

# Estimation And Prediction Of Hospitalization And Medical Care Costs

## Introduction:

### Overview:

- Medical costs are one of the most common recurring expenses in a person's life. Based on different research studies, BMI, ageing, smoking, and other factors are all related to greater personal medical care costs
- The estimates of the expenditures of health care related to obesity are needed to help create cost-effective obesity prevention strategies. Obesity prevention at a young age is a top concern in global health, clinical practice, and public health.

### Purpose:

- Cost analysis is a helpful tool to enhance project management and predict potential profits for a company.
- Cost effectiveness analysis is a way to examine both the costs and health outcomes of one or more interventions.
- Cost effectiveness analysis helps identify ways to redirect resources to achieve more.

### Literature Survey:

## Existing problem:

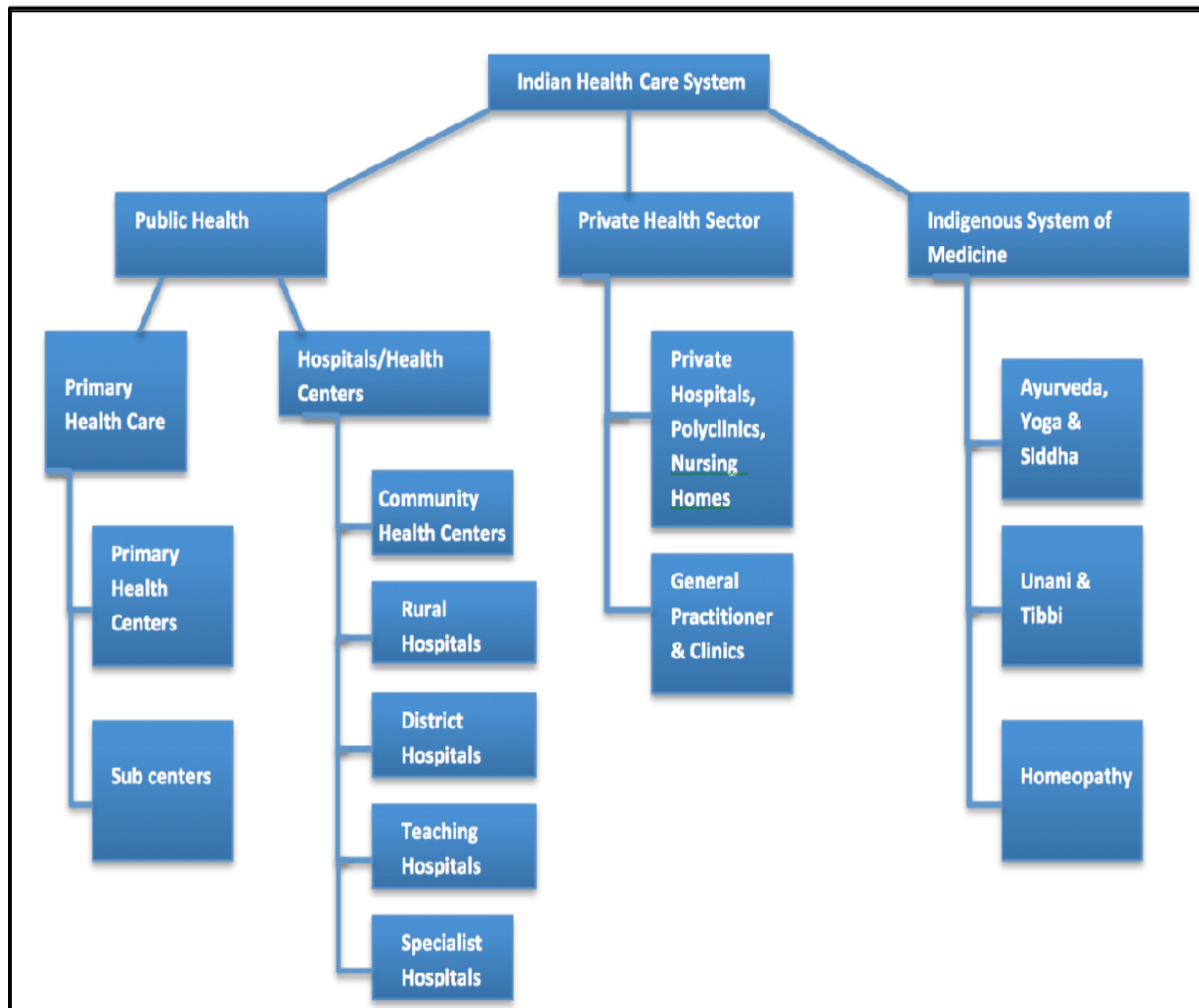
- Healthcare providers (hospitals and clinics) may have diminished control over revenues, but they can control hospital operating expenses, which comprise all the costs of taking care of patients: labour, supplies, utilities, equipment, buildings, property, and capital. A few of these expense categories are driving the current cost problems:
- Accurate measurement of costs and outcomes is the previously hidden secret for solving the health care cost crisis. The authors would like to acknowledge the extensive and invaluable assistance of Mary Witkowski, in the preparation of this article.

## Proposed Solution:

- ❖ Expand Insurance to cover health care costs.
- ❖ Accelerate digital innovation to enable smarter decisions that reduce cost, patient and consumer, engagement improve health outcomes.
- ❖ Hypochlorite are widely used in healthcare facilities in a variety of settings ,Inorganic chlorine solution.

## Theoretical Analysis:

## Block Diagram:



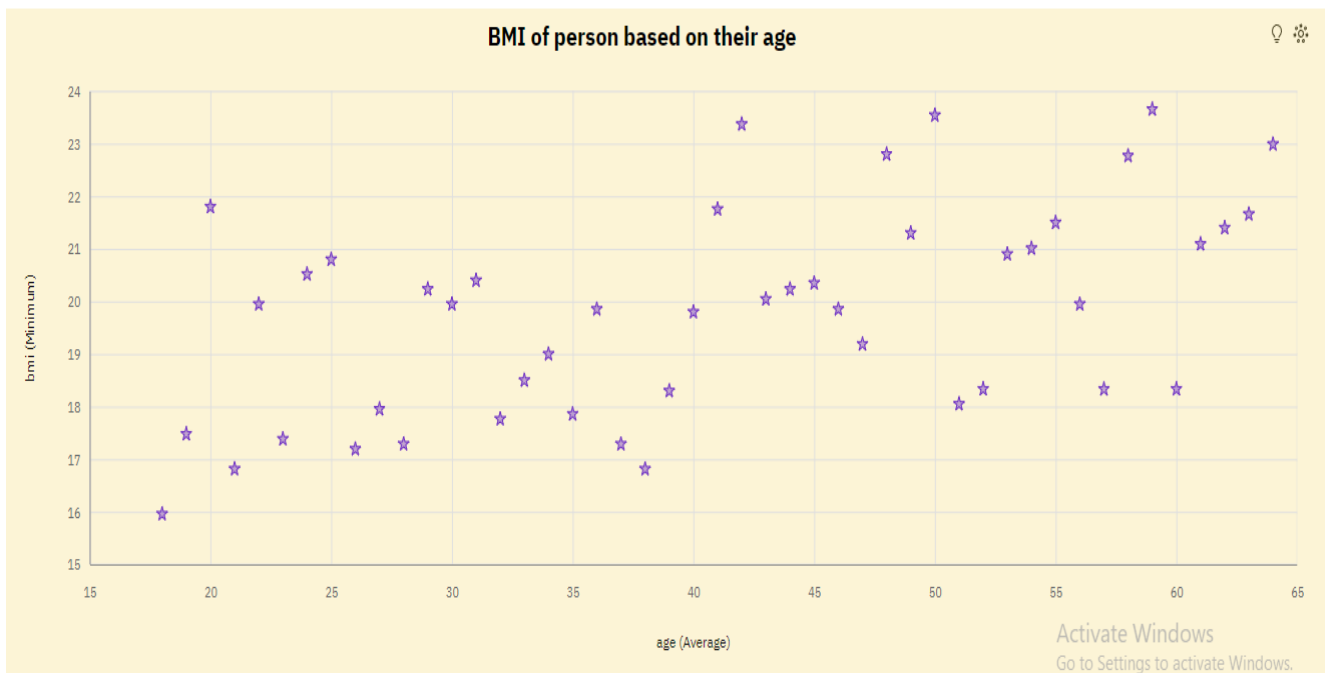
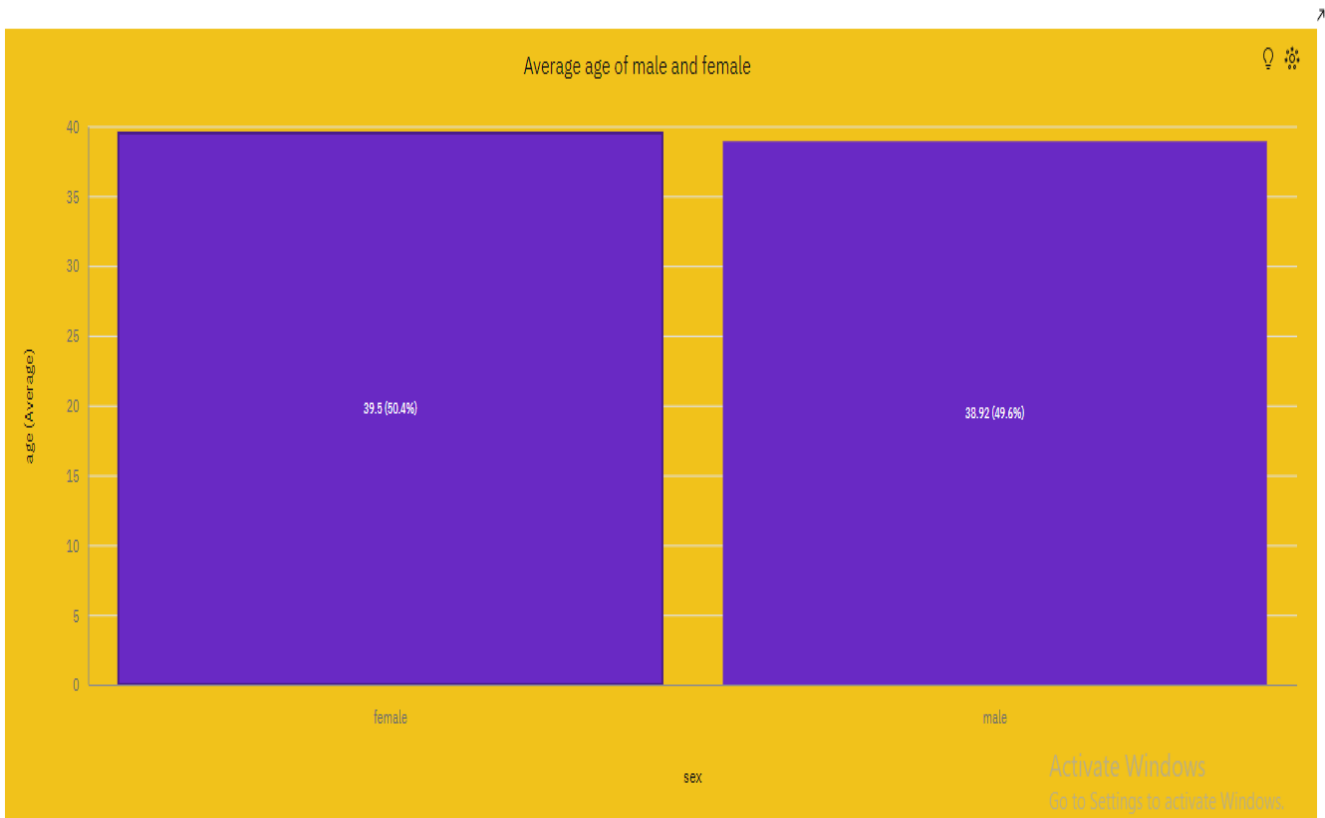
## Hardware/Software Designing:

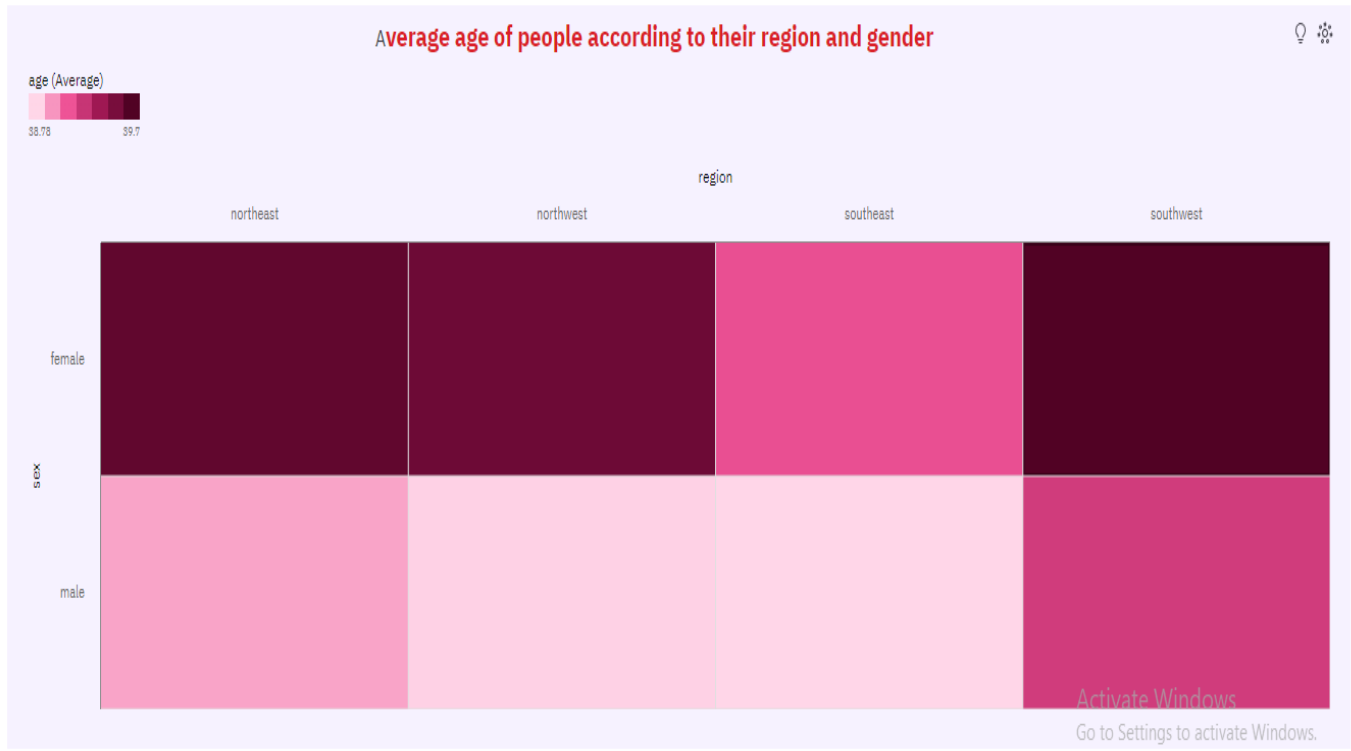
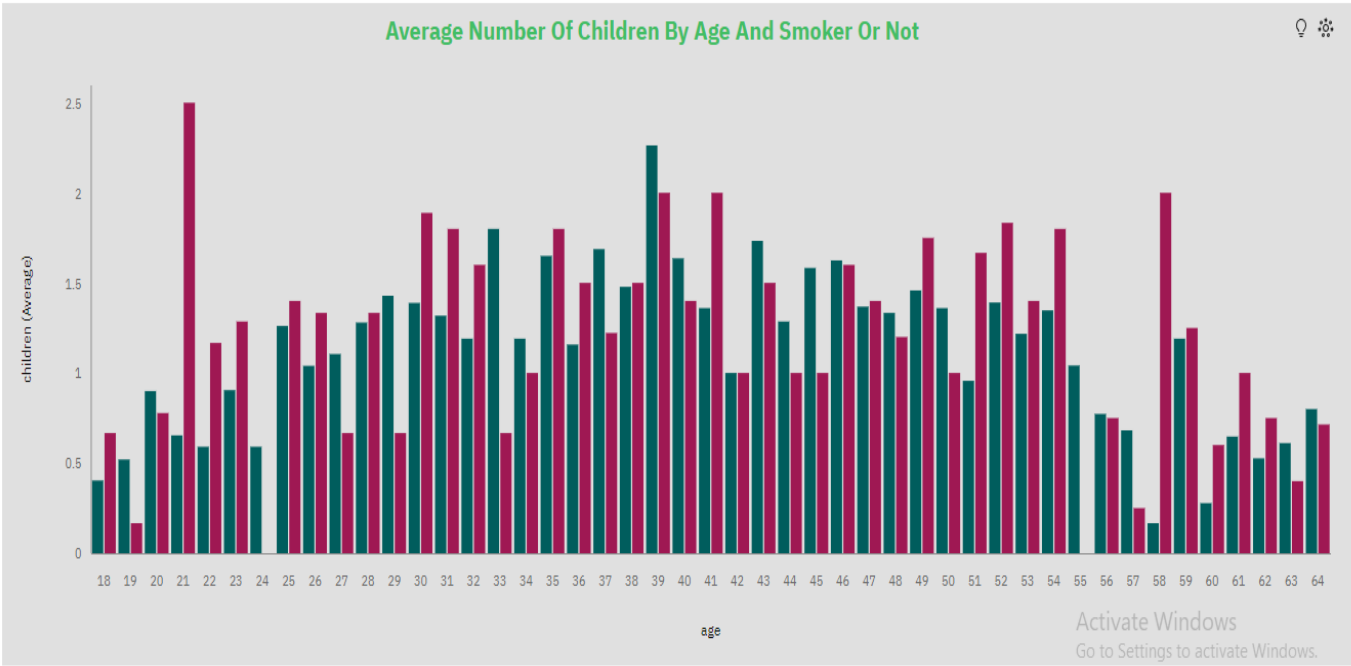
\*Hardware and software requirements for the hospital management system can be as follows. Ready to deploy IoT solutions for surgical scrub & linen management, RFID asset tracking in hospitals, tracking surgical sets with RFID,

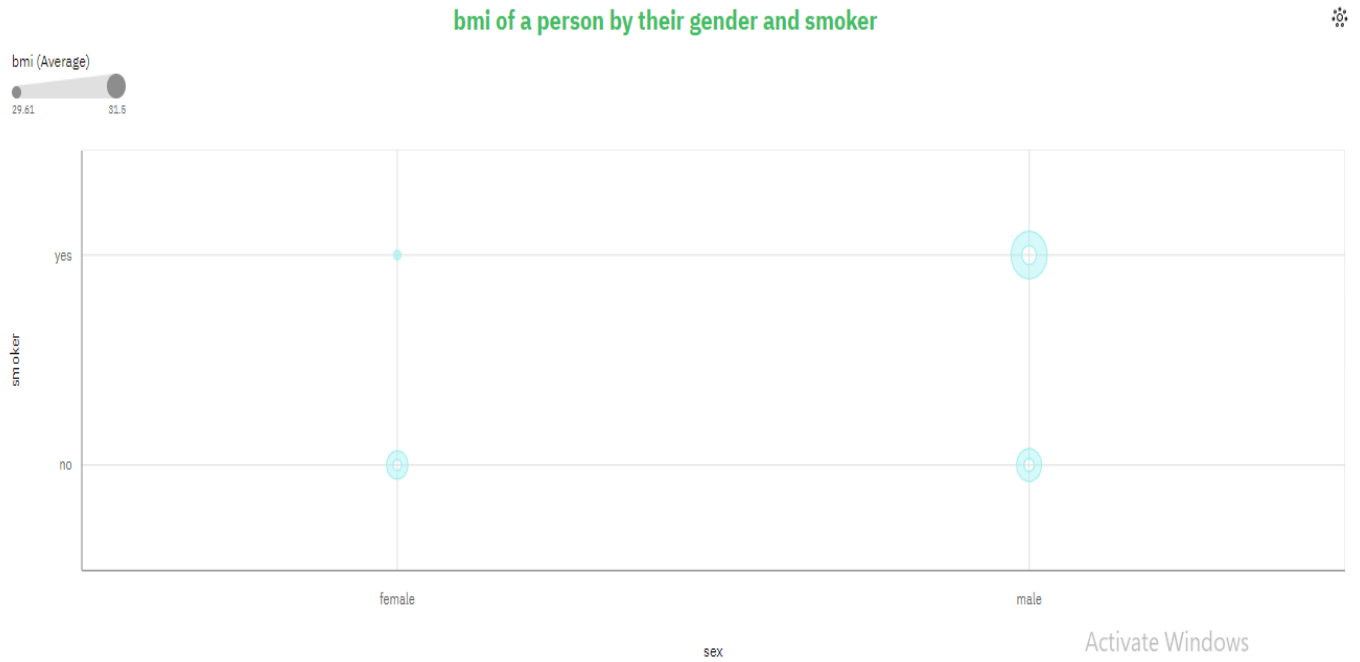
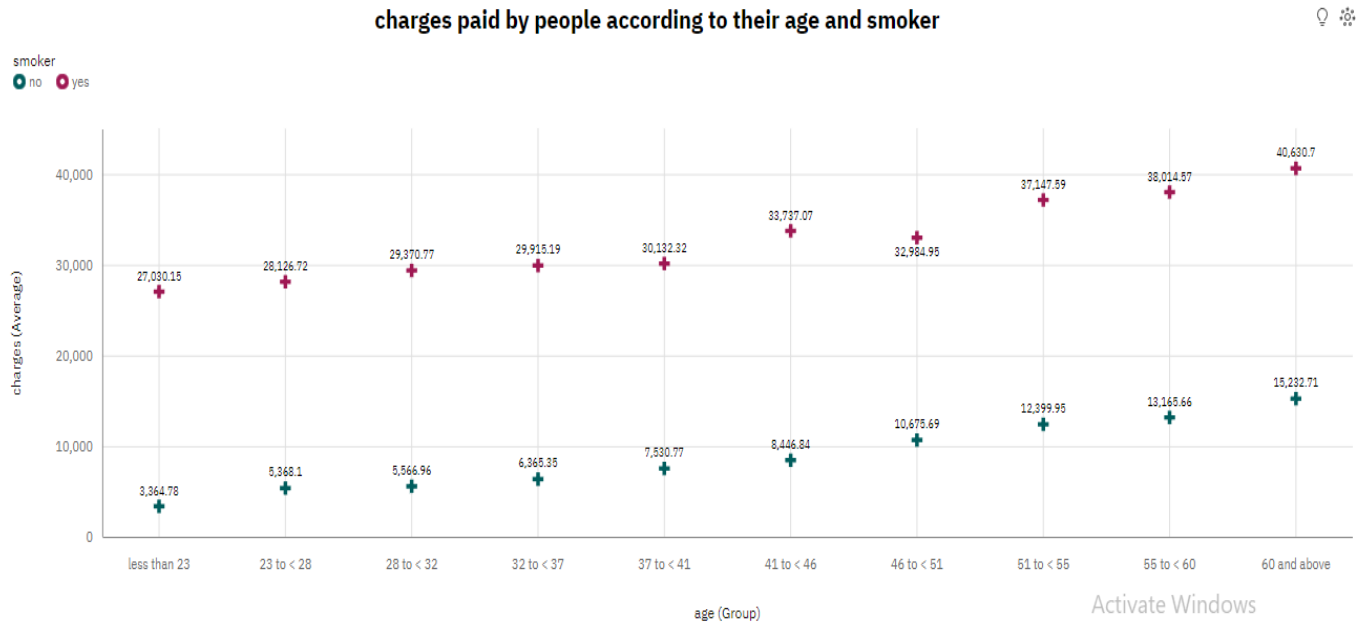
monitoring temperature sensitive material, Laboratory management, equipment tracking, and inventory management.

\*There are different software classifications specific to medical equipment. Before starting a new project, it's necessary to clearly define the requirements for your medical device software development, as the scope and technologies can be pretty diverse, including embedded coding and SAMD.

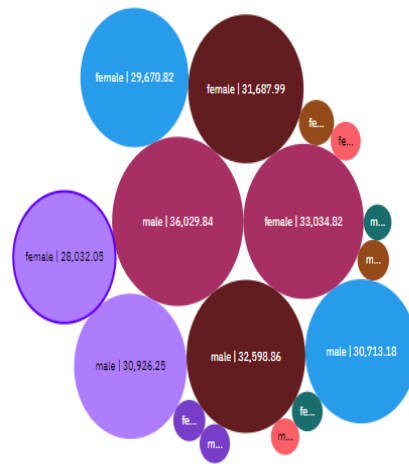
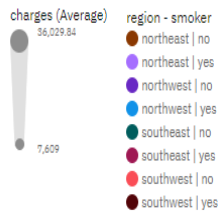
**Result:**





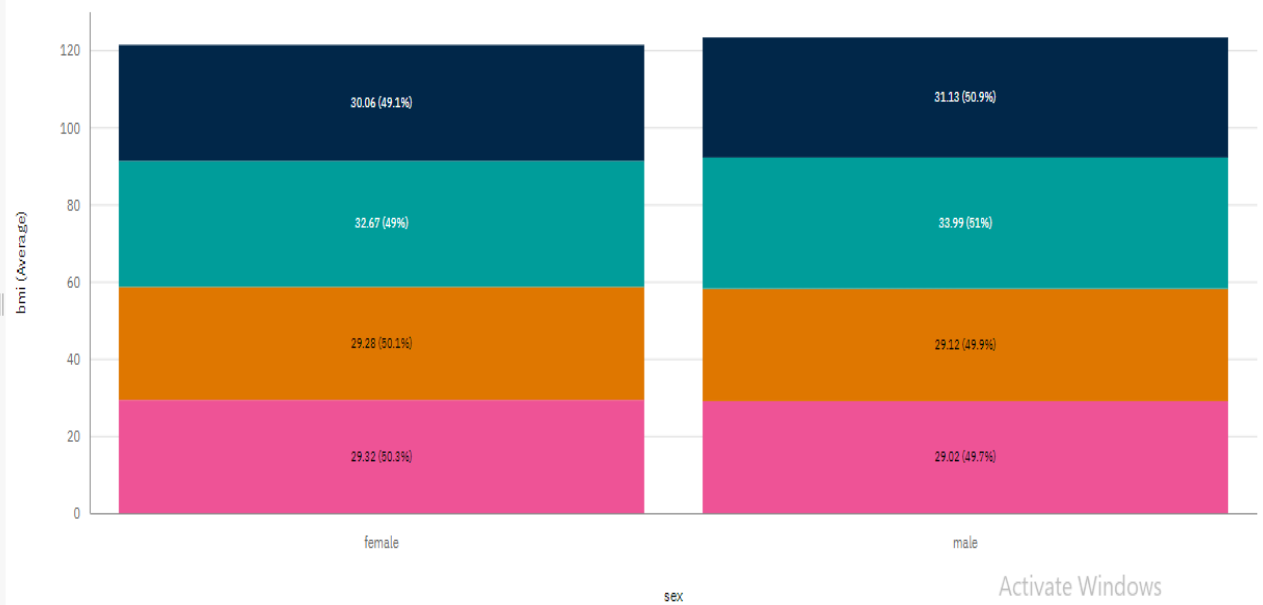
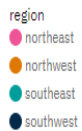


charges paid by people according to their gender,region and smoker



Activate Windows  
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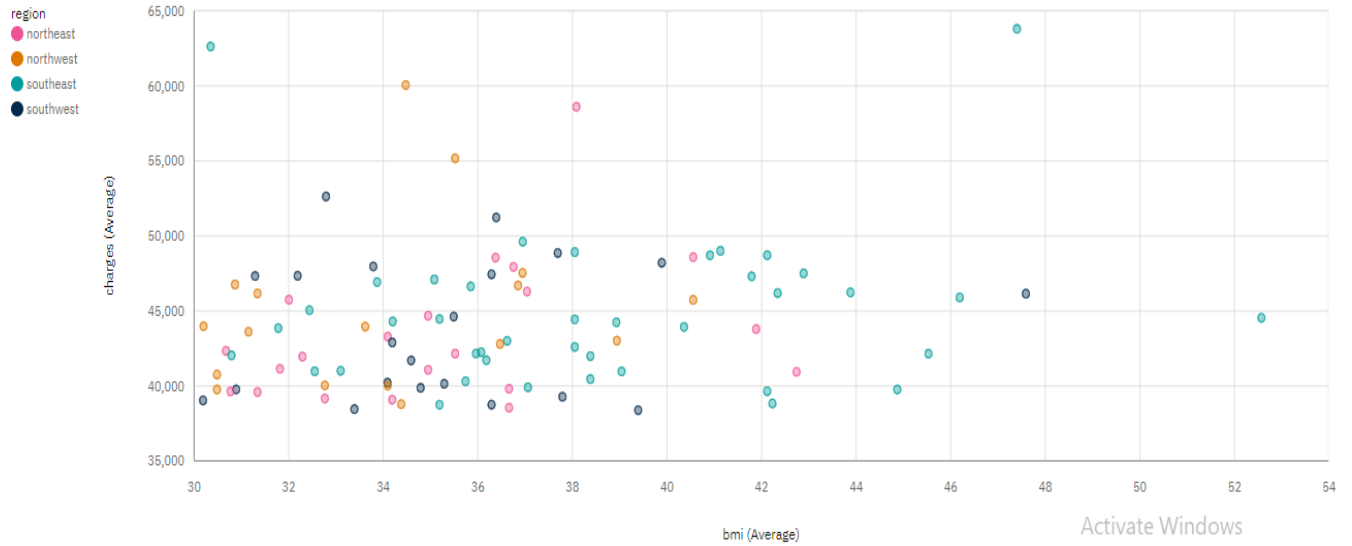
Average BMI of people by gender and region



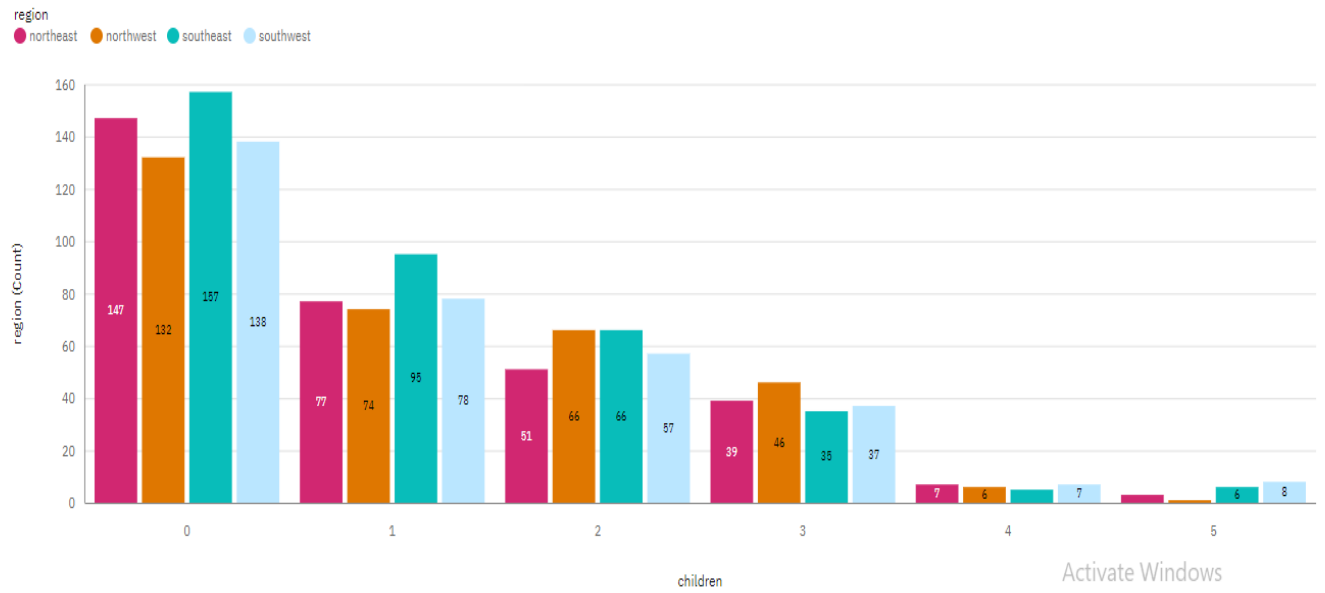
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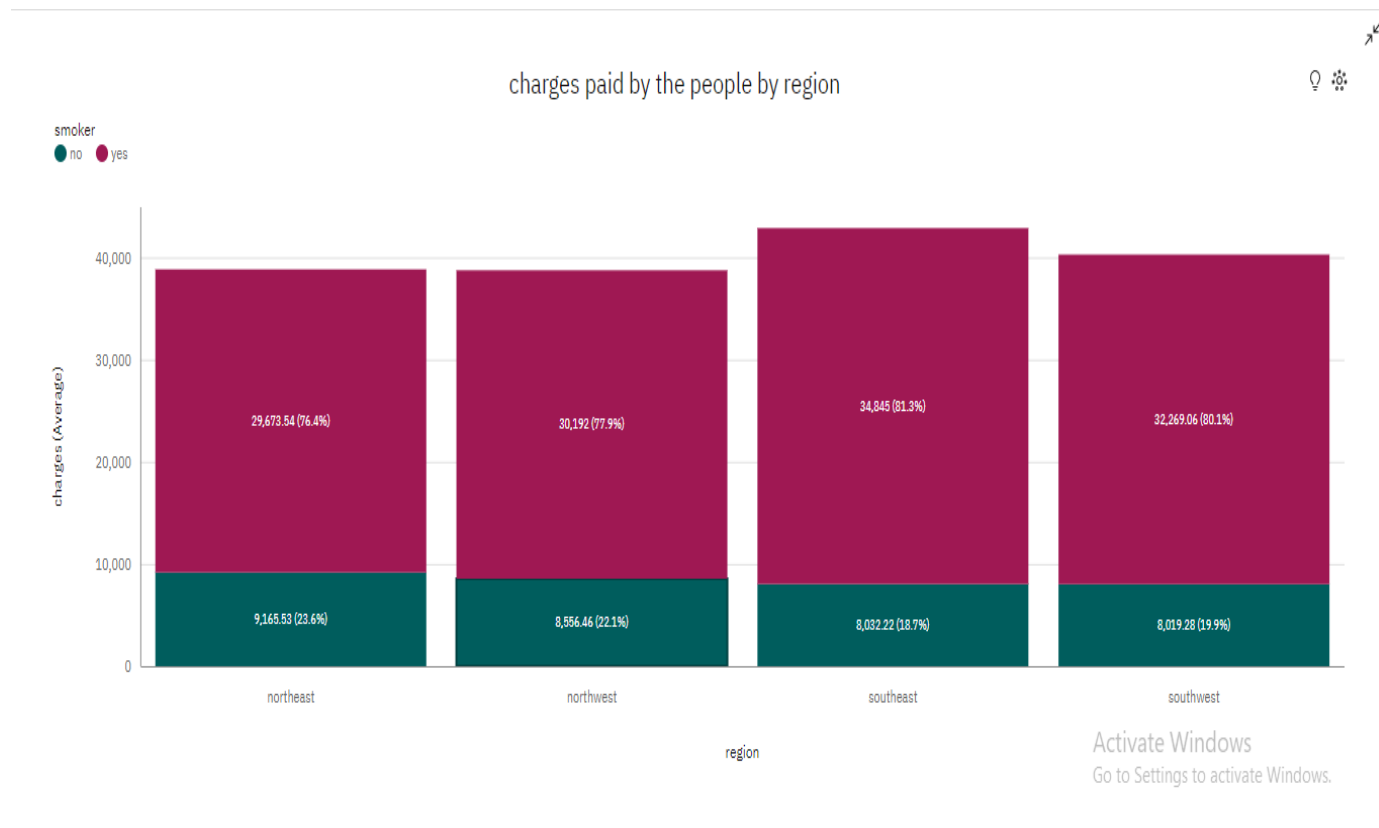


Top 100 charges paid by people based on BMI and colored by region

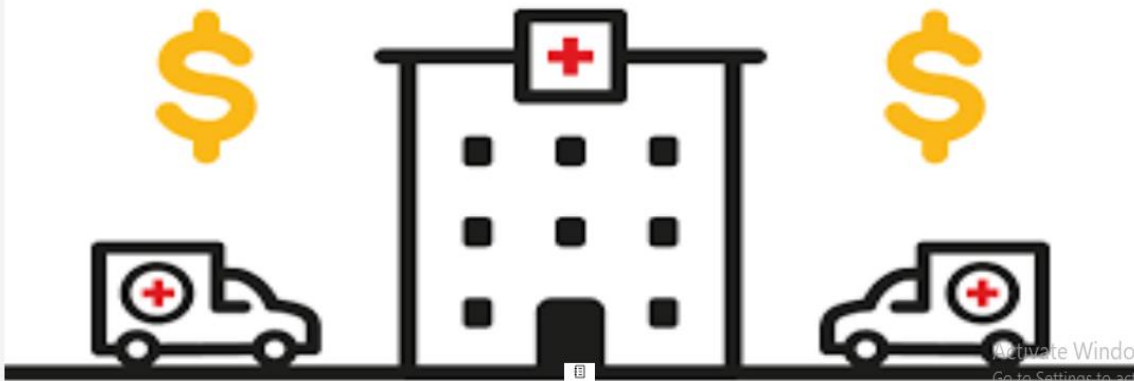


Number of children to the people by region





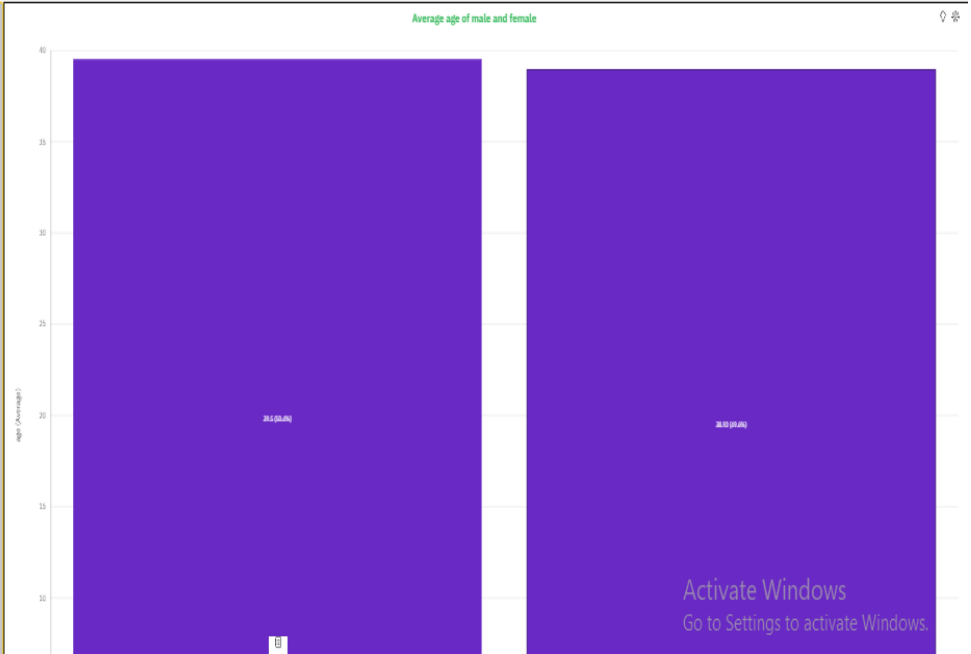
# Medical Care Costs Story



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# Medical Care Costs Story

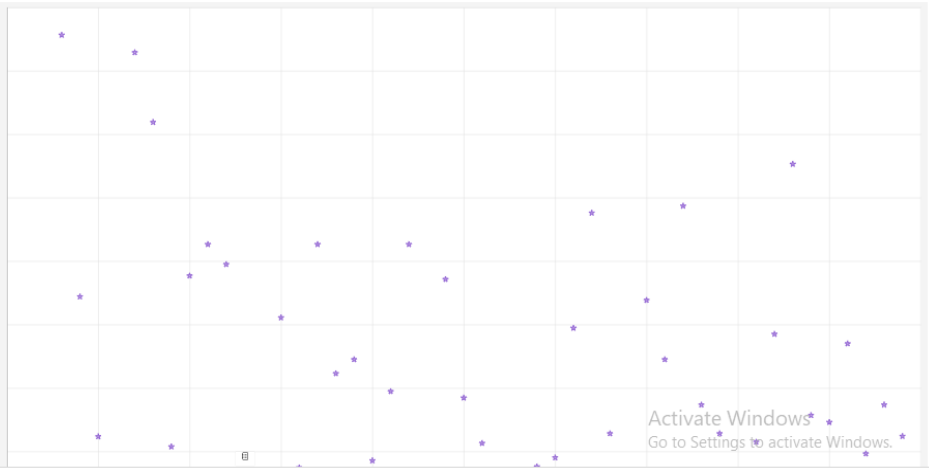
- This graph mainly represents the average age of males and females and as we the female average is higher.
- The average age of female is higher despite having a little bit less number of females in the overall dataset.



# Medical Care Costs Story

- As age is increasing the average BMI of persons also increases. This means BMI and age are linearly proportional.
- The maximum value of BMI is 30 in the middle.

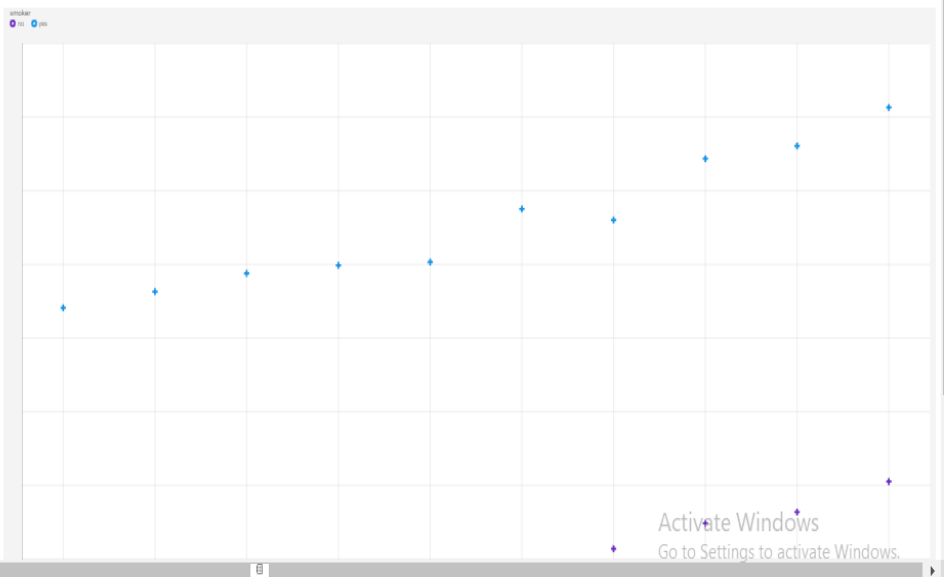
BMI of person based on their age



# Medical Care Costs Story

- Smoker of any age are paying more than non-smokers the value is also almost 3 to 6x higher.
- Charges are getting increased as the age is also increasing in both scenarios.

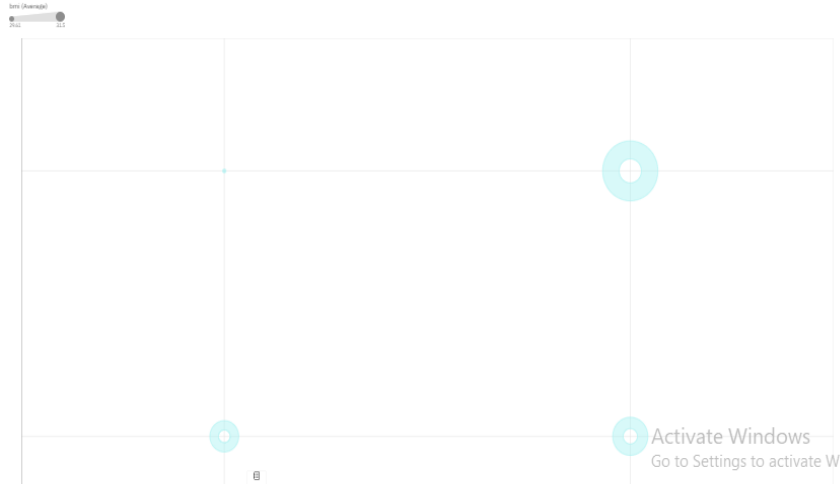
charges paid by people according to their age and smoker



# Medical Care Cost Story

- Females and smokers have the less average BMI values compared to all.
- Increase non smokers irrespective of gender their average BMI is almost similar.

bmi of a person by their gender and smoker

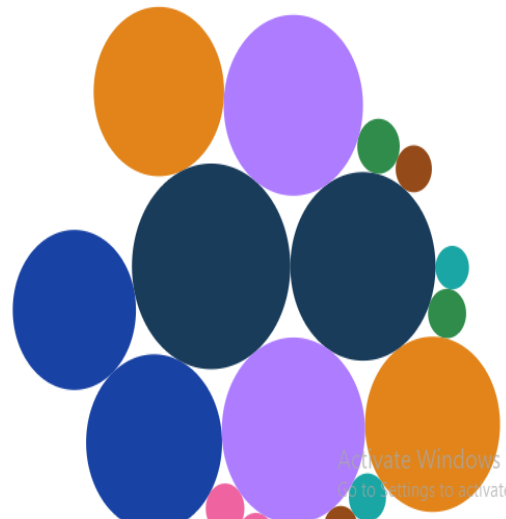


Prev scene |< >| Next scene | Scene 5 of 7 | 0:05.0

# Medical Care Costs Story

- Southeast region people, both men and women are paying more charges compared to other regions.
- South-east region smokers a few ones who a paying more charges.
- out of all as we have seen smokers tend to pay more irrespective of region.

charges paid by people according to their gender, region and smoker



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# Smoking Is Not Only Injuries To Health But Also For Wealth



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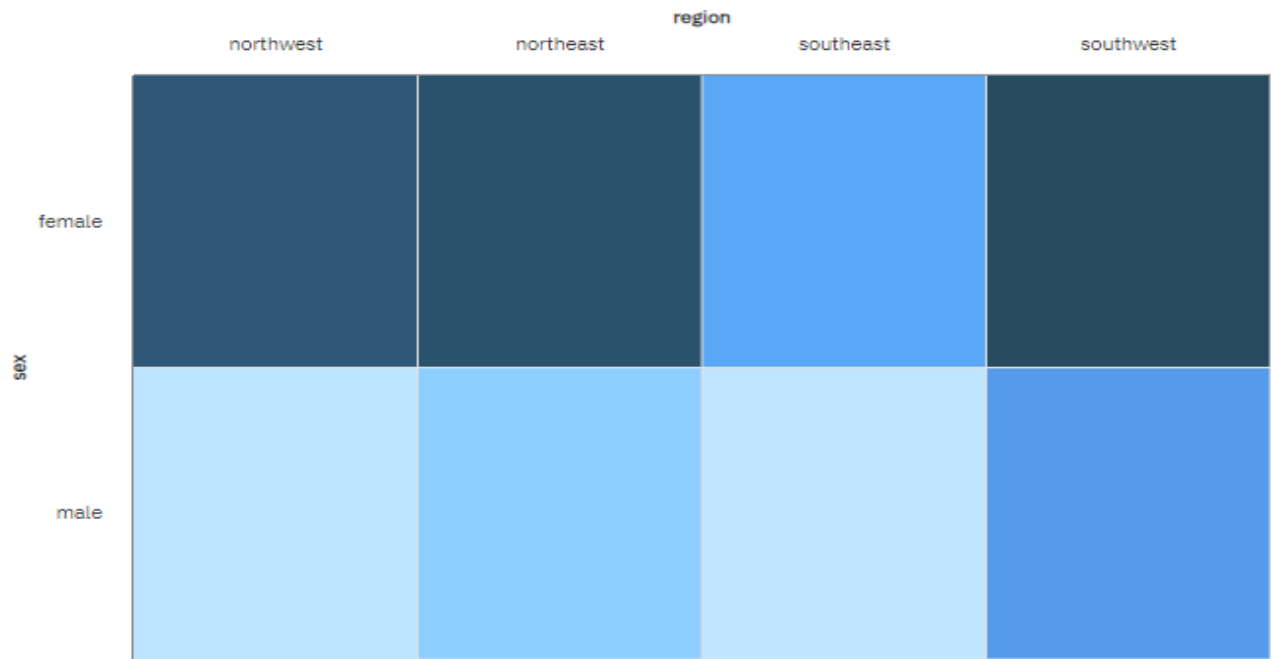
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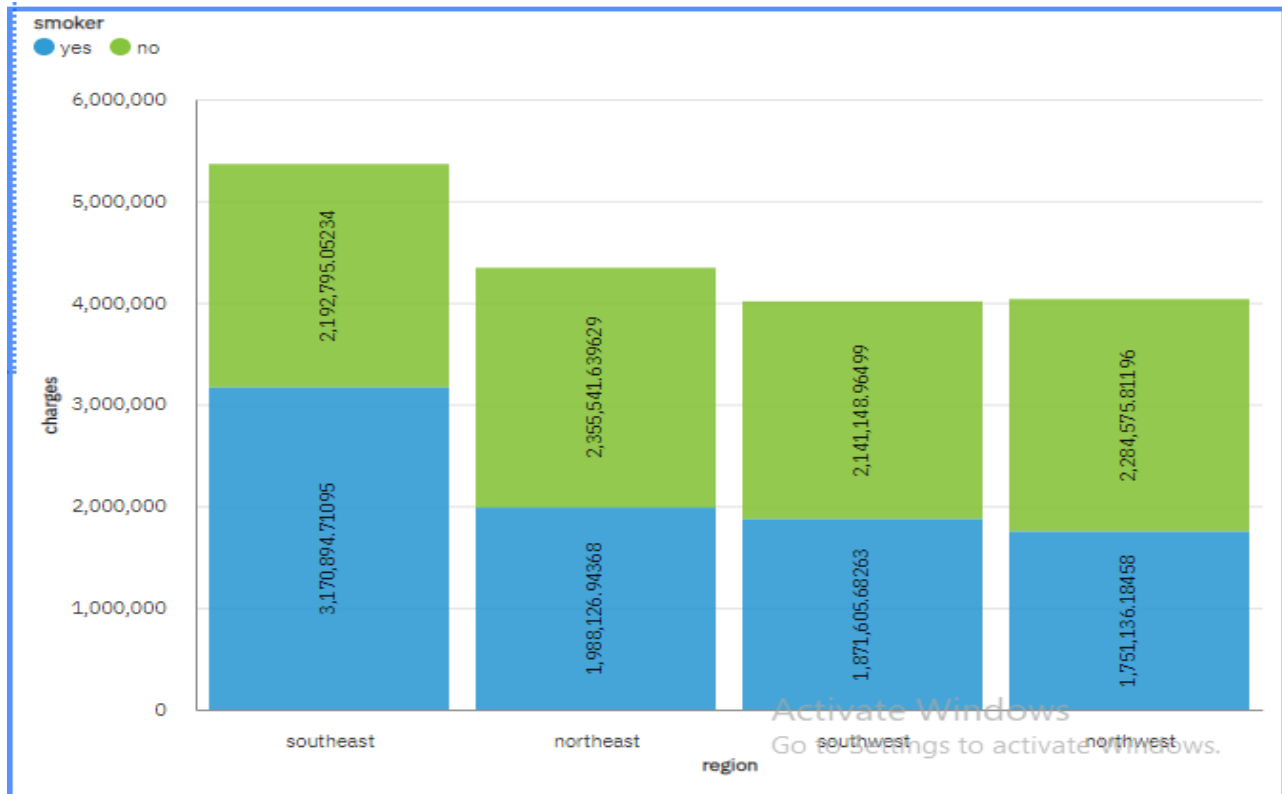
## Medical\_Care\_Cost\_Report

Average age of person based on region and gender

The number of females in northwest is higher then every other

age  
38.7830687830688  
39.7037037037037





## Medical Care Cost in India

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# Medical Care Cost Analysis in India

Indians are struggling with healthcare costs, so much so that its rise is pushing 5.5 crore Indians below the poverty line<sup>1</sup>. India's per capita expenditure on health remains among the lowest in the world. India still spends only around 1.5% of its budget on health. Medical Care is Key For Development Nation

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## Dashboard



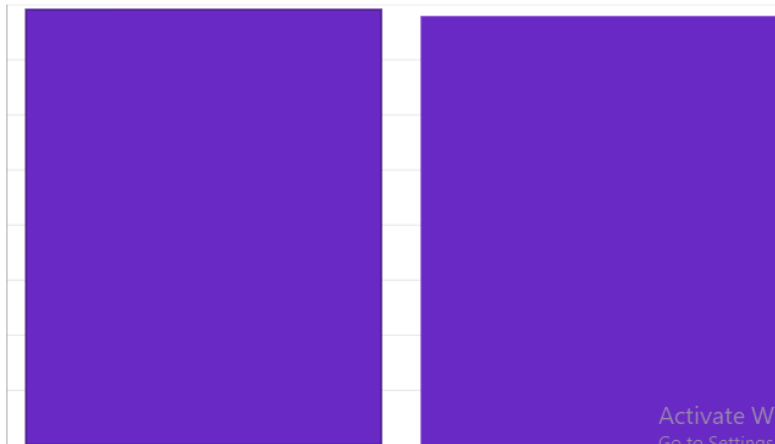
## Story



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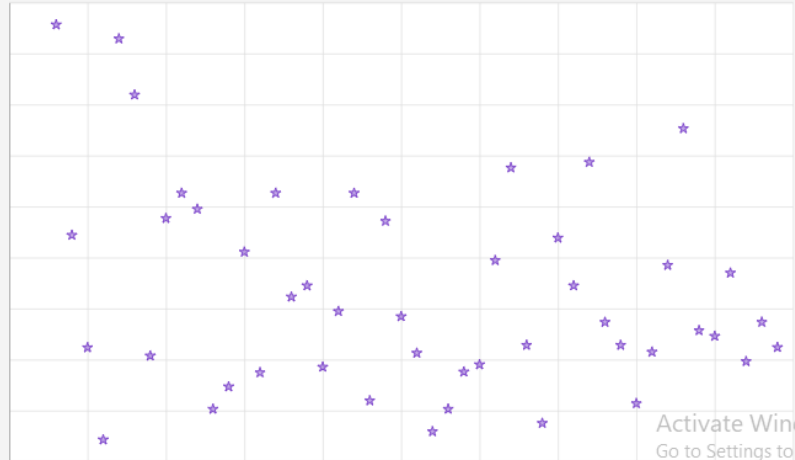
Average age of male and female



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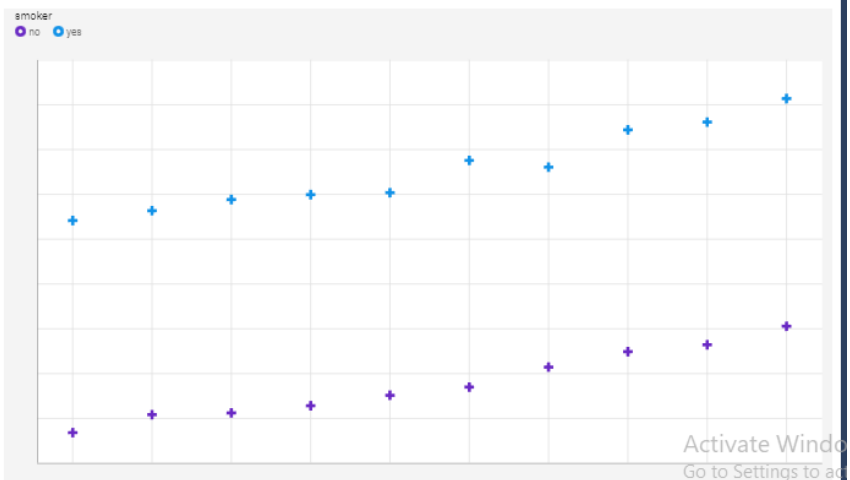
BMI of person based on their age



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charges paid by people according to their age and smoker



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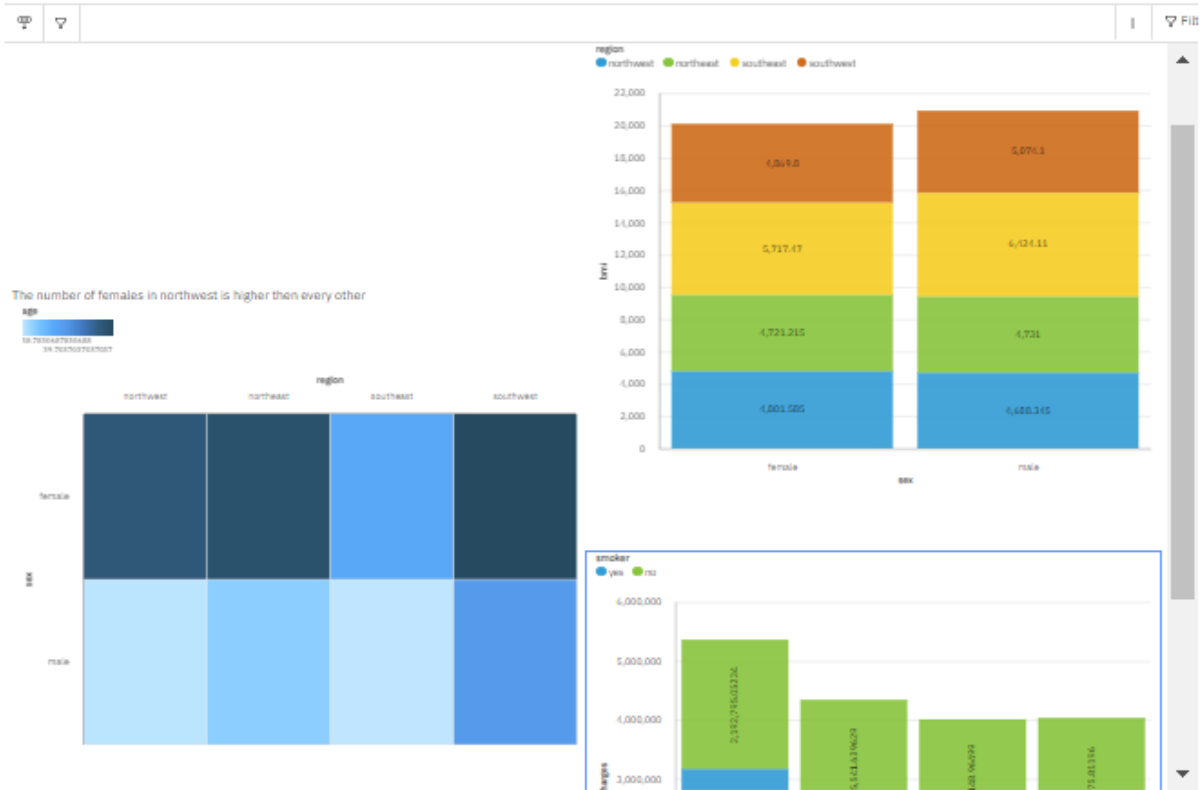
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Smoking Is Not Only  
Injuries To Health But  
Also For Wealth

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Report



## Contact

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info@example.com  
contact@example.com



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+1 5589 55488 55  
+1 6678 254445 41

Send Message

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# Advantages & Disadvantages:

## Advantages:

1. Covers medical-related expenses...
2. Ensures access to preventive care...
3. Funds dental treatment...
4. Gives add-on coverage for critical illnesses...
5. Offers a cashless claim benefit...
6. Provides for domiciliary treatment...

## Disadvantages:

1. Premiums increase with age.
2. Pre-exclusion.
3. Waiting period for existing health problems.
4. Co-payment.
5. High-cost of health care.
6. Financial issues.

## Applications:

- \* Use of mobile devices to educate consumers about preventive healthcare services.
- \* Remote patient monitoring.
- \* This function are assessment and certification of health status.
- \* Prognostication.
- \* Segregation of the ill to limit communication of illness.
- \* Helping and cope with the problems of illness.

## Conclusion:

- i. Everyone needs to be well informed and concerned about the quality of care.
- ii. Healthcare marketing is a potent tool that organizations may use to broaden their audience reach and boost customer engagement.
- iii. Primary, secondary, tertiary and quaternary care refer to the complexity and severity of health challenges that are addressed, as well as the nature of the patient-provider relationship.



## Future scope:

- ❖ Technological developments, shifting demographics, and changing healthcare regulations.
- ❖ The hospital industry is expected to reach \$132 Bn by 2023 from \$61.8 Bn in 2017, growing at a CAGR of 16-17%.
- ❖ Health tourism ,research and medical information.
- ❖ Advances in digital healthcare technologies ,such as artificial intelligence ,VR/AR,3D-printing,robotics or nanotechnology.