

Pre-Analysis Plan for Courts of Tomorrow

Introduction

This study evaluates the impact of integrating generative AI technology in the Pakistani judicial system. Approximately 800 trial court judges, or one-third of the national judiciary, will be equipped with AI tools as part of the Pakistan Judicial Academy's "Artificial Intelligence Training Initiative." The project aims to assess AI's role in reducing case backlogs, improving disposal rates, and enhancing the quality of legal analysis. This initiative could set a precedent for the integration of AI in judicial systems in developing countries, offering insights into leveraging technology to improve state capabilities and judicial productivity.

Study Design

A randomized controlled trial will be implemented, with trial court judges randomly assigned to receive generative AI assistance through OpenAI's ChatGPT and related training. The judges will be divided into two groups: the treatment group, receiving AI tools and training, and the control group, continuing with traditional judicial processes until a subsequent round of the course at the end of the year. This phased roll-out ensures a comprehensive evaluation of AI's impact on judicial efficiency across varied court settings in Pakistan.

Outcome Variables

The primary outcome variables include:

- Attendance, participation tracking
- AI tool utilization
- Judgment text analysis on readability, argument diversity, legal arguments
- AI utility perceptions
- Productivity, AI expectations expectations

Regression Specification

We will estimate OLS regressions with the following specifications:

- no covariates
- FE for court
- FE for stratification unit

Heterogeneity Analysis

The study will explore heterogeneity in treatment effects by examining:

1. Heterogeneity by Age of Judges
2. Heterogeneity by education level of Province
3. Differences in outcomes based on the type of cases handled by the judges (civil vs. criminal).
4. Variation in AI tool usage patterns among judges and their correlation with efficiency improvements.
5. The impact of judges' prior experience with technology on the effectiveness of AI assistance.

Hypotheses

H1: Participation in the course will increase AI assistant usage.

H2: AI assistance will improve the quality of legal reasoning in judgments.

H3: The perceived usefulness of AI tools by judges will increase.