Chapter 1

Introduction

The welfare of women in public places is concerning due to the violence, harassment, and discrimination they face, despite the actions and campaigns that have been implemented to address this issue. Public places —such as streets, public transportation, and workplaces—should be environments where individuals can move freely and without fear. However, for many women, these spaces often become sources of vulnerability, where they face catcalling, inappropriate touching, verbal abuse, and even sexual assault (Philippine Commission on Women, 2020). The acts of harassment that occur pervasively not only affect the physical safety of women but also create an atmosphere of fear and discomfort and have a significant adverse effect on the ability of women to participate fully in public life.

This matter is about one woman's experience and many women. When a woman is harassed online, it is very much like when a man is harassed online. It reinforces certain types of behavior if we let these kinds of decisions be

made in these ways. The Philippine gown and women—that specific spaces (cyberspace inclusive) are preferable for men, that it's natural for women to be less visible than men, and that women are less safe when they're visible, online or off. This debate is about safety, first and foremost. It is also about freedom of expression. It is about something that will matter even more in the long run: the kind of society our government made.

A significant legislative advance in 2020 regarding this issue by enacting the Safe Spaces Act or Bawal Bastos Law (Republic Act No. 11313). In public and private settings, this law forms a foundation of responsibility and respect by criminalizing harassment. While this law is a step forward regarding safety, its implementation has been patchy, and the full benefit has been blunted. Many women hesitate to report incidents due to fear of retaliation, societal stigma, or a lack of confidence in the authorities' response (Philippine Commission on Women, 2020). Consequently, a persistent problem plagues us; It is not just a single event that a person can recover from. Instead, it is more like a chronic health condition.

Feeling Unsafe leaves women in a virtually unending state of fear and vulnerability.

Problem Statement

Such an environment is not safe where society does not protect the human rights of women. They are limited in what they can do with prevalent things like harassment and discrimination. Although there are safety measures, such as emergency hotlines and laws, that are designed to address these issues, They are lacking in offering accessible and real-time actions. Current resources lack the ability for women to take action in difficult situations. In addition, women are deterred from reporting harassment and violence due to cultural factors, such as victim-blaming attitudes and lack of appropriate reporting mechanisms (Philippine Commission on Women, 2020).

The pressing issue of guaranteeing women's safety in public spaces calls for creative and effective strategies. With violence and harassment ongoing, hindering women's confidence in public spaces, technology offers an opportunity to link existing legal safeguards to prompt and practical support. The SafeZone Application seeks to

empower women. SafeZone provides quick assistance in potentially dangerous circumstances by leveraging mobile technology to offer users immediate access to emergency services and reliable contacts.SafeZone aims to fulfill this requirement by offering an innovative solution that includes real-time location tracking, emergency alerts, and entry to secure zones. **Through its innovative approach, SafeZone addresses the pressing need for timely, available, and reliable resources to improve women's safety in public spaces. The application promotes a more secure atmosphere and supports gender equality by empowering women to take action during emergencies and connecting them with contacts and authorities.**

Given the limitations of existing strategies, there is a pressing demand for creative and easily reachable solutions to address the challenges women face in public areas. Leveraging technology presents an optimistic avenue for enhancing women's empowerment and ensuring their safety. Employing instruments that enable immediate oversight, prompt alerts, and access to restricted areas. Technology can link policy with action, offering timely and practical support to vulnerable women. This matter carries excellent

societal significance, as women's safety is closely tied to their ability to participate equally and freely in public life. The lack of a reliable safety system continues to promote gender-based violence and harassment, hindering women's social and economic advancement (United Nations, 2021). Addressing these safety concerns contributes to Sustainable Development Goal (SDG) 5—Gender Equality—by allowing women to access public spaces without fear of harassment, violence, or discrimination and live in a community that respects their rights and dignity.

This app aligns with Sustainable Development Goal (SDG) 5—Gender Equality—which aims to eliminate violence against women and girls in public and private spheres as part of promoting gender equality and empowering all women and girls (United Nations, n.d.). It improves individual safety while fostering a cultural change that acknowledges and tackles safety concerns impacting women in society.

By developing a platform that fosters community involvement, SafeZone enables users to report hazardous locations and exchange vital information, potentially leading to broader systemic transformation. The app's functionalities aim to initiate a ripple effect, where

enhanced safety for individual users leads to more secure public spaces for all women. Furthermore, its incorporation of resources like self-defense strategies and education on legal rights strengthens the overarching goal of empowering women with the understanding and resources necessary to succeed in society. By employing its innovative approach, SafeZone tackles urgent safety issues while fostering a long-term vision of equality and empowerment, which is entirely in harmony with the goals of SDG 5.

Citation of related studies discussing the proposed technology

Local Studies

According to the research of Rhea Nayang Tortor, Thea Carole Mariano BRIONES, Kevin Daniel Andres JEBULAN, Martin Enriquez Hernandez, Clyd Eddieson Cinense MARIÑAS (2024) build IPANIC, this mobile application has functionality tied to permissions, including GPS Detection and Emergency contacts to the Philippine National Police, enhanced the safety of residents.

Summary. Enhances resident safety through GPS detection and emergency contacts like the Philippine National Police.

Relevance. Improve public safety by leveraging GPS detection and direct emergency contact with the Philippine National Police. Supporting the objective of our proposed mobile application

Roel Ceballos's (2023) dataset contained the volume of index crimes in the Philippines, assuring the safe zone area.

Summary. The dataset was used to identify and ensure safe zone areas in the country.

Relevance. The dataset contains past crime hotspots, enabling better resource allocation.

In (2017), Toledo and the team developed SakunApp, which enables real-time data information reports, protecting women.

Summary. Enhances real-time information dissemination to safeguard women.

Relevance. Timely information and support aiding in law enforcement and crisis handling.

Foreign Studies

As stated by Perla and Perla (2024), Through a broad technology innovation approach, an integrated mobile program is bound to improve women's security.

Summary. Focuses on the use of innovative mobile technology to help women's safety through integrated applications.

Relevance. Advise **SafeZone**'s development by promoting the role of technology in addressing safety concerns.

After examining the existing programs, Akare, Gahile, and Vi, Fokmare (2023), after reviewing improvements in these innovations.

Summary. Reviews existing women's safety apps and emphasizes the need for better features and real-time solutions.

Relevance. Guides **SafeZone** in addressing gaps in current safety applications and improving usability.

Moreover, Vinarao et al. (2019) developed Athena, this software for mobile devices includes GPS tracking and notification to the police. This mainly guarantees women's security.

Summary. Developed Athena, an app with GPS tracking and police notification for women's safety.

Relevance. Serves as a reference for integrating similar features into **SafeZone** to enhance real-time emergency response

Citation of related studies discussing the advantages of the proposed technology.

Local Studies

Balahadia and Mortel (2020) developed iJuanaHelpMo, a web and mobile app that enables women to report violence discreetly. The app includes anonymous reporting, emergency contacts, and legal information under Republic Act No. 9262. Their study found that the app could help raise awareness, improve responses to violence against women (VAW), and create a centralized database for government agencies. Similarly, iJuanaHelpMo supports SafeZone's vision of empowering women by providing real-time features

like emergency text alerts, location tracking, and safe space locators.

While iJuanaHelpMo offers important features like anonymous reporting and legal information, Balahadia and Mortel (2020) pointed out that some victims may hesitate to use it due to fear of retaliation or social stigma. The SafeZone app also needs to consider this, as users might be reluctant to act in dangerous situations if they fear the consequences. iJuanaHelpMo faces the challenge of limited reach due to a lack of awareness, which SafeZone also needs to address by ensuring it is easily accessible and known to its users. Balahadia and Mortel (2020) highlighted that improving an app's features and strengthening its connections with local support networks can enhance its effectiveness.

Vinarao et al. (2019) developed Athena, a mobile app designed to enhance women's safety in Rizal Province through features like real-time SMS alerts, GPS tracking, and direct emergency calls to police stations. The app improved emergency response times and helped prevent crimes based on user inputs. Athena aligns with SafeZone's goal of leveraging mobile technology to improve public safety, particularly through real-time tracking and alert systems during emergencies.

Like our application, SafeZone, Athena also has stand-out features like real-time alerts and GPS tracking. These attributes made the environment safer and allowed for speedier emergency response. However, one of its shortcomings was that the app relied on mobile networks and could not be accessed in areas with poor connectivity. It was only applicable within Rizal Province. The SafeZone app faces the same challenge, as its effectiveness could suffer in regions with unstable networks. Both apps need to address these limitations to ensure broader reach.

Algaba et al. developed Laguna Patroller in 2018, a mobile app that promotes violence awareness and is a tool for reporting crimes. Using GPS technology, users can track reports on this app for real-time insights, while image processing can be used to submit pictures, enhancing accessibility and public safety.

The Laguna Patroller app aligns with our app's goal of utilizing mobile technology to improve safety. Both apps provide real-time GPS tracking and easy-to-use reporting functions, making them powerful resources for combating violence. Unfortunately, the Laguna Patroller suffered from reliability problems since it was not particularly available or easily recoverable. This will lead to a need for the SafeZone app to be reliable, even in areas with poor connectivity or during sudden outages.

Foreign Studies

In the United Kingdom, Ford, Bellis, Judd, Griffith, and Hughes (2022) gave a summary of smartphone applications intended to improve personal security and safety from interpersonal violence, focusing on how mobile technology can help address these problems.

Summary. Reviews UK smartphone apps for improving personal safety and addressing interpersonal violence.

Relevance. Highlights the role of mobile technology in enhancing safety, aligning with **SafeZone's** objectives.

Premi et al. (2022) introduced FRNDY to address the rise in crimes against women in Malaysia. The app provides ways for women to get help during emergencies, which aligns with SafeZone's goal of using mobile technology to enhance safety.

FRNDY's main strength is its simple yet effective approach, combining GPS tracking, emergency alerts, and secure authentication—similar features in SafeZone. By prioritizing reliability and listening to user feedback, SafeZone can better meet the needs of its users and ensure it provides meaningful support in emergencies.

Rationale

This study addresses women's safety in public spaces, where unacceptable behaviors remain widespread regardless of the existing legal framework. Ensuring safety allows women to move freely. This study proposes the development of SafeZone: Bridging Safety, Awareness, and Emergency Connectivity to employ technology that provides access to safe areas, emergency warnings, and real-time location tracking to bridge the gap between laws and immediate action. By empowering women to navigate safely and confidently in public spaces, the application addresses the pressing demand for valuable tools that enhance safety.

Research Objectives

This study aims to design, develop, and test the *SafeZone* application. In particular, the researchers aim to accomplish these specific objectives:

1. Identify the current tools and systems for women's safety in public spaces, including legal frameworks, emergency services, and other mobile safety applications.

2. To Assess the limitations of current safety measures, such as lack of real-time support, accessibility, and user engagement, and identify the challenges women face when accessing help in dangerous situations.

3. To Determine the application's necessary features, including real-time location tracking, SOS alerts, safe space locator, and user notifications.

4. To perform the following tests on the proposed *SafeZone* app:

   - **Acceptability**. To Evaluate the application user interface (UI)

   - **Functionality**. To Guarantee that it meets user needs and is accessible during emergencies.

- **Usability.** Gather responses from the target audience about the application's usability.

- **Performance**. Test the application's feature in providing real-time responses.

- **Security.** Secure the user's personal information.

5. To Evaluate the impact of applying gender equality on enhancing women's safety in supporting Sustainable Development Goal 5 - Gender Equality.

Research Questions

1. Who is the target audience of the application?

2. What are the current safety measures available for women in public spaces?

3. What features should the application include to address the safety needs of women in public spaces?

4. When are women most vulnerable to safety risks in public spaces, and how does the application provide support during these times?

5. Where do women typically experience harassment or violence in public spaces, and how does the application help them navigate these areas?

6.   Why is it essential to create an application like the *SafeZone* app to address women's safety issues?

7.   How does the lack of real-time safety measures contribute to women's fear of victimization in public spaces?

Research Framework

 This research framework focuses on addressing the safety issues women face in public places by creating "SafeZone," a mobile app designed to provide real-time tracking, emergency alerts, and access to safe spaces. The framework has three main parts: input (identifying the problem and gathering requirements), process (developing and implementing the app), and output (launching and assessing its impact).

The significance of this study is manifold for various stakeholders. First and foremost, it will benefit women by giving them a tool to make them safer in public. Completely empowering women with an immediate way to reach out to trusted contacts and authorities when faced with a threatening environment through the SafeZone app, enabling them to seek help with more confidence and assurance. The
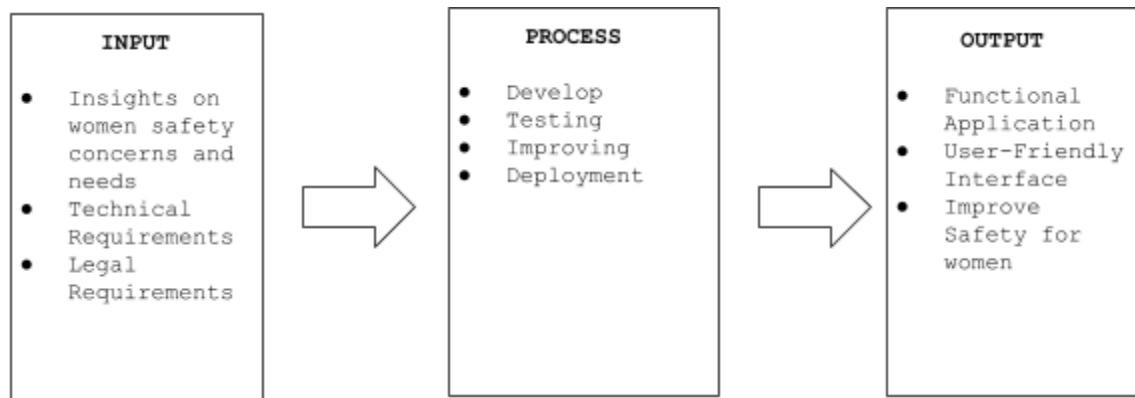
app is designed in such a way that it will help law enforcement agencies to respond quickly via emergency notifications and real-time location tracking, thereby improving their ability to. Law enforcement agencies will also benefit from the app, facilitating quicker response times through emergency alerts and real-time location tracking, thus enhancing their ability to address safety concerns. Guardians will gain peace of mind, knowing they can stay informed about the safety of their loved ones, especially when they are in potentially risky environments. Technologically, this study will provide an understanding of guideline development toward creating application programs for social issues, specifically improving women's safety and empowering users to obtain emergency assistance. This information will facilitate advocacy by being used by NGOs to promote their initiatives towards gender equality and create policies for a safer environment for women. Lastly, the general public will benefit by becoming more aware of unsafe areas and contributing to the creation of a community-centered approach to reducing violence and harassment against women.

3rd paragraph- Process discussion (should reflect the research methodology) louise

SafeZone: Bridging Safety, Awareness, and Emergency Connectivity. This mobile application is designed to deal with the necessities for women's safety in public places. This study will include features such as having access to a safe place database, emergency alert notifications, and real-time location monitoring. Using such features, the users will receive assistance and respond quickly in possibly dangerous situations. To promote safety awareness and enable women to move through public places with security, the software also includes instructional materials for legal rights information and self-defense methods. Using technology, SafeZone seeks to close the deficit between safety protocols and readily available, real-time solutions. This application aims to promote equality and security. By tackling gender-based violence while advocating a safer society for women, the output

supports the sustainable development goal (SDG) 5—gender equality—and is consistent with the study's title.

INPUT	PROCESS	OUTPUT
• Insights on women safety concerns and needs • Technical Requirements • Legal Requirements	• Develop • Testing • Improving • Deployment	• Functional Application • User-Friendly Interface • Improve Safety for women

Scope and Limitation

This study will assess the application's design, development, and testing in Dagupan, Pangasinan, Philippines. It aims to identify the features the SafeZone application must offer, such as real-time location tracking, SOS alerts, and safe space locators. This study will also test the app's design and functionality, usability and performance — and whether it is keeping personal data secure. This study settles on current measures' limitations and specifies the essential functions the application needs

to deliver, including real-time location tracking and SOS warnings. It will also test whether the application's design, features, and performance keep personal data secure. The research will primarily explore the app's effectiveness in addressing the safety needs of women in Dagupan City public spaces.

The study is limited to Dagupan, Pangasinan, meaning its findings may not directly apply to other regions with different cultural, social, or legal contexts. The research will focus solely on the SafeZone app and not compare it with other safety tools or mobile applications. The study will also be constrained by the availability of participants for testing within this geographic area and the app's capability to provide real-time responses and location tracking in Dagupan's urban and rural settings. Additionally, the long-term impact of the app on users' safety perceptions will not be explored in this research.

Significance of the Study

The result of this study will benefit the following:

Women. The study will help them safely contact trusted people and authorities in times of danger. The application promotes confidence and security while navigating public spaces.

Law Enforcement. This study can be used to help in assisting public safety by using emergency hotlines, SOS alerts, and real-time tracking. It will support them in addressing women's safety.

Guardians. The application offers peace of mind by enabling them to be informed of the safety of their loved ones, especially in situations that could be dangerous.

Future Developer. It provides insights into technology's role in solving social issues, demonstrating how apps can be designed to improve women's safety, empowering them to protect themselves and connect with emergency services.

Advocacy Groups and NGOs. Supports gender equality initiatives by offering an app that empowers women and gathers real-time safety data, contributing to developing policies and strategies for a safer environment.

General Public. Fosters a safer community by promoting awareness of unsafe areas and encouraging a culture of safety and mutual support, contributing to the reduction of harassment and violence against women.