

An Integrated Emergency Service and Community Engagement Platform Using Mobile Technology

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Peer Review Information	Abstract
Type: Article Received: 02 July 2026 Revised: 05 Aug 2026 Accepted: 03 Sept 2026 Published: 08 Oct 2026	In a rapidly changing, interrelated world, quick access to emergency services is vital and can be life-saving. This paper describes a new mobile application called “BeSocial” that addresses the need for quick access to essential emergency services like hospitals, police, fire and blood banks. BeSocial links users to the closest emergency facilities, depending on their location, and allows direct communication via the app. In addition to matching users to services in their vicinity, BeSocial also has advanced features that improve the emergency response process. Keywords: Emergency Services; Social Activism; Location-Based Services; Environmentalism; Community Engagement

How to Cite This Article

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Introduction

As society becomes more connected, mobile applications have become increasingly important in addressing major social challenges. BeSocial is an Android app that aims to solve two major social problems: quick access to emergency services and community involvement of activists. It is designed to help in emergency response by providing advanced location-based technology to suggest the closest hospitals, police stations, fire brigades, and blood banks. The app not only delivers location-based data, it also allows users to directly communicate with emergency services via its interface. BeSocial also plans to increase the participation of the community, especially social activists and other organizations. The platform enables non-governmental organisations to host events, share information with other NGOs and engage in a community space through their mobile devices. By encouraging these communications, BeSocial leverages cooperative efforts to promote positive social change. This paper describes BeSocial's architecture, including its user interface and backend systems, and examines the techniques and methods used to support both emergency response and community development. It also discusses the application's social effects, potential benefits, and challenges.

Related Work

The article 'Mobile Augmented Reality Techniques for Emergency Response [1]' explores a mobile app developed through an iterative, user-centred process to assist emergency services using Augmented Reality. AR has been widely applied in areas such as healthcare and crime, and this application intends to help individuals in emergencies [2], [3], [4], [5]. EcoKonnnect provides four carbon footprint calculators: three based on metrics (individual, company, and student) and one based on sentiment, including a special calculator for marketing strategies [6].

EcoKonnnect aims to create a networking app that connects individuals with shared eco-friendly goals and encourages them to sustain eco-friendly habits. Its objective is to advance environmental protection by motivating users to take action. The research paper [4] explored the core aspects of real-time collaborative technology, including its components, types, and related topics. It mainly addressed location privacy issues, reviewing potential attacks and proposed defence mechanisms. Our study identified existing gaps and challenges in this area. Location privacy is vital for Location-Based Services, which rely on users' locations to function. We also reviewed recent research on computational security services, where clients use their locations to access benefits [7]. The paper highlighted various issues and future research directions. Chat-Bots offer user-friendly and easy-to-understand interfaces, particularly in the user's native language. They emulate patient-doctor interactions and make them a natural primary interface. This was verified by a community survey, which showed that Chat-Bots are easy to use [3]. The paper also introduces a system called Health-5G for the support of emergency medical teams through mixed reality. The Health-5G is a distributed system comprising of four interconnected applications: advanced human-computer interaction, real-time video conferencing, medical device integration and communication infrastructure. Microsoft HoloLens 2™ headsets are used for the mixed reality experience. Health-5G allows emergency responders to communicate with remote medical professionals using audio, video and data through the 5G network with mixed reality glasses. This enables specialists to view the scene in real time and guide patients verbally and visually (including gestures and 3D markers) in real time, which can be crucial to patient care and save precious time. Furthermore, Health-5G enables seamless integration of medical devices and patient data acquisition through optical character recognition, thereby assuring scalability and capability. A case study example is provided to demonstrate its use in the management of a patient with atrioventricular (AV) third degree block in the outdoor setting. The study also evaluates latency and performance metrics on a 5G network. As a whole, Health-5G offers a full solution for remote, immersive emergency support, with advanced capabilities and interaction methods that are not reported in the existing literature [8]. The lives and social involvement have been transformed in the last century due to significant urbanisation. As many people are now living in urban areas, urban areas are under increasing pressure to provide increasingly efficient and sustainable public services, particularly in the face of potential impacts of climate change [9]. Emergencies can occur at any moment in these crowded areas, putting lives and livelihoods at risk. Many cities have instituted smart city initiatives for detection, alerting and mitigation in response to urban emergency challenges. This article presents a review of the most recent smart city solutions for crisis management, introduces the concept of emergency systems and classifies them based on the technology employed and services provided. It emphasizes the developments of the Internet of Things, Artificial Intelligence, and Big Data, and discusses their future potential in the field of urban emergency management, and future research directions. The end presents some main obstacles and encouraging developments for future research in urban emergency management. In recent years, the sole method of authentication used to stop unauthorized access, the username/password combination, is proving to be less effective. Organisations can experience substantial losses due to data breaches and sensitive credential compromises that can result in espionage. To counteract this, "Preventing Unauthorized Access to Enterprise Systems Using a Location-based Logical Access Control" introduces a novel framework to enhance security through time and location information. For instance, on a university campus, users who register at certain points would only be able to log in to their accounts in specific zones and during business hours. Unique usernames and passwords were assigned based on location at initial logon, and later logons were authenticated by credentials and location. Access was only allowed if both criteria were true. This system worked well to prevent unauthorised access attempts, including those with stolen credentials and those from malicious remote logins. With the rise of data on the internet, it is becoming

a common problem to be overwhelmed with information. Recommender systems (RS) have been found useful in assisting users in finding relevant information and in enhancing decision making, particularly in the medical field, e-commerce and e-learning. Recommendation tools (RS) are crucial in the health care sector, where even minor bits of knowledge can be life-saving. This paper reviews some of the RS techniques, their applications, and their significance in medical field. The use of GPS in health and ageing studies has been growing and is a non-invasive, objective measure of daily mobility. However, even with GPS indicators, it is difficult to describe mobility exactly due to its complexity. This research investigates the impact of 'virtual information' on the environment, which is measured by cultural values, social media and environmental performance of 30 European countries, by applying two regression models. The findings indicate that cultural factors and social media are both important and have an impact on environmental outcomes when examined in combination. The study points out the importance of an integrated approach to IT and sustainability, suggesting that policies guaranteeing widespread social media access could boost sustainable development.

Proposed System

BeSocial is user-centric and provides a main registration page for login. Registration process checks users by confirming phone number and email address. It offers a user-friendly dashboard for users, administrators and registered members, allowing users to easily navigate through communities. The interface allows users to search for services, which will query the database to get the information. Administrators can enter emergency service information like addresses and contact numbers to create a comprehensive and interactive database. Once the search results are displayed, users are directed to Google Maps for route planning and are able to call service providers with an in-app calling feature. The community feature allows users to communicate, post and engage with other communities, and all information is safely stored in a dedicated community database. There are 3 parts to the system: Admin (where emergency information is entered), User (where users can search for services) and Community (where activities are recorded in the system). Feedback procedures enable users and administrators to give input which helps in continuous improvement.

Admins can learn from communities about their challenges and insights, and make improvements and adjustments based on that. In summary, BeSocial aims to provide a comprehensive, interactive platform that seamlessly bridges the gap between users and emergency services while fostering community engagement.

Working Of the System

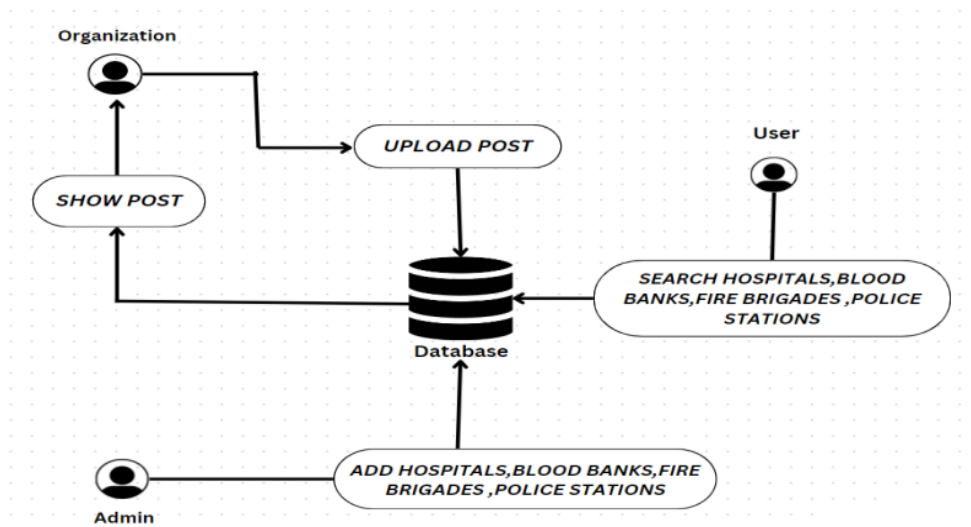


Fig. 1. System Design

The system design of BeSocial application is shown in figure Figure 1:

- **Registration:** The core module is a central module that is required in any system to handle user registration credentials for login. It only deals with the login procedure and typically asks for basic information like the valid phone number and email ID during registration.
- **UI:** This user-friendly interface displays the Dashboard to users, admins and registered communities, and allows users to search for specific services.
- **BeSocial's Internal Working:** This module explains how the system works, including Admin, User, Community and their interactions. The Admin enters emergency service information (addresses, contact details, etc.) into the database. These services are searchable by users, the system processes their search, shows the results and guides them to the location on Google Maps. They

can also call the providers directly using the in-app call tool. Furthermore, the Community part allows members to post updates, chat, join other communities, or check out other communities' posts. This information is all stored in the Community database.

- **Output:** The app retrieves the user's search query from the database and then redirects to Google Maps depending on the results. Users can see directions to emergency services, the provider's contact number, and can call them directly from the app.
- **Feedback:** Input will be collected from users and community through the feedback system. This feedback and reviews will be analysed by the admin to understand user challenges and make the required changes. Also, users can rate or give positive feedback. All data created by BeSocial will be stored in the storage component. The amount of data generated by BeSocial is large, which means that storage requirements are high.

Implementation

The BeSocial app has three major parts: the front end, back end, and database. The frontend client is connected to the backend (BeSocial system), which is responsible for managing the database updates. The database contains different types of data such as authentication data, user profiles, and social exchanges. When users submit requests, the backend handles them and executes the appropriate database queries.

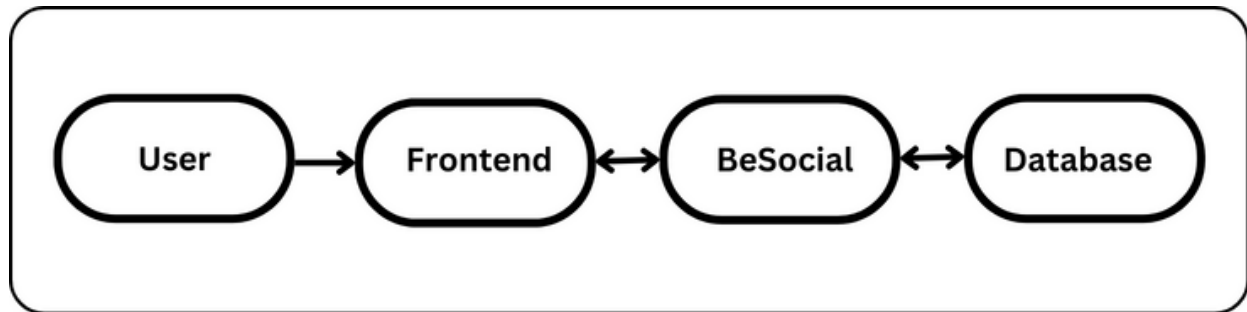


Fig. 2. BeSocial Application Architecture Overview

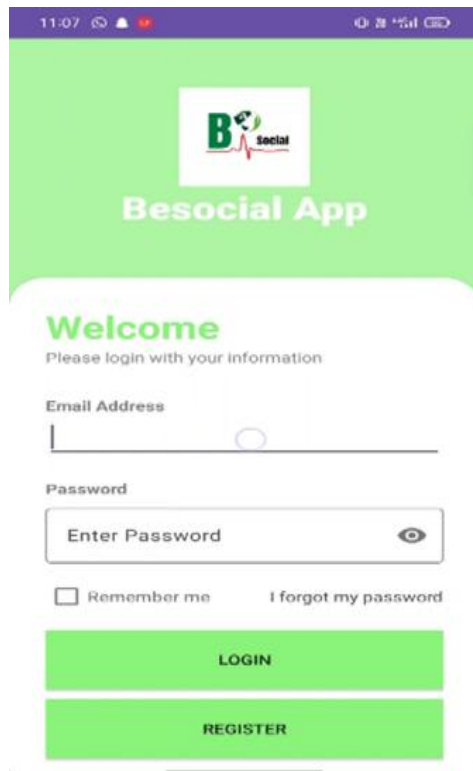


Fig. 3. Login Page

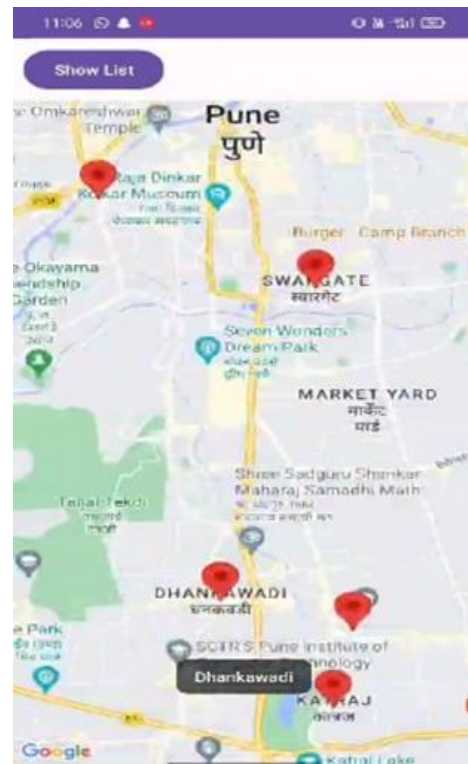


Fig. 4. Recommending Emergency Services



Fig. 5. In-app calling

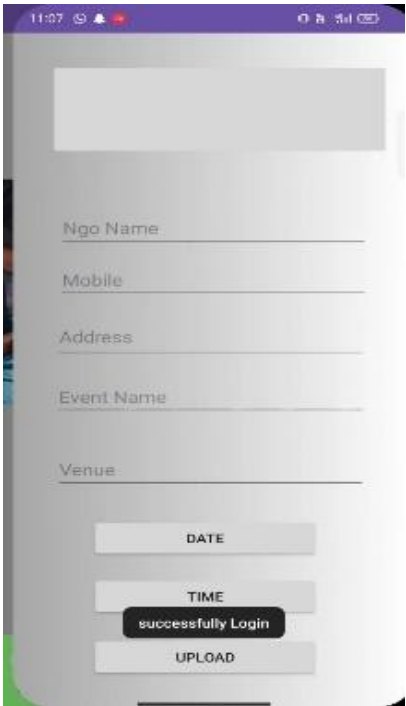


Fig. 7. Post Uploading

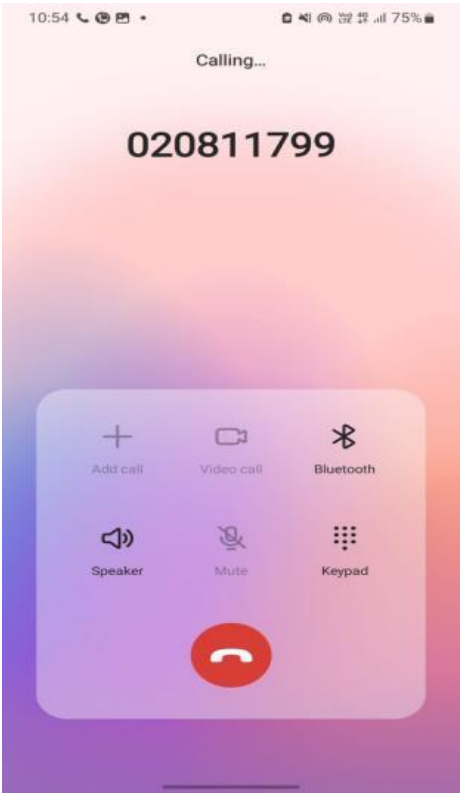


Fig. 6. Calling Emergency Service Provider

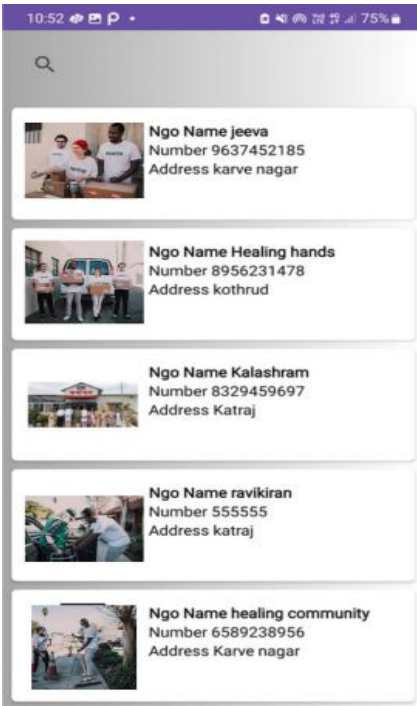


Fig. 8. Show Existing Posts

Results And Discussion

The graph shows a comparison of traditional emergency services (visiting the emergency department) and BeSocial emergency services across a range of factors including efficiency, accessibility, speed and reliability. All the parameters are rated from low to high where higher the value better the performance.

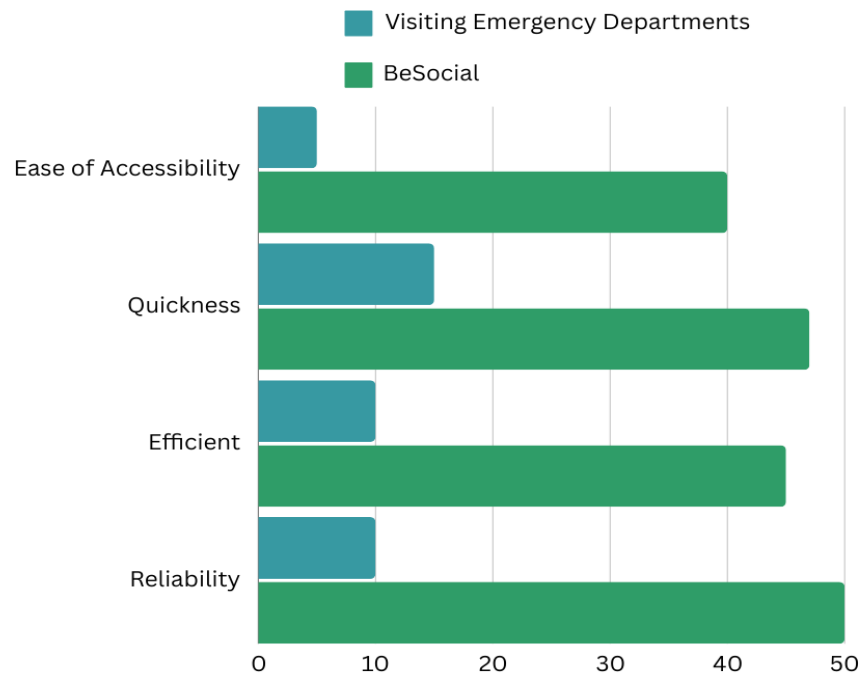


Fig. 9. *Traditional Emergency Services vs BeSocial*

1. **Efficiency:** The emergency services provided by BeSocial are more efficient than traditional services, like in-person visits [10]. A key measure of efficiency is response time, the time from when a user requests help to when they receive it, which is optimised by quick and accurate response to emergencies and effective communication among users, responders and community stakeholders. BeSocial decreases the response time, which benefits individuals in distress, decreases the risk of harm, and allows for immediate action in emergency situations.
2. **Ease of Access:** The emergency services offered by BeSocial are more accessible than traditional services, such as visiting in person [11]. The app has an intuitive interface that allows users to call for emergency assistance in a simple and efficient way, with a few taps. It automatically detects the location, which further simplifies the process, as it doesn't require manual entry of an address. This saves time, effort, and makes it easier and more convenient for the user to access in an emergency.
3. **Quickness:** BeSocial's emergency services respond quicker than normal services like on-site visits [10]. The data indicates that the emergency responders are quick to respond to requests through the BeSocial app [12]. The app features real-time tracking and notifications, ensuring that nearby responders are notified of incoming requests, ensuring timely response. Moreover, BeSocial's integration with the emergency service providers allows for a seamless coordination of resources and dispatch, further minimizing the response times.
4. **Reliability:** As can be seen in the graph, the emergency services offered by BeSocial are very reliable and offer a consistent and trustworthy service [13]. This reliability is due to BeSocial's robust infrastructure and skilled responders, ensuring that emergency requests are processed promptly and efficiently. The platform uses state-of-the-art algorithms and protocols to prioritise and route requests by urgency and location, reducing delays and guaranteeing quick assistance [7]. Additionally, the community-based approach of BeSocial fosters trust and accountability among users and responders, enhancing the platform's reliability and effectiveness in emergencies.

In conclusion, the graph illustrates the advantages of using BeSocial emergency services over traditional face-to-face visits, suggesting its potential to enhance emergency response and outcomes for individuals in need. The results show how important technology is and how important community involvement is in the innovation and optimisation of emergency services in today's society.

Conclusion

BeSocial is a full-featured Android app combining emergency services with community-building capabilities. It allows users to locate the most reliable and nearest help by using geolocation and real-time communication. The application also fosters an active community of social activists, facilitating the organisation of initiatives, information exchange, and connections among individuals with shared values. By combining these features, BeSocial enables quick emergency response and encourages positive social change, strengthening individuals and groups to collaborate for a safer, more engaged society. The main goal was to develop a more efficient way to access emergency assistance, which is essential for saving lives.

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