

# Project Report

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# Glossary

Term	Definition
Antenatal Care	Care from health professionals during pregnancy
Child Mortality	Death between the first and the fifth birthday
Complementary Feeding	Feeding an infant, from six months onwards to complement breastfeed
Infant Mortality	Death of an infant before the first birthday
Overweight	More weight-for-age
Stunting	Being too short for one's age
Underweight	Low weight-for-age children
Under-five Mortality	Death before the fifth birthday
Wasting	Being dangerously thin for one's height

## Introduction:

The National Family Health Survey (NFHS) conducted by the Ministry of Health and Family Welfare has played a key role in providing various insights to the government of India. The report evaluates the population on various parameters which is the benchmark for all government initiatives. It provides data on the population, health, and nutrition of India.

## Scope of our Research:

“4 out of every 100 children born in India die within 5 years of their birth”.

This is the issue we tried to explore in our research. Although there are many other factors that affect the child's health like sanitation of the household, poverty, family income, etc. But we focused our study on the following parameters only:

- 1) Maternal Health.
- 2) Child feeding practices.
- 3) Immunization.
- 4) Malnutrition.

Our data analysis is limited to NFHS - 4 and NFHS - 5 reports. In our study, we focused on capturing the overall picture of all the states by the above-mentioned parameters.

## Methodology

### 1. Team's Approach to Study:

The first step that the team took is to download the data for NFHS -5 from Pratap Vardhan's [GitHub profile](#). Some team members took the initiative to do the data analysis and others went through the various news reports.

Each team member went through various topics to finalize which topic to work on. Each team member tried to explore different topics for research. The team did realize that the scope of this study had to be limited as the amount of time available was limited. Thus, by limiting the scope of the study, our focus was to get high-quality insights from the data and the model so that we can focus more on our visualization strategy.

The team concentrated on cleaning the qualitative data that we had to answer any possible questions related to our research. The topic that the team came up with was Women empowerment, child health, education, and sanitation. Eventually, we all agreed to cover Child's Health.

### 2. Determining the right Indicators.

The next step is to find the relevant indicators around the child's health and weave a coherent story around our theme.

We studied the NFHS-5 report and CSV file and found the following relevant indicators to work with:

### 3. Allocating tasks to team members that match the goals of the study

After identifying the relevant indicators for the study, we divided our work equally to study different parameters. Because of that, we were able to focus on identifying various insights. There were various data tables relevant to our indicators in NFHS - 5 and NFHS - 4 reports. Each team member tried to find a correlation or causation from all the data that was available to us.

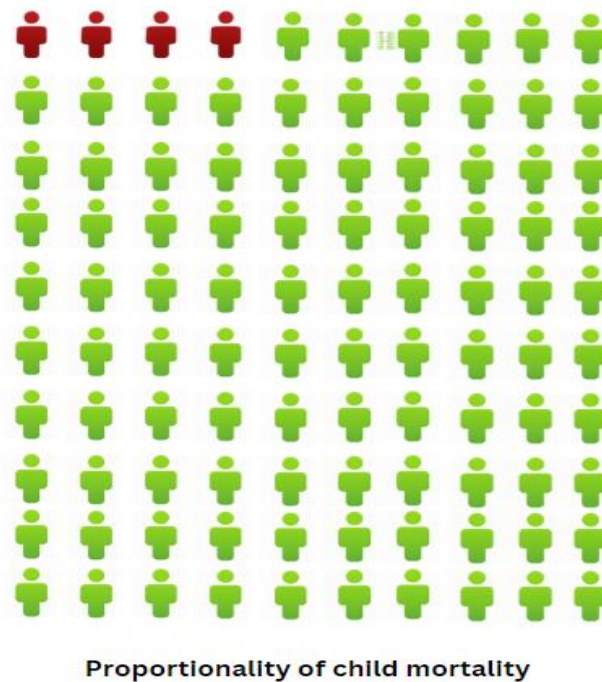
### 4. Iterating through various graphs and tools.

As a team, we first dived deep into the gender distribution of early childhood mortality rates to check if there is a significant difference between the two genders. We tried various graphs for each data point that was relevant to our study.

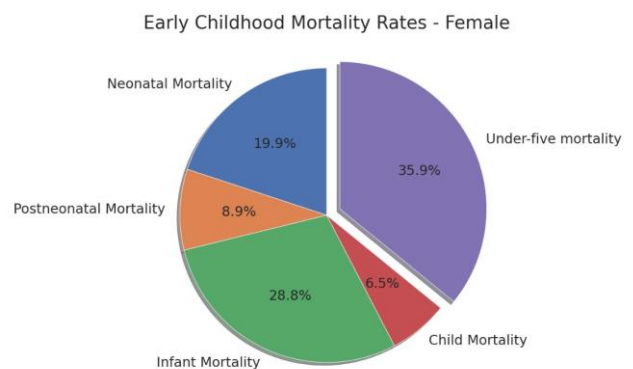
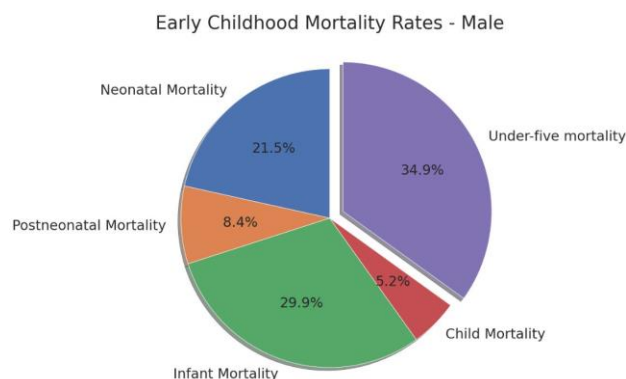
We experimented with various tools like Excel, Tableau, Flourish, Data Wrapper, etc. Then we covered the trends of immunization across the different states.

## Analysis

Chart Mortality Rates by Gender is insignificant.



The above graph shows the Infographic of Child Mortality rate in India. Among which 4 out of 100 children born in India die within 1 year of their birth.



- The above graph indicates different causes for mortality of children aged 0-5 years
- The comparison of the two visualizations indicates no significant difference in the distribution of causes between male and female child deaths

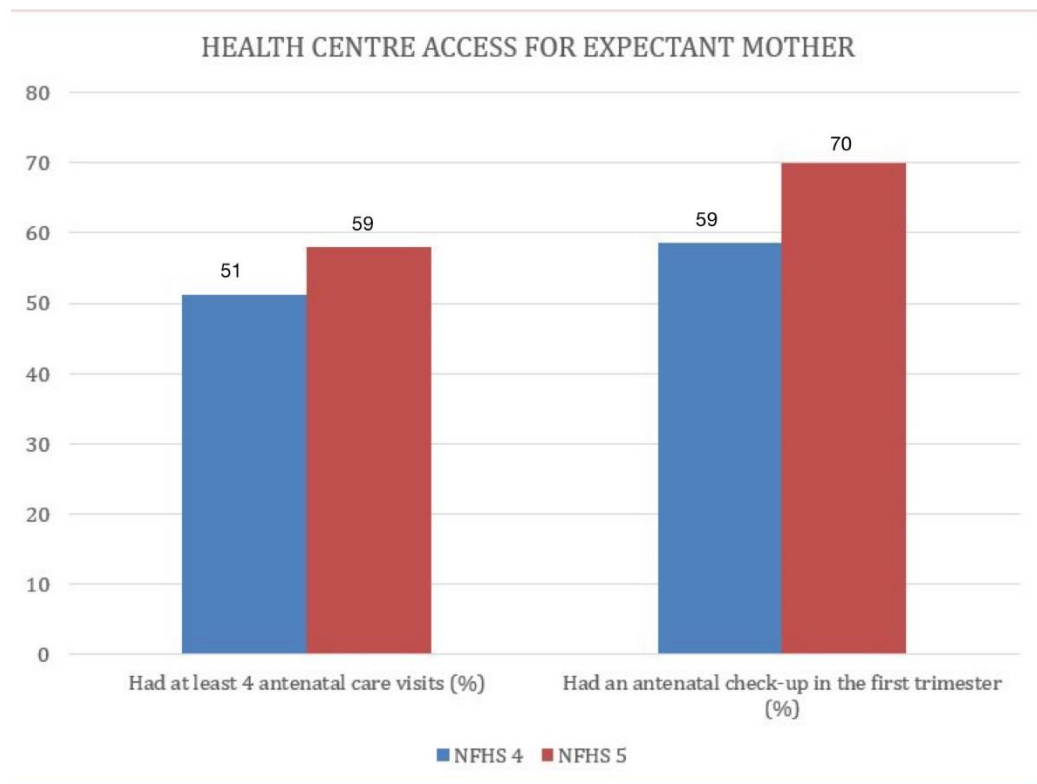
## Central Argument

Infant Mortality rates are impacted heavily by the conditions of mothers during their pregnancy as well as the condition of the child, right after its birth to 5 years of age.

Going forward in this study, our focus areas are:

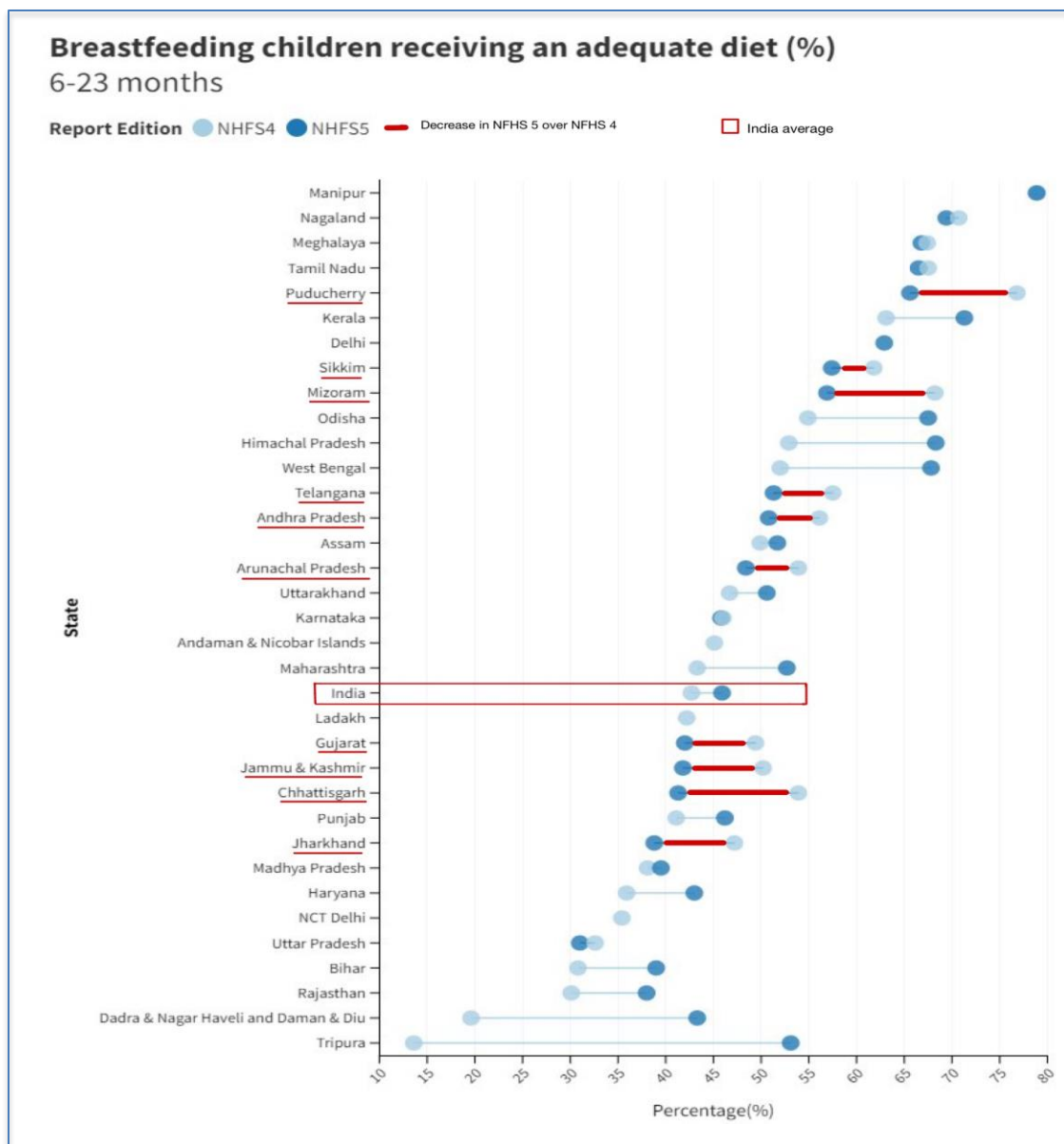
- Maternal Health
- Feeding practices
- Immunization
- Malnutrition

## Maternal Health: Improved status, but proportionally low



The above graph depicts the proportion of women that received the recommended four or more Antenatal Care (ANC) visits increased from 51% to 59%. Also, the proportion of women who received ANC in the first trimester increased from 59% to 70%. Though these numbers look promising, 3 out of 10 women in India still do not have access to basic healthcare facilities.

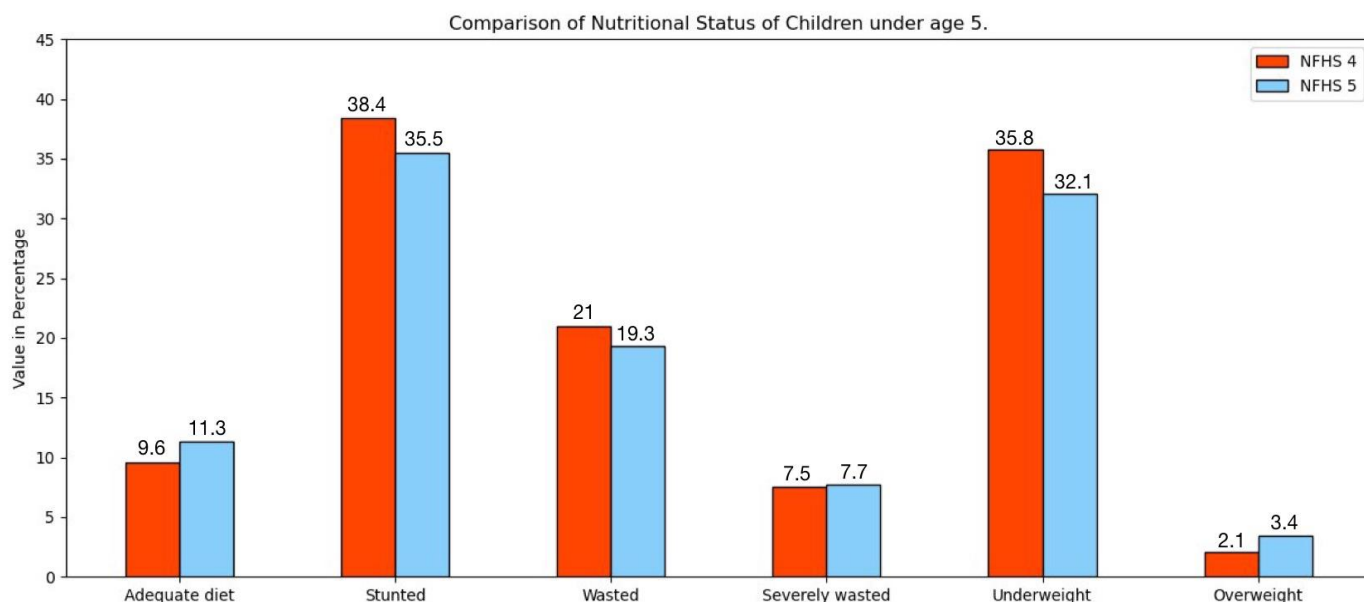
## Complementary Feeding Practices: Declined or constant for majority states



The above graph explains the following things:

- The complementary feeding (CF) data visualization indicates a worrying inference—a number of states have declined stats in terms of CF.
- Barring the state of Tripura and union territories of Dadra & Nagar Haveli and Daman & Diu, most states have not improved or declined on the CF metric since NFHS-4.
- The age period from 6 to 23 months is critical for a child's growth and lack of proper nutrition in this period can lead to poor health and issues like malnutrition.
- More awareness regarding CF had to be spread for better acceptance.

## Malnutrition: Unlikely to have majorly contributed to child mortality



The above bar graph tells that child nutrition indicators show a slight improvement at all-India level.

- Stunting has declined from 38% to 36%
- Wasting from 21% to 19%
- Underweight from 36% to 32%.

In all States/UTs, the situation has improved in respect of child nutrition, but the change is not significant as drastic changes in respect of these indicators are unlikely in a short span period.



# Immunization

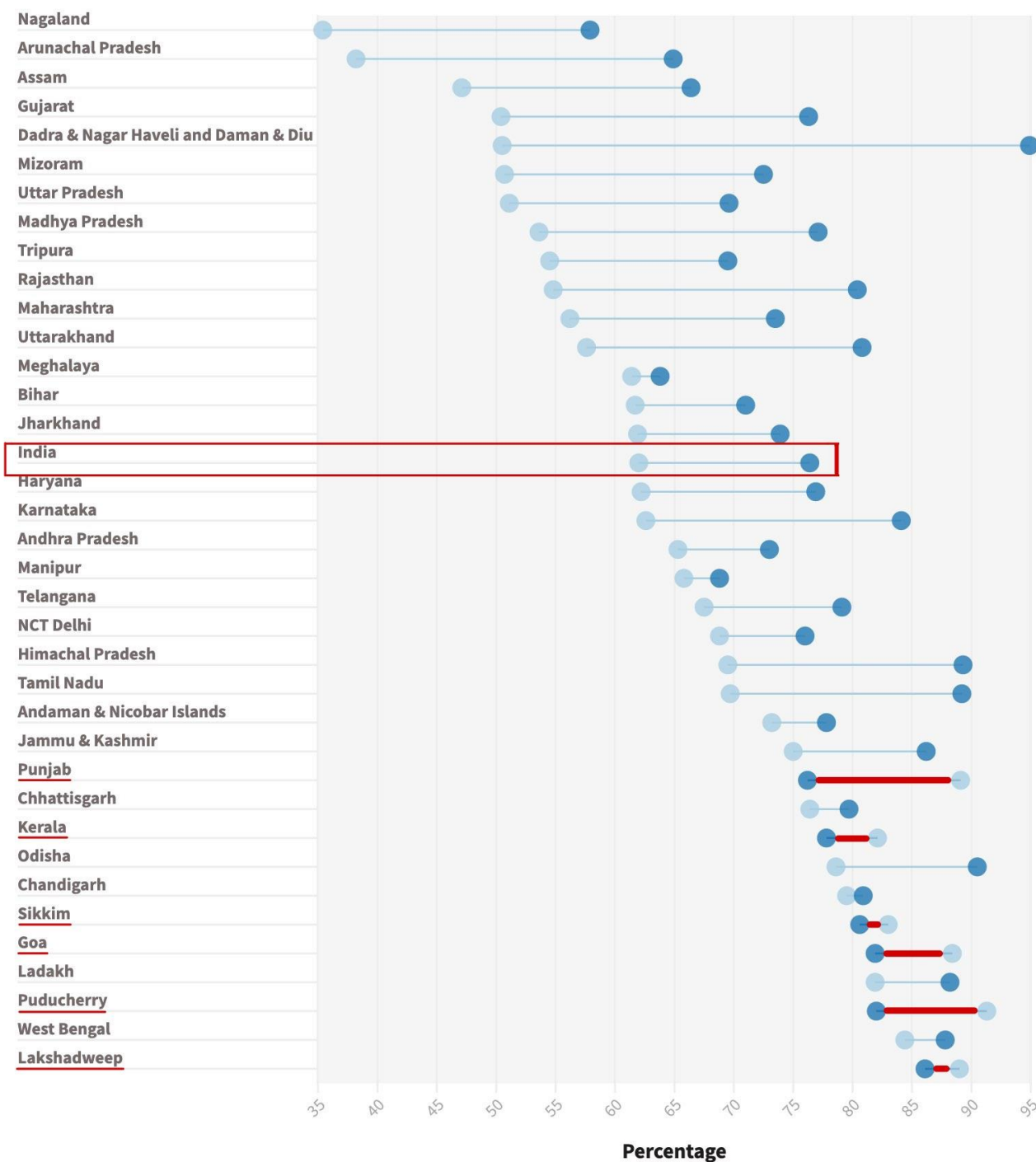
## Coverage with all basic Vaccination by States/UTs

Percentage of children age 12-23 months

Survey ● NFHS - 4 ● NFHS - 5

— Decrease in NFHS 5 over NFHS 4

□ India average



The above dumbbell chart highlights the following points:

- Highest coverage of vaccination for children below 2 years of age is observed in Dadar and Nagar Haveli Daman and Diu, Odisha, Tamil Nadu and Himachal Pradesh.
- Lowest coverage of vaccination for children below 2 years of age are observed in states Nagaland, Meghalaya, Arunachal Pradesh.
- Even though the rate of vaccination in India has increased from 62% to 76.4%, the growth of coverage is still very low.

## Government Policies:



- The Government has introduced several policies since 2013 to improve women and child health.
- While there have been improvements in certain regions for factors, at a granular level, improvement is required to observe the impact.
- Some of the initiatives include
  1. Pradhan Mantri Surakshit Matritva Abhiyaan (PMSMA)
  2. Pradhan Mantri Matru Vandana Yojana
  3. Pradhan Mantri Mahila Shakti Kendra Scheme
  4. LaQshya Programme
  5. Poshan Abhiyaan
  6. Surakshit Matritva Aashwasan (SUMAN)

A brief description of the Government schemes is provided below:

Sr. No.	Name	Description
1:	Reproductive, Maternal, New-born, Child and Adolescent Health (RMNCH+A) framework	To address the major causes of mortality and morbidity among women and children.
2:	Pradhan Mantri Surakshit Matritva Abhiyaan (PMSMA)	Provides fixed day, free of cost assured and quality Antenatal Care to all pregnant women in the country
3:	Pradhan Mantri Matru Vandana Yojana	Maternity benefit to eligible beneficiaries for first living child of the family
4:	Pradhan Mantri Mahila Shakti Kendra Scheme	To empower rural women through community participation
5:	LaQshya Programme	To improve quality of care in Labour Room and Maternity Operation Theatres (OTs) in public health facilities
6:	Poshan Abhiyaan	To improve nutritional outcomes for children from 0-6, Adolescent Girls, Pregnant Women and Lactating Mothers
7:	Surakshit Matritva Aashwasan (SUMAN)	To provide assured, dignified, respectful and quality healthcare, at no cost and zero tolerance for denial of services, for every woman and new-born visiting the public health facility

**This motivates the thought of implementation vs. adoption of policy benefits.**

## Conclusion

- Our hypothesis is supported by the visualizations and the associated analysis
- Parameters considered in the analysis are not exhaustive
- Further insights can be drawn by taking different parameters into consideration
- Child mortality is indeed the biggest challenge across the country
- Premature deaths of children are caused due to various factors such as poverty, unhealthy household environment, insufficient health care services, etc.

## References

NFHS Report:

[FR375.pdf \(dhsprogram.com\)](#)

UNICEF Report:

[Malnutrition in Children - UNICEF DATA](#)