Learnings from an Ongoing Deployment of an IVR-based Platform for Voter Awareness

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ABSTRACT

Spreading awareness among voters is a critical first step towards ensuring democratic participation. We report results from an ongoing deployment in India where we use an Interactive Voice Response (IVR) system to raise awareness about voting. People can call in to the number and answer a few questions on voting. They receive a mobile airtime top-up if they answer correctly, and an explanation

of the correct answer if they do not. The system also serves as a survey instrument and we use it to collect data on the percentage of people who have their voter ID cards that enable them to vote. Extending past work on IVR-based mass awareness, we employ a different way of presenting content—a quiz instead of a tutorial—and of incentivizing usage—no monetary incentive for referrals except for specified referrers. In 24 days of deployment, over 1900 people have called the system, out of which 1245 answered all questions correctly in their first attempt, and 234 answered correctly after learning from their initial incorrect answers.

INTRODUCTION

For many scenarios in agriculture, public health, financial inclusion, and civic policy, raising public awareness is an important first step towards bringing change[1, 3, 4, 8, 12]. These changes could promote a beneficial practice ("the benefits of sanitation") or raise awareness about an intervention such as a vaccine. In recent years, platforms based on Interactive Voice Response (IVR) have been proposed that aim to connect directly to people through their phones and deliver information[2, 5–7, 9–11, 13, 14]. As an example, the Learn2Earn system was used in rural India to spread awareness about farmers' land rights [12], and relied on peer-to-peer referrals to reach over 15,000 people in 45 days.

   While phone-based platforms can be useful, their deployment involves a number of considerations—choosing content, selecting peer influencers, and designing incentives for use—that can have an effect on the overall effectiveness of an awareness campaign. In this paper, we report results from an ongoing deployment of a IVR-based awareness platform and our learnings on these considerations. We deploy the system in three states of India with the goal of encouraging people to vote during the 2019 national election.

DESIGN OF THE SYSTEM

We use a system based on the Learn2Earn technology [12] and adapt it to spread awareness for voting: users call a toll-free number and listen to an awareness message about voter rights. They are then asked the following yes/no questions, which they are required to answer using their phone keypad:

   - Is it your duty to vote?
   - Does every Indian citizen over the age of 18 have the right to vote?
   - Should you vote for a candidate because they give you the most alcohol or money?

   If a caller answers all questions correctly, we award them a mobile top-up. Further, people can share the toll-free number with their social connections who also receive a top-up if they answer all questions correctly. Compared to past work [12] that used a tutorial format (tutorial and a quiz),

we chose a quiz format where people are provided a tutorial-like explanation only if they answer a question incorrectly, based on people's preference in initial pilots for a shorter call duration.

ANALYSIS

Our IVR-based experiment is ongoing since April 19, 2019 in several villages of India during the National Elections: Rewa in the state of Madhya Pradesh, Surajpur in Chhattisgarh, and Karaon, Amethi, and Rae Bareli in Uttar Pradesh. We present descriptive statistics of the experiment in Table 1.

In the first 24 days of the experiment, the platform has engaged 1922 unique callers, with an average of 77 calls per day. On most days, the platform received less than 100 calls; however, on May 12, which also happens to be the penultimate phase of General Elections, a maximum of 303 calls were received. Of those that called system, 1245 (65%) got all of the answers correct in their first attempt. In total, 1479 (77%) people answered all questions correctly after (optionally) multiple attempts. The vast majority (90%) of these callers successfully received mobile top-ups (due to some technical glitches that we are currently resolving, about 10% of the top-ups did not go through).

Spread of Information: Voluntary vs. Paid

The experiment started with 'seeding' a few people to take the quiz on our platform, some of them deliberately chosen as influencers in the community. From these 'seed' users, knowledge of our platform is intended to spread voluntarily through word of mouth. In addition to the organic spread of information, we selected a few "paid trainers", people who are paid to refer more people to take the quiz.

Of the unique callers, 95% came through voluntary spread of information after seeding. Further, 19 users were paid "trainers" to refer more people to take the quiz. While all the 19 paid users referred at least one person, 11 of them referred more than one with a specific paid user referring 115 people. In total, these paid users referred 260 people, out of which 40% made a call to our platform. Thus, while the referrals of paid users resulted in a small fraction of the total calls, they could still be useful to leverage in the future.

Figure 1 illustrates the number of unique calls that were received and the number of users who passed the voter awareness quiz (in their first attempt) over time. Further, the quiz passers are split into two categories in the plot: (1) those who came through organic spread of information, indicated by the blue bar, and (2) those who came through paid users, indicated by the orange bar. We also mark the days of "no-seeding": these are the days where our team did not contact any person to encourage them to try out the quiz. It can be observed that days without seeding (indicated by yellow dots) often saw fewer overall calls to the system. However, we do see an increasing trend in the number of calls over time, and would like to disentangle the effects of seeding and organic referrals as we collect more data.

Metrics	Value
Unique callers	1922
Unique callers per day (min, mean, median, max)	(4, 77, 51, 303)
Callers answering all questions correctly	1479
Callers answering all questions correctly in their first call	1245
Of questions attempted, fraction correct (Q1, Q2, Q3)	(95%, 94%, 90%)
Callers who received recharges	1115
Calls made by callers (min, mean, median, max)	(1, 2, 1, 30)

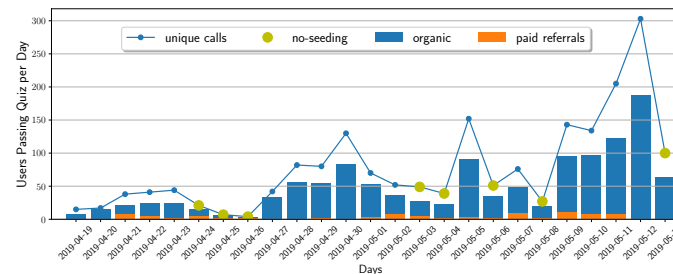Table 1: Summary statistics for our IVR-based deployment.

Figure 1: Number of people who called in (blue line) and those who answered all three questions correctly.

While preliminary, our results offer new insights on spreading awareness through IVR-based peer referrals. Unlike in past work where every user was offered a bonus for referrals, we find that people spread the system to their friends even without an explicit sharing incentive.

Gauging Voter Awareness

In addition to spreading voter awareness, we ask people who answer all three questions whether they have a valid voter ID, which is required to cast their vote. Through this question, we intend to measure how many voters who are aware of their voting rights are also practically capable of casting their votes. We find that 1042 users had a valid voter ID while 175 did not have and 28 did not wish to answer. Thus, at least in our sample, 16% of the successful quiz passers may not be able to cast their vote. While this may include people who are too young to vote, it can nonetheless serve as useful information for the local election body.

Repeated Calling Patterns

We observed that 65% of callers answered all questions correctly on the first attempt, while 12% of callers required multiple attempts to answer correctly. Almost half of callers (49%) called more than once. Of the people who called more than once, more than half of them (54%) retried the quiz even after getting a top-up. One person called 30 times. In future work, we would like to investigate the reasons behind repeated calling patterns, and whether repeated calling helped in learning the content.

CONCLUSIONS

This paper describes exploratory and ongoing work to use IVR systems, coupled with mobile payments, to increase voter awareness in rural India. Early results are promising, showing that the system can spread organically and result in positive engagement from users. Future work will continue to explore the best ways to incentivize seeding and spread, as well as ultimate impact on voting awareness.

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