Telecom Customer Churn Analysis

Insights and Solutions

PROBLEM STATEMENT

Customer Churn: A Strategic Threat to Our Business

Cost of Acquiring new Customers

5-7 times higher than retaining existing ones.

Churn Rate

25% annually, resulting in significant revenue losses.

Undermining Our Competitive Edge

Impact on company reputation and competitiveness.

OBJECTIVE OF ANALYSIS

Unlocking Churn Insights to Drive Growth and Retention

- **Identify Churn Drivers:** Analyze customer data to determine key factors contributing to churn.
- **Inform Retention Strategies:** Use data insights to drive targeted customer retention and loyalty initiatives.
- **Boost Customer Lifetime Value:** Increase revenue and growth through enhanced customer engagement and retention.

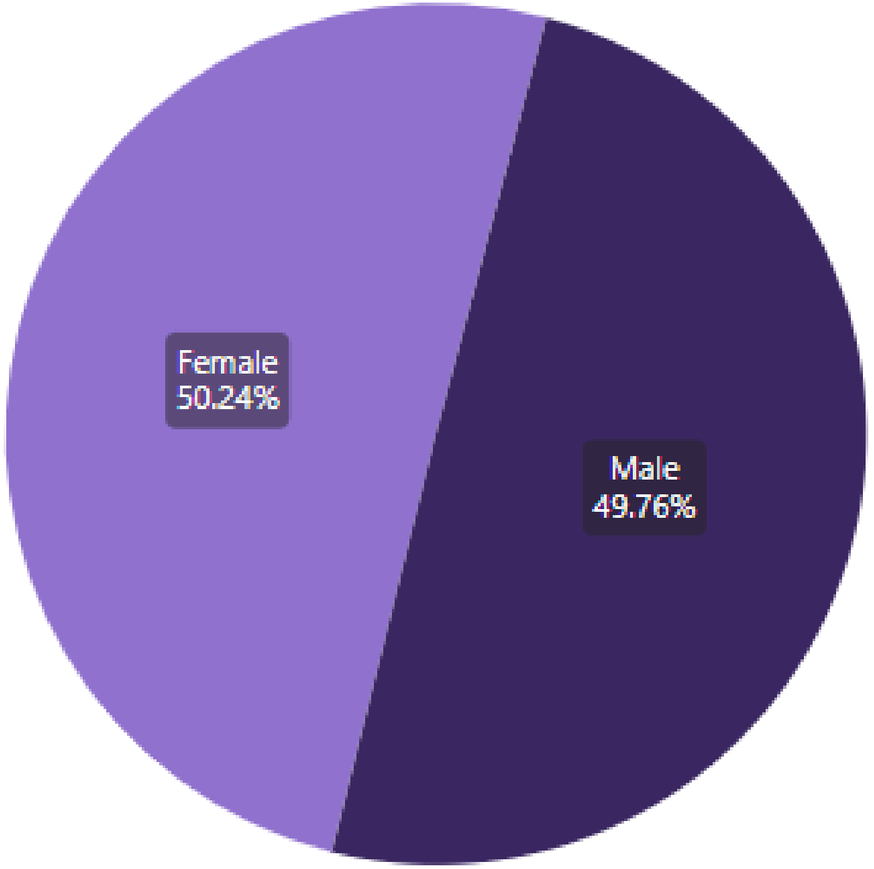
CHURN ANALYSIS KEY QUESTIONS

1. What is the distribution of churned customers by gender?
2. **Which internet service type has the highest churn rate?**
3. Are there any correlation between churn and payment methods?
4. **Are there any correlation between churn and contract types?**
5. Which combination of services has the highest churn rate?
6. **Do customers with dependents have a higher churn rate than those without?**
7. How does the tenure of customers impact churn rate?

Distribution of Churned Customers by Gender

```sql
SELECT
    gender, COUNT(customerID) as "Churned Customers"
FROM
    telecom.customer
WHERE
    churn = 1
GROUP BY gender;
```

gender	Churned Customers
Male	930
Female	939



Insight

- The distribution of churned customers by gender is relatively balanced, with a slight majority of females (50.24%).

Suggestions

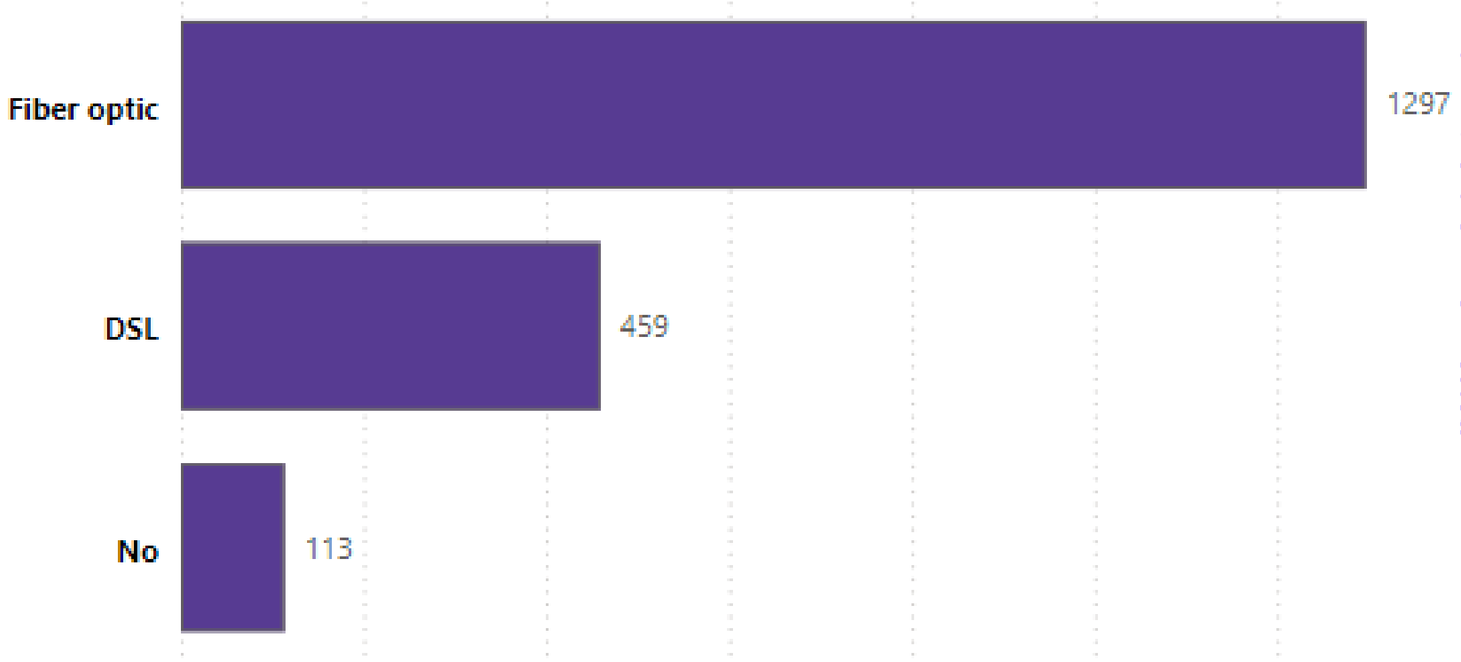
- Consider targeted marketing campaigns to retain female customers, as they slightly dominate the churned customer base.

- Focus on other factors contributing to churn, such as service type, payment methods, and customer tenure.

Churn Rate Based on Internet Service

```sql
SELECT
    InternetService, COUNT(customerID) AS 'Churned Customers'
FROM
    customer
WHERE
    Churn = 1
GROUP BY InternetService
ORDER BY COUNT(customerID) DESC;
```

InternetService	Churned Customers
Fiber optic	1297
DSL	459
No	113



Insights

- Fiber Optics customers have the highest churn rate (1297), indicating potential issues with this service.
- DSL customers have a significantly lower churn rate (459), suggesting a more stable customer base.

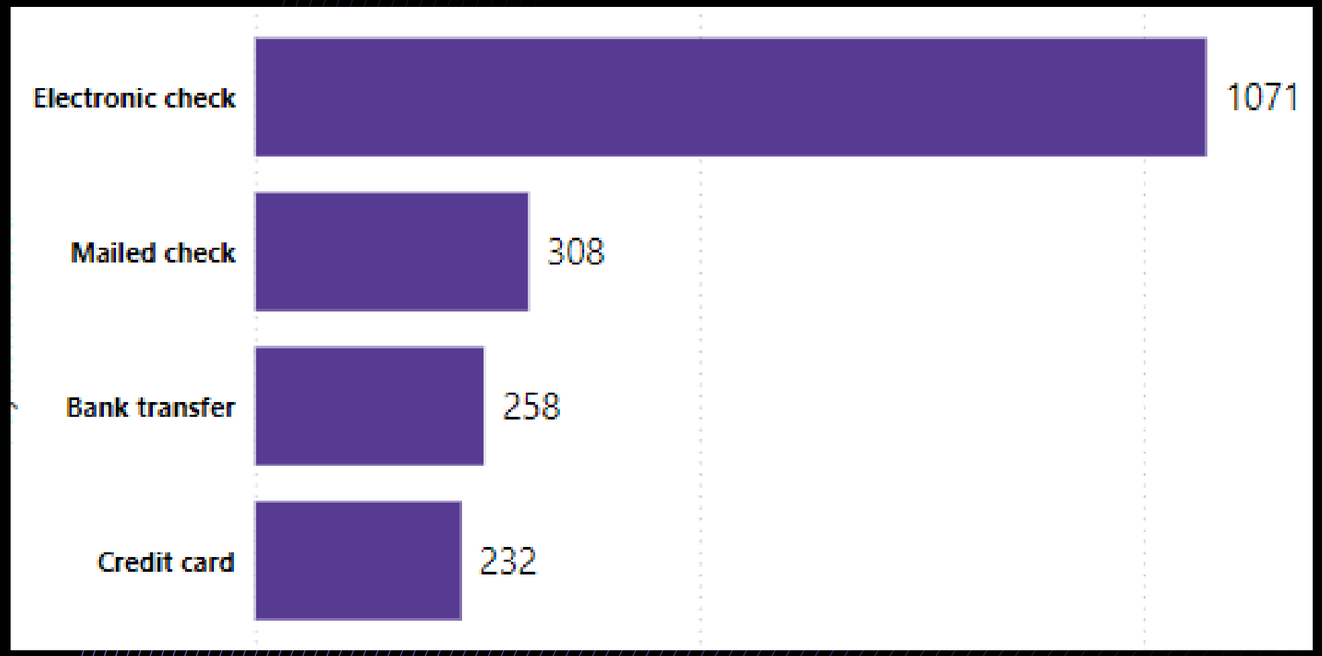
Suggestions

- Investigate potential issues with Fiber Optics service, such as outages, speed, or pricing.
- Consider offering incentives or improvements to Fiber Optics customers to reduce churn.

Churn Rate by Payment Method

```sql
SELECT
    PaymentMethod,
    AVG(Churn) AS ChurnRate
FROM
    customer
GROUP BY
    PaymentMethod
ORDER BY
    ChurnRate DESC;
```

PaymentMethod	ChurnRate
Electronic check	0.4529
Mailed check	0.1920
Bank transfer	0.1673
Credit card	0.1525



Insights

- Electronic Check has the highest churn rate (1071), indicating potential issues with this payment method.
- Credit Card has the lowest churn rate (232), suggesting a more stable payment option.

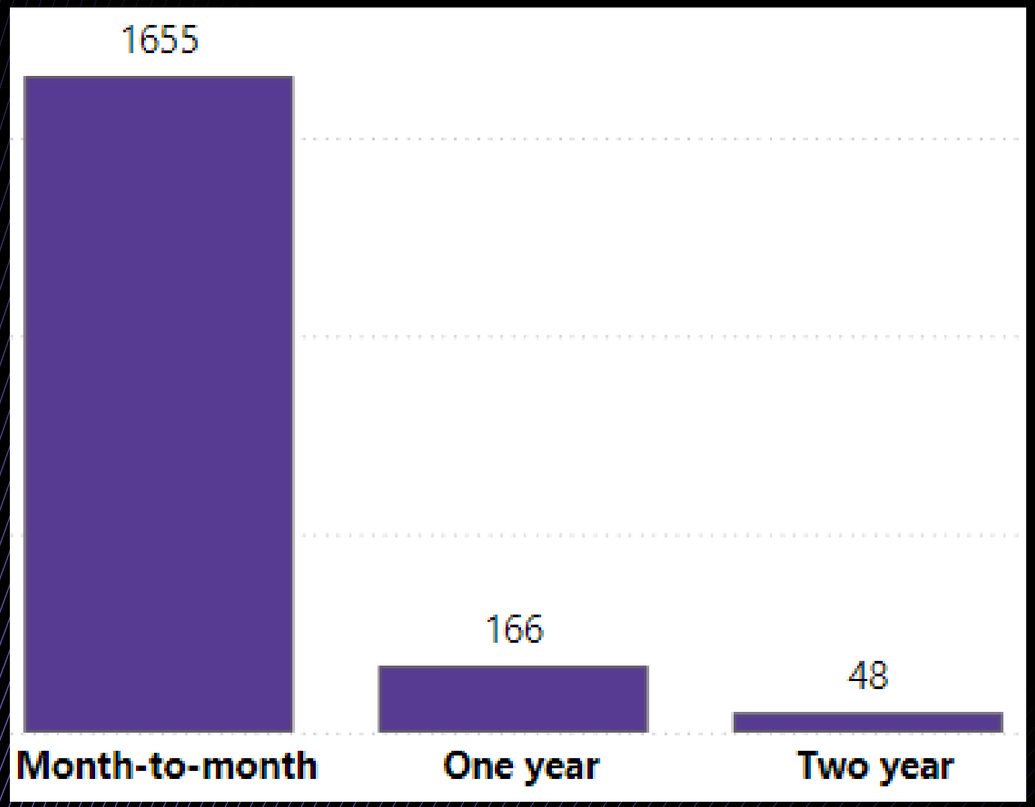
Suggestions

- Investigate reasons for high churn rate among Electronic Check customers (e.g., processing issues, fees).
- Consider offering incentives or promotions for customers to switch to Credit Card or other lower-churn payment methods.

Churn Rate by Contract Types

```sql
SELECT
    Contract,
    Avg(Churn) AS ChurnRate
FROM
    customer
GROUP BY
    Contract
ORDER BY
    ChurnRate DESC;
```

Contract	ChurnRate
Month-to-month	0.4271
One year	0.1128
Two year	0.0285



Insights

- Month-to-Month contracts have a significantly higher churn rate (1655) compared to One Year (166) and Two Year (48) contracts.
- This suggests that customers with shorter contract commitments are more likely to churn.

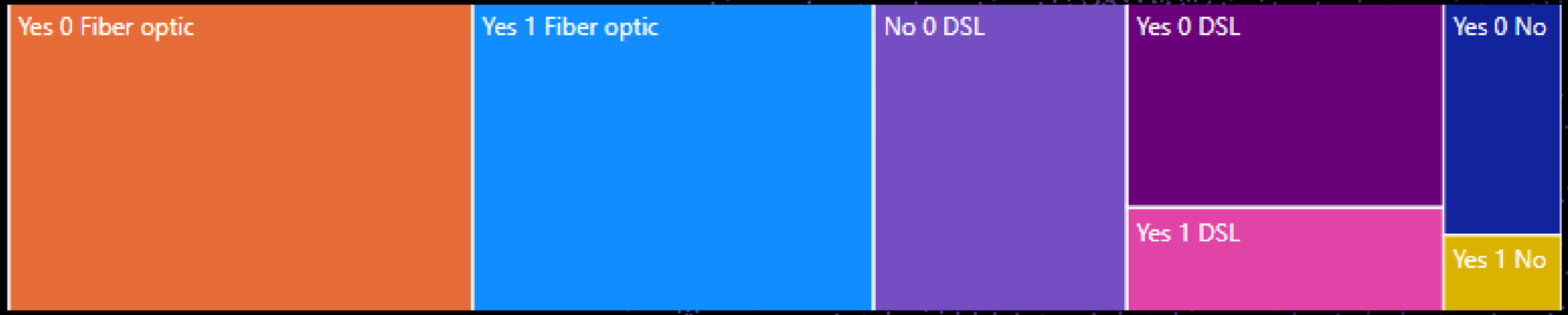
Suggestions

- Consider offering incentives or promotions to encourage customers to switch to longer-term contracts (e.g., discounts, loyalty rewards).
- Develop targeted retention strategies for Month-to-Month customers, focusing on their specific needs and pain points.

Combination of Services (InternetService, PhoneService, MultipleLines) with Churn Rate

```sql
SELECT
    InternetService, PhoneService, Multiplelines, AVG(Churn) as ChurnRate
FROM
    customer
GROUP BY InternetService , PhoneService , Multiplelines
ORDER BY AVG(Churn) DESC
```

InternetService	PhoneService	Multiplelines	ChurnRate
Fiber optic	Yes	0	0.4577
Fiber optic	Yes	1	0.3958
DSL	No	0	0.2500
DSL	Yes	0	0.2063
DSL	Yes	1	0.1060
No	Yes	0	0.0873
No	Yes	1	0.0294



Insights

- The combination of services with the highest churn rate is Fiber Optic internet with PhoneService and MultipleLines (0.4577 and 0.3958).

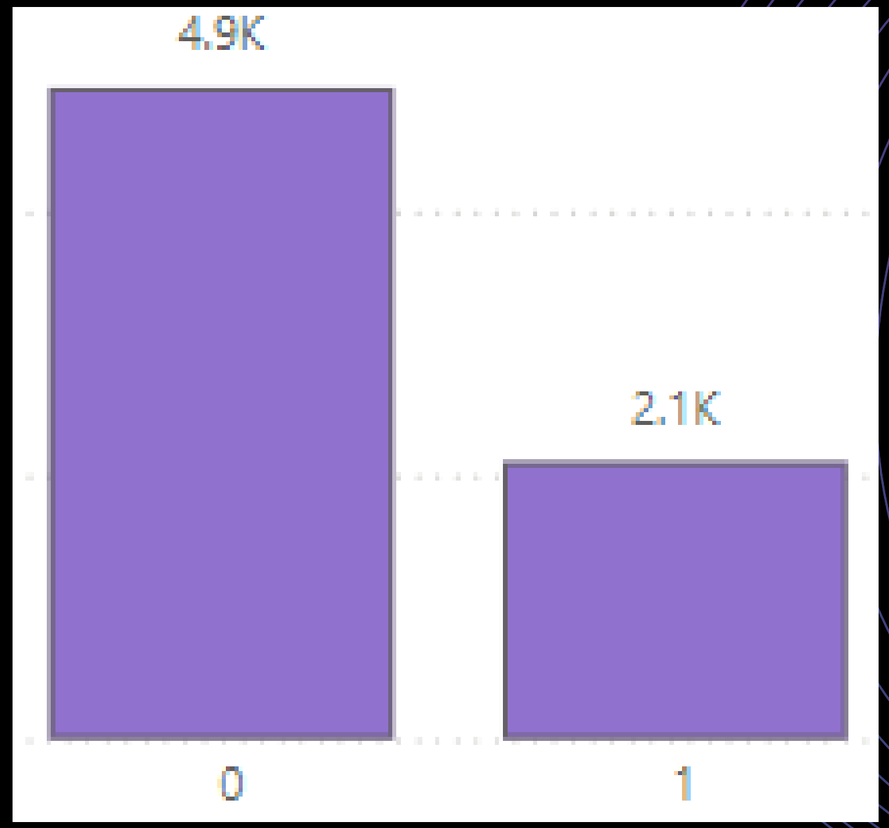
Suggestions

- Consider offering targeted promotions or retention programs for Fiber Optic customers with PhoneService and MultipleLines.
- Explore opportunities to improve customer satisfaction and reduce churn among DSL customers.

Churn Rate by Dependents

```sql
SELECT
    Dependents, AVG(Churn) AS ChurnRate
FROM
    customer
GROUP BY Dependents;
```

Dependents	ChurnRate
0	0.3128
1	0.1553



Insights

- Customers without dependents (Dependent 0) have a significantly higher churn rate, with 4,900 customers churning compared to 2,100 customers with dependents (Dependent 1).
- Having dependents is associated with a lower churn rate.

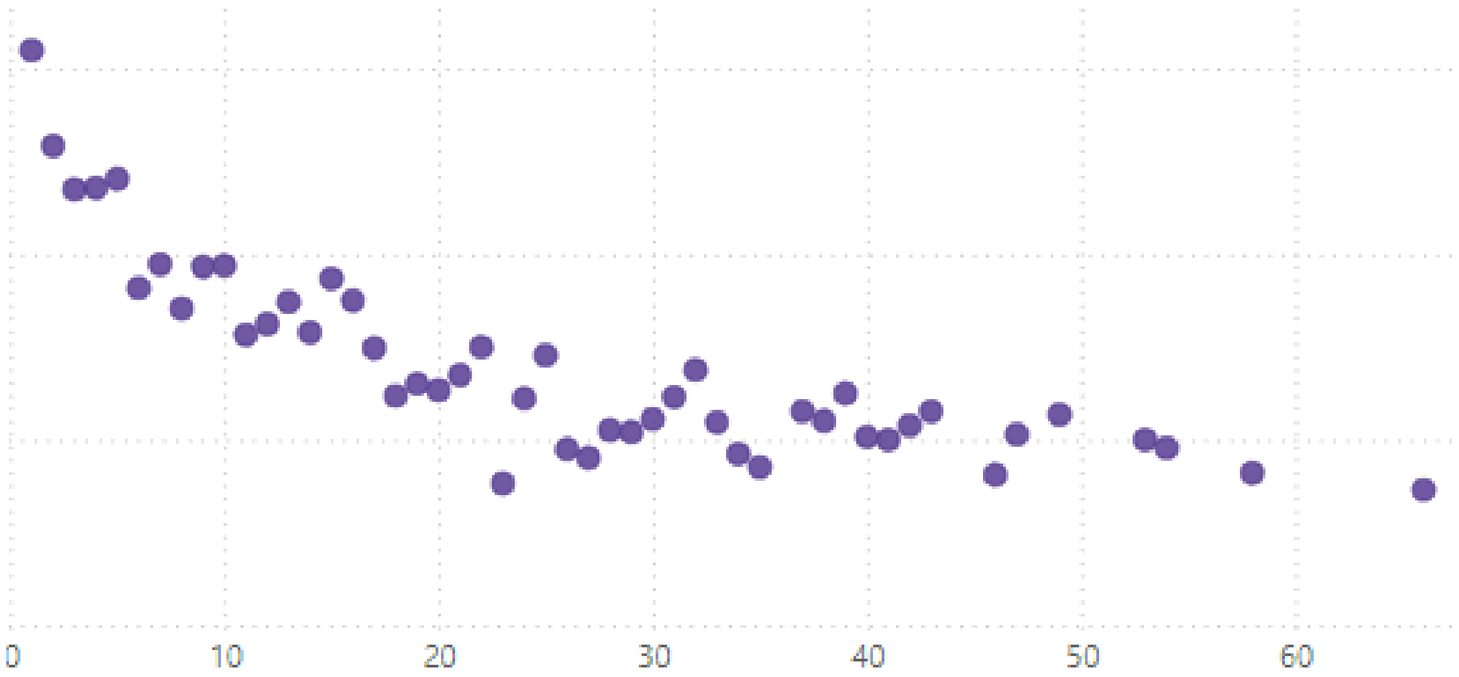
Suggestions

- Investigate reasons for higher churn among customers without dependents (e.g., lifestyle, financial stability).
- Develop targeted retention strategies for customers without dependents.

Churn Rate by Tenure of Customers

```sql
SELECT tenure, AVG(Churn)
FROM
    customer
GROUP BY tenure
ORDER BY AVG(Churn) DESC
```

tenure	AVG(Churn)
1	0.6199
2	0.5168
5	0.4812
4	0.4716
3	0.4700
7	0.3893
10	0.3879
9	0.3866
15	0.3737
6	0.3636
16	0.3500
13	0.3486
8	0.3415
12	0.3248
14	0.3158
11	0.3131
22	0.3000
17	0.2989
25	0.2911
32	0.2754



Insights

- There is a negative correlation between tenure and churn rate, indicating that customers with longer tenure have lower churn rates.
- Churn rate decreases significantly in the first 5 months of tenure.

Suggestions

- Implement retention strategies focused on early-stage customers (0-5 months) to reduce churn.
- Develop loyalty programs for long-tenure customers (above 10 months) to maintain their loyalty.

KEY TAKEAWAYS AND RECOMMENDATIONS

Key Takeaways

Customers with month-to-month contracts have the highest churn rate (1655).

Customers with dependents have a lower churn rate (0.1553).

Tenure is negatively correlated with churn rate, with customers above 10 months having relatively low churn rates.

Recommendations

Offer incentives for customers to switch to longer-term contracts.

Develop targeted retention strategies for customers with dependents.

Implement loyalty programs for long-tenure customers.

Conduct further analysis on customer behavior and preferences.

Develop a comprehensive retention strategy.

Thank You!

Thank you for your time and consideration. I appreciate the opportunity to present my analysis and recommendations to you today.

Please feel free to contact me with any further questions or to discuss next steps:

Uditgoel.data@**gmail.com**
+91 8059-845047

Best regards,

Udit Goel