1. Churn Rate

Definition: The percentage of customers who churned out of the total customer base.

```sql
SELECT
    COUNT(*) AS total_customers,
    SUM(CASE WHEN churn_label = 'Yes' THEN 1 ELSE 0 END) AS churned_customers,
    ROUND(SUM(CASE WHEN churn_label = 'Yes' THEN 1 ELSE 0 END) / COUNT(*) * 100, 2) AS churn_rate_percentage
FROM telco_customers_olap.churn_fact;
```
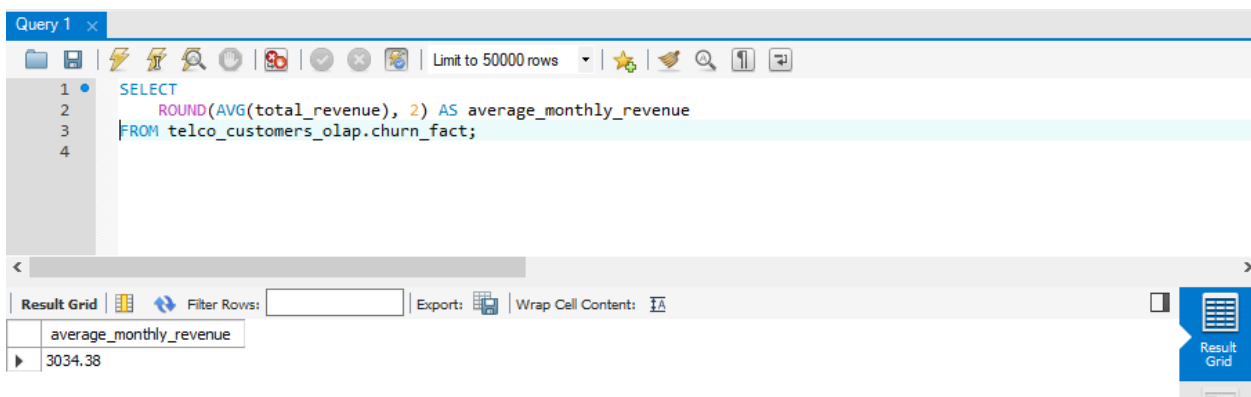
total_customers	churned_customers	churn_rate_percentage
7043	1869	26.54

Visualization Idea: A simple gauge chart or pie chart in Power BI showing churn vs. retained customers.

2. Average Monthly Revenue Per Customer

Definition: The average revenue generated per customer each month.

```sql
SELECT
    ROUND(AVG(total_revenue), 2) AS average_monthly_revenue
FROM telco_customers_olap.churn_fact;
```
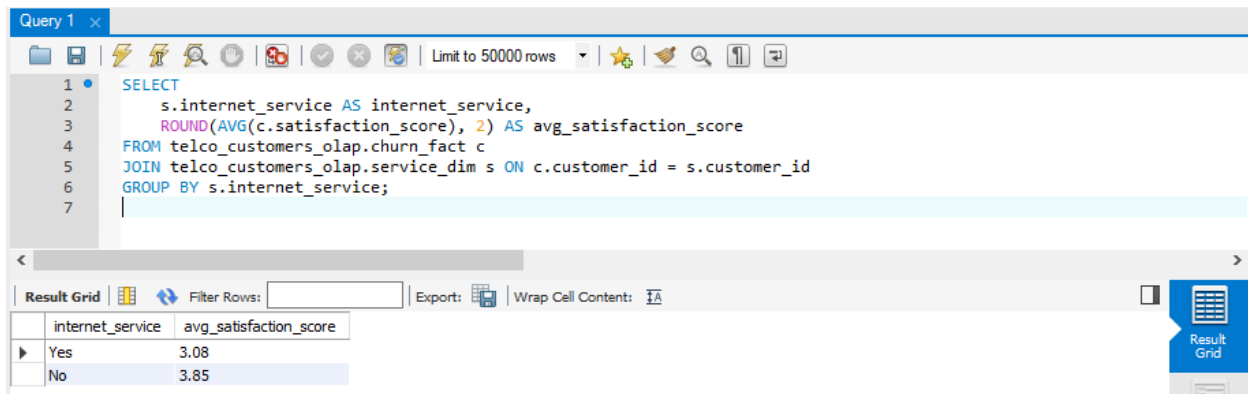
average_monthly_revenue
3034.38

Visualization Idea: A card visualization in Power BI displaying the average revenue.

3. Customer Satisfaction by Internet Service

Definition: The average satisfaction score grouped by whether customers have internet service or not.

```sql
1 •  SELECT
2        s.internet_service AS internet_service,
3        ROUND(AVG(c.satisfaction_score), 2) AS avg_satisfaction_score
4    FROM telco_customers_olap.churn_fact c
5    JOIN telco_customers_olap.service_dim s ON c.customer_id = s.customer_id
6    GROUP BY s.internet_service;
7
```
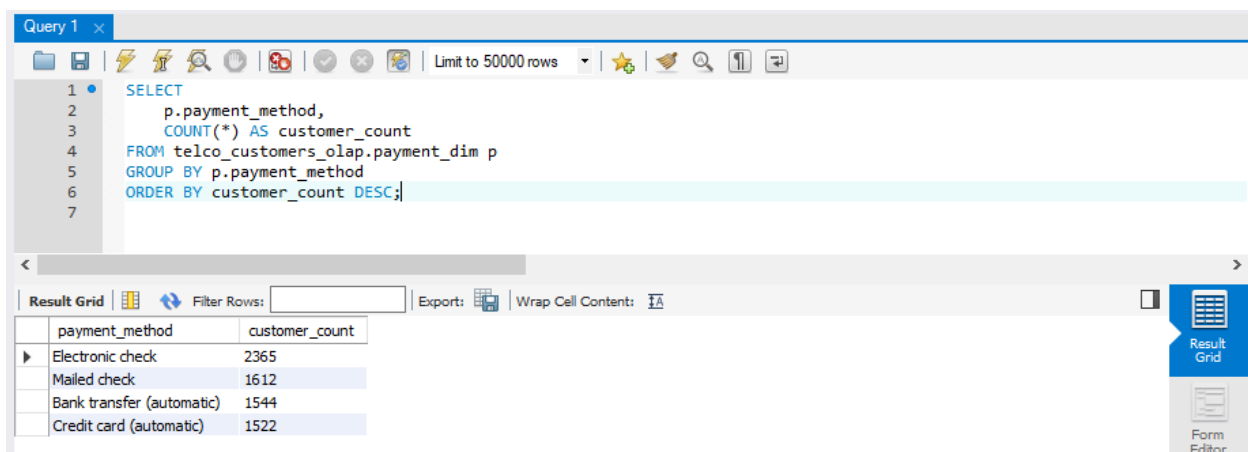
internet_service	avg_satisfaction_score
Yes	3.08
No	3.85

Visualization Idea: A bar chart in Power BI comparing satisfaction scores for customers with and without internet service.

4. Payment Method Preferences

Definition: The distribution of customers across different payment methods.

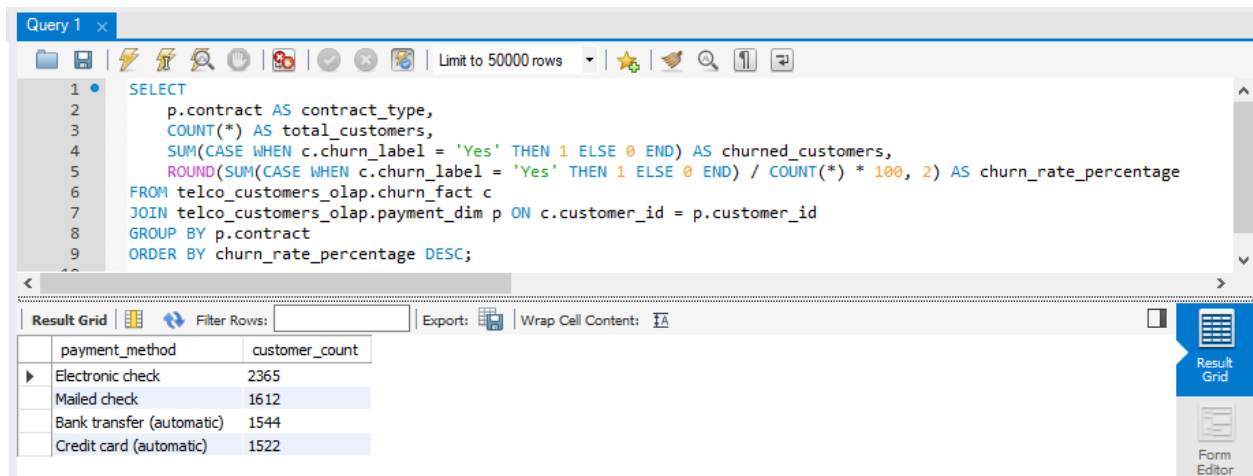**Visualization Idea**: A pie chart or stacked bar chart showing payment method preferences.

```sql
1 •  SELECT
2        p.payment_method,
3        COUNT(*) AS customer_count
4    FROM telco_customers_olap.payment_dim p
5    GROUP BY p.payment_method
6    ORDER BY customer_count DESC;
7
```

payment_method	customer_count
Electronic check	2365
Mailed check	1612
Bank transfer (automatic)	1544
Credit card (automatic)	1522

5. Contract Type vs. Churn Rate

Definition: Churn rates segmented by contract type.

```
Query 1  x

1 •  SELECT
2        p.contract AS contract_type,
3        COUNT(*) AS total_customers,
4        SUM(CASE WHEN c.churn_label = 'Yes' THEN 1 ELSE 0 END) AS churned_customers,
5        ROUND(SUM(CASE WHEN c.churn_label = 'Yes' THEN 1 ELSE 0 END) / COUNT(*) * 100, 2) AS churn_rate_percentage
6    FROM telco_customers_olap.churn_fact c
7    JOIN telco_customers_olap.payment_dim p ON c.customer_id = p.customer_id
8    GROUP BY p.contract
9    ORDER BY churn_rate_percentage DESC;
```
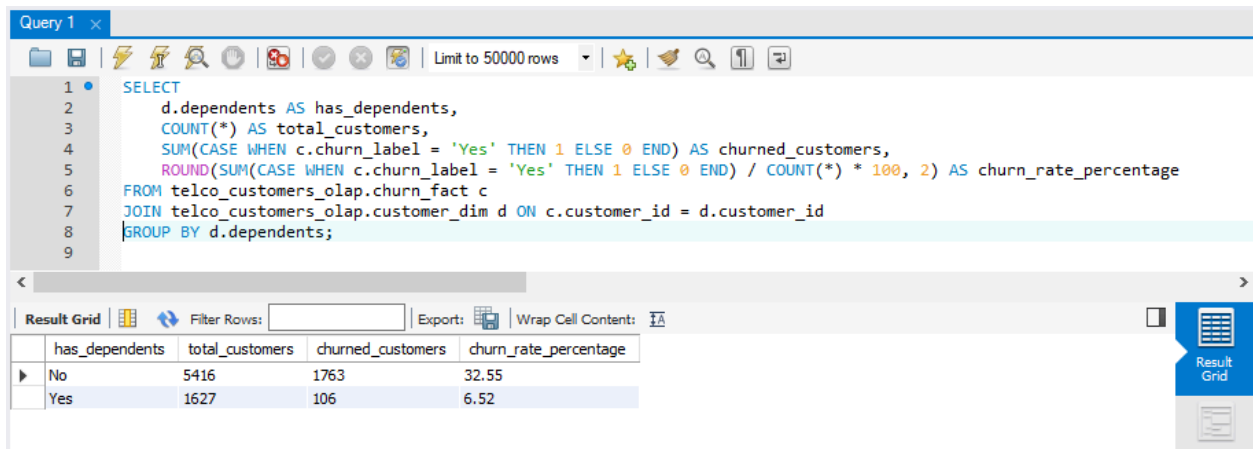
payment_method	customer_count
Electronic check	2365
Mailed check	1612
Bank transfer (automatic)	1544
Credit card (automatic)	1522

Visualization Idea: A bar chart in Power BI comparing churn rates across contract types.

6. Dependents' Impact on Churn

Definition: Churn rate comparison between customers with and without dependents.

```
Query 1  x

1 •  SELECT
2        d.dependents AS has_dependents,
3        COUNT(*) AS total_customers,
4        SUM(CASE WHEN c.churn_label = 'Yes' THEN 1 ELSE 0 END) AS churned_customers,
5        ROUND(SUM(CASE WHEN c.churn_label = 'Yes' THEN 1 ELSE 0 END) / COUNT(*) * 100, 2) AS churn_rate_percentage
6    FROM telco_customers_olap.churn_fact c
7    JOIN telco_customers_olap.customer_dim d ON c.customer_id = d.customer_id
8    GROUP BY d.dependents;
9
```

has_dependents	total_customers	churned_customers	churn_rate_percentage
No	5416	1763	32.55
Yes	1627	106	6.52

Visualization Idea: A clustered bar chart in Power BI showing churn rates for customers with and without dependents.