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# i-JaMCSIIX 2022

International Jasin Multimedia & Computer Science Invention and Innovation Exhibition

## EXTENDED ABSTRACT BOOK

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Extended abstract

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## FemaleSafe2Go

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**Abstract**— There has been an increase in the number of solo female travelers all around the world. Although traveling is a good thing which will have a great impact on tourism industries, it is still worrisome for travelers especially female travelers due to the increasing rate of crime. Based on previous research, they stated that tourists in general are victims of crime as a result of their carelessness, lack of local knowledge, self-indulgence, and unfamiliarity with the area. Women, on the other hand, are arguably easier targets since they stand out more when they are alone. It is quite frustrating for people, especially women nowadays, to travel while facing the risk of being exposed to dangers. This is why we felt like we needed to do something about the issue. Thus, the idea of wanting to create a tracking application that can give a safe experience for female travelers called FemaleSafe2Go has come to fruition. This application is a user-friendly application with tons of security features. The main purpose of this application is to ensure the safety of female travelers, especially solo travelers while potentially decreasing their rate of exposure to violence during their vacations and travels. Our compact and easy-to-use applications are specialized on safety-based services such as tracker for tracking purposes, “Save Our Souls” system (SOS) for emergency purposes, and a gyroscopic enhanced module to detect whether the user is in danger through the orientation of the user’s respective device. To differentiate between this application and other safety-based applications such as BSafe and OneScream is that those applications tend to breach the user’s agreements for advertisement purposes. FemaleSafe2Go keeps all the users’ data private and confidential since we prioritize safety of the users instead of monetization purposes.

**Keywords**— *Mobile Application, Female traveler, Tracker, Safety, Travel Constraints*

### I. INTRODUCTION

As we can see, nowadays people tend to travel more. Based on the World Tourism Organization (UNWTO), there was a record of 1.4 billion international tourist arrivals in 2018 [1]. Travelling not only gives a great impact to our life but also to the local economy. Tourism, on the other hand, brings with it a slew of other difficulties, like higher crime rates. This could be because tourism causes a temporary boost in the population of small towns. It also helps to bring foreigners into local communities, which is another element that contributes to crime. Women may be an easier target because they stand out more when they are alone and being in unfamiliar surroundings. Opportunistic crime, particularly bag snatching, is the most common security concern that female travellers experience, followed by sexual harassment and assault. This is why the idea of creating a safety travel application, FemaleSafe2Go for women traveller to have a more secure experience. These compact and easy-to-use applications are specialised on safety-based services such as tracker for tracking purposes, “Save Our Souls” system (SOS) for emergency purposes. Besides that, the gyroscopic enhanced module allows the user’s respective device to execute pre-programmed commands based on certain actions. For example, to detect the user in a dangerous situation. Other than that, to distinguish this app from other safety-related apps like BSafe and OneScream, keep in mind that those apps frequently violate user agreements for advertising purposes. FemaleSafe2Go maintains all user data private and secure since the safety of our consumers comes first, not the revenue.

## II. MATERIALS

### A. Collecting Data

FemaleSafe2Go is an application that is a special creation for women safety so this is a serious problem where women are afraid to travel or go anywhere, we might think anything could happen if we as women travel alone. However, in 2021 the majority of women will travel and it also have become a travel style among women [1]. Figure 1 shows the data of women go to travel.

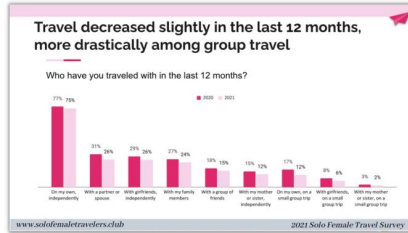


Fig 1. Graph of Women Travellers

### B. Connection System

FemaleSafe2go uniqueness has almost 98% accurate value of a person's location. This is because these apps connect with all the legal organizations such as government, police, hospital and so on and will guarantee and get support from the government. There might be a lot of applications that produce this service but not each of it is accurate.

## III. METHODS

It is accessible to any female users of all ages. This is also part of our specialty where this application does not so much focus on the age of the women, meaning that every woman can use this application since we are concerned and focus on women safety. FemaleSafe2Go is so convenient especially for citizen women that are not so familiar with the apps.

On top of that, the application is also using SOS signals (Save Our Soul) to access the users especially in emergency situations. No one could guarantee safety, especially women. The start of season (SOS) for forests is very sensitive to temperature, and if the temperature changes are strong, the SOS can occur earlier or be delayed, which will change the length and intensity of vegetation activities and affect the regional and global carbon cycle [2]. FemaleSafe2Go becomes more advanced and easier to access when it is absolutely connected with satellites. Satellite accessing is adequate and accurate.

### A. SOS Process

Based on the previous study the dynamic threshold method defines the SOS when the vegetation index reaches a certain percentage of the amplitude [3]. We believe by using SOS it will be easier to detect the user's condition at that moment. Figure 2. Show about graphical abstract on how SOS process goes regarding [4].

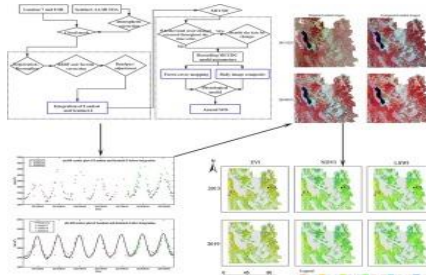


Fig. 2. Graphical Abstract SOS Process

**B. Satellite**


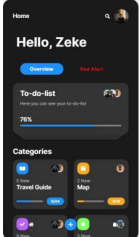
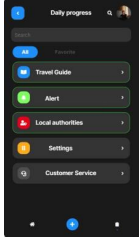
Satellite is a new technology to access the users. In this study we are deciding to use performance measures based on categorical metrics. This is the same method and measure that is used by Climate Hazards Group InfraRed Precipitation and Stations (CHIRPS). This formula is called Performance based on Categorical Metrics.

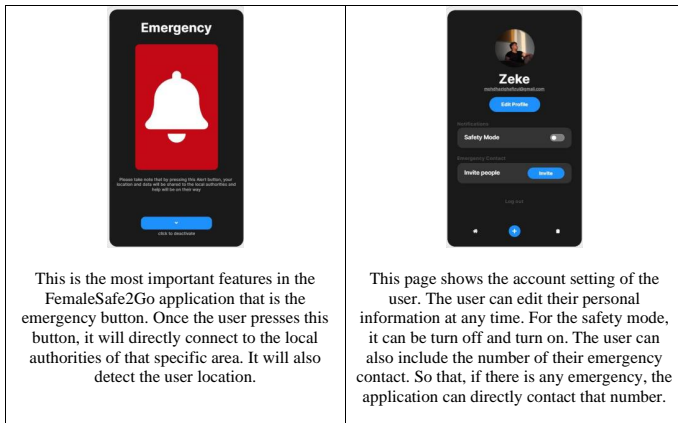
**C. Formula Performance Measure Based on Categorical Metrics**

Six categorical metrics were used in assessing the monthly CHIRPS v.2 product performance for detection of rainfall but the one that we found that suits the project is called Performance Measure Based on Categorical Metrics.

Name	Formula
Probability of detection	$POD=AA+C$
False alarm ratio	$FAR=BA+B$
Equitable threat score	$ETS=A-ArA+B+C-Ar$ , were $Ar=A+BA+CN$
Hansen and Kuipers discriminant	$HK=AA+C-BB+C$
Heidke skill score	$HSS=2AD-BCA+CC+D+A+BB+D$
Frequency bias	$FB=A+BA+C$ <i>A: number of hits; B: number of false alarms; C: number of misses; D: number of correct negatives.</i>

FemaleSafe2Go application's interfaces:

		
<p>This is the page of FemaleSafe2Go application. It shows the logo of this application. Next, user can sign-in using their email address, phone number, google account and also Apple ID.</p>	<p>Once the user already sign-in, this is the home page of the FemaleSafe2Go application. At this part, user can see the overview of the application such as the to-do-list, travel guides, maps and others. There is also a red alert button that can be use during emergency.</p>	<p>This page shows the daily progress of the user. Every time the sign-in the application, the user can see the travel guide, the alert and the local authorities. There are also setting button and customer service button if the user has some problem.</p>



#### IV. RESULTS AND FINDINGS

By having all this system method, we believe that we can get the accurate information and data about the users. By combining these two technology and support from the government it will be more efficient and precise.

#### IV. CONCLUSIONS

To summarise, owning this FemaleSafe2Go application may provide several benefits to all female travellers. We concentrated on developing a small and simple-to-use application with a safety-based service that includes a tracker and other features for emergency use. Because the safety of our customers comes first, not the bottom line, our application keeps all user data private and secure. We focus on giving a secure travel application with an easy access to female traveller. Last but not least, we believe that FemaleSafe2Go can be more useful in the future.

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