A Study of Top 500 Smart Cities of India

1. Introduction

India is the second largest country in the world after China. There are 4,000 cities and towns in India. About 300 cities have population over 1,00,000. Seven cities have population more than 3 million. Greater Mumbai still is the most populated city in its 440 sq. Km. area followed by Delhi, Kolkata, Bangalore and Chennai. As India is a developing Nation , with a whooping population of 1.31 billion . As the increase in the digitization field more and more cities are going under the category of Smart Cities.

2. An empirical field study of top 500 Smart Cities in India.

We will see what the data of that cities tell and we study what factors are dependent for the smart cities to be consider by the government. We study how can a city comes under the category of SMART cities.

2.1 Hypothesis

We study how the sex ratio and literacy rate of female are dependent for the smart cities. We see for cities to be consider under Smart Cities there is a need to Educate Feamale for better development.

> **H1:** *The sex ratio and effective literacy rate of female are dependent for the Smart Cities.*

3. Data

Data of 500 Cities with population more than 1 Lac by Census 2011.

Below are the name of the columns:

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'name_of_city'                  : Name of the City
'state_code'                    : State Code of the City
'state_name'                    : State Name of the City
'dist_code'                     : District Code where the
city belongs ( 99 means multiple district )
'population_total'              : Total Population
'population_male'               : Male Population
'population_female'             : Female Population
'0-6_population_total'          : 0-6 Age Total Population
'0-6_population_male'           : 0-6 Age Male Population
'0-6_population_female'         : 0-6 Age Female Population
'literates_total'               : Total Literates
'literates_male'                : Male Literates
'literates_female'              : Female Literates
'sex_ratio'                     : Sex Ratio
'child_sex_ratio'               : Sex ratio in 0-6
'effective_literacy_rate_total' : Literacy rate over Age 7
'effective_literacy_rate_male'  : Male Literacy rate over Age
7
'effective_literacy_rate_female': Female Literacy rate over
Age 7
'location'                      : Lat,Lng
'total_graduates'               : Total Number of Graduates
'male_graduates'                : Male Graduates
'female_graduates'              : Female Graduates
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3.1 Model

Model 1: We first established the effect of sex ratio on effective literacy rate of female

$$Sex\_ratio = \alpha_0 + \alpha_1 * effective\_literacy\_rate\_female_{jk} + \in$$

We estimated Model 1, using linear least squares.

3.2 Results

Model 1: There is a positive correlation between the sex ratio and literacy rate. Though not very strong, there is still an effective correlation and also the p-value is pretty small which again gives us a good statistic to decide that the correlation is not 0 amongst the two variables. There is very poor linear correlation between the total number of graduates and the effective literacy rate.

4. Conclusion

This paper was motivated by the need for research that could improve our understanding of what factors are important for the development of the cities, which sectors requires some improvement and how can a city be comes under the smart cities category.

The unique contribution of this project is that we investigated the need of Female education for the development of the nation. We found that sex ratio is important factor for effective literacy rate.

This research has some managerial implications. We find that the majority of people's perception of that particular city, for example cities which has higher sex ratio and more literacy rate of female gives better opportunities for the co-operate world for establishing the company.

Educate Females for better sex ratio and better development!!