The impact of online dispute resolution on the judicial outcomes in India

Abstract:

This study assesses the impact of online dispute resolution (ODR) on the Indian Judiciary's efficiency, focusing on Sama's platform. Amidst India's massive case backlogs and the Covid-19 challenges, the introduction of technology, specifically chatbots, in Lok Adalats is analyzed. The research utilizes a Randomized Control Trial (RCT) methodology and empirical specifications to evaluate different ODR features. Results indicate an increased user engagement and maintained resolution rate with chatbot integration. The findings underscore the potential of incorporating procedural justice principles in technological advancements, enhancing user participation, and contributing to the legitimacy and efficacy of the legal system.

Introduction:

A. Case Backlogs in the Indian Judiciary:

Overburdened judiciaries with large case backlogs routinely delay justice in developing countries (Djankov, Porta, Lopez-De-Silanes, Shleifer, 2003; Marciano, Malcarne and Ramello, 2019). This not only imposes direct constraints on those who are seeking justice but also undermines public trust in the judiciary, markets and broader institutions (Amriapu, 2021). The costs of delayed justice are particularly high for those who are poor and marginalized. The global Covid-19 pandemic intensified these issues. While some judiciaries were able to adopt remote work technologies (Ramos-Maqueda and Chen, 2020), in developing countries, the limited access to digital technologies, erratic internet connectivity and strong paper-based filing systems made this transition difficult, resulting in further backlogs, greater burdens on justice workers and hindering access to justice for citizens.

In this project we propose to evaluate an intervention that aims to reduce backlog and improve judicial efficiency in India. Even before the pandemic, India faced enormous judicial backlogs. In 2018, NITI Aayog, the central government think tank of India, noted that it would take 324 years to clear the backlog of cases at the current pace. Even though India has steadily climbed in the ranking for Ease of Doing Business (currently ranked 63rd), it continues to be at 163 out of 190 in enforcing contracts. The cost of enforcing contracts has been estimated to be as high as 31% of the average claim value, as compared to 21.5% in OECD High Income Countries and 16.2% in China. The backlog of cases has gone up by at least 20% since the pandemic began and currently stands at more than 38.9 million cases. The total number of pending cases with High courts went from 4,684,354 in 2019 to 5,642,567 in December 2020. A similarly concerning statistic is evident at the District courts as well with an 18.2% increase in the total number of pending cases with 31,448,888 in November 2019 to 37,183,419 in January 2021. Furthermore, Supreme Court cases increased from 60,469 in March 2020 to 66,727 in March 2021. This steep rise in cases has been among the sharpest inclines since case specific data became shared with the

public in 2013.[1] This highlights the need to address the efficacy of justice at the bottom of the pyramid: alternative dispute resolution, mediation, and conciliation.

B. The Role of Lok Adalats in improving case clearance:

India has taken several steps towards streamlining its judicial processes and addressing the many systemic inefficiencies. In 1982, cognizant of the rising burden on the judiciary, Alternative Dispute Resolution (ADR) was introduced. This was termed as 'Lok Adalat' and was built on the traditional village approach of dispute resolution. Through Lok Adalat, parties adopted a conciliatory approach during both the pre-litigation and litigation stages. Eventually, the National Legal Services Authority (NLSA) was constituted under the Legal Services Authorities Act, 1987 to provide free Legal Services to the weaker sections of the society and to organize Lok Adalats for amicable settlement of disputes. As of 30th September, 2015 more than 1.5 million Lok Adalats had been organized in the country since its inception, and more than 82.5 million cases had been settled by the mechanism.[1] Notwithstanding the evidence, Lok Adalats have suffered from a serious shortage of resources that has prevented adequate administration of justice despite their demand (Zainulbhai, 2011; Galanter & Krishnan, 2003). Zainubhai, 2011 also points towards the structural flaws in Lok Adalats that have caused access to the system to be intermittent and difficult for the public.

In such a context, technology that enables the provision of virtual legal services to resolve disputes holds great potential. The COVID-19 pandemic led to a much needed change in the functioning of Lok Adalats. During the pandemic, NLSA suspended the in-person Lok Adalats and shifted to Online Lok Adalats. Between June and October 2020, a total of 27 e-Lok Adalats were conducted in 15 states wherein 483,000 cases were taken up and 251,000 cases disposed of resulting in settlement of INR 1,409 million.[2] While online Lok-Adalat is being celebrated for saving cost, its effectiveness, much like offline Lok Adalat, remains untested. More importantly, it has been questioned whether the online Lok-Adalat's focus on swift delivery comes at the cost of just and fair outcomes.[3]

C. Online Dispute Resolution to complement the Lok Adalats

The context of online Lok Adalats provided a unique opportunity to evaluate the effectiveness of these online dispute resolution services. We proposed an intervention in partnership with Sama, an organization that provides an innovative platform for online dispute resolution services. Founded in 2015, Sama was recognized as one of the fastest platforms for online dispute resolution.[4] It is also the only Online Dispute

[1] Pandemic Increases Pendency of Cases, Data from Ministry of Law & Justice, (March 31, 2021), https://www.newsbytesapp.com/news/india/coronavirus-pandemic-increases-pendency-of-cases/story

[2] E-Governance in Rural India: Need of Broadband Connectivity Using Wireless Technology https://www.scirp.org/html/13-6801053_5833.htm

[3] National Legal Service Authority website https://nalsa.gov.in/lok-adalat

[4] E-Lok Adalats enabled delivery of justice at litigants' doorstep during covid pandemic: Ministry of Law & Justice: https://government.economictimes.indiatimes.com/news/digital-india/e-lok-adalats-enabled-delivery-of-justice-at-litigants-doorstep-during-covid-pandemic-ministry-of-law-justice/79387933

Resolution platform recognised by the Ministry of Law and Justice. Since the start of the pandemic Sama has executed 4 online Lok Adalats by partnering up with state Legal Service Authorities across India. In the process, it has worked with more than 100,000 cases. Furthermore, Sama also provides its services to e-commerce and insurance platforms, mediating 2000 cases for them on a weekly basis.Therefore by leveraging Sama's broad reach and infrastructure we were able to conduct an RCT to study the efficacy of online mediation.

We evaluate the impact of online dispute resolution using a chatbot, on the efficiency and productivity of the judicial processes across the states in India. We assess whether the usage of AI driven bots can complement or supersede the current method of using human agents for online dispute resolution. We also assess its potential to support the Indian Judiciary in reducing case backlog and increasing their citizens' access to justice by comparing the effectiveness of the different forms of online mediation to understand what feature works best in the context of judicial processes and Lok Adalats in India. We will also look into the impact of these features on user satisfaction and engagement that can potentially lead to improved trust in the judicial institutions and legal access among the citizens.

Data and Methodology:

We piloted a chatbot to resolve traffic violation disputes online and estimate its impact on settlement rate. In a previous Lok Adalat held on 12th March 2022, Sama (an Online Dispute Resolution platform recognized by India's Ministry of Law and Justice), in partnership with the Maharashtra State Legal Service Authority (MSLSA), managed more than 5.3 million traffic violations cases across 37 districts of Maharashtra. Sama achieved a settlement rate of 18% and recovered INR 710 billion for the state. Sama makes use of a WhatsApp FAQ feature to help guide users in resolving the traffic violation cases
In the first phase of the Lok Adalat held in September 2021, Sama, in addition to WhatsApp FAQs, used a customer care helpline in the form of IVR (Interactive Voice Response) to resolve 1.1 million traffic violation disputes. These interactions were recorded in 400 audio files. We transcribed these audio files and ran Natural Language Processing algorithms to generate clusters of questions across various themes. We used these ML generated questions along with the FAQs provided by Sama to construct the automated chatbot. The chatbot is designed to quickly identify the user's query and accordingly prompt questions and instructions that help them navigate and resolve their legal disputes, in our case - traffic violations.

We randomized the violations across five treatment arms to compare their effects on the case settlement rate and other outcome variables of interest. Treatment arm 1 offers only the chatbot feature. The chatbot is accessed through a notice sent by Sama via SMS. Disputants can ask questions by clicking on the link to the chatbot. Treatment arm 2 is Interactive Voice Response (IVR) where the disputants are provided with a telephone number that they can call for assistance with cases. The number has pre-recorded responses based on the questions chosen by the disputants. Treatment arm 3 is a combination of IVR and WhatsApp. Disputants were given the option for an IVR call and later on, the option of a WhatsApp number using which they could interact with a Sama case manager (agent) who can answer their questions regarding the traffic violation. Treatment arm 4 was a combination of the Chatbot and WhatsApp. Disputants first use the chatbot feature and then are offered the option of WhatsApp number to interact with an agent to resolve their disputes. The control group received only the WhatsApp agent feature since this is the current approach used by Sama to resolve disputes remotely. Outcome variables of

interest include duration of the notice, action count, and page count in the chatbot interface. The duration of the notice indicates the speed of resolution of the disputes. The action and page counts can be used as a measure of user engagement and responsiveness.
Our empirical specification is as follows:

$$Y_i = \beta_1 * Treat1_i + \beta_2 * Treat2_i + \beta_3 * Treat3_i + \beta_4 * Treat4_i + c + \varepsilon_i \qquad (1)$$

Where Y_i is the outcome variable of interest for the disputant 'i'. $Treat1_i$ through $Treat4_i$ are dummy variables indicating whether the disputants were assigned to the corresponding treatment arms (excluding the control); c refers to the regression constant (which will include the control group coefficients) and ε_i is the error term.

Table 1: Effect of Online Dispute Resolution

	(1)	(2)	(3)	(4)	(5)	(6)
Outcome	Total Duration	Mean Duration	Total Actions count	Mean Actions Count	Total Page Count	Mean Page count
Chatbot	11.288	3.875	0.209	0.131	0.116	0.076
	(11.48)	(6.43)	(0.40)	(0.40)	(0.30)	(0.06)
IVR	10.518	6.694	1.006	0.85	0.062	0.02
	(16.32)	(9.37)	(1.04)	(1.06)	(0.06)	(0.03)
IVR + WhatsApp	18.907	11.305	0.328	0.054	0.156**	0.080*
	(12.45)	(6.36)	(0.27)	(0.20)	(0.05)	(0.04)
Chatbot + WhatsApp	25.853	17.965	0.574*	0.384**	0.150**	0.113***
	(17.12)	(8.99)	(0.22)	(0.14)	(0.05)	(0.03)
Claims Amount	-0.009***	-0.005***	-0.000***	-0.000*	-0.000**	-0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Constant	289.371***	196.828***	12.334***	8.415***	2.040***	1.371***
	(9.87)	(5.40)	(0.19)	(0.17)	(0.03)	(0.02)
N	11694	11694	11694	11694	11694	11694
R2	0.078	0.095	0.008	0.003	0.035	0.012
F-Statistic	13.61	17.51	16.21	12.36	6.54	4.7

The standard errors are shown within parentheses. The coefficients are shown to be significant at * $p<0.05$ ** $p < 0.01$ amd *** $p <0.001$ levels. The total values refer to the outcomes measured per user across all sessions and the mean values refer to the outcomes measured per session per user. Duration

variables refer to the dwell time of the user sessions, actions count refers to the no. of user clicks and other interactions with the platform. The page counts refer to the no. of pages viewed by the user through the interaction with the chatbot. The Chatbot treatment is offered only the chatbot services, while the IVR treatment group is offered only the IVR services. The Chatbot + Whatsapp treatment offers the option of interaction with human agents via WhatsApp on user demand after using the chatbot. Likewise for the IVR + WhatsApp group. Claims Amount refers to the original amount sought for payments over the traffic violation.

Discussion of the Results:

The results from the regressions using the specification (1) are displayed in Table 1. We have tabulated both the total and mean of outcome variables for each disputant. We see that the duration, action count and page counts all decrease as the amount to be paid by the users increase indicating a faster resolution for higher amounts.

Next, We see from columns (3) through (6) that having the chatbot feature to assist and complement the human agents that act as WhatsApp responders increases action and page counts from the users. An increase in page count essentially indicates that the users are able to obtain more detailed information on their queries and a hike in action counts could indicate that the users are more interested and engaged in the interaction.

Interestingly, in columns (1) and (2), where we are looking at the duration of the interactions, the addition of the chatbot feature did not really affect the resolution time.This implies that the use of chatbot to assist human interaction in ODR improves the user experience at no cost to the speed of resolution of cases. These results suggest the users were better able to express their voice in the case proceedings without significant loss of judicial state capacity.

Conclusion:

Having a voice in court is an essential element of procedural justice, a foundational principle in legal theory that suggests fairness in legal proceedings is crucial to achieving just outcomes. The utility of people getting their voice in court is multifaceted: it empowers individuals, provides a platform for presenting evidence, and contributes to the legitimacy and public acceptance of legal decisions. When people feel they have been heard and their views considered, it enhances the perceived legitimacy of the legal process and the acceptance of its outcomes. This, in turn, contributes to the stability and effectiveness of the legal system.

From a computer science perspective, integrating these principles can help in developing technologies and systems that facilitate access to justice. For example, digital platforms can be designed to ensure that individuals can effectively convey their narratives, evidence can be accurately recorded and analyzed, and the transparency of the legal process is maintained. Additionally, natural language processing (NLP) and machine learning (ML) can be used to analyze and interpret the information presented, aiding in the comprehensive and impartial evaluation of cases.

In conclusion, recognizing and ensuring the utility of people's voice in court is pivotal for achieving justice. Integrating these principles in the design and application of legal technologies can significantly enhance the functionality and fairness of the judicial system. This intersection of computer science and legal theory opens new avenues for innovation, enabling the creation of more accessible, equitable, and efficient legal processes.

References:

Djankov, S., Porta, R. L., Lopez-De-Silanes, F., & Shleifer, A. (2003). Courts. The Quarterly Journal of Economics, 118(2), 453-517.

Marciano, A., Melcarne, A., & Ramello, G. B. (2019). The economic importance of judicial institutions, their performance and the proper way to measure them. Journal of Institutional Economics, 15(1): 81-98.

Amirapu, Amrit. (2020). Justice Delayed Is Growth Denied: The Effect of Slow Courts on Relationship-Specific Industries in India. Economic Development and Cultural Change. 10.1086/711171.

Ramos Maqueda, Manuel; Chen, Daniel L.. 2021. The Role of Justice in Development : The Data Revolution. Policy Research Working Paper;No. 9720. World Bank, Washington, DC. © World Bank. https://openknowledge.worldbank.org/handle/10986/35891 License: CC BY 3.0 IGO.

Tameem Zainulbhai, Justice for All: Improving the Lok Adalat System in India, 35 Fordham Int'lL.J. 248 (2016). Available at: https://ir.lawnet.fordham.edu/ilj/vol35/iss1/3