Business Insights

- The **Average insurance charge per policy** is approximately **₹13,270**, which can serve as a **baseline for pricing, budgeting, and risk planning**.

- **Male policyholders** have slightly higher average charges than females; however, the **difference is minimal**, indicating that **gender is not a strong pricing driver**.

- **Insurance charges vary significantly by region**, with the **Southeast** showing the **highest average claims**, suggesting the need for **region-specific premium strategies**.

- The **Northwest and Southwest regions** have **lower average charges**, and **uniform pricing may overprice customers** in these regions.

- **Smoking status** has a **strong impact on insurance charges**, making it a **critical factor** in **premium calculation and risk assessment**.

- **BMI** shows a **positive relationship with insurance charges**, particularly for **obese individuals**, although the **overall correlation is weak** and should not be used as a **standalone factor**.

- Customers with a **normal BMI** can be considered for **discounts**, but **BMI should be evaluated alongside other risk factors**.

- **Families with 1–3 children** exhibit **higher average claims**, indicating **increased risk** for **small to medium-sized families**.

- **Large families** show **lower average claims**; however, this trend may be influenced by **limited sample size** and should be interpreted **cautiously**.

- **Family-based pricing** can **improve risk alignment** by adjusting **premiums based on the number of children**.

- **Age** has some influence on **insurance charges** but is **not a strong standalone predictor**.

- A **multi-factor pricing approach** incorporating **age, BMI, smoking status, region, and family size** will lead to **more accurate and sustainable premium pricing**.

Additional Charts Insights

- **Median charges** are slightly higher for **males than females**, but the **difference is small**, so **gender alone is not a strong pricing factor**.

- **High-cost outliers** exist in **both genders**, indicating that **extreme claims can occur for anyone** and should be considered in **risk management**.

- **Smokers** incur **significantly higher insurance charges** than **non-smokers**, indicating **smoking status is a major risk factor** for **premium calculation**.

- **High-BMI smokers** drive the **highest premiums**, signalling **top risk for insurers**.

- The **biggest jump in cost** happens **after age 45**, so **insurance gets much more expensive as people get older**.

- **Most insurance policies** cost **less than ₹10,000**, showing that **low-cost plans are the most popular** among people.

- **People aged 46–55** have the **most insurance policies**, showing they're the **most active in buying coverage**.

- **Insurance charges** go up as the **number of dependents increases**, peaking at **3 children**. After 3 dependents, the **average cost starts to drop**, which might suggest **discounts or capped pricing** for **larger families**.

- The **Southeast region** has the **highest percentage of smokers (25%)**, making it a **key area for health awareness efforts**.

- **Obese individuals** have the **highest percentage of high-cost insurance claims**, showing a **strong link between BMI and medical expenses**.

- **Claim volatility** is **nearly the same across all age groups**, showing that **age doesn't strongly affect cost unpredictability**.