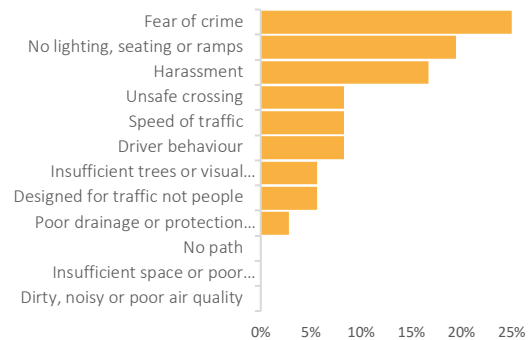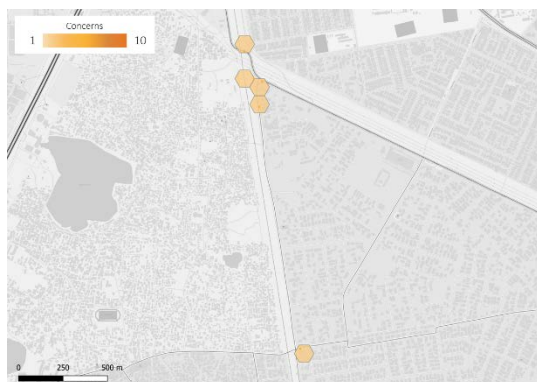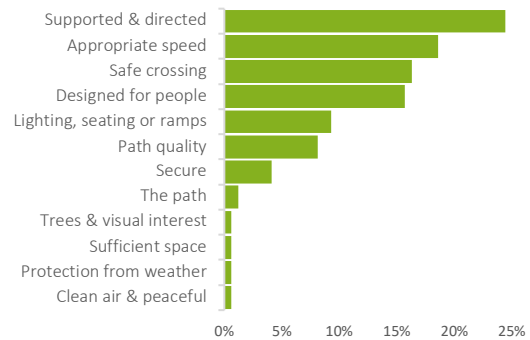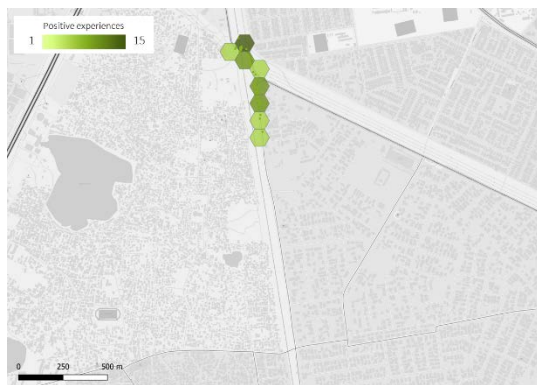

Figure 51. Main walkability outcomes in Railway Corridor.
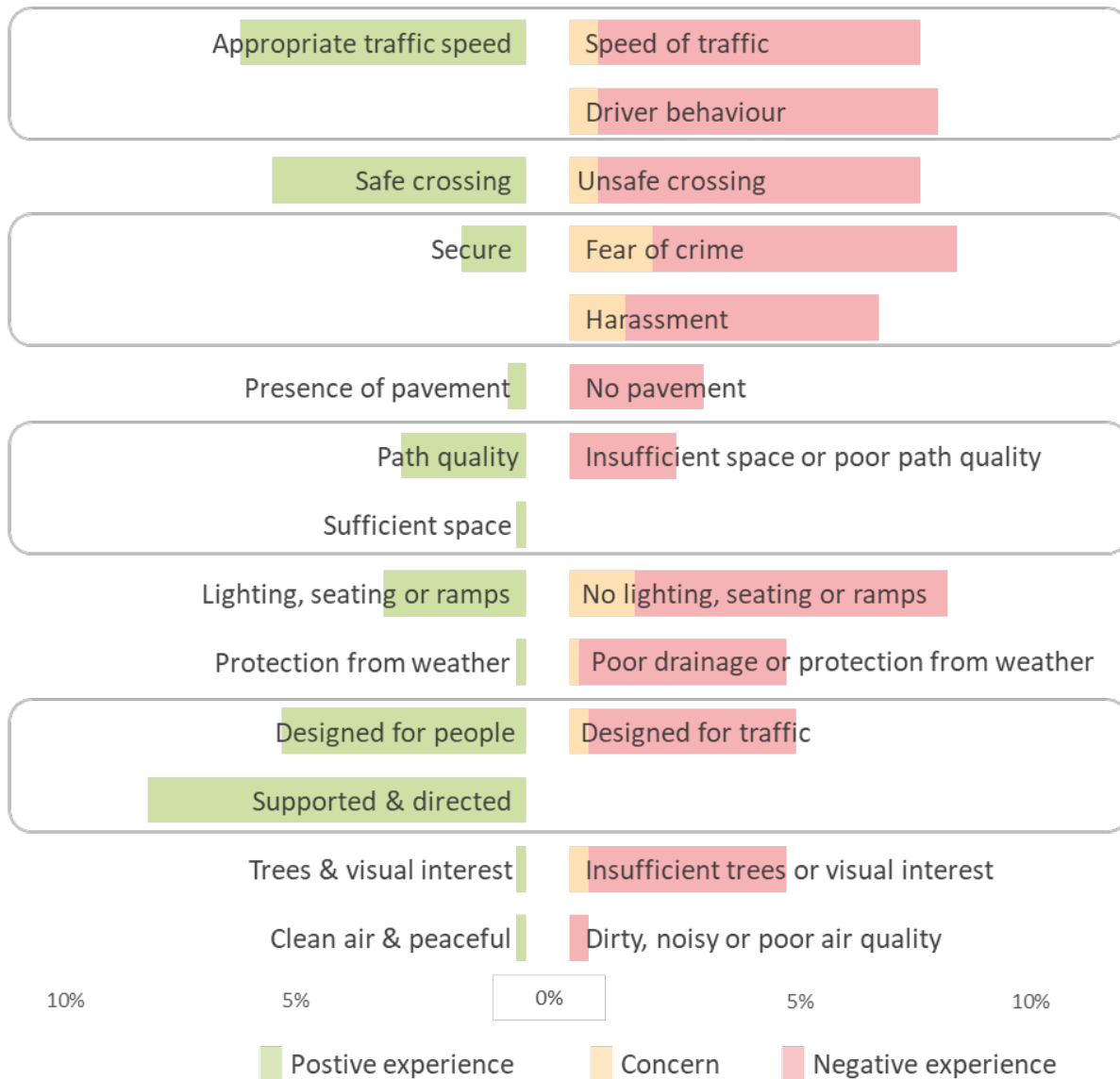
72

Railway Corridor

Figure 52. Relationships between environmental determinants and walking experiences in Railway Corridor.

Proposed intervention in Railway Corridor.

Assess the places with positive experiences related to 'Safe crossing' (for best practices) and the negative experiences and concerns related to 'Unsafe crossing' for future interventions.
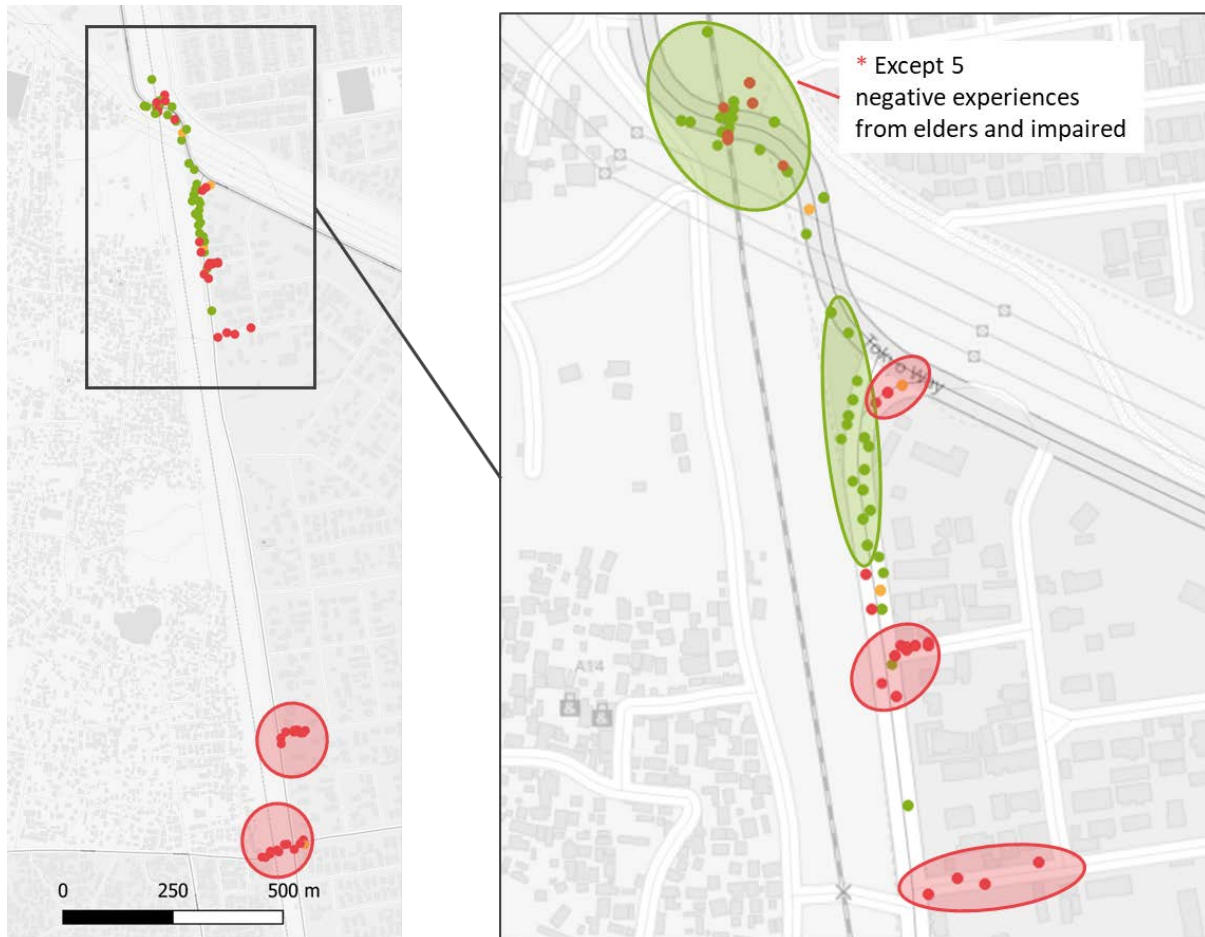

Figure 53. Areas for Proposed intervention in Railway Corridor.

All Environmental determinants linked to all experiences		N	%
Positive experiences	Supported & directed	42	8.2
	Appropriate traffic speed	32	6.2
	Safe crossing	28	5.5
	Designed for people	27	5.3
	Lighting, seating or ramps	16	3.1
	Path quality	14	2.7
	Secure	7	1.4
	The path	2	0.4
	Clean air & peaceful	1	0.2
	Protection from weather	1	0.2
	Sufficient space	1	0.2
	Trees & visual interest	1	0.2
Concerns	Fear of crime	9	1.8
	No lighting, seating or ramps	7	1.4
	Harassment	6	1.2
	Driver behaviour	3	0.6
	Speed of traffic	3	0.6
	Unsafe crossing	3	0.6
	Designed for traffic not people	2	0.4
	Insufficient trees or visual interest	2	0.4
	Poor drainage or protection from weather	1	0.2
	Dirty, noisy or poor air quality	0	0
	Insufficient space or poor path quality	0	0
	No path	0	0
Negative experiences	Driver behaviour	38	7.4
	Speed of traffic	37	7.2
	Unsafe crossing	36	7
	No lighting, seating or ramps	35	6.8
	Fear of crime	34	6.6
	Harassment	28	5.5
	Designed for traffic not people	23	4.5
	Poor drainage or protection from weather	23	4.5
	Insufficient trees or visual interest	22	4.3
	No path	15	2.9
	Insufficient space or poor path quality	12	2.3
	Dirty, noisy or poor air quality	2	0.4
	TOTAL	513	100

Table 13. Observations on environmental determinants by type of experience in Railway Corridor.

3.7. Walking environmental determinants in Lusaka, by study area

Pedestrian crossings

Pedestrian crossings were the most frequent determinants (13%) related to walking experiences in Lusaka, with 5.1% of observations on safe crossings related to positive experiences, while 4.3% and 3.6% of unsafe crossings related to unsafe experiences and concerns respectively. By study areas, there were five places with more positive experiences related to safe crossings: Great East Rd. (14.4%), Chilimbulu Rd. (8.1%), Tokyo Rd. (7%), Cairo Rd. (5%), and Leopards Hill Rd. (4.9%). Although some of these places also had a considerable number of negative experiences and concerns related to unsafe crossings, especially Great East Rd. There was one place with more concerns related to unsafe crossing: Los Angeles Rd. (6%). Finally, there were four places with more negative experiences related to unsafe crossings: Katima Mulilo rd. (12.6%), Lumumba Rd. (11.1%), Great North Rd. (10.4%), and Railway Corridor (7%), although this last place also had a considerable number of positive experiences related to safe crossings.

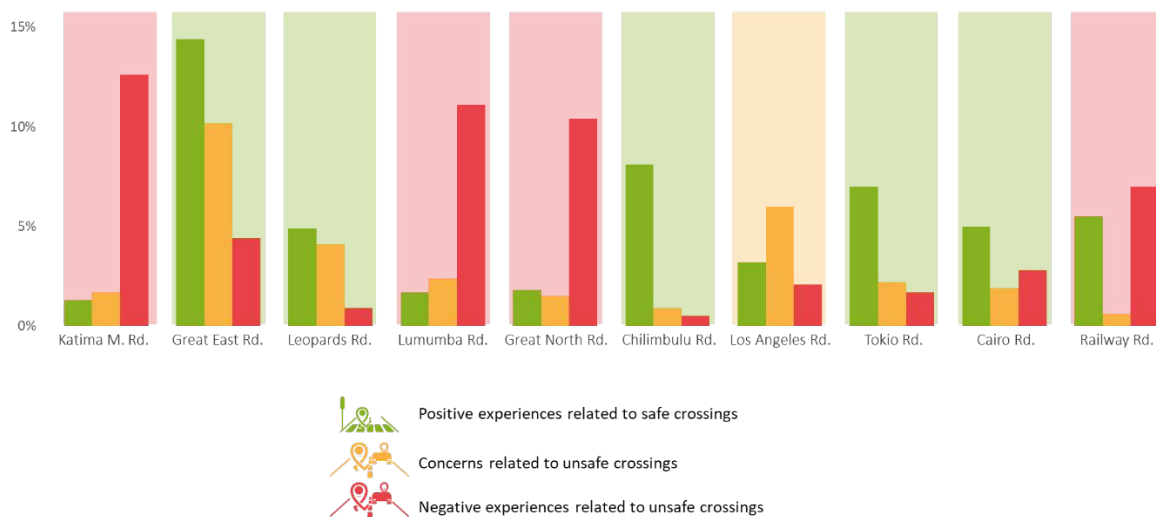| Places to learn from	Great East Rd., Chilimbulu Rd., Tokyo Rd., Cairo Rd., Leopards Hill Rd.
Places to improve	Katima Mulilo rd., Lumumba Rd., Great North Rd., Railway Corridor.

Figure 54. Walking experiences related to crossings by study area.

Footpath space and quality

Sufficient or insufficient footpath space and its quality was the second most frequent determinant (11.2%) related to walking experiences in Lusaka, with 3.1% and 2.1% of observations on insufficient space and poor path quality related to negative experiences and concerns respectively, while 2.4% of observations on sufficient space and good path quality related to positive experience. By study areas, there were six places with more positive experiences related to footpath space and quality: Tokyo Rd. (9.8%), Leopards Hill Rd. (5.6%), Los Angeles Rd. (5.5%), Great East Rd. (4.4%), and Chilimbulu Rd. (4.3%). On the other hand, there were four places with more negative experiences related to insufficient space and poor quality of footpaths: Lumumba Rd. (12.2%), Great North Rd. (9.9%), Katima Mulilo Rd. (4.6%), and Cairo Rd. (2.2%).

Places to learn from	Tokyo Rd., Leopards Hill Rd., Los Angeles Rd., Great East Rd., Chilimbulu Rd.
Places to improve	Lumumba Rd., Great North Rd., Katima Mulilo Rd., Cairo Rd.

Positive experiences related to sufficient space and path quality

Concerns related to insufficient space and poor path quality

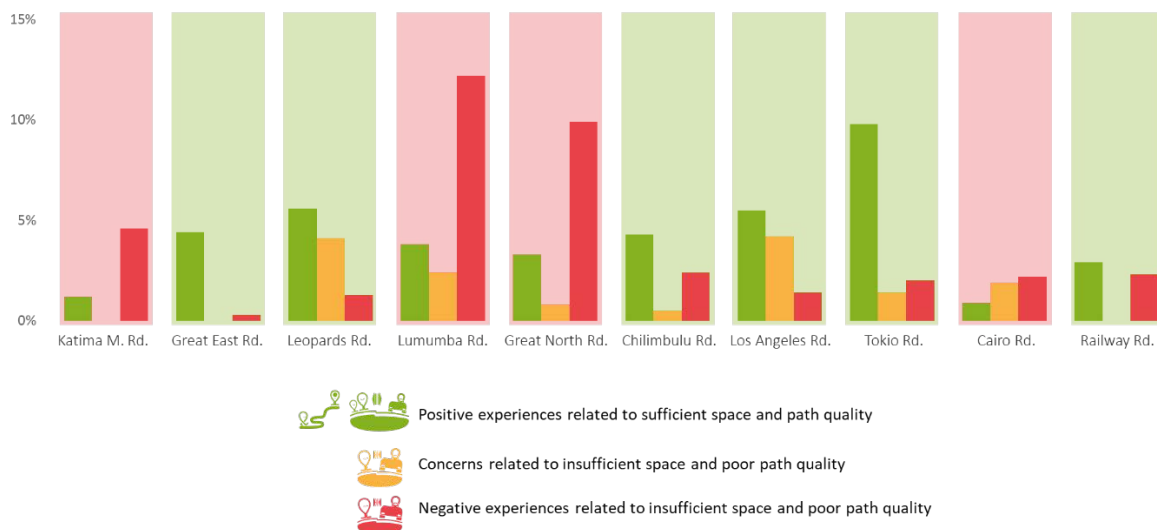Negative experiences related to insufficient space and poor path quality

Figure 55. Walking experiences related to path space and quality by study area.

Traffic speed

Traffic speed was the third most frequent determinant (11%) related to walking experiences in Lusaka, with 4.4% and 3% of observations on traffic speed related to negative experiences and concerns respectively, while 3.6% of observations on appropriate traffic speed related to positive experience. By study areas, there were three places with more positive experiences related to appropriate traffic speed: Tokyo Rd. (6.7%), Chilimbulu Rd. (6.2%), and Leopards Hill Rd. (3.4%). There were two places with more concerns related to speed traffic: Great East Rd. (9.4%) and Los Angeles (5.8%). Finally, there were five places with more negative experiences related to traffic speed: Katima Mulilo Rd. (12.6%), Great North Rd. (11.6%), Lumumba Rd. (9%), Railway Corridor (7.2%) which also had a considerable number of positive experiences related to appropriate traffic speed (6.2%), and Cairo Rd. (2.2%).

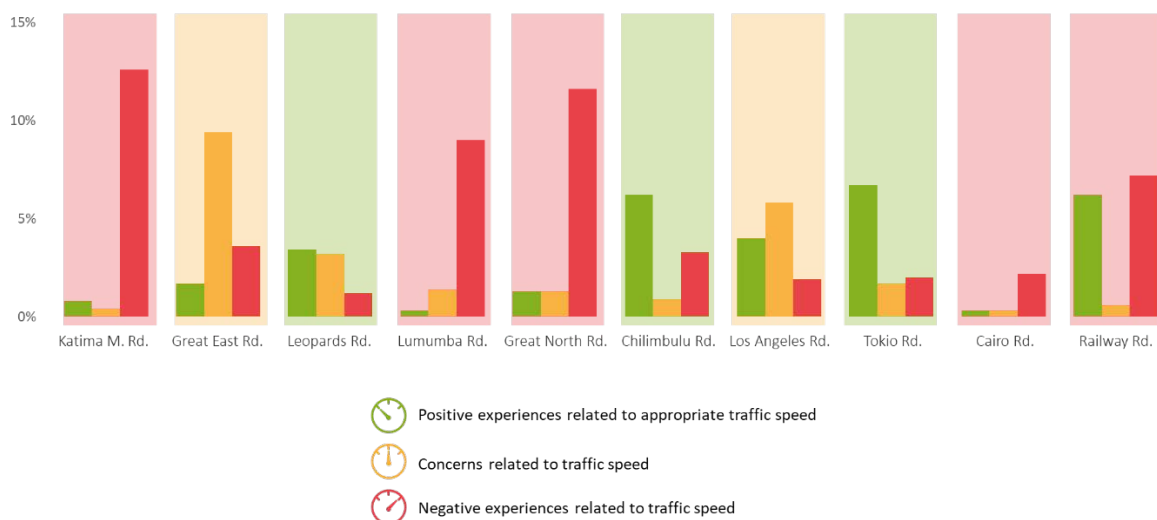| Places to learn from	Tokyo Rd., Chilimbulu Rd., Leopards Hill Rd., Railway Corridor.
Places to improve	Katima Mulilo Rd., Great North Rd., Lumumba Rd., Railway Corridor.

Figure 56. Walking experiences related to traffic speed by study area.

Lighting, seating or ramps

The presence, absence or quality of street lighting, seating and ramps (pedestrian equipment) was the fourth most frequent determinant (10.2%) related to walking experiences in Lusaka, with 4.6% of observations on lighting, seating or ramps related to positive experiences, while 3% and 2.6% of observations on no lighting, seating or ramps related to negative experiences and concerns respectively. By study areas, there were five places with more positive experiences: Chilimbulu Rd. (9.5%), Great East Rd. (6.9%), Tokyo Rd. (5.9%), Los Angeles Rd. (4.8%), Cairo Rd. (3.1%). There was one area with more concerns: Leopards Hill Rd. (7.9%), although it also had a considerable number of positive experiences (5.2%). Finally, there were four places with more negative experiences: Katina Mulilo Rd. (9.7%), Great North Rd. (7.3%), Railway Corridor (6.8%), and Lumumba Rd. (2.8%).

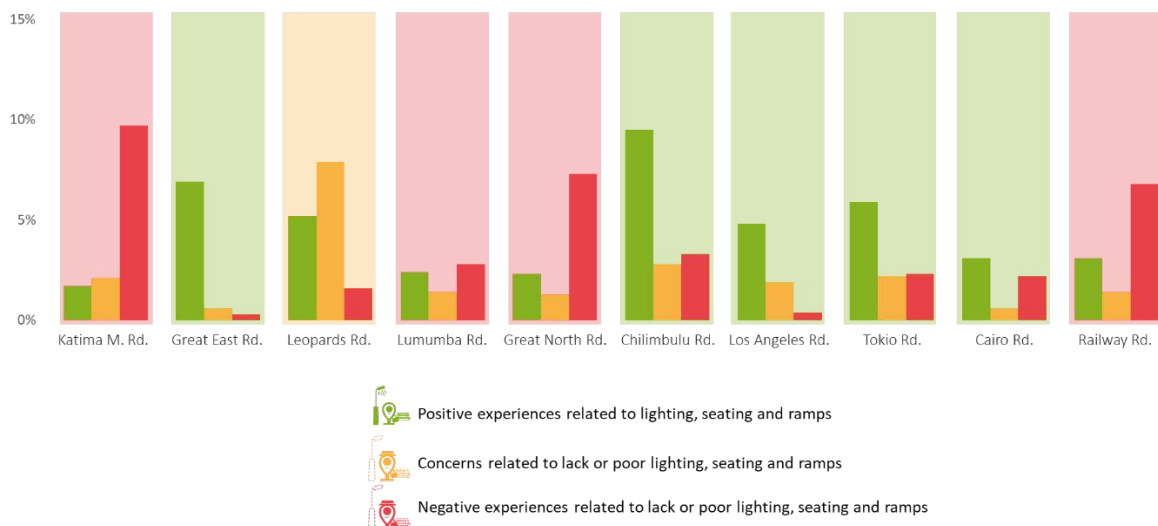| Places to learn from	Chilimbulu Rd., Great East Rd., Tokyo Rd, Leopards Hill Rd.
Places to improve	Katina Mulilo Rd., Great North Rd., Railway Corridor, Lumumba Rd.

Figure 57. Walking experiences related to lighting, seating or ramps by study area.

Personal security

Personal security, either fear of crime or feeling secure, was the fifth most frequent determinant (10%) related to walking experiences in Lusaka, with 4.3% of observations on secure related to positive experiences, while 3.1% and 2.6% of observations on fear of crime related to negative experiences and concerns respectively. By study area, there were five places with more positive experience related to secure: Tokyo Rd. (7.3%), Great East Rd. (6.9%), Chilimbulu Rd. (5.7%), Los Angeles Rd. (5.2%), and Leopards Hill Rd. (4.4%). There was one place with more concerns: Cairo Rd. (6.8%), although it also had a considerable number of negative experiences (5%). Finally, there were four places with more negative experiences: Katima Mulilo Rd. (8.4%), Railway Corridor (6.6%), Lumumba Rd. (6.3%), and Great North Rd. (4.1%).

Places to learn from	Tokyo Rd., Great East Rd., Chilimbulu Rd., Los Angeles Rd., Leopards Hill Rd.
Places to improve	Katima Mulilo Rd., Railway Corridor, Lumumba Rd., Great North Rd., Cairo Rd.

Figure 58. Walking experiences related to personal security by study area.

Protection from weather

Good and bad protection from weather and drainage was the sixth most frequent determinant (8.7%) of walking experiences in Lusaka, with 4.3% and 3.5% of observations on no protection from weather related to concerns and negative experiences respectively, while 0.9% of observations on protection from weather related to positive experiences. Data collection was conducted during a rainy week, which might partially explain that there was no place with more positive experiences related to protection from weather. By study area, there were five places with more negative experiences: Lumumba Rd. (6.6%), Great North Rd. (5.3%), Katima Mulilo Rd. (5%), Railway Corridor (4.5%), and Great East (1.4%). Finally, there were five paces with more concerns: Cairo Rd. (10.2%), which had also more negative experiences than the rest of places (8%), Leopards Hills Rd. (8.6%), Los Angeles Rd. (6.6%), Chilimbulu Rd. (4.7%), and Tokyo Rd. (3.4%), which had also the most positive experiences (3.3%).

Places to learn from	Tokyo Rd.
Places to improve	Cairo Rd., Lumumba Rd., Great North Rd., Katima Mulilo Rd., Railway Corridor, Great East.

Positive experiences related to protection from weather

Concerns related to lack or poor protection from weather

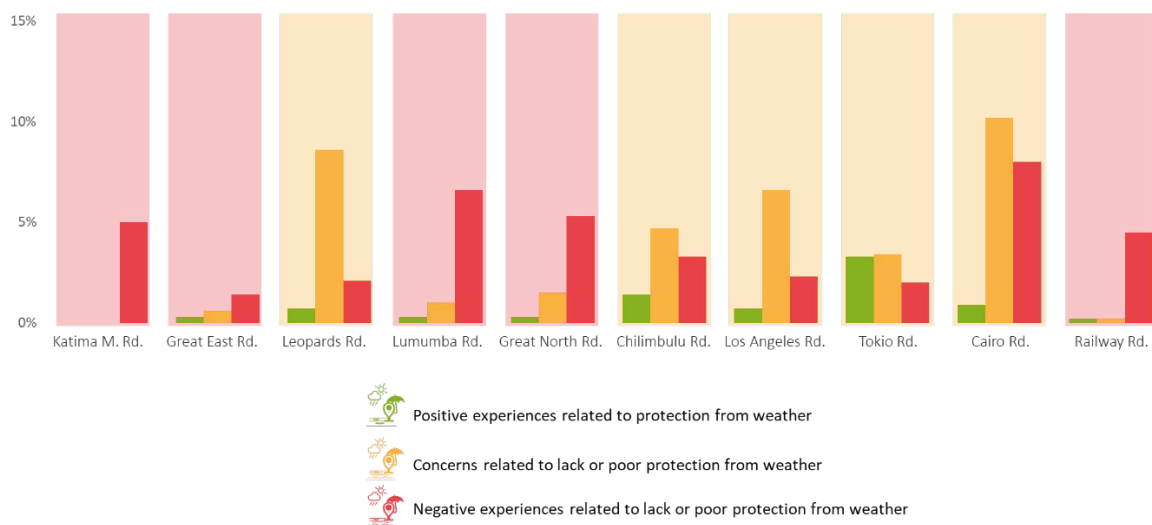Negative experiences related to lack or poor protection from weather

Figure 59. Walking experiences related to protection from weather by study area.

Presence or absence of footpath

Presence or absence of footpath is the seventh most frequent determinant (7.5%) related to walking experiences in Lusaka, with 3.5% of observations on presence of pavement related to positive experiences, while 2.3% and 1.7% of observations on absence of footpath related to negative experiences and concerns respectively. By study areas, there were four places with more positive experiences related to presence of footpath: Great East Rd. (13.8%), Tokyo Rd. (6.5%), Leopards Hill Rd. (4.6%), and Cairo Rd. (3.4%). There was one place with more concerns: Los Angeles Rd. (3.7%) and another place with as many positive and negative experiences: Chilimbulu Rd. (2.8%). Finally, there were four places with more negative experiences related to no footpath: Lumumba Rd. (4.9%), Katima Mulilo Rd. (3.8%), Railway Corridor (2.9%), and Chilimbulu Rd. (2.8%).

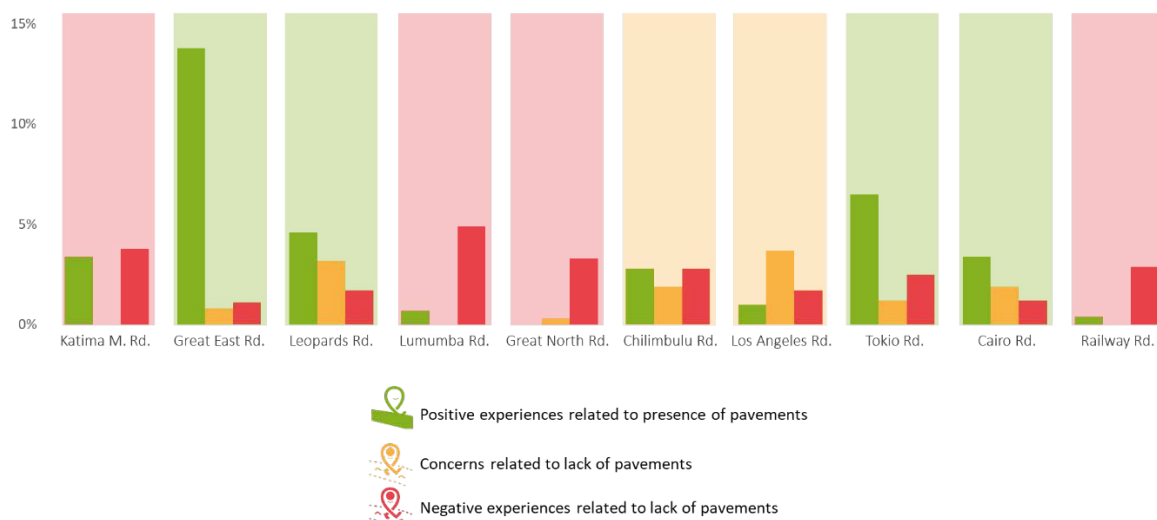| Places to learn from	Great East Rd., Tokyo Rd., Leopards Hill Rd., Cairo Rd.
Places to improve	Lumumba Rd., Katima Mulilo Rd., Railway Corridor, Chilimbulu Rd.

Figure 60. Walking experiences related to presence or absence of footpath by study area.

Car or pedestrian oriented street design

Designed for people or designed for traffic was the eighth most frequent determinant (7%) related to walking experience in Lusaka, with 3.3% of observations on designed for people related to positive experiences, while 2.1% and 1.6% of observations on designed for traffic related to negative experiences and concerns respectively. By study area, there were seven paces with more positive experiences related to designed for people: Chilimbulu Rd. (8.5%), Tokyo Rd. (5.8%), Railway Corridor (5.3%) although it also had a considerable number of negative experiences (4.5%), Cairo Rd. (4.3%), Leopards Hill Rd. (4.1%), Great East Rd. (3.3%), and Katina Mulilo Rd. (2.5%). There was one place with more concerns: Los Angeles Rd. (2.5%). Finally, there were two places with more negative experiences: Great North Rd. (5.8%) and Lumumba Rd. (2.8%).

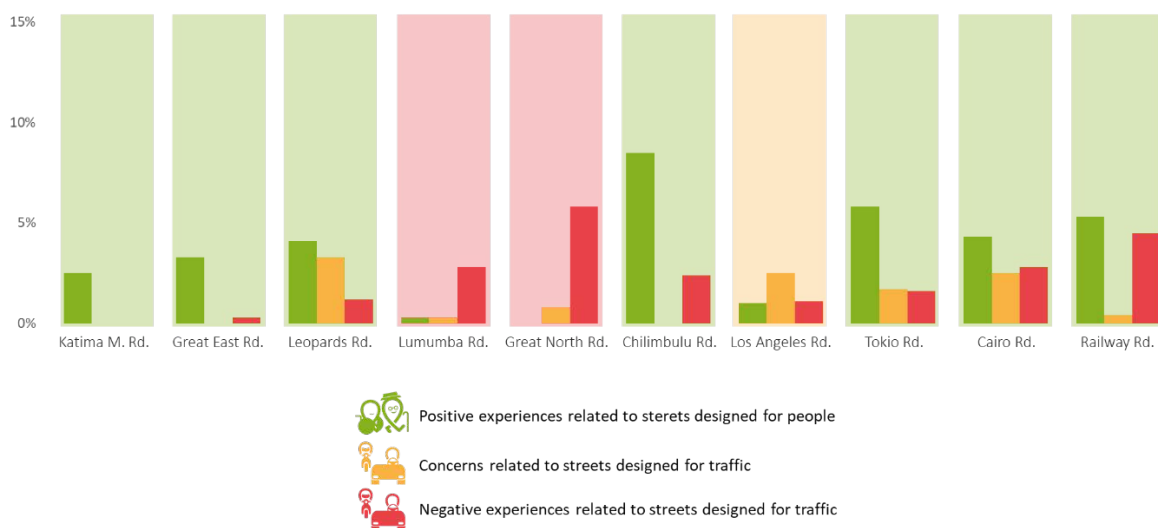| Places to learn from	Chilimbulu Rd., Tokyo Rd., Railway Corridor, Cairo Rd., Leopards Hill Rd., Great East Rd., Katina Mulilo Rd.
Places to improve	Great North Rd., Railway Corridor, Lumumba Rd, Los Angeles Rd.

Figure 61. Walking experiences related to street design by study area.

Environmental quality

Clean air and peaceful places or dirty, noise and poor air quality was the ninth most frequent determinant (6.4%) related to walking experiences in Lusaka, with 3.6% of observation on clean air and peaceful related to positive experiences, while 1.6% and 1.2% of observations on dirty, noisy and poor air quality related to negative experiences and concerns respectively. By study areas, there were six places with more positive experiences: Chilimbulu Rd. (9.5%), Tokyo Rd. (6.1%), Los Angeles Rd. (4.7%), Katima Mulilo Rd. (3.8%), Leopards Hill Rd. (3.2%), and Great East Rd. (3%). There was one place with more concerns: Cairo Rd. (4.6%). Finally, there were three places with more negative experiences: Lumumba Rd. (4.9%), Great North Rd. (3.8%), and Railway Corridor (0.4%).

Places to learn from	Chilimbulu Rd., Tokyo Rd., Los Angeles Rd., Katima Mulilo Rd., Leopards Hill Rd., Great East Rd.
Places to improve	Lumumba Rd., Great North Rd., Cairo Rd.

Positive experiences related to clean air and peaceful streets

Concerns related to dirty, noise or poor air quality

Negative experiences related to to dirty, noise or poor air quality
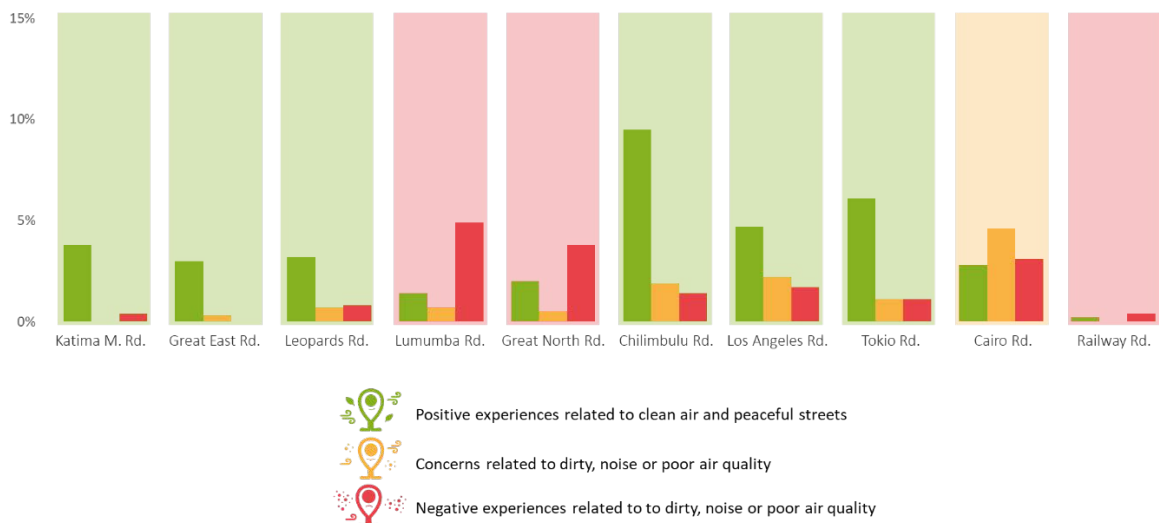
Figure 62. Walking experiences related to environmental quality by study area.

Driver behaviour

Bad driver behaviour is the tenth most frequent determinant (6.2%) related to negative experiences (3.8%) and concerns (2.4%) in Lusaka, since the Walkability App does not include a determinant on good driver behaviour related to positive experiences. By study area, there were six places with more negative experiences: Katima Mulilo Rd. (16%), Railway Corridor (7.4%), Great North Rd. (6.1%), Lumumba Rd. (4.9%), Great East Rd. (2.4%), Chilimbulu Rd. (1.4%), and Tokyo Rd. (1.2%). Finally, there were three places with more concerns: Los Angeles Rd. (6.6%), Cairo Rd. (4.3%), and Leopards Hill Rd. (1.8%).

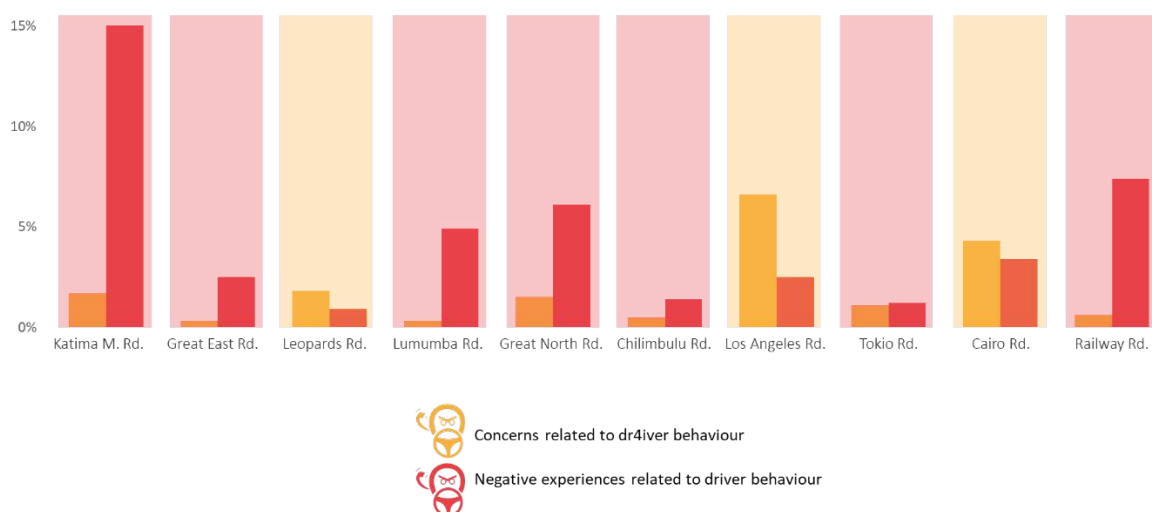| Places to learn from	Leopard Hills Rd, Chilimbulu Rd., Tokyo Rd.
Places to improve	Katima Mulilo Rd., Railway Corridor, Great North Rd., Lumumba Rd., Cairo Rd., Los Angeles Rd.

Figure 63. Walking experiences related to driver behaviour by study area.

85

Trees and visual interest

The presence and absence of trees and visual interest is the eleventh most frequent determinant (3.7%) related to walking experiences in Lusaka, with 1.3% of observations on no trees or visual interest related to negative experiences and concerns respectively, while 1.1% of observations on trees and visual interest related to positive experiences. By study area, there were two places with more positive experiences: Cairo Rd. (3.1%) and Leopards Hill Rd. (2%). There was one place with more concerns: Los Angeles Rd. (4.2%), another with the same number of positive, concerns and negative experiences: Lumumba Rd. (3%), and another with the same number of positive and negative experiences; Great East Rd. (0.3%). Finally, there were four places with more negative experiences: Railway Corridor (4.3%), Great North Rd. (2.8%), Chilimbulu Rd. (0.9%), and Katina Mulilo Rd. (0.8%).

Places to learn from	Cairo Rd., Leopards Hill Rd.
Places to improve	Railway Corridor, Great North Rd., Los Angeles Rd., Tokyo Rd.

Positive experiences related to trees and visual interest

Concerns related to lack of trees and visual interest

Negative experiences related to lack of trees and visual interest
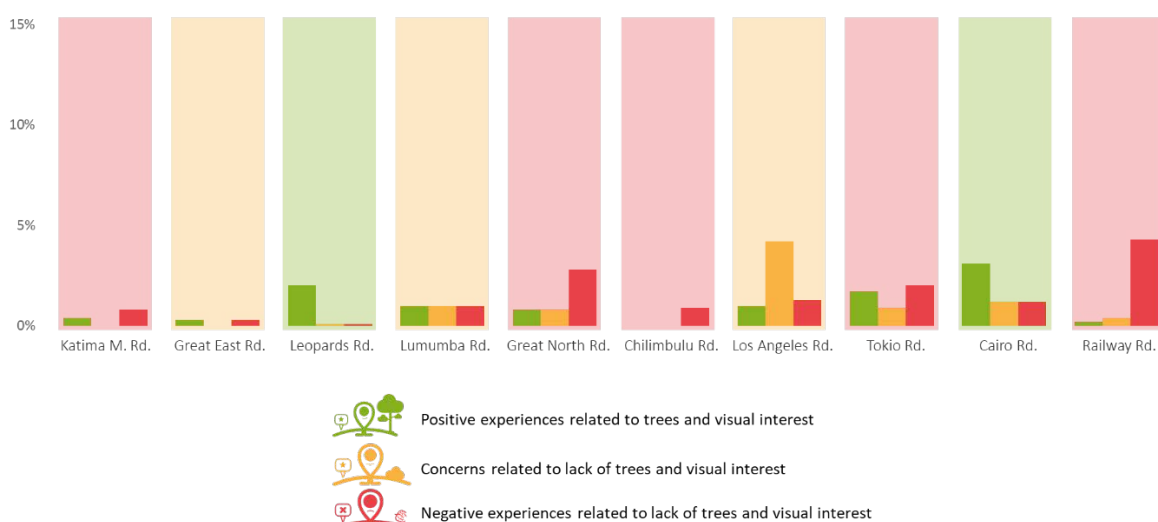
Figure 64. Walking experiences related to trees and visual interest by study area.

Harassment

Harassment is the twelfth and least frequent determinant (2%) related to negative experiences (1.6%) and concerns (0.4%) in Lusaka, , since the Walkability App does not include a determinant on no harassment related to positive experiences. By study areas, there were seven places with more negative experiences: Lumumba Rd. (6.3%), Railway Corridor (5.5%), Great North Rd. (2.8%), Cairo Rd. (1.9%), Chilimbulu Rd. (0.9%), Leopard Hills Rd. (0.3%), and Tokyo Rd. (0.2%). There were two places with more concerns: Los Angeles Rd. (0.5%) and Great East Rd. (0.3%). Finally, there was one place with no observations related to harassment: Katima Mulilo Rd.

Places to learn from	Katima Mulilo Rd., Great East Rd., Los Angeles Rd., Tokyo Rd.
Places to improve	Lumumba Rd., Railway Corridor, Great North Rd., Cairo Rd.

Concerns related to harassment

Negative experiences related to harassment

Figure 65. Walking experiences related to harassment by study area.

Summary of places with best practices and places to prioritise interventions in Lusaka

Determinant	Places to learn from	Places to improve
Pedestrian crossing	Great East Rd., Chilimbulu Rd., Tokyo Rd., Cairo Rd., Leopards Hill Rd.	Katima Mulilo rd., Lumumba Rd., Great North Rd., Railway Corridor.
Footpath space and quality	Tokyo Rd., Leopards Hill Rd., Los Angeles Rd., Great East Rd., Chilimbulu Rd.	Lumumba Rd., Great North Rd., Katima Mulilo Rd., Cairo Rd.
Traffic speed	Tokyo Rd., Chilimbulu Rd., Leopards Hill Rd., Railway Corridor.	Katima Mulilo Rd., Great North Rd., Lumumba Rd., Railway Corridor.
Lighting, seating or ramps	Chilimbulu Rd., Great East Rd., Tokyo Rd, Leopards Hill Rd.	Katina Mulilo Rd., Great North Rd., Railway Corridor, Lumumba Rd.
Personal security	Tokyo Rd., Great East Rd., Chilimbulu Rd., Los Angeles Rd., Leopards Hill Rd.	Katima Mulilo Rd., Railway Corridor, Lumumba Rd., Great North Rd., Cairo Rd.
Protection from weather	Tokyo Rd.	Cairo Rd., Lumumba Rd., Great North Rd., Katima Mulilo Rd., Railway Corridor, Great East.
Presence or absence of footpath	Great East Rd., Tokyo Rd., Leopards Hill Rd., Cairo Rd.	Lumumba Rd., Katima Mulilo Rd., Railway Corridor, Chilimbulu Rd.
Car or pedestrian oriented design	Chilimbulu Rd., Tokyo Rd., Railway Corridor, Cairo Rd., Leopards Hill Rd., Great East Rd., Katina Mulilo Rd.	Great North Rd., Railway Corridor, Lumumba Rd, Los Angeles Rd.
Environmental quality	Chilimbulu Rd., Tokyo Rd., Los Angeles Rd., Katima Mulilo Rd., Leopards Hill Rd., Great East Rd.	Lumumba Rd., Great North Rd., Cairo Rd.
Driver behaviour	Leopard Hills Rd, Chilimbulu Rd., Tokyo Rd.	Katima Mulilo Rd., Railway Corridor, Great North Rd., Lumumba Rd., Cairo Rd., Los Angeles Rd.
Trees and visual interest	Cairo Rd., Leopards Hill Rd.	Railway Corridor, Great North Rd., Los Angeles Rd., Tokyo Rd.
Harassment	Katima Mulilo Rd., Great East Rd., Los Angeles Rd., Tokyo Rd.	Lumumba Rd., Railway Corridor, Great North Rd., Cairo Rd.

Table 14. Summary of places with best practices and places to prioritise interventions in Lusaka

3.8. Walking environmental determinants in Lusaka, by type of pedestrian

Different types of pedestrians shared different share of positive experiences, concerns and negative experiences of the same places. By gender, men and women tend to share rather similar shares of different types of experiences, although women often shared slightly fewer positive experiences and more negative ones, overall both men and women tend to have a similar type of experience with each environmental determinant- By age, there is a clearer difference in their type of experiences. On the one hand, teenagers and adults tend to share more positive experiences and fewer negative experiences, especially teenagers. On the other hand, children and elders tend to share fewer positive experiences and more negative experiences, especially elders. By ability, assisted and impaired tend to share fewer positive experiences and more negative experiences, especially impaired pedestrians, compared to able pedestrians. In view of this, children, elders and impaired pedestrians seem to face more concerns and negative experiences when encountering the same environmental determinants in Lusaka as the rest of participants. This highlights that children, elders and impaired pedestrians might have specific needs and concerns to consider when planning and providing walking infrastructure and services.
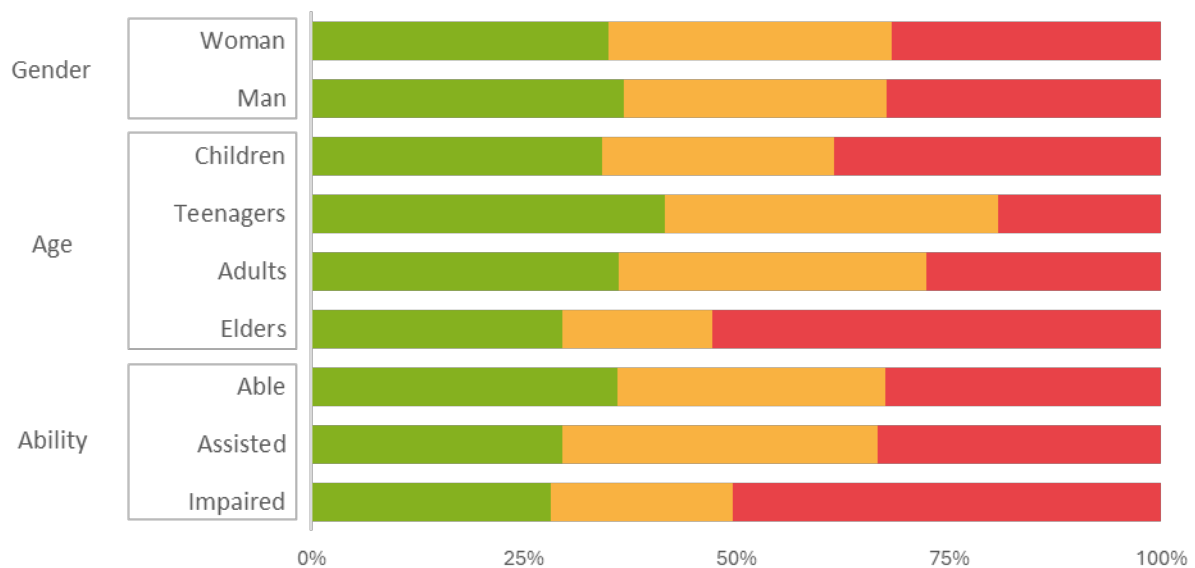

Figure 66. Percentage of walking experiences by pedestrian profile.

Most frequent type of walking experience (positive: green, concern: amber, negative: red) related to each environmental determinant by pedestrian gender, age and ability.

Pedestrian Determinant	Gender		Age				Ability		
	Men	Women	Children	Teenagers	Adults	Elders	Able	Assisted	Impaired
Pedestrian crossings	green	green	red	green	green	red	green	red	red
Footpath space & quality	green	green	green	green	green	red	green	green	green
Traffic speed	red	red	red	green	amber	red	red	red	red
Lighting, seating or ramps	green	green	green	green	green	red	green	green	red
Personal security	green	green	green	green	green	red	green	green	red
Protection from weather	amber	amber	amber	amber	amber	red	amber	amber	red
Presence or absence of footpath	green	green	amber	green	green	red	green	amber	red
Street design	green	green	green	green	green	red	green	red	red
Environmental quality	green	green	green	green	green	red	green	green	red
Driver behaviour	red	red	red	amber	red	red	red	amber	red
Trees and visual interest	amber	amber	amber	amber	amber	red	amber	amber	red
Harassment	red	red	red	red	red	red	red	red	red

Figure 67. Most frequent type of walking experience related to each environmental determinant by pedestrian profile.

The following tables 15 and 16 present a summary of more detailed graphs, with the percentage of observations on all environmental determinants related to different experiences, by pedestrian profile: age, gender and ability.

Table 15. Percentage of walking experience related to each environmental determinant by pedestrian profile (1/2).

Table 16. Percentage of walking experience related to each environmental determinant by pedestrian profile (2/2).

Appendix

Appendix 1. Glossary of terms in the Walkability App

1.1 Pedestrian profile

1.1.1 **Gender:** Indicates the participant's gender

Man: The participant is a man.
Woman: The participant is a woman.
Other: The participant does not self-identify within the binary categories.

1.1.2 **Ability:** Indicates the degree of self-defined ability by the participant to walk and interact with the environment. Note that when we say ´walk' or 'walking' throughout the document we are including people who need additional support to 'walk' such as a frame or wheelchair.

Able: The participant can walk and fully interact with the environment.
Assisted: The participant needs assistance to walk and interact with the environment. Example: The participant walks with an assistive device, such as a wheelchair, crutches, a stick, cane or guide dog, or with the assistance of another person (carer).
Impaired: The participant cannot fully walk and interact with the environment. Example: The participant faces challenges or total inability to move, see, hear or interact with the environment for different reasons (mobility, visual, hearing or cognitive impairment).

1.1.3 **Age:** Indicates the participant´s age.

Child: Less than 12 years old.
Teenager: between 12 and 18 years old.
Adult: between 18 and 65 years old.
Elderly: More than 65 years old.

1.2 Walk context

1.2.1 **Decision:** Indicates whether the participant walks out of necessity or by choice.

Necessity: The participant walks because they do not have access to an effective viable alternative to reach their destination. Also known as "captive pedestrians", due to personal or service constraints (personal: economic status, ability, ownership etc.; service constraints: no public service, low frequency, low reliability etc.). Example: The participant walks because they do not own/cannot afford to buy a car or there is no accessible public transport that is affordable/reliable.

Choice: The participant walks out of choice. They could use private or public transport, but they choose to walk. Example: The participant chooses to walk as they consider it a better option

compared to other means of transport (cheaper, more convenient, healthier, faster, more pleasant, more sustainable).

1.2.2 **Purpose:** Indicates whether the participant walks for transport or leisure.

Transport: The participant walks from one place to another (from A to B) to access a specific destination (within a specific time) Example: The participant walks to work or school, walks to a public transport stop or a shop.

Leisure: The main purpose of walking is not to access a specific destination but to walk as the main activity or together with other purposes, such as moderate physical activity or sociocultural activity. Example: The participant walks to do exercise, talk or interact with others, do some sightseeing walking or window shopping.

1.2.3 **Group size:** Indicates the number of other pedestrians walking with the participant.

Alone: The participant walks on their own.
With a dependent: The participant walks with someone who needs their assistance to walk and interact with the environment. Example: Participants carrying babies in a stroller or elders on a wheelchair.
In a group: The participant walks with one or more companions.

1.2.4 **Familiarity:** Indicates the familiarity of the participant with the place.

Local: The participant is familiar with the place. They know the area where they are interviewed because they have been in the same place or area before. Example: They live, work or have walked and spent time in the area before.
Visitor: The participant is not familiar with the place. They have never been in the place or area before. Example: The participant has never walked in the area before or they do not live, work or have spent time in the area before.

1.2 Pedestrian experiences

1.2.1. **Positive experiences** (green icon)

Positive pedestrian experiences while walking and interacting with the environment. The positive experiences may be related to the ease of walking in the area, as well as a positive personal sense of safety, comfort, pleasantness and vibrancy of the environment.
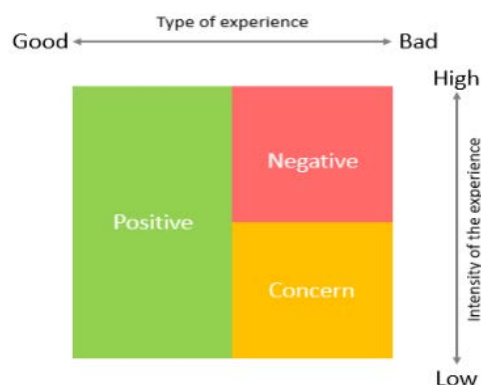
1.2.2. **Concerns** (amber icon)

Pedestrian concerns (mild negative experience) while walking and interacting with the environment. The concerns may be related to lack of ease of walking in the area, as well as a slightly negative personal sense of safety, comfort, pleasantness (and vibrancy) of the environment.

1.2.3. **Negative experiences** (red icon)

Negative pedestrian experiences while walking and interacting with the environment. The negative experiences may be related to high unease of walking in the area, as well as the negative personal sense of safety, comfort, pleasantness and vibrancy of the environment.

* Consideration between concerns and negative experiences: A concern does not warrant a change in behaviour but is noticeable as undesirable/annoying. However, a negative experience (i.e. problem) does warrant a change in behaviour due to the severity of the impact.

1.3 Environmental determinants

1.3.1. Linked to positive experiences

Appropriated (traffic) speed The traffic speed in the area is appropriate and not considered a threat or danger by pedestrians. Example: a street in which traffic moves slow enough so that pedestrians can make eye contact with the drivers.	
Clean and peaceful The area is not polluted with litter, odour, air or noise pollution. Example: a street with no litter, noise or air pollution.	
Designed for people The area is specially designed and managed to cater for pedestrian needs over any other means of transport or activity. Example: a pedestrianised area (street with no traffic).	
Lighting, seating or ramps The area is equipped with street furniture and infrastructure to cater for	

pedestrian accessibility, safety and comfort. Apart from lighting, seating and ramps, this category may include bins, public fountains and toilets, etc. (But

participants/surveyors need to use the comments to add them or specify if the observation is only referring to lighting, seating or ramps in particular.

Example: a street with streetlights and benches.

Path quality

The area has good quality pavements in terms of surface, width, design and

maintenance.

Example: a street with wide and flat pavements.

Protection from weather

The area is equipped with street furniture and infrastructure to protect pedestrians from harsh weather conditions, such as extreme heat and cold, rain, wind, humidity etc.

Example: a street with shade and shelter (e.g. trees, buildings with arcades) and with storm drainage (e.g. rain sewers).

Safe crossing

The area has a designated pedestrian crossing that provides an enhanced sense of safety to pedestrians from the risk of traffic.

Example: a street with signal crossing (zebra crossing) or light controlled junctions

(traffic lights).

Secure

The area feels secure for personal security. This could be due to the presence of

active surveillance (police, CCTV) or passive surveillance (other people in the street or buildings with open entrances), and the lack of threats to personal security, such as social misconduct, stray animals, etc.

Example: a street with other people showing friendly social interactions or non-

dangerous/threatening behaviour.

Sufficient space

The area provides sufficient space for pedestrians, both with the presence of wide pavements and large pedestrianised areas, and with the absence of obstacles and barriers.

Example: a street with width and unobstructed pavements.

Supported and directed

The area provides infrastructure, urban and street design, and information to support pedestrian mobility.

Example: a street or area that supports walking directness (no need to take detours to reach a destination (e.g. bus stop) and it is easy to navigate on foot (e.g. there is wayfinding).

The path.

The area has dedicated space (a pavement/footpath/footway) for pedestrians.

Example: a street or areas with designated pavements for pedestrians.

Trees and visual interest

The area has trees or other types of greenery, as well as other elements that are considered of visual interest, such as buildings, landmarks and aesthetic scenery.

Example: a street with trees, a square with traditional architecture.

1.3.1. Linked to concerns and negative experiences.

Designed for traffic, not people

The area is specially designed and managed to cater for the needs of motorised traffic at the expense of pedestrian accessibility, safety, and comfort.

Example: a highway or street junction with no pavements or crossings. A large parking area with no pavements.

Dirty, noisy or poor air quality

The area is polluted with litter, odour, air or noise pollution.

Example: a street with litter. A street with air and noise pollution from traffic.

Driver (bad) behaviour

The drivers of the area present bad driving behaviour that threatens or disrupts

pedestrians, such as speeding, aggressive driving, disregard of traffic signs, invading the pavement (using the horn and shouting at pedestrians), etc.

Example: a street where cars do not stop at pedestrian crossings or drive/park on

the pavement.

Fear of crime

The area feels unsafe for personal security. This could be due to the absence of

active surveillance (police, CCTV) or passive surveillance (other people in the street or buildings with open entrances), and the presence of threats to personal security, such as social misconduct, stray animals, etc.

Example: A street with people presenting bad social behaviour (e.g. drinking alcohol or taking drugs, shouting or fighting). An empty street at night.

Harassment

Some people in the area present aggressive pressure or intimidation to pedestrians. This could also be unwanted

Example: A street with people presenting bad social behaviour in which the

participant feels they can be assaulted at any moment.

Insufficient space or poor path quality

The area has streets with insufficient space for pedestrian (safe and comfortable)

mobility and their use of public space. This could be due to narrow pavements or

due to the presence or obstacles and barriers, such as vehicles parked on the

pavement, misplaced infrastructure and street furniture, vendors and other activities taking place on the pavement, crowded pavements (too many pedestrians). Path quality also refers to the quality of the pavement in terms of width, surface, design and maintenance.

Example (insufficient space): An area with cars on the pavement, street vendors

occupying all the pavement, crowded streets where all the pedestrians do not fit on the pavement.

Example (Poor path quality): A street with narrow and broken pavements.

Insufficient trees or visual interest

The area does not have trees or any urban greenery. The area does not have any relevant urban scenery (lack of relevant architecture, buildings, landmarks, etc.)

Example: a street without trees and buildings with poor architectural design.

No lighting, seating or ramps

The area is not equipped with street furniture and infrastructure to cater for pedestrian accessibility, safety and comfort. Apart from the lack of lighting, seating or ramps, this category may refer to bins, public fountains and toilets, etc (But participants/surveyors need to use the comments to add them or specify if the observation is only referring to lighting, seating or ramps in particular.

Example: a street with no streetlights (or proper public lighting), and no benches.

No path

The area does not have designated pavements for pedestrians.

Example: a street or segment of the street with no pavement.

Poor drainage or protection from weather

The area is not equipped with street furniture and infrastructure to protect pedestrians from harsh weather conditions, such as extreme heat and cold, rain, wind, etc.

Example: a street with no shade and shelter (sun and rain) and with rain drainage (floods).

Speed of traffic

The traffic speed in the area is too fast and considered dangerous or annoying by pedestrians.

Example: a street with fast traffic in which pedestrians cannot cross the road or use it to talk along the traffic.

|	
Unsafe crossing The area does not have a designated pedestrian crossing. Traffic has always the priority at junctions. Example: a street with no signal crossing (zebra crossing) or no light-controlled junctions (traffic lights)	

1.3.3. Comments

Apart from the predefined categories to add observations on elements and characteristics of the public space, participants can add comments to their observations (Purple icon with three points at the top-right corner of the report window). This allows adding specific observations related to context-specific observations that may not be fully represented by the predefined categories included in the app.
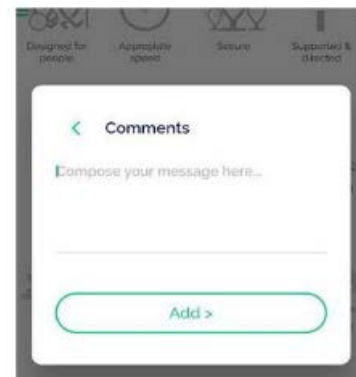
Appendix 2. Step-by-step tutorial for surveyors: Walking interviews

2.1 Introduction of the project and the surveyor

"Hello, we are conducting a study on pedestrian safety (explain the Trans-Safe project), would you like to respond to a few questions within less than five minutes?" We use the Walkability.App to collect the information that you share with us.

2.2. Ask about the pedestrian profile

In the app, go to Main Menu / Pedestrian Profile

Ask the participant about their gender, age and ability. Input the information in the Pedestrian Profile form accordingly. Click on "Continue".

2.3. Ask about the walk context

In the app, click on "Start Walk" and the Walk Context for will automatically appear on the screen.

Ask the participant about their walk decision, purpose, group size and familiarity with the place. Input the information in the Walk Context form accordingly. Click on "Continue".

2.4. Ask about pedestrian experience

Ask the participant if the pedestrian experience in the specific place where you are is positive, negative or with some concerns. Click on the green icon (positive), amber icon (concerns) or red icon (negative) accordingly.

2.5. Ask about environmental determinants

Ask the participant the reason(s) why the experience is positive/concern/negative. Based on their response, click on the icons that represent what they say. Add a comment if necessary. Click on "Send".

The interview is complete. Click on the 'red and white icon with a cross' to stop the walk and the interview.

Repeat steps 2.1 to 2.5 with the next participant.

Workflow to use the Walkability App as a survey tool for walking interviews

Use of the Walkability App
Interaction with participants

1. Open the Walkability App and log in with your username and password.

2. Make sure the map shows your current location.

3. Open the Pedestrian Profile Form (in the main menu, top-left)

4. Introduce yourself (surveyor) and the project (walkability study)

5. Ask participant about their pedestrian profile (3 questions). "Could you please tell me your?":

- Age
- Gender
- Ability to move and interact with the environment

6. Set the pedestrian profile and click on 'Continue>'

7. Click on 'Start Walk'

8. Ask participant about their walk context (4 questions). "Are you walking here?":

- Decision (by choice or out of necessity?)
- Purpose (as a leisure or transport activity?)
- Company (alone or accompanied?)
- Familiarity (as a local or visitor?)

9. Set the walk context and click on 'Continue>'

10. Ask about pedestrian's experience (1 question)

- Are you having a positive experience, some concerns, or a negative experience in this place?

11. Click on the green / amber / red icon, depending on the participant's response

12. Ask about environmental determinants (1 or more questions)

- What are the elements and characteristics of the public space that influenced such experience?

13. Select one or more icons depending on the participant's response. Add comments if necessary.

14. Click on 'Send>'

15. Let the participant know that the interview is completed and thank them for their contribution

16. Stop the walk by clicking on the red button with a red cross.

17. Go back to point 3 to start a new interview with another participant

OR

18. Log out (main menu, top-left) if you have finished your data collection.