Where do women choose to walk? Female safety in public spaces

Por onde as mulheres escolhem caminhar? Segurança feminina em espaços públicos

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Abstract

Women tend to regulate their activities and limit the use of public spaces to certain times of the day due to the perception of unsafety that acts as an integral part of their daily life. The objective of the research was to investigate objective and subjective factors related to walking from the perspective of female safety, through a case study conducted in the city of Londrina, State of Paraná. The tactics addressed were questionnaires and walking interviews to understand the socio-spatial factors that influence the choice and those that inhibit walking. The results indicate that the construction of "fear" occurs through reports from third parties and the media, while the main factor for "feeling safe" is related to the movement of people because, when there is such movement, women are seen.

Keywords: safety; woman; walking; questionnaire; walking interviews.

Resumo

As mulheres tendem a regular suas atividades e limitar o uso dos espaços públicos a certas horas do dia, pela alta percepção de insegurança que atua como parte integrante da sua vida cotidiana. O objetivo desta pesquisa foi investigar os fatores objetivos e subjetivos para caminhar sob a perspectiva da segurança feminina, através de um Estudo de Caso realizado em Londrina – PR. As táticas abordadas foram questionários e entrevistas caminhadas para compreender os fatores socioespaciais que influenciam na escolha e os que inibem o caminhar. Os resultados indicam que a construção do "medo" ocorre por meio de relatos de terceiros e da mídia, enquanto o principal fator de "sentir-se" segura está relacionado ao movimento de pessoas pelo fato de serem vistas.

Palavras-chave: *segurança; mulher; caminhar; questionário; entrevistas caminhadas.*

Introduction

The city has different meanings for different people with repercussions in their urban commutes (Chant and Mcilwaine, 2015). The right to mobility is one of the components for access to the city (Navarrete-Hernandes, Vetro and Concha, 2021), with safety classified as one of its basic demands (Mohamed and Stanek, 2020). When there is no safety, the population experiences fear and, subsequently, the commute is not done using the shortest route because of insecurity factors in the built environment (Cervero, 2013).

People are influenced by safety in many ways. Smith and Torstensoon (1997) state that safety cannot be understood in a single definition, as it is related to people's perception. Pain (2000) also adds that geographic, economic, social and cultural contexts affect people's fear, and can have repercussions at different scales such as global, national, local, family and on the body itself. Therefore, to reflect on the city and its safety, different approaches must be considered, in addition to the diversity of social groups (Collins, 2015; Navarrete-Hernandes, Vetro and Concha, 2021) such as gender, social class, race and sexuality.

When associating security with the issue of gender, Hale (1996) points out that this variable is the one that best predicts the fear of crime. Despite studies showing the rate of male violence to be higher (Reid and Konrad, 2004; Cops and Pleysier, 2001), women's perception of violence is three times higher (Sadeghi and Mirhosseini, 2015). Falú (2009) argues that society perpetuates violence against women, becoming thus an integral part of everyday life, characterized by power inequality between men and women.

Women experience a series of offensive behavior towards their sexuality and this scenario causes the fear of crime to be perceived as fear of attacks (Tandogan and Ilhan, 2016). Warr (1984) explains that women's fear is related to their sensitivity to attacks on their bodies, which operates as a central fear, underlying other fears. Physical violence is an invisible problem, as it occurs in spaces where the only witnesses are, for the most part, the victim and the aggressor (Pina, Gannon and Sanders, 2009).

Fear causes women to regulate their activities and limit the use of public spaces to certain hours of the day (Loukaitou-Sideris, 2014) or take longer detours because of these insecurity factors (Cerveró, 2013). Some authors also show that women's mobility is not homogeneous (Svab, 2016; Lyra, 2019): upper--middle class women avoid places associated with crime, and those from lower classes are more susceptible to areas of urban violence (Stanko, 1995; De Koning, 2009). Women who only travel on foot and/or by public transport restrict their activities more than those who have private transportation (Sur, 2014; Dunkel Gralia, 2016). Sadeghi and Mirhosseini (2015) add that women with higher income tend to substitute their mode of transport, opting for individual vehicles for safety reasons.

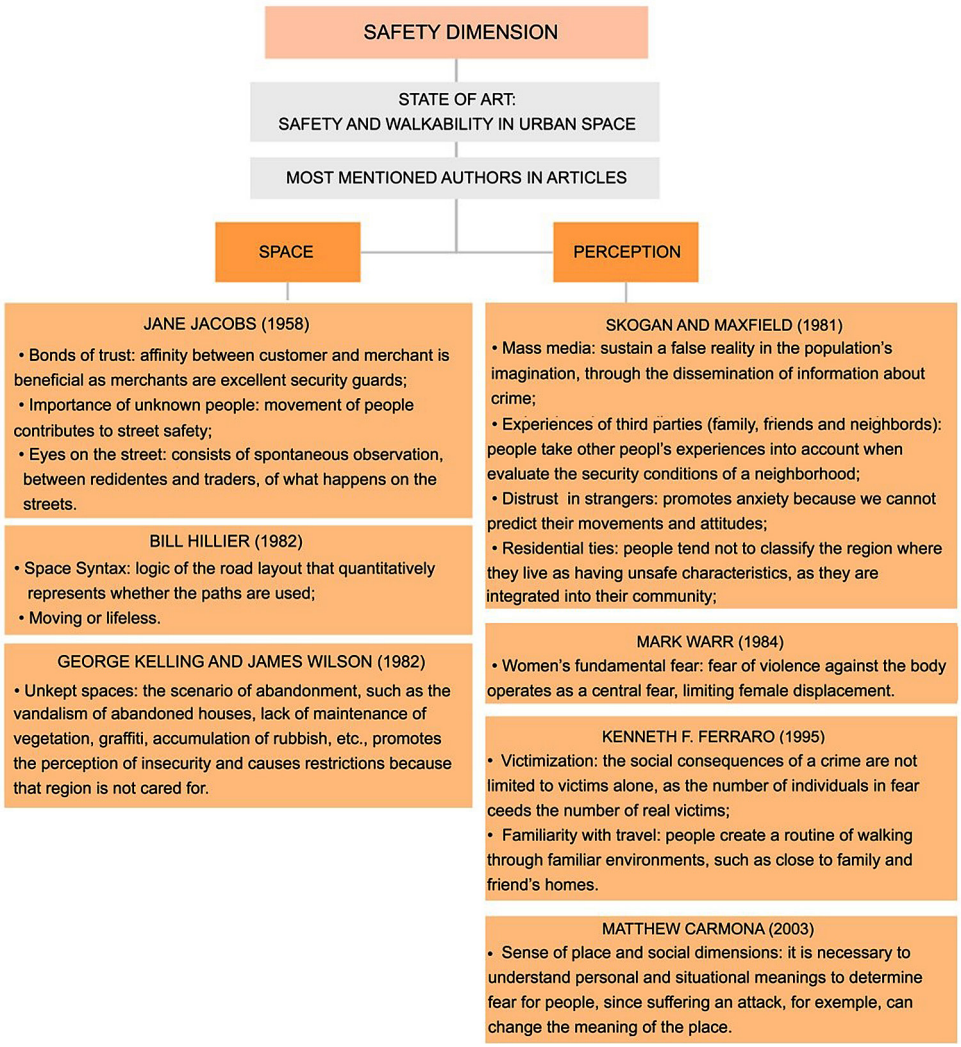
When women's perception of insecurity is high, they may limit their mobility at the micro level, such as the neighborhood, which has repercussions at the macro level – city scale (Chant and Mcilwaine, 2015). And, according to Falú (2009), violence against women in public spaces is a systemic problem that goes beyond individual cases and must be analyzed in an intersectional way, because some women are more vulnerable to violence than others.

Specifically, while we worked on investigating factors associated with women's safety/insecurity in relation to public space, our bibliographic search resulted in 15 articles of which 5 were national and 10 were international. The most mentioned authors who explained the relationship between safety and spatial issues were Jacobs (1958), Wilson and Kelling (1982) and Hillier and Hanson (1984). Others pointed out the relationship between safety and the perception of the respondents, as in the case of Skogan and Maxfield (1981), Warr (1984), Ferraro (1995) and Carmona (2003) (Figure 1).

The two approaches – Spatial and Perception of Safety– impact on how women enjoy the city and how they move about pointing to objective and subjective analytical approaches. Kuhn and Da Agra (2010) analyzed the safety factors that can be classified as objective, which were extracted from criminal data, official statistics, and the influence of environmental issues, among others. On the other hand, the subjective ones are influenced by the individual's perception and sensation. Although recent research is more concerned with identifying the factors that influence women who walk (Golan, 2017; Lyra, 2019; Uteng, Sing and Lam, 2019; Oliveira et al., 2020), few studies have sought to interpret/ investigate the reasons for women's choice to walk on certain streets.

To understand the phenomenon, the general objective of this research was to investigate the objective and subjective mobility factors from the perspective of women's safety. Understanding these factors becomes relevant in order to contribute to the development of more equitable, safe and sustainable cities.

Figure 1 – Summary of Theoretical Approaches



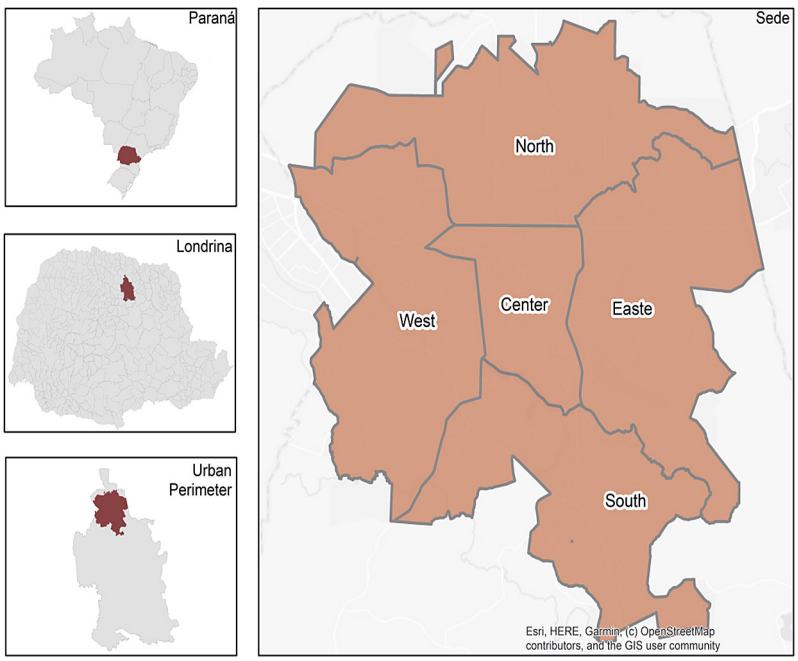
Source: authors, in 2023.

Methodology

Authors explain that, although quantitative methods provide insight into gradations of crime, used in isolation, they do not explore the nature of fear (Deere, 2018; Yates, 2021) because the causes depend on elements contained in individual identity (Moser, 2004). Qualitative and quantitative research, in combination with data, tend to provide a better understanding.

To define the methodological procedures, the following steps were defined: first, the case study was used as a strategy, as it is an empirical investigation into a contemporary and complex phenomenon which cannot be separated from the context (Yin, 2015). The city of Londrina, a Brazilian municipality located in the Northern Region of the State of Paraná (Figure 2), was chosen because of its available data for defining spatial sections – data on mobility and police reports. To understand where women choose to walk, a questionnaire with 50 respondents was carried out to capture objective data. The results were analyzed using the space syntax integration measures by Hillier and Hanson (1984) and existing evaluation data from Maps-Global (2022) – which is an audit tool for microscale elements. For the subjective data, 5 walking interviews were carried out.

Figure 2 – Municipality of the city of Londrina – PR



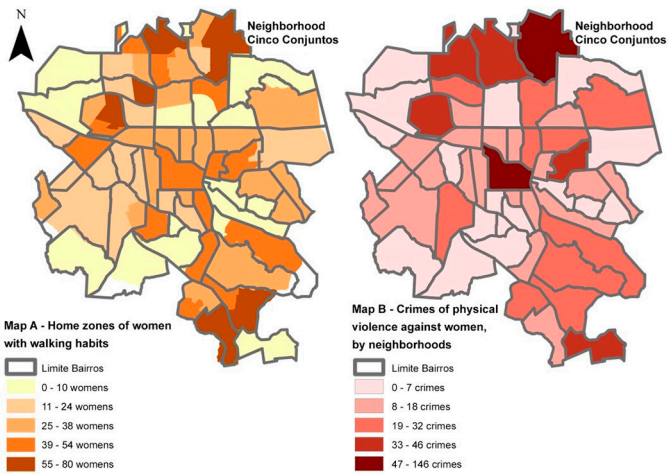
Source: authors, in 2023.

Getting around on foot, according to the Origin and Destination Survey, was the second means used by the population (Ippul, 2019). Walking accounts for around 23% of trips, with individual transport predominating with 55% of trips. Only the women's mobility patterns were analyzed, and the results represented according to the city's traffic zones (Figure 3 – map A). The data made it possible to measure the women's residential zones of those who responded affirmatively regarding moving about on foot. The results showed that, among the 2,064 women who walk, the residential areas with the highest rates are in the north, central and south regions, with the Cinco Conjuntos neighborhood having the highest percentage (9.93%).

In order to identify the neighborhoods with higher incidences of registered occurrences against women in the city of Londrina – PR, a police database was obtained from the Center for Analysis, Planning and Statistics (Cape, 2023), which belongs to the Secretariat State of Public Safety of Paraná (Sesp/PR). Reports that were not recorded in public spaces, such as residential, commercial, etc., were disregarded. Another criterion was the exclusion of crimes that do not fall under the category of physical violence, such as moral, patrimonial and psychological, in accordance with law no. 11,340 (title II – chapter II – Forms of domestic and family violence against women, among others). Therefore, the crimes considered to be physical violence were: physical, sexual and lethal.

One thousand twenty-seven police reports were systematized for crimes that occurred in public spaces over a period of three years (2018, 2019 and 2020). The data was spatialized using ArcGIS 10.8 software according to crimes of physical violence which were: physical (964), sexual (60) and lethal (3). The data showed that the northern region (268 reports) and the central region (250 reports) were the areas of the city with the highest rates of physical violence against women in public spaces (Figure 3 – map B).

Figure 3 – Association between data: definition of the research section



Source: Ippul (2019) and Sesp/PR (2020), modified by the authors, in 2023.

The overlap of walking data and reports of physical violence were procedures to delimit the spatial scope of the research with the definition of the Cinco Conjuntos neighborhood as an empirical study (Figure 3).

To assess the perception of safety of those women who have the habit of moving about on foot, questionnaires and walking interviews were used as research tactics. The questionnaire consisted of ten open and multiple-choice questions (Chart 1), applied in two periods. First, in May 2022, the questionnaire was applied on three alternating weekdays and on two weekends, totaling five days of research. Later, in December 2022, they were applied on three alternating days of the week. The research was carried out on site, with a total of 50 respondents, with approximately 15 minutes for each questionnaire.

Chart 1 – Questionnaire questions according to the analysis stages

Steps/Phases (Zeisel, 2006)	Questionnaire questions
Dada and knowledge	1.1 Public Place 1.2 Age 1.3 Education 1.4 Walking Habits 1.5 Which neighborhood in Londrina would you classify as safe? Why? 1.6 Which neighborhood in Londrina would you classify as unsafe? Why?
Places, routes and perception relationship	2.1 Imagine that you are at origin A (Escola Moacyr Teixeira), during the day, and a new resident in the neighborhood asks for your directions to go, on foot, to destination B (Colégio Marista). Which route would you recommend? If you don't know the name of the streets, identify references. (Route Map)  2.2 Would you recommend this route for the residente to take at night? Why? 2.3 What places should residentes avoid in their neighborhood? Why?
Opinion regarding neighborhood safety	3.1 How do you rate the safety of your neighborhood? (A) Not at all safe (B) Somewhat safe (C) Safe (D) Very Safe

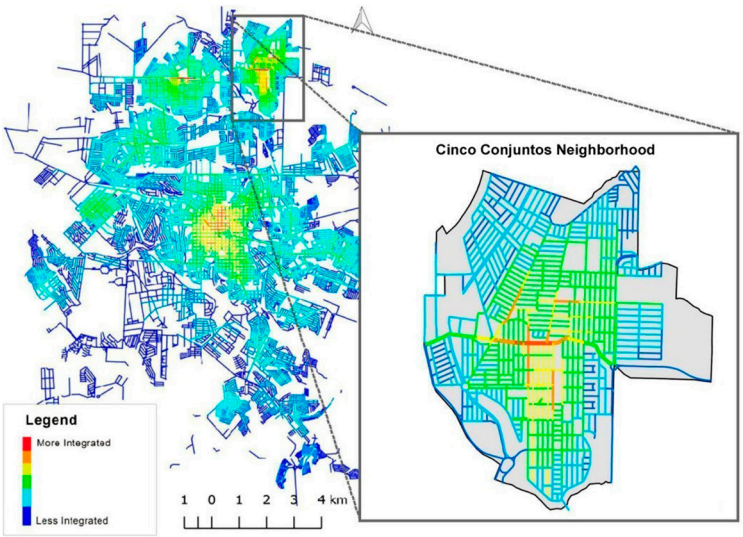
Source: authors, in 2023.

For the points of origin (A) and destination (B), the criteria used were the main facilities in the neighborhood located close to the most integrated streets, a definition based on the study of Space Syntax, responsible for measuring how deep or distant a street is compared to all the others (Hillier, 2004) (Figure 4). Integration measures can indicate the paths and routes used most by people (Saboya, 2007; Gonçalves, 2018). The integration of the radius equaling R1200m was used, which is equivalent to a 15-minute walk (Kronenberger and Saboya, 2019).

The results of the questionnaire were compared with the data from an Integration mapping R1200m of Space Syntax, already carried out in the Cinco Conjuntos neighborhood (Leão and Urbano, 2020) and with the results of a microscale walkability audit defined by the Maps-Global protocol (Sasaki et al., 2022) whose evaluation scores were carried out in all the neighborhood's street segments.

The other research tactic applied was the walking interview. The objective of this tactic is to discover, in depth, "how people define a situation, what they consider important and how they feel about it" (Zeisel, 2006, p. 227). To carry out the interview, the researcher must accompany the interviewee for a certain stretch of the route, covering the concepts from the study (Júnior, Kikuchi and Portella, 2020). The walking interview obtained a sample of 5 interviews as a qualitative approach to understand the phenomenon more in depth. Both instruments – the questionnaire and the interviews – were approved by the Ethics Committee, Plataforma Brasil, protocol 56984222.7.0000.5231.

Figure 4 – Integration of 1200m of the Cinco Conjuntos neighborhood



Source: Leão e Urbano (2020), modified by the authors, in 2023.

As the objective of the research was to analyze the phenomenon of security on objective and subjective structures, in addition to the similar themes in the instruments, the path map (Table 1), both in the interviews and in the questionnaire, had the participants trace a route that they classified as safe for a woman to walk along between the two schools.

Results and discussions

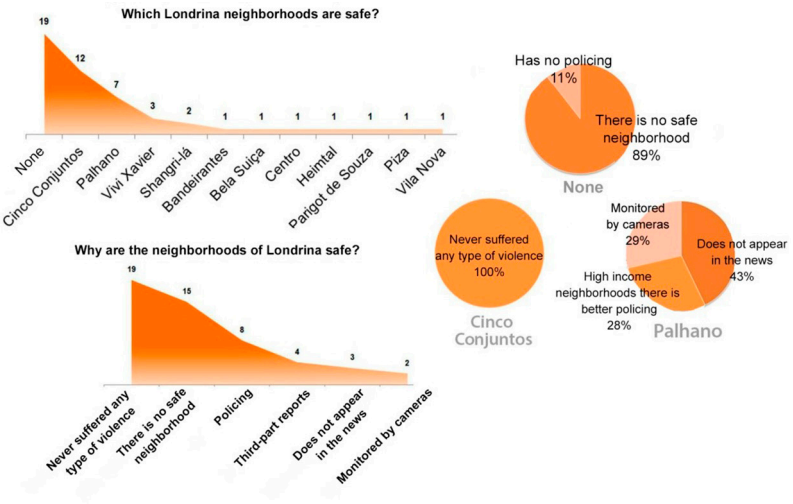
The results were divided into two stages, first, for each research tactic and, subsequently, for the comparative reflections on quantitative and qualitative analyses, with the aim of interpreting safety factors related to women's mobility in public spaces.

Objective approach – questionnaires

The questionnaire was used to identify socio-spatial characteristics related to walking safety. Regarding the profile of the respondents, the majority of the interviewees were young women between the ages of 20 and 29 years (26%) and for the elderly (10%). Regarding women's walking habits, around 52% do not walk as their main method for getting around, while approximately 48% do all their activities on foot. The survey identified the most frequent destinations such as the market (21.5%), work (16.3%) and for physical exercise (13.4%).

Among the neighborhoods classified as safe, 37.3% of the respondents stated that no neighborhood is safe; 23.6%

Graph 1 – Why are neighborhoods classified as safe?

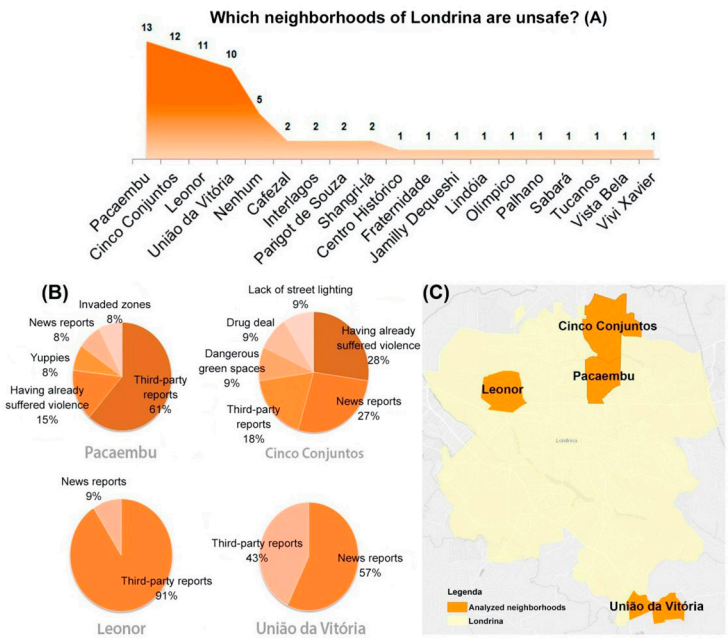


Source: authors, in 2023.

classified the Cinco Conjuntos, that is, the neighborhood where they live, and 13.7% indicated the Gleba Palhano neighborhood, one of the neighborhoods with the highest concentration of income in the city (Graph 1). The women who mentioned the Cinco Conjuntos neighborhood stated that they had never suffered any type of violence. As for the Palhano neighborhood, 43% of respondents explained that the neighborhood does not appear in the news, 29% responded that it is monitored by cameras and 28% stated that, in high income neighborhoods there is better policing.

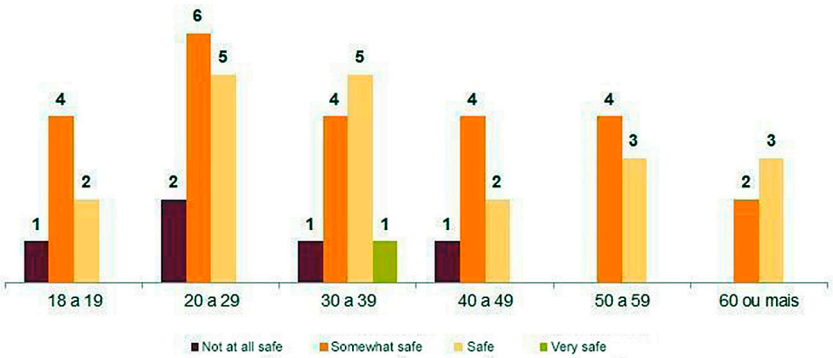
The main neighborhoods classified as unsafe were: Pacaembu (18.3%), Cinco Conjuntos (16.9%), Leonor (15.6%) and União da Vitória (14.1%) (Graph 2 B). When analyzing the factors separately from those neighborhoods cited as most unsafe, it was found that people's reports of violence, in Pacaembu and Leonor, were preponderant, as these are neighborhoods that border the respondents' place of residence (Graph 2 C). União da Vitória was ahead when it came to the media as being responsible for creating the image of insecurity in the neighborhood. More detailed justifications of insecurity factors were pointed out, such as “having already suffered violence”, “lack of street lighting”, “dangerous green spaces”, “invaded zones”, among others, in relation to the more remote neighborhoods, as both justified by “third-party reports” and “news reports”.

Graph 2 – Why are neighborhoods classified as unsafe?



Source: authors, in 2023.

Graph 3 – Neighborhood safety, according to age groups



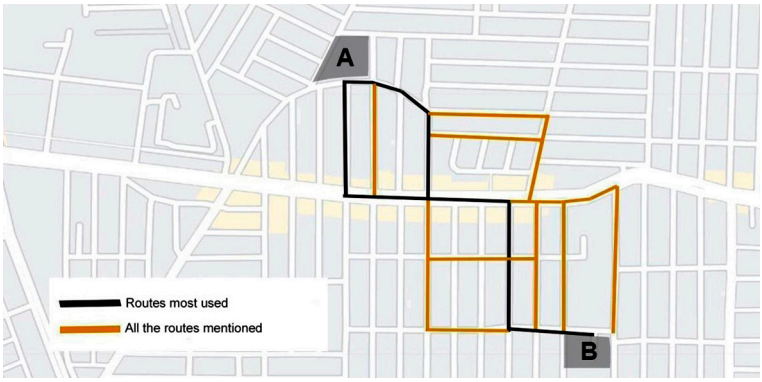
Source: authors, in 2023.

As for the opinion of the respondents on the perception of safety in the Cinco Conjuntos neighborhood, the majority of them classified it as “not very safe” (48%) and around 36% of these women had never suffered violence in public spaces. When relating this information to the respondents' age group, the data showed that women between the ages of 20 and 29 had a higher level of fear compared to other ages (Graph 3). National and international research on the subject have identified that younger women are more fearful than other age groups (Warr, 1984; Nanya, 2022). In a similar way, Junger (1987) identified that women's fear is greater among the 20- to 29-year-old age group. Another issue was the rating for “safe” which was higher among women aged 30 to 39 and the only age group to cite the neighborhood as “very safe”. Women over 50 were the only ones who did not classify the neighborhood as “not at all safe”.

Regarding the topic Places, Routes and Perception Relationships, the questions identified the socio-spatial characteristics related to walking safety. Figure 5 indicates all the routes mentioned and highlighted are those most used by women. The first analysis, regarding the route map, began with the overlap of these paths with the Spatial Syntax studies and the Maps-Global audit of destinations and land use.

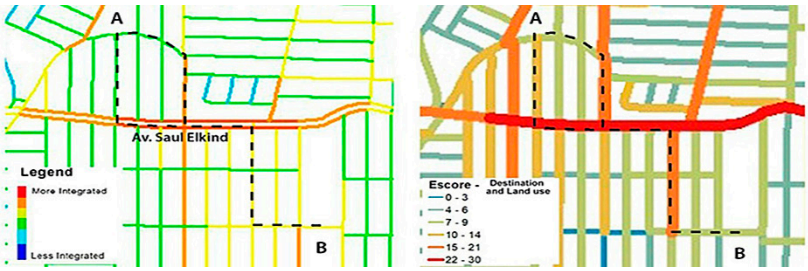
The integration map, from the Spatial Syntax of the area, allows us to observe that not all of Saul Elkind Avenue was characterized as more integrated (seen in red). However, the respondents selected the route along the stretch of the avenue with the greatest integration value. The other streets mentioned do not have a high integration value, as they were represented by colder colors (less integrated). In the microscale assessment, developed by Sasaki et al. (2022), the best

Figure 5 – Route Map



Source: authors, in 2023.

Figure 6 – Route Map: Integration R120m and Destinations and Land Use



Source: Leão e Urbano (2020); Sasaki et al. (2023), modified by the authors, in 2023.

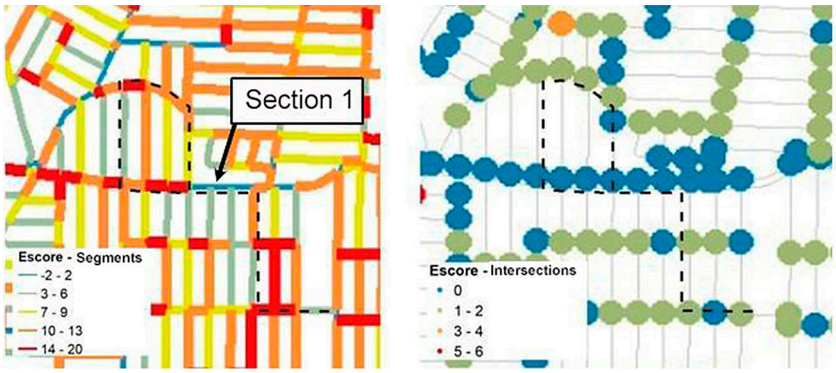
scores, in a similar way, were identified by the warmer colors, in relation to the inferior ones with cooler colors. Among the positive scales of destination and land use mapping, the following were referenced: residential density, shops, restaurants and entertainment, services, religious and educational institutions, leisure spaces (public and private). When analyzing the information from the two maps (Figure 6), it is clear that the women indicated the path along routes that have the most integration and with a high land use score.

The mapping of the synthesis of urban landscape scores (Figure 7) considered the existence of public transport and street furniture, as well as the presence of traffic reducers and traffic calming devices (Sasaki et al., 2022). It was observed that the respondents walked on streets with high landscape scores, compared to the others, and with the presence of a bus stop between the point of origin and the destination (points A and B). Another subsection analyzed was the aesthetic and social aspects, which assessed the condition

Figure 7 – Route map: urban, aesthetic and social landscape

Source: Sasaki et al. (2023), modified by the authors, in 2023.

Figure 8 – Route map: segments and intersections



Source: Sasaki et al. (2023), modified by the authors, in 2023.

and maintenance of buildings, landscaping and the elements of care in such spaces, such as rubbish, waste and graffiti (ibid.). When analyzing the scores in this section with the routes taken, it was observed that Harpia Street has higher levels compared to Arara Azul Street. Therefore, the maintenance of buildings and public spaces seems to have influenced women's choice of where to walk.

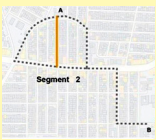
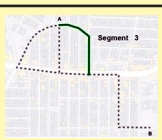
The segment map (Figure 8) evaluated the presence and the width of sidewalks and bicycle lanes, the presence of windows in buildings, shade from trees, the presence of street vendors, etc. (ibid.). The authors highlighted the fragmentation of the roads in the segment analyses, by noticing the different scores. However, despite such fragmentation, women indicated the roads with the highest scores, except for a section of Saul Elkind Avenue (Figure 8 – section 1), showing that the diversity of land use can be more important and decisive for the choice of routes for women to walk along.

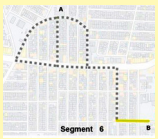
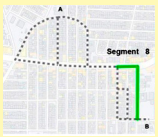
And finally, the intersection map evaluated the quality and amenities in these intersections, the ramps and signs, once these characteristics are linked to going on foot (ibid.). The mapping showed the number of intersections in the area; however, the majority had a low score due to the existence of a bicycle lane in the central median of the avenue.

Subjective approach – walking interviews

The results obtained from five walking interviews were systematized with all routes, analyzed by segments (Chart 2) and, subsequently, a conceptual map was formed from the listening sessions (Figure 9), in order to understand women's choice to walk on certain streets.

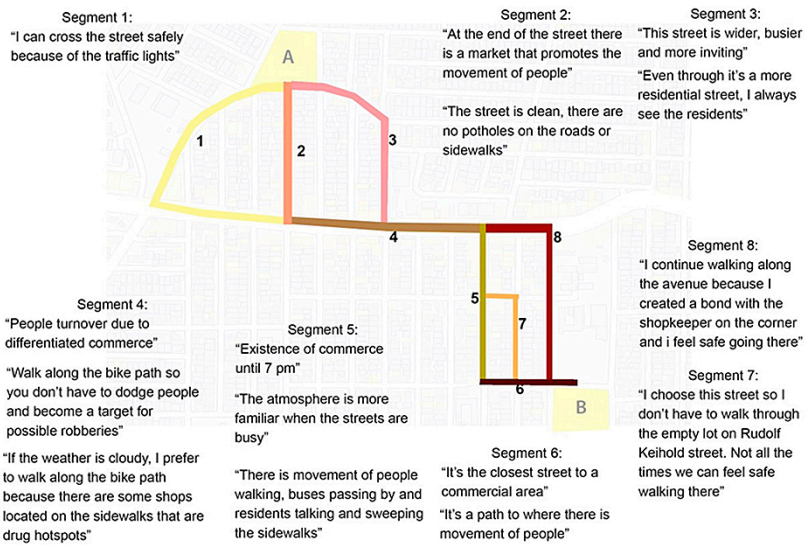
Chart 2 – Route Map of the walking interviews, by segment

Segment	Justifications
	Segment "1" is made up of Luiz Brugin Street and Saul Elkind Avenue and this route taken by only one interviewee. Although the street is further away from the routes taken, the choice is due to the existing signage for pedestrians to cross safely.
 	Segment "2" is represented by Arara-Azul Street, which was chosen due to the upkeep of the space: the cleanliness of the street indicates that residents take care of their sidewalks. In addition, there are no obstructions along the street and walking is easy. Space upkeep is studied by Wilson and Kelling (1982) in which they point out that a lack of care increases the perception of insecurity, and when there is maintenance, it subsequently promotes the perception of safety. Another consideration for choosing the segment was the existence of shops, schools and supermarkets. According to the interviewee: "the supermarket parking lot is at the end of the street and if something happens, I can call someone to help me". It was noticed that the existence of non-residential uses is related to the frequency of people walking about. Finally, traffic safety was mentioned once again when the interviewee saw the street as quiet and easy for safe crossing.
 	Segment "3" is made up of Luiz Brugin Street and Irene Carrara Nunes Street. The choice for this section was related to physical and social structures. The segment is made up of businesses such as a pizzeria and the Maria Cecília Basic Health Unit (UBS) and the very presence of residents enables the circulation of people which the interviewees explained as, "even though it is a more residential street, I always see people in their garages or sweeping the sidewalks." Another characteristic for choosing the street was the spatial characteristics, such as the width of the road, seen as more inviting in relation to the others.

Segment	Justifications
	Segment “4” is defined only by a section of Saul Elkind Avenue and taken by all interviewees who reported such choice because of: “the number of people walking around due to the existence of several businesses”. However, problems with the sidewalks bothered those interviewed and subsequently caused some to walk along the bike path located in the central median of the avenue. One of the problems was the width of the sidewalks which are narrow, full of people, bus stops, signs, lamp posts, etc., and according to one interviewee, it’s easy to be a target for muggers. The frequency of people circulating is beneficial because they are seen, however in some cases, it can contribute to the negative perception of being a victim. Finally, because the cycle path has very few trees, one of the interviewees reported that, on cloudy days, she prefers to walk along the cycle path, as there are shops on the avenue that are drug hotspots.
	Segment “5” is made up of Antônio Lopes Sevilha Street, and its main characteristic for choosing it was the “existence of shops close to the sidewalk, which are open until 7 pm”. According to Jacobs (1958), establishments are excellent safety guards, they take care of the sidewalks and promote public order because they are concerned about the safety of their customers. Another factor in choosing this segment of road, according to one interviewee, is “I always see residents in their homes or sweeping the sidewalks, talking, buses drive by and the flow of cars is greater”. The interviewee added that, if there are no people walking around or residents nearby, it is not a good place to walk because “no one would help you if you needed to ask for help”. Another characteristic cited was the perception of familiarity. One woman responded that “she feels that the environment is more familiar and welcoming when the streets are busy”. Ferraro (1995) explains that the familiarity of the route is supported by activities that are symbolically significant for individuals and promote sociability.
	Segment “6” is determined by Izaura Amaral Alves Street and chosen by the residents because it is “a route closer to the areas with businesses”, as well as, “being the route with greater movement of people”. The women interviewed chose the street because it is located close to commercial streets, as well as its proximity to the route of their destination. This question shows that the route is also taken by choosing streets closer to their destination, in other words, how quickly they can reach it.
	Segment “7” is defined by Antônio Lopes Sevilha Street and Maria Sinopoli Francovig Street, which were chosen for having a number of residences because they promote the “eyes on the street”, by Jane Jacobs (1958). The segment was chosen because residents can see from their homes if something happens.
	The last segment “8” is classified by Saul Elkind Avenue and Rudolf Keilhold Street. The interviewed woman continued her commute along the avenue because “I ended up creating a friendship with a shopkeeper on the corner of Rudolf Keilhold Street and I feel safe when going that way”. The theory of trust is mentioned again, and characterized by Jacobs (1958) as promoting public order through the bonds created between shopkeeper and customer. Another characteristic of the segment is the implementation of the Olympia Tormenta School, which promotes greater movement of people on the street.

Source: authors, in 2023.

Figure 9 – Conceptual map of the Interviews, with numbered segments



Source: authors, in 2023.

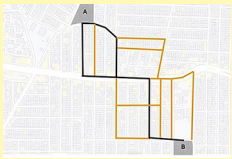
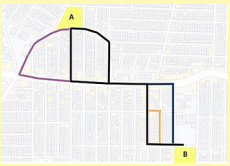
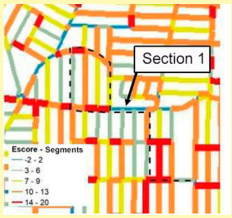
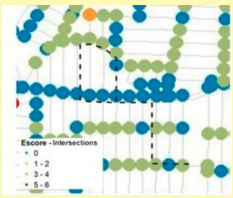
The walking interview with the participants made it possible to create a conceptual map to get a synthesis as to the reasons for choosing such segments.

Comparative reflections between the results

Although the tactics present different approaches, such as the questionnaire (objective) and the walking interviews (subjective), both were subject to comparisons and similarities in their results (Chart 3). The routes indicated on the route map, both in the questionnaires and in the walking interviews, were similar (Chart 3 A), with the understanding that the routes did not differ by the type of tactic covered, but rather by the more detailed explanations of the choice of routes.

The Maps-Global tool, used to objectively analyze the routes, pointed out that section 1 (Chart 3 B) is a route with a high level of integration, land use, a medium urban landscape score and social aesthetics; however, it presented low segment scores. When analyzing the same segment with the answers from the walking interview the participants also pointed out the specific factors of the sidewalk, such as its narrowness. Yet, other negative spatial factors were mentioned in this segment, for example, narrowness and obstacles which

Chart 3 – Comparative table – Questionnaire and walking interviews

	Questionários e Maps-Global	Entrevistas caminhadas
A		
B	 ● Respondents indicated sections with low segment scores.	  ● All the women interviewed walked along the avenue due to the movement of people. However, some prefer to walk along the cycle path because the sidewalks are too narrow, which can make them a target for muggers, and because it has points where drugs are sold .
C	 ● Mapping by sections with low intersection scores.	 ● “There are traffic lights here, and I know that at some point I will be able to cross safely”; ● Pedestrian crossings on corners were mentioned as making crossing difficult because “cars don’t respect the traffic signs”.
D	Most mentioned places that women should avoid in the neighborhood ● Greenspace next to the Colégio Lauro Gomes (25%); ● Cabrinha Lake (14%).	Quote from the interviewee when not taking the route through a certain street: ● olf Keilhold Street has a large empty plot of land with trees and bushes
E	Around 61% of respondents indicated the route taken at night: ● Movement of people; ● Shops; ● Wear discreet clothing; ● Lighting; ● Never been robbed; ● Fastest route; ● Policed streets; ● Residents are always on the streets.	Women who indicated the route for the resident to take at night: As Women should avoid exclusively commercial streets that are open until 6 pm because they must be seen; ● The streets tend to be busy at night and the more people on the streets, the safer it will be;You should try to walk through streets full of people, however, you should avoid stores that are drug hotspots
F	Around 33% of respondents did not indicate the route to the resident to take at night: ● Fear of crimes; ● Precarious lighting; ● Presence of men at night; ● Movement of people is low; ● Has already been mugged.	Interviewees who did not indicate the route for the resident to take at night: ● I don’t feel safe walking at night because there are deserted roads. It is beneficial to have witnesses if a crime occurs; ● I never see police patrolling during the day, much less at night. At night, the movement of people walking is low.

Source: authors, in 2023.

promoted the perception of possible crimes due to the high flow of people walking around. For this reason, the interviewee mentioned that she preferred walking on the bike path. Another woman also explained that she feels safer walking on the bike path because, according to her, the businesses close to the sidewalks are known for being a drug distribution hub. It was noticed that, in addition to the physical variables analyzed by the Maps-Global tool, social factors and local knowledge, as explained in the walking interview, were important to understand that women do not always choose streets with better infrastructure, unless they are superimposed to other positive factors.

Another question that can be compared between the Maps-Global tool and the walking interviews had to do with intersections (Chart 3 C), as all participants took the route along Saul Elkind Avenue. Sasaki et al. (2022) commented on the best score obtained by the avenue, however, some women explained that they did not feel safe crossing the street. One of them stated that she takes a much longer route than the others because most vehicles do not respect pedestrians, preferring instead to walk close to the traffic lights for safe crossing. In a similar way, another woman explained a lack of safety when crossing at the crosswalks located close to the corners.

The upkeep of green areas in public spaces within the neighborhood was indicated as a negative aspect, both in the questionnaires and by one interviewee (Table 3 D). Among the places a woman should avoid in the neighborhood, the most cited were dense vegetation areas, the forest next to the school Lauro Gomes (25%) and Cabrinha Lake (14%), as well as the unoccupied land located on Rudolf Keilhold Street. Their justifications were that they house illicit activities, such as serving as a drug spot and as a hiding place for possible crimes to occur.

As to whether or not they would indicate the route to a woman going on foot at night, the interviewees emphasized areas where they can be seen, places with many people circulating and not walk on streets where shops are closed or promote illicit activities (Chart 3 E). The respondents to the questionnaire also indicated the route for having more activity, but when mentioning commercial areas, there was no mention of shops closing after 6 pm. However, the respondents mentioned other beneficial factors when walking at night, such as lighting, the fact that they have never been mugged, being a faster route, surveillance and the “eyes on the streets” due to the presence of residents. As for the women who did not indicate the route (Chart 3 F), the answers may be associated between the two tactics. The participants mentioned being afraid of violence at night because there aren’t as many people circulating in the area and there are more men.

Conclusion

The two tactics highlight socio-spatial characteristics, both positively and negatively for women's safety. As for the topic of knowledge, how people acquire information about something, among the main factors for “feeling” safe, these were associated to personal experiences of never having suffered violence and the existence of safety devices such as the presence of police and surveillance.

As for insecurity, it showed that the buildup of "fear" came from third party reports, mainly from the media.

The route indicated on the map was used in two research tactics, with the aim of pointing out the objective and subjective factors. The overlap of questionnaire data, integration measures and Maps-Global scores showed that women walk along streets with a high integration value, with diversity of land use, maintenance and easy crossing locations.

The interviewees' walk indicated the negative aspects for commuting that were not observed in the evaluation of the questionnaires. Reactions to narrow sidewalks, in their interpretation, are like spaces for possible crimes. Streets with a lot of movement and crowds and illicit activities were also identified as unsafe. Due to these characteristics, both interviewees reported using the cycle path located in the central median of the avenue.

In addition, despite a segment of Saul Elkind Avenue presenting physical and social characteristics that were perceived negatively, the interviewees did not divert their walk to other streets. The avenue was chosen, both by the participants of the questionnaire and the walking interview, for the circulation of people, which acts as safety guard according to Jacobs (1958). Two factors were identified as justification for choosing to walk along the avenue: commerce promotes the circulation of people which in turn creates a greater movement of people. The concept of eyes on the street was also related to the choice of residential streets, in the sense that the interviewees reacted positively to streets where the presence of residents is observed, because they can intervene if something happens. The lack of residents nearby and the lack of people circulating has a negative impact on the walk.

It was observed that the objective analyzes of the attributes of the built environment as a support for walking did not always correspond to women's choices. Qualitative approaches allow us to identify the perceptions in order to understand subjective safety factors (Chart 3 B).

The literature showed that women have a high perception of insecurity due to the fear of physical violence and the fact that crime occurs in spaces where the only witnesses are, generally speaking, the victim and the aggressor. From this context and the socio-spatial factors, it can be concluded that the perception of safety for women who walk was promoted, mainly, by the presence of people on the streets, whether in places with diverse land use or on residential streets.

The analyzes of objective and subjective safety factors in women who walk were identified in a neighborhood with a high population density (Cinco Conjuntos), in a medium-sized city (Londrina – PR). However, more research should investigate whether the factors are similar in other urban environments, such as in neighborhoods with a lower population density or even in small and/or large cities. Therefore, future studies should understand and compare safety factors in the built environment that influence women in different urban contexts.

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