

‘Shakthi’: An experimental study on developing and testing a mobile phone application to bring legal redressal awareness to young women of India

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Abstract

‘Shakthi’ was a mobile phone application launched in Chennai, India, as an experimental study by the authors with the goal of spreading awareness of legal redressal procedures available for women in the Indian legal system. In India, many heinous crimes against women remain under reported. Reasons being social stigma, patriarchal notions, illiteracy, and most importantly, lack of awareness about reporting these crimes. Translated as “The female power”, the ‘Shakthi’ app was promoted among young women (in the age group of 18-25) for a period of 30 days. ‘Shakthi’ was built for Android phones and was tested real time on a focus group of 50 young women participants. The prototype addressed topics like: what is a First Information Report (FIR) and how to file one, redressal process for those sexually harassed at work place and so on. The participants were asked to fill a pre- test questionnaire followed by the installation of the application on their respective smart phones. They were encouraged to use the app throughout the study period; after which, they were asked to answer a post- test questionnaire. The analysis helped learn how the subscribers used the service, what they learnt from it, what they like and dislike about it and whether the service influenced their awareness. Participants were keen on learning more information under more titles that pertain to women rights. *Shakthi*, was designed with the limits to understand the demands and gauge the need for legal awareness and how a digital platform can engage them. Future projects or continuation of this study should help equip women gain more knowledge on how to address other grievances caused by crimes against them, with more information and add meaning to the technology enhanced lives of women in developing countries.

Introduction

In 2005 in India, it was recorded that only 6 in every hundred crimes committed against women by men were reported. In 2013, the year the infamous Nirbhaya took place, it was recorded that for every one lakh total population **523 crimes** (other than women crimes) were registered. For every one lakh women population, **52 women crimes** were registered. Many heinous crimes against women are mostly under reported. Reasons being social stigma, patriarchal notions, illiteracy, and most importantly, lack of awareness about how they can report crimes and offences against them. Urban, well- educated women still find it difficult to report crimes because of the assumptions that reporting any form of violence is a tedious job. But, the process of filing a complaint and seeking justice is a comparatively easier job, once the Indian Law System and the path to seek redressal is understood. As women, in a developing country like India, where the rate of crimes seem to be going up day by day, it is up to themselves to secure their lives and learn how to attain justice for many crimes committed against them.

The Indian Law is a huge system, there are provisions and punishments for every form of crime, from a petite- pick pocket to rape and murder. But many women shy away from reporting a crime because of their lack of knowledge on how to file complaints and what happens next.

Smartphones have become an integral part of everyone's lives. Information from around the world is now accessible within the touch of a finger. But there are a lot of necessary information that we need to know, go unheard of. One of them is the process of seeking redressal for violence committed in any forms. Developing a mobile phone application where women can learn the process of filing a complaint and knowledge of what happens next, will not only empower them with legal awareness, but also the power to help someone in need. The study analyses how the application will serve as a 'comprehensive legal redressing guide' for young women between the age group of 18- 25 years old in understanding their rights and procedural application of the same. As technology develops, and more and more mobile phone application are developed with various uses, a mobile phone application to learn and create awareness about how a complaint can be filed and

understanding the judicial process will help every woman feel safe and break the social stigma of reporting any form of violence or offence against women.

The research was conducted with a mobile phone application containing information regarding the redressing procedure according to Indian laws and acts pertaining to women under the topics of Domestic violence, Sexual Harassment at workplace, Cybercrime and a General category where the basics of filing a complaint will be included.

The research helped evaluate the usability of such a mobile phone application - a modern digital medium- the depth of awareness hence created on using it.

The following will be the flow of process:

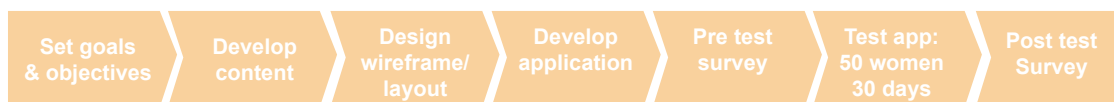


Fig 1. Flowchart of process of study

Prior to installing the application, a questionnaire was presented to the participants. After the 30 days time frame, the participants were again made to answer another questionnaire and the study will help identify if the emerging digital medium is a feasible platform to spread awareness about the basic legal provisions available for women in India.

Aim

To develop and test the usability of a mobile phone application for spreading legal awareness specific to women between the ages 16-25 in Chennai.

Objectives

1. To develop a mobile phone application containing information regarding laws and acts pertaining to young women.

2. To analyze how the application will serve as a ‘comprehensive legal guide’ for women in understanding their rights and procedural application of the same.
3. To evaluate the usability of such a mobile phone application and the depth of awareness hence created on using it.

Limitations

- Too many laws in the IPC, hence the App will concentrate more on the basics of important laws that young college going girls want to learn more about and concentrate on its procedure (filing a complaint, etc.)
- There are multiple existing apps that concentrate on the safety of women and legal awareness (Fig 2).



Fig 2. Snapshots from other mobile phone applications that pertain to women safety and (or) law

- Testing the App on a limited audience may not give completely reliable results, however due to the limitations of time and monetary resources, the test will be carried out on the 30 selected participants for thirty days.

Telecommunication revolution in India

Since liberalisation, Indian Telecommunication Sector has undergone plenty of institutional restructuring. Presently, the Indian Telecom market is one of the fastest growing telecom markets in the world, particularly by the unparalleled growth in mobile telecommunication. India is currently one of the largest telecom market, globally. Indian telecom network has 787.29 million connections as on 31st December 2010 with 752.20 million wireless connections. There is an addition of over 18 million connections per month making the Indian Telecom sector strong. The target of 600 million telephones by the end of 11th five-year plan has been achieved in February, 2010. With such a quick growth, the 12th five-year plan targets became easily achievable. (Papori B. & Rashmi B., 2014). Many telecom players have now laid their feet in the Indian market which gives all the more options to the consumers. There are millions of subscribers in India alone, making a huge contribution to India's progress in development. India adopted a *phase* approach for transforming the telecom sector from the beginning. The opening of the sector has not only led to rapid growth but also helped a great deal towards maximisation of consumer benefits in the arena of telecommunication.

The amount of competition has also helped in swift development and introduction of new modern technology at competitive tariffs. Telecom sector has witnessed a continuous rising trend in the total number of telephone subscribers. From a meagre 22.8 million telephone subscribers in 1999, it has grown to 621.28 million at the end of March, 2010. The total number of telephones stands at 787.29 million as on 31st December 2010 showing

addition of 166.01 million during the period from March to December 2010. Wireless telephone connections have contributed to this growth as the number of wireless connections rose from 35.61 million in 2004 to 584.32 million in March, 2010 and 752.20 million as on 31st December 2010. The Wireline started to decline from 40.92 million in 2004 to 36.96 million in March, 2010 and 35.09 million in December, 2010, albeit it is stagnating now. The number of telephone subscribers in India increased from 562.16 Million at the end of December, 2009 to 621.28 Million at the end of March, 2010, registering a sequential growth of 10.52 per cent over the previous quarter. This reflects year-on-year (Y-O-Y) growth of 44.58 per cent over the same quarter of last year. (www.traai.gov.in).

Emergence of smartphones in India

In India, the domestic mobile handsets market has seen an increase of more than 150 per cent in terms of the value of smartphones shipped in to the country. It has increased from Rs 50,714 crores in the year 2010 to Rs 128,729 crores in the year 2014. The smartphone market in India was expected grow to over 10 million units in 2011 from 6 million units in the year 2010, a 66.7 per cent increase. The Android operating system was the most popular mobile OS and 12 per cent of all smartphones shipped in India during 2011 were based on the Android platform. Additionally, due to the increase in popularity of WiMax and LTE services, content creation and mobile application development is witnessing a rapid increase (www.telecomlead.com). For regulating the activities of the telecom sector in India, Telecom Regulatory Authority of India (TRAI) has been developed over ISPs and mobile-phone service providers. The organisation operates as an independent agency, offering public consultations and other participatory decision-making processes. (www.outlookindia.com).

Use of mobile phone applications

Since the birth of smartphones, software based mobile phone applications have become an integral part of the phones. Mobile applications, referred to software systems operating on mobile devices, are evolving rapidly, making ubiquitous information access at any time and anywhere. Many mobile phone applications have brought Internet services to mobile phones (Kaasinen et al., 2000). In the business area, M-Commerce (Mobile eCommerce) applications, such as mobile banking and advertising, extend businesses to mobile devices. Customers can check their bank account balances and carry out business transactions through their mobile phones using applications (Varshney & Vetter, 2002; Zhang, 2003).

With the continuous advances in wireless technology and the widespread use of mobile devices such as cell phones, personal digital assistants (PDAs), many innovative mobile phone applications are being created, to enhance wireless communication and provide users with easy access to information (Li & Liao, 2000). Mobile phone applications developed specifically for small mobile devices include daily news alert services, classified mobile advertising, restaurant and entertainment listings, wireless Web portals, and mobile commerce (m-commerce) applications (Varshney & Vetter, 2002). The high demand and fast growth of mobile applications have attracted extensive research interests in the field of mobile phone applications.

Women's rights and laws

There is no better religion than protection of human rights of a human being by a human being. Gender theory has lately arisen to help liberate women from the manacles of archaic law, obsolete traditions and customs. They are replaced by new claims, interests and needs of women that are being promoted through law. They fight for equality with men on the basis of dignity and to

evade exploitation. Nehru once said “the women of India will not attain their full rights by the mere generosity of men, they will have to fight and force their will on the men folk if they want to succeed” (Julie P., Andrea W., 1995). The female gender is mostly the victim of endemic hunger, malnutrition, illiteracy, ignorance, unemployment, preconditioning any discussion on human rights.

India, is a developing country with a population of about 1.27 billion (2015), containing nearly one sixth of the world’s population. According to the World Bank, the percentage of population of Indian women is 48.29 per cent (2013). India, traditionally has been a patriarchal society. Women, since time immemorial, in the Indian society has been malleable to the male entity and chained to the cinder. However, phases of colonialism, post colonialism and neoliberalism of the Indian economy have brought tumultuous change in harnessing gender equality.

This caricaturing of Indian women, in fiction and non fiction, has also sculpted the society of India into a female- docile one, where men are peremptory beings. Women assumed tasks of cleaning home, taking care of children whereas men take care of lawn work, auto- fixing and jobs that require strenuous physical effort. However, the task of budgeting, getting groceries, and economic related activities are tasks that can be carried out by both the parties which was, again, the task controlled by the male entity of the family. Women wore the veil, cooked, cared and cleaned the homes. Bargaining power to the Indian housewife was negligible. This construct claimed men to be more powerful, be it at the workplace or at home. Each period in the Indian history had it’s own zeitgeist of gender structure- pre colonial, colonial, post colonial and the contemporary. Freedom warriors like Sarojini Naidu, Rani of Jhansi, Kasturba Gandhi, Vijaylakshmi Pandit, were great women whom India looked up to, during nationalist movements. They fought on par with men, both in violent and non violent terms.

Following the freedom struggle were notions of globalisation and modernity, which created the identity of the *Modern Indian Woman*. Contemporary India opened Indian markets to the global economy bringing with it technology and job opportunities, demanding men and women join the workforce. Modern media like the radio, television and print (the media that was proactive during the onset of globalisation- 1990's onwards) enabled cultivation of gender equality in the best way possible. However, the change was byzantine and was not soon to come.

As Bhatt writes, citing Chatterjee, Anti-colonial nationalisms had to mark themselves as both capable of modernity, like the colonial powers, and distinct, and they did so through complex processes of gendering. The 'new Indian woman' became an icon and an identity that straddled this socio- temporal paradox between modernity and tradition by asserting national, cultural difference in the home, a place distinct from the world. Symbolically, representations of women thus resolve the national identity conflict between the constructed binary of tradition/modernity.

Gupta (2002), defines modernity in terms of attitudes, especially those that come in social relations, such as an individual dignity, adherence to universal norms, individual achievement and accountability in public life. The Modern Indian woman was well educated, she was economically stable, she could voice her opinions without dilemma, fear or anxiety of the society in spite of its demands.

The new Indian woman is the ambivalent entity shaped by the social and public domain which simultaneously portrays her as glamorous, independent, conscious of her embodiment and of the many forms of adornment and self

presentation. She, although as a different life inside her family, her bargaining power in the house changes in comparison to her public avatar.

The more women stepped out of households, they required awareness about societal issues and basic knowledge and understanding of their rights.

Important National legislations for uplifting of women

- Protection under the Immoral traffic (Prevention) Act, 1956
- The Dowry Prohibition Act, 1961
- Medical Termination of Pregnancy Act, 1971
- The Indecent Representation of Women Act, 1987
- Commission of Sati (Prevention) Act, 1987
- National Commissions for Women Act, 1990
- Protection of Human Rights Act, 1993
- The Protection of Women from Domestic Violence Act, 2005
- Protection Against Sexual Harassment of Women Bill, 2005

Case studies of crimes committed against women

- On January 1st, 2008, in Mumbai, two women were molested and almost killed by a group of about 60 men outside the J.W. Marriot in Juhu. The group of men tore up the women's clothes and groped them, as the girl's male companions tried helplessly to protect them. A big police personnel posted close to the venue was later alerted who then drove away the miscreants.

- A similar incident took place in Mumbai in (2007). A girl was molested by New Year's Eve merrymakers at the Gateway of India.
- In 2006, a Muslim woman was raped by her father-in-law. Some Muslim clerics said that she should marry her father-in-law and this led to widespread protests. Her father-in-law was finally given a prison term of 10 years. The verdict was welcomed by many women's groups and the All India Muslim Personal Law Board.
- Delhi rape : The highest number of rape cases was 414 being registered in the city-state in 2014. Delhi is the second- highest when it comes to number of complaints by women relating to police harassment and police apathy. A survey of working women by industry body ASSOCHAM, early this year found that 65 per cent of women who were interviewed in Delhi felt insecure working during night shifts. The number of complaints by women relating to police harassment and police apathy in Delhi was 126 in 2008-09, 237 in 2009-10, 453 in 2010-11 and 357 in the first 11 months of this 2012. (M. A. Khan, 2007).

Awareness of legal rights among women

The sex ratio of India clearly shows how the Indian society is prejudiced against the female gender. There are 933 females per thousand males in India , according to the census of 2001, this is much below the world average of 990 females per 1000 men. Women are not safe anywhere, neither at home, nor at workplace. Every hour a woman is raped in India and every 93 minutes a woman is burnt to death caused by a dowry issue. (Showkeen, 2014)

Hate (1978), in her book stated that there is positive change in the political, economic and social status of middle class women living in four cities in Maharashtra after the advent of independence. Mojumalue (1988)

commented on the case of Biswanath Das Vs Maya Das, acquiring a significance as it highlights the deficiencies and inadequacies that exist in the present legal system, statutory laws, judiciary and the Indian society.

Existing studies

- **Sivaramayya B. (1983):** Status of Women and Social change. The study The Hindu law in the matters of women's rights, sati, involvement of the British in enacting laws to protect women's social status. The study examines views, interpretations of courts, legislature in matters of bigamy, conjugal rights, inheritance, divorce, maintenance under Hindu marriage act and Muslim personal laws. The study also looks at the Muslim community perspectives. This study illustrates instances, circumstances of litigation and court interpretations and views on matters pertaining to women and the law. The study attempts to examine the social status of women by way of legislation, judicial interpretations and processes.
- **Sachchidanand and Sinha's (1988):** The Study revealed that even after several decades of introduction of social legislation, rural women and many urban women had not even heard of the existence of a lot of laws. Very few were able to mention the provisions available within these rights. Even if they knew, women did not want to have a share in the property and did not want to break away from the wedlock.
- **Mahajan (1990):** The study found that age, education and employment of women had an impact on the awareness of their legal rights. Awareness was more in older, educated and employed women. The study, which focused on people's awareness and attitude towards women rights, have confirmed that women's rights to inheritance is likely to remain very ineffective in patriarchal societies like the Indian society.

- **Bajpai Asha (1997) Women's Rights at the Workplace:** The study discusses the effects of the post 1990 economic liberalisation era on the women workers in organised and unorganised sectors. The study recommended a legal strategy for the empowerment of women. The study compared India and UK. Due to the job losses in organised sector there will be further pressure on the unorganised sector when it comes to women employment.
- **Nirmala Banerjee & Swasti Mitter (1998): Women Making a Meaningful Choice- Technology and New Economic Order:** The study address two contemporary issues- one relating to Indian working women's response to technological changes and globalisation; the second relating to the impact of these changes on women's work in India. The study emphasises on demands, concerns and aspirations of Indian working women in relation to technological changes that have happened through time. The study examines women of diverse backgrounds and their co-relation to technologies, in different regions and industries.
- **Shanthi, K. (1998) Empowerment of women:** The study narrates the existing empowerment strategies and their shortcomings in the present scenario. It speaks about the general, political, legal, social, economical and cultural empowerment of the women of India. Issues like reservation for women starting from Panchayats to Parliament, education and employment as an important tool for empowerment, role of governmental and non-governmental organisations in women development, need for concretisation of men and women on the importance of women development and women empowerment.

- **Rehana Sikri, Kanishka (1999) Women and Sexual Exploitation: Harassment at Work Place:** There is an increase in the number of women in the total workforce and the emerging patterns of social interaction views the work place as a new domain of conflict in the 'running battle of the sexes'. The study is a comprehensive profile of the working force in India drawing upon data from decennial Censuses, National Sample Surveys and small scale socio- economic surveys. The study provides women's occupational profile and family values that determine behavioural patterns at workplace. The study also identifies sexual harassment and male-female relationship at the workplace. Working women's search for identity is also addressed in the context of the traditional pattern of gender and sexual exploitation.
- **Julie Peters, Andrea Wolper (1995), Women's rights, human rights:** The study reveals that under democracy and dictatorship, in times of war and times of peace, women's human rights are violated daily also sometimes, systematically. Women may be denied the right to vote or hold office. They may be subjected to rape and sexual abuse by soldiers, police, employers, family members. They may not be free to choose when and whom to marry, or how many children and when they can have them. The United Nations Universal Declaration of Human Rights proclaims that "all human beings are born free and equal in dignity and rights." Yet women's freedom, dignity and equality are persistently compromised by law and by custom in ways that men's are not. The mere extension of existing human rights protection to women is insufficient: women's rights must be understood as human rights.

Methodology adopted in the study

The research was carried out on 50 participants between the age group of 18 to 25 years old. The android application was installed on the smartphones of the participants and tested real time for a period of 30 days to identify the impact and awareness of legal redressal rights created on the participants on using the application.

The experimental study on the whole, helped analyse the need for using a digital medium to increase awareness for women on their legal redressal rights. Since the Indian law system is complicated and difficult to understand, the application's content tried to make the understanding of the law easier for the everyday user. The content was also made more interesting by incorporating a step- by- step understanding of the redressal process.

Apart from the topics like Sexual Harassment at Workplace, Domestic Violence and Cybercrime, the app also featured a 'General' section where the basics of redressal- filing a police complaint, what an FIR is and how to file it and what happens after filing an FIR will be included in the application.

The 50 young women participants were selected through purposive sampling. They were either doing their under graduation or post graduation or PhDs from their respective colleges. The age group was chosen because the application targets topics such as sexual harassment at workplace, domestic violence and cybercrime redressal. Awareness about their rights on those topics will help them in their everyday life as a young college going woman.

Sampling technique

Young women between the age group of 18-25 were selected for the study. Law students were purposively selected to test if the application will be useful to them. Architecture students, media students and engineering students were selected from the age group. 50 participants were selected to keep the experimental study limited. Since real time testing was selected for the application usability test, 50 participants from the same city would be easier to keep a track of and more reliable. Qualitative type of data has been derived from the experimental study.

Pre- Test Survey

The research began with the researcher asking the participant to fill in a questionnaire that acted as a pre- test questionnaire. The questionnaire addressed questions that gauged the amount of existing awareness and identified what the participants look for in the use of a mobile phone application. The name, age, email address and phone numbers of the participants were collected to keep a track of their usage and to ask them to take part in the post test study after the 30- day testing period. The questionnaire also had close ended questions like ‘What is the application that you most use and why?’, ‘Do you know what and FIR is and how it is filed?’, ‘What is the topic you want to know more about your legal rights?’, etc.

Installation of the Application

The mobile phone application was installed on each of the participants’ Android smartphones. They will be asked to sign up with their credentials and use the app for 30 days beginning 16 February 2016 till 17 February 2016. The participants usage of the application was followed through the back- end server. The amount of time they spent on the app, the number of times they opened the app, the number of visits per page was recorded and used for analysis. The mobile phone application has been developed with the aid of an online portal that helps create applications. The process has also been consulted with an application development expert. A native mobile phone application was created for use on Android mobile devices.



Fig 3. Flowchart of app development model

Following the pre test survey, the key topics necessary for the participants to learn more about were identified. Domestic Violence, Sexual Harassment at Workplace and Cybercrime were the topics the most of the participants wanted to learn about. Since a number of the participant were unaware of even the basic redressal procedures like what an FIR is and how to file one, a ‘General’ category was included in the study.

Content, pertaining to the identified topics were researched and compiled in simpler terms for easier understanding of the participants. Under the first general category, a few headings like ‘FIR’, ‘How to it is filed’ were included. In the Workplace category, ‘Who can file a complaint’, ‘What is the process of filing a complaint’, etc., were included. For each of the categories, such topics were included.

The colors chosen for designing the mobile phone application and logo of the app was maroon shade. A dark hue to express seriousness and the maroon colour to indicate *Sindoor*, a part of the Indian woman’s cultural attire. The layout was designed in a very simple and minimal manner. Only text was provided. The layout was designed by the researcher. A third party website helped the researcher place the design in the wireframe, providing a prototype that could be downloaded and tested on a mobile device. An application

development expert's help was sought while deploying the mobile phone application.

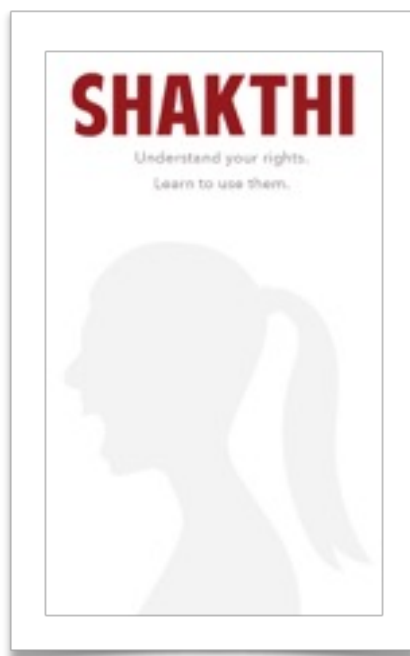


Fig 4. Screenshot of the Splash Screen of Shakthi

Once the application was developed, it was installed in the mobile phones of the fifty participants. The participants were instructed to use the application for a period of 30 days beginning from 16 February, 2016 till 17 March, 2016.

Post Test Survey

After the above mentioned period of 30 days, the participants were asked to fill a questionnaire again. This questionnaire acted as a post- test questionnaire and helped analyse the impact and awareness created on the knowledge of participant's legal redressal rights. The questionnaire again had a few questions from the pre test questionnaire to compare the results. App usability- based questions like 'How easy was the application to use?', 'how did you understand the language?' were incorporate along with open ended questions on how the application maybe improved.

Analysis

Pre- test results analysis

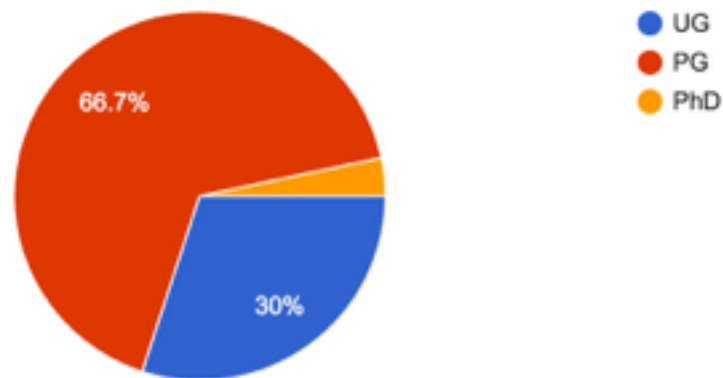


Fig 5. Pie chart showing the level of education level of the participants

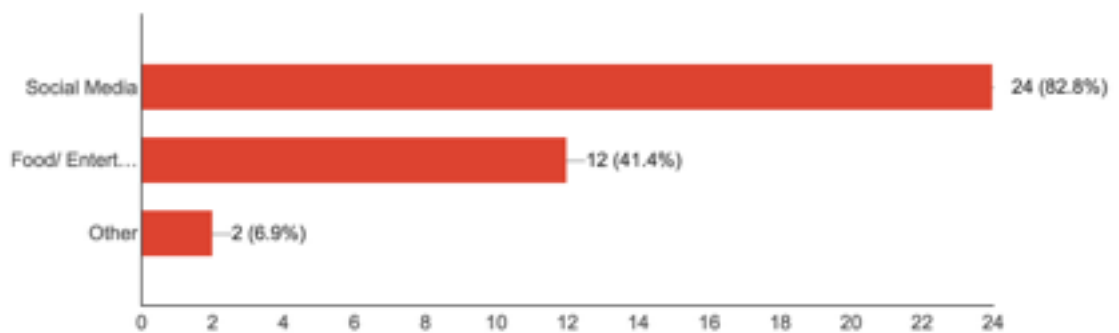


Fig 6. Bar graph showing applications most frequently used by respondents

Majority of the respondents use Social Media applications the most (82.8%) and a few participants use food and entertainment based applications (41.4%). The rest of the participants use other applications most frequently.

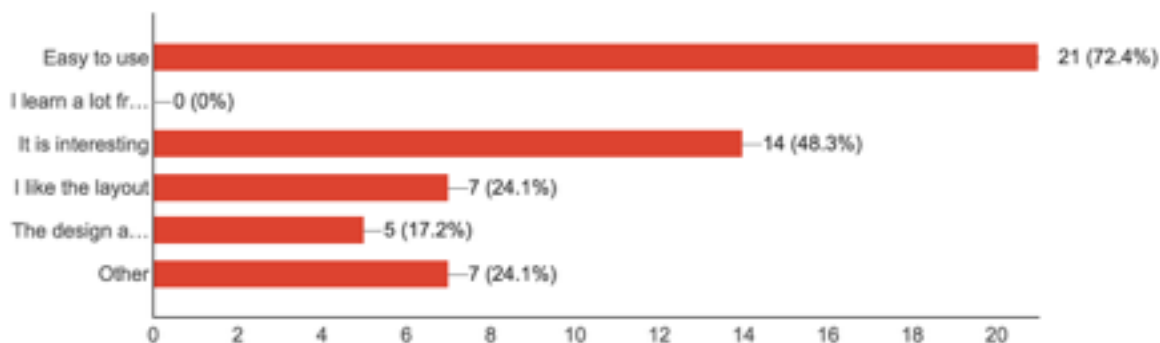


Fig 7. Bar graph showing reasons for increased use of a mobile phone application

On being questioned why the respondents use a mobile phone application more frequently than the others, the responses choosing ‘Easy to use’ was majority (71.4%). None of the respondents use an application frequently because they learn something out of it. However, 48.3% of the respondents may use an application because it is very interested. The layout and the design of the application also plays an important role; 24.1.2% of them use the app because of it’s layout and 17.2% use the app because of it’s design.

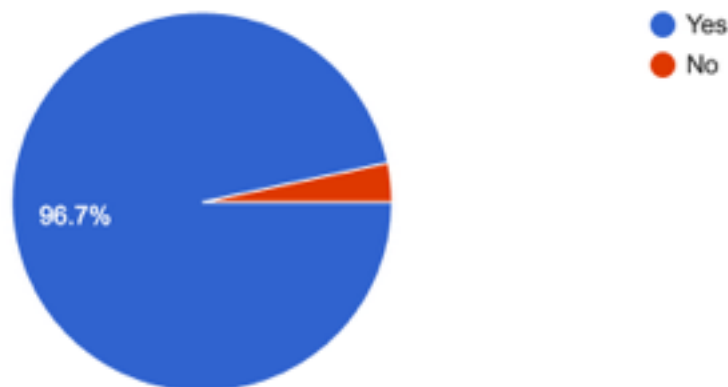


Fig 8. Pie chart showing level of assumption of awareness of basic legal rights during pre- test

During the pre test, the participant were asked in the questionnaire if they are aware of their basic legal rights and 96.7% of them chose they know and very few participants (3.3%) chose no.

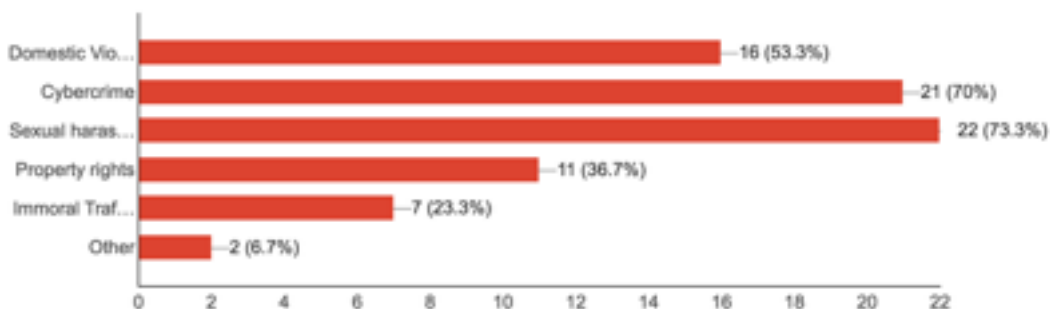


Fig 9. Bar chart showing topics the participants are interested in learning about

When questioned what topic the participants want to gain more knowledge about, 73.3% of them wanted to know more about their legal redressal rights on Sexual Harassment at Workplace, followed by Cybercrime (70%) and then Domestic violence at 53.3%. **The participants also chose Property Rights (36.7%) - many of whom were architecture/ civil engineering students.** 23.3% of the participants wish to learn about Immoral Trafficking rights and 6.7% wanted to learn about other redressal rights.

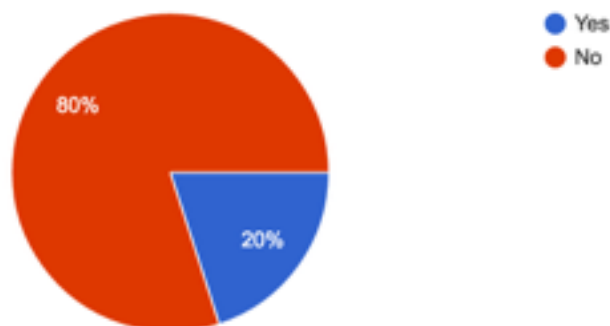


Fig 10. Pie chart depicting number of participant who know how to file a complaint

80% of the participants claim they do not know how to file a complaint whereas the rest of the participants know how to file a complaint.

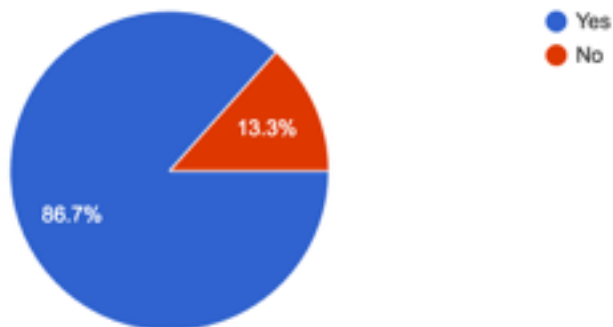


Fig 11. Pie chart showing the participants' knowledge of FIR

Most of the participants knew what an FIR was (86.7%) Whereas 13.3% of the participants were not even aware of what an FIR is.

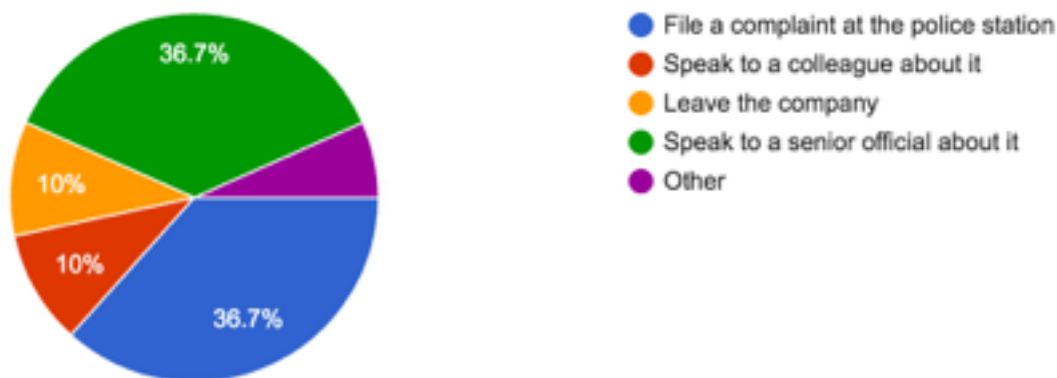


Fig 12. Pie chart showing how the participants will seek redress if sexually harassed at workplace

Only 36.7% of the participants said they would file a complaint at the police station. 10% of them said they will speak to a college about the issue. 36.7% of

the participants would approach a senior official and speak to them about the issue. 10% of the participants said they will leave the company if they faced an issue.

Post Test Analysis



Fig 13. Pie chart showing number of participants who launched the app: Redress

100% of the participants opened and used the mobile phone application.

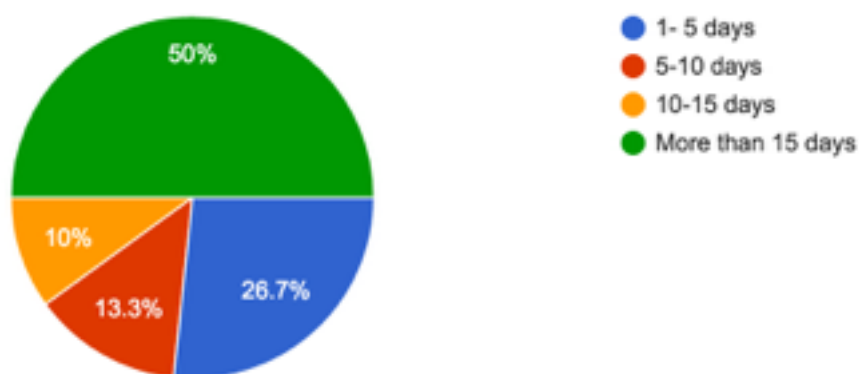


Fig 14. Pie chart depicting number of days the application was used for

50% of the participants used the application for more than 15 days. However, 26.7% of them used the application for only 1-5 days. 13.3% of the participants used the app for 5- 10 days and 10% used the app for 10-15 days.

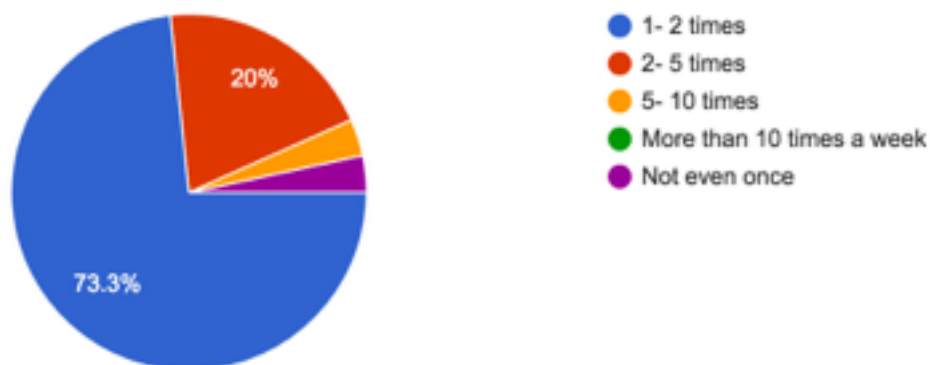


Fig 15. Pie chart showing number of times the application was launched

Majority of the participants used the application only 1-2 times in a week. 20% of the select audience opened the application 2- 5 times a week. One out of 50 participants used the application 5-10 times a week and another one of the participant never opened the app after logging in once.

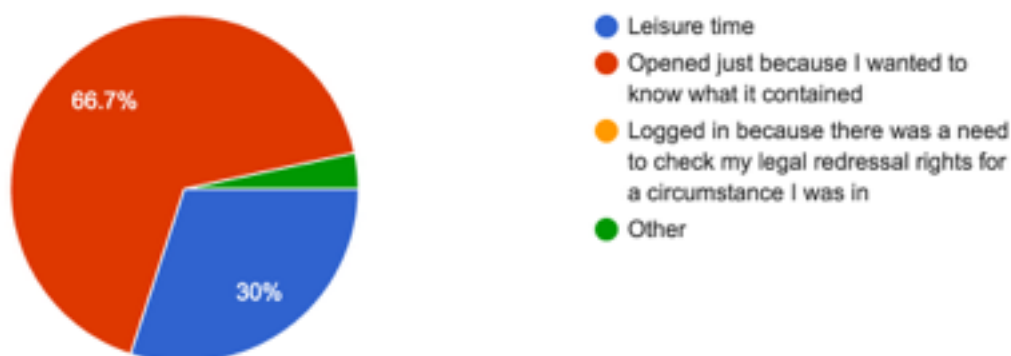


Fig 16. Pie chart depicting reasons for opening the application

Most of the participants (66.7%) opened the app only to know what it contained. 30% of the respondents use the app during their leisure time. None of the participants used the application because there was a need for them to check their redressal rights.

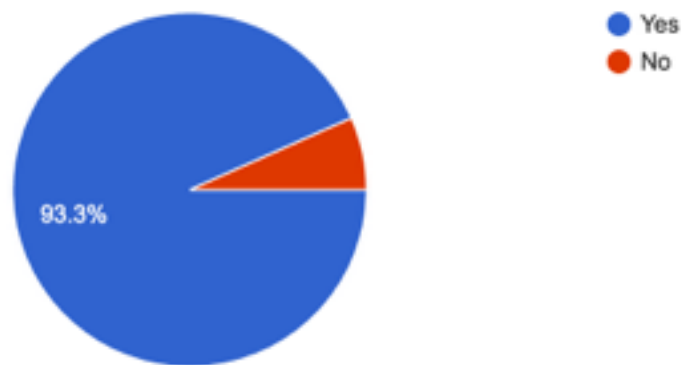


Fig 17. Pie chart showing the number of people who choose to open the application at the time of need

The respondents claimed they would definitely open the application when there is a need to open the application and check their redressal rights. Only one of the respondent said they might not even do so.

Usability test analysis

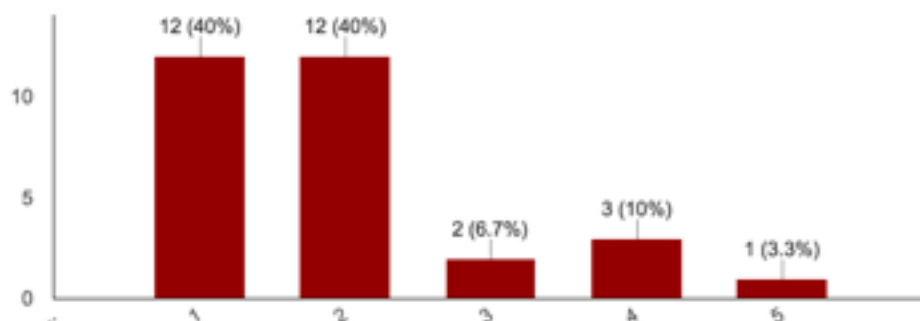


Fig 18. Users finding the layout of the application easy to use

40% of the participants feel the layout design of the mobile phone application Redress is interesting. Another 40% of the audience agree that the layout is good. However, 6.7% of the respondents feel the application’s layout design may or may not be interesting (neutral). 10% of the audience disagree that the layout is interesting and 1 of the respondents strongly disagree with the layout design of Redress.

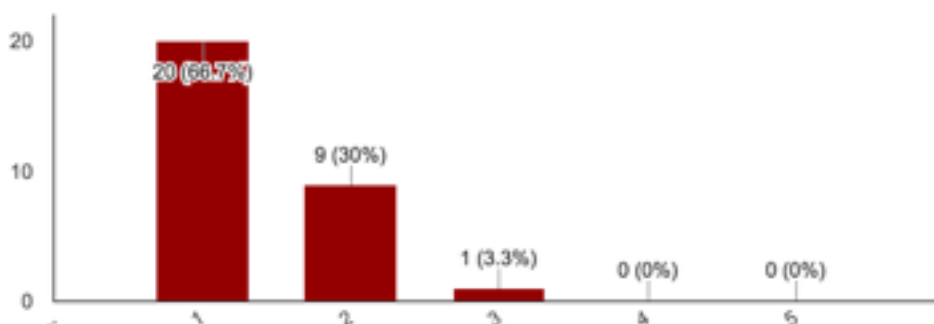


Fig 19. Users finding the application to be difficult to use

It is assumed that none of the respondents feel there was any difficulty in using Redress. However, 3.3% of them stay neutral in choosing. 30% of the audience feel the application is not difficult and 66.7% of the respondents felt the application is easy to use.

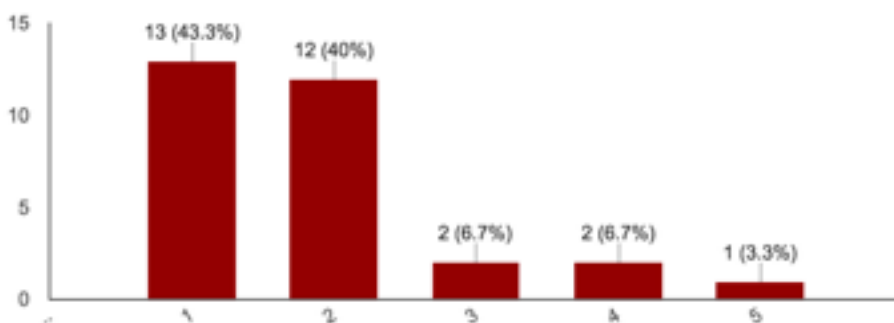


Fig 20. Level of understanding of each category

43.3% of the respondents strongly agree that they were able to understand the functionality of each of the categories upon launching the app. 40% of the audience just agree with the same and 6.7% of the respondents chose to stay neutral about the same. Another two respondents disagreed that the application’s categories’ functionalities can be understood and one more strongly disagrees with the same.

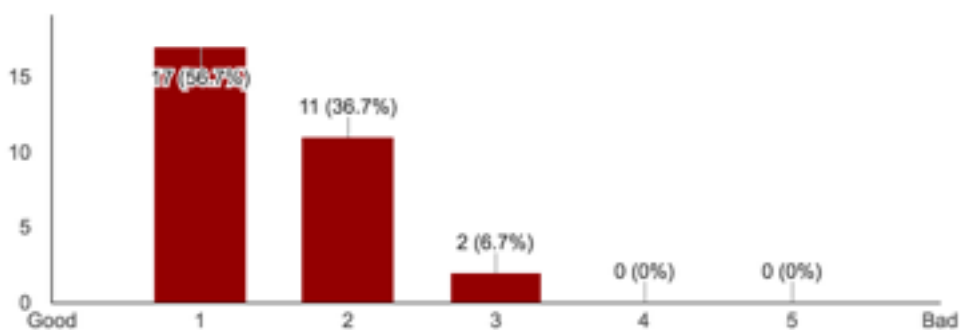


Fig 21. Overall impression of the application

56.7% of the respondents feel the application is very good. 36.7% of the respondents feel the application is good and 6.7% of the respondents have a neutral opinion of the application Redress.

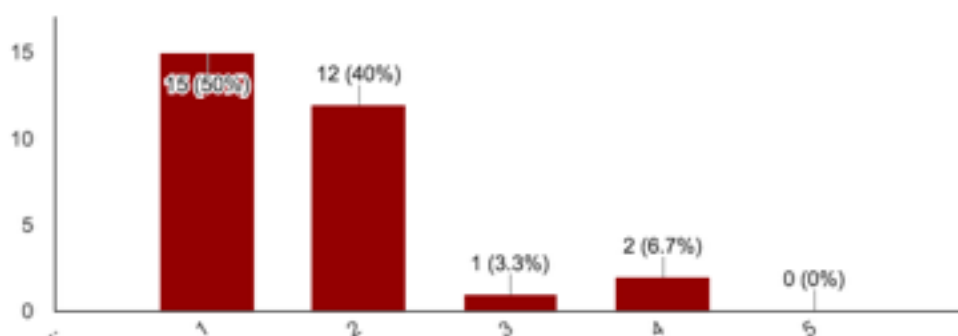


Fig 22. Usefulness of the application

50% of the users of the application feel the application is extremely useful for them and their safety. 40% of the respondents feel the application is useful for

them and one of the respondents feel neutral about the usefulness of the app. 6.7% of the respondents don't believe the app is very useful for them or their safety.

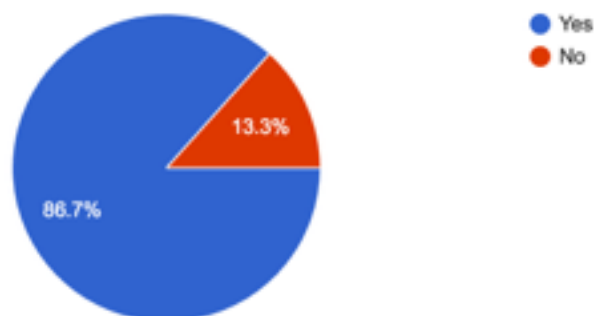


Fig 23. Pie chart depicting the ease of understanding the language used in the application

On using the application, most of the users (96.7%) said the application has an easy language that they can understand. However, only one of the participant feel they did not understand the language used in the application.

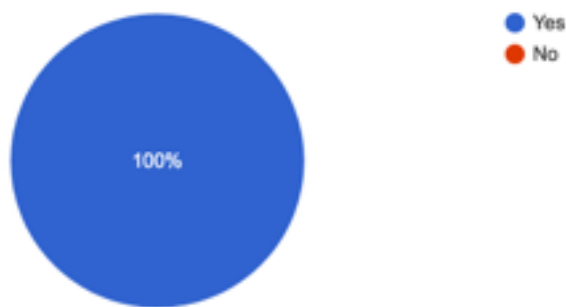


Fig 24. Pie chart showing how many participants understood their basic redressal rights

86.7% of the participants feel on using the application, they now know their basic rights in the topics given in the app. However, 13.3% of them still believe they are not enlightened enough about the rights.

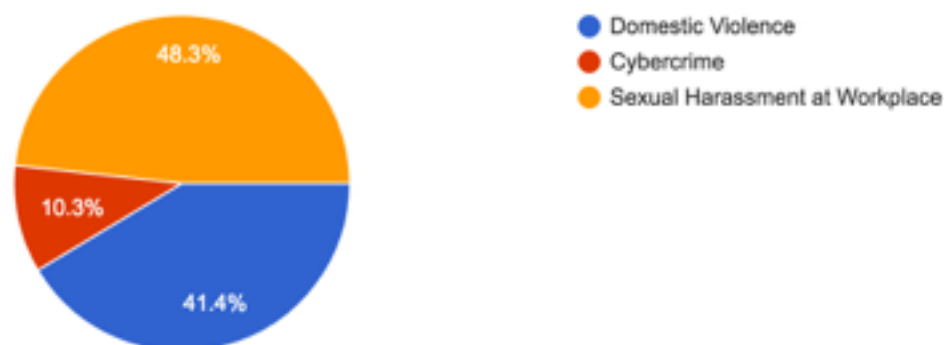


Fig 25. Pie chart showing the depth of understanding of the basic redressal rights according to the topics

Out of the topics covered in the application, 48.3% of the users felt they received the most information from 'Sexual Harassment at Workplace' section. 41.1% felt they received the most information from the Domestic Violence section and 10.3% felt they received the most information out to cybercrime section.

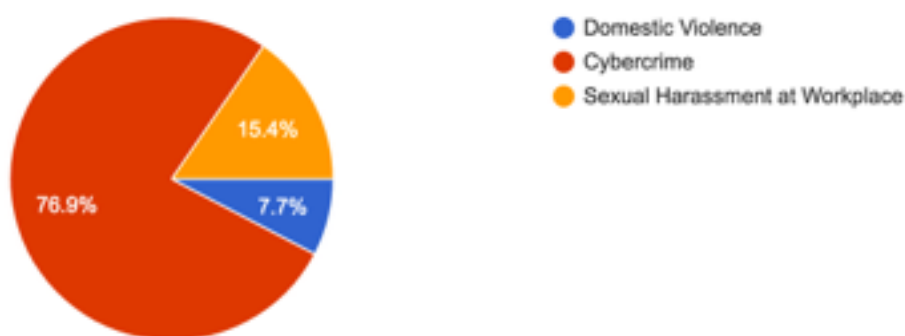


Fig 26. Topics that have the least information about

In the topics covered, majority of the users (76.9%) felt there was no ample information about Cybercrime redressal process. 15.4% of them felt they received less information about Sexual harassment at workplace and 7.7% from domestic violence.

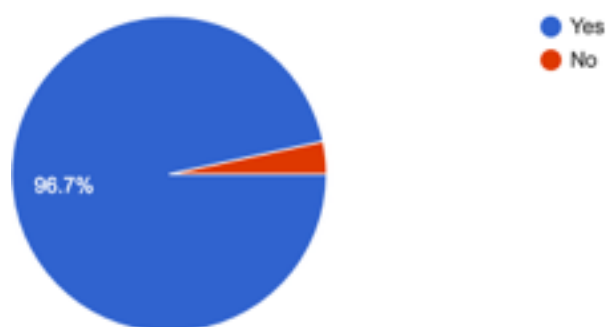


Fig 27. The usefulness of the application

96.7% of the app users said they find the application useful and will help them or they will be able to help someone in need, at some point in the future. Only one of the participant said they do not find the app useful for them.

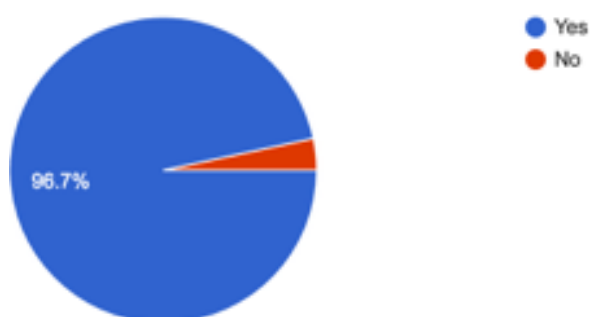


Fig 28. Future use of the app

When the participants were questioned if they will download and use the application if published in play stores, 96.6% of the respondents said they would download and use the application.

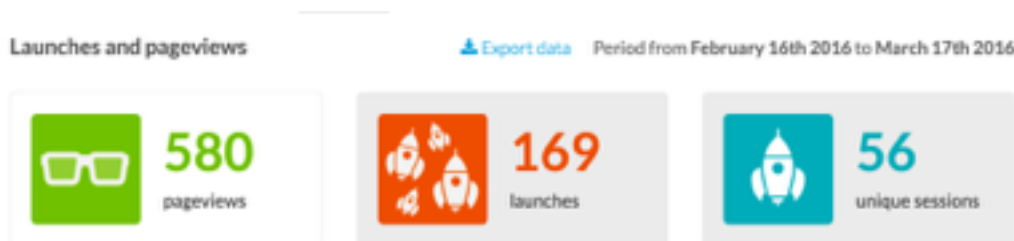


Fig 29. Lauches and Page views

During the period between 16th February to 17th March, it has been recorded that 169 launches of the application took place. Out of this, there has been 580 page views. 56 of the launches were unique launches apart from the 169 launches. The application was most launched on 17- 18 February, 26th February, 1st March, 6th March, and the most was during the 9th- 10th of March.

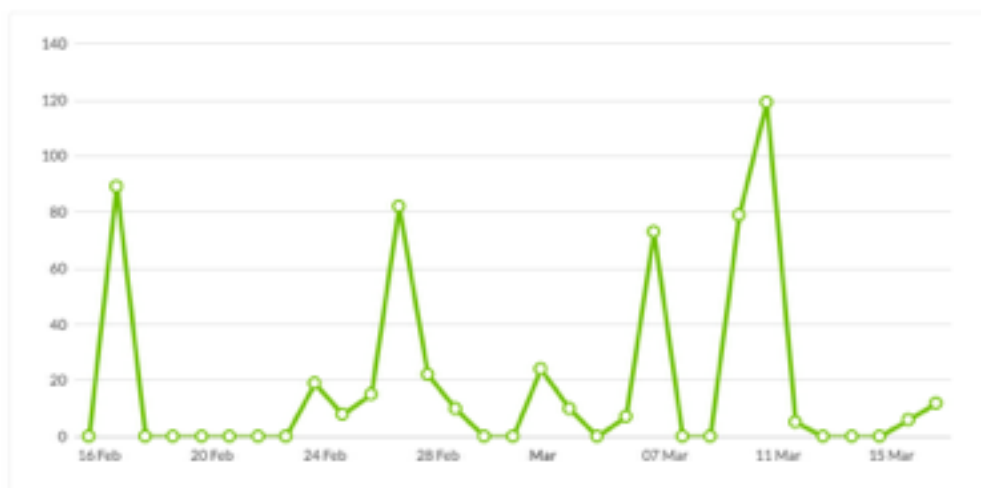


Fig 30. Days during which the application was launched

During the study period, the following days were when the application launch took place the most number of times. The following table explain when the application was launched during the week, the most:



Fig 31. Days when the app was launched the most

The mobile phone application Shakthi was launched most during the weekends- which explains the launch during leisure time. Followed by Thursday, Wednesday and Saturday.

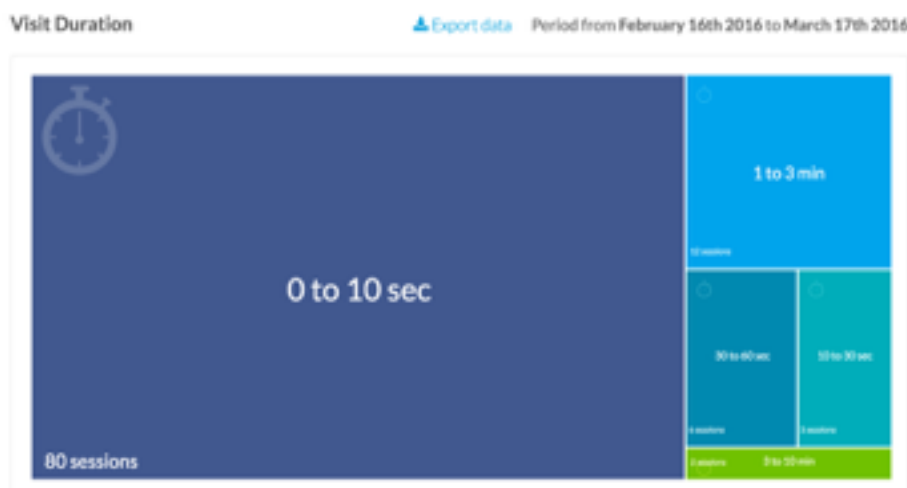


Fig 32. Duration of app usage as per back end server records

Majority of the sessions on this app is recorded as 0- 10 seconds followed by 1-2 minutes. Six of the sessions lasted 30-60 seconds and five of the sessions lasted 10- 30 seconds. Only two sessions lasted 3- 10 minutes.

Interpretations from the Analysis

The mobile phone application, Shakthi completely served its purpose of educating the participants about their legal redressal rights. During the pre test survey, most of the participants were not completely aware of their rights. However, there was one law student who was a participant who already had the knowledge owing to her academic background. Most of the students, were willing to learn more about their basic rights. When questioned about what area of the law they wish to learn more about, majority of the participants chose 'Sexual Harassment at Workplace', followed by 'Cybercrime', 'Domestic Violence', 'Property Rights' and then 'Immoral Trafficking'. It has been understood from the study that the number of students who wished to learn about property rights were architecture or civil engineering students. It can be noted that there was one married woman participant, who chose to learn about domestic violence. Majority of the students who wished to learn more about domestic violence redressal procedure were post graduation or PhD students.

Before using the app, the participants seemed to not have a clear idea of how to seek redressal when faced with a crime. A situation was posed in the questionnaire- How would you react if you were sexually harassed at your workplace. It was alarming to note that a few of the participants also said they might quit their job, instead of seeking help. But a few of the participants said they will speak to a higher official or their colleague. On analysing the results, it was understood that many of them who chose to leave the job, were students hailing from a rural background, indicated cultural and familial values.

Educating women about their legal rights at a young age is completely necessary to help avoid such ignorance.

During the study period, the participants did not seem to open the app by themselves out of their own interest. So when questioned about when they are likely to open the application, they said that they would open the app at the time of need; when they face a grievance and will need to seek redressal. It has been understood that Shakthi is a completely need- based application and will not be used until there is a need to learn one's rights or process of seeking redressal.



Fig 32. Screenshot of the application

From the data of app usage, it can be concluded that a lot of the participants said they opened the app during their leisure time. This is also indicated by the statistics that the application was launched the most during Fridays, which is

the weekend, by most of the participants. The mobile phone application was launched mostly only 1- 2 times a week, which indicates the participants opened and used the application only when asked to. Apart from that, only a few of the participants opened the app out of their own interest.

Participants also wanted to learn more about other legal topics. One of the respondents suggested adding a topic of addressing acid attacks, which is a widespread crime now in India. The most visited page in the application was 'What is defined as Domestic Violence?'. One of the participants said there is a fine line between what is and what can be considered as a crime and that is very important to be understood by all, and that this explanation could have been added in the other sections too.

During the pre test survey, to gauge the amount of existing awareness, the researcher posed a question to check if the participants were aware of the term FIR and how to file one. Although most of the respondents were aware of the term FIR, there was comparatively lesser knowledge on how to file one. During the post test survey, the respondents were again asked the question because the 'General' section in the application provides basic information about FIR and how to file one. The participants had gained an understanding of the term FIR as well as how to file a complaint. The following pie chart explains the difference in the answers from the pre and post test survey.

Do you know what an FIR is? Do you know how to file a complaint?

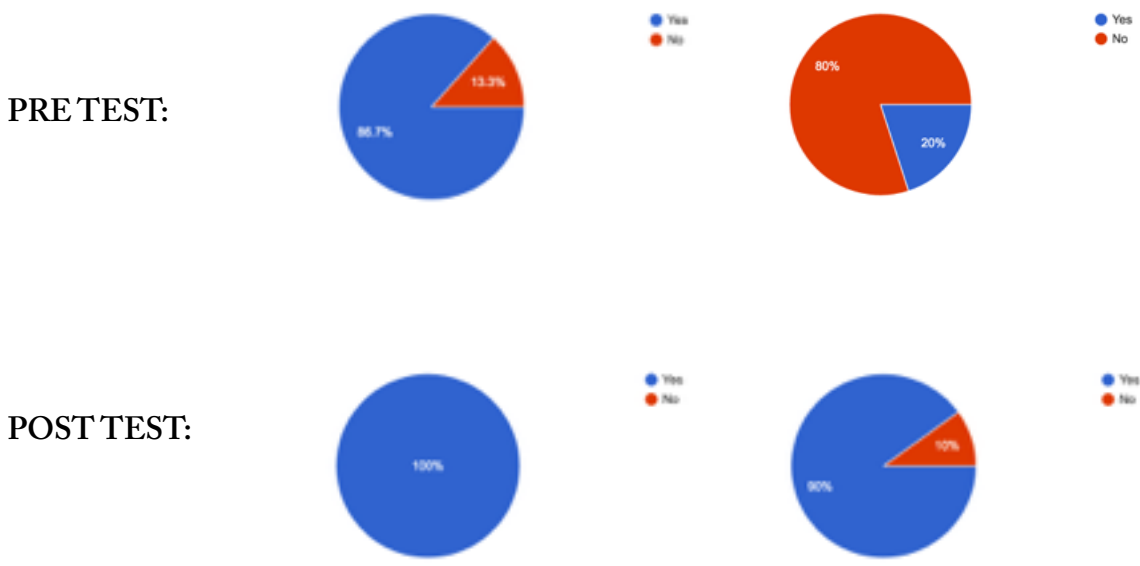


Fig 34. Comparison of the pie charts from the pre test and post test survey

From the above information it is understood that the participants learned the basics of an FIR and how to file one.

During the pre test survey, it was observed that there were less number of participants who were willing to learn their basic redressal rights. However, after using the mobile phone application, majority of the participants (including those who were not willing to learn about their basic redressal rights) said they would download and use Redress if launched in the *Playstore*. The range has been observed only on using the application, the participants' curiosity to learn and understand more of their redressal rights and procedure increased.

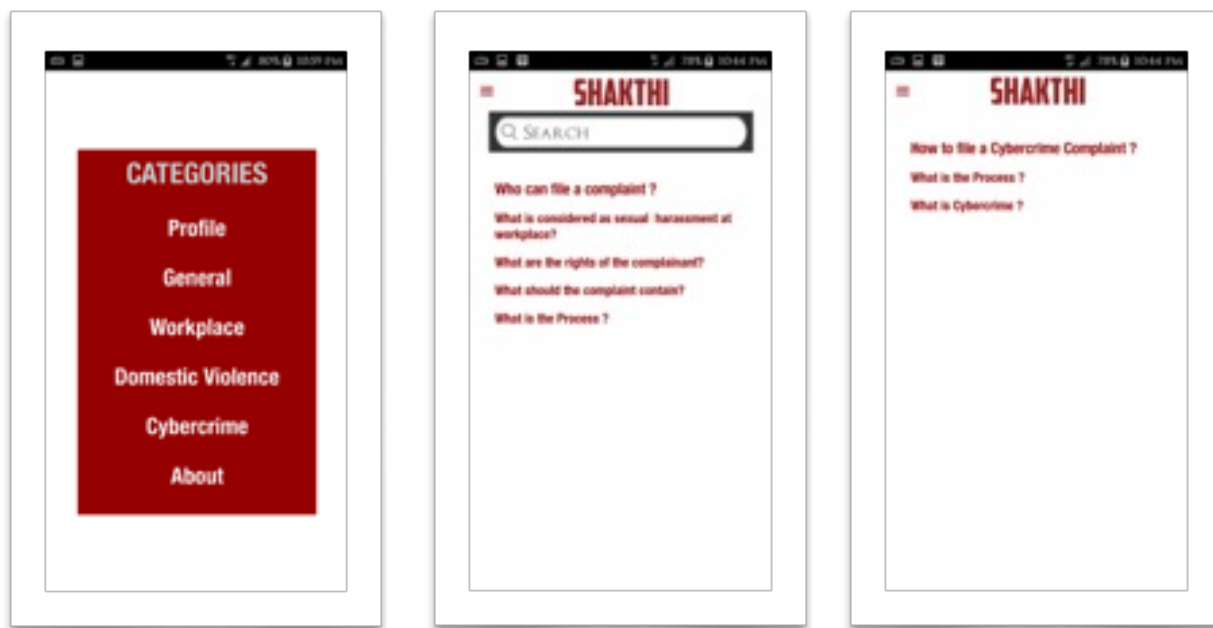


Fig 34. Snapshots from the application

Even though the participants were keen on learning more information about cybercrime, over domestic violence, it has been derived that the participants received the most information on domestic violence redressal over cybercrime. The content available with domestic violence was more than cybercrime. But in spite of the limitation, many of the respondents agreed that the mobile phone application is a very useful application and that it will help them feel safe and also enable them to help someone in need in the future.

Many of the participants, when questioned why they would use an application frequently, in the pre test survey rated ease of use the highest followed by interesting content, layout and design. In Redress, majority of the participants said the app was easy to use and the over all impression of the application seemed to be good. However, the respondents suggested that the application's layout could have been designed in a more interesting manner with more images and easy to understand content.

Major findings

- Participants did not have much knowledge about their rights before using the mobile phone application. But there has been a significant increase in their awareness after using the application.
- Most of the participants wanted to know more about redressal procedure and the complainant's rights for sexual harassment at workplace, owing to the age group selected for study.
- There were participants who knew what an FIR was but did not know how to file one. But after using the application, every participant understood what an FIR is and the majority had learnt how to file one.
- Redress is a need- based application and will be downloaded only when there is a need to learn the redressal procedure or rights.
- Many of the participants think they need to know more about their basic redressal rights and procedure to feel safe. On using Redress, the participants said they felt safe and confident to confront sexual harassment at workplace, domestic violence and cybercrime offences committed against them.
- The mobile phone application was was easy to use and the content was written in easily comprehensible language.
- The application could have had a better layout and made more interesting through the use of images and a better design.
- The overall impression of the application is good and further development could be done as the application has successfully completely served the purpose of educating young women on their redressal rights.

Conclusion

The mobile phone application Shakthi has served its basic purpose of educating young college going women on their basic redressal procedure and rights. Although the application had a few limitations, the participants welcomed the application and agreed that they will download and use the application if launched full- fledged with more content highlighting other violence too. Redress was also an easy to use mobile phone application where the respondents stated that the organisation of the content could have been better. Shakthi enabled it's users to be more confident and feel safe because of the availability of the application and the basic knowledge it has given them. However, the mobile phone application is completely need based and will not be downloaded by women, unless they are posed with a situation where they may need to learn their basic rights.

References

- 1 *"Microsoft: 71 percent of Windows Phone apps are installed on low memory devices,"* Windows Central, 23 12 2014. [Online]. Available: <http://www.windowscentral.com/microsoft-71-percent-windows-phone-appdownloads-go-low-memory-devices>.
- 2 *"FreeBSD.org: FreeBSD Handbook – Who uses BSD?,"* [Online]. Available: https://www.freebsd.org/doc/en_US.ISO8859-1/books/handbook/nutshell.html.
- 3 *"Smartphone OS Market Share, Q3 2014,"* IDC, [Online]. Available: <http://www.idc.com/prodserv/smartphone-os-market-share.jsp>.
- 4 Yadav, Vinita (2012) *"To study the awareness about women's legal rights amongst girl students studying in different professional courses"*
- 5 Agarwal, Bina. *"Reports on the Current Status and Needed Priorities of Womens Studies in Asia and the Pacific"* Kuala Lumpur: APDC, 1986.
- 6 Agri A., Agharuwhe (2013): *"Students' and Human Rights Awareness in Secondary Schools' Environment in Delta State"*, Delta State University, Delta State, Abraka, Nigeria.
- 7 Baruah, Paporri and Baruah, Rashmi, (2014) *"Telecom Sector in India: Past, Present and Future"*, International Journal of Humanities & Social Science Studies (IJHSSS), Volume-I, Issue-III, Page No. 147-156
- 8 Berendrapal Singh, Sehgal: *"Law, Woman and Population in India"*, 1989.
- 9 Bilal, Showkeen, (2014), *"Awareness and exercise of legal rights among working and non working women of Punjab"*, Educationia Confab 03/2014; Vol. 3, No. 3.
- 10 Dalmasso, I., Datta N.; Christian, B.; Nikaiein N., *"Survey, Comparison and Evaluation of Cross Platform Mobile Application Development Tools,"* [Online]. Available: http://www.academia.edu/6486265/Survey_Comparison_and_Evaluation_of_Cross_Platform_Mobile_Application_Development_Tools. [Accessed 10 4 2015].

- 11 Dixon-Mueller , Ruth , (1993) "*Population policy & women's rights*".
- 12 Gay, L. R., Mills, G. E., & Airasian, P. W., (2006) "Competencies for analysis and applications", Educational Research: (8 ed.). Upper Saddle River, NJ:Merril Prentice Hall. Gay, pp 29-44.
- 13 Gupta, Sudesh K., (2000). "*Women organisations in India (A sociological study of AIWC & NFIW)*".
- 14 Hate C.A., (1978) "*Changing status of Women in Post-Independence India*" New Book Co., Bombay
- 15 Jeesmon, J., (2105) "*Beginner's Guide for Mobile Applications Testing*" Kindle edition.
- 16 Kaasinen, E., Aaltonen, M., Kolari, J., Melakoski, S., & Laakko, T.. (2010) "*Two approaches to bringing Internet services to WAP devices. Computer Network*", 33, 231-246.
- 17 Khan, M. A : (2007)"*Women and Human Rights*", Published in India.
- 18 Koul, A. K., and Ahuja, V. K.: (1999) "*Legal Education In India In 21st Century- Problems and Prospects*" Congress Faculty of Law University of Delhi : Published by All India Law Teachers .
- 19 Nasit A., Alpesh, "*An empirical study on marketing strategy of telecom sector in Gujarat State*", RK College of Business Management, Kasturbadham, Rajkot, Gujarat.
- 20 Nimbalkar R., Ravi, (2013). "*Mobile Application Testing and Challenges*", International Journal of Science and Research (IJSR), India Online ISSN: 2319-7064 Volume 2 Issue 7.
- 21 Peters, Julie and Wolper, Andrea, (1995) "*Women's Rights, Human Rights: International Feminist Perspectives*" , Psychology Press, ISBN 0415909953, 9780415909952.
- 22 Rai, Priya and Verma, Akash: "*Digital library- Legal education and research*" - 91-11-23077000, 23383381, 23389392
- 23 Reynolds, C., (2015), "*App index: Ten of the Best Cross-Platform Mobile Development Tools for Enterprises*," 16 10 2014. [Online]. Available: <http://appindex.com/blog/ten-best-cross-platform-development-mobileenterprises>.

- 24 Saxena, Radha Rani, (2102). *“To study the awareness about women’s legal rights amongst girl students studying in different professional courses”*.
- 25 Shanthi K.,(2006) *“Female Labour Migration in India :Insights”*, from NSSO Data.
- 26 Sikri, Rehana: *“Women and Sexual Exploitation: Harassment at Work”*, Kanishka Publishers, Distributors.
- 27 Thambidorai, M., *“A study on the general legal awareness among the students of professional courses”*, 2010
- 28 Zhang, D.: (2003), *“Delivery of personalized and adaptive content to mobile devices: a framework and enabling technology”*, Communications of AIS, 12, 183-202.