

# Impact Study on 333 Helpline Service

## National Helpline 333



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We hope that the insights from this research report will be a useful resource for policymakers, public and private stakeholders working to enhance public service delivery in Bangladesh.

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# Executive Summary

E-Government initiative was a vision aimed at transforming Bangladesh into a technologically advanced and digitally inclusive society. One crucial aspect of this endeavor is the establishment of the 333 National Helpline under the Aspire to Innovate (a2i) Program. This public service hotline, introduced in April 2018, aims to provide citizens with easy access to information on government services, address grievances, and bridge the digital divide, especially in rural areas. Despite the noble intentions and potential societal benefits, there is a notable knowledge gap regarding the impact of the 333 National Helpline on the citizens of Bangladesh. This report seeks to address this gap by conducting a thorough investigation and analysis, with the main objective of assessing the helpline's effectiveness and exploring its future potential in terms of citizen benefit. The specific objectives include assessing user satisfaction, analyzing Time, Cost, and Visit (TCV), and identifying key challenges faced by users with recommendations for service improvement. This research used a mixed method research design which combines the elements of qualitative research and quantitative research in order to answer the research question. The mixed method approach allows for data triangulation, enhancing the validity and depth of the study's findings. Conducting a thorough stakeholder analysis helps researchers make decisions, manage expectations, and ensure successful research outcomes. Initially this study has identified different stakeholders such as users and non-users of 333 National Helpline, call center operator, call center agents, partners, a2i and 333 team for this study. The findings reveal a mixed perspective from users, with positive feedback in areas such as post-service satisfaction calls and successful interventions, including preventing child marriages. However, challenges are evident in instances where reported issues were not adequately addressed, raising concerns about the overall responsiveness of the helpline. The report emphasizes the need for a comprehensive impact study to guide policymakers, government officials, and stakeholders in making decisions, allocating resources efficiently, and implementing targeted improvements to enhance the functionality of the 333 National Helpline. The success stories underscore the potential of the helpline to positively impact citizens' lives, but the identified challenges highlight areas for improvement to ensure effective service delivery and user satisfaction. As Bangladesh strives towards a digital and inclusive society, understanding the impact of initiatives like the 333 National Helpline is crucial for shaping future policies and interventions. The recommendations provided in this report aim to contribute to the ongoing efforts to enhance the quality and effectiveness of the helpline, ultimately benefiting the citizens and advancing the goals of the "NextGen Bangladesh" vision.

# CHAPTER 1: INTRODUCTION

## 1.1 Background of the Study

E-Government initiative was a vision aimed at transforming Bangladesh into a technologically advanced and digitally inclusive society. It emphasized online platforms by leveraging the information and communication technologies (ICT) to enhance governance, economic development, education, and healthcare. The goal was to create a digital infrastructure that fosters innovation, improves public services, and empowers citizens through increased access to digital resources, ultimately contribute to the nation's socio-economic progress (Hoque et al, 2014). However, 61.9% of households still do not have internet access at home and are unaware of online platforms (BBS, 2022). Only 8.7 per cent of the households have computer and 46% of households use smartphone. So, many citizens are unable to take the advantages offered by online platform and need to spend a significant amount of money, time, and effort to receive information about government services.

In order to deliver government information and services at citizens' fingertips, the Aspire to Innovate (a2i) Program established Call Center "333." on April 12, 2018. It is a public service hotline meant to be 'The National Helpline', aimed at disseminating information related to government assistance (Aziz, 2020). It is voice enabled platform for citizens with low literacy and familiarity with technology. Millions of people without smartphones, even a low price feature phone, can ask for assistance from trained agents by dialing 333.

The National Helpline (333) was piloted on March 2017 in 24 districts. It was operated as government information related call service in the beginning. It was repurposed different times and included emergency response to social problems, such as child marriage, domestic violence. It played an important role during the COVID-19 and received more than 7.5 million phone calls requesting for government food aid and health related services. The 333 National Helpline provides different services to marginalized people such as farmers, physically challenged people, elderly people, etc. and also reduces digital divide in rural area. It addressed different social issues with spirit of the United Nations Global Digital Compact and the Sustainable Development Goals (SDG). It provides necessary information on government services and citizens are able to get required information prior to obtaining a service.

About 8.4 crore calls have been placed to 333 for government services and more than 4 crore calls received and service provided. The authorities carried out initiatives to address the issues such as child marriage, cyber security and health and resolving many claims including contaminated food, gambling, environmental pollution, eve teasing, fees for public exams and issues with unlawful licenses. Since the day of the inauguration, millions of residents have accessed the essential information services, and more than 81,000 have found solutions to their problems. The call center will integrate new service delivery channels like SMS, USSD-based services, Live chat, and social media. Along with the main service provided by 333, AI-based chatbots has already actively answering the inquiries about the government services.

Bangladesh took a monumental step towards enhancing public safety and well-being by establishing the 333 National Non-Emergency Helpline and it has extended its service across the 64 districts of Bangladesh successfully. Despite its noble intentions and potential societal

benefits, there exists a significant knowledge gap regarding the impact of this initiative on the citizens of Bangladesh. A thorough investigation and analysis are imperative to understand the impact of the 333 National Helpline on users' day to day life. The lack of an inclusive impact study raises critical questions about the usefulness of the 333 National Helpline in meeting its projected objectives and addressing the diverse needs of the populace. This knowledge gap impedes the capacity of policymakers, government officials, and stakeholders to make up-to-date decisions, allocate resources efficiently, and implement targeted improvements to enhance the helpline's functionality.

## 1.2 Objective of the Study

The main objective of this study is to assess the impact of the 333 National Helpline and to explore future potentiality in terms of citizen benefit.

### 1.2.1 Specific objectives

- To evaluate the effectiveness of the 333 National Helpline in providing support to citizen.
- To assess the level of satisfaction of users and to identify the promotional strategy.
- To analyze the status of TCV (Time, Cost and Visit).
- To measure performance and user satisfaction of AI-Voice Bot.
- To identify the key challenges faced by the users and to recommend policy for enhancing the quality of services.

## 1.3 Literature Review

Governments in different countries are usually utilizing information and communication technology, particularly the Internet and cellphone, for providing government services to citizens, agencies, companies and other nongovernmental entities (Sprigg and Jackson, 2006). According to McNutt et al. (2016), public organizations started 'e-government journey' all over the world by publishing static information to the internet and creating an online presence which increase efficiency, effectiveness and organizational performance. As they seek consensus on e-government programs, researchers and practitioners are drawn to an increasing number of attractions. E-government is a continuum of information provision that includes web interactive communication and E-transactions, one-stop integrated virtual governmental services, and one-stop posting of static information to the internet (Hossain et al., 2018). Call center service line is one of the successful example of e-government system in many countries around the world.

Minkoff (2016) indicate that 311, telephone and web service, allows citizens of many cities to report non-emergency concerns and problems with city services to their local government. The author also discusses the challenges of using 311 data to understand the distribution of problems within a city. Milakovich (2021) found that the government service centre and helpline are critical in fostering public involvement in local government and act as a catalyst for increasing civic involvement and democracy. The most recent academic research revealed that citizens serve as users and collaborators in the digital era for shaping services and policies (Sharma et al., 2022).

Some countries have implemented helplines tailored to specific populations, such as youth, seniors. Research from Sweden, the Netherlands, and Brazil explores how targeted helplines address the unique needs of these populations, providing specialized support and fostering a

sense of inclusivity (Krawczyk et al., 2020). Mental health helplines have gained prominence globally as crucial resources for individuals experiencing emotional distress. Studies from the Australia, Denmark, France, and Germany emphasize the significance of mental health helplines in destigmatizing mental health issues, providing crisis intervention, and connecting individuals to appropriate resources. The impact of cultural factors on the utilization and effectiveness of mental health helplines is a common theme in the literature (Mahmood et al., 2024).

The integration of technology, including online chat services and text messaging, has transformed the landscape of National Helpline services. Studies from Singapore, Norway, and the United States investigate the impact of technological advancements on accessibility, user preferences, and the ability to reach diverse demographics (Budd et al., 2020). Common challenges faced by National Helpline services include resource limitations, training requirements, and maintaining service quality. Comparative analyses from Germany highlight variations in the regulatory frameworks governing helplines and the strategies employed to ensure consistent, high-quality service provision (Proctor et al. 2021). The success of National Helpline services depends on public awareness. Studies from France, China, and Nigeria investigate the factors influencing public knowledge of helplines, barriers to use, and strategies for enhancing outreach.

Hartmann, Mainka, and Stock (2017) conducted a study on Citizen Relationship Management in Local Governments, specifically exploring the potential of the 311 service for public service delivery. The research employed a mixed-method approach, involving both interviews and survey methods. The findings of the study revealed that call center services, such as the 311 service, has a positive impact on civilians' lives. The 311 service has emerged as a collaborative platform, facilitating direct communication and the sharing of thoughts between civilians and the government.

Different researches of the Middle East countries utilized non-emergency call center data to investigate the possession and manifestation of territoriality in urban areas and to examine social inequalities based on race, education, and wealth (Read et al., 2015). Although non-emergency services are very useful for urban residents, there have been little attempts to effectively forecast the regional and temporal fluctuations in demand for this non-emergency services of Arab countries (Moafa, 2022). Furthermore, the requests generated from non-emergency call center exhibit complicated geographical and time-based patterns, and there is also an issue of insufficient data.

Kontokosta and Hong (2021) revealed the positive impact of non-emergency call centre on citizens' decisions making process. According to research on non-emergency service demand modelling, accurately forecasting demand is very important (Sahoo et al, 2023). This principle applies equally to non-emergency municipal services. In addition to the growing number of call center inquiries, the demand for these municipal services varies significantly based on time and place (Channouf et al., 2007). It is also necessary to ascertain the agents' availability and arrange for the deployment of a service dispatch.

Some scholars analyzed non-emergency service from the perspective of New Public Management (NPM), which is a management approach in public administration that originated in the 1990s (Rosenbloom and Kravchuk, 1998). The primary objective of NPM is to optimize the efficiency and effectiveness of the public sector with a dedicated emphasis on reform (Rosenbloom and

Kravchuk, 2022). The NPM strategy is based on the ideas of broadening service delivery choices for individuals and enhancing government receptiveness to consumer demands. The 911 Canadian government contact centres conform to the principles of NPM and findings recommended to adopt the NPM through non-emergency call centre.

A study shows that service delivery become hindered in real time due to technologies that assist doctors and healthcare management in making judgments about patient prioritizing in non-emergency circumstances (Napi et al., 2019). In 2016, a study was conducted using a comprehensive resident satisfaction survey method and revealed a positive and significant relationship between the impact of the national call center and customer satisfaction. Cho and Choi (2004) conducted a study on Seoul Metropolitan Government's Dasan Call Center and found that the call center acts as a buffer for municipal administrative processes, shielding them from external accountability and hindering organizational learning. Appendix 1 shows services of non-emergency call center across the world.

Non-emergency helplines play a crucial role in providing citizens with national services and information, and this helps the emergency response team to tackle urgent situations with better resource availability. Citizens are benefitted from the prompt responses received which leads to informed decision making and empowerment. Governments in different countries offer different kinds of services to their citizens around the world using such helpline numbers. In New Zealand, 105 (Ten-Five) was introduced to tackle non-urgent cases and keep the emergency line 111 available for critical cases. Each year, 1.2 million calls are received by 105 service providers (Olley, 2024). This helpline generally handles cases related to loss or intentional damage to property, theft, report updates etc. Additionally, in the United Kingdom, NHS 111 service is a non-emergency medical helpline to offer medical services in cases that require little to no emergency actions. A total of 1.9 million calls were made to this service in January, 2024 and nearly half of them (53%) were responded within 60 seconds (NHS 111, 2024). It is found that dental problems, abdominal pain, respiratory problems and other general symptoms are observed as some of the most found cases (Turner et al., n.d.). In Vietnam, hotline 111 is dedicated to provide child protection, attending 5,00,000 calls each year. The helpline helps to address 1000 cases regarding child trafficking, abuse annually in a country of 23 million children. In order to provide government e- services to the citizens, the Qatar government runs government contact center '119'. According to the country's Ministry of Transport and Communications (MOTC), a total of 4 million calls are received each year. The helpline offers more than 60 services including primary health care (107), government entities (109), customs (184) and Qatar Post.

## 1.4 Methodology

### 1.4.1 Research Method

This research used a mixed method research design which combines the elements of qualitative research and quantitative research in order to answer the research question. The mixed method approach allows for data triangulation, enhancing the validity and depth of the study's findings. Conducting a thorough stakeholder analysis helps researchers to make decisions, manage expectations, and ensure successful research outcomes. Initially this study has identified different stakeholders such as users and non-users of 333 National Helpline, call center operator, call center agents, partners, a2i and 333 team.

#### 1.4.1.1 Qualitative Data

Qualitative data was collected through Focus Group Discussion (FGD) with call center agent, a2i team and users of 333 National Helpline. Key Informants Interview (KII) were conducted with call center operator, team of 333 and Project Director of a2i program. Face-to-face Interviews with users of 333 National Helpline helped to understand service adoption and its impact. Telephone interview was also conducted with the users of 333 National Helpline whose call categorized as blind call, abandoned call, phantom call and prank call. The face-to-face interview was conducted with non-users of 333 National Helpline to understand why not adopting these services. Both of the types of interviews were conducted to perform qualitative data collection.

#### 1.4.1.2 Quantitative Data

The quantitative method entailed a structured questionnaire survey that was administered face-to-face. The data were collected from the users of 333 National Helpline all over the Bangladesh. A detailed description regarding information found from the survey data is discussed in Chapter Four of this report. The survey data indicates that out of the total respondents, 287 individuals were male and 159 individuals were female. Regarding phone usage, 331 individuals of the respondents used button phones, 63 individuals used smartphones and 52 individuals used both types of phones. In terms of age distribution, the respondents were segmented into various age ranges. 88 individuals of respondents fell into the 18-25 age range, 157 individuals were in the 26-35 age range, 105 individuals were in the 36-46 age range, 78 individuals were in the 47-57 age range, and 18 individuals were 57 years old and above.

### 1.4.2 Sampling Strategy

For the qualitative data, judgement sampling is appropriate for FGD and KII in this study since we needed to interview knowledgeable individuals and experts. Additionally, in-depth interview has been conducted for this report. Respondent were selected based on random sampling technique through 333 databases for interview and survey. Convenience sampling was used to collect data from non-users. The Table 1 shows the participants group, sample size, sampling technique and instruments.

<b>Participants Group</b>	<b>Sample size</b>	<b>Sampling Technique</b>	<b>Instrument</b>
Project Director, a2i	1	Judgment Sampling	KII
333 Team	2	Judgment Sampling	KII
a2i team	5	Judgment Sampling	FGD
Call Center Operator	4	Judgment Sampling	KII
Call Centre Agents	8	Judgment Sampling	FGD
Users of 333 National Helpline	446	Random Sampling	FGD, Interview, Survey Questionnaire
Non-users of 333 National Helpline	60	Convenience Sampling	Interview, Survey Questionnaire

### 1.4.3 Questionnaires

This study has selected those respondents who have relevant knowledge and open to respond. The questionnaire was divided into Part A and Part B. Part A contains demographic information such as age, gender, educational qualifications, types of phones, occupation and Districts, etc. Part B includes questions for the different constructs presented in the research model using a 5-point Likert scale ranging from (1) "strongly disagree" to (5) "strongly agree". The measurements of all constructs of the theoretical model were developed from previous studies and adapted to the context of 333 National Helpline services. The details of measurement items and questionnaires are enclosed in the Appendix 2 and 3.

### 1.4.4 Data Analysis

We used the Partial Least Squares (PLS) method, a statistical analysis technique based on the Structural Equation Model (SEM), to test and validate the relationship between the theoretical model and the hypothesized structure. SEM is a widely accepted paradigm for measuring the validity of a theory using empirical data. Data were analyzed using SmartPLS software, one of the best-known software applications for PLS-SEM. Thematic analysis is used to identify, analyze and report patterns or themes within qualitative data. It allows considerable freedom to researchers in their interpretation and selection of themes from the interview transcript. The qualitative data were analyzed by NVivo11.

# CHAPTER 2: NATIONAL HELPLINE SERVICE (333)

## 2.1 National Helpline Service

In order to address social problems and improve public service delivery, the Bangladesh government introduced a programme called 333. This programme aims to connect citizens directly and promptly, as part of the government's vision to create a Next-Gen Bangladesh. The objective of this project is to offer an alternative avenue for accessing government information and services, primarily targeting individuals who do not use the internet and smart phone but have access to button phones.

The programme '333' symbolizes a significant intersection of decentralizing service delivery, enhancing local governance, and empowering communities. With the implementation of this real-time platform, citizens can now access to government information and services, submit complaints and get feedback through this platform. The '333' platform has now evolved into a central centre for obtaining information related to legal and administrative support in addressing numerous social issues and finding information about different government services. This initiative aims to save time, minimize operational expenses, decrease the need for physical visits, and enhance the accessibility and availability of information to the citizens.

Prior to the introduction of this service, there was a lack of a centralized complaint system addressing social issues, which hindered the prompt resolution of social problem. The number '333' is also linked to the web-based 'Grievance Redress System and Service Application Platform' (Alom, 2021). The objective of this initiative was to extend its reach to underserved populations, uneducated, marginalized, and vulnerable who have lack of access to the internet, computer technology, and are geographically distant from government offices and other support services. Individuals from any location throughout the country can contact 333 at any time to obtain the services they want.

## 2.2 Existing Services of 333 National Helpline

According to the necessity of the citizen, 333 National Helpline service is categorized into the ten nodes (Table 2). Government is continuously monitoring to adjust services based on the citizens' needs and demands.

**Table 2: Available Services of 333 National Helpline of Bangladesh**

Dialed numbers (Node)	Available Services
<b>333-0</b>	Government information and Services
<b>333-1</b>	Health related information and Medical Advices
<b>333-2</b>	Survey of Land, Land Rent, Mutation, Mouza Map and other land related Services
<b>333-3</b>	Information regarding a2i and Git Directly Mobile phone related investigation question or complain
<b>333-4</b>	To get redressal of grievances related to government services
<b>333-5</b>	Social problems and to get a remedy for crime
<b>333-6</b>	Registration of E-Commerce Business and DBID Service
<b>333-7</b>	Education Related Information and Services
<b>333-8</b>	Cyber Security Related Assistance
<b>333-9</b>	Assistance in cases of violence against Women and Children

## 2.3 Contact Channels

Contact channel links citizens with the services of 333 National Helpline. 333 National Helpline uses several communication channels throughout its services to connect citizens efficiently. Communication channels of 333 National Helpline are voice, SMS, internet and email. Citizens connect with voice channel by dialing at 333. Interactive Voice Response (IVR) receives call and describe all the existing services. Then IVR redirect the call towards call center agent according to the need of citizen. A group of professional call center agents receive those calls and dedicatedly answer the queries. Short Message Service (SMS) is another form of contact channel for spontaneous communication. However, the 333 National Helpline's SMS service is now operating at a very low level. Although video calls, websites, chatbots, social media integration, and email are the most prevalent contact means for Generation Z (born 1997-2012) and Alpha (born 2013-2025), only the website of 333 National Helpline is available at this moment.

## 2.4 Context and Architecture of 333 National Helpline

The Context and Architecture of 333 National Helpline is not so complex (Figure 1). The authority of 333 National Helpline tried hard to make it simple and smooth for the stakeholders. Service architecture starts with the problem of the citizens. Citizens faces problems and feel that authentic information is necessary to solve their problem. Only authentic and credible sources can provide accurate information which lead citizens towards 333 National Helpline service. Users engage with the IVR system to understand available nodes and follow the IVR to connect with an agent. The agent provides credible and authentic information leading to problem resolution. The 333 National Helpline Call center agents forward those complains to the designated authorities.

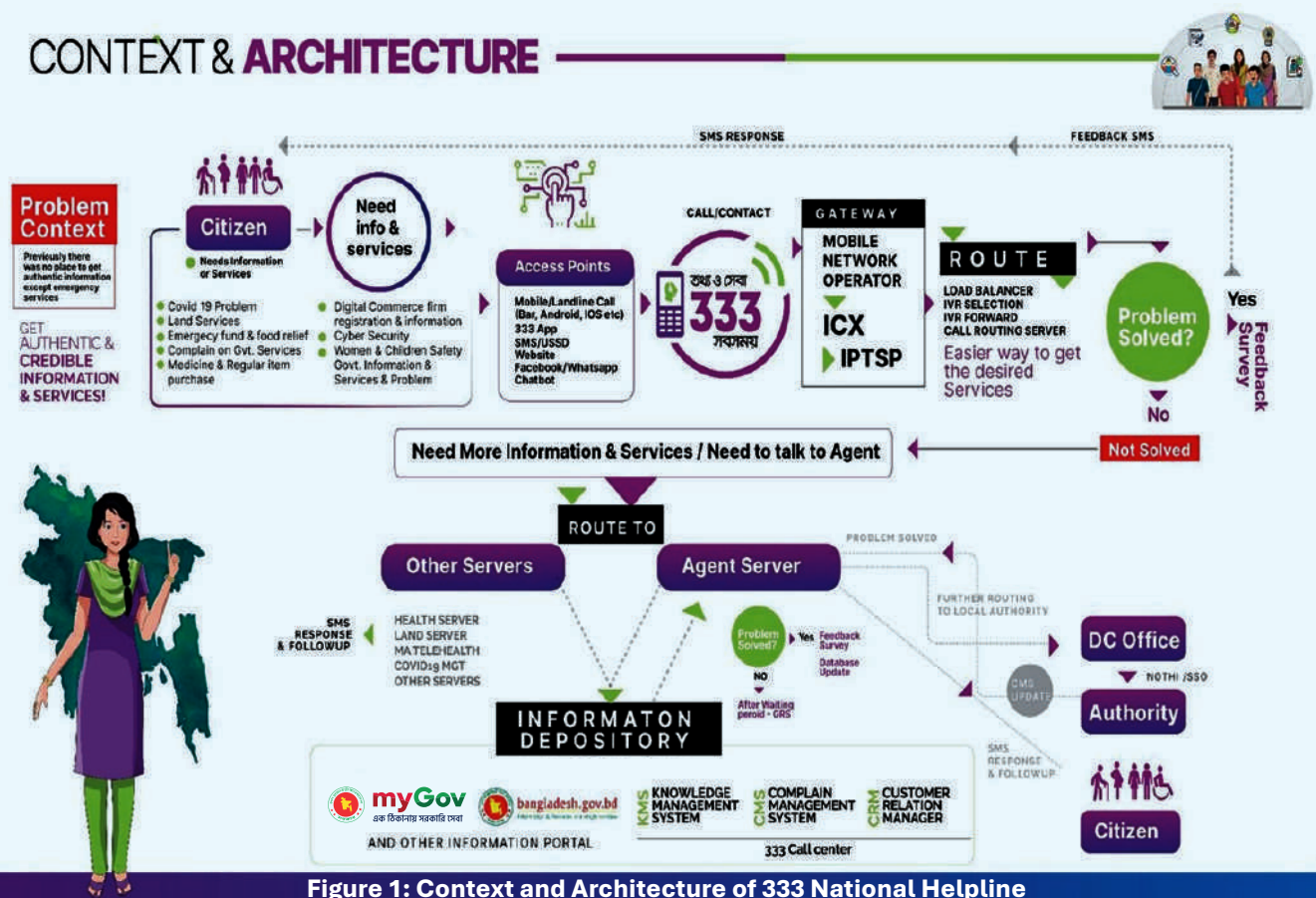
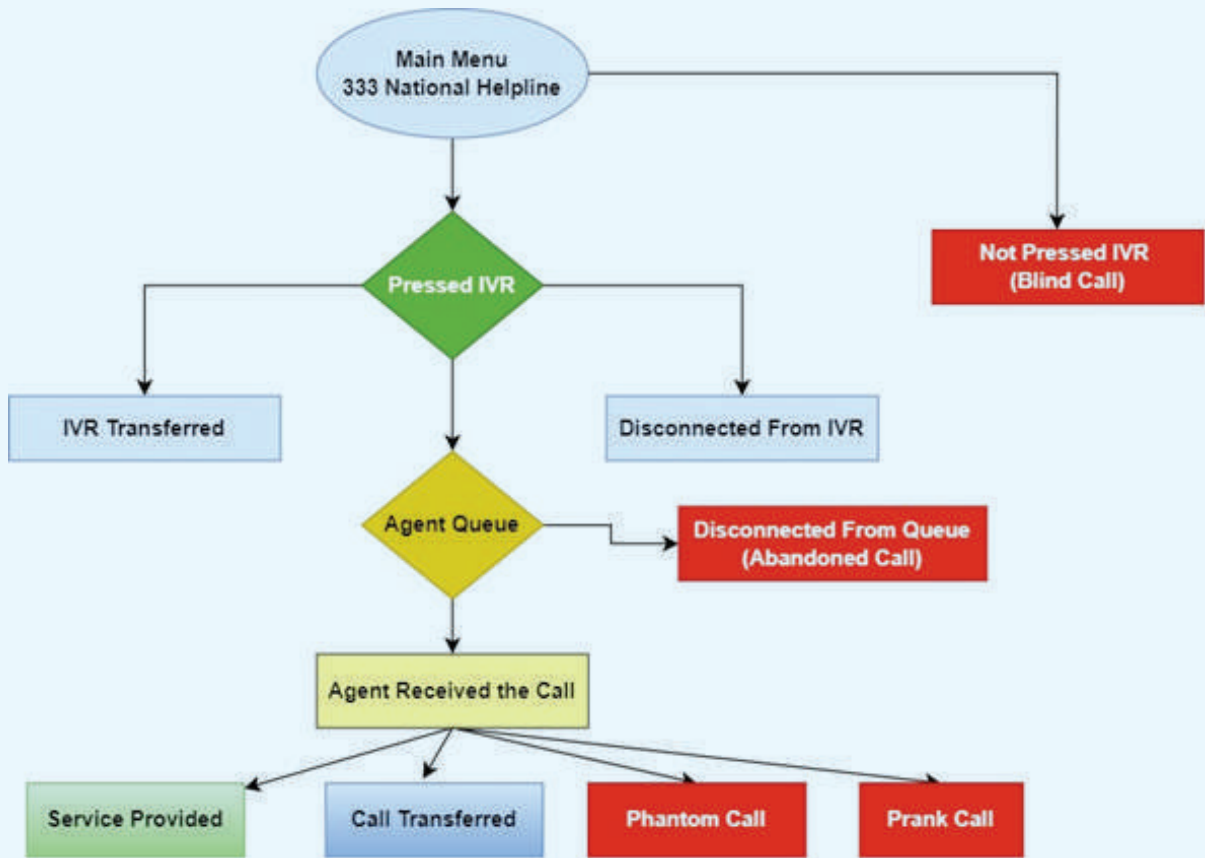


Figure 1: Context and Architecture of 333 National Helpline

The call center flowchart outlines a structured process for handling incoming calls (Figure 2). It commences with the Main Menu, where callers can navigate through various options. If a caller does not press any key, the system recognizes it as a Blind Call. If the caller opts for the Interactive Voice Response (IVR), further possibilities unfold, including IVR transfers, disconnections from a sub-IVR node, and entry into the agent queue. The agent queue introduces scenarios like abandoned calls and calls received by agents, leading to subsequent events such as service provision, phantom calls (disconnected within 4-second after receiving by the Agent), prank calls (Calling for fun), and call transfers.

In this call center framework, the Main Menu serves as the gateway to a variety of services, while the IVR and agent queue pathways provide specific routes for callers based on their interactions.

The comprehensive structure ensures a systematic approach to call handling, allowing for efficient management and resolution of diverse scenarios within the call center environment.



**Figure 2: Service Flow Chart of 333 National Helpline**

## 2.5 Why the 333 National Helpline is Essential

Non-emergency call centers help in diverting non-urgent inquiries away from emergency services which is very necessary for the country like Bangladesh. The 333 National Helpline receives 34,908 calls per day and serves more than 7,000 calls through helpline. Some calls are forwarded to different concerned authorities by agent. Since 2023, about 2500 land related calls come in each day. The helpline offers more than 2,000 government information and services. During COVID-19, 4,500 doctors provided telemedicine service to citizens through this call center. Since April, 2018, the 333 National Helpline served 100 million calls related to government information and service, 164 million for food and relief assistance, 18,000 for the prevention of child marriage, 40,000 for the prevention of other social issues, 1.237 million for digital commerce, 9.845 million for purchase of medicines and daily commodities, 100 million health inquiry calls, 4,48,000 for natural disaster assistance, 2.2. million land related calls, 6,60,000 women and child support calls, 1.062 million for cyber security assistance. It received 2 million calls from persons with disabilities. More than 5,000 families requested for help and applied for relief during recent flood in 2024 through the call center. The major benefits of 333 National Helpline are as follows.

**Public Service Accessibility:** A non-emergency call center provides a convenient and accessible channel for the public to seek information, report non-urgent issues, and access

various public services. This enhances overall public service delivery for citizen satisfactions in Bangladesh.

**Information Dissemination:** The call center can serve as a central hub for disseminating important information related to government services, public health, safety regulations, and other relevant information. Therefore, only a call over phone saves time and reduce the number of visits of the citizens.

**Community Engagement:** Establishing a non-emergency call center fosters community engagement by encouraging citizens to actively participate in reporting different issues, providing feedback, and suggesting improvements. This engagement contributes to a sense of community responsibility and collaboration among the citizens of Bangladesh.

**Data Collection and Analysis:** 333 National Helpline is the valuable tool for collecting data on citizen concerns, complaints, and suggestions. Analyzing this data can help policymakers make informed decisions, identify trends, and implement targeted interventions to address specific community needs.

**Enhanced Governance:** By providing a platform for citizens to voice their concerns and seek assistance, a non-emergency call center contributes to transparent and accountable governance in the developing country like Bangladesh. It establishes a direct line of communication between the government and the public, fostering trust and accountability.

**Public Safety and Welfare:** In Bangladesh non-emergency call centers can handle inquiries related to public safety, such as reporting non-urgent issues or safety hazards. Timely responses to these concerns contribute to the overall well-being of the community and create a safer living environment.

**Reduction of Workload on Emergency Services:** Routing non-emergency calls to a dedicated call center helps alleviate the workload on emergency services, allowing them to focus on critical situations that require immediate attention. This can lead to faster response times for emergency situations.

## 2.6 Current Status of 333 National Helpline Services

### 2.6.1 Year wise Call of 333 National Helpline

About 1,22,49,697 citizens seeking assistance in the year 2023. Till July 2024 the helpline received 79,26,805 calls. The number of calls in the National Helpline has gradually increased year by year.



Figure 3: Year wise Answered Call

### 2.6.2 Month wise Call

The monthly call data for 2023 at 333 demonstrates varying levels of importance. The month May stands out with the highest call volume at 1,75,295 suggesting a significant demand or activity during that month. January records the lowest call volume at 68,228, potentially suggesting reduced activity or importance.

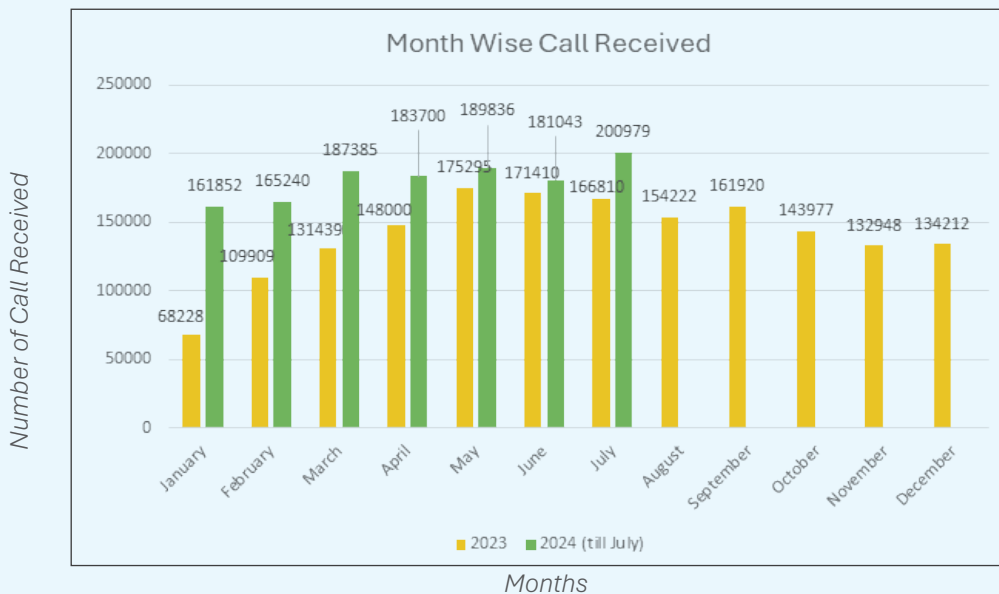
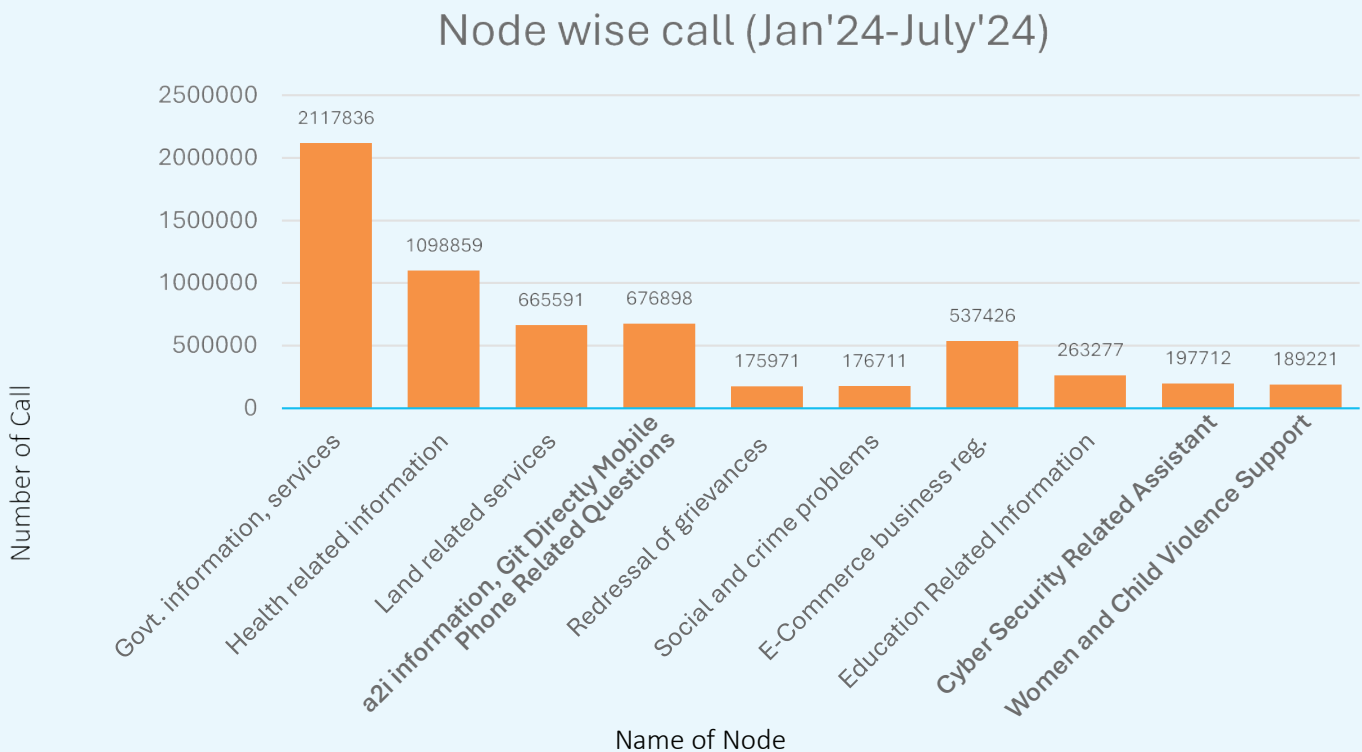


Figure 4: Month wise Call (2023- July 2024)

### 2.6.3 Node Wise Call

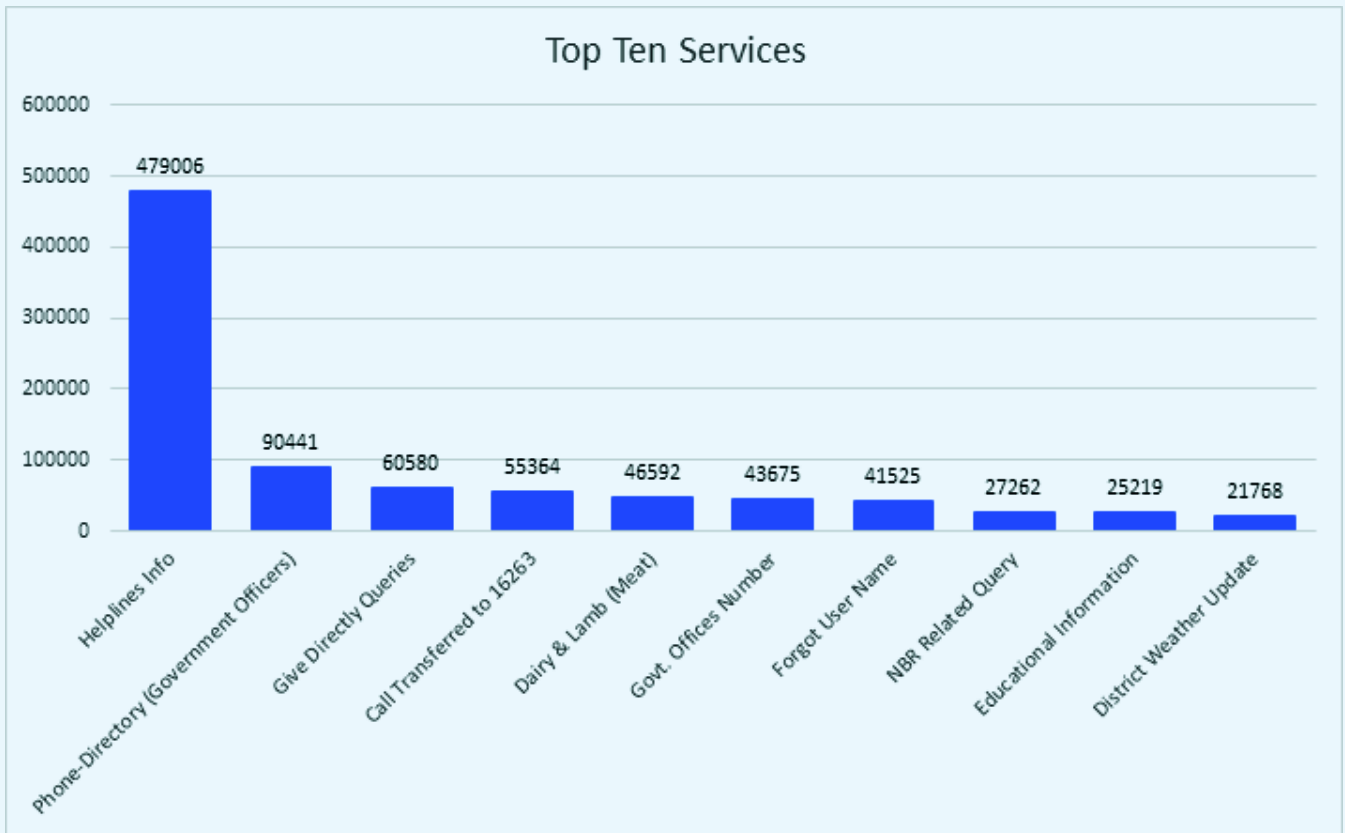
The figure 5 represents a time-series analysis of node wise call for the first 7 months of 2024 (January to July). The higher values may suggest greater significance or activity in a particular node, while lower values indicate less impact or involvement. Analyzing trends, patterns, and fluctuations in these values over time can reveal insights into the dynamics and importance of each node within the given system.



**Figure 5: Node Wise Call**

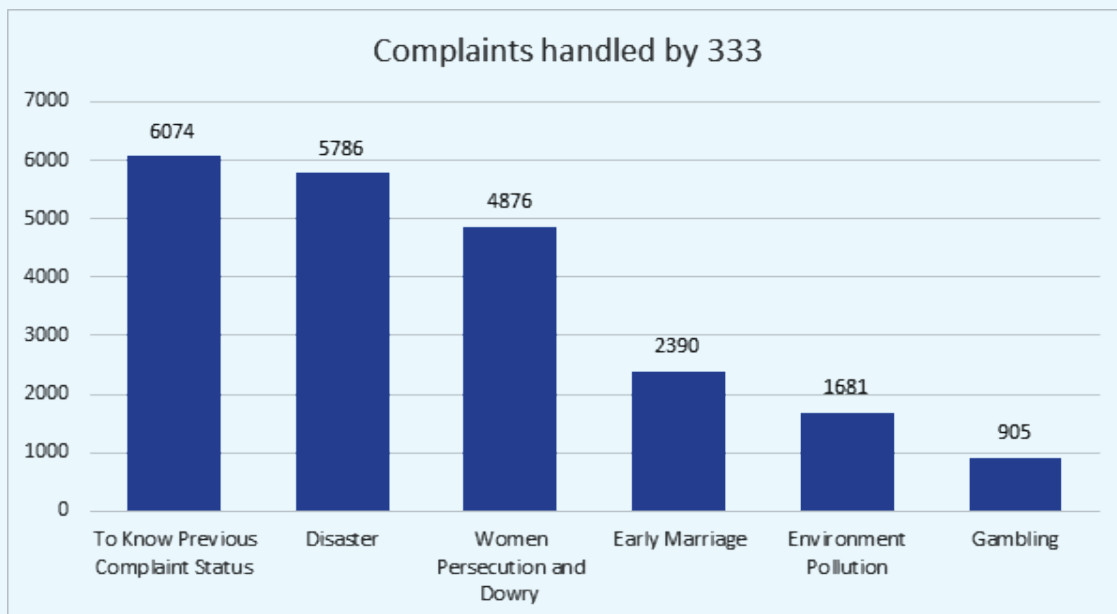
### 2.6.4 Service wise Call of 333 National Helpline

The data reflects a variety of questions, with "Helplines Info" being the most often requested service, indicating a significant need for general information. Citizens also ask for other necessary helplines information while talking with the 333 agents. Phone directories/numbers of government officials, transfer to 16263, give directly queries shows call count from 90,441 to 55,364 numbers. In addition, customers also collect information about national board of revenue.



**Figure 6: Services of 333**

During 2023-2024 (until July), The National Helpline service received the highest number of complaints related to feedback on their previous complaint status. In addition to women's persecution, civilians raise concerns about other significant social problems, including early marriage, gambling, environmental pollution through the 333 National Helpline.



**Figure 7: Complaints handled by 333**

## 2.6.5 District wise Call of 333 National Helpline

There are 64 districts in Bangladesh. The district-level service statistics show various degrees of service uptake, with Dhaka ranking first, implying a significant frequency of queries or help requests, which is consistent with its prominence as the capital city. Cox's Bazar comes in second, indicating a strong level of service participation. Chittagong and Sylhet are ranked third and fourth, respectively, indicating high service consumption in those areas.

**Table 3: District Wise Call information (Jan'23- Jul'24)**

SL.	District	Call	SL.	District.	Call.
1	Dhaka	112810	33	Kushtia	15468
2	Coxs bazar	98182	34	Kishoreganj	15416
3	Chittagong	72014	35	Pirojpur	15367
4	Sylhet	56265	36	Chandpur	15180
5	Mymensingh	53214	37	Lalmonirhat	14986
6	Noakhali	47245	38	Lakshmipur	13703
7	Rangpur	41883	39	Sherpur	13499
8	Comilla	41524	40	Natore	13319
9	Gazipur	37742	41	Barguna	13302
10	Dinajpur	36404	42	Narsingdi	13284
11	Sirajganj	34148	43	Brahmanbaria	12614
12	Naogaon	28163	44	Bagerhat	11804
13	Barisal	27267	45	Jhenaidah	11425
14	Satkhira	27185	46	Rangamati	11048
15	Rajshahi	26513	47	Gopalganj	10783
16	Bogra	25000	48	Feni	10687
17	Jessore	23364	49	Habiganj	10597
18	Gaibandha	22782	50	Chuadanga	10369
19	Khulna	21053	51	Khagrachhari	9703
20	Nilphamari	19999	52	Chapainawabganj	9272
21	Kurigram	19922	53	Panchagarh	8837
22	Tangail	19652	54	Munshiganj	7940
23	Jamalpur	19368	55	Joypurhat	7293
24	Moulvibazar	18396	56	Rajbari	7247
25	Bhola	18150	57	Magura	6977
26	Patuakhali	17283	58	Madaripur	6803
27	Netrokona	17109	59	Shariatpur	6598
28	Pabna	17000	60	Manikganj	5995
29	Thakurgaon	16503	61	Jhalakathi	5102
30	Sunamganj	16189	62	Narail	5061
31	Narayanganj	16089	63	Bandarban	4033
32	Faridpur	16023	64	Meherpur	3390

Notably, districts such as Manikganj, Jhalokathi, Narail, Bandarban, and Meherpur demonstrate lower levels of service participation. This data highlights the unequal demand for services among different regions, underscoring the importance of targeted support and tailored information distribution in various locations.

### 2.6.6 Division wise call of 333 National Helpline

Bangladesh has eight divisions to establish effective governance of the country. According to the division-wise service taking statistics, Chittagong has the most service involvement, with a total of 3,38,324 service takers. With 280,462 users, Dhaka is in second place. After Rangpur (1,82,762) and Rajshahi (1,62,021), Khulna is the city with the most people in need of assistance. Mymensingh, Sylhet, and Barisal complete the list, with increasing intervals between each division's highest and lowest service participation rates. Chittagong and Dhaka have the highest levels of service consumption, demonstrating the regional inequalities in service demand in Bangladesh shown by this data.

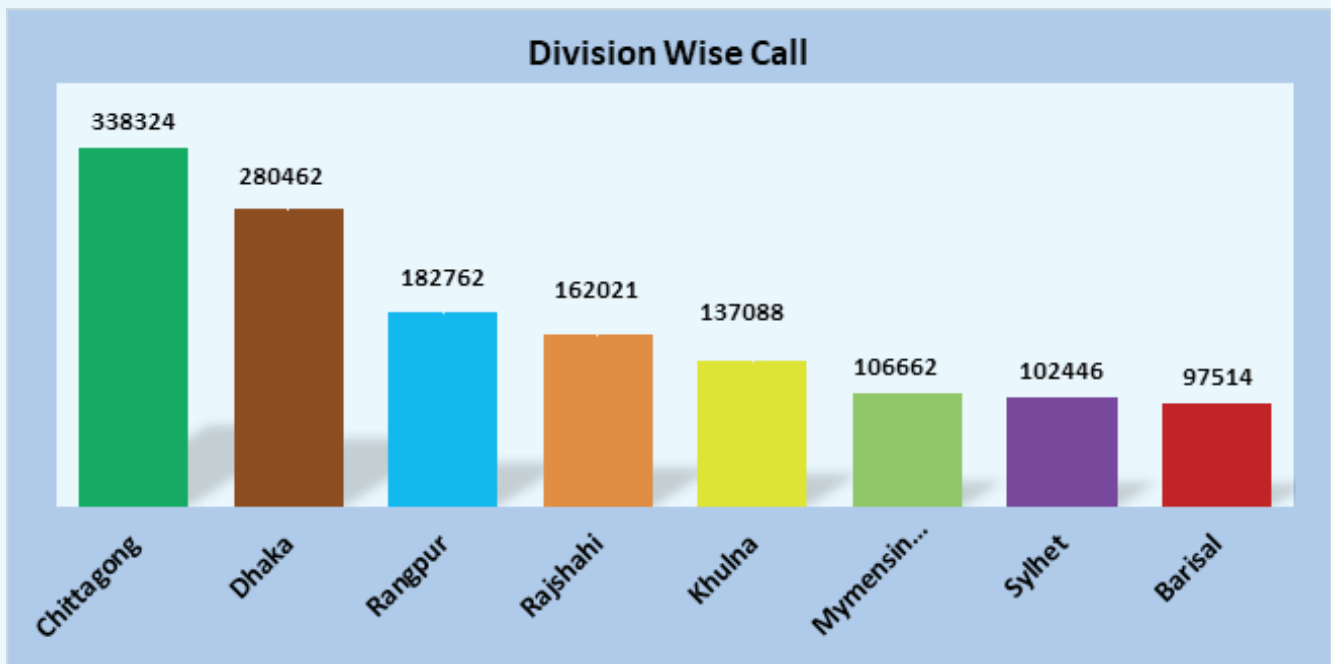


Figure 8: Division wise call information

# CHAPTER 3: CONCEPTUAL FRAMEWORK AND HYPOTHESIS DEVELOPMENT

According to the objectives and scope of the study, conceptual framework is developed. The adoption of call center services is influenced by various factors that shape users' perceptions and attitudes toward the service. It is assumed that the performance expectancy, effort expectancy, service quality, self-efficacy, perceived trust, and data security and privacy influences the adoption of call center services. Understanding these factors is crucial for call center managers and service providers to enhance customer satisfaction, loyalty, and overall success. These factors can be discussed with the support of the existing theories of technology adoption models such as TAM and UTAUT. Here is a comprehensive exploration of the key factors influencing the user adoption of call center.

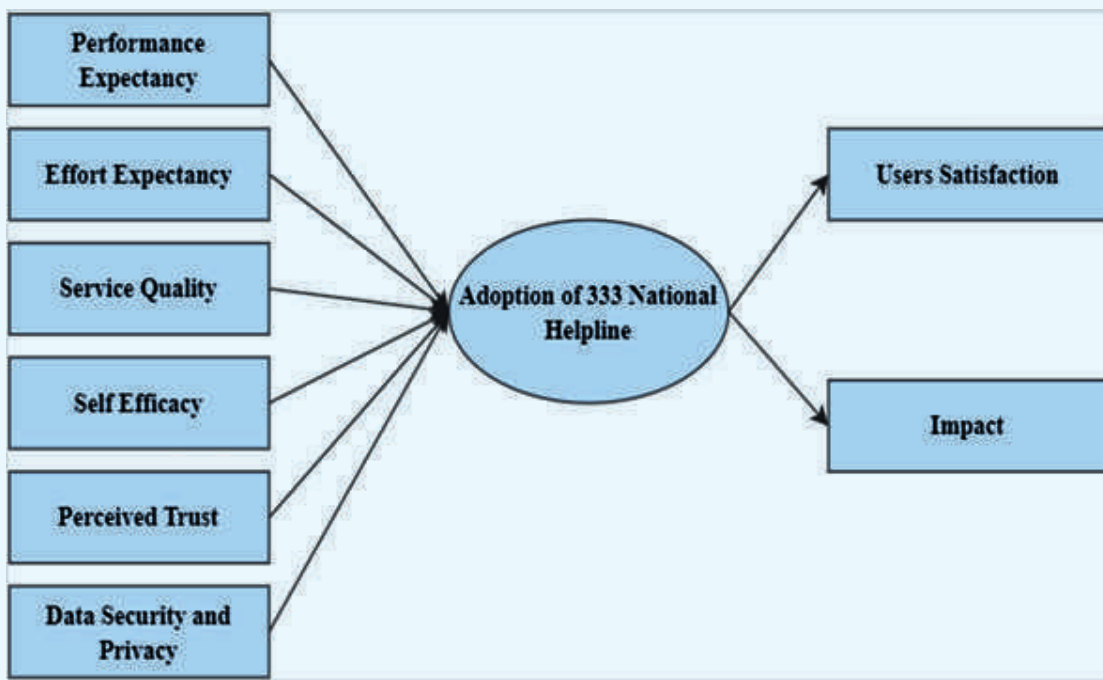


Figure 9: Theoretical Framework

## 3.1 Performance Expectancy

Performance expectancy is a key determinant of users' intention to adopt and use a technology. It refers to the extent to which users believe that using a particular technology will help them perform their tasks more effectively and efficiently (Chan et al, 2010). According to Venkatesh et al (2003), "Performance expectancy is defined as the degree to which an individual believes that using the system will help him or her to attain gains in job performance". Numerous studies applying the UTAUT has found that performance expectancy significantly influences the user's attitudes and intentions towards technology adoption. When users perceive a technology as beneficial in enhancing performance, their adoption with the technology is likely to increase. In the context of the 333 National Helpline, users are likely to adopt the service if they expect it to perform well in providing timely and effective assistance. Therefore, the following hypothesis is proposed:

*H1: The performance expectancy positively influences the adoption of 333 National Helpline.*

## 3.2 Effort Expectancy

According to Venkatesh et al, (2003), “Effort expectancy is defined as the degree of ease associated with the use of the system”. It has been found that effort expectancy is playing significant role on adopting a technology (Alraja, 2015; Heeks & Bailur, 2007). In the context of 333 National Helpline services, if users found this service easy to use with minimum effort required to access, it is likely to influence their overall attitude toward the technology positively. Effort expectancy is closely connected to the cognitive load of a user’s. According to technology adoption model, perceive ease of use directly influences users’ intention to adopt technology. If users perceive the national non-emergency service required minimum effort to use, it is more likely to use the 333 National Helpline service. Therefore, the following hypothesis is proposed:

*H2: The Effort expectancy positively influences the adoption of 333 National Helpline.*

## 3.3 Service Quality

To measure the benefits derived from any services, the idea of service quality is introduced from the model of SERVQUAL (Parasuraman et al., 1985). Reliability, responsiveness and efficiency are predominated factors in judging the technology based services (Sujeet, 2016 & Parasuraman et al., 2005). In the context of 333 National Helpline, service quality encompasses various aspects such as responsiveness, reliability, effectiveness and users support. Users perception of the quality of service provided by the helpline are crucial in shaping their attitude and behaviors toward adopting and using the technology. If the 333 National Helpline consistently delivers reliable and effective services, users are more likely to interact with the helpline. So the hypothesis can be derived as:

*H3: The Service Quality positively influences the adoption of 333 National Helpline.*

## 3.4 Self –Efficacy

Bandura (1986) defined the Self-efficacy as “people’s judgements of their capabilities to organize and execute courses of action required to attain designated types of performances”. It focuses on an individual’s evaluation of their capacity to do something successfully in a given situation. Users with high self-efficacy believe in their ability to adopt and use the 333 National Helpline more effectively. This confidence positively influences their attitude toward the helpline, contributing to a sense of control and mastery over the technology. High self-efficacy is also associated with increased engagement and willingness to explore the features and capabilities of technology. Thus users who feel confident in their ability to navigate the helpline are more likely to engage with its services which leads to a more positive users experiences. Therefore, the following hypothesis is proposed:

*H4: The Self-efficacy positively influences the adoption of 333 National Helpline.*

## 3.5 Perceived Trust

Beeri et al. (2019) found that the engagement of citizen towards any public service mostly depends upon the perceived trust. However, an emotional state of mind actually brings trust to another in particular task which actually leads for the sustaining of such activities. So both sided engagement (citizen participation and gained trust) on technological survival is important. Users

reliability, security and effectiveness of 333 National Helpline is encapsulated in the concept of perceived trust. Trust serves as a foundational element which influences users' perceptions and adoption of the 333 National Helpline. Users who trust the service are more likely to have a positive perception of the helpline's capabilities leading to the adoption of 333 National Helpline. Therefore, the study proposes the following hypothesis:

*H5: The Perceived trust positively influences the adoption of 333 National Helpline.*

### 3.6 Data Security and Privacy

Generally, data security refers to the measures and protocols in place to protect users' information from unauthorized access, data breaches or any form of compromise. Data privacy involves safeguarding users' personal information and ensuring that it is handled in a confidential and responsible manner. It concludes transparent communication about how users' data is collected, stored and used, as well as providing users control over their own information. The data security and privacy influence the adoption of technology. Improved data security and privacy play a critical role in the adoption of technology (Nagahawatta et al., 2021). If users perceived that data is secured and privacy is maintained in 333 National Helpline, they will adopt this service. Therefore, the study proposes the following hypothesis:

*H6: The Data Security and Privacy positively influences the adoption of 333 National Helpline.*

### 3.7 Satisfaction and Impact

The adoption intention of call center service is a nuanced process influenced by factors like performance expectancy, effort expectancy, service quality, self-efficacy, perceived trust, and data security and privacy. Successfully navigating these factors contributes to the ongoing use of call center services. Understanding customers' adoption intentions in call centers has far-reaching effects on satisfaction levels. Numerous studies, including those by Chan et al. (2010) and Alruwaei (2020), acknowledge satisfaction is an important variable in understanding the adoption of technological advancements. If adopting 333 National Helpline services reduces cognitive load of a user, it will bring optimum satisfaction for them. As a result of positive adoption experience and higher adoption rates are certainly associated with increased user satisfaction. Therefore, the study proposes the following hypothesis:

*H7: The adoption of 333 National Helpline has positive influence on user satisfaction.*

Users are strategic in allocating their resources, time and visit to solve problems. Research suggests that user's behavior, including the time spent, frequency of visit and allocation of resources, is influenced by their perception of the technology's usefulness. Users will be more adaptive to the new technologies if those technologies save users resources and time more efficiently. The 333 National Helpline which ultimately help users to save their time, visit and resource to search government information. As 333 National Helpline provides all necessary information in one place that reduces the cost for visiting of users. As a result, users can utilize their time, resources and visits to solve other problems. Therefore, the study proposes the following hypothesis:

*H8: The adoption of 333 National Helpline has positive impact on users*

# CHAPTER 4: FINDINGS

## 4.1 Service Status of 333 National Helpline

### 4.1.1 Service Provided by the Agent

The table 4 indicates the fluctuations in the number of services provided throughout the January, 24 to July, 24. The month January starts with a high percentage of services (22%) but sees a gradual decline over the subsequent months. Finally, total call handled by the service agents for six months were 18,58,319 (23%) from 79,26,805 main calls.

**Table 4: Main Menu and Service Provided by Agent (Jan'24-July'24)**

Month	Main Menu	Service Provided by Agent	%
January	1049094	230147	22
February	888499	273145	31
March	1068200	326763	31
April	1072771	297195	28
May	1168803	281972	24
June	1224391	253344	21
July	1455047	195753	13
Total	7926805	1858319	23

### 4.1.2 Blind Call

Citizens who dialed into the 333 call centre but not to proceed with the conversation by refraining from pressing any number to access services are considered as blind calls. The table 5 shows the summary of Blind Call during the period from January to July, 2024. The number of blind call raises from 47% to 52% during the period of January-July. The average blind call is 52% during this period.

There are different reason for Blind calls to the 333 National non-emergency Service in Bangladesh. Some individuals make these calls to test the functionality and purpose of the service, seeking to understand its capabilities. Technical problems, such as connectivity issues, could also lead to blind calls, emphasizing the importance of maintaining a robust technological infrastructure for seamless service delivery.

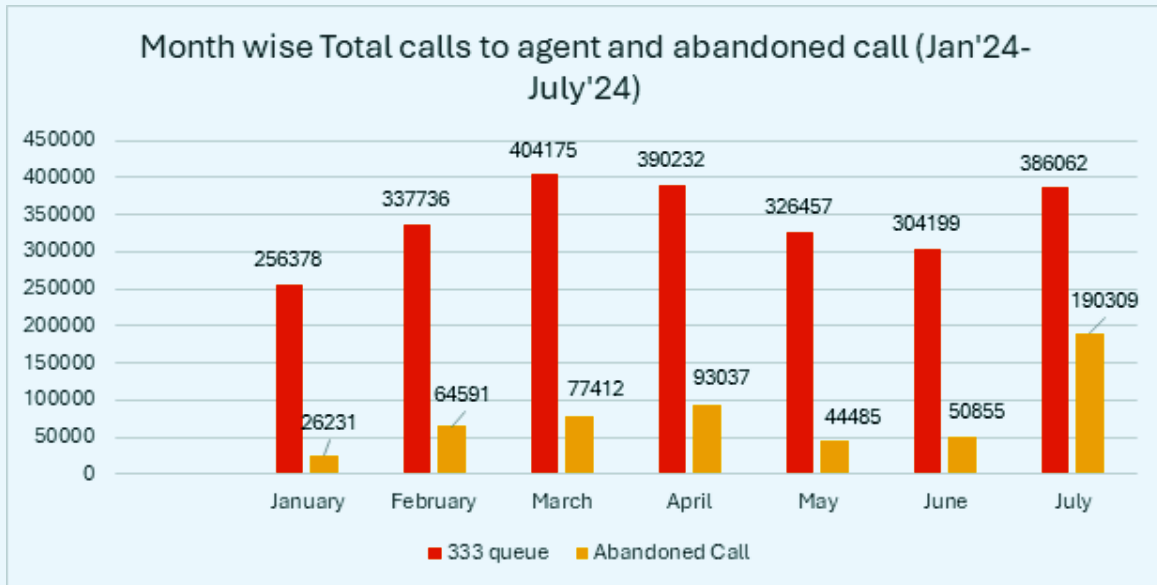
**Table 5: Blind Call (Jan'24-July'24)**

<b>Month</b>	<b>Main Menu</b>	<b>Not Pressed</b>	<b>%</b>
January	1049094	496935	47
February	888499	472846	53
March	1068200	580150	54
April	1072771	595656	5
May	1168803	599663	51
June	1224391	662684	54
July	1455047	758721	52

### 4.1.3 Abandoned Call

When customers pressed IVR to talk with the call center agents but disconnected from the queue and failed to talk with agents is known as 'Abandoned Call'. During the month of January and February 10-19% calls were abandoned whereas, the highest number of call were abandoned (49.29%) in July. The average abandoned call is 6% during this period.

Abandoned calls in a call center can stem from various factors, each contributing to a distinct aspect of customer dissatisfaction. Firstly, calls may be abandoned when agents are unavailable, reflecting potential challenges in staffing levels or operational efficiency. A shortage of available agents can lead to increased wait times, prompting customers to disconnect before their call is answered. Long waiting times due to high call volumes, inadequate resource allocation and inefficient call handling processes is another reason for call abandonment. Technical problems, such as system glitches or connectivity issues, can further contribute to call abandonment, highlighting the importance of robust technology infrastructure to ensure seamless customer interactions. Addressing these factors is crucial for reducing call abandonment rates, enhancing customer satisfaction, and optimizing overall call center performance.



**Figure 10: Abandoned Call (January, 24- July, 24)**

#### 4.1.4 Phantom and Prank Call

Both phantom and prank calls are common phenomenon for any call centers. When customers call reached to call center agents but disconnected within 4 seconds are known as phantom call. The number of phantom calls are lowest in March. However, the month of July shows the highest rate (7%) at phantom call. Call centres agents faces humorous or absurd scenarios, which is known as prank call. The month of June represent 2.63% prank call whereas July shows the lowest rate in prank call.

Phantom and prank calls to the 333 National Call Center in Bangladesh can be attributed to various reasons. Some callers may engage in such behavior to test the functionality and purpose of the '333' service, aiming to understand its capabilities. Others might resort to phantom calls due to disconnections during previous interactions, seeking to address unresolved issues or concerns. Technical problems could also prompt users to make phantom calls as a means of troubleshooting or reporting issues they may be experiencing. Addressing these diverse issues is essential for maintaining the integrity and efficiency of the National Call Center service.

**Table 6: Phantom and Prank Call (January, 24- July, 24)**

Month	Answered by Agent	Prank	Phantom	Prank(%)	Phantom(%)
January	230147	4838	8007	2.10	3.48
February	273145	6218	5569	2.28	2.04
March	326763	5848	3208	1.79	0.98
April	297195	6900	3219	2.3	1.08
May	281972	5588	4783	1.98	1.70
June	253344	6656	9828	2.63	3.88
July	195753	3,119	14,103	1.59	7.20

#### 4.1.5 Service Mapping

The 333 National Helpline services have reached to citizens of every division of Bangladesh. Most of the services are taken by the citizens of Dhaka, Chittagong and Rangpur Divisions. Rangpur division shows tremendous optimism as it is one of the developing division of Bangladesh. The human development index of Rangpur stands below the average line relative to other divisions of Bangladesh. This division has eight districts; Rangpur, Gaibandha, Dinajpur, Thakurgaon, Ponchogor, Nilphamari and Lalmonirhat. Most of the citizens of those districts face multiple challenges in their day to day life which leads them to take support from non-emergency service lines. Thus this finding show that citizens of these remote locality are highly motivated for this services.

**Table 7: Service Mapping**

Division	Ranked (Based on Population)	Ranked (Based on Service Received)	Ratio of Service and Population (%)
Dhaka	1 (45,644,586)	1 (280462)	0.61%
Chittagong	2 (34,178,612)	2 (338324)	0.99%
Rajshahi	3 (20,794,019)	4 (162021)	0.78%
Rangpur	4 (18,020,071)	3 (182762)	1.01%
Khulna	5 (17,813,218)	5 (137088)	0.77%
Mymensingh	6 (12,637,472)	6 (106662)	0.84%
Sylhet	7 (11,415,113)	7 (102446)	0.90%
Barishal	8 (9,325,820)	8 (97514)	1.05%

#### 4.1.6 Ranking of 333 National Helpline Services

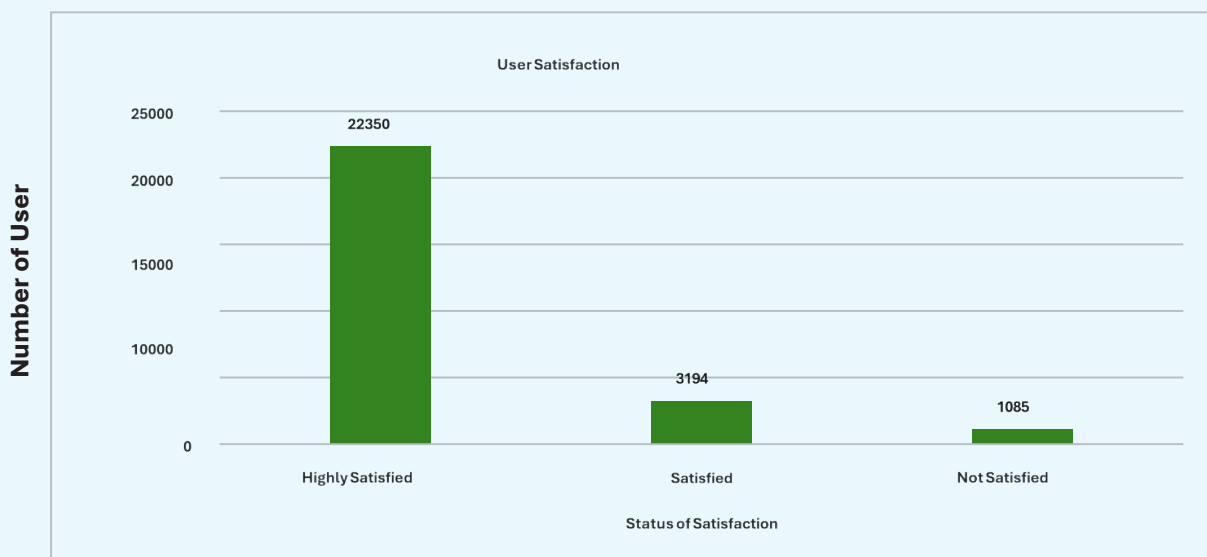
Day by day family and social problems are increasing which is alarming for the development of a country. Call centre agents receives most of the call related to social problem that is consistent with the social fact. Query to collect government information is stand in 2nd position of the rank. Citizens are now well aware from where they can collect accurate government information. Violence against women and child stands in the third position of the query. Therefore, concerned authorities need to form a cell to address the sensitive issue more quickly. Finally collecting information about a2i is not significant to the citizens which node should be replaced this with other necessary services.

**Table 8: Ranking of 333 National Helpline Services**

Rank	Dialed Number (Node)	Services
1	333-5	Solving Social Problems
2	333-0	Government information and Services
3	333-9	Legal assistance in cases related to violence against women and children
4	333-4	To file complaints about the promised services of government departments
5	333-2	Information associated to Public Land and property
6	333-1	Health related information and doctor’s advice
7	333-7	Education Related Service
8	333-6	Digital Commerce
9	333-8	Cyber Security Assistance
10	333-3	Collecting information regarding a2i

## 4.2 User Satisfaction of 333 the National Helpline Services

As there is no cost or charge for using the 333 National Helpline service, respondents show positivity of using these services. They become more optimistic about the future of this service. However, some of them also mentioned that if the Helpline service line will give more services, they are willing to pay for it. Users of this service are very pleased about all the services provided by the 333 National Helpline service. But users are rarely giving suggestions to their friends and family members about this service. The data from system log shows that 84% users are highly satisfied.



**Figure 11: User Satisfaction of 333**

*According to survey*

In interview one respondent shows his satisfaction in the following way.

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*“I contacted the Pension Information Helpline seeking details. The representatives attentively listened to my requirements and promptly furnished the necessary information. Participants expressed high satisfaction with the helpline's services, underscoring its effectiveness in providing valuable and helpful assistance regarding pension- related inquiries”*

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One respondent shows dissatisfaction of helpline.

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*“I contacted the Women and Children Torture Helpline with complaints. Initially they acknowledged my concerns and assured me for action. But no follow- up actions were taken. This lack of response raises concerns about the effectiveness of the helpline in addressing reported cases of abuse and highlights a need for improved accountability.”*

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Participants who received post-service calls from 333 expressed both happiness and high satisfaction with the organization's work. This positive feedback highlights the effectiveness of 333 is not only delivering services but also in ensuring client satisfaction and engagement beyond the service completion. About 83% respondents think that the call center agents are well equipped, efficient knowledgeable and smartly behaved.

### 4.3 Impact of 333 National Helpline

Generally, citizens of any country search for easy solution by using minimum resources of time. The 333 National Helpline is not an exception. Most of the users said that 333 National Helpline saves their time, cost and number of visits. They can use their time, money and resources in other activities. The 333 National Helpline service has reached from city to village. The success stories of the 333 National Helpline services are significant. Some of the success stories that gained significant popularity such as child marriage and food assistance.

The 333 National Helpline has facilitated the resolution of numerous social issues and provided essential services to citizens in Bangladesh. These success stories highlight the helpline's impact on people's lives, serving as an "anchor of hope". The following are a few notable examples:

**333 Saves Child from Early Marriage:** Asma Akther, a 15-year-old girl from Syednagar village in Faridganj upazilla, saved herself from an early marriage by calling the helpline number

333. Officials from the upazilla administration promptly responded and foiled the marriage attempt. A mobile court fined Asma's Father and obtained a written undertaking to prevent any further attempts to marry her off early. Police and local authorities were present during the intervention to ensure a successful outcome.

A school girl named Rifa from Jhenaidah called the helpline to report that her friend, Nipa, was about to be married off. The authorities intervened, and Nipa returned to school.

A caller reported a child marriage was going to take place in Kotchandpur. The local authorities quickly took action and stopped the marriage.

**Food Assistance and Disaster Assistance:** Shamsunnahar from Rajshahi sought food assistance of 333's services. She received prompt help and expressed high satisfaction, highlighting the success of 333 in meeting her needs and providing valuable assistance during the specified period.

A woman named Saharen from Chittagong called during a flood in 2023. Her family was facing severe food scarcity. Thus, she received food assistance within a few hours.

A woman named Narsima from Lakshmipur called the helpline in 2024 seeking shelter and food assistance as she had become homeless due to a flood. The helpline quickly provided the necessary support.

A resident of Lakshmipur called during a flood and stated that his home was submerged.

**Environmental Protection:** A caller from Dhaka reported an illegal plastic factory causing air pollution in their neighborhood. The 333 National Helpline took the complaint to the Department of Environment, who took action and closed the factory.

**Addressing Social Issues:** A caller reported that a man named Farhi from Gazipur was mistreating his elderly mother. After the complaint was processed through 333, his mother received assistance within days.

A caller from Jhalokati reported that the quality of food at the Upazila Health Complex was poor. The 333 helpline forwarded the complaint to the health authorities, who addressed the problem. The caller later confirmed that the issue was resolved.

**Access to Government Services:** Citizens utilize the helpline to inquire about various government services, such as passport fees, NID correction procedures, and trade license renewal fees. A caller from Lakshmipur sought information about land-related services.

A caller sought and received information regarding the procedure to receive a land tax payment.

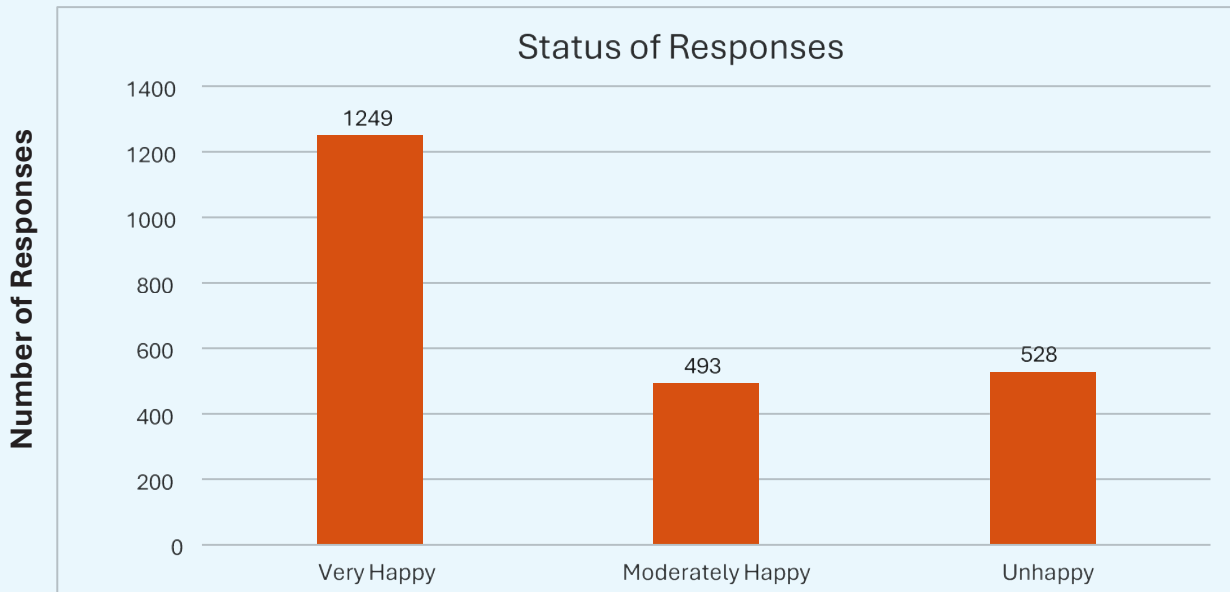
A caller received information and assistance for the e-passport application process.

A caller asked about the process for collecting a National ID card and was satisfied with the service provided.

These cases illustrate the diverse ways in which the 333 helpline is making a difference, providing both immediate relief and long-term solutions to various problems faced by the citizens of Bangladesh. It serves as a vital link between citizens and government services, promoting public welfare and community well-being.

## 4.4 User Satisfaction of AI-Voice Bot

AI-Voice Bot has already in function. Customers are calling to AI-Voice Bot and receiving services regularly. In a system log data, 12,491 customers show very happy, 4930 customers show moderately happy and 5283 shows unhappy about the performance of this Voice Bot.



**Figure 12: User Satisfaction of AI-Chatbot**

User satisfaction with the AI-Voice Bot on the 333 National Helpline in Bangladesh reflects a mixed experience. Users appreciate AI-Voice Bot for providing accurate information, which contributes to the overall service quality. However, some users express concerns about AI-Voice Bot's response speed, noting a delay in interactions. The voice quality of AI-Voice Bot is clear and loud, enhancing the communication experience. Nevertheless, there are challenges highlighted, such as AI-Voice Bot's limitations in understanding local languages, potentially creating a barrier for users who prefer or primarily communicate in regional dialects. Furthermore, users note a constraint in the range of topics AI-Voice Bot can address, limiting the scope of information it can provide to only four predefined areas. Lastly, dissatisfaction is expressed regarding the unavailability of desired services, specifically related to police clearance, contact numbers of local authorities, and hospital information, indicating room for improvement in the range and accessibility of services provided by AI-Voice Bot. Addressing these concerns can contribute to user satisfaction and the effectiveness of the 333 National Helpline's AI-Voice Bot.

## 4.5 Performance of AI-Voice Bot

The AI-Voice Bot of 333 National Helpline in Bangladesh excels in providing accurate and clear information swiftly. However, users note the occasional delays to respond the query. AI-Voice Bot faces challenges with repetitive queries, occasionally becoming confused and struggling with more complex questions. Additionally, it encounters difficulties in distinguishing between background noise and speech, impacting its responsiveness in certain situations. Addressing these issues can further enhance the overall performance and user experience of AI-Voice Bot.

## 4.6 Perspective of Managers, Operators and Agent of Call Center

The Table 9 represents the thematic analysis of the interview transcripts of the key stakeholders of the 333 National Helpline. From service provider perspective, managers, call center operators and call center agent are the important stakeholders of 333 National Helpline Service in Bangladesh.

**Table 9: Thematic Analysis of Perspective of Managers, Operators and Agents**

Theme	Detail
Customer Handling Experience	<p>Most of the call center agents are happy to handle the customers. As per the feedback of the 333 National Helpline users, many participants are highly satisfied with the service, appreciating its promptness, accuracy, and professionalism, particularly in providing medical advice and handling queries. Specific aspects like agents' behavior, timely information delivery, and receiving updates via SMS are also praised. Additionally, customers are satisfied receiving various services, such as e-passport assistance, medical consultations, agricultural support, and tourist information.</p> <p>However, sometimes customers shows their dissatisfaction in cases of dropped calls, incomplete answers, slow processes, and frustration with certain service aspects.</p>
Technology Infrastructure	<p>Technology has definitely improved efficiency. We recently implemented a new CRM system that has streamlined call routing and improved data accuracy. However, adapting to new technology was challenging for some agents. We implemented chatbots for handling routine queries, but ensuring a smooth transition between bots and human agents was tricky. Sometimes customers are frustrated if the handover isn't seamless. From an IT perspective, integrating various systems has been a challenge. We are constantly working on tools and techniques to provide a better user experience for both agents and customers.</p>

Employee Training and Development	We conduct regular training sessions on product updates and soft skills. However, it is challenging to find the balance between providing enough training and not taking agents away from the floor for too long. Continuous training is crucial. We have started e-learning platform which allows agents to learn at their own pace. It helps with retention of information. Cross-training agents on different channels is essential. It ensures they can handle calls, chats, and emails, providing a more versatile and adaptable team.
Future Trends in Call Center Management	We believe that artificial intelligence will play a significant role. We might see more advanced chatbots and virtual assistants and allowing human agents to focus on complex issues. Using data analytics to tailor interactions based on the customer's history and preferences will become standard practice. We can allow remote work as well. Ensuring that our management practices support a remote workforce and maintaining team cohesion will be crucial.
Harassment	In FGD call center agents mentioned that some callers made unnecessary call and wanted to know the personal information of agents. Those are really embarrassing for us.

#### 4.7 Perspective of Team of a2i Projects, 333 team

The face-to-face interview, FGD and KII ( a2i team and 333 team) highlight several key points. Firstly, there's a noticeable increase in the number of calls received by 333. The integration of 333 into the national curriculum is a noteworthy development. Additionally, individuals are using 333 to register complaints with the Grievance Redress System (GRS).

However, challenges such as the absence of established business models and policies for 333 are identified. A viable business model for the 333 service could be developed by drawing insights from the analysis of user interactions and needs. The feasibility of a shared business model is considered, and there is a suggestion to introduce AI into the 333 system. Merging other hotlines with 333, emphasizing its focus on marginalized individuals, advocating for free services, and identifying specific services for 333 are important considerations. Integration with other services to minimize overlapping, service forecasting, and the implementation of best practices are also emphasized for the continued enhancement of the 333 National Helpline in Bangladesh.

## 4.8 Challenges of 333 National Helpline Service

After analyzing the transcripts of every stakeholder the following challenges are found which has been presented under following theme.

**Table 10: Thematic Analysis of the Challenges of 333 National Helpline service**

Themes	Details
Call Connectivity Issues	Participants frequently mention challenges related to connecting with the service line. This includes instances of dropped calls, call multiple times to get connected, and a busy line. Connectivity issues contribute to frustration and can impact the overall user experience.
Sound Quality and Communication	Several comments focus on sound-related challenges, such as low sound quality and the need to ask for answers multiple times. Participants express concerns about agents possibly reciting information without a proper understanding. Effective communication is highlighted as a crucial aspect for a satisfactory service experience.
Waiting Time and Call Handling	Waiting time in queues emerges as a common theme, with participants mentioning significant wait times, the need to call multiple times to reconnect, and concerns about agents keeping calls waiting for extended periods. Time management and call handling efficiency are identified as areas needing improvement.
Information Quality	Participants expressed their satisfaction and dissatisfaction about information quality. There is a call for special training to enhance the capacity of service line agents and ensure accurate and reliable information delivery.
Call Management System and Infrastructure	Several comments address the need for improvement in the call management system, restructuring the hotline system, and investing more in infrastructure to support the increasing demand for services.
Crisis Handling Time and Professionalism	Concerns are raised about the efficiency of crisis handling time, emphasizing the need for more professionalism and versatile knowledge of agents.
Prank Call and Harassment	Call enter agents faces harassment and unwanted calls from the users. As a result of mental embarrassment the quality of services decline tremendously.

In summary, the thematic analysis reveals a range of experiences and feedback related to call connectivity, sound quality, waiting times, service satisfaction, and suggestions for improvement. Participants highlight both positive aspects and areas that need attention to enhance the overall effectiveness of the service line.

#### **4.9 Results of the Measurement Model**

The measurement model was assessed by examining the internal reliability, convergent and discriminant validity (Hair and Alamer, 2022). The internal reliability was evaluated considering Cronbach's alpha ( $\alpha$ ) and composite reliability, where 0.70 indicates acceptable internal consistency (Hair et al., 2011). Convergent validity was assessed by an average variance extracted (AVE) and items loading with recommended value 0.50 (Hair et al., 2012). The loadings, AVE, composite reliability and Cronbach's alpha ( $\alpha$ ) are presented in Table 11. It can be seen from Table 11 that the calculated Cronbach's alpha ( $\alpha$ ) values ranged from 0.888 to 0.935, and composite reliability values ranged from 0.882 to 0.951, which supports strong internal reliability. Table 11 also shows that the estimated loading ranged from 0.739 to 0.947 and AVE ranged from 0.714 to 0.863 is greater than the recommended levels. Therefore, the conditions for convergent validity are satisfied in this study.

**Table 11: The Measurement Model**

<b>Constructs</b>	<b>Items</b>	<b>Loadings</b>	<b>AVE</b>	<b>CR</b>	<b>Cronbach's Alpha</b>
Performance Expectancy (PE)	PE 1	0.925	0.854	0.946	0.915
	PE 2	0.928			
	PE 3	0.916			
Effort Expectancy (EE)	EE 1	0.906	0.836	0.939	0.902
	EE 2	0.923			
	EE 3	0.915			
Service Quality (SQ)	SQ 1	0.918	0.853	0.946	0.914
	SQ 2	0.941			
	SQ 3	0.917			
Self-efficacy (SE)	SE 1	0.867	0.816	0.930	0.888
	SE 2	0.915			
	SE 3	0.909			
Perceived Trust (PT)	PT 1	0.891	0.795	0.951	0.935
	PT 2	0.876			
	PT 3	0.888			
	PT 4	0.889			
	PT 5	0.902			
Data Security and Privacy (DS)	DS1	0.904	0.810	0.945	0.922
	DS2	0.899			
	DS3	0.887			
	DS4	0.911			
Adoption of 333 National Helpline (AN)	AN1	0.865	0.805	0.943	0.919
	AN2	0.915			
	AN3	0.915			
	AN4	0.893			
Satisfaction (US)	US 1	0.739	0.714	0.882	0.920
	US 2	0.895			
	US 3	0.843			
Impact (IS)	IS 1	0.906	0.863	0.950	0.920
	IS 2	0.947			
	IS 3	0.915			

The discriminant validity was assessed by the square root of the AVE and cross-loading matrix. The square root of the AVE of a construct should be greater than its correlation with other constructs for satisfactory discriminant validity (Hair et al. 2013). The diagonal elements must be larger than the entries in corresponding columns and rows to satisfy discriminant validity (Henseler, Ringle and Sinkovics, 2009). The results shown in Table 12 reveal that all constructs in this study confirm the discriminant validity of the data.

**Table 12: Correlation Matrix and the Square Root of the AVE**

	PE	EE	SQ	SE	PT	DS	AN	US	IS
PE	<b>0.92</b>								
EE	.579**	<b>0.914</b>							
SQ	.661**	.597**	<b>0.923</b>						
SE	.551**	.821**	.602**	<b>0.903</b>					
PT	.506**	.608**	.705**	.625**	<b>0.891</b>				
DS	.450**	.571**	.657**	.572**	.846**	<b>0.900</b>			
AN	.363**	.625**	.495**	.595**	.733**	.758**	<b>0.897</b>		
US	.432**	.590**	.478**	.538**	.678**	.708**	.757**	<b>0.928</b>	
IS	.500**	.518**	.449**	.498**	.621**	.609**	.649**	.831**	<b>0.853</b>

\*\* Correlation is significant at the 0.01 level (2-tailed).

Heterotrait-Monotrait Ratio (HTMT) is also used to determine discriminant validity. HTMT values close to 1 indicate a lack of discriminant validity, 0.900 indicates liberal discriminant validity and less than 0.850 indicates severe discriminant validity. If the value of the HTMT is higher than this threshold, one can conclude that there is a lack of discriminant validity. As shown in Table 13, all values pass HTMT.900 (Kline, 2011) and HTMT inference shows no discriminant validity problems.

**Table 13: Heterotrait-monotrait ratio (HTMT) - Matrix**

	AN	DS	EE	IS	PE	PT	SE	SQ	US
AN									
DS	0.824								
EE	0.687	0.625							
IS	0.706	0.660	0.568						
PE	0.398	0.489	0.637	0.546					
PT	0.792	0.911	0.661	0.667	0.547				
SE	0.658	0.631	0.916	0.549	0.612	0.685			
SQ	0.539	0.716	0.659	0.486	0.724	0.763	0.670		
US	0.883	0.826	0.694	0.901	0.513	0.785	0.637	0.561	

## 4.10 Hypothesis Testing

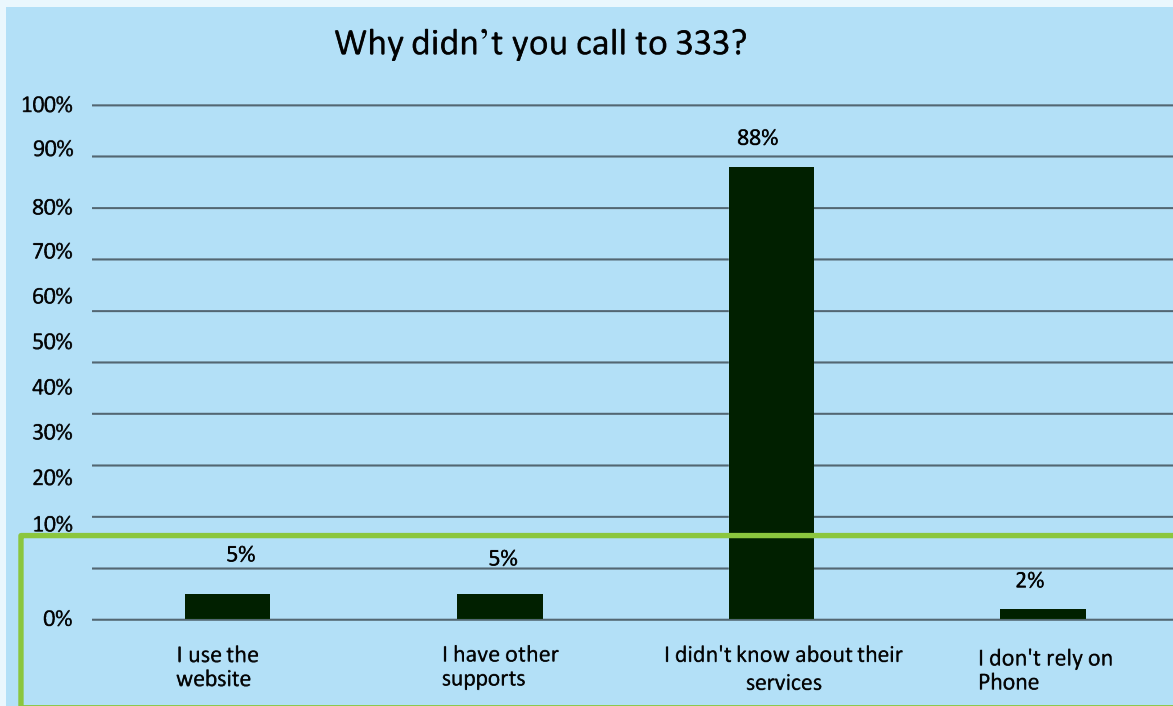
The structural model was developed to identify the relationships among the constructs of this research model. The study tested the relationship between dependent, independent and mediation variables by path coefficient ( $\beta$ ) and t-statistics. The PLS results for the structural model are shown in Table 14. The results show the positive relationships between EE and AN ( $t = 4.927, \beta = 0.274, p > 0.05$ ). SQ and AN ( $t = 3.60, \beta = 0.169, p < 0.05$ ), PT and AN ( $t = 4.419, \beta = 0.299, p < 0.05$ ), DS and AN ( $t = 7.128, \beta = 0.456, p > 0.05$ ). Thus H2, H3, H5, and H6 are supported. However, the relationship between PE and AN ( $t = 1.546, \beta = -0.078, p > 0.05$ ) and SE and AN ( $t = 1.232, \beta = 0.072, p < 0.05$ ) are not significant. So, H1 and H4 are not supported. There is strong relationship between AN and US ( $t = 3.725, \beta = 0.756, p < 0.05$ ) and AN and IS ( $t = 2.844, \beta = 0.650, p < 0.05$ ) supporting H7 and H8. Therefore, the adoption of 333 Helpline has positive impact on users. Moreover, users are satisfied to use this helpline.

**Table 14: Hypothesis Testing**

Hypothesis	Path	B	t-statistics	P values	Comments
H1	PE -> AN	-0.078	1.546	0.122	Not Supported
H2	EE -> AN	0.274	4.927	0.000	Supported
H3	SQ -> AN	0.169	3.360	0.001	Supported
H4	SE -> AN	0.072	1.232	0.218	Not Supported
H5	PT -> AN	0.299	4.419	0.000	Supported
H6	DS -> AN	0.456	7.128	0.000	Supported
H7	AN -> US	0.756	3.725	0.000	Supported
H8	AN -> IS	0.650	2.844	0.000	Supported

## 4.11 Perspective of non-user of 333 National Helpline Service

Respondents, especially who living in the rural area, still know nothing about the 333 National Helpline service. About 88% said "I didn't know about their services". For this reason, they didn't call to 333 for the purpose of taking services. About 10% people have access to online platform and other support.



**Figure 13: No Call to 333**

About 75% of respondents expressed interest in using the 333 national helpline services. This study indicates that 68% of respondents are in favor of implementing a fee for the services provided by the 333 National hotline. Additionally, some respondents expressed their willingness to pay a higher price for call center that offers premium service.

# CHAPTER 5: RECOMMENDATIONS

## 5.1 Building Awareness among Citizens through a Strong Online and Offline Presence

- **Traditional Media:** To enhance public awareness of the 333 National Helpline services, the helpline number should be included in billboards in both commercial and non-commercial areas. The 333 team can take initiative for the publicity of the role of 333 in solving various problems and promoting them on TV, radio, newspaper and journals. Call centers can campaign at Union and Ward level through miking, distribution of leaflets, banners and posters. The authority should send SMS about 333 services to specific categories of people through mobile operators. The government can organize workshops in schools, colleges, universities and various institutions to inform about 333 services. Collaboration with religious and community leaders and NGOs can also be helpful to disseminate the information regarding government services. Success stories of customers served through 333 (videos or stories) should be shared.
- **Social Media Campaign:** Video content, graphics and infographics can be used to promote 333 services on various social media including Facebook, YouTube, Twitter. Groups and communities in these platforms can be leveraged analyzing different comments and posts to understand the types of required services and feedback on the existing ones. 24/7 service on social media platforms should also be integrated into the helpline services. All these will be helpful for the 333 service providers to understand service requirements of the citizens.
- **Focus on Rural Outreach and Digital Literacy Programs:** As the study's analysis shows there are lower engagement in some divisions such as Barisal. Thus, incorporating these activities might enhance the response levels:
  - Implement community-based digital literacy initiatives to teach the use of 333 services, particularly in rural areas from where responses have been lower in past.
  - Utilize local channels like community centers, village markets, and local leaders to disseminate information to those areas. These steps can educate and empower rural people as they will have greater access to information through the 333 helpline services.

## 5.2 Developing a Robust Infrastructure for Service Providers, Receivers, Collaborators and Decision-makers

- **Websites and Online Portals:** A dedicated website should be built and maintained, displaying all the offered services and contact information. This should act as a one-stop service platform for the citizens who are in need of information regarding government services. Else, existing pages need to be updated and maintained properly. Website contains inadequate information for the visitors. Moreover, this website also needs adequate information as a significant portion of the displayed contact information has been found missing. Necessary contact information (Govt. representatives, officials etc.) needs to be stored in a database which can be linked to this website. There should also be effective redirecting links to other ministries and departments' websites to streamline the service. Moreover, launching banner and pop-up ads with 333 services on official and popular websites can increase visibility.
- **Addressing Time Delay and Other Inconsistencies by Service Agents:** Officials need to address issues on time delay in providing services, like information regarding passport, NID, birth certificate etc. Moreover, as per reported, the system seemed ineffectively automated with little interaction with the person and hence, no actual service was received during the call. Adequate human intervention or modification of the automated segment can be helpful in this case.
- **Technology Investment for the 333 Team:** The team should take initiative to provide information about 333's services in various government websites and apps. Ensure that the call center has up-to-date and efficient customer relationship management (CRM) software. There should be necessary training programs for the operators and other designated staffs of 333 team to implement the software in this particular government organization's set-up. Advanced telephony systems and interactive voice response (IVR) should be implemented to streamline call routing.
- **Introduction of Mobile Information Units:** During environmental calamities or beforehand number of vehicles equipped with connectivity and resources to provide direct support to people in remote areas or in high-lands such as 'Bandarban' from where services are rarely availed. These units can also assigned to collect user feedback from those areas.
- **Omni channel Support to Customers:** Multiple channels such as phone, chat, email, and social media should be included to meet customers' preferences. Seamless integration between these channels should be ensured for a consistent customer experience. Maintaining coordination among the 333 service providers and platform managers can ensure a seamless experience for customers.
- **Tailored Approaches for Different Services:** Among 9 different categories of services provided by this helpline, some require tailored ways.
  - For example, if necessary, professional counselors or psychiatrists can handle sensitive cases like harassment or assault with sensitivity.
  - Alert messages can facilitate emergency actions during natural disasters to support people located in disaster prone areas.

- **Voice Bot / Chatbot:** Integrating Natural Language Processing (NLP) to voice bot / chatbot is necessary to understand the conversation by the technology. Additionally, speech-to-text (STT) and text-to-speech (TTS) systems can ensure seamless voice interactions. It is also important to enhance it with multilingual (Bangla / English) and regional dialects support capabilities. AI models can be trained using historical call logs, frequently asked questions, conversational data, common complaints, emergency responses etc. Using AI models can be helpful for the 333 team to identify and classify the complaints. To implement these technologies, voice bot can be integrated into the IVR (Interactive Voice Response) system of 333 while digital platforms like the 333 website, mobile app, social media platforms are suitable to deploy the chatbot technology. This is important to offer added convenience to service receivers, specially to the people with little to no education.

### 5.3 Follow-up and Continuous Improvement

- **Comprehensive Training Programs: Government** should provide thorough training for call center agents on product knowledge, communication skills, and problem-solving techniques. Having the ability to understand people with different dialects and provide multilingual support is important for providing services effectively. Regularly updated training programs to keep **agents** informed about the latest products, services, technologies and industry trends are necessary.
- **Effective Quality Monitoring:** A robust quality monitoring system should be implemented to evaluate calls regularly. This can include call recording, live monitoring, and customer feedback analysis which can provide constructive feedback to agents.
- **Empower Agents to handle Customers' Problems: Agents** should be empowered to resolve customer issues promptly, reducing the need for escalation. Conducive work environment will enhance employee satisfaction, leading to better customer interactions. They are also supposed to be knowledgeable about the enlisted service procedures of other ministries and departments. Also, there should be certain considerations and provisions in terms of following hierarchy for prompt problem solving.
- **Implement Customer Feedback Loops:** Call centers should collect customer feedback through surveys, social media, and other channels to understand their experiences. The feedback can be used to identify areas for improvement and make data-driven decisions.
- **Personalization of Customer Data:** Customer data can help in designing personalized services. This can include using the customer's basic data and referencing their history to provide more tailored assistance. Updating the master database of the customers and building a robust system for information retention in real-time are required here. This can offer better insights to the agents, analysts and decision-makers to provide satisfactory services.
- **Continuous Process Improvement: 333 team** should regularly review and refine call center processes to identify and eliminate bottlenecks and inefficiencies. Feedback from both **the customers' and agents'** ends will help to streamline the process.
- **Analytics and Reporting:** The 333 team can use analytical tools to gain insights into call patterns, customer behavior, and agent performance from multiple platforms. Leveraging data can be significant make informed decisions about resource allocation and process improvements by analysts, operators and decision-makers.

- **Sentiment Analysis:** Users usually share their sentiments through their speeches and text while communicating at the 333 National Helpline. AI tools can analyze customer interactions to determine sentiment, helping the **333 national service call center agents** to understand the emotional tone of conversations. This can be useful for identifying potential issues and improving customer satisfaction.
- **Security Measures:** Strong security measures should be taken to protect **customer data** and ensure compliance with data protection regulations.
- **Employee Recognition, Rewards and Well-being:** Recognizing and rewarding **high-performing agents** will boost morale and motivation. Performance-based incentives should be implemented to encourage continuous improvement.
  - As the study suggests there are significant number of prank/fake calls, therefore agents should be introduced to an effective process to report any harassment they face. A proper mechanism to trace the prank calls and appropriate steps can mitigate the chances of those occurring in foreseeable future.

## 5.4 Implementing Amber Alert in Bangladesh's 333 National Helpline System

Amber Alert is an emergency notification system to disseminate missing information immediately to responsible and authorized individuals. To integrate the Amber Alert system into Bangladesh's 333 National Helpline, a structured approach involving stakeholders, technology, and process standardization is essential. The architectural framework of the system should be outlined considering regulatory bodies, technological infrastructure, integration policies, cutting edge technologies etc.

### 5.4.1 Stakeholder Coordination & Policy Framework

**Regulatory Oversight:** The Bangladesh Telecommunication Regulatory Commission (BTRC) should define operational guidelines considering the necessity of prompt responses.

**Telecom Operators (GP, Robi, Banglalink, Teletalk):** Operators must facilitate SMS broadcasting, cellular notification and geo-targeted messaging.

**Law Enforcement (Police, RAB, DB, CID):** These bodies are to act as the primary authority for issuing Amber Alerts based on validated missing reports.

**ICT Ministry & 333 Call Center Operators:** Oversee the technical implementation, overall coordination and increasing public awareness about the service.

**Citizen's Identity Database (NID, Birth Registration):** This database can play a crucial role in verifying and updating missing persons' identities.

## 5.4.2 Pilot Implementation in Target Areas

- Conducting a pilot program in high-risk regions (e.g., Dhaka, Chattogram, Rajshahi) based on previous incidents' information.
- Assessing technical feasibility, response times, and public reaction before national rollout.

## 5.4.3 Technical Architecture & System Integration

**Amber Alert Module Integration in 333:** Integrating the Amber Alert Module system to the existing 333 call centers to the services requiring emergency alert.

**AI-Based Validation:** Using AI to analyze and verify missing reports across the country before issuing alerts.

### Telecom Operator Role:

- Cell Broadcast System (CBS):** Enabling instant SMS and push notifications to users in specific regions.
- Emergency USSD Code (\*333#):** Allowing users to receive Amber Alert details via a short code to increase accessibility.

### AI & Data Analytics for Alert Routing:

- Geo-Targeted Alerts:** Color coded areas based on missing news frequency. These regions can be further categorized into districts, thanas, upazilas, wards or unions.
- Real-Time Tracking Dashboard:** Implementing a centralized platform for tracking reported cases with real-time updates.

### Multi-Channel Notification System:

- SMS Broadcast & Social Media Alerts:** After the verification of the missing news, alerts can be shared via Facebook, Twitter, WhatsApp, and government web portals. Smartphone users can be notified through mobile apps and feature phone users can be informed via IVR calls.
- Billboard & TV News Integration:** Displaying alerts on public digital billboards and TV channels as conventional media are still powerful in the country.

## 5.4.4 Privacy & Security Compliance

**Data Encryption:** It is important to ensure data privacy, for which SSL/TLS encryption can be implemented for secure data handling.

**Role-Based Access Control (RBAC):** Only authorized personnel should be able to trigger alerts.

### 5.4.5 Awareness & Training Programs

**Public Awareness Campaigns:** Creating public awareness about the alert system while educating citizens on how to report missing persons via 333.

**Law Enforcement Training:** Technical training for police and emergency responders on Amber Alert activation procedures.

### 5.4.6 Evaluation & Continuous Improvement

**Performance Metrics:** Alert effectiveness, case resolution rates, and public engagement are some of the important metrics to be considered for the effectiveness of the amber alert system.

**Regular System Upgrades:** Adaptation according to emerging technologies like AI-based facial recognition and IoT-based tracking or satellite positioning.

## 5.5 Dashboard of the 333 National Helpline

An analytical dashboard can provide real-time insights for decision-making and resource allocation for the 333 National Helpline. Key features should include interactive visualizations, filters for service type and region, and real-time monitoring of call resolution and citizen satisfaction. Important KPIs include total calls received, resolution rates, handling times, and geographical call distribution. To understand the current scenario, suitable visualizations like scorecards, line charts, bar charts, and heatmaps will improve data interpretation. Tools like Microsoft Power BI, Tableau, or Apache Superset can be used, ensuring seamless integration with government databases while maintaining data security. This kind of dashboard will help identify service bottlenecks, improve response times, and optimize resource distribution. Ultimately, it will enhance service delivery and citizen satisfaction through data-driven decision-making.

# CHAPTER 6: BUSINESS MODEL

The creation of a workable business model for the 333 service could be achieved by examining user interactions and requirements. Considering the viability of a Shared Business Model (50% Customer + 50% Government) entails exploring the practicality of a model where both citizens and the government contribute equally, thus fostering a balanced partnership for sustainable service development. The table 14 shows some business ideas which might bring more quality as well as revenue for the society.

**Table 15: Business Model**

Model	Description
Subscription-Based Model	Offer subscription plans for businesses or individuals who require regular non-emergency support. Provide different tiers of subscription with varying levels of service, response times, and available hours.
Pay-Per-Use Model	Charge clients based on the number of calls or minutes used. This model can be attractive for businesses with sporadic or unpredictable call volumes.
Outsourcing Services	Position your call center as an outsourcing solution for businesses looking to outsource non-emergency customer support or administrative tasks. Charge a fee based on the volume or complexity of tasks Outsourced.
White Labeling	Offer your call center services under the branding of other Companies. Businesses can use your services as an extension of their own operations without revealing the outsourcing aspect to their customers.
Specialized Industry Support	Focus on specific industries such as healthcare, finance, or Technology. Tailor your services to meet the unique needs and compliance requirements of these industries, charging a premium for specialized knowledge.
Multichannel Support	Extend your services beyond phone calls to include email, live chat, and social media support. Charge based on the number of channels and the level of service provided.
Consulting and Analytics	Offer additional services such as call analytics, customer feedback analysis, and process improvement consulting. Charge businesses for insights and recommendations to enhance their non-emergency call handling processes.

Inclusion of AI in the 333 National Helpline services will save money, enhance customer service, and streamline contact center operations. However, AI technologies must be carefully integrated to complement human agents rather than replace them.

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## Appendix 1: National Helpline Services around the World

Country	Number	Definition	Toll	Services
India	112	This number works to provide non-emergency policing services to the people.	Free	Policing services.
	108	This number works to provide weather information to the people when they need to know about the weather information.	Free	Weather Update Information.
	104	The main objective of 104 Medical Helpline number is to provide information and advice for health-related services to the citizen.	Free	Health services.
China	12110	The main objective of 104 Medical Helpline number is to provide information and advice for health-related services to the citizen.	Free	Non-emergency policing services.
	114	114 is a very important number, for even though you can't remember any other numbers, you can dial 114 to look up the numbers you need.	Free	Telephone number enquiry information.
Qatar	911	This number works to provide general electricity and city corporation services to the people in their need.	Free	General Electricity City Corporation services.
	109	109 is the official and unified hotline supporting Qatar government e-services 24/7. Citizens, companies, residents, and visitors can contact "109" any time to ask about all government information or complain about any government e-service.	Free	Government Information service provide.
Japan	7119	This number works to provide non-emergency medical services in Japan.	Free	Non-emergency medical services.
	171	171 Disaster Emergency Message Dial is a service that enables citizen to post and check safety status of the Citizens.	Free	Disastersafety services.
	189	This hotline is effective in safeguarding against child abuse in Japan.	Free	Child abuse report.

Country	Number	Definition	Toll	Services
Korea	110	This number provide non-emergency police service to the people of South Korea.	Free	Non-Emergency Police service.
	111	In South Korea, 111 is a special telephone number for accessing National Intelligence Service to report crimes that threaten national security.	Free	National Intelligence Service.
England	101	101 is the non-emergency police number in the United Kingdom (UK), which automatically connects the caller to their local police force, in a similar manner to the pre-existing 999 emergency number. The 101 service was created to ease pressure, and abuse of the existing 999 system.	Free	Non-Emergency Police service
Spain	092	The municipal police cover their local town or city area for traffic offences and control, lost property and crimes such as theft and neighborhood disputes.	Free	Non-Emergency Police service
Switzerland	144	This number works to provide Non- emergency medical services to the people of Switzerland.	Free	Non-emergency medical services.
Netherland	844	If citizens have an emergency that requires the police, citizen should call the emergency number 112. If citizen don't have an emergency, but citizen still need to contact the police, citizen can call: 0900-8844.	Free	Non-Emergency Police service
Denmark	114	114 is the service number for the police if citizen want to report a crime but do not require immediate police response.	Free	Non-Emergency Police service
Sweden	414	414 is for all non-urgent matters such as providing information or reporting crimes.	Free	Non-Emergency Police service
Ghana	323	Provide different types of information and non-urgent services.	Free	Provide information and others services.
Nigeria	741	In Nigeria, the non-emergency number for general inquiries and non-urgent assistance is typically the national police helpline, which is 0703 228 7741. This number can be used for reporting non-emergency incidents or seeking general information from the Nigerian police.	Free	Non-Emergency Police service
Morocco	160	This is non-emergency police service number.	Free	Non-Emergency Police service

Country	Number	Definition	Toll	Services
<b>Egypt</b>	<b>122</b>	This provides non-emergency policing services to the people of Egypt.	Free	Non-Emergency Police service
<b>Kenya</b>	<b>112</b>	This is the non-emergency police service number of Kenya. The people of Kenya can call this number in case of getting non- urgent policing services.	Free	Non-Emergency Police service
<b>Ethiopia</b>	<b>111</b>	111 is a non-emergency policing service number in Ethiopia. To get the urgent services they usually use 999 or 112 and to get the non-urgent but not necessary, they usually use 111.	Free	Non-Emergency Police service
<b>USA</b>	<b>311</b>	311 is for non-emergency police, fire and municipal services. Local and municipal governments administer 311 calls.	Free	Non-emergency police, fire and municipal services.
<b>Canada</b>	<b>122</b>	Provincial Communications Centres operate 24/7, answering emergency and non-emergency calls for service such as health, police etc.	Free	Non-emergency services such as government information, police, and health services
<b>Mexico</b>	<b>111</b>	This number supports to provide non-emergency services that has no life threatening situation.	Free	Health services. Police services. Weather update.
<b>Jamaica</b>	<b>116</b>	This hotline is operational for delivering non-urgent weather updates to the residents of Jamaica.	Free	Weather update Services.
	<b>114</b>	Provide general information to the Jamaican People.	Free	General Information.
	<b>404</b>	Non-emergency medical and other consultancy services.	Free	Non-emergency medical services.
<b>Argentina</b>	<b>101</b>	This hotline is effective for delivering non-emergency police assistance in Argentina.	Free	Non-Emergency Police service
	<b>107</b>	This number works to provide non- emergency Ambulance service in Argentina.	Free	Non-Emergency Ambulance services.
<b>Colombia</b>	<b>113</b>	This number provide general information to the Colombian people based on their necessary.	Free	General Information services.
<b>Peru</b>	<b>060</b>	When the help from police is necessary in Peru but not urgently, the people of Peru can call on 4601060.	Free	Non-Emergency Police service

Country	Number	Definition	Toll	Services
<b>Uruguay</b>	<b>44</b>	44 is the non-emergency Police service provider number in Uruguay.	Free	Non-Emergency Police service
<b>Bolivia</b>	<b>169</b>	This number provide non-emergency ambulance services in Bolivia.	Free	Non-emergency Ambulance services.
<b>Australia</b>	<b>500</b>	Australian citizen get their non-emergency services by contacting this number.	Free	Non-emergency Police, Ambulance, and Fire.
<b>New Zealand</b>	<b>105</b>	People of New Zealand call this number in case of getting services from police.	Free	Non-Emergency Police service
<b>Norway</b>	<b>800</b>	Norwegian people call this number to get the non-urgent services from their police.	Free	Non-Emergency Police service

## Appendix 2: Constructs and Measurement Items

Construct	Item	Source
Performance Expectancy (PE)	PE1: I find 333 National Helpline useful in my day to day life.	Venkatesh et al. (2003) & Kijasanayotin et al. (2009)
	PE2: The 333 National Helpline allows me to do the required work more rapidly.	
	PE3: The use of 333 National Helpline supports me to increase tasks that are important to me.	
Effort Expectancy (EE)	EE1: I had no trouble to call the 333 National Helpline.	Venkatesh, Thong, & Xu (2012)
	EE2: My contact with service line is flawless and clear.	
	EE3: I find it to be a straightforward task to use the 333 National Helpline.	
Service Quality (SQ)	SQ1: The services are always available as and when required.	Akter et al. (2013)
	SQ2: The Call center agents are sincere in solving my problems.	
	SQ3: The Call center agents are committed to ethics and promote ethical behavior in the workplace.	
Self Efficacy (SE)	SE1: I am good at communicating over telephone.	Alruwaei et al. (2020)
	SE 2: My passion is to apply new methods and technology to solve my existing problems.	
	SE3: I love to learn as much as I can to enrich my competencies.	
Perceived Trust (PT)	PT1: I feel that 333 National Helpline is secured place for me to ask a question.	Fischer et al. (2014)
	PT2: I am confident that 333 National Help line is providing right information.	
	PT3: The 333 National Helpline was so confident and reliable.	
	PT4: During the conversation, call center agents are deeply involved.	
	PT5: Call center agents of 333 National Help line are highly tolerant in any kind of queries.	
Data Security and Privacy (DS)	DS1: I believe that my personal details are confidential in 333 National Helpline.	Arpaci et al. (2015)
	DS2: Communication over voice is more secured than face to face communication.	
	DS3: As 333 National Helpline is operated by Government, the possibility of data breach is very low.	
	DS4: The operators of 333 Service line did not ask private questions frequently.	

Adoption of 333 National Helpline (AN)	AN1: To solve day to day problems my first option is to contact with 333 National Helpline service.	Venkatesh, & Davis (2000)
	AN2: No smart phone is required to avail the service of the 333 National Helpline.	
	AN3: I can rely on their recommendation.	
	AN4: 333 operators are very much sharing and caring which encourage me to call frequently.	
Users Satisfaction (US)	US1: There is no cost of using 333 National Helpline service.	Bhattacharjee (2001)
	US2: I suggest my friends and family members to use 333 National Helpline.	
	US3: I am pleased with the service of 333 National Helpline.	
Impact of 333 National Helpline (IS)	IS1: Using National service line saves my time	Amin et al (2014)
	IS2: Service line reduces the cost of searching and collecting information.	
	IS3: 333 National Helpline reduces the number of visit of the users.	

