

An AI-Enabled Mobile Safety Platform for Enhancing Women's Security"

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Abstract: *Women in India are active participants in the Indian economy. They are also increasingly contributing to rising employment levels. Although, women mobility in urban and semi-urban India is already increasing, women tend to feel less safe in travelling in public or alone, and therefore, the technology developed to safeguard women is quite primitive and largely passive, which does not allow effective real-time intervention. Such harassment, abuse and crime against women in public spaces at night and in isolated areas is on the rise. The possibility to submit complaints and supported by verified multimedia evidence can now be made through this online reporting module, which minimizes the delay in reporting the incidents to the police and enhances the degree of transparency. The app's system is built on AI and Machine Learning to provide proactive smart protection, such as GPS tracking in real time, SOS alerting, contextual location risk detection and learning in respect to a woman's travel behaviour and location patterns. If an emergency occurs, the woman's live GPS location, audio and video and timestamped evidence are sent to her trusted contacts and the emergency response teams. The e-complaint module assessment revealed that there was a reduction in the response time to emergencies, enhanced documentation of incidents and increased self-confidence in travelling alone. The offered project does not only stop at traditional safety measures but also integrates real-time monitoring, intelligent analytic and safe communications connections to ensure the lives of women are safer and more dependable when traveling.*

Keywords: Women's Safety Application which uses AI, Machine Learning, GPS technology, SOS services, Audio/Video Recording and e-complaint services.

I. INTRODUCTION

The safety of women is a massive concern in the world, both in the developed and developing world. Many of the women continue to experience harassment, violence, and an overall feeling of weakness, particularly when going outside and travelling alone. Crime statistics of different locations and reports reveal that the danger is highest during the daily commute most especially in the late evenings when women are returning to work or college.

Governments and other social agencies have attempted to address it by establishing helplines, CCTV cameras, and responses packages. Although these are helpful, they tend to be working alone. It implies that it may take a long time to respond, and no active mechanism is implemented to prevent the occurrence of incidents.

Tech had opened up new possibilities on the positive side. The development of AI, ML, location-based services, and mobile computing allow us to re-evaluate safety systems. The current smartphones already feature GPS, motion and wireless interfaces; add the appropriate tools and a phone can not only send an SOS; it can also identify danger, alert users and even others before anything becomes dangerous.

Other fields have witnessed great involvement of the populace. As an example, crowdsourced information was used in disaster response, city mapping, and emergency navigation. However, the safety apps of most women are limited to



emergency buttons, panic calls. They seldom perform predictive analytics, community knowledge or collaborative awareness, although that may create an enormous difference in prevention.

To close such gaps, therefore, our study proposes a smart mobile safety platform that is based on the real-time geospatial analysis and AI-based models. Preventing the emergencies is as much as the response to emergencies, which is not simply to react to emergencies. Such features measured as ML-based safety scoring, risk prediction, safe route suggestions, multi-linguistic interfaces, SOS communication, and even mood tracking are planned to be implemented so that it was more personal and comfortable. The system is based on the event-based architecture to ensure that alerts are kept quick and compatible with the next-generation technology of smart-cities.

Of particular deliverables: we have developed a GPS-tracked mobile safety system with SOS alerts and allowing community members to report on the spot. Other AI/ML models that we trained were used to produce safety scores, forecast risks and suggest safer routes according to time, location and events. Our frontend was based on HTML5/JavaScript and the backend was based on Python that connects with mapping and messaging APIs to provide fast feedback to users. Lastly, we did the usability test, response time test, the user trust and the usefulness of the real life public-safety networks.

Concisely, this study will take digital safety systems beyond the simple emergency tools. It believes that by demonstrating how AI-enhanced mobile platforms can be used as intelligent safety companions, it would increase the confidence of women travelling, assist in supporting public safety efforts and aid in the creation of interdependent smart-city ecosystems.

II. LITERATURE REVIEW

The majority of the research on female safety apps tends to investigate such aspects as monitoring the current location of a person, emergency alerts via phone, and, most recently, attempting to predict the possibility of danger. Initially these systems primarily assisted during an emergency. An example is that one system was based on GPS and GSM to assist women in distress. It would be able to send emergency messages containing their actual location to the people they had pre-established contacts. This was aimed at reducing the time of arriving of help during an emergency. These systems are effective at alarms but they do not particularly anticipate risks or observe what is going to happen before it. Later, to overcome these issues, research began to use contextual data analysis and emergency notifications that could be triggered by more than a single event. As an example, Rescue Now includes such functions as SOS notifications and GPS. Neither does it make any noise and it applies intelligent technology to identify dangerous spots and alert you without requiring you to take any action at all times. This actually demonstrates that we are moving towards wiser in addition to more on-top-of-things AI safety solutions, including, but not restricted to, computer vision, which allows them to see, and anomaly detection, which identifies things that are unusual. This allows them to identify suspicious things, such as the sighting of guns. In addition to that, they ensure that all the evidence stored in the cloud is safe, and it is handy regarding legal purposes or investigations. And, these community-based safety platforms also tend to implement machine learning. This assists them to propose the safe routes, to resolve various events and to develop a map indicating where safety complications are prevalent. These apps rely on location data and user-reported data to calculate the riskiness of various locations. This assists them in providing methods of responding to issues once they occur, as well as preventing them in advance. Some more recent versions such as AURA do even more so as far as safety is concerned. They offer various combinations of how things should be felt, augmented reality to guide you, warns in case you enter certain places, and a chat feature to be assisted in the case of a safety issue. All these make people feel more in control and supported in case something goes wrong, as well as some of the problems with the ease of using the apps and their availability, as well as the privacy with which you keep your information. The surveys indicate that such apps to be effective among women of all social classes must provide the support in a large variety of languages, secure personal information, and be introduced in such a manner that all people will be able to use them.

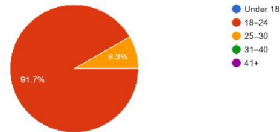
Based on what has been said, it is evident that women safety systems have evolved tremendously. These used to be simple SOS warnings, but they are now much smarter. They involve the application of AI and sensors, as well as entire



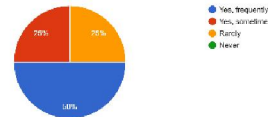
communities. However, much of the solutions available merely examine some aspect of safety. That is why we actually require a mobile application that would have it all in a place: it should be able using AI to predict the danger, assist to address the emergency in a moment, educate people on safety, and be user-friendly. This is what this study is essentially attempting to accomplish.

Results

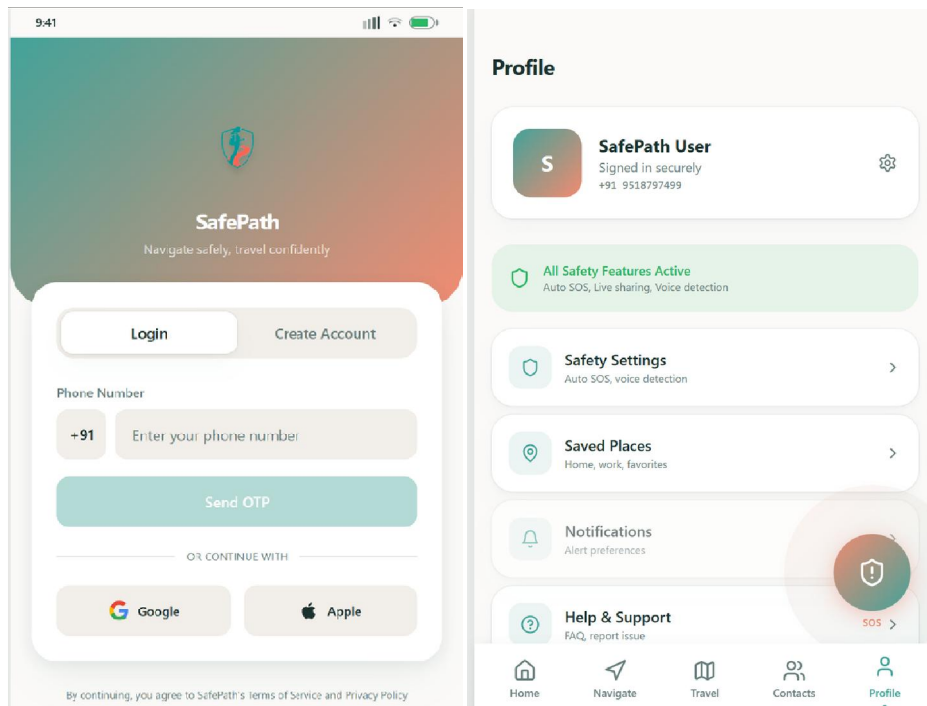
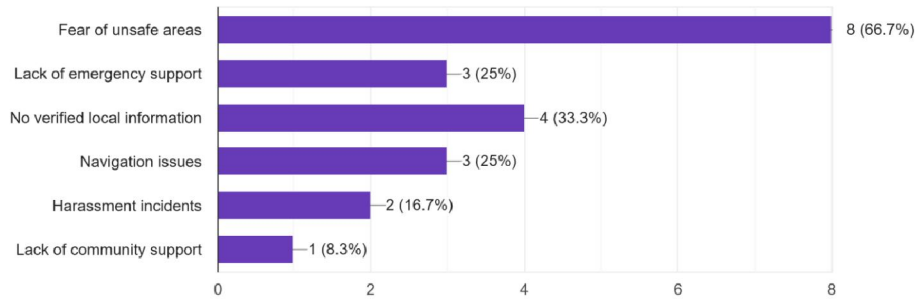
1. What is your age group?
12 responses

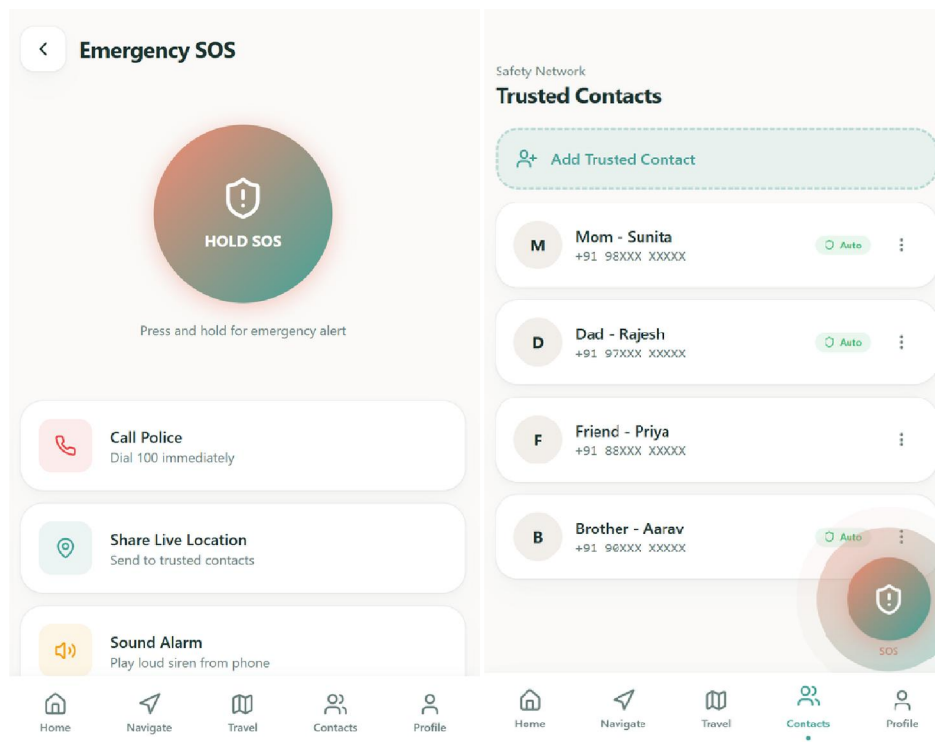


3. Do you travel alone?
17 responses



6. What safety challenges do you face during solo travel?
12 responses





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