

# SHREYASH DESHMUKH

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## EDUCATION

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<b>Indian Institute of Management, Kozhikode</b> <i>Doctoral Fellow, Quantitative Methods and Operations Management</i>	May 2024 - Pursuing <i>Kozhikode, India</i>
<b>Indian Institute of Management, Bangalore</b> <i>Predoctoral Fellow, Decision Science</i>	May 2023 - May 2024 <i>Bangalore, India</i>
<b>International Institute for Population Sciences, Mumbai</b> <i>Master of Population Studies</i>	July 2022 - June 2023 <i>Mumbai, India</i>
<b>Sardar Patel University, Gujarat</b> <i>MSc (Bio-Statistics)</i>	2018 - 2020 <i>Gujarat, India</i>
<b>Savitribai Phule Pune University, Maharashtra</b> <i>BSc (Statistics)</i>	2015 - 2018 <i>Maharashtra, India</i>

## PUBLICATIONS

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Deshmukh, S., & Deb, S. (2025). [A Survey of Statistical and Machine Learning Methods for Quantile Regression in Time Series and Their Suitability for Predicting Dengue Outbreaks](#). Published at the Japanese Journal of Statistics and Data Science .

## WORK EXPERIENCE

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<b>Statistician and Jr Data Manager</b> <b>Johns Hopkins India Private Limited, Pune</b>	08/2020 – 07/2022
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As part of this role, I developed clinical risk prediction methods using longitudinal and survival data, contributing to more robust analytical approaches in clinical research. I actively assisted in the development of the statistical analysis plan for the [HATHI](#) study, working in close collaboration with the Principal Investigator (PI) and study coordinator. This collaboration also involved designing and finalizing paper-based Case Report Forms (CRFs) to ensure alignment with the study's data collection objectives. Additionally, I supervised and trained clinicians, counselors, and field staff on data entry protocols, including the use of REDCap for electronic data capture and integration with Electronic Health Records (EHRs), while standardizing procedures through well-defined Standard Operating Procedures (SOPs). To uphold data integrity, I conducted comprehensive quality assurance and quality control (QA/QC) processes to identify and rectify discrepancies in CRF and electronic data, ensuring the delivery of high-quality, reliable datasets for analysis.

## RESEARCH WORK

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### Meta-Analysis of Survival Rate of AIDS Disease( MSc Project)

Conducted a meta-analysis to estimate survival rates from HIV diagnosis to AIDS onset and from AIDS onset to death.

#### Key Contributions:

- Reviewed **20 cohort studies** with **25000 participants** from **PubMed, Web of Science, and Scopus** databases.
- Analyzed **survival probabilities** for HIV-to-AIDS progression and AIDS-related mortality with and without **HAART (Highly Active Antiretroviral Therapy)**.

- Applied **random-effects models** to estimate survival rates with **95% confidence intervals**.
- Identified significant **heterogeneity** and evaluated studies for **risk of bias**.
- Concluded that **HAART significantly improves survival**, with most untreated patients dying within **two years of AIDS onset**.

### Dynamic Interactions Between Air Pollutants and Air Quality Index: A VAR Model Approach

This study is exploratory study, which examines the dynamic relationships between air pollutants (PM<sub>2.5</sub>, PM<sub>10</sub>, O<sub>3</sub>, NO<sub>2</sub>, SO<sub>2</sub>, CO) and Air Quality Index (AQI) using a Vector Autoregressive (VAR) model. The Augmented Dickey-Fuller (ADF) test confirms stationarity, and optimal lag selection criteria (AIC, BIC, HQIC) suggest a lag length of 3 or 4. Granger causality tests indicate that PM<sub>2.5</sub>, PM<sub>10</sub>, NO<sub>2</sub>, and CO significantly influence AQI, while impulse response analysis shows that shocks in PM<sub>10</sub> and CO have persistent effects on AQI. These findings highlight the need for targeted policy interventions to control key pollutants, particularly vehicular emissions and industrial pollution.

### AWARDS & CERTIFICATIONS

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UGC-NET Junior Research Fellowship (Demography)	2023
Maharashtra State Eligibility Test (MH-SET) in Statistics	2023
First Prize for Paper Presentation	2020
National Conference on Recent Advances in Statistics, Sardar Patel University	

### COMMUNICATION SKILLS

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- **Oral Presentation:** Delivered a talk on "Recent Advances in Statistics and Statistical Practice" at a seminar in 2019.
  - **Poster Presentation:** Presented a research poster at the Annual Conference of Respiratory and Critical Care (ACINUS) in 2022.

### TECHNICAL SKILLS

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R, Python, STATA, SPSS, MATLAB, C++, C#, LaTeX,