# Mobile Apps and Sustainable Development of Voluntary Organizations

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**Abstract:** ICT support in voluntary organizations is an interesting emergent field of research. The voluntary organizations are aware about the use of technology in their activities but the complexity of technologies, lack of technological knowledge, lack of funds and lack of standards are big obstacles. There is a need to transform the operation and structure of these organizations, as the roles and functions of voluntary organizations have significantly expanded in recent years. The current research objective is to investigate the current scenario of the implementation of ICT by the voluntary organizations. The objectives of the study were to study the usage of ICT, impact of ICT and satisfaction level of ICT in voluntary organizations, also to study the issues and challenges they are facing. The study was conducted in and around Pune. Questionnaires were managed to various voluntary organizations and the results of this are analyzed. Based on the investigation, recommendations are made and mobile application using open source technologies is suggested.

**Keywords**: Information and Communication Technology, Voluntary Organization, Open Source

## Introduction

This study will focuses on the functions of voluntary organizations in education sector, the importance and role of Information and Communication Technology in voluntary organizations, the use of Information and communication technology for smooth execution of various activities in voluntary organizations. The findings of this study will be useful in providing an insight into the extent of ICT usage in voluntary organizations, their satisfaction level, the challenges faced by voluntary organizations while adopting ICT and the voluntary organizations' perception about the use of ICT

The study will proposes open source framework for ICT implementation in voluntary organizations and also suggests mobile application.

## Research Design

Research Design is descriptive. Voluntary organizations which are using ICT and are located in and around Pune city and work for education of various target groups are selected. The organizations' selection is based on various lists published by authorized government organization Niti Aayog's portal NGO Darpan (ngodarpan.gov.in). Simple Random Sampling technique is used. Sample Size is 107 (43% of the population). Data Collection was made on following aspects. Extent to which ICT is used in Program Implementation, Volunteers Management, Fundraising, Financial Management, Campaign Management, Web Content Management, Donors Management, External Communication, The reports generated through use of ICT, The helpfulness of these reports and the satisfaction level, the challenges faced while incorporating ICT and the impact of use of ICT in various functions and perception of voluntary organization towards using freely available ICT tools.

## Data Analysis and Interpretation

### 1. Use of ICT for Volunteer Management functionality

Considering various extent of use i.e. great extent, moderate extent and some what extent together 59 (55%) respondents are using development of job description functionality followed by 49 (46%) respondents using Orient/train new volunteer and Evaluation of volunteer functionality. It is observed that the least used functionality in volunteer management is Timely communication for retaining volunteer, 70 (65%) respondents and second last least used functionality is Acknowledge/Recognize volunteers' contribution or efforts 67 (63%) respondents. Reporting is also comparatively less used functionality 56 (52%) respondents in volunteer management function.
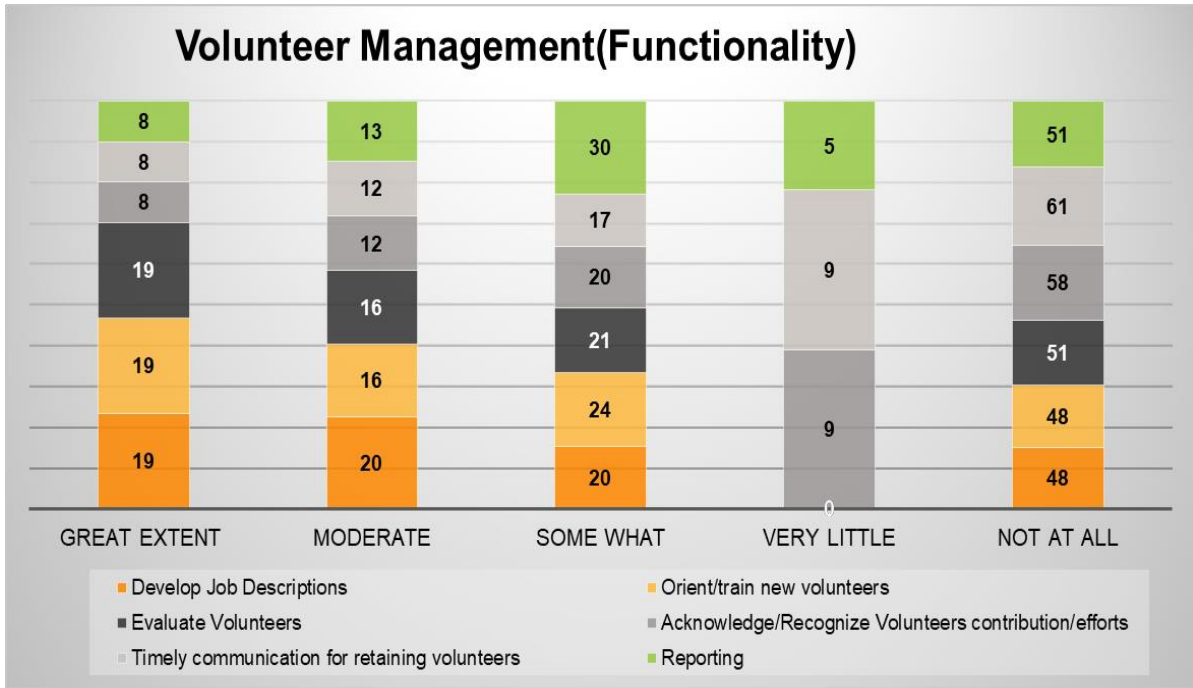
Chart 1 Volunteers Management (ICT use in functions)

**2. Satisfaction Level with the use of ICT for Volunteers Management**

It is clearly indicative from following graph that, only 8 respondents form each category of the responses chosen Very Satisfied option for Helpfulness of report related to volunteer management. Same is the case with Very dissatisfied about the either category of the report. Only 9 respondents voted for the same. As per 27 respondents, the level satisfaction is at satisfied level for Job allotment, as per 28 respondents for volunteers' training, 9 respondents for volunteers' activity report and no one chosen for volunteers' performance. The most selected option from either category of the report is Dissatisfied. According to 37 respondents for volunteers' activity report, 26 respondents for volunteers' performance, 20 respondents for Job allotments and 15 respondents for volunteer training voted for dissatisfied option in the case level of satisfaction of the report. 4 respondents given neutral response in the case of Job allotment category report.
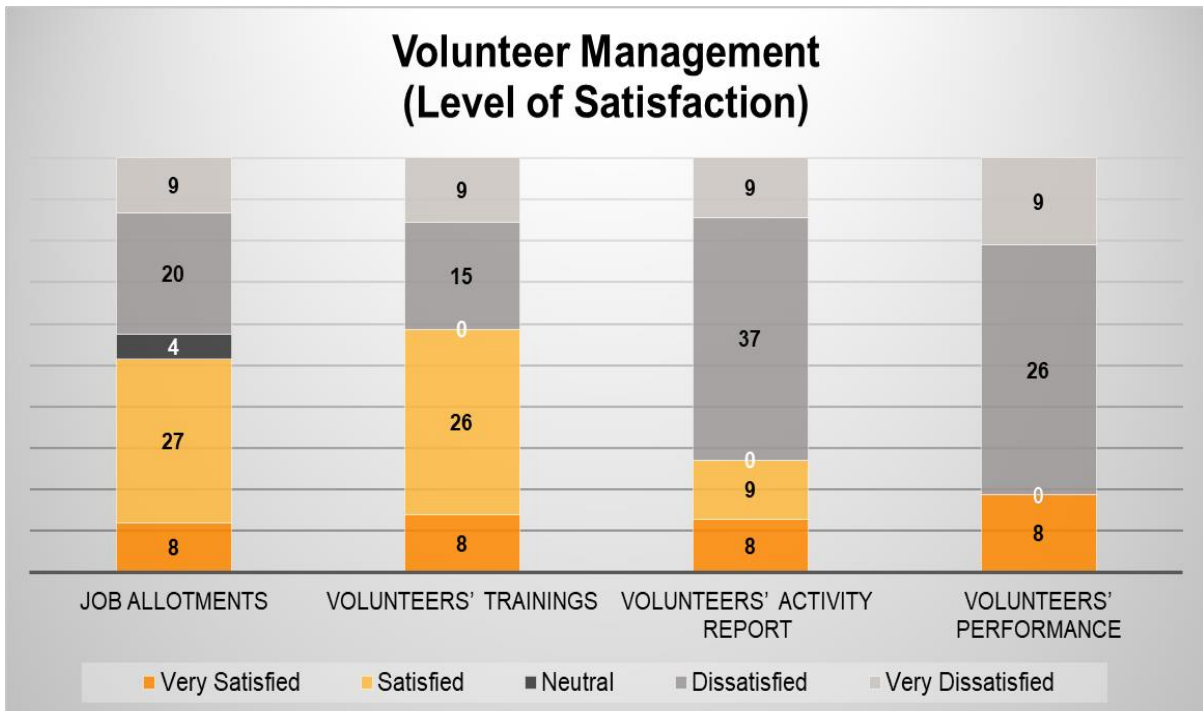


Chart 2 Volunteers Management (ICT use- Satisfaction Level)

**3. ICT Collaboration Challenges**

**Issues and Challenges while using ICT**

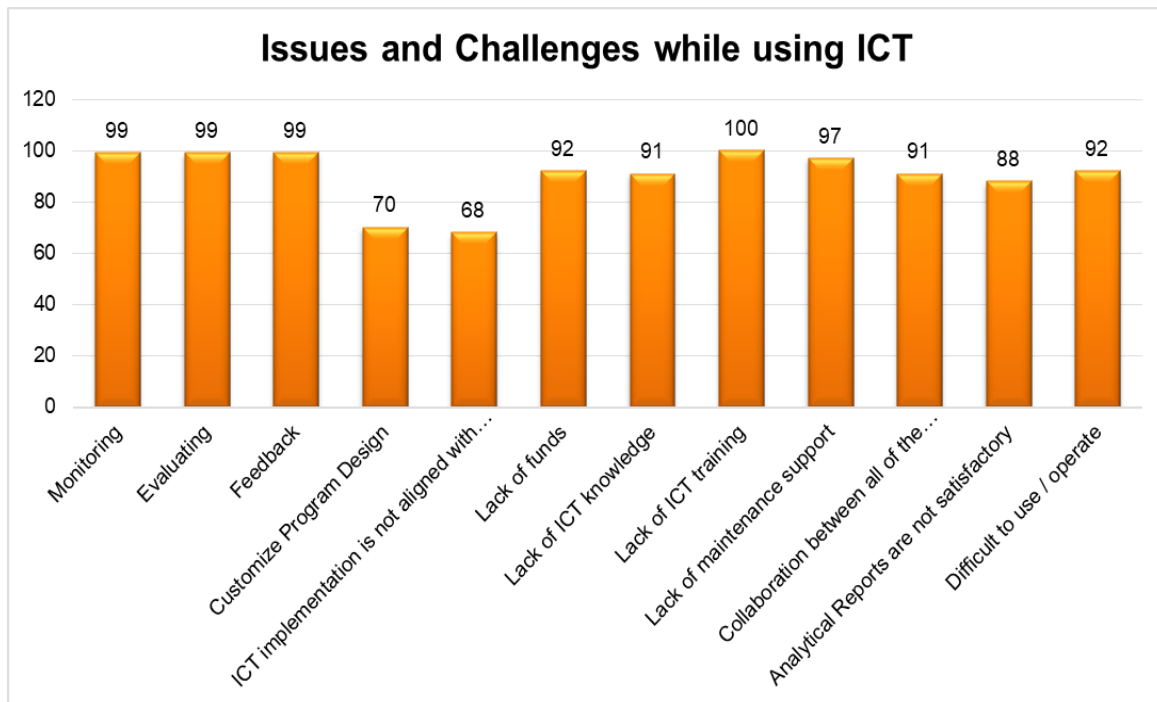| Category | Value |
|---|---|
| Monitoring | 99 |
| Evaluating | 99 |
| Feedback | 99 |
| Customize Program Design | 70 |
| ICT implementation is not aligned with… | 68 |
| Lack of funds | 92 |
| Lack of ICT knowledge | 91 |
| Lack of ICT training | 100 |
| Lack of maintenance support | 97 |
| Collaboration between all of the… | 91 |
| Analytical Reports are not satisfactory | 88 |
| Difficult to use / operate | 92 |

Chart 3 ICT Use- Issues and Challenges

Lack of ICT training is highlighted issue 93% of the respondents, followed by Monitoring, Evaluating and Feedback by 92% respondents. The next specified challenge is Lack of maintenance support for ICT tool (91% of the respondents) followed by Lack of fund (86% of the respondents) for the ICT tool. Further Difficult in use or operation is one of the challenges specified by 86% respondents while Collaboration between all of the stakeholders is also one of the issues as per 85% respondents. Analytical Reports are not satisfactory as per 82% of the respondents. Comparatively less issue observed in the case of Customize Program Design as per 65% respondents and in the case of ICT implementation is not aligned with the process as per 64% of the respondents. This directs towards necessity of training and development of voluntary organization for the use of ICT tool/s

4. **Impact of ICT Implementation**

**Impact of ICT on voluntary organizations**

Legend: ■ Very Satisfied ■ Satisfied ■ Neutral ■ Dissatisfied

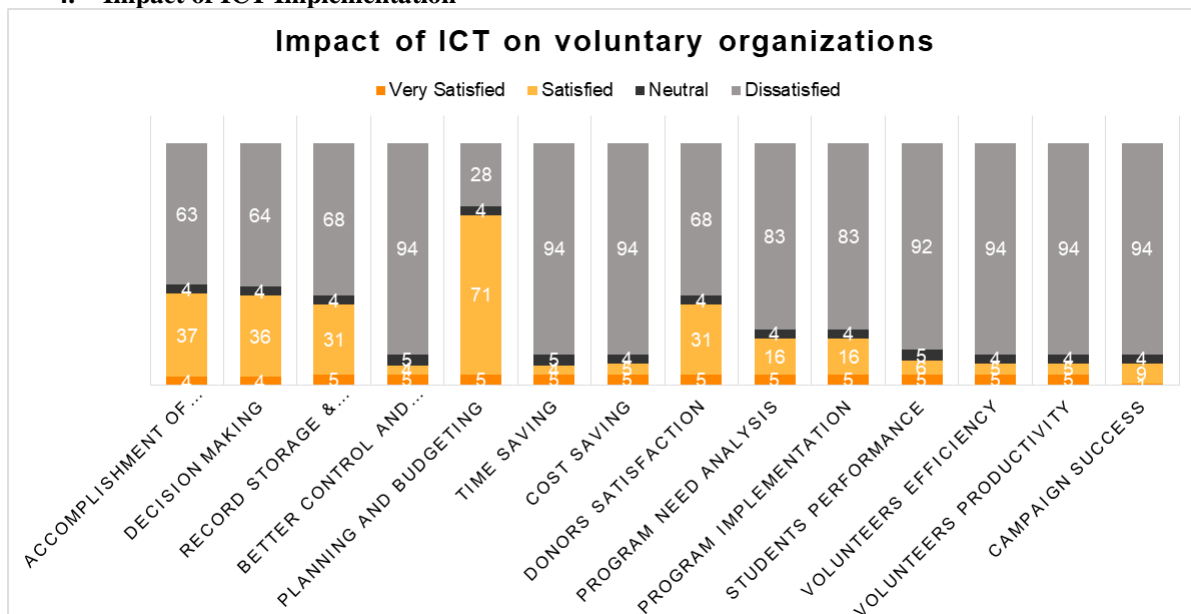| Category | Very Satisfied | Satisfied | Neutral | Dissatisfied |
|---|---|---|---|---|
| ACCOMPLISHMENT OF … | 4 | 37 | 4 | 63 |
| DECISION MAKING | 4 | 36 | 4 | 64 |
| RECORD STORAGE & … | 5 | 31 | 4 | 68 |
| BETTER CONTROL AND … | 5 | | | 94 |
| PLANNING AND BUDGETING | 5 | 71 | 4 | 28 |
| TIME SAVING | 5 | | | 94 |
| COST SAVING | 5 | | | 94 |
| DONORS SATISFACTION | 5 | 31 | 4 | 68 |
| PROGRAM NEED ANALYSIS | 5 | 16 | 4 | 83 |
| PROGRAM IMPLEMENTATION | 5 | 16 | 4 | 83 |
| STUDENTS PERFORMANCE | 5 | | | 92 |
| VOLUNTEERS EFFICIENCY | 5 | | | 94 |
| VOLUNTEERS PRODUCTIVITY | 5 | | | 94 |
| CAMPAIGN SUCCESS | 9 | | | 94 |

Chart 4 ICT Use- Impact

Impact of ICT implementation is not encouraging, as 84% of the respondents are dissatisfied with most of the organizational functionality. Only Planning and Budgeting taken positively by the respondents.

**5. Paired Sample Test for variables associated with ICT Implementation and its effectiveness**

| | | Paired Differences | | | | | | | |
| | | | | | 95% Confidence Interval of the Difference | | | | |
| | | Mean | Std. Deviation | Std. Error Mean | Lower | Upper | t | df | Sig. (2-tailed) |
|---|---|---|---|---|---|---|---|---|---|
| Pair 1 | PIAVG - ICTIEAVG | -1.20093 | .69773 | .06745 | -1.33466 | -1.06720 | -17.804 | 106 | .000 |
| Pair 2 | VMAVG - ICTIEAVG | -2.06542 | 1.33371 | .12894 | -2.32105 | -1.80979 | -16.019 | 106 | .000 |
| Pair 3 | FMAVG - ICTIEAVG | -1.39052 | 1.22719 | .11864 | -1.62573 | -1.15531 | -11.721 | 106 | .000 |
| Pair 4 | FRAVG - ICTIEAVG | -2.23976 | 1.61249 | .15589 | -2.54882 | -1.93071 | -14.368 | 106 | .000 |
| Pair 5 | CMAVG - ICTIEAVG | -2.32839 | 1.80792 | .17478 | -2.67491 | -1.98188 | -13.322 | 106 | .000 |
| Pair 6 | DMAVG - ICTIEAVG | -1.67623 | 1.37855 | .13327 | -1.94045 | -1.41202 | -12.578 | 106 | .000 |
| Pair 7 | COAVG - ICTIEAVG | -2.15421 | 1.81237 | .17521 | -2.50157 | -1.80684 | -12.295 | 106 | .000 |
| Pair 8 | CTAVG - ICTIEAVG | -1.65643 | 1.29849 | .12553 | -1.90531 | -1.40756 | -13.196 | 106 | .000 |
| Pair 9 | PFAVG - ICTIEAVG | -1.83899 | 1.12493 | .10875 | -2.05460 | -1.62338 | -16.910 | 106 | .000 |

Table1  Paired sample test analysis

The highlighted values are supporting difference between mean of variables stated above. It is also observed that, the important variable mean value of PFAVG which is the variable mean of all the parameters related to performance of voluntary organization having difference of mean with the mean value of variables associated with ICT adoption. (as the p-value is < 0.05). In current scenario, ICT adoption is not positively significantly correlated with performance of voluntary organization.

**Findings**
- Lack of ICT training is the most emphasized issue in the case of ICT tool in use
- Through current level of use of ICT, monitoring, collaboration with all stakeholders, lack of maintenance support, lack of ICT knowledge and report generation are the major challenges
- 86% of the respondents expressing difficulty in finding sufficient funds for ICT
- Impact of ICT implementation is not encouraging
- Necessity of ICT tool is highlighted by the respondents
- Awareness about freely available tool is comparatively less
- Effectiveness and Enhancement in functionality with help of ICT tool and reports is agreed by the respondents

**Suggestions**

**1. Use of Open Source**

There are many practical reasons why voluntary organizations should use open source software. The main reason is cost. There are no license fees, no mandatory upgrades, and no external costs. The organization can customize the code to meet your needs. It is easy to modify the code to best suit the needs of an organization. There is no need to track license agreements. In case of open source, there are fewer legal headaches, as there are very few lawyers involved with Open Source litigation, which is not the case with the "software manufacturing" model. Open source operating system is very stable. Open source tools are becoming user-friendly to use and the more time and effort is put into them, the better they become.

**2. Mobile App can be the an ultimate solution**

Conventionally, non-profit organizations, or NGO's, have had to rely on minimal advertising and physical donations in order achieve their goals. However, with the invention of smartphones, NGO's now can develop their own mobile applications which immensely expand their capabilities. They can increase the amount of advertising for their respective organizations, as well as accept digital donations, but apps make it easier to regularly engage with volunteers, and manage large events.

**3. Benefits of Mobile Application**

Mobile Technology is the fastest growing operating system of smartphone device and is becoming increasingly popular with each day. It has a very wide range for creating apps for users across the globe. Mobile Application is nowadays necessary for all the business. Many start-ups and big enterprises are now moving to high-quality mobile application which will strengthen your business's competitiveness. Every year, mobile devices become more sophisticated, robust, and ubiquitous in nature. This allows mobile devices such as smartphones and tablet computers to run more complicated programs, send and receive data faster, and operate in more remote areas of the globe with each passing year. Mobile application platforms are powerful tools for helping organization's track important information. Mobile apps can be a tremendous help from mobile data capture to track beneficiary and donor information, volunteers job scheduling, stock reporting, route planning, and dozens of other significant functions. Reports on the supply inventory of your organization can be produced more readily

using electronically recorded data on a mobile device, making it easier to prevent losses in the often messy circumstances surrounding the delivery of assistance to crisis communities. Best of all, mobile application platforms put these tools on devices that your in-field volunteers can easily carry around with them. As the mobile application platform sits at the center of the flow of data and information between the back-office and field based volunteers, it is therefore essential that the mobile application platform can exchange data with the other key systems within the organization.

By integrating the mobile application platform with the voluntary organization's CRM and ERP, systems we can enable significant operational efficiencies.

• Beneficiary Database – where a voluntary organization maintains beneficiary records in a central database, by extracting the relevant fields from the central database, we can make this information available on a mobile device to the program volunteers in the field. Updates from the field to the beneficiary database are synchronized back to the central system to ensure that the central database remains updated with the most recent information.

• Program Implementation – where the organization maintains a central beneficiary database system, we can enable volunteers and staff in the field to view the records and update about their performance levels, thereby maintaining accuracy of the information.

• Financial Management- Integration with the organizations' core financial system can enable enhanced financial control and monitoring of program and staff costs.

• Staff and Program Expenses – By enabling field based staff to input time allocated, materials and resources used, and expenses incurred, against specified tasks, activities or programs and by integrating this information with back-office financial systems we can streamline both the approval and sign-off process and also financial accounting and reporting.

• Communication- Integration between the mobile enterprise platform and third party SMS Gateways can enable voluntary organizations to enhance the donations and also to maintain communication with stakeholders like donors and other voluntary organizations. You can push notifications to your followers on any device to increase awareness and let people know the activities you organize. People can read your messages anywhere anytime.

• Donations- Integration between the mobile enterprise platform and third party Mobile MoneyPlatforms can enable voluntary organizations to enhance the donations. Donors can conveniently donate from their mobile phones.

• Events and Campaigns- People can rapidly look up their activities, synchronize them with their calendars, read event information, speakers, sponsors, and even get the contact information straight on their mobile devices.

• Social Feeds- Blog updates, FaceBook, Twitter, feeds can now are seen on the mobile devices without going to multiple site locations. People spend more time on FaceBook than any other website, people can share, comment on organization's social media places conveniently and make voluntary organization more popular

• Reporting- Comprehensive, enterprise wide management, donor and operations reporting within any large organization will usually require data from multiple sources. This will, in most circumstances, require systems to be capable of sharing data. This becomes particularly important within voluntary organizations that operate across multiple regions and multiple program types where the aggregation of data from these regions / programs is required to enable data based comparisons to be made and the appropriate learning to the extracted.

4. **Mobile App for Volunteers' Management**

Volunteers cut costs for voluntary organizations by generously donating their time to the organization and getting work done without depleting budgets. Instead of payment, volunteers are gaining precious life experience, interest-field expertise, and job satisfaction that really makes a difference. Without volunteers, the costs of running a voluntary organization would be significantly greater, and progress significantly slower. Volunteers make voluntary organizations more effective in getting the work done, and everyone gains something in the process. The researcher has made an attempt to develop mobile app for volunteer's management in voluntary organization.
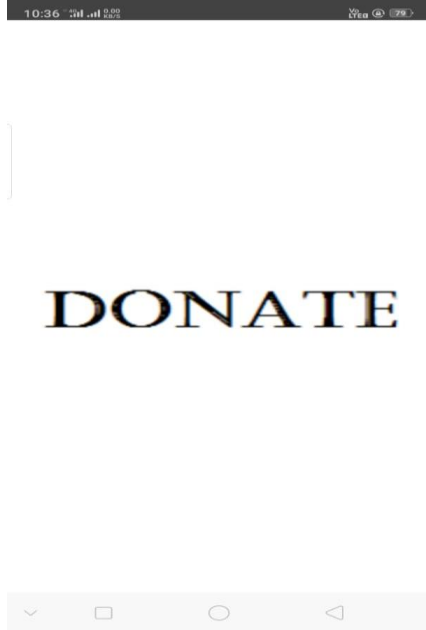
In this mobile app voluntary organization can provide information about their organization, including all the events and activities to engage with the people that support them. Through this app volunteer can register and join the events and project.
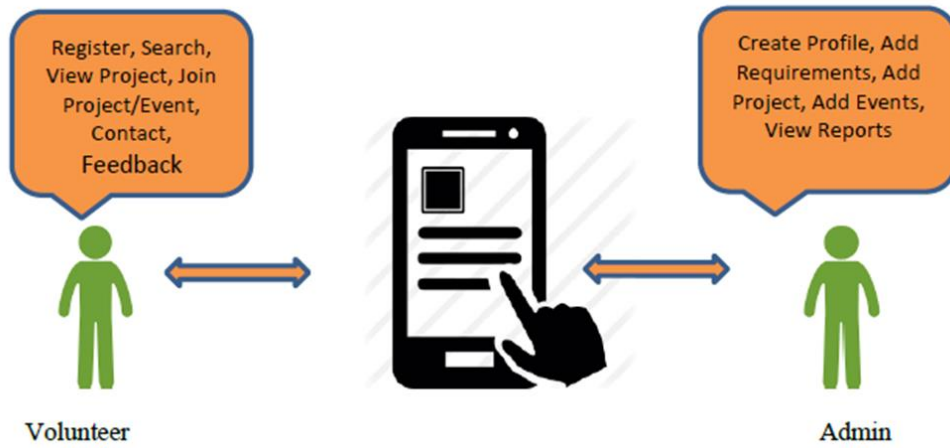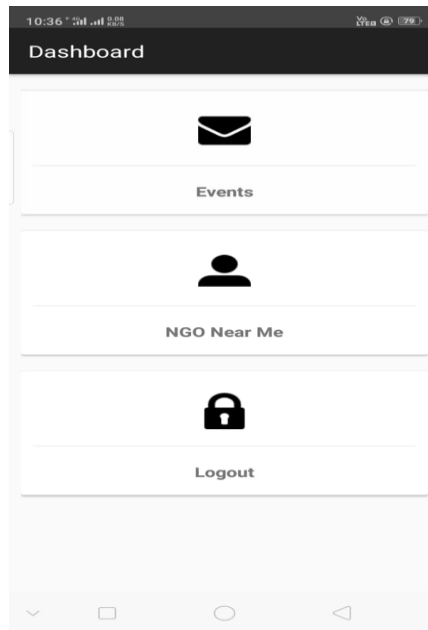
**5. Technology Used**

Spring MVC Architecture, Restful Java API, MySQL

**6. Screen design of mobile app**



Home screen                                  Dashboard

Volunteer Registration



NGO Registration



NGO Registration
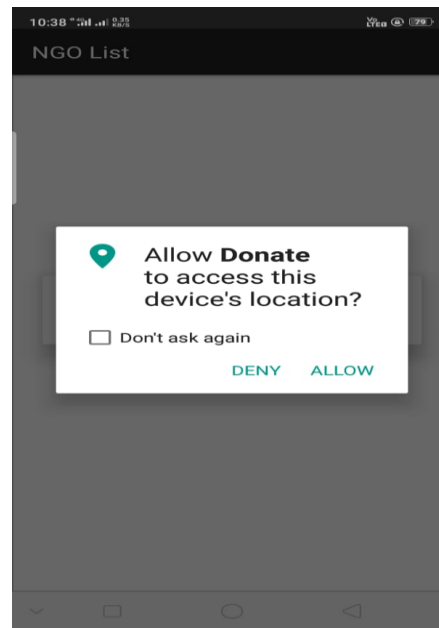


NGO Registration
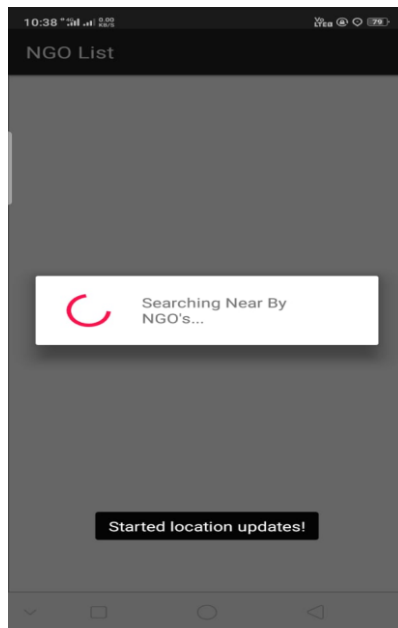
Search nearby NGOs                    Access Device Location

The features of this app are

1. Include the history, mission and vision of your organization

2. Add rich information about the projects they are working on: description, images, videos

3. Add information of their specific requirements as well as the events of an organization and members can get involved

4. Send push notifications, "Whatsapp" like messages with information about the activities and events they can participate.

5. Include your social networks twitter, facebook, youtube, instagram

6. Volunteers can register and search nearby location's voluntary organizations

7. Volunteers can view the events and project going; they can join for an event or project by filing some mandatory information.

8. Volunteers can contact an organization through phone, email or a form. Just one touch on the screen, and they can contact.

9. Volunteers can spread message by sharing feedback and first hand experiences to attract more volunteers to help with their cause.

10. Donor can search voluntary organization to fulfil specific requirements of voluntary organizations

**Conclusions**

The study investigated the influence of ICT on the performance of voluntary organizations.  Using apps could be an effective and efficient way to reach, engage with, scheduling of tasks for and track volunteers. Unlike using laptops or tablets, people often carry their smartphones all day long. Efficiency and effectiveness of the tasks, appointments and planning for events will be made easy by mobile technology hence influencing performance voluntary organizations. The uses of mobile technology lead to cost saving practices on labour, stationery and data. The study recommends further research to be carried on impact of mobile technology on performance of voluntary organizations; effect of mobile technology on employment in voluntary organizations.

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