



**VIRGINIA COMMONWEALTH UNIVERSITY**

**Statistical analysis and modelling (SCMA 632)**

**A5: Visualization - Perceptual Mapping for Business**

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# INTRODUCTION

This report presents an analysis of consumption data for Goa, derived from the NSSO68 dataset. The primary focus is to visualize and interpret the distribution of consumption across different districts within the state of Goa.

## Objectives

- 1) Plot a histogram to display the distribution of total consumption across different districts in Goa.
- 2) Create a bar plot to visualize the consumption per district, specifically naming each district.
- 3) Map a chosen variable (in this case, total consumption) on the geographical map of Goa using the NSSO68 dataset.

## Business Significance

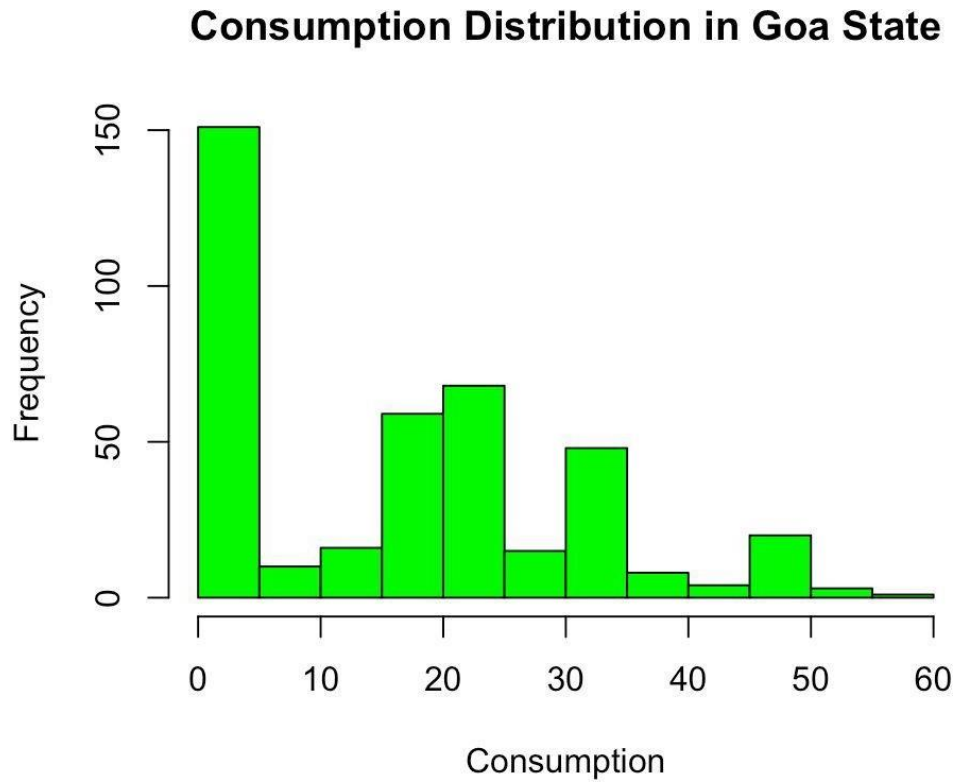
Understanding consumption patterns at the district level is crucial for policymakers and businesses. It helps in:

- Identifying areas with higher or lower consumption, aiding in resource allocation and planning.
- Tailoring marketing strategies and business plans according to regional consumption behaviors.
- Informing government policy decisions for targeted interventions in specific districts.

## RESULTS AND INTERPRETATIONS

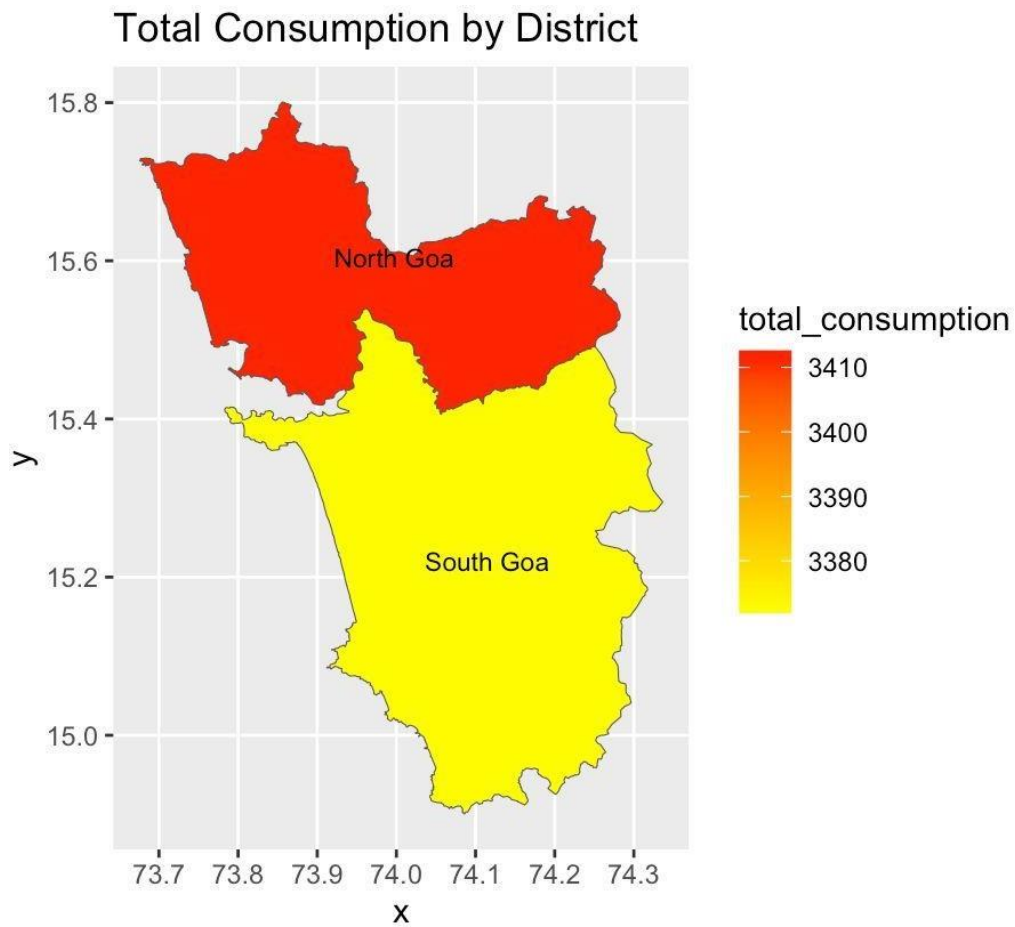
### 1. Consumption Distribution in Goa State:

**Result:**



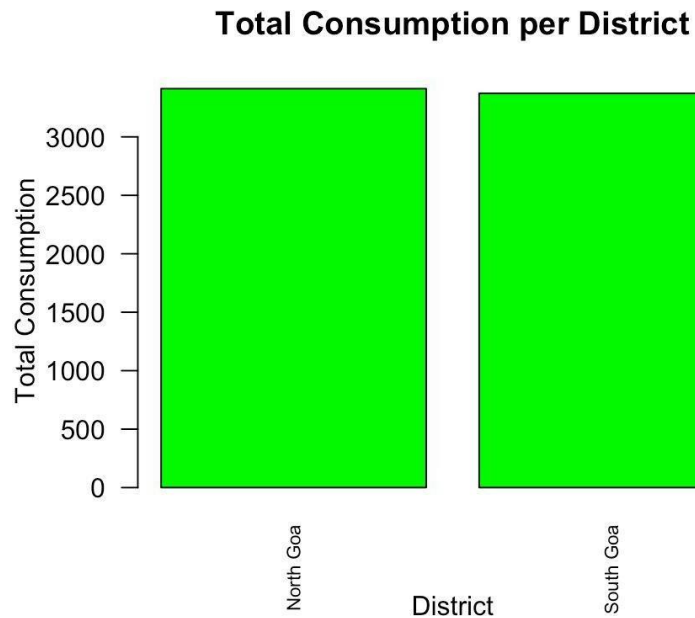
- The histogram indicates that the majority of the data points lie within the lower consumption range, with a significant frequency observed around the 0-10 consumption units.
- There are notable peaks in the 20-30 consumption range, suggesting clusters of moderate consumption.

## 2. Total Consumption by District:



- The map visually differentiates total consumption by district, with North Goa and South Goa being highlighted. North Goa shows a slightly higher total consumption compared to South Goa, as indicated by the color gradient.

### 3. Total Consumption per District:



The bar plot provides a straightforward comparison of total consumption between North Goa and South Goa. Both districts exhibit similar total consumption values, although there is a marginal difference, with North Goa leading slightly.

### Conclusion

The analysis reveals that consumption in Goa is predominantly lower, with certain districts showing moderate levels of consumption. North Goa slightly surpasses South Goa in terms of total consumption. These insights can guide targeted policy measures and business strategies to address the specific needs and characteristics of each district in Goa.