



विद्याविनियोगाद्विकासः

FUTURE of TV IN INDIA

by

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IS TV DECLINING IN INDIA, OR IS IT QUIETLY PREPARING FOR ITS NEXT EXPANSION?

India's television landscape is evolving alongside rapid changes in digital access, economic development, and demographic transitions. In this study, we cast a wide net and examined a broad set of potential influences on TV viewership – everything from population structure to economic conditions to the digital ecosystem surrounding households.



THROUGH A CAREFUL REGRESSION-BASED EXPLORATION, WE FILTERED THIS LONG LIST DOWN TO THE VARIABLES THAT TRULY SHAPE **HOW TV IS CONSUMED ACROSS THE COUNTRY.**



Internet Subscribers, GSDP per capita, Literacy Rate, and Dependency Ratio emerged as the most meaningful indicators, offering a clear and data-grounded lens through which to understand how television fits into India's changing social and technological environment.



Internet Subscribers



GDP Per Capita-State (GSDP)



Literacy Rate



Dependency Ratio

KEY HIGHLIGHTS

- **1 Billion TV audience estimated by 2029**
- **By 2029, lower-income states such as Rajasthan, Odisha, and West Bengal are projected to reach TV penetration levels comparable to current levels in higher-income states like Gujarat and Tamil Nadu.**
- **Internet subscribers are the strongest and most consistent driver of TV audience growth across India**—in overall, rural, and low-income regions. A rise in internet penetration is associated with a significant increase in TV viewership.
- **Income growth matters primarily in rural and low-income states.** As incomes rise in these regions, TV audience increases sharply, while the effect is weaker and statistically insignificant in relatively affluent states.
- **Demographic factors—literacy rate and dependency ratio**—significantly influence TV viewership in all-India and rural regressions.
- **TV audience will continue growing steadily (≈2–3% annually) across most regions, with the fastest growth expected in rural and low-income states, especially UP/Uttarakhand, Bihar/Jharkhand, and AP/Telangana.**

**THE NEXT WAVE OF
TV AUDIENCE
EXPANSION WILL BE
DRIVEN BY:**

0 1

Increasing internet
penetration

0 2

Rising rural and
low-income
incomes

0 3

Gradual
improvements in
literacy and ageing
demographics

INTRODUCTION

Television continues to remain an authentic and trusted source of entertainment and news in India. For several people, it is, in fact, the only source of entertainment. Along with entertainment, television programs have increasingly been catalysts for social change. Empirical evidence suggests that television has the capability to bring about social change through shaping perceptions and narratives. Academic research, too, has highlighted the power of TV to bring in social and demographic change.



Same-Language-Subtitling

For instance, an experiment called same-language-subtitling where subtitles of Bollywood movie songs appear on the TV along with the song, has significantly improved literacy rates, especially in rural India. Through this initiative, when people watch songs on the television, subtitles of lyrics in the local language appear on screens.

Studies have confirmed that the human eye tends to gravitate towards that text, making them read. This, in turn, led to a significant improvement in literacy levels. Many people, especially women who are only literate, have commented that there was a significant improvement regarding their reading abilities. This enabled them to read newspapers, thereby improving their world view.^[1] In many cases, it is not merely a source of entertainment, but also a major source of inspiration as well.^[2]

In a recent survey conducted by White light Research Services, many TV watchers have confirmed that they found inspiration from the characters that appeared in the TV shows that they watched regularly. Furthermore, studies indicate that there is a significantly positive correlation between exposure to TV and empowerment of women. According to the study, exposure to TV is positively correlated with "greater awareness of autonomy, greater financial independence, less unwanted pregnancy (birth control), negative attitude toward beating, a lower tendency of giving birth, a smaller family, and a lower preference level for sons."^[1]

01

Greater Awareness of Personal Autonomy

02

Higher Financial Independence

03

Lower Unwanted Pregnancy

04

Opposes Domestic Violence

05

Lower Tendency to Have More Children

06

Reduced Preference for Sons

With the growth of Internet in India, an important question emerges: What is the future of TV in India? Given the access to diverse content, internet could be a greater source of motivation to acquire and watch TV in the first place. Further, as income levels gear up (especially in regions where income levels are on the lower levels currently) and urbanization happens, there should be a greater expansion of TVs.



FOR INSTANCE, AS A RELATIVELY LOW-INCOME STATE SUCH AS BIHAR MOVES TOWARDS THE PER-CAPITA INCOME LEVELS OF A RELATIVELY AFFLUENT STATE SUCH AS ANDHRA PRADESH, TV PENETRATION IS LIKELY TO INCREASE SIGNIFICANTLY IN BIHAR.

And as states march towards urbanization, TV penetration is likely to see a significant increase as well. The purpose of this report is to estimate how TV has penetrated the Indian social fabric, and what demographic characteristics influence it. Internet penetration, urbanization, changing income levels, etc., are some of the factors we consider estimating TV audience. Following that, this report also projects how TV is going to grow in the coming years.

METHODOLOGY

We create a statistical model to predict TV audience with the help of covariates that are likely to impact viewership. To this end, we exploit the differences in TV audience across various states in India across various years. Along with the differences in TV audience across states over time, we look for several covariates that are likely to influence TV viewing audience like internet subscribers, literacy rate, income levels, dependency ratio, availability of micro-credit, etc. Both our empirical model and estimation exercise are chosen keeping in mind the type of data available. Before dwelling on the actual modelling part, we first discuss various sources from where we obtained the data.

DATA SOURCES

In order to estimate TV penetration, one of the key variables required is the data on the number of TV audiences in India. Periodic data on the number of TV audiences is collected at a state/region level, with the country divided into sixteen regions. We obtained TV audience data from 2016 to 2024 across these regions from publicly available industry reports.

The next task was to look at factors that influence TV audiences. One of the major factors that is expected to impact TV audience is the number of internet subscribers in the region. **We obtained the information on the number of internet users from the Telecom Statistics published by the Department of Telecommunications.**



We expect that as internet subscribers increase in the market, TV becomes more attractive. Therefore, TV consumption is likely to see an increase. At the same time, alternatives to TV increase (computers, mobile phones, etc.). So, the impact of internet on TV audience becomes an empirical exercise. Another factor is the income levels in each of the states. We proxy the income levels of the state with per-capita gross domestic product of the state for each year. **This data is obtained from the RBI handbook of statistics on Indian states and Census population projections.** We believe that as income levels increase, TV consumption is likely to go up. This is because of affordability reasons. We also expect this impact to be higher in rural and poorer regions of India.



The other two variables we used are: dependency ratio and literacy rate of the state in the given year. Dependency Ratio is defined as the population aged between 0 to 14 and 65+ divided by the population aged 15-64 multiplied by 100. These data were obtained from the **Periodic Labor Force Survey (PLFS)** conducted by the Ministry of Statistics and Program Implementation.



EMPIRICAL MODEL

The primary empirical strategy we follow is panel-data regression analysis. Regression is a statistical technique which allows us to look at how the TV audience in a state is changing when several other factors change simultaneously. To this effect, we estimate the following equation:

$$TV\ Audience_{it} = a + b\ Internet\ Subscribers_{it} + c\ GSDP\ Per\ Capita_{it} + d\ Dependency\ Ratio_{it} + e\ Literacy\ Rate_{it} + \theta_i + \epsilon_{it}$$

This equation can be interpreted as follows: TV Audience in the year t , in a state i , is dependent on the number of internet subscribers in the state in that year, GDP per capita of the state in that year, and dependency and literacy rates of the state in that year. Along with these variables, there could be other unobserved variables that are unique to a state. For instance, policy regime in the state could have an influence on the TV audience. This is constant across time within a state but differs across states. The term θ_i captures all the unobserved variables that could have an influence on the TV audience which are constant across states, and the term ϵ_{it} is the forecasting error, which occurs due to influence that happens beyond the variables considered in the model. In other words, ϵ_{it} represents the difference between the predicted value of the TV audience and the observed value of TV audience. Please note that the error term will have an average value of 0. That is, on average the model predicts correctly.

The coefficients are interpreted as: if internet subscribers increase by one-unit (million subscribers), other variables being constant, TV audience is expected to increase by b units (lakh people). At the same time, if the state GDP increases by one-unit, other variables being constant, TV audience is expected to increase by c units and so on. A regression model estimates the value of the parameters of the model (a, b, c, d and e) by ensuring that the sum of squares of errors is as low as possible.



0 1

Regression Analysis for All India

We study how the covariates impact TV audience **across the country**. This will help us derive results state-wise.

CASE 1: ALL INDIA



Estimated Impact on TV Audience

VARIABLE CHANGE	ESTIMATED CHANGE IN TV AUDIENCE	STATISTICALLY SIGNIFICANT (95%)
A 1 million increase in Internet subscribers	Increases TV audience by approximately 2 lakh viewers	Yes
A ₹1 lakh increase in GSDP per capita	Increases TV audience by approximately 40 lakh viewers (≈ 4 million)	No
A 1 percentage point increase in the dependency ratio	Increases TV audience by approximately 3 lakh viewers	Yes
A 1 percentage point increase in the literacy rate	Increases TV audience by approximately 6 lakh viewers	Yes

All effects are estimated holding other covariates constant. Statistical significance assessed at the 5% level using robust standard errors

- The number of internet subscribers has a positive impact on the number of TV audience. Further, this variable has a significant impact on the TV audience. That is, we can say with certainty (more than 95% probability) that TV audience is directly correlated with internet subscribers.

- At the same time, while per capita income is positively correlated with TV audience, the impact is not statistically significant. That is, we are not able to guarantee with a reasonable probability that this correlation is not zero.

- Similarly, dependency ratio (number of dependents, for instance old people) and literacy rate, have a positive correlation with the TV audience. Not only are these correlations positive, but also, they are statistically significant. That is, with more than 95% probability, we know that the positive correlation is non-zero.

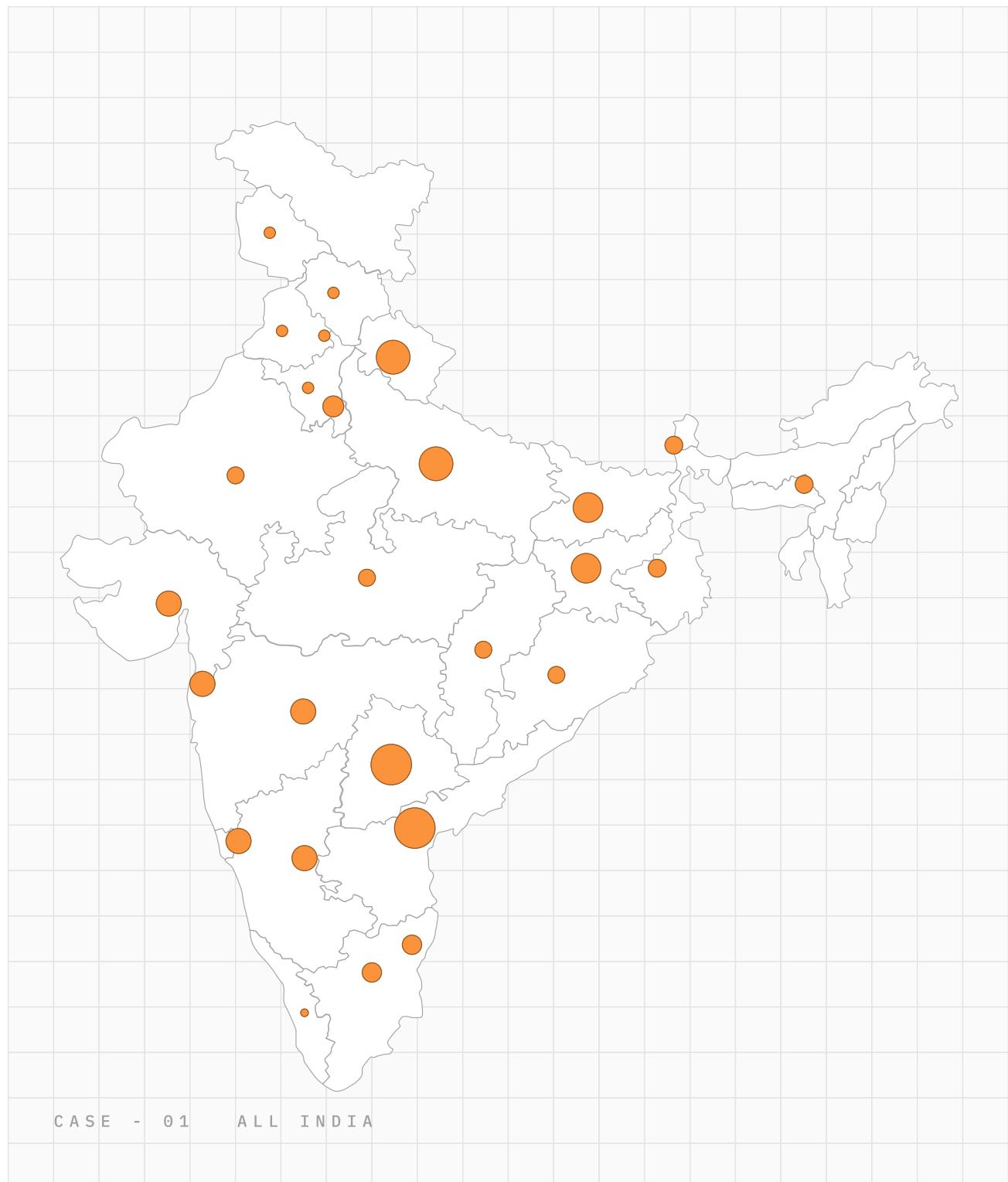
TV AUDIENCE PROJECTIONS - ALL INDIA

Forecasted TV Audience as estimated by the 1st Regression Model

TV AUDIENCE PROJECTIONS					
REGION\YEAR	2026	2027	2028	2029	AVG. ANNUAL GROWTH
India (excl. AN and LD)	964.7	988.1	1011.6	1035	2.37%
AP / Telangana	60.8	63.1	65.5	67.8	3.73%
Assam / North East / Sikkim	58	59.4	60.7	62.1	2.27%
Bihar/Jharkhand	60	61.9	63.8	65.6	3.05%
Delhi	66	67.2	68.5	69.8	1.90%
Guj / D&D / DNH	62	63.4	64.8	66.2	2.21%
Har/HP/J&K	54	54.8	55.6	56.4	1.47%
Karnataka	61.3	63	64.7	66.4	2.70%
Kerala	61.1	61.8	62.5	63.2	1.12%
Mah / Goa	78.9	81.4	83.8	86.3	3.03%
MP/Chhattisgarh	54.1	55.4	56.7	58	2.35%
Odisha	47.9	48.8	49.7	50.7	1.93%
Pun/Cha	54.4	55.2	56.1	56.9	1.50%
Rajasthan	51.6	52.6	53.6	54.5	1.84%
TN/Pondicherry	64.9	66.4	67.8	69.3	2.17%
UP/Uttarakhand	72.3	74.8	77.3	79.9	3.39%
West Bengal	57.3	58.8	60.3	61.8	2.55%

TV AUDIENCE PROJECTIONS - ALL INDIA

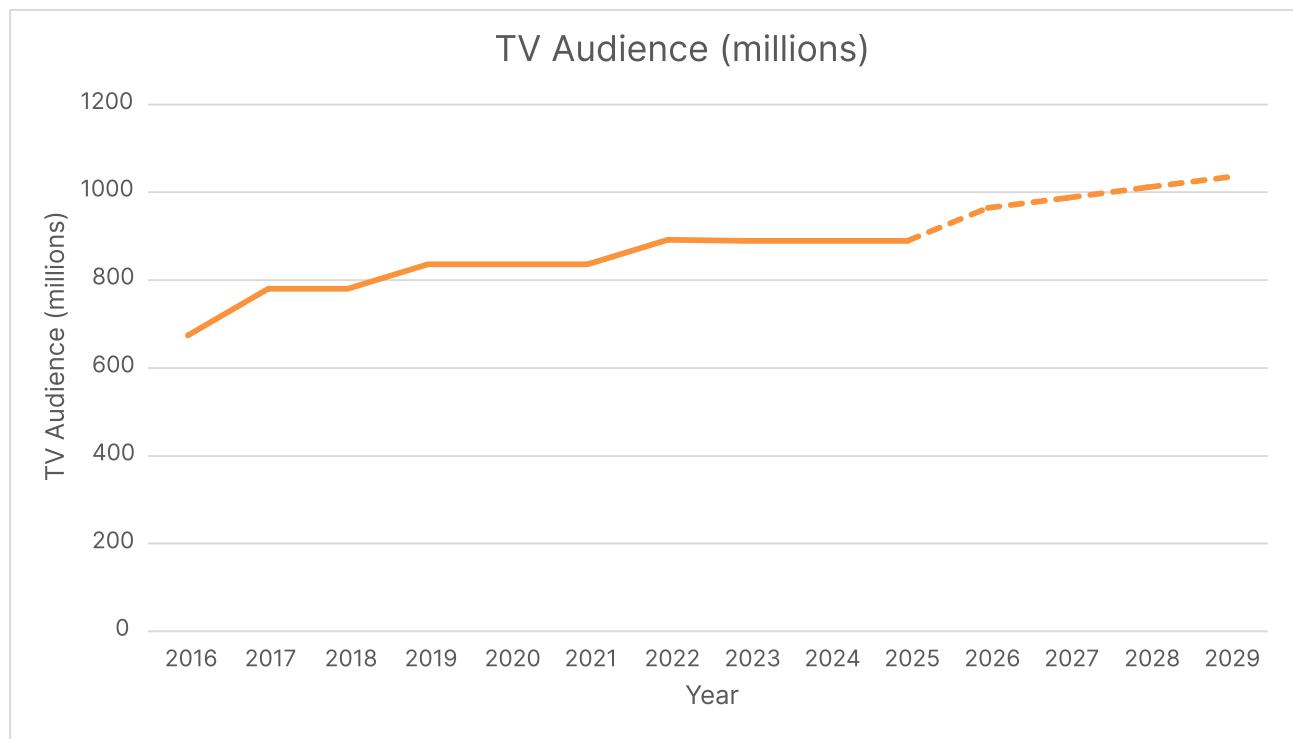
A Map showing the growth rate of TV audience across Indian states.



Note: The data shown here is sourced from the TV Audience Projection All India table.

TV AUDIENCE PROJECTIONS - ALL INDIA

A line graph showing the predictions for All India





0 2

Regression Analysis for Rural India

We study how the covariates impact TV audience in rural India. This will help us derive results for the **rural areas across the states**.

CASE 2: RURAL INDIA



Estimated Impact on TV Audience

VARIABLE CHANGE	ESTIMATED CHANGE IN TV AUDIENCE	STATISTICALLY SIGNIFICANT (95%)
A 1 million increase in rural internet subscribers	Increases TV audience by approximately 2 lakh viewers	Yes
A ₹1 lakh increase in rural GSDP per capita	Increases TV audience by approximately 170 lakh viewers (\approx 17 million)	Yes
A 1 percentage point increase in the dependency ratio	Increases TV audience by approximately 1 lakh viewers	Yes
A 1 percentage point increase in the rural literacy rate	Increases TV audience by approximately 2.6 lakh viewers	Yes

All effects are estimated holding other covariates constant. Statistical significance assessed at the 5% level using robust standard errors

- Once again, even in rural India, number of internet subscribers is statistically significantly correlated with TV audience with more than 95% probability.
- As expected, an improvement of income in rural India leads to an increase in TV audience. However, unlike in the case of overall India, this number is statistically significant. That is, TV audience is statistically significantly correlated with the income of the region.
- Just as in the case of overall India, dependency and literacy rates are not only positively correlated with TV audience, but also, this correlation is statistically significant.

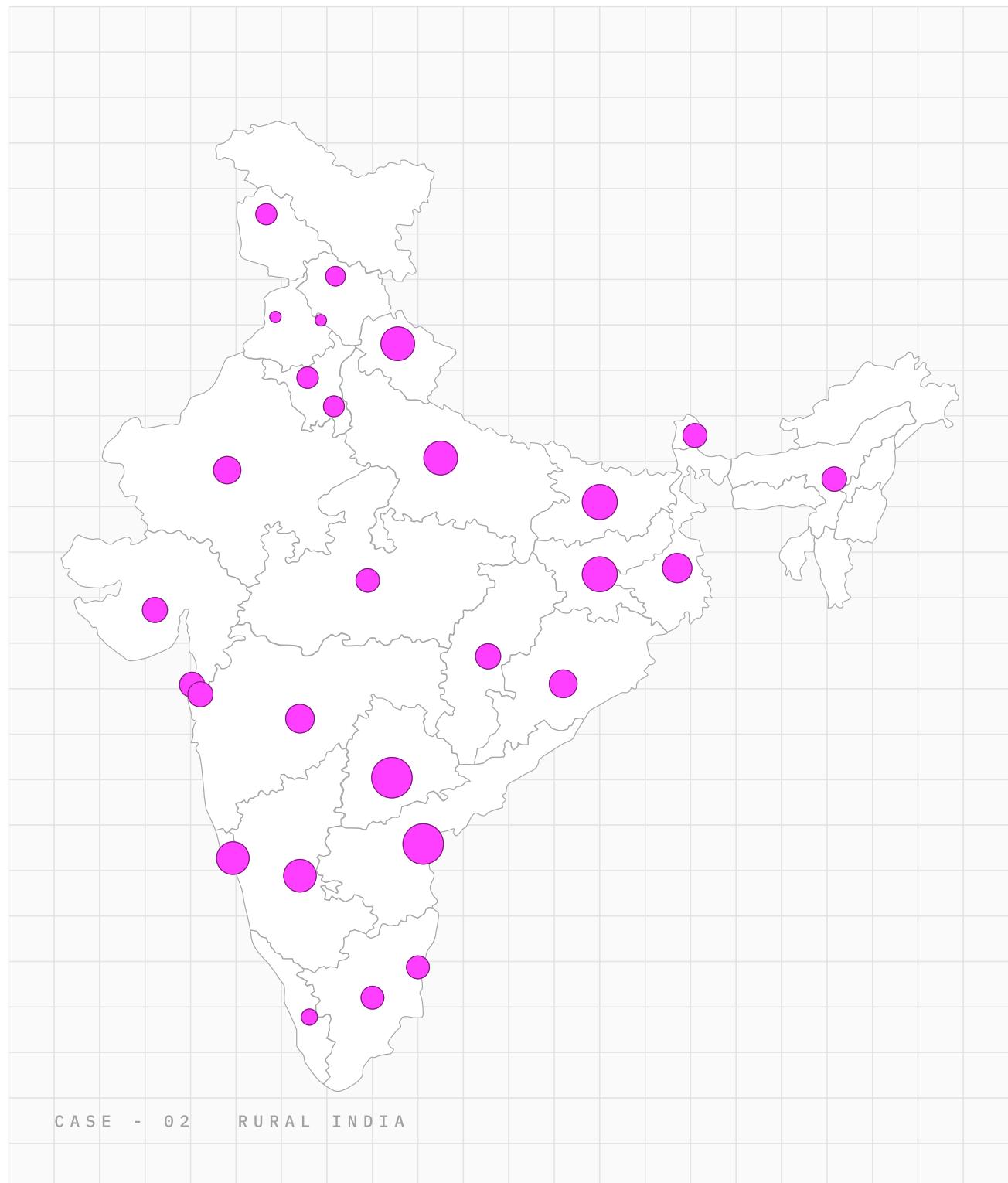
TV AUDIENCE PROJECTIONS - RURAL INDIA

Forecasted TV Audience as estimated by the 2nd Regression Model

TV AUDIENCE PROJECTIONS					
REGION\YEAR	2026	2027	2028	2029	AVG. ANNUAL GROWTH
Rural India (excl. AN & LD)	612.9	627.6	641.9	656.2	2.30%
AP / Telangana	40.5	42	43.6	45.2	3.76%
Assam / North East / Sikkim	35.6	36.4	37.1	37.9	2.14%
Bihar/Jharkhand	35.7	37	38.2	39.5	3.45%
Delhi	48	48.7	49.1	49.4	0.99%
Guj / D&D / DNH	40.9	41.8	42.7	43.7	2.24%
Har/HP/J&K	37.9	38.6	39.2	39.9	1.68%
Karnataka	41.9	43.2	44.5	45.8	3.00%
Kerala	40.8	41.3	41.8	42.3	1.25%
Mah / Goa	45.2	46.3	47.5	48.7	2.55%
MP/Chhattisgarh	31.8	32.5	33.3	34	2.32%
Odisha	32.6	33.4	34.2	35	2.37%
Pun/Cha	34.5	34.8	35.1	35.5	0.95%
Rajasthan	32.2	32.9	33.6	34.3	2.16%
TN/Pondicherry	41.1	42	42.9	43.8	2.13%
UP/Uttarakhand	41.1	42.6	44	45.5	3.45%
West Bengal	33.3	34.1	34.9	35.7	2.32%

TV AUDIENCE PROJECTIONS - RURAL INDIA

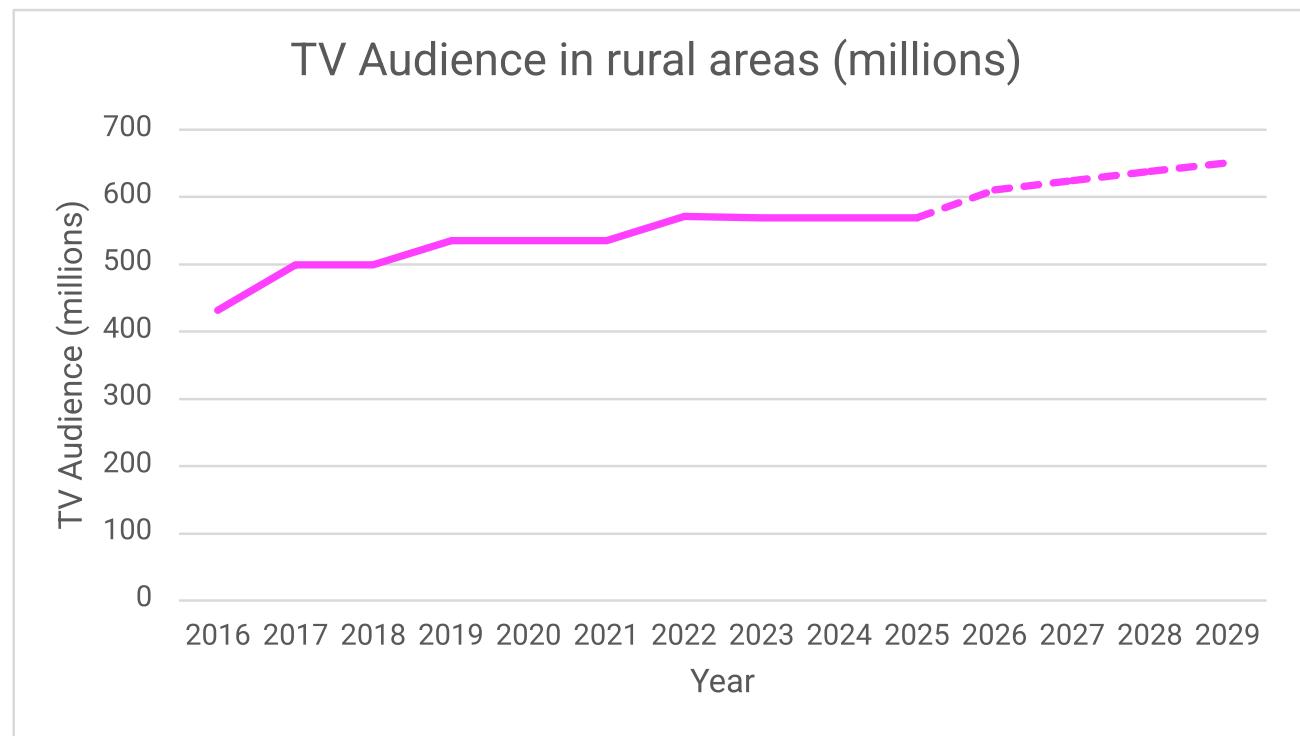
A Map showing the growth rate of TV audience across rural areas of Indian states.



Note: The data shown here is sourced from the TV Audience Projection Rural India table.

TV AUDIENCE PROJECTIONS - RURAL INDIA

A line graph showing the predictions for rural India





0 3

Regression Analysis for Low Income States

We study how the covariates impact TV audience in low-income states. This will help us get accurate measures for **low-income states**.

CASE 3: LOW INCOME STATES



Low-income regions are regions with GDP per capita below Rs 1,14,100 throughout years 2016-2024.

The regions in consideration are – Assam / North-East / Sikkim, Bihar/Jharkhand, MP/Chhattisgarh, Odisha, Rajasthan, UP/Uttarakhand, and West Bengal

VARIABLE CHANGE	ESTIMATED CHANGE IN TV AUDIENCE	STATISTICALLY SIGNIFICANT (95%)
A 1 million increase in rural internet subscribers	Increases TV audience by approximately 1.6 lakh viewers	Yes
A ₹1 lakh increase in rural GSDP per capita	Increases TV audience by approximately 250 lakh viewers (≈ 25 million)	Yes
A 1 percentage point increase in the dependency ratio	Increases TV audience by approximately 2.2 lakh viewers	No
A 1 percentage point increase in the rural literacy rate	Increases TV audience by approximately 26 thousand viewers	No

All effects are estimated holding other covariates constant. Statistical significance assessed at the 5% level using robust standard errors

- Even in the low-income states, the number of internet subscribers seems to have a positive and statistically significant correlation with the number of TV audience.
- Income levels also seem to have a significant relationship with the TV audience. This relation is also statistically significant, unlike in the case of overall India.
- At the same time, dependency ratio and literacy rates are not playing a significant role in explaining the number of TV audience, even if the correlation is expectedly positive.

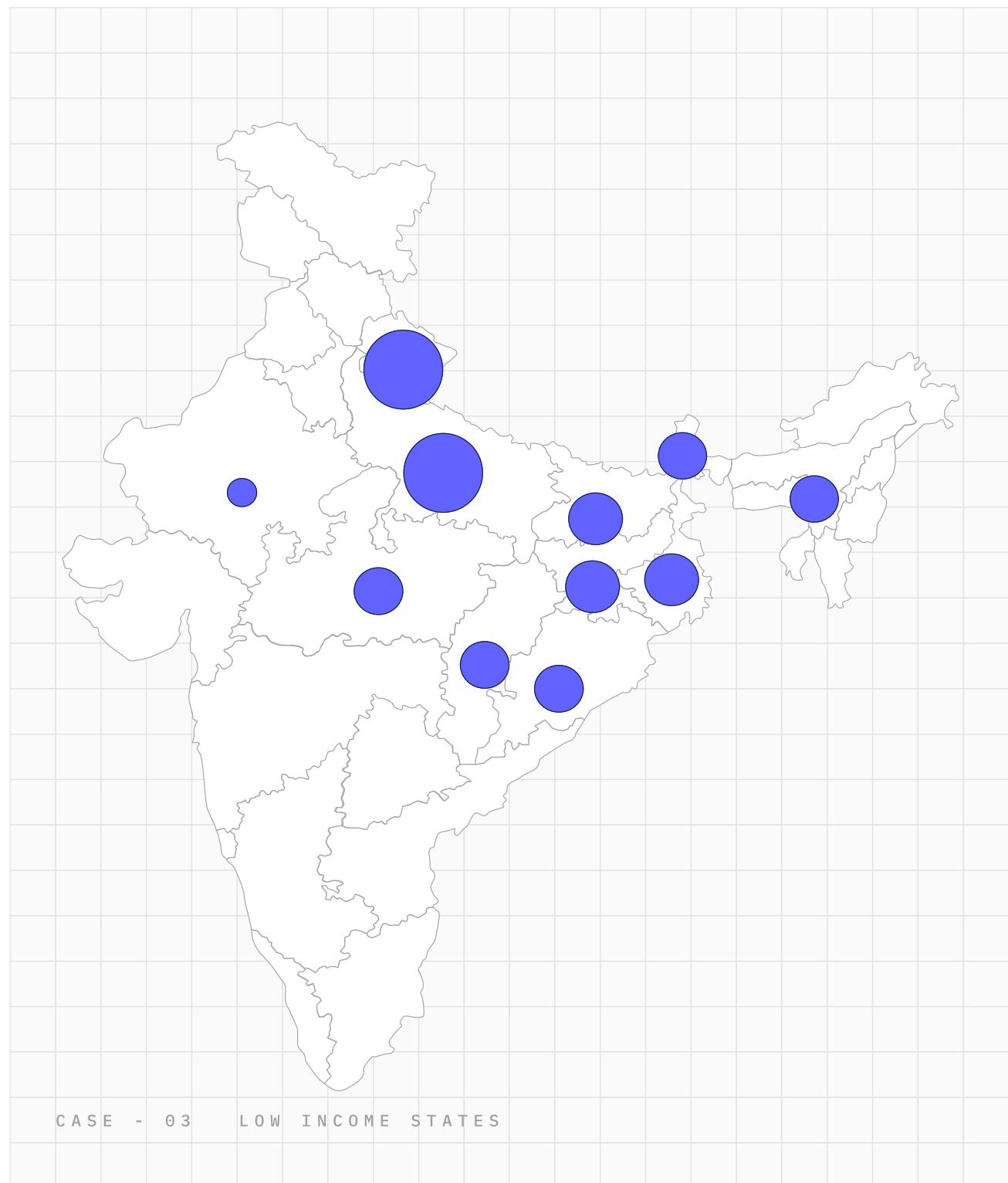
TV AUDIENCE PROJECTIONS - LOW INCOME STATES

Forecasted TV Audience as Estimated by the 3rd Regression Model

TV AUDIENCE PROJECTIONS					
REGION\YEAR	2026	2027	2028	2029	AVG. ANNUAL GROWTH
Aggregate of Low-Income States	399.8	411.1	422.3	433.5	2.74%
Assam / North East / Sikkim	54.8	56.4	58	59.5	2.80%
Bihar/Jharkhand	50.8	52.3	53.8	55.3	2.88%
MP/Chhattisgarh	56.5	58.1	59.6	61.2	2.66%
Odisha	57.8	59.4	61	62.6	2.71%
Rajasthan	59.1	60.4	61.6	62.8	2.04%
UP/Uttarakhand	63.6	65.8	67.9	70.1	3.30%
West Bengal	57.2	58.8	60.4	62	2.72%

TV AUDIENCE PROJECTIONS - LOW INCOME STATES

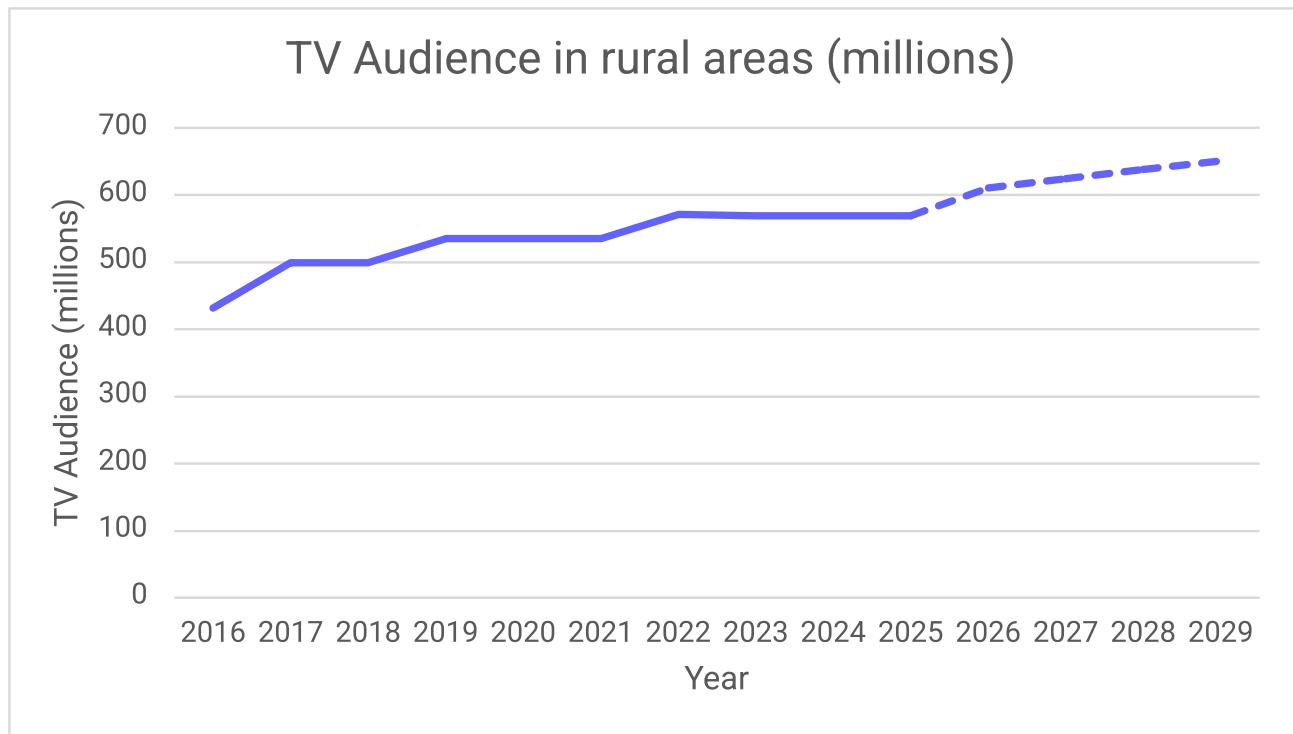
A Map showing the growth rate of TV audience across low-income regions



Note: The data shown here is sourced from the TV Audience Projection Low Income States table.

TV AUDIENCE PROJECTIONS - LOW INCOME STATES

A line graph showing the predictions for low-income states



CONCLUSION

Combining the results from the three regressions, one can conclude:



Number of internet subscribers is a primary driver of TV audience across India. As the number increases, TV audience is going to improve significantly. Therefore, in the coming years, as the number of internet subscribers increases, one should expect a greater spurt in the number of people who watch TV. As the number of people who watch TV content increases, both consumption of online programs as well as traditional programs would increase significantly. We do not have data to bifurcate this further, but we believe that even traditional TV, which is the vogue in rural and low-income regions, would increase as well.



An increase in income levels will lead to a greater number of TV audience. However, this result is highly significant to rural India and states which are below average on per capita income. For instance, while an increase in income levels in Mumbai may not lead to an increase in TV audience, an increase in income in a village in Nashik District or states such as Bihar whose per capita income is below the national average, this leads to a greater increase in TV audience. Therefore, as income levels increase in coming years, growth in TV audience (and hence, consumption of TV sets) is likely to come from regions which are predominantly rural, and states which are low-income.



Finally, as India ages, dependency ratio is likely to increase. Further, given various programs by the Government, literacy rates are also likely to increase in the coming years. The results of this regression suggest that these two variables are significant drivers of TV audience (except in low-income states).

Therefore, in the coming years, while growth in TV audience is primarily driven by literacy rate and dependency ratio in states which are more urban and are in high income category, income seems to be a primary driver in rural India and states with low-incomes. The number of internet subscribers continues to be a significant driver of TV audience across all of India.

APPENDIX

REGRESSION 1. ALL INDIA RESULTS

VARIABLES	COEFFICIENTS (STD. ERR)
Internet Subscribers (millions)	0.2090368*** (0.029135)
Gross State Domestic Product Per Capita (Rs.)	0.0000411 (0.0000297)
Dependency Ratio (%)	0.3174166 ** (0.1371961)
Literacy Rate (%)	0.5789859 ** (0.2721417)
Constant	-24.07109 (21.62655)
Region Fixed Effects	Yes
Observations (N)	144
Number of Regions	16
Within R2	0.6238
Prob >F (Overall)	0

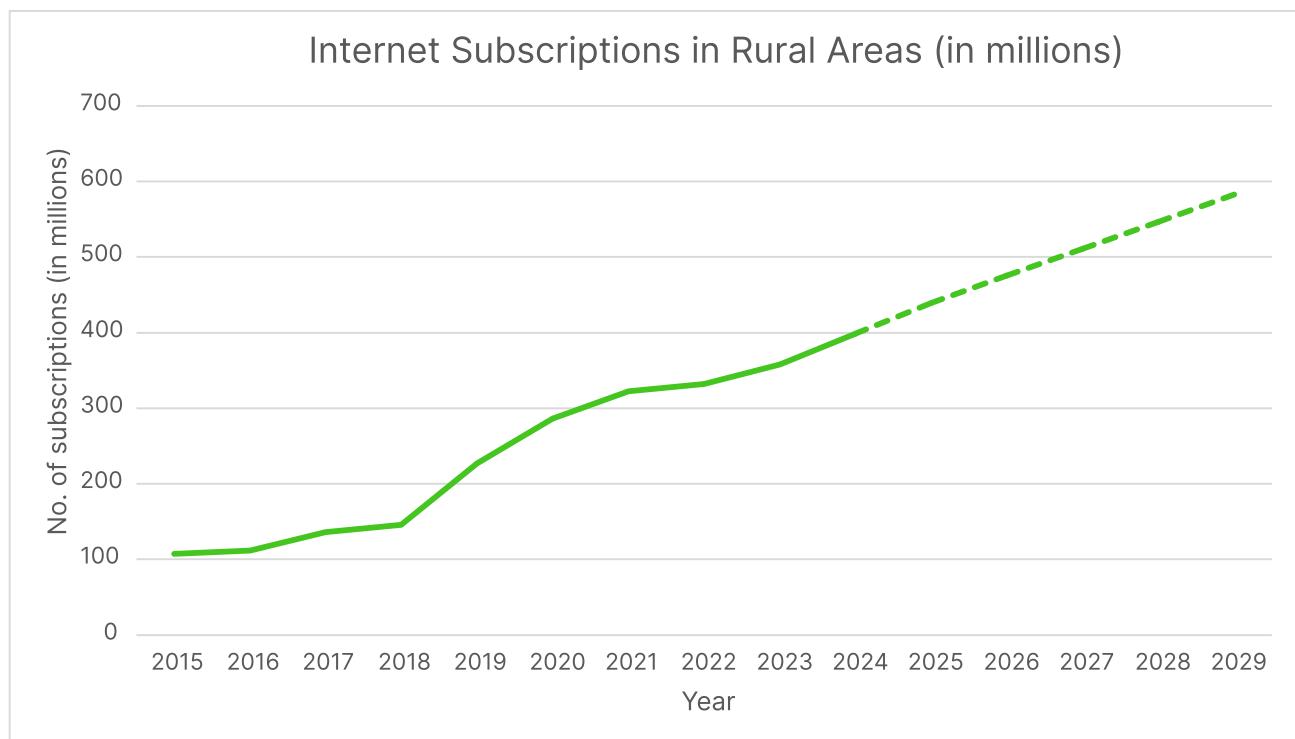
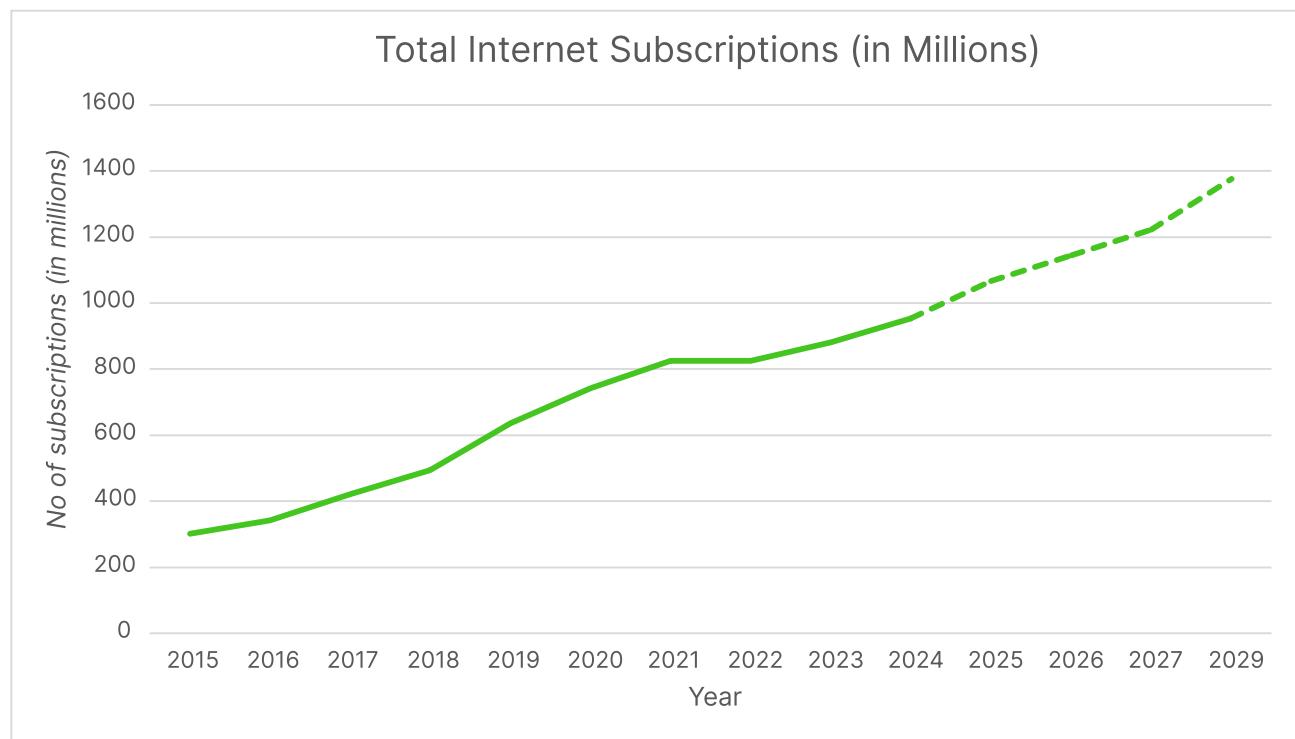
REGRESSION 2. RESULTS FOR RURAL INDIA

VARIABLES	COEFFICIENTS (STD. ERR)
Rural Internet Subscribers (millions)	0.2026226*** (0.0320151)
Rural Gross State Domestic Product Per Capita (Rs.)	0.0001756*** (0.0000423)
Rural Dependency Ratio (%)	0.1011775** (0.0406626)
Rural Literacy Rate (%)	0.2696736*** (0.088598)
Constant	-5.87141 (7.783286)
Region Fixed Effects	Yes
Observations (N)	144
Number of Regions	16
Within R2	0.6047
Prob >F (Overall)	0

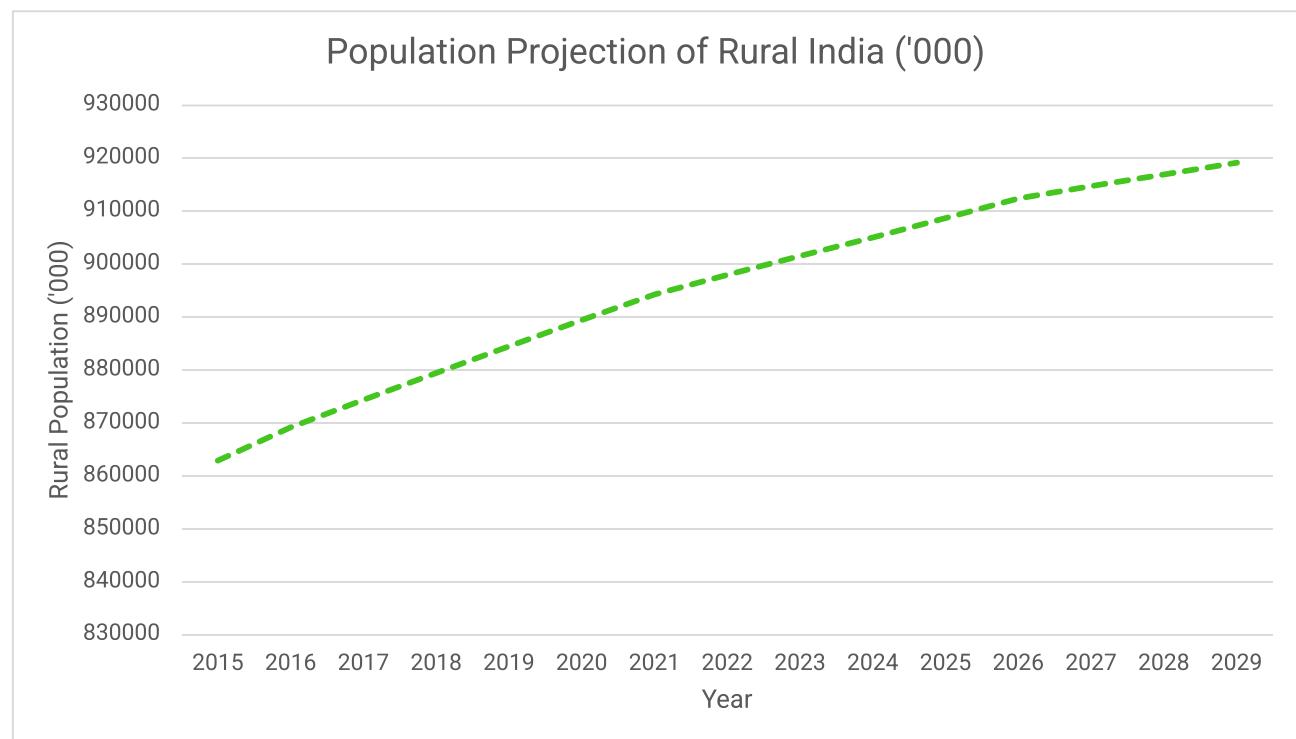
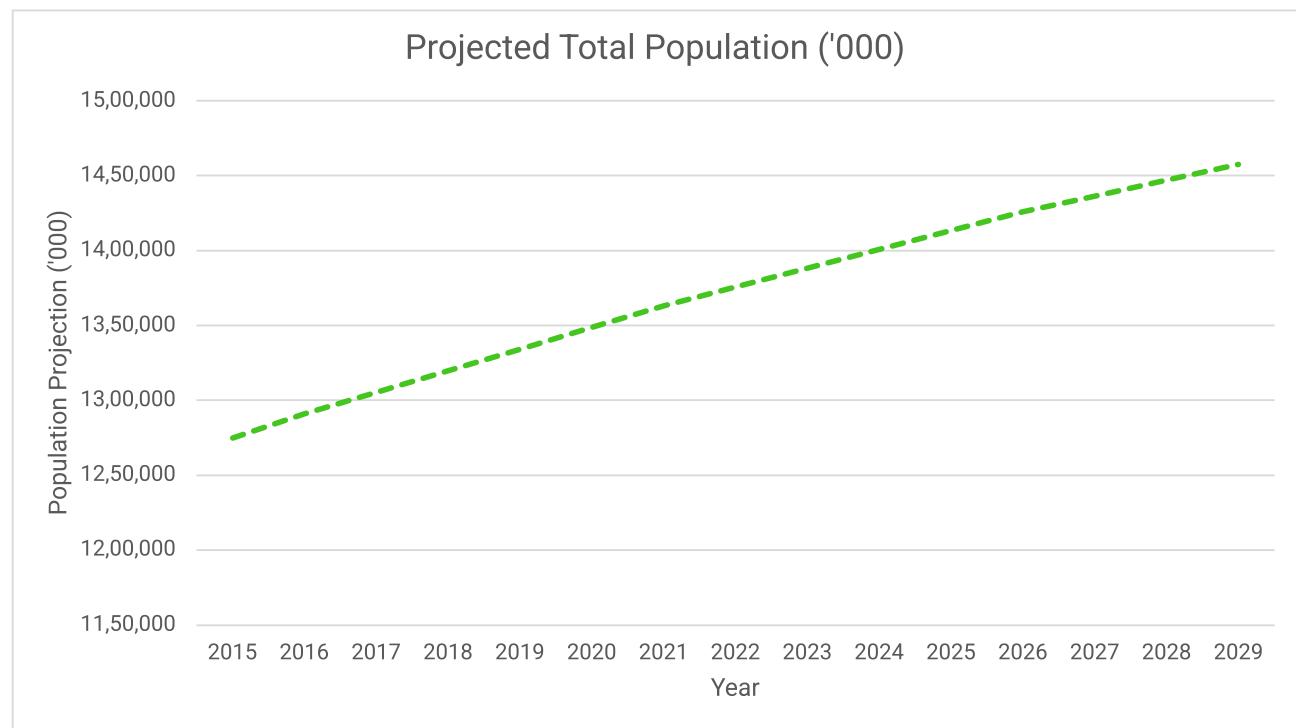
REGRESSION 3. RESULTS FOR LOW-INCOME STATES

VARIABLES	COEFFICIENTS (STD. ERR)
Rural Internet Subscribers (millions)	0.1609511*** (0.0434151)
Rural Gross State Domestic Product Per Capita (Rs.)	0.0002576** (0.0000935)
Dependency Ratio (%)	0.2274285 (0.1878292)
Literacy Rate (%)	0.026242 (0.6200973)
Constant	8.665035 (46.4782)
Region Fixed Effects	Yes
Observations (N)	63
Number of Regions	16
Within R2	0.5993
Prob >F (Overall)	0

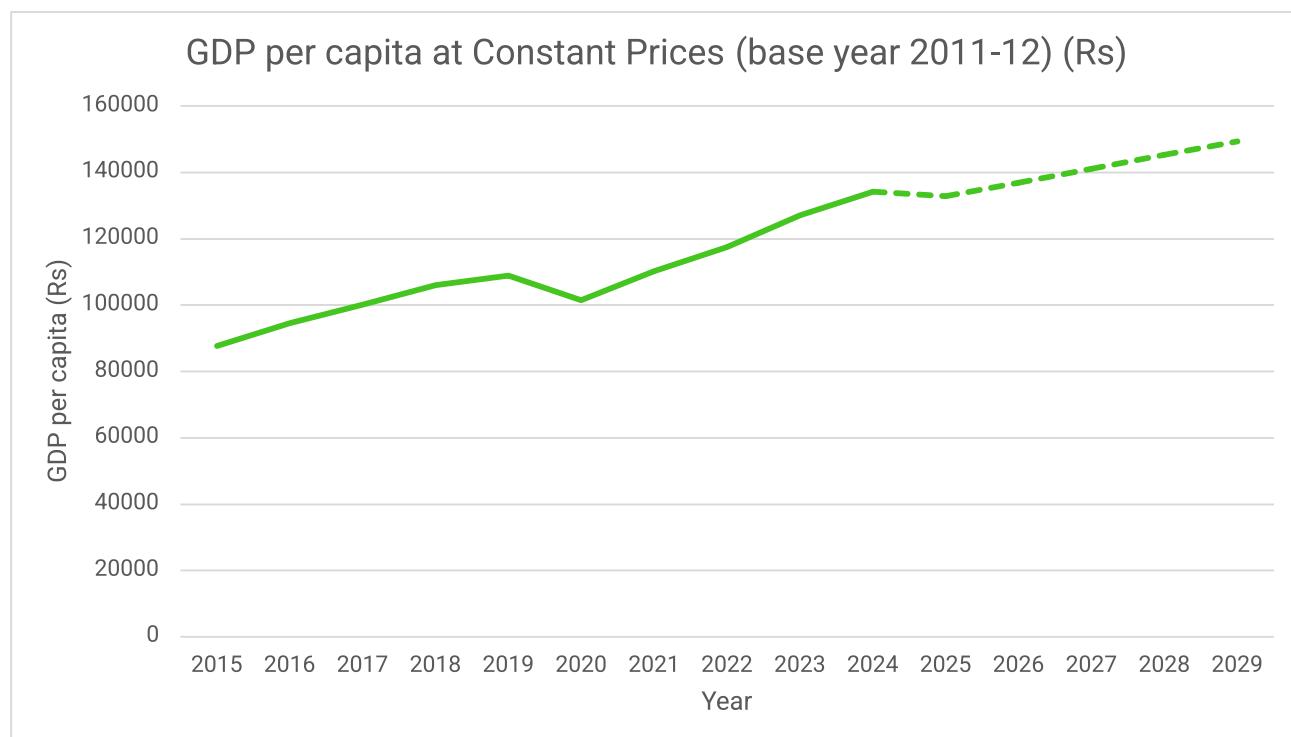
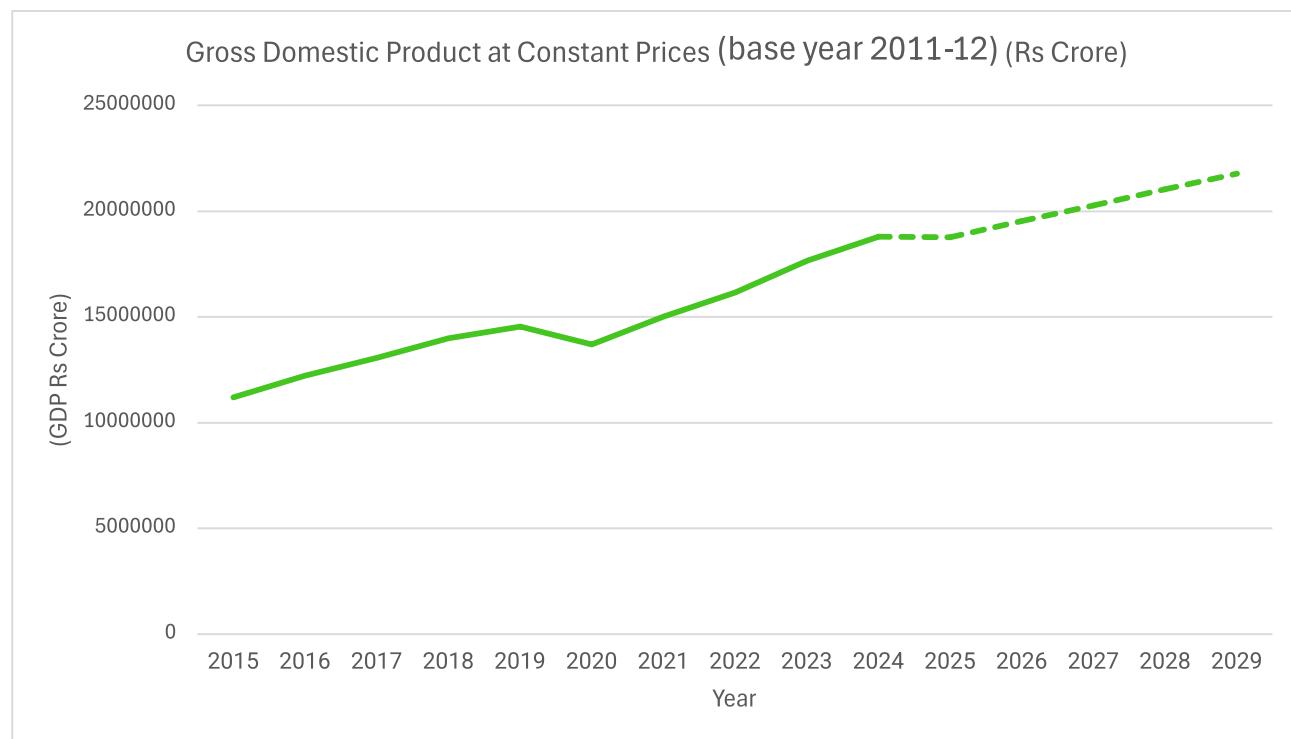
INTERNET SUBSCRIPTIONS



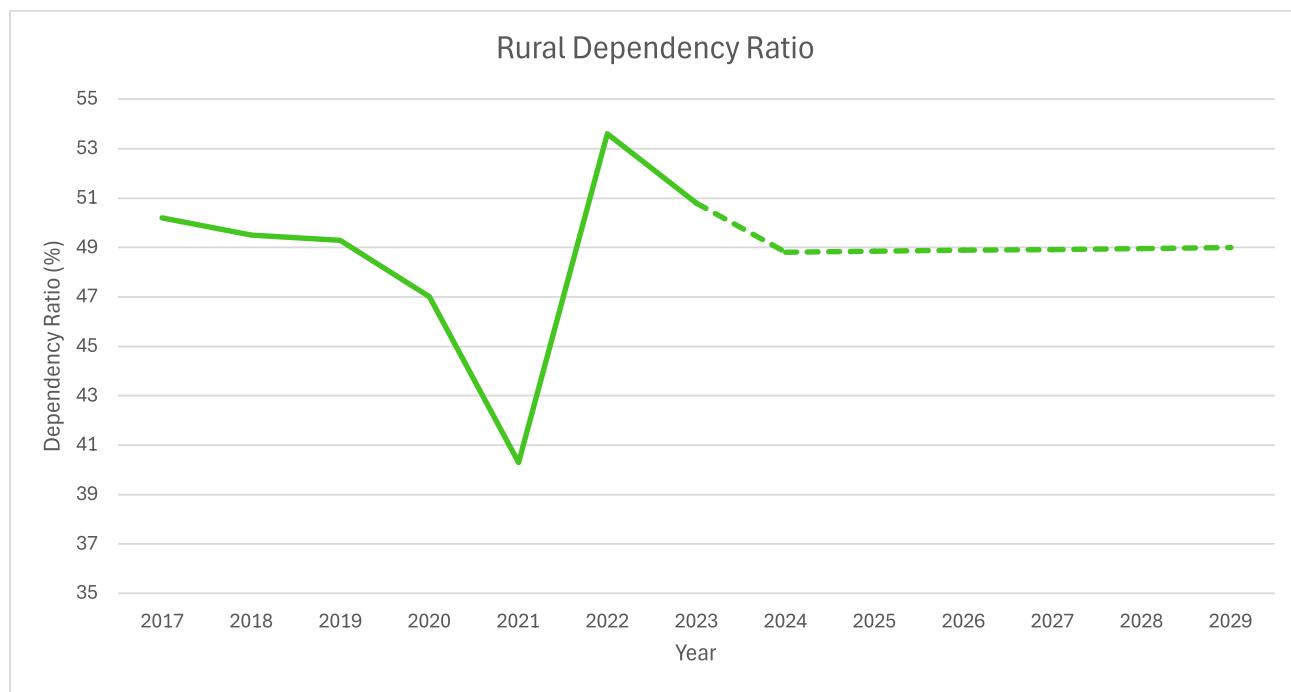
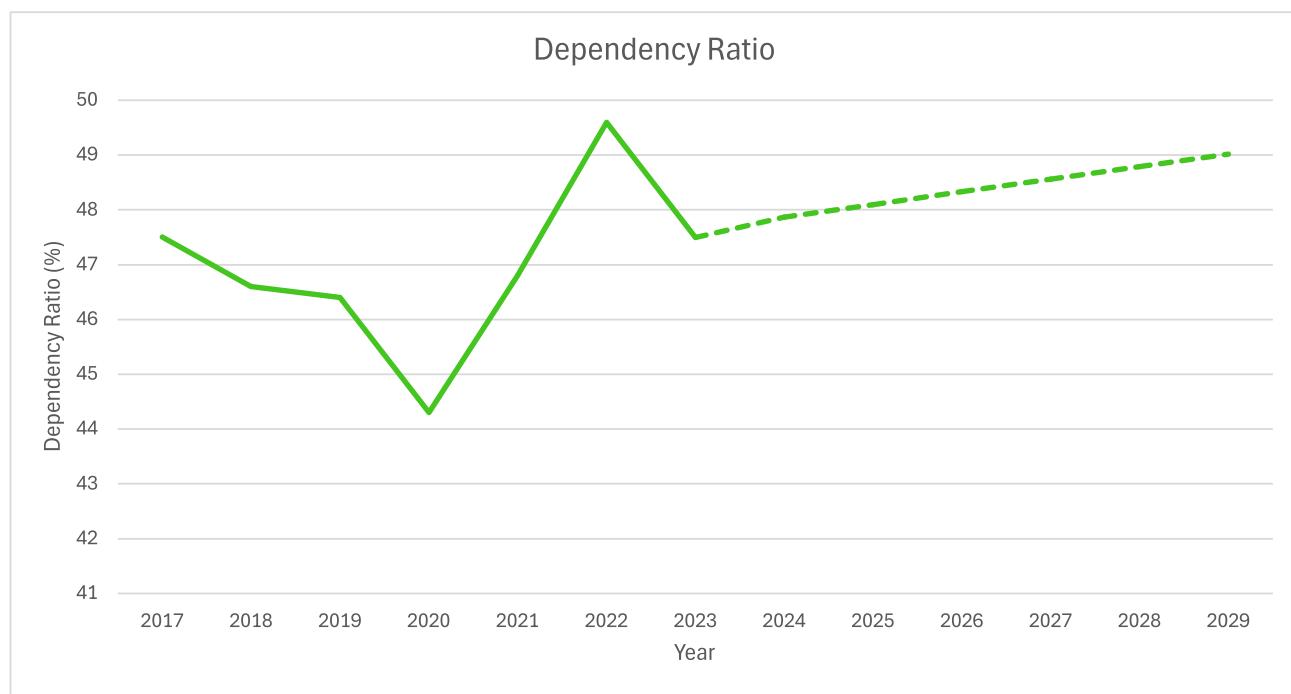
POPULATION PROJECTION



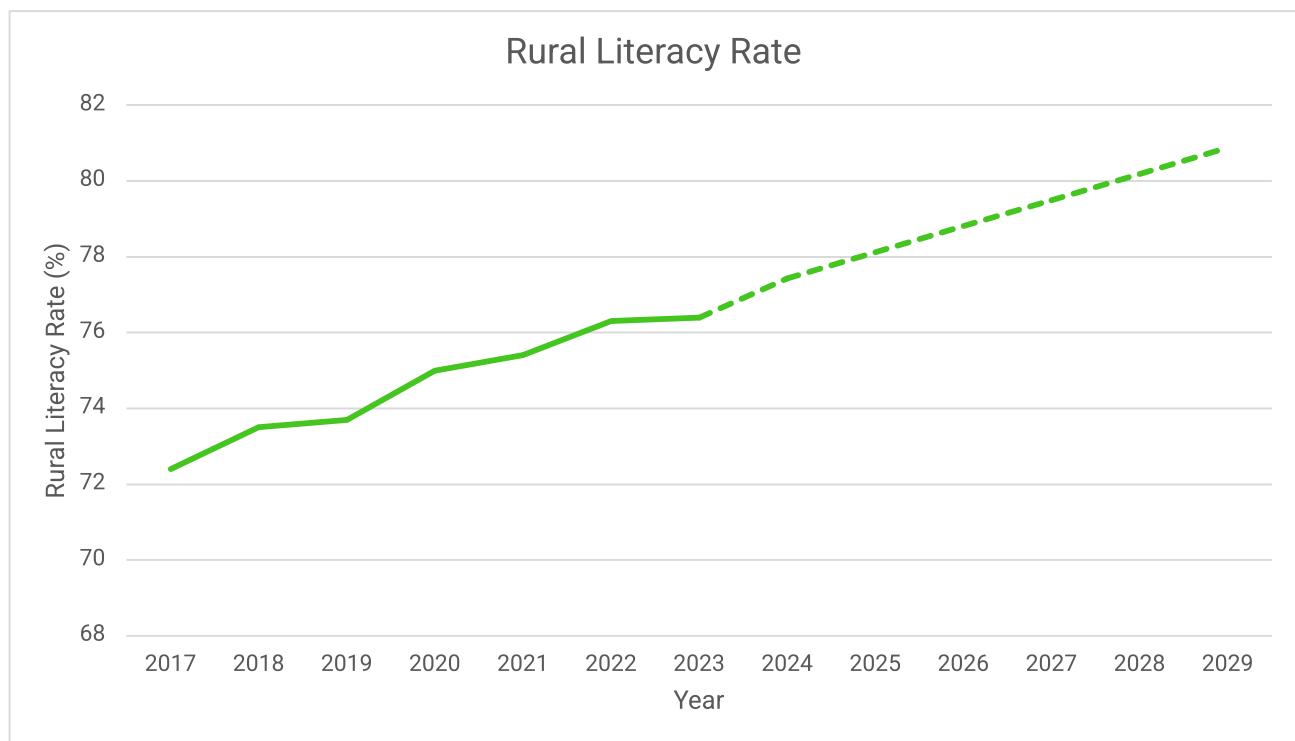
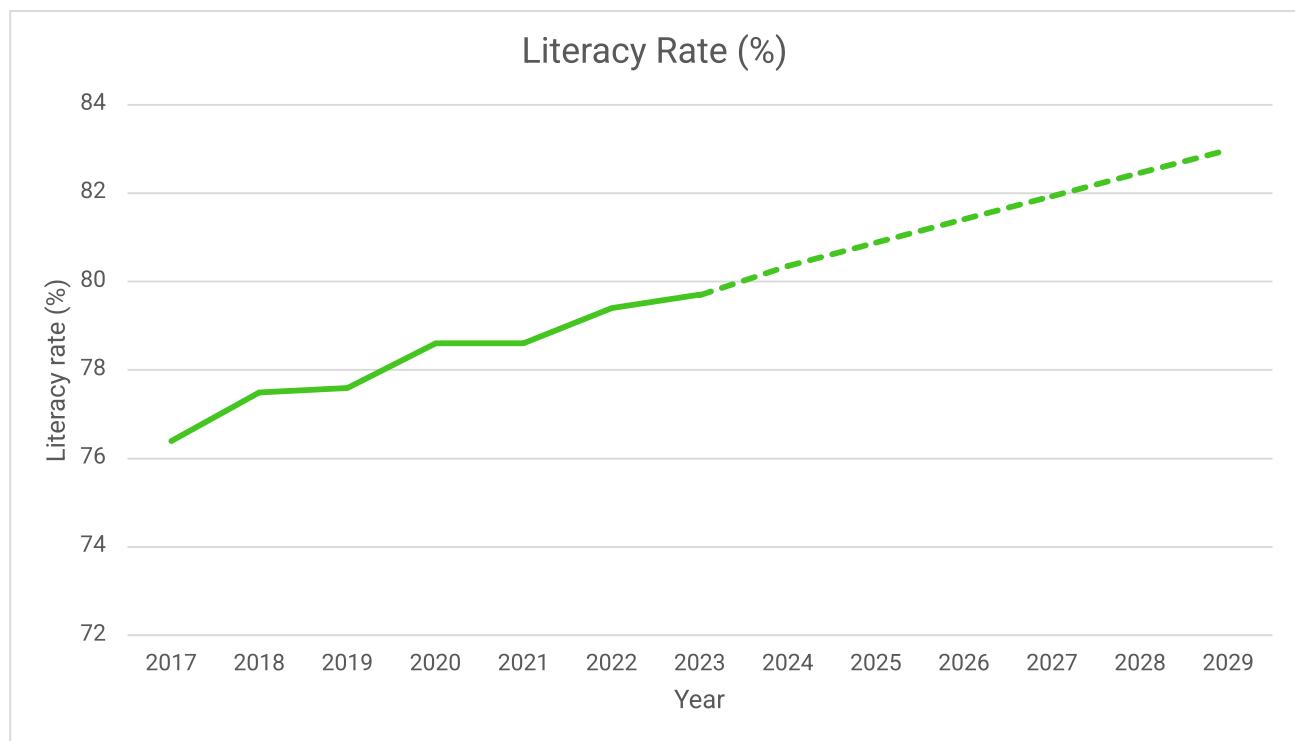
GDP PER CAPITA AND GDP



DEPENDENCY RATIO



LITERACY RATE



REFERENCES

- [1] Kothari, Brij, and Tathagata Bandyopadhyay. "Same language subtitling of Bollywood film songs on TV: Effects on literacy." *Information Technologies & International Development* 10.4 (2014): pp-31.
- [2] Kothari, Brij, and Tathagata Bandyopadhyay. "Same language subtitling of Bollywood film songs on TV: Effects on literacy." *Information Technologies & International Development* 10.4 (2014): pp-31.
- [3] Ting, Hsin-Lan, Chon-Kit Ao, and Ming-Jen Lin. "Television on women's empowerment in India." *The Journal of Development Studies* 50.11 (2014): 1523-1537.

TEAM AT IIM AHMEDABAD



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विद्यावित्तीयाशास्त्रिकालः

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