

Exploring the use of an IVR service to increase financial literacy levels in rural Indians

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Abstract - The pandemic has worsened India's poverty crisis. Over 210 million Indians have re-entered poverty since the pandemic began. Meanwhile, market regulator SEBI says that less than 1 per cent of rural households in India are investors in stock markets. The poor representation of rural Indians in the Indian stock markets is troubling for multiple reasons. This research paper proposes the creation of an IVR service, Project Tijoree, which allows rural Indians to receive important financial education in their language. I deployed the platform in both rural and urban India, and our participants reported significantly higher levels of financial literacy, post the program. I make the case for using an IVR service like Project Tijoree, to improve financial literacy levels in rural India, and thus, enabling rural Indians to make financially sound choices.

keywords - financial security, financial literacy, education, IVR technology

1. INTRODUCTION

The pandemic has worsened India's poverty crisis. Over 210 million Indians have re-entered poverty since the pandemic began [1]. India's per capita growth rate for 2020 has been revised downwards to about negative 11 percent making it one of the deepest recessions in the world. As a developing economy, India has a large number of vulnerable people who have only recently escaped poverty, and have limited savings [2]. Existing literature shows that most poor communities in India have very limited access to banks and investment tools.

Market regulator SEBI's 2017 survey indicated that less than 1 per cent of rural households in India are investors in stock markets [3]. Although nearly all interviewed rural Indians are staggeringly aware of bank deposits (99.9 per cent), life insurance (94.7 per cent) and Post Office Savings (89.4 per cent), they were significantly less familiar with mutual funds and equities (28.4 per cent and 26.3 per cent, respectively). The poor representation of rural Indians in the Indian stock markets is troubling for multiple reasons.

First, while Indians who had their money in stock markets saw their wealth grow by 14 per cent in 2020 [4], rural Indians who kept their savings at home or in their accounts, actually saw their wealth decrease by 6.2 per cent due to inflation [5].

Second, much like other countries, Indian stock markets saw a huge growth period during 2020-21. This growth spurt inspired many young urban Indians to become investors for the very first time. According to SEBI, 10.7 million new demat accounts were added between April and Jan in FY21, more than double the accounts that were opened in the entirety of FY20 [6]. Unfortunately, most of these investors were young, aspirational urban Indians, and rural Indians remain excluded from these investment opportunities.

Third, lack of financial literacy, technology, and language barriers. There are multiple reasons why rural Indians feel alienated on India's top financial trading platforms. One of the major barriers is the lack of financial literacy and a lack of understanding of different investing methods. A MasterCard survey report showed that the overall financial literacy index rate in India was 62 points lower versus other similar developing countries [7]. An OECD 2018 report measured financial literacy values within males and females in rural India as 12 percent and 8 percent, respectively [8]. I strongly believe that financial literacy is an incredibly important tool to move a family out of poverty, and is one of the 21st century's most important skills. In our interview with rural Indians, several other barriers to financial literacy were discovered. Most rural Indians don't own or have access to a smartphone or a computer. As of 2021, over 600 million Indians don't have access to a smartphone or a computer [9]. Online tech platforms like Zerodha, ETMoney etc. are primarily published in English, a language that most rural Indians don't speak. Access to the Internet remains a major problem in India. Finally, there's a trust deficit between rural Indians and urban banks. In our interviews, I found that over 30 per cent of our interviewees had been scammed by various outfits, masquerading as real banks. These outfits often offer unrealistic return rates and prey on the lower levels of financial literacy in our target demographic.

Our primary goal as researchers, is to build an accessible, inclusive financial literacy platform for rural Indians. I strongly believe that such a platform must be available to people who don't own any smartphones or computers. It must also be available to people in their local languages. It should also not require access to the Internet, and it must directly address the trust deficit between rural Indians and banks.

I believe that with this research paper, I have taken the first step towards that goal. Project Tijoree is an IVR (Interactive Voice Response) platform that anyone can use without having access to a smartphone. Thankfully, India has over 1 billion phones (both feature phones and smartphones) which will enable people to call our toll-free number directly [10]. Project

Tijoree doesn't require access to the Internet or the ability to speak English. Our audio curriculum is recorded in local Indian languages, in partnership with several respected non-profits, including the Parinaam Foundation. Parinaam Foundation has spent the last 40 years building trust among rural communities across India. I was able to use Parinaam Foundation's financial literacy curriculum as the building block for own financial literacy curriculum,

Over a period of 3 months, I conducted a major pilot study, launching our IVR service in 5 villages across India. The user feedback has been largely positive, with several of our users asking for more financial learnings, and methods of investing in the markets. I am thrilled to pursue collaborations with similarly-minded banks in rural India, to enable more Indians to learn about financial tools at their disposal, and make smart, well-educated financial decisions.

In this paper, I discuss the genesis of our idea, the path towards building our curriculum and lessons and insights from our pilot launch. Finally, I discuss the future of Project Tijoree, and build the case for a national launch of an IVR-based financial literacy platform.

II. PRIOR RESEARCH

In her 2019 Forbes article, Nancy Anderson writes that financial literacy is mandatory to lift oneself from poverty, and paves a way to financial security and independence [14]. Unfortunately, most rural Indians are not financially literate. As mentioned above, a 2018 OECD report showed that only 12 percent of males, and 8 percent of females in rural India were financially literate [8].

Our research builds on prior work in improving financial literacy within the target users. In their 2020 research paper, Yi Zhang proposes the design of a mobile app to promote digital financial literacy, among young people [16]. While their work is similar to our goal, most rural Indians don't own smartphones, and thus, can't be served using a mobile application. Similarly, in 2017, Samonte, Borja et. al designed Kashing, a financial literacy micro lecture app that gamifies financial education in a form of game and a micro lecture. I was inspired by their curriculum, and included a quiz-like game element in our curriculum.

III. METHODOLOGY

Curriculum Creation

I conducted thirty user interviews across the targeted demographic to recognise the aspects of financial literacy they required the most. Most feedback indicated a lack of savings, trust in banks and understanding of basic concepts like loans and interest. Through online research [11,12] and in partnership with Parinaam Foundation, I composed the outline which included the key components of financial literacy with important terminology. I also used the State Bank of India's website to write definitions of important terms [13].

IVR Platform Creation

I used Exotel [17] to build the IVR service. Obtaining an IVR number in India can be tricky, and requires permission from local authorities. After obtaining our IVR number (080-471-90976), I used Exotel's IVR tools to build our user flow. A user flow chart, and a screenshot of the Exotel IVR service are shown below:

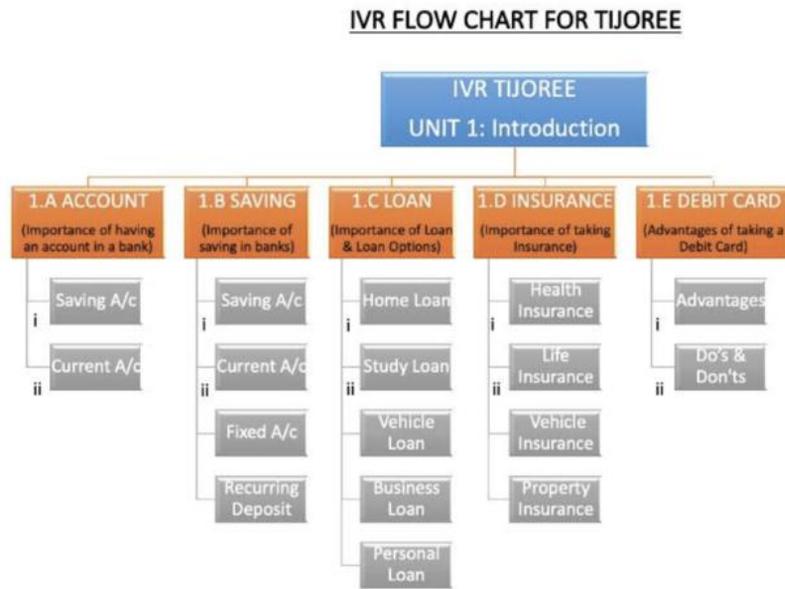


Figure 1: An IVR flow chart, representing our curriculum process

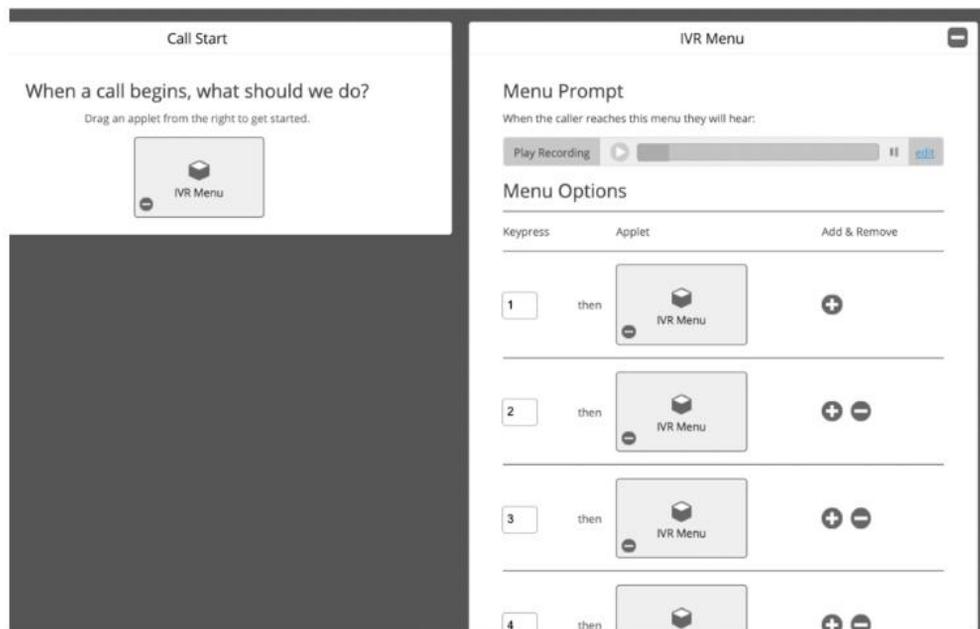


Figure 2: A screenshot of the Exotel IVR platform that showcases the first IVR menu, and summons four different IVR menus after the user inputs 1,2,3 or 4 on their keypad

IV. PILOT AND QUALITATIVE RESEARCH

Over a period of 3 months, my IVR service has been used to distribute more than 2,000 minutes of financial literacy-education in 5 villages across India. I conducted detailed user interviews with 30 of our users. These interviews were presented as informal conversations to keep the participants at ease. With the permission of the interviewees, I recorded our conversations and took detailed notes, both during and after the conversation. I observed three central themes during my interviews. The themes are presented below:

Surprise at how easy some difficult-seeming concepts were

“I never understood what fixed deposits can do, and I thought it was so complicated, so I never bothered asking someone. But now that you have explained it... it makes so much sense. I will immediately start a fixed deposit in my bank” : P21, 28, woman, domestic help

In the quote above, one of our participants was surprised to see how easy some tools of financial investment are. This was not an uncommon idea. Several participants were surprised at how quickly they grasped the curriculum and told us that they had always assumed that it would be a lot more complicated.

“I wish I had done this 20 years ago, but no one explained it to me so well” : P12, 57, woman, homemaker

Some participants also expressed regret at not having received financial education much earlier in life.

Happiness at the free IVR mobile number

“My household has one smartphone that my husband takes to work, which I do not know how to use. I am happy that I can listen to information for free without a smartphone,” :P11, 43, woman, homemaker

Many participants, especially women, have limited or no access to smartphones, and therefore no other means to gain financial knowledge digitally.

Wanting more : Guide to investing responsibly

“I used the IVR service to learn about loans and savings, but I also want to learn about investing because I saw that it is a good way to make money. On the news many people are making money by investing.” : P4, man, construction worker

V. QUANTITATIVE RESULTS

Of the users I surveyed (N=30), 90 per cent of our users finished the entire curriculum, and reported it to be useful in understanding financial terms. Our users spent an average of 7 minutes listening to the curriculum. On the flip side, 10 per cent of our users didn't finish the curriculum, because they couldn't understand the language used.

VI. CONCLUSION

Financial education is a basic life skill which correlates directly to personal well-being [18], and India's financial literacy rate stands at a mere 27 per cent [19]. India also ranks at 23rd in financial literacy among 28 surveyed countries, while being the third-largest growing economy[20]. With 65.07 per cent of the Indian population living in rural areas, where financial planning is scarcely taught, 70 per cent of Indian respondents from a survey cannot manage their personal economic emergence for more than three months[21].

In wake of the COVID 19 pandemic, it is even more difficult for rural Indians to access information. It is important to note that even today, half of all Indian citizens don't have access to the Internet or smartphones. Most Indians live one disaster away from poverty, not only because they have a low income, but because they are unaware of what to do with money after receiving their pay check. It is common practise to hide cash in mattresses and in jars throughout homes, since banks are not trusted in village areas. In a survey I took at the end of 2020, I found that over 30 per cent of my area's maintenance staff have been scammed by a local body pretending to be a bank, or offering high interest rates.

These non-institutional sources give out loans at inflated interest rates lead to small firms and individuals to fall into debt. This problem could be solved simply by taking advantage of banks, and a financial education, ultimately helping everyone take more informed decisions. 87 per cent of all schools in India are government schools [22], and due to a lack of implementation of various financial education initiatives by the government [23], most efforts for financial education are unable to reach rural school children. This is why I believe it is important for services such as Project Tijoree to bridge this educational gap. I strongly believe that this paper makes the case for building more financial literacy programs, like Project Tijoree, that educate people, and help them become more financially literate.

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