

## **Capturing What Statistics Miss: Mapping Unsafe Places and Victimization Experiences in the City of Granada, Spain**

### **Abstract**

This research assesses safety perceptions and maps unsafe places and victimization experiences of both women and men university students in public spaces throughout Granada city, Spain. Survey data from 383 participants were analyzed, with 413 unsafe places mapped. Statistically, significant gender disparities were found, with women reporting greater insecurity, particularly at night, and experiencing higher frequencies of victimization, notably sexual violence. Spatially, the innovative Perceived Insecurity Points Score (PIPS) emphasize findings by integrating environmental factors (EF), social factors (SF) and victimization experiences (V), offering a comprehensive assessment of how these factors overlap and influence individuals' experiences. Men identified significantly fewer unsafe locations than women, with only a third acknowledging their existence. Meanwhile, women reported a higher frequency of victimization incidents, particularly involving sexual harassment. The work captures what is often overlooked in official statistics: broader forms of unwanted behavior pose a significant threat to women, extending the shadow of the “hypothesis of sexual assault”.

**Keywords:** Victimization experiences; Perception of insecurity; Public spaces; Unsafe places; Granada; Spain

### **Introduction**

Perceived insecurity in public spaces due to fear of crime can have a significant impact on people's behavior (Capasso Da Silva & Rodrigues Da Silva, 2020; Ferrer & Ruiz, 2018). Recently, Ceccato et al. (2023) analyzed how fear and victimization affect young people's mobility and life chances, restricting access to certain basic services, deepening social inequalities and impacting overall well-being. Women's fear of crime frequently influences their navigation of urban environments, emphasizing the essential link between fear and spatial dynamics (Beebeejaun, 2017). Moreover, fear, risk and

insecurity intersect with gender and other power dimensions, including age, race, and socioeconomic status (Crenshaw, 1995; Day, 1999; Ruddick, 1996; Pain, 2001).

This research is aimed at assessing safety perceptions and at mapping unsafe places and victimization experiences by both women and men university students in public spaces throughout Granada city, Spain. To our knowledge, there are gaps in how victimization experiences, by type and gender, are spatially distributed in the cities, a relevant part of safety dynamics in European cities (European Union, 2015). Crime rates fail to account for the normalized forms of violence experienced by women, which they often encounter (Collectiu Punt 6, 2019) and reflect an objective assessment of safety from a masculine perspective, as highlighted by Boyer (2022). Research also emphasizes the inefficiency of focusing solely on higher geographic units like neighborhoods, which can lead to information loss and ineffective allocation of limited resources for crime prevention (Solymosi et al., 2015; Weisburd et al., 2012).

This contribution analyzes the experiences of university students, men and women, living and studying in Granada (Spain). The aims are, firstly, to quantify the gender gap in the perception of insecurity; perceived risk and types of victimization experiences encountered by the participants in this study, using the traditional approach to measuring fear of crime through a survey questionnaire (Carcarch et al., 1995; Ferraro & Grange, 1987; Forde, 1993). Secondly, drawing from participants' daily experiences in public spaces, the city's unsafe areas were characterized and mapped. Thus, we aim to map the specific areas where participants feel unsafe due to fear of crime, understanding the factors contributing to these perceptions and identifying reported victimization experiences to reveal spatial patterns in public spaces, a perspective often neglected in urban spaces (Beebeejaun, 2017; S. Johansson & Haandrikman, 2023).

The study utilized data from a survey conducted in the first semester of the 2022/2023 academic year among undergraduate university students ranging from the second to fifth year, who both studied and resided in Granada. The survey drew from a representative sample with 383 valid observations, alongside 413 mapped points denoting unsafe areas. Notably, in 28% of these points (116 places) direct and/or indirect victimization experiences were reported, 86% of them (100) in Granada city.

Our research operates on the fundamental understanding that fear of crime encompasses interconnecting social, cultural, economic and psychological dimensions that shape perceptions of safety and vulnerability in diverse contexts. Understanding the complexity of women's fear requires adopting a gender-sensitive approach, recognizing that it stems from the threat to their sexual integrity and is exacerbated by their disproportionate vulnerability within patriarchal structures (Pain, 2001; Stanko, 1995). Expanding on this, certain forms of violence against women in public spaces, such as sexual harassment, escape official statistics due to their normalization or invisibility (Beebeejaun, 2017; European Union, 2015). Some surveys conducted throughout Spain reveal that approximately one-third of women who have encountered some form of sexual violence, be it physical or verbal, have reported these incidents occurring in public spaces like streets or parks (Ministry of Equality, 2020; Ministry of Interior, 2021). This underscores the pervasive nature of gender-based violence in public spaces, highlighting the urgent need for measures to enhance safety and address these concerning trends. In this context, in December 2017, Spain approved the State Pact on Gender Violence (Government Delegation against Gender Violence, 2017). As part of the pact initiatives, local governments promoted the “Purple Points”, that serve as crucial information hubs in public and private spaces, providing support for women facing aggression while also acting as a deterrent. They vary from permanent locations

to temporary setups during festivals. Staff undergo specialized training, ensuring varied support options with volunteers or authorities.

This article also examines the issue of men's insecurity in public spaces, given that research data has showed that men, more specifically, young men, make up the largest percentage of victims of personal crime (S. Johansson & Haandrikman, 2023; Stanko, 1993). Our results will indicate that once unsafe places are recognized, both men and women identify similar environmental and social factors, confirming that gender differences lie in the types of direct or indirect victimization reported. The shadow of sexual attack hypothesis suggests that street harassment can extend the perceived threat of sexual assault, without any discernible spatial pattern. It can happen anywhere, not in specific neighborhoods, but rather in microlevel geographical variations (Solymosi et al., 2015). This study can shed light on the specificities of gender-based violence within public spaces, highlighting the importance of maintaining and expanding safety and security measures to eradicate these incidents.

This article is composed of five sections. After the present introduction, the second section describes the literature on the perception of insecurity and victimization in public spaces. Materials and methods are explained in the third section. The fourth section includes results from our empirical study. The fifth section consolidates the discussion, and the article closes with conclusions and recommendations for research and policy.

### **Literature review**

Perceived insecurity can be shaped by environmental and social factors (Valera & Guàrdia, 2014), which are further influenced by individuals' direct or indirect experiences of victimization. Environmental factors (EF) may include the design and layout of public spaces which impact how fear is experienced and the specific images it

evokes (Rodó-de-Zárate & Estivill, 2016). Research demonstrates that urban design significantly influences perceptions of security, which vary among individuals. Certain urban features, such as streetlights, sidewalks, and pedestrian-friendly amenities serve as environmental cues that enhance security and promote walking (Jacobs, 1961; Loukaitou-Sideris, 2006; Ottoni et al., 2021; Pain et al., 2006; Yen et al., 2014). Conversely, factors like inadequate street lighting, darkness, litter, and poorly maintained infrastructure contribute to feelings of insecurity, impacting physical and mental well-being (Ceccato & Loukaitou-Sideris, 2021; Lizárraga et al., 2022; Loukaitou-Sideris, 2009), and discouraging walking activity (Ferrer & Ruiz, 2018; Larranaga et al., 2019; Moura et al., 2017; Olszewski & Wibowo, 2005). Thus, enhancing infrastructure, like better lighting and wider sidewalks, can reduce insecurity in public spaces (Garfias-Royo et al., 2023).

Social factors (SF) strongly influence perceived walking security, including the presence of others, their behavior, and pedestrian interaction levels. This idea aligns with Jacobs' "eyes upon the street" (Jacobs, 1961, p. 35) and findings that underline the importance of community presence in crime prevention (Ferrer & Ruiz, 2018; Hidayati et al., 2020; Park & Garcia, 2020). However, the mere presence of people is not sufficient to create a sense of security. Perceived social disorder can arise due to the presence of drunk or drugged individuals, vagrants, the homeless, gangs or vandalism, all of which can negatively impact this perception (Ferrer et al., 2015; S. Johansson & Haandrikman, 2023; Van Cauwenberg et al., 2012). Specifically, nightlife zones are focal points where alcohol or drugs are consumed, and where young people socialize, yet young women fear sexual violence (Mehta & Bondi, 1999). In these zones, public and private spaces merge, extending the private sphere into public areas (Abbey et al., 1996). Alcohol intake has a negative impact on awareness, responsibility, confidence

and skills, rape myth acceptance and perceptions of victim worthiness, as exposed by Baillie et al. (2022).

As well as EF and SF, the direct victimization model has established a link between crime victimization and fear of crime (Dull & Wint, 1997; Skogan & Maxfield, 1981). Moreover, victimization entails not only direct victimization, but also vicarious or indirect victimization, that occurs when individuals have been exposed to others who have been victimized in public spaces, producing an effect resulting from this knowledge that increases the perception of insecurity (García-Carpintero et al., 2022; Özascilar, 2013; Roman & Chalfin, 2008). Therefore, individuals who have not been directly victimized may still be conscious of the potential for crime victimization, linking fear of crime and awareness of crime victimization (Ferraro, 1996; Fox et al., 2009).

Studies have shown that women are more likely to feel insecure in public spaces due to the threat of victimization (V), expressing greater fear of crime than men in their journeys on foot (Collins, 2016; Ferraro, 1995; Foster & Giles-Corti, 2008; Grinshteyn et al., 2016) and these gendered differences impact women's freedom of movement and experiences in the urban context (Koskela, 1997, 1999; Pain, 2001; Sandberg & Rönnblom, 2013).

The fear of sexual violence, described as the "shadow of sexual assault" hypothesis (May et al., 2010), reflects a fundamental and widespread concern among women. Sexual violence can occur in a variety of forms, from sexual harassment and unwanted touching to rape. According to the shadow of sexual assault hypothesis, women's greater fear of other crimes such as burglary, robbery, and assault can be attributed to their higher fear of sexual crimes (Ferraro, 1996; Özascilar, 2013).

Accordingly, women's direct or indirect experiences of sexual victimization in public

spaces can profoundly shape an individual's perception of security, not only intensifying but also giving tangible form to the hypothetical shadow of sexual assault. Kissling (1991) established that sexual content behind street harassment serves as a reminder of [women's] possible punishment for trespassing in public spaces that belong to men. Yodanis (2004) emphasizes how sexual harassment, in the framework of heteropatriarchy, objectifies women and perpetuates male dominance, contributing to a broader continuum of violence. Additionally, she underscores the culture of fear arising from gender inequality in a climate in which women know that sexual violence does occur.

In the case of young female university students, Ceccato & Loukaitou-Sideris (2021) highlight that sexual harassment is widespread in transit settings across diverse cities worldwide, impacting the utilization of public space and mobility decisions. As a consequence, women not only walk less but also exhibit a diminished tendency to walk, as they feel excluded from public spaces due to their gender and the fear of sexual violence. Koskela (1999) termed this phenomenon "gendered exclusions," which underscores unjust power dynamics and the unequal status of women, perpetuating disparities in public space utilization, or a gendered use of public space (Mark & Heinrichs, 2019).

Young men face an elevated risk of becoming victims of crime, especially violent offenses. Conversely, women are disproportionately vulnerable to sexual violence and Intimate Partner Violence (IPV), with a significantly higher likelihood of victimization by a friend, relative, intimate partner, or acquaintance compared to men (Fox et al., 2009; García-Carpintero et al., 2022). Generally, men perceive insecurity in dubious neighborhoods or dangerous areas and fear being robbed or being involved in a street fight (Rodó-de-Zárate et al., 2019; Toro & Ochoa, 2017). In the context of the

dominant masculine and heterosexual culture, it is less acceptable for men to openly express fear, as noted by (Pain, 2001). However, upon experiencing victimization, men may come to recognize their own vulnerability, as highlighted by (May et al., 2010).

## **Materials and methods**

### ***Study area***

In Granada, a city characterized by its academic environment, pedestrian mobility is the most common mode of transportation, constituting a notable 54% of total journeys, reflective of its robust pedestrian infrastructure and cultural inclination towards walking (Granada City Council [PMUS], 2013). The crime rate in Granada is low (0.49 criminal offenses per hundred thousand inhabitants) and similar to Spain's (0.47 criminal offenses per hundred thousand inhabitants) (Ministry of Interior, 2023). During the 2022/2023 academic year, the University of Granada enrolled 46,729 students, comprising a substantial portion (19.22%) of the total city population, which stood at 243,059 inhabitants in 2022. This factor significantly influences the economic and social landscape of Granada, generating 7.7% of jobs in the province and contributing 6.1% to the Gross Domestic Product (Canal UGR, 2020).

The student population resides in different areas of the city and attends classes at five campuses, each hosting a range of academic centers and degree programs. Two of these campuses are in the city center. In the case of *Campus Centro*, university amenities are seamlessly integrated within the urban landscape, while *Campus Fuentenueva* has a specific perimeter and is located near the city center (Figure 1). Their urban placement encourages walking as the preferred mode of transport, complemented by strong connectivity to other areas via public transportation.



The city's walkability and its low crime rates, together with the central location of the aforementioned campuses, make Granada city an ideal location to explore insecurity perception in public spaces of the city and victimization experiences (Ferrer & Ruiz, 2018; Lizárraga et al., 2022).

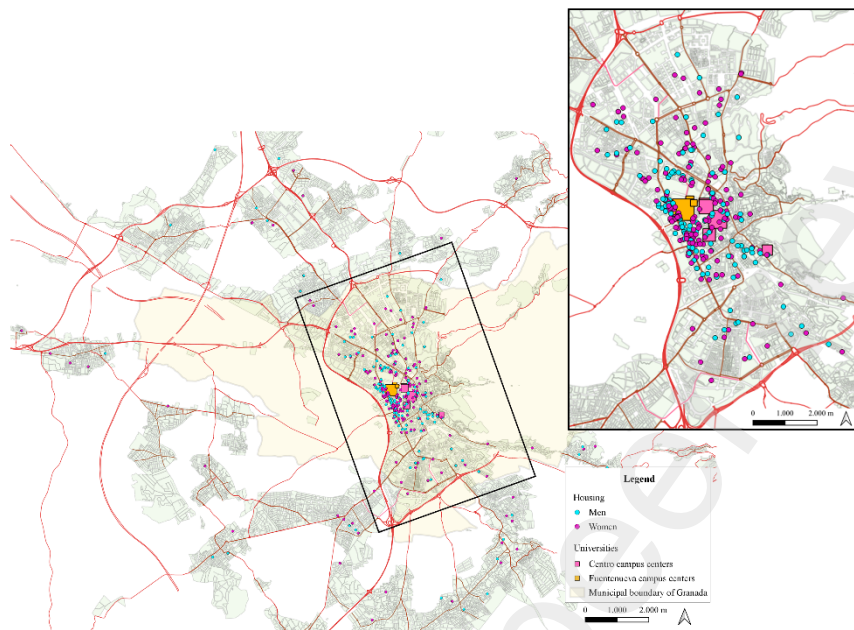


Figure 1. Geographical distribution of campus centers and men and women's housing in Granada. Data source: IECA (2023)

### ***Participants and sample collection***

This study included second to fifth year undergraduate university students at Granada University to ensure they had at least one year of academic experience and familiarity with urban public spaces. We focused on the above-mentioned *Centro* and *Fuentenueva* campuses, which house eight faculties. During the 2022/2023 academic year, these campuses hosted 11,022 second to fifth year students (Table 1).

Table 1. Participants

Stratum	Population			Minimum sample size		Sample size		
	Women	Men	% Women	Women	Men	Women	Men	%Women
Architecture	372	290	56.2	13	10	14	14	50.0
Building engineering	118	209	36.1	4	7	5	7	41.7
Engineering of roads, canals, and ports	105	298	26.1	4	10	4	10	28.6
Law	1,430	793	64.3	48	27	48	27	64.0
Politics and Sociology	600	458	56.7	20	15	22	16	57.9
Sciences	1,931	2,013	49.0	65	68	65	68	48.9
Social Work and Labor relations	1,068	426	71.5	36	14	36	16	69.2
Translation and interpreting	722	189	79.3	24	6	24	7	77.4
Total	6,346	4,676	57.6	214	157	218	165	56.9

### ***Research design***

The data analyzed in this work were obtained from a questionnaire about the perception of insecurity in public spaces adapted from the Victimization Survey of Barcelona (2021) and from the National Survey on Victimization and Perception of Public Safety of Mexico (INEGI [National Institute of Statistics and Geography of Mexico], 2021). The questionnaire had two sections. In the first section, socioeconomic information was collected, and the rest of the questions were divided into three dimensions. Firstly, using a traditional approach to measure fear of crime, respondents were asked about their perceived level of insecurity both during the day and at night while walking through their neighborhood. (2 items). Responses were recorded on a 10-point Likert-type scale ranging from 1 (very safe) to 10 (very unsafe). Secondly, participants were queried regarding their perception of risk while walking in their neighborhoods (6 items), assessing the likelihood of encountering physical aggression; sexual assault; stalking; street harassment; theft or robbery. Responses were captured using a 10-point Likert-type scale, spanning from 1 (not at all likely) to 10 (very likely). Regarding

victimization, they were asked if, while walking through a public space in Granada, they had been a direct or vicarious victim of the above encounters mentioned (12 items). The responses were binary, requiring a yes or no answer. Kidnapping and murder were excluded from our study due to their infrequent prevalence in our research area, aligning with findings from Barcelona City Council (2021).

The questionnaire displayed high internal consistency, with Cronbach's Alpha values of 0.845 for the entire instrument, 0.820 for Perceived Insecurity and Risk in the Neighborhood, and 0.761 for Victimization. These values exceed the 0.7 threshold, indicating reliability. The Kolmogorov-Smirnov test showed non-normal distribution for each scale.

### ***Spatial data collection: Location of Unsafe Places***

In the questionnaire's second section, participants identified unsafe areas in Granada, drawing on their firsthand experiences and familiarity with their living and study environments, using Google Maps. Additionally, they provided explanations detailing why these areas were deemed unsafe for pedestrian activity. This approach facilitated the identification of unsafe locations and offered insights into the factors influencing perceptions of insecurity and victimization. By employing this method, we amassed a substantial dataset comprising numerous identified black spots along with detailed descriptions. Previous research has similarly identified such points through exploratory walks that incorporate a gender perspective (Ceccato & Loukaitou-Sideris, 2021) or using an app (Solymosi et al., 2015)

### ***Data collection and Participants***

The questionnaire was uploaded to the LeSphinx platform, accessed by students through a QR code, meeting Granada University's ethical and legal requirements, including the

procurement of informed consent, and ensuring participant confidentiality (General Secretary's Office, 2022). The data was collected during the 2022 autumn semester, from October 4 to December 15, 2022, utilizing the CAWI application (Computer-assisted web interviewing). This method, ideal for internet-savvy populations with accessible contact information, was deemed suitable for the young demographic surveyed (Díaz de Rada Igúzquiza et al., 2019).

In October 2022, authorization letters were dispatched to the Directorates of university centers outlining the objectives of the study and emphasizing adherence to ethical guidelines. Additionally, we communicated the scheduled recruitment date to each center. Upon receiving approval from the Directorates of university centers, we were authorized to establish recruitment tables in every Faculty Hall next to the main door on the designated date.

Systematic random sampling was employed at each center, stratified by gender and educational center (Särndal et al., 2003). The selection process began by randomly choosing the first man or woman student, after which subsequent individuals were selected at fixed intervals. Recruiters, who were also participants in the project, informed selected students and encouraged their participation by providing links to online surveys. Data collection entailed participants accessing and completing surveys online through the provided links. The sample size was determined so that the error in the proportions did not exceed 5%. A total of 383 valid observations were obtained, comprising 57% women and 43% men, aligning with the gender distribution among second to fifth year students on the campuses analyzed (Table 1).

### ***Mann–Whitney U test***

The nonparametric Mann–Whitney U test for statistical significance was conducted to

analyze gender differences between women and men on individual items (Mann & Whitney, 1947). It was used to analyze the significant differences in the level of insecurity, in the perceived risk and in the types of direct and indirect victimization. Survey data were analyzed using SPSS Statistics Package 28.0.1.0. The Kolmogorov Smirnov test was used to determine whether responses for each scale were or were not normally distributed.

### ***Gender Gap Index (GGI)***

A gender gap index (GGI) was calculated to capture the size of gender-based disparities. This index was used to compare the degree of victimization experiences of women and men, which corresponds to a quotient between both values (1). When GGI takes a value greater than 1, women have a value (% Women) above that of men (% Men) and when the value is less than 1, women have a value in the dimension below men (1).

$$GGI = \frac{\% \text{Mean Value for Women}}{\% \text{Mean Value for Men}} \quad (1)$$

### ***Perceived Insecure Points Score (PIPS)***

By analyzing descriptions of identified unsafe locations on Granada's map, a quantitative metric was created to assess key categories influencing public space insecurity perception, according to literature: environmental factors (EF), social factors (SF), and direct or indirect experiences of victimization (V). This process culminated in the establishment of the Perceived Insecurity Points Score (PIPS), a discrete variable with three possible values, which was subsequently spatially represented. A score of 1 indicates the presence of elements from one dimension; 2 indicates overlapping of elements from two categories; and 3 indicates the co-occurrence of factors from all three categories (EF, SF, and V). A thermal map of Granada was generated using PIPS

assessments. We also analyzed the overlapping dimensions contributing to PIPS using Euler-Venn diagrams, created with the “eulerr R package” (Larsson & Gustafsson, 2018), to illustrate the overlaps of EF, SF and V in the specified locations. Locations where incidences of victimization occurred were mapped considering the different types of victimization by gender. Geographic Information Systems (QGIS) supported the integration and analysis of statistical and spatial data.

## Results

### *Socio-economic characteristics of the participants*

Of the 383 valid responses, 57% are women and 43% men, coinciding with the distribution by gender in the population of the second to fifth year students on the campuses analyzed. Regarding sexual orientation, 77.5% identify themselves as heterosexual, the average age was 21; 32% report receiving a grant, the average amount of which is 800€/year, and the average monthly household income was 3,384€. Half had a driving license, but only 19.3% had a car. 68% do not live with their parents. Regarding ethnicity, only seven people (1.8%) identified themselves as being of non-majority ethnicity, the majority being racialized white people.

Figure 1 illustrates the geographical distribution of housing and university centers across the two campuses considered. A substantial 81.7% of students are living in Granada city, with the remaining population residing in the metropolitan area, corroborating the prevalent inclination among university students to select accommodations near their academic institutions (Capasso Da Silva & Rodrigues Da Silva, 2020; Hewawasam et al., 2020). Such a pattern ensures that the surveyed populace has engaged with the urban public spaces pertinent to the study.

### ***Perceived insecurity and risk in the neighborhood***

Women perceive a higher level of insecurity when walking through their neighborhoods compared to men, particularly at night. Despite feeling safe during the day, university students, particularly women, experience increased insecurity after dark, with the gender gap related to the mean widening, as indicated by the GGI (Table 2).

Table 2. Degree of perception of insecurity in the neighborhood in which they live (from 1 very safe to 10 very unsafe)

Measure	Women		Men		GGI	Mann–Whitney U
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Day	2.463	1.560	1.909	1.131	1.29	14,319.0***
Night	5.674	2.288	3.794	2.002	1.50	9,822.5***

Note. *M* denotes the mean and *SD* denotes the standard deviation. *M* parameter is shown for women (n=218) and men (n=165). The distribution of responses for each scale was assessed using the Kolmogorov-Smirnov test, which indicated that the data were not normally distributed ( $p < 0.05$ ).

\*\*\*  $p < .001$

In all cases, women displayed a heightened perception of risk regarding potential victimization, significantly differing from men. Sexual violence (harassment and sexual assault) is the type of violence against women perceived as most likely and with a higher GGI. In general, the risk perceived by men is low and in no case exceeds the value of half the scale (5/10), while they consider the most probable forms of violence to be robbery, theft and stalking (Table 3).

Table 3. Perceived risk of victimization in the neighborhood (10=maximum risk, 1=minimum risk)

	Women		Men		Mann–Whitney U	
	M	SD	M	SD	GGI	
Harassment	6.59	2.58	3.51	2.25	1.88	6,924.5***
Stalking	5.58	2.56	3.70	2.23	1.51	10,583.0***
Theft	4.56	2.36	3.90	2.28	1.17	15,045.0**
Robbery	4.34	2.34	3.73	2.29	1.16	15,192.5**
Sexual assault	4.14	2.31	1.79	1.41	2.31	6,474.5***
Physical aggression	3.77	2.10	3.03	1.87	1.24	14,123.5***
Rape	3.66	2.33	1.64	1.25	2.23	7,511.5***

Note: *M* denotes the mean and *SD* denotes the standard deviation. *M* parameter is shown for women ( $n=218$ ) and men ( $n=165$ ). The distribution of responses for each scale was assessed using the Kolmogorov-Smirnov test, which indicated that the data were not normally distributed ( $p < 0.05$ ).

\*\*  $p < .01$  \*\*\*  $p < .001$

Beyond risk perception, 84.9% of surveyed women had experienced some form of direct victimization throughout their lives while walking in public spaces, compared to 71.5% of men. In the case of indirect victimization, this proportion reaches 73.9% for women and 32.7% of men. Street harassment disproportionately affects women, with 80.3% experiencing it indirectly, and 69.7% directly. Stalking follows closely behind, with 42.7% experiencing it firsthand and 59.2% indirectly, highlighting significant gender disparities (Table 4).

Table 4. Direct and indirect victimization experiences

Victimization type	Direct victimization experiences				Indirect victimization experiences			
	Women %	Men %	GGI	Mann–Whitney U	Women %	Men %	GGI	Mann–Whitney U
Harassment	69.7	20.0	3.49	9,042.0***	80.3	47.9	1.68	12,158.5***
Stalking	42.7	14.5	2.94	12,928.5***	59.2	37.0	1.60	13,991.5***
Theft	9.6	9.7	0.99	17,996.5	39.0	30.9	1.26	16,531.5
Sexual assault	5.5	1.2	4.58	17213*	31.2	25.5	1.22	16,953.0
Robbery	3.2	9.1	0.35	19042.5*	28.0	17.6	1.59	16,113.5*
Physical aggression	2.3	6.1	0.38	18662.5	18.3	12.7	1.44	16,974.0

Note: Data is shown for women ( $n=218$ ) and men ( $n=165$ ). The distribution of responses for each scale was assessed using the Kolmogorov-Smirnov test, which indicated that the data were not normally distributed ( $p < 0.05$ ).

\*  $p < .05$  \*\*  $p < .01$  \*\*\*  $p < .001$



## ***Spatial results***

### *Perceived Insecure Points Score (PIPS)*

85.3% of women and 70.3% of men participants recognized and pinpointed unsafe areas on a map of Granada, drawing from their personal experiences navigating public spaces. 14.7% of women and 29.7% of men did not perceive any locations as unsafe. A total of 428 insecure points were identified, and 413 of these points (267 [64.6%] pinpointed by women; 146 [35.4%] by men) were accompanied by individual descriptions detailing the reasons for the perceived insecurity. This dataset allows us to assign a PIPS value of 1, 2, or 3 to each point, corresponding to different spatial experiences to show how the dimensions overlap to explain the unsafety.

The primary factors cited for locations perceived as unsafe are SF (56%) and EF (59%), with overlaps occurring in 19% of cases. Similarly, the incidence of victimization experiences is reported at a rate 28%, with no intersection observed between these experiences in 9% of cases (Figure 2). It is noteworthy that no gender differences were found in how individuals identify unsafe points. It may be that once insecurity is acknowledged and its causes described, there are no discernible differences between women and men in identifying these dimensions. Gender differences are referred to the greater number of insecure locations identified by women and a lower proportion of them reporting no insecure places in Granada and the types of victimization they reported.

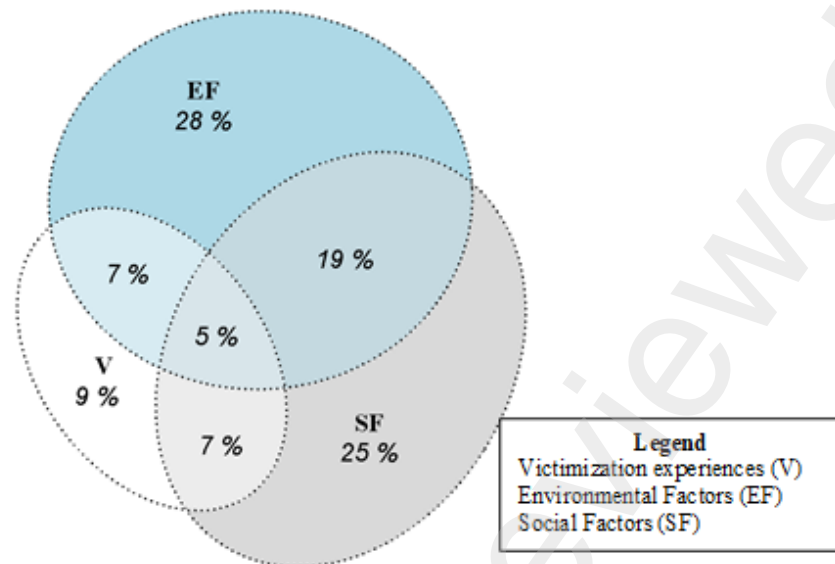


Figure 2. Spatial overlapping among dimensions that cause insecurity to university students in Granada

Figure 3 shows the unsafe locations indicated by women and men, as well as the heat map of unsafe locations. The perception of insecurity occurs with no distinct spatial pattern observed and it is evenly distributed throughout the city.

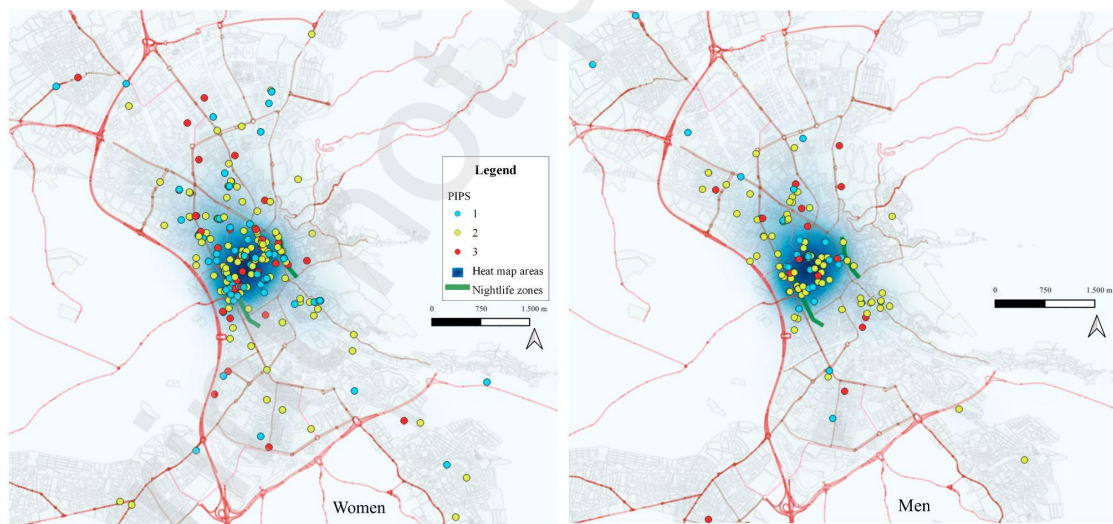


Figure 3. Location of Perceived Insecure Points Score (PIPS) in Granada. Data source: IECA (2023)

*Mapping Victimization Experiences in Public Spaces: the elongated shadow of sexual attack*

An analysis of victimization experiences reveals significant insights into the distribution, types, and gender dynamics of incidents occurring within identified unsafe places. Out of the 413 identified unsafe areas in Granada, 28% of them, which is 116 points, are reported as presenting instances of direct (53%) and/or indirect (47%) victimization experiences. Out of the unsafe locations, 100 (86%) points are situated within Granada city itself, while the remainder are in the metropolitan area. There are noticeable gender differences in the experiences of victimization. Women constitute a majority, accounting for 75.9% of direct and 60.5% of indirect victimization experiences. With respect to spatial patterns, Figure 4 visually depicts the distribution of victimization experiences for both genders within Granada city. Notably, there appears to be a concentration of these experiences in areas associated with nightlife, where alcohol consumption is common as a form of socialization.

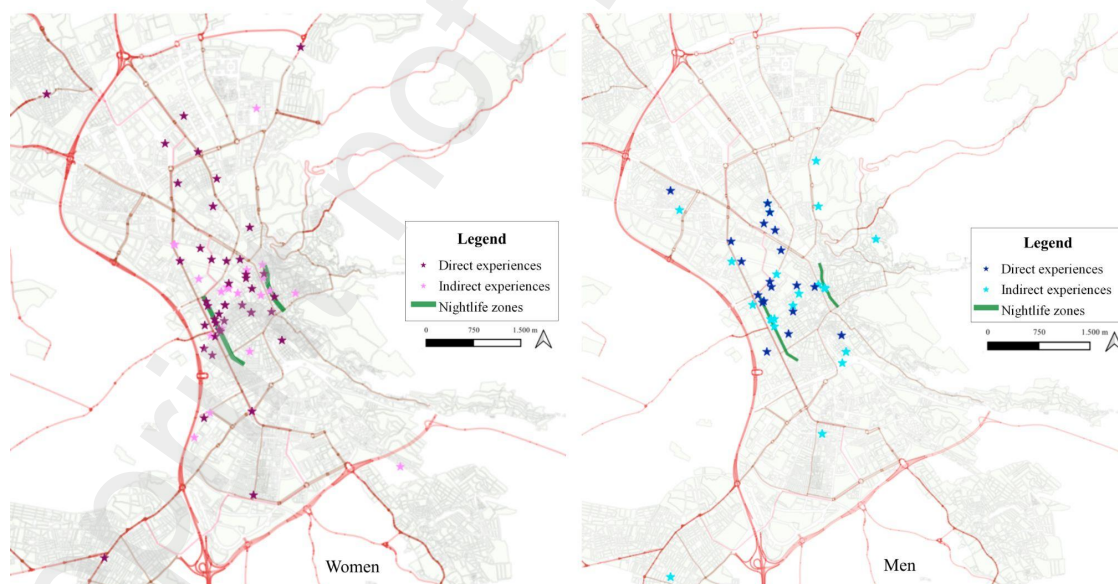


Figure 4. University students' direct and indirect experiences of victimization in Granada. Data source: IECA (2023)

Women not only report a greater number of victimization experiences in the city, but are victims of all types of violence, in particular, different forms of sexual violence, among which street harassment stands out. These instances of gender-based violence often go unnoticed in official data compilations. Conversely, men tend to report victimization related to crimes against property without the use of violence (Theft) or with violence (Robbery) (Figure 5). Our findings reveal the prevalence of gender-based violence experienced by women university students across public spaces in Granada city, highlighting the need for a network of safe spaces and specific protocols.

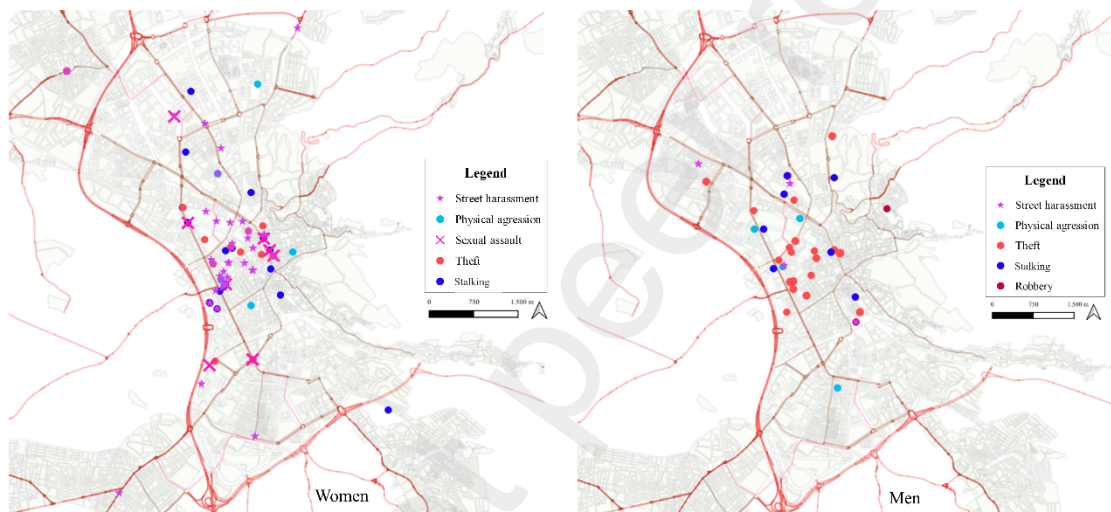


Figure 5. Types of victimization experiences of university students in unsafe points in Granada. Data source: IECA (2023)

### Limitations

Study limitations include the homogeneous age and social backgrounds of participants, hindering exploration of power dynamics related to race or social class (Boyer, 2022; Crenshaw, 1995). Surveyed respondents were primarily university students, predominantly middle class and white. Nonetheless, the study reveals gender distinctions in public space experiences, including perceptions of security, risk and encountered victimization types, at a geographic microlevel scale.

## Discussion

This study has shown, following a traditional approach of fear of crime, that women university students in Granada perceive greater insecurity in their neighborhoods compared to their male counterparts and this disparity is particularly pronounced at night (Collins, 2016; Ferraro, 1995; Foster & Giles-Corti, 2008; Grinshteyn et al., 2016; Hassen & Kaufman, 2016; U.N. Women, 2017). The gender difference, measured by GGI, is statistically significant, something that has been identified in an extensive literature (Gardner et al., 2017; Koskela, 1999; Mehta & Bondi, 1999; Stark & Meschik, 2018; Yavuz & Welch, 2010; Zhang et al., 2022). Thus, university students' access to and utilization of public space is significantly shaped by their position within the sex-age-gender system (Capasso Da Silva & Rodrigues Da Silva, 2020; Ceccato & Loukaitou-Sideris, 2021).

In addition, university women perceive a significantly higher risk of victimization in their neighborhoods compared to men. In particular, the hypothesis of sexual assault is reinforced by the fact that one contributing factor to women's heightened sense of insecurity comes from the perceived risk of sexual violence victimization in different urban contexts (Fox et al., 2009; García-Carpintero et al., 2022; K. Johansson et al., 2012). Notably, the probability of being a victim of street harassment receives the highest score (6.59 out of 10).

Regarding the experiences of victimization throughout their lifetime, there are significant differences in the case of both direct and indirect victimization experiences with a sexual component. In Spain, 57% of young women have experienced situations of normalized sexual violence in nightlife zones throughout their lives, while only 4% of young men reported such experiences (FsyC, 2017). 69.7% of this study's participants indicated sexual harassment based on personal experience. GGI,

particularly for sexual victimization, reflected that power dynamics and women's unequal status contribute to the perpetuation of disparities in the use of public spaces, irrespective of crime rates. 73.9% of women, compared to 32.7% of the men surveyed had indirect or vicarious victimization experiences, which allows us to consider that men share their victimization experiences to a lesser extent, and rarely express to each other their fears of crime victimization (Goodey, 1997; León et al., 2022; van Eijk, 2017).

Beyond these aspects, widely explored by literature, 413 insecure places were mapped by 85.3% of women and 70.3% of men, displaying a distribution with no apparent spatial pattern. It can be confirmed that focusing on microlevel scale resulted in comprehensive data and allocation of unsafe places (Solymosi et al., 2015). Gender disparities show a notable contrast in the proportion of men (29.7%) who report feeling secure in their neighborhood or on campus, compared to women (14.7%). Interestingly, it is possible that once males perceive insecurity, they encounter similar EF and SF as women do, aligning with the findings of May et al. (2010). These factors become clearer after individuals experience victimization, prompting them to acknowledge their vulnerability.

The spatial identification of unsafe locations and the assignment of a score based on the factors that generated insecurity (PIPS) revealed overlaps among EF, SF and V, indicating that both genders perceive insecurity for reasons consistent with existing literature. Notably, the analysis of the overlaps between the causes of perceived insecurity shows to what extent it could be reduced with some urban interventions, given that a quarter of the locations perceived as insecure are exclusively due to EF. In addition, EF and V intersect in 7% of cases. This suggests that EF not only contribute to perceived insecurity, but zones with deficiencies may attract and facilitate perpetrators

of violence, as Capasso Da Silva & Rodrigues Da Silva (2020) evidenced in the case of Brazil. Additionally, SF are cited by both women and men as contributing to the identification of 56% of unsafe areas, as previously discussed by Johansson & Haandrikman (2023), who noted that fear of crime can be attributed to social factors for both genders, with a more pronounced association observed among men.

While insecurity dimensions are ungendered, gender differences emerge in victimization experiences. Women face body-related victimization, while men experience property-related incidents in areas with no defined spatial pattern. The low crime rate of Granada fails to account for the normalized forms of violence experienced by women, which they often encounter (Col·lectiu Punt 6, 2019). This reflects an objective assessment of safety predominantly from a masculine viewpoint, as underscored by Boyer (2022).

The results corroborate that women are disproportionately affected by a wider range of unwelcome behaviors. The prevalence of harassment, predominantly perpetrated by men, as the primary form of violence against women in public spaces, underscores the appropriation of women's bodies by men. This phenomenon, normalized and romanticized within heteropatriarchy, highlights broader societal issues regarding gendered power dynamics (Anitha & Lewis, 2018; Boyer, 2022). While sexual harassment violates the norms of civic behavior by disregarding the rule of non-interaction with strangers in public spaces, as recognized by Almanza Avendaño et al. (2022), women who have experienced such harassment are often excluded from official statistics and not recognized as victims (European Union, 2015; Ministry of Interior, 2021).

This study revealed that sexual harassment is prevalent in the transit settings of Granada city, impacting participants university students. Ceccato & Loukaitou-Sideris

(2022) established that it is a global phenomenon, varying temporally and across transit systems and cities and affecting different types of travelers. In our case, the spatial experiences showed that at a geographical microlevel scale, harassment can occur everywhere, disproportionately affecting women (Bowman, 1993; Latcheva, 2017) and leading them to experience more fear in settings of everyday life. This rupture causes "gendered exclusions" (Koskela, 1999) and gendered use of public space (Mark & Heinrichs, 2019). Notably, this gender disparity is pronounced in the nightlife zones of Granada where people gather, exacerbating the shadow of the hypothesis of sexual assault. Thus, in nightlife spaces, where alcohol intake is usual, the public space turns into an extension of the private sphere and alcohol becomes a risk factor that can facilitate sexual violence (Abbey et al., 1996; Baillie et al., 2022).

## **Conclusions**

This research analyzed perceptions of safety and mapped areas of insecurity and victimization experienced by university students, both women and men, in public spaces across Granada city, Spain. It aimed to fill a gap in understanding how victimization experiences, categorized by type and gender, are spatially distributed within the city, which is considered a crucial aspect of safety dynamics in European urban environments.

This study examined survey data from a representative sample of undergraduate students enrolled at the two-city center campuses in Granada, assessing their perceptions of insecurity, perceived risk, and victimization experiences. Unsafe places were mapped and described by participants. Methodology included several instruments that included Mann Whitney U test and a Gender Gap Index (GGI) to test statistical gender differences. Using a novel approach, this study developed a quantitative metric,



the Perceived Insecurity Points Score (PIPS), to assess factors influencing insecurity perceptions in Granada's public spaces. PIPS integrated environmental factors (EF), social factors (SF), and victimization experiences (V), with values ranging from 1 to 3. Overlaps in these three factors were analyzed using Euler-Venn diagrams.

Results highlighted gender disparities in perceptions of insecurity among university students in Granada, with women reporting greater insecurity in their neighborhoods, particularly at night. Statistical analysis revealed a significant gender difference, consistent with existing literature. The study underscored how students' access to, and use of public spaces are influenced by their position within the sex-age-gender system. Likewise, there were notable gender differences regarding the type of victimization experiences suffered throughout life. Women perceived greater insecurity in the public space, higher risk due to victimization threat and have been victims to a greater extent than men.

Considering the spatial dimension at the microlevel scale, less studied by literature, there were no gender differences in the distribution of the factors (EF, SF and V) used by participants to describe unsafe locations. So, where did the spatial gender differences lie? Firstly, men identified fewer unsafe locations, with only a third of them acknowledging the existence of unsafe areas. Secondly, women experienced a higher frequency of both direct and indirect victimization incidents, especially various forms of sexual violence, with street harassment being particularly prevalent. On their part, victimization experiences for men were focused on robbery and theft. These realities result in gendered exclusions within public spaces, not only in specific neighborhoods, but also anywhere at the microlevel scale.

This work captured what is often overlooked in official statistics. The findings appeared to support longstanding arguments: broader forms of unwanted behavior pose

a particularly significant threat to women, exacerbating the shadow of the hypothesis of sexual assault. These types of threatening sexual behaviors were common throughout the city and were much more commonly experienced by women than men, with harassment being particularly prevalent. Nightlife areas emerged as significant spaces impacting women's lives. Mapping types of victimization experiences showed that harassment is something that not only “happens all the time” (Mellgren et al., 2018), but everywhere.

Recognizing nightlife venues as potential sites for sexual assaults, initiatives such as Barcelona's "We Won't Be Quiet" (Barcelona City Council, 2018) and Granada's 2023 Purple protocol (Román-Fernández & Bernal-Gallastegui, 2023) empower businesses and communities to collectively combat sexual violence. Additionally, “Purple Points” serve preventive and deterrent functions in public and private spaces, offering support for women in case of sexual aggression. In Granada, they are marked with purple dot stickers and staff receive specialized training from the City Council to address violence against women (Granada City Council, 2024). However, some local far-right governments in Spain are replacing them with generic "security points," disregarding the unique reality of gender-based violence (elDiarioclm.es, 2023). Hence, it is imperative to bolster and safeguard the framework of “Purple Points” based on our research findings.

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# **Capturing What Statistics Miss: Mapping Unsafe Places and Victimization Experiences in the City of Granada**

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## **Funding sources**

This work was supported by the project B-SEJ-238-UGR20, funded by Junta de Andalucía-Consejería de Transformación Económica, Industria, Conocimiento y Universidades/ ERDF (European Regional Development Fund). We gratefully acknowledge this financial support.

## **Acknowledgements**

We extend our sincere gratitude to Rosemary Dibb for their invaluable assistance in translating and ensuring the clarity and accuracy of this manuscript. Additionally, we thank Cathaysa Martin-Blanco for their insightful contributions to the survey design discussions and implementation. We also appreciate the participants for the time dedicated to completing the survey.

## **Declaration of Interest Statement**

The authors declare that they have no financial or non-financial interests that may be relevant to the research presented in this paper. There are no conflicts of interest to disclose.