

Measuring Women's Perceptions of Safety Using a Web App: A Feasibility Study of City4all web-app

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ABSTRACT

Background/objective: Women, in comparison to men, report in average higher perceptions of unsafety. However, most studies have focused on average effects derived from one self-reported observations per year. Consequently, a more nuanced examination of perceptions of unsafety is needed to produce more accurate and detailed estimates of these differences in future studies. As for this, we designed a web-based application (City4all) to measure women's perceptions of safety in everyday contexts. Then, main objective of this study is to analyse the use and feasibility of the City4all web application. **Method:** A one-month pilot study was conducted between July and August 2023 with 44 Spanish women. Participants reported their perceptions using real-time ("Here and Now") and retrospective ("Up to 12 Hours") options. Feasibility was assessed in terms of technical performance, patterns of use, and participant feedback ($n = 16$). A total of 55 reports were submitted, primarily in real time. While initial registration was relatively high, active participation was limited and declined over the study period. Technical issues were reported by a small number of participants, and overall evaluations of usability, simplicity, and questionnaire length were positive. **Results:** Most respondents indicated that the app adequately captured their experiences. Reporting patterns varied across time of day, supporting the context-dependent nature of safety perceptions. **Conclusions:** Overall, the findings suggest that the City4all app is a feasible tool for capturing situational perceptions of safety. However, low engagement remains a key challenge. Future research should focus on improving participation, refining technical features, and testing the approach with large and more diverse samples.

Medición de las Percepciones de Seguridad de las Mujeres mediante una Aplicación Web: Estudio de Viabilidad de la Web-app City4all

RESUMEN

Antecedentes/objetivo: Las mujeres, en comparación con los hombres, informan en promedio percepciones más elevadas de inseguridad. Sin embargo, la mayoría de los estudios se han centrado en efectos promedio derivados de una única observación auto informada por año. En consecuencia, se requiere un examen más matizado de las percepciones de inseguridad para obtener estimaciones más precisas y detalladas de estas diferencias en estudios futuros. Con este propósito, diseñamos una aplicación web (City4all) para medir las percepciones de seguridad de las mujeres en contextos cotidianos. Así, el objetivo principal de este estudio es analizar el uso y la viabilidad de la aplicación web City4all. **Método:** Se llevó a cabo un estudio piloto de un mes de duración entre julio y agosto de 2023 con 44 mujeres españolas. Las participantes informaban sobre sus percepciones utilizando opciones en tiempo real ("Aquí y Ahora") y reciente ("Hasta 12 Horas"). La viabilidad se evaluó en términos de rendimiento técnico, patrones de uso y retroalimentación de las participantes ($n = 16$). Se enviaron un total de 55 reportes, principalmente en tiempo real. Aunque el registro inicial fue relativamente alto, la participación activa fue limitada y disminuyó a lo largo del período de estudio. Un pequeño número de participantes informó problemas técnicos, y las evaluaciones generales sobre la usabilidad, la simplicidad y la duración del cuestionario fueron positivas. **Resultados:** La mayoría de las encuestadas indicó que la aplicación capturaba adecuadamente sus experiencias. Los patrones de reporte variaron según la hora del día, lo que respalda la naturaleza dependiente del contexto de las percepciones de seguridad. **Conclusiones:** En general, los hallazgos sugieren que la aplicación City4all es una herramienta viable para captar percepciones situacionales de seguridad. Sin embargo, la baja participación sigue siendo un desafío importante. Las investigaciones futuras deberían centrarse en mejorar la participación, perfeccionar las características técnicas y probar este enfoque con muestras amplias y diversas.

Palabras clave:

Miedo al delito

Percepción de seguridad de las mujeres

Evaluación ecológica momentánea

Percepción situacional de seguridad

Introduction

From a situational perspective, fear of crime can be understood as a context- and time-dependent experience rather than a stable individual trait. Drawing on situational perspectives, such as Routine Activity approach (Felson & Cohen, 1980), these views emphasise how perceptions of safety are shaped by environmental and social conditions, as well as by individuals' subjective assessments of risk in specific situations (Vitelli & Endler, 1993). As such, fear of crime¹ is better conceptualised as a dynamic phenomenon that varies across contexts and over time.

Traditional survey approaches to measuring fear of crime have largely relied on static items assessing perceived safety in participants' neighbourhoods (Hale, 1996; Hart et al., 2022). While these methods have generated substantial knowledge, including insights into broader trends and trajectories (Natter, 2025; Pohl & Buil-Gil, 2026), they rely on retrospective reporting and are therefore prone to recall bias. As a result, they tend to capture general beliefs or future-oriented concerns rather than specific, situated experiences (Ferraro, 1995; Gray et al., 2011; Jackson, 2006; Robinson & Clore, 2002), and provide limited information about the immediate environmental and social context in which fear occurs (Birenboim, 2016; Jackson & Gouseti, 2014; Solymosi & Bowers, 2018).

In response to these limitations, more recent approaches have adopted methods such as Ecological Momentary Assessment and related experience sampling techniques, often implemented through mobile or web-based applications and, in some cases, supported by crowdsourcing approaches (see Shiffman et al., 2008). These methods collect data in real time and in participants' everyday environments, allowing fear of crime to be studied as it unfolds in situ (Csikszentmihalyi & Larson, 2014). Although this approach is still developing and often relies on small-scale or pilot studies due to its intensity and cost (see Solymosi et al., 2021 for a comprehensive discussion of these limitations), it is increasingly considered a feasible way to capture the situational dynamics of fear of crime and its relationship with environmental conditions (Solymosi et al., 2021; Hart et al., 2022). Applications of these approaches have begun to appear in the literature (Chataway et al., 2019; Engström & Kronkvist, 2023; Chataway et al., 2017; Skarlatidou et al., 2023; Solymosi et al., 2015), as well as in related domains (e.g., topophilia; Brisudová et al., 2024).

Building on this emerging body of work, the present pilot study examines the feasibility of using a web-based application to assess women's fear of crime in everyday settings. To our knowledge, this is one of the first studies to focus specifically on women using this type of approach in a Spanish context.

Objective and Research Questions

The main objective of this study is to analyse the use and feasibility of the City4all web application, with the intention of drawing conclusions and recommendations for improvement. These findings will provide the basis for larger-scale research aimed at understanding women's perception of crime in urban settings. This study aims to answer the following research questions: (RQ1) *Are there technical problems with the City4all app?* (RQ2) *How*

do women use the City4all application? (RQ3) *To what extent do women perceive that the City4all app accurately reflects their feelings of safety or insecurity?* (RQ4) *Is it possible to effectively measure women's safety perception using the City4all app?*

The City4all web application (hereafter, City4all) was developed by the research team in collaboration with a professional company, drawing on previous research on app-based approaches to fear of crime and a systematic review of studies using such tools in urban contexts. The web app is available in two languages, compatible with iOS and Android devices, and designed to ensure broad accessibility. It operates anonymously and received approval from the Ethics Committee for Research Involving Human Subjects (CEISH) from the research team.

City4all includes three types of questionnaires. The first is an initial survey collecting socio-demographic information (e.g., age, neighbourhood of residence). This functions as a one-time registration without requiring login credentials and is automatically linked to subsequent responses. Participants can then complete two additional questionnaires: a "Here and Now" survey for real-time reporting, and an "Up to 12 Hours" survey allowing retrospective reporting within a 12-hour period.

Both questionnaires collect information on perceived safety and insecurity, types of crime, and perceived likelihood of victimisation for oneself and other women. They also include questions on situational factors such as company, activity, frequency of space use, and whether safety influenced decision-making. In addition, participants report on contextual features that cannot be externally verified (e.g., lighting, visibility, crowd density, and trust in others), as well as how perceived insecurity shapes their daily behaviour and willingness to return to a given space (see Supplementary Material for further details).

Methods

The study was conducted in two phases. First, the web app was tested over a one-month period with a small group of participants. Second, once the first phase was over, participants were contacted again to collect feedback and better understand their experiences with the app. This information was collected through online surveys and telephone interviews, following previous pilot studies (Solymosi et al., 2015). Participant descriptive statistics are presented in the Results section.

Procedure

Phase 1: Using the Application for a Month

The study was conducted between 11 July and 10 August 2023 (one month). Participants were selected using a convenience sampling strategy, primarily consisting of women connected to the research team, who received an email with study information and a link to the web app. In total, 44 women were recruited, of whom 13 submitted at least one report (hereafter Participants). Table 1 summarises the socio-demographic characteristics of the participants. The women used the web app freely and anonymously, without specific instructions. To support engagement, reminder emails were sent every seven days in the evening.

¹ We use fear of crime as an umbrella term encompassing crime-related perceptions and constructs, including the primary concept examined in this study, safety perception.

Phase 2: Participant Feedback

At the end of the one-month study, an anonymous online survey was sent to all initial participants ($n = 44$), of whom 16 responded. As the survey was anonymous and aimed at gathering general feedback on the app, it was not possible to link responses to individual participants.

The survey, developed by the research team, included questions on reasons for participation, technical issues, and aspects of the web-app's design (e.g., usability and visual appeal). It also addressed the questionnaires themselves, including whether participants used all available options and whether they found the length appropriate (see Supplementary Materials for further details).

Data Analysis

Data analysis focused mainly on descriptive methods to summarise the characteristics of the participants, the reports, and the use of the app. We also report the difference between those who only completed the baseline survey (hereafter Abstainers) and the Participants. Specifically, we run Welch's t-test for continuous variables and Fisher's exact test for dichotomous variables.

Results

Results: Phase 1

Registration

In terms of registration, a total of 44 participants registered for the study. Of the total number of people who registered, 31 were "Abstainers", i.e. people who registered but did not participate further in the study because they did not send in any reports. In contrast, 13 were participants who sent reports about places that made them feel safe and unsafe. Table 1 depicts some of the participants sociodemographic characteristics. Comparatives analysis between abstainers and participants showed no statistically significant differences in age (Welch's t-test, $t(21.372) = -0.105$, $p = .917$), ethnic minority status (Fisher's Exact Test, $p = .509$) or previous victimisation (Fisher's Exact Test, $p = 1$). Hedges' g is reported as a measure of effect size. However, due to the feasibility-study design and exploratory nature of the research, these effect sizes are provided for descriptive purposes only and should be regarded as indicative rather than inferential.

When asked about how frequently they were concerned about different types of victimisations, Welch's t-tests showed no statistically significant differences between abstainers and participants. Overall, mean levels of concern were relatively low on a 4-point Likert scale (0 = not worried at all; 3 = worried every day). For verbal harassment abstainers reported a mean of 0.39 ($SD_{ABSTAINERS} = 0.67$) and participants 0.15 ($SD_{PARTICIPANTS} = 0.38$). Welch's t-test, $t(38.095) = 1.469$, $p = .150$, $g = 0.399$. For theft, the mean was 0.77 ($SD_{ABSTAINERS} = 0.85$) among abstainers and 1.31 ($SD_{PARTICIPANTS} = 1.32$) among participants, Welch's t-test, $t(16.316) = -1.35$, $p = .195$, $g = 0.536$. For physically assault, abstainers reported a mean of 0.29 ($SD_{ABSTAINERS} = 0.53$) and participants 0.15 ($SD_{PARTICIPANTS} = 0.38$), Welch's t-test, $t(31.529) = 0.968$, $p = .340$, $g = 0.285$. Finally, for sexual violence, the mean was 0.35 ($SD_{ABSTAINERS} = 0.55$) among abstainers and 0.31 ($SD_{PARTICIPANTS} = 0.85$) among participants, Welch's t-test, $t(16.342) = 0.183$, $p = .857$, $g = 0.062$.

Regarding registration timing, most participants registered on the first day following the invitation (46.6%), whereas abstainers were more likely to register on the second day (32.2%). The abstainer group also showed more delayed registration patterns overall, with some registering towards the end of the study period, particularly after the final reminder was sent (see Figure 1; timestamps correspond to the day notifications were sent).

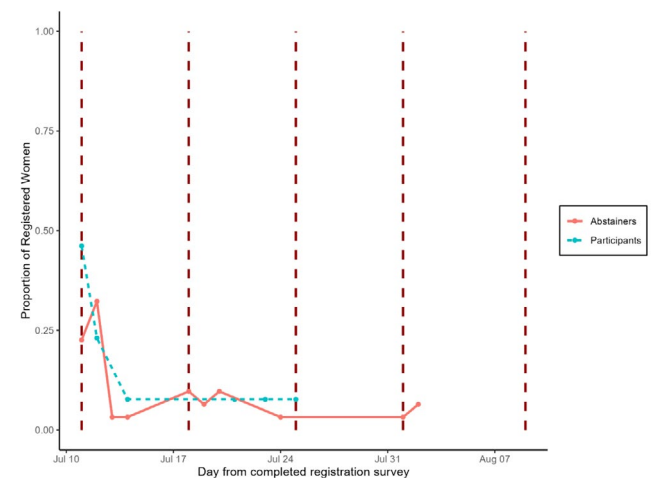
Table 1

Summary of Participants' Characteristics Based on the Baseline Survey (Registration form) Completed at Study Entry.

Variable	Abstainers (N=31)		Participants (N=13)		Total (N = 44)	
Age						
Mean	38.3		38.7		38.4	
Median	38		39		38.5	
SD	10.2		10.8		10.2	
Other variables	f	%	f	%	f	%
Ethnic minority						
Yes	1	3.23	1	7.69	2	4.55
No	30	96.8	12	92.3	42	95.5
Previous victimisation						
Yes	2	6.5	1	7.7	3	6.8
No	29	93.5	12	92.3	41	93.2

Figure 1

Proportion of Registered Women over Time Following Completion of the Registration Survey, Stratified by Participant Group. Points Represent the Observed Proportion of Women Registered on each Date, and Lines Connect Successive Observations within each.



Reporting Safety and Unsafety Perceptions

A total of 55 reports were submitted, 52 using the "Here and Now" option and 3 using the retrospective "Up to 12 Hours" option. Overall, women reported feeling safe in 83.6% of entries. However, the aim of this study is not to provide a substantive analysis of women's safety perception, but to assess the feasibility of the study. For this reason, the descriptive results are presented for context only and are not analysed in depth.

Across 52 "Here and Now" reports (see Table 2) contributed by 12 women, participants reported feeling safe in an average of 80.97% of assessments. Mean safety intensity was 4.35 ($SD = 0.59$), whereas mean unsafety intensity was 2.56 ($SD = 0.66$). Participants estimated their

likelihood of becoming a victim at 35.62 % (SD = 25.53 %) and the likelihood of another woman becoming a victim at 24.74 % (SD = 24.09).

Table 2

Descriptive Statistics of Participants' Safety Perceptions, Safety Intensity, and Perceived likelihood of Victimization Based on "Here and Now" reports. Statistics Represent Participant-level Averages Calculated across All Available In-situ Observations. Higher Scores Indicate Greater Perceived Safety, Unsafety, or likelihood of Victimization, Respectively.

Variable	Mean (<i>SD</i>)	Range
Safety intensity	4.35 (0.59)	3.5 – 5.0
Unsafety intensity	2.56 (0.66)	2.0–3.2
Likelihood of personal victimisation	35.62 (25.53)	0.0–57.5
Likelihood of another woman being victimised	24.74 (24.09)	0.0–63.3

Regarding the retrospective questionnaire ("Up to 12 Hours"), two women completed a total of three reports. All reports indicated feeling safe (100%), with safety intensity consistently rated at the maximum value of 5. No participant reported any perceived likelihood of personal victimisation, while the perceived likelihood of another woman becoming a victim ranged from 0% to 10%.

Weekday. Safety perceptions were generally high across weekdays. All reports submitted on Tuesday and Saturday were classified as safe (100%), while the highest proportion of unsafe reports was observed on Friday (25.0%) and Wednesday (23.5%). A single report was submitted on Monday, which was classified as unsafe.

Time of the day. Regarding time of day, following [Kronkvist & Engström \(2020\)](#), the day was divided into four segments: morning (07:30–12:30), midday (12:31–17:30), afternoon (17:31–22:30), and night (22:31–07:29). Safety perceptions varied across these periods (see [Table 3](#)). All reports submitted during midday were classified as safe (100%), followed by morning (85.7%), afternoon (78.9%), and night (71.4%). Conversely, unsafe reports were most frequent at night (28.6%), followed by the afternoon (21.1%) and morning (14.3%), with no unsafe reports recorded during midday.

Feasibility Indicators

Survey Participation and Completion Time

Most participants completed 1 (33%) or 2 (25%) reports, although reporting frequency varied, with some participants contributing as few as 1 reports and others as many as 6 or even one participant contributing with 24 reports.

In terms of completion time (see [Figure 2](#)), Abstainers completed the registration survey in an average of 79.2 seconds ($SD = 62.8$), compared with 62.8 seconds among Participants ($SD = 42.0$). The in-situ (“Here & Now”) questionnaire required an average of 105.3 seconds ($SD = 57.3$) to respond, whereas the retrospective (“Up to 12 Hours”) questionnaire required an average of 100.0 seconds ($SD = 69.3$).

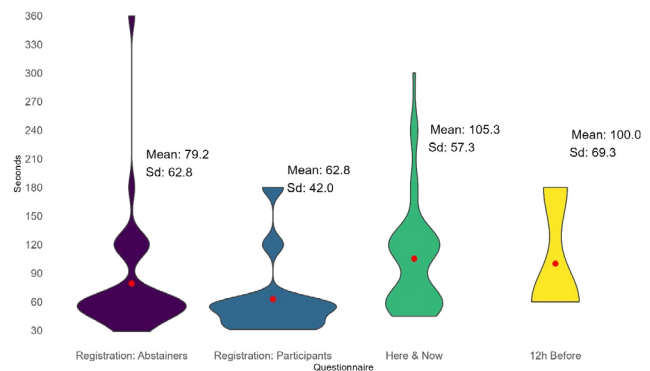
Table 3

Distribution of Safe and Unsafe In-Situ Reports Across Time-of-Day Periods. Percentages Represent the Proportion of Reports Classified as Safe or Unsafe Within Each Time Period (Morning, Midday, Afternoon, and Night)

Variable		Time of day							
		Morning (07:30-12:30)		Midday (12:31-17:30)		Afternoon (17:31-22:30)		Night (22:31-07:29)	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Safety perception	Safe	6	85.7	12	100	15	78.9	10	71.4
	Unsafe	1	14.3	0	0	4	21.1	4	28.6

Figure 2

Violin Plots of Questionnaire Completion Times. The Plots Display the Distribution of Completion Times (in Seconds) for the Registration Survey, Participant Questionnaire, In-Situ ("Here & Now") Questionnaire, and Retrospective ("Up to 12 Hours") Questionnaire, With Wider Sections Indicating a Higher Concentration of Observations.

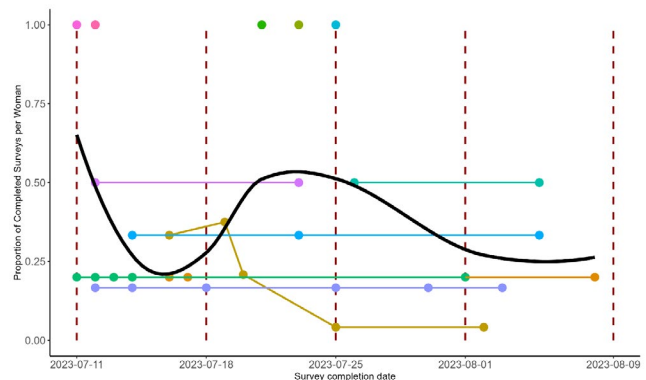


Duration of Participation

Participation varied over the course of the study, with slight increases following reminder e-mails (see [Figure 3](#)). Across all participants, peaks in reporting were observed on 12, 16, and 19 July. However, closer inspection shows that these peaks were largely driven by a single high-frequency participant (an outlier who submitted 24 reports).

Figure 3

Participant Engagement Over the Study Period. Coloured Lines and Points Represent the Cumulative Proportion of Completed In-Situ Surveys for Each Participant Across Survey Completion Dates. The Solid Black Line Represents the Overall Smoothed Trend in Survey Completion Across Participants. Dashed Vertical Red Lines Indicate the Dates on Which Reminder Emails Were Sent.



After excluding the outlier of 24 reports, the highest proportion of reports was recorded on 12 July (21.4%), the day after the initial

invitation email was sent. Additional smaller peaks occurred on 14 and 23 July. Overall, reporting declined after the first two weeks, indicating a decrease in participation over time.

Results: Phase 2

Participant Engagement and Barriers to Use

Most survey respondents were active participants who had completed registration and submitted at least one report (56.3%). A further 18.8% reported that they had accessed the app but had not used it. When asked about their level of participation, nine respondents provided additional feedback. The most common reason was lack of time ($n = 3$). Other reasons included discomfort with sharing location data, technical issues with the app, and difficulties accessing or locating it.

When asked about technical issues, three participants (18.8%) reported experiencing problems with the app. Of these, two indicated that they did not use the app as a result. Reported issues included difficulties accessing the camera and the app not being available in the Apple Store.

App Characteristics and Questionnaires Feedback

Participants were asked to evaluate different aspects of the app and its questionnaires using a 0–5 scale. Overall, the app received positive ratings, with mean scores of 4.07 for visual appeal, 4.50 for ease of use, and 4.57 for simplicity. Regarding the questionnaires, participants evaluated the registration, “Here and Now,” and “Up to 12 Hours” options separately. The registration questionnaire received mean ratings of 4.88 for simplicity and 4.73 for appropriate length. Eight participants reported using the “Here and Now” questionnaire, rating it 5.00 for simplicity and 4.50 for length. Only one participant used the “Up to 12 Hours” option, assigning a score of 5.00 for both simplicity and length.

Finally, participants were asked whether the questionnaires adequately captured their experiences. Of the 15 respondents, 14 indicated that they did, while one participant suggested a preference for an alternative questioning format.

Reminders

Participants were also asked about reminder notifications. Most respondents (14 out of 16) considered the use of reminders appropriate. When asked about their preferred mode of delivery, six participants indicated a preference for WhatsApp, while nine considered both WhatsApp and email acceptable. Regarding their usefulness, 66.7% of participants reported that reminders were helpful, 20.0% reported that they were not, and 13.3% were unsure.

Overall Opinion

To assess overall perceptions of the app, participants were asked whether they considered it a useful tool for improving women’s safety in public spaces and whether they would use it on a daily basis. Thirteen participants responded positively, while two were unsure. Regarding intended use, twelve participants indicated that they would use the app on a daily basis, whereas three reported that they would not.

Discussion

This feasibility study set out to examine whether a web-based application can be used to study women’s perceptions of safety in everyday contexts. Overall, the findings suggest that this approach is feasible, in line with previous work (Chataway, et al., 2017; Kronkvist & Engström, 2020; Solymosi, et al., 2015), while also highlighting several challenges that need to be addressed.

Regarding RQ1 (technical problems), only a small number of participants reported technical issues, and most rated the app positively in terms of usability, simplicity, and design. However, specific problems, such as difficulties accessing the app or certain features, indicate that further technical refinement is still needed. These types of issues have also been identified in similar studies (Wrzus & Neubauer, 2023).

In relation to RQ2 (patterns of use), participation was uneven. While initial registration was relatively high, active engagement was low, with only a minority of participants submitting reports. Reporting tended to occur shortly after the initial invitation and declined over time, a pattern commonly observed in similar studies (see Myin-Germeyns & Kuppens, 2026). Reminder emails appeared to support new registrations but had limited impact on sustained reporting. Most participants submitted only one or two reports, although one high-frequency user highlights the potential for more intensive engagement. Reporting was primarily conducted in real time, although retrospective entries were also used, suggesting that offering both options is appropriate.

For RQ3 (perceived accuracy of the app), participants generally reported that the questionnaires captured their experiences well, and the app received high ratings for clarity and length. Questionnaire completion times remained within the limits suggested in previous EMA research (Cloos et al., 2026; Eisele et al., 2026), and participants evaluated them positively in terms of simplicity and length. Implying that the balance between data collection and participant burden was largely achieved.

Finally, regarding RQ4 (feasibility of measuring safety perception the results) indicate that the app can capture context-specific perceptions of safety and insecurity. Reports were distributed across different days and times, reflecting variability in participants’ daily experiences. The observed patterns—such as higher perceptions of safety during daytime and increased reports of insecurity in the evening and at night—are consistent with previous research on fear of crime (Grohe, 2011; Nasar & Fisher, 1993). The inclusion of both safe and unsafe reports is particularly relevant, as it allows for a more balanced understanding of how women experience urban spaces.

At the same time, the study highlights key limitations. The low level of active participation remains a central challenge and cannot be fully explained by technical issues alone. Factors such as time constraints, lack of engagement, or concerns about sharing location data may have played a role. Addressing these barriers will be essential for future research, particularly in terms of recruitment strategies, communication, and participant motivation.

This feasibility study has several limitations that should be considered when interpreting the findings. First, although generalisability was not the primary aim, the level of participation was lower than desirable. A higher number of active participants, as well as a greater frequency of reports per participant, would have strengthened the assessment of feasibility. Achieving this level of

engagement is challenging in studies of this kind, particularly in the absence of incentives. While incentives may increase participation, they can also introduce biases by attracting specific population groups (e.g., Gaia et al., 2026). For this reason, conducting studies without monetary incentives can be valuable for reaching participants who are less influenced by such mechanisms, although this often comes at the cost of lower engagement.

Relatedly, the design of the web-app required participants to actively initiate reports, which demands a high level of motivation and may have contributed to the low reporting rate. This approach may also introduce selection bias, as those who chose to participate actively are likely to be more engaged or interested in the topic (Revilla et al., 2021). In addition, reminder notifications were sent manually via email, assuming that participants regularly checked their inboxes. The absence of integrated, automated notifications within the app may have further limited engagement.

Another limitation concerns the lack of detailed data on participation. No in-depth qualitative or quantitative information was collected to explain why some women did not actively participate or dropped out, which restricts a fuller understanding of barriers to engagement. Future studies could benefit from incorporating more systematic feedback mechanisms to better capture these reasons.

Finally, although feasibility indicators proposed by Kronkvist & Engström (2020) were used, one key indicator, compliance rate, could not be assessed. Because the app relied on participant-initiated reporting rather than prompted surveys, it was not possible to measure response compliance, which would have provided useful additional insight into engagement patterns.

Conclusions

Despite these limitations, the results of this study, although descriptive and not generalisable, suggest that the City4all app is a viable tool for collecting data on the perception of safety and its temporal and contextual variability. The findings also highlight several considerations that may inform the design of future app-based studies, particularly in relation to participant engagement, notification systems, and data collection strategies.

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Conflict of Interests

The authors declare no competing interests.

Data Availability

The data from this study cannot be made publicly available because the participants were not asked to provide consent for public access to their data. However, the data will be made available to individuals who wish to reproduce the results, provided that they agree to the applicable privacy and data security conditions. To obtain access, interested parties may contact any of the authors.

Informed Consent Statement

Informed consent was obtained from all participants involved in the study.

Institutional Review Board Statement

This entire project has obtained a favourable report from the Ethics Committee for Research Involving Human Beings (CEISH) of the University of the Basque Country (Spain). Code: M10_2015_297

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Supplementary Materials

Questionnaires entered in the “City4all” application

Introductory information:

City4all is a web app with which women can indicate where and when we feel safe or unsafe in our city, Donostia-San Sebastián, and how this affects us in our daily lives.

With your participation you help us

- We analyse which places in public spaces make women feel safe and which ones make us feel unsafe.
- We work to be able to feel safe anywhere in our city.

Registration questionnaire:

Welcome, new participant of the City4all study!

We would like to ask you a few questions about yourself. Remember that participation is always anonymous, we don't know who you are. We will only ask you these questions once

A. Please indicate your year of birth (detachable with the years).

1. Are you a resident of Donostia-San Sebastián?
 1. I am a resident
 2. No, but I work here
 3. I neither live nor work here
2. Are you a member of an ethnic minority?
 1. Yes
 2. No
3. How often have you been worried that any of these incidents might happen to you when you have been walking down the street in Donostia?
 1. Verbal harassment, obscene comments
 2. Theft
 3. Physical aggression
 4. Sexual violence
 1. Response options:
 1. I have not been concerned
 2. Once or twice in the last month
 3. Once or twice in the last week
 4. I worry about it every day
4. Have you been a victim of crime in the last 12 months?
 1. Yes
 1. If yes
 1. Can you describe what happened to you? (0-30 characters maximum)
 2. No

You're done with the initial questions, thank you very much! From now on, come back to the app at any time to share how you feel about safety in public space.

“Here and now” questionnaire:

1. How do you feel now, in this place, about security?
 1. Safe
 1. If the participant answers “safe”

1. How safe? (1-5)
 2. How likely is it that anything could happen to any woman in this place? (0-100)
1. Unsafe
 1. If the participant answers “unsafe”
 1. How unsafe? (1-5)
 2. What are you worried will happen to you here? (0-30 characters max)
 3. How likely is this to happen to you? (0-100)
 4. How likely is it that anything could happen to any woman in this place? (0-100)
2. You have come to this place:
 1. Alone
 2. Accompanied
3. And you are here:
 1. Spending some time
 2. Crossing the place to go somewhere else
4. You've come to this place, or passed this place, mostly:
 1. For leisure or errands
 2. For work or other obligations
 3. Other reasons
5. In the last month, you have come to this place:
 1. First time
 2. Once or twice a month
 3. Once or twice a week
 4. Every day
6. When you decided to come here, did you think about safety?
 1. I didn't think about it
 2. I have thought about it, but it seemed safe
 3. I have thought about it and it may be unsafe, but I have no other choice
 4. I've thought about it and it might be unsafe, but it's worth it (time, faster, etc.)
7. Look around you for a moment, what is the lighting like?
 1. Poor
 2. Normal
 3. Good
8. Can you see well the space around you and where you are going next?
 1. No, the place is isolated
 2. I can see normal
 3. Yes, the place is open and clear
9. Think about how many people are around you, are you comfortable?
 1. There are few people and I am comfortable
 2. There are few people and I am uncomfortable
 3. Normal and I am comfortable
 4. Normal and I am uncomfortable
 5. There are a lot of people and I am comfortable
 6. There are a lot of people and I am uncomfortable

10. Do the people around you inspire confidence in you?
 1. No, some make me uneasy
 1. If you answer “no, some make me uneasy”:
 1. Why do these people make you uneasy? (0-50 characters maximum)
 2. I am indifferent to them
 3. Yes, they give me security
11. Based on this experience, I will henceforth (tick as many cells as you need to)
 1. I will come to this place again at any time.
 2. I will come back, but only in the daytime
 3. I will come quietly by myself
 4. I will come only if accompanied
 5. I will try not to return to this place

12. OPTIONAL: Can you provide a photograph of the place you are in? Try to show as much of the space as possible.

***NOTE: in this “here and now” survey, the application itself collects the geo-referenced and time-stamped information automatically.

“12h before” questionnaire:

1. Taking into account the current time, how many hours ago did the experience you are about to share take place? (time drop-down)
2. What is the place where you were? Mark it on the map, as precisely as possible. Drag the red icon to the place of the experience (a Google map appears where the participant can move a red icon to the place where the experience occurred or can enter the address manually by filling in the street name, city, province and postcode).
3. From where are you sharing your experience?
 1. From home
 2. From the street, near to the place of the experience
 3. From the street, in another place

NOTE: From now on the survey “12h before” is exactly the same as the survey “here and now” changing the verb tense to past tense.

Women’s feedback questionnaire

Good morning!

As previously explained, to conclude the pilot study we need to hear your views on the app. Whether you have used the app in full or simply completed the initial participation form, we need you to answer the following questions. Thank you very much in advance!

When you submit this form, it will not automatically collect your details, such as your name and email address, unless you provide them yourself.

1. How far did you get in the study?
 1. I filled the form to participate in the study.
 2. I downloaded the app but never used it again.
 3. I filled in the registration form for the app but did not use it any more.

4. I filled in the registration form and submitted reports on places where I felt (un)safe.
2. Could you briefly explain why you reached that stage? (Open-ended question).
3. Did you have any technical issues with the app?
 1. Yes.
 2. No.
4. If you experienced a technical issue with the app: Did this issue ultimately prevent you from using the app?
 1. Yes.
 2. No.

Below, we will outline a number of the app’s features.

We’d like to hear your thoughts on them (A scale of 0 to 5 using stars was used)

5. The app is visually appealing (on a scale of 0–5).
6. The app is comfortable to use (on a scale of 0-5).
7. The app is easy to use (on a scale of 0-5).
8. The registration form is easy to fill in (on a scale of 0-5). *The registration form is the first form you filled in, which asked for your year of birth, town of residence, etc.*
9. The length of the registration questionnaire is appropriate (on a scale of 0-5). *If you find the registration form appropriate, or did you feel it was too short or too long.*
10. Did you use the “Here and Now” reporting option? *The ‘Here and Now’ report was the report you could file in situ.*
 1. Yes
 2. No
11. The ‘Here and Now’ questionnaire is easy to complete (on a scale of 0-5).
12. The length of the ‘Here and Now’ questionnaire is appropriate (on a scale of 0-5).
13. Did you use the “Last 12 hours” reporting option? *The ‘last 12 hours’ questionnaire is the report that you could complete retrospectively for an event that occurred up to 12 hours prior to the report.*
 1. Yes.
 2. No.
14. The ‘Last 12 Hours’ questionnaire is easy to complete (on a scale of 0-5).
15. The length of the “Last 12 Hours” questionnaire is appropriate (on a scale of 0-5).
16. Do you think the questions in the questionnaires captured your experience accurately or fully?
 1. Yes.
 2. No.
17. What do you think we missed asking? (Open-ended question).
18. Did you find the notifications/reminders about app usage helpful?
 1. Yes.
 2. No.
19. If you didn’t think it was right, why didn’t you think it was right? Please explain briefly (Open-ended question).
20. What type of notification or reminder would you prefer?
 1. By email.
 2. By WhatsApp.
 3. Both forms are correct.

21. Do you think the app usage notifications/reminders helped you remember to use the app?
 1. Yes.
 2. No.
22. Do you think this is an interesting app for improving the situation of women in public spaces?
 1. Yes.
 2. No.
23. Would you use it in your day-to-day life?
 1. Yes.
 2. No.
24. If you'd like to leave us any further comments (Open-ended question).

Thank you very much for your collaboration.