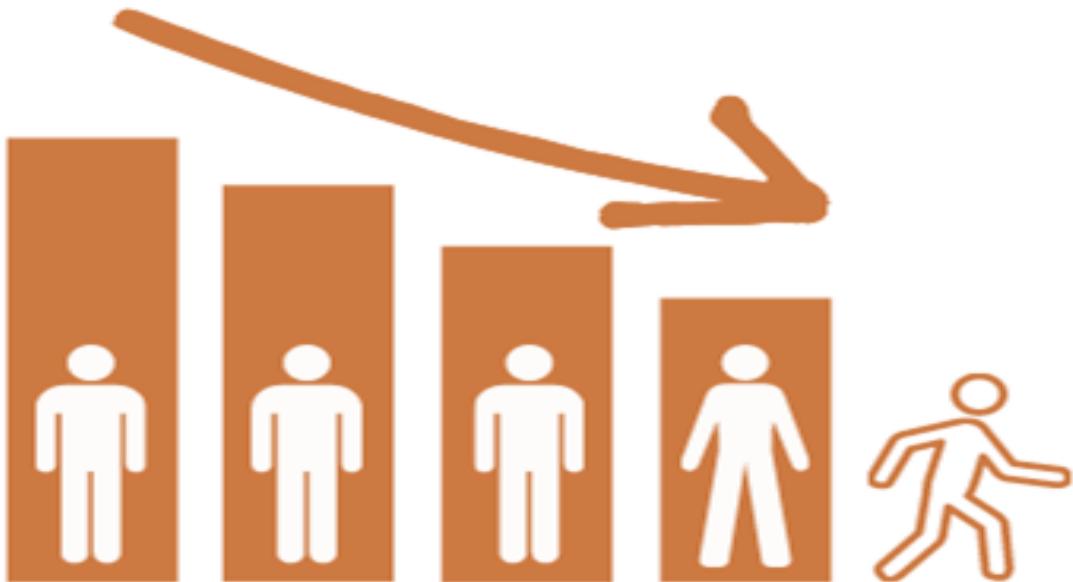




Phone Now: Churn Insights for Retention Success



Date: December 2024

Prepared by: Ashwin Joseph K A

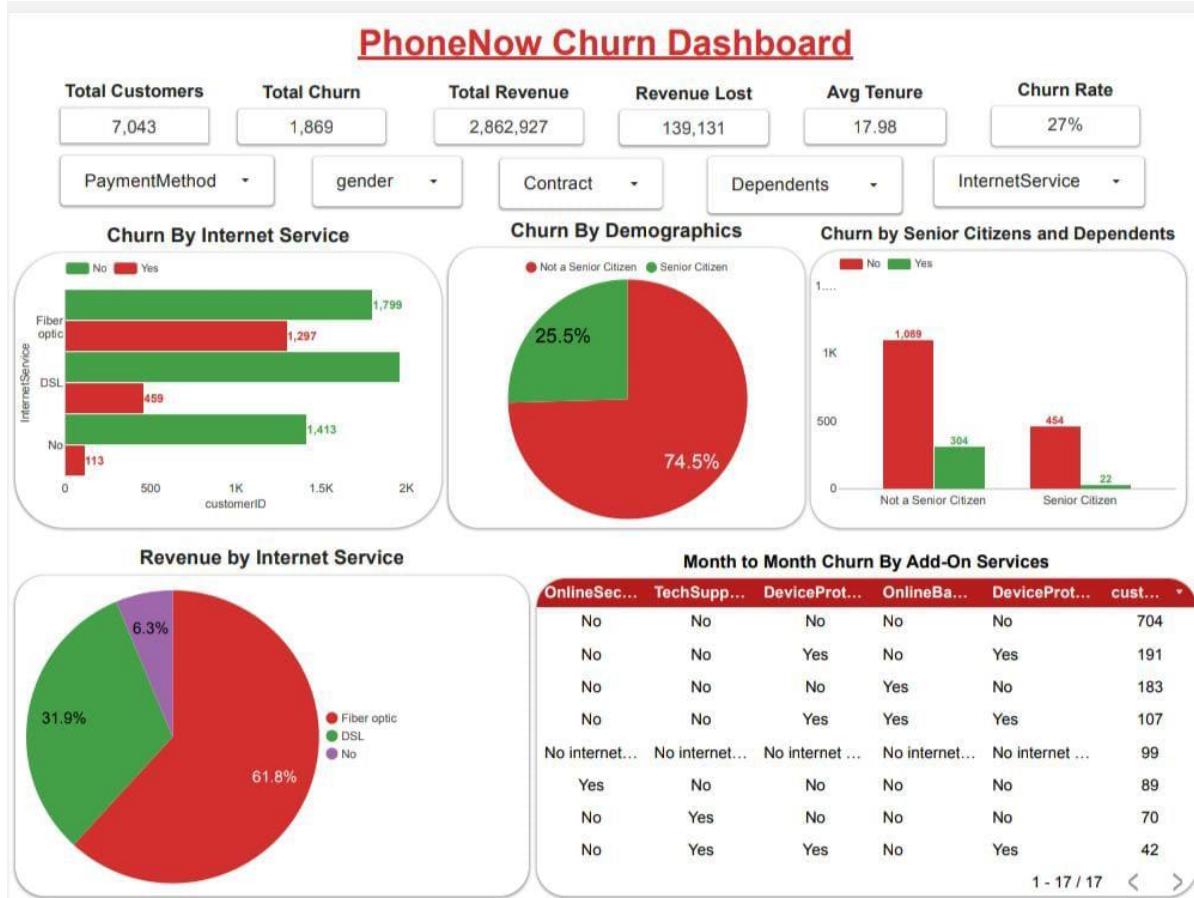
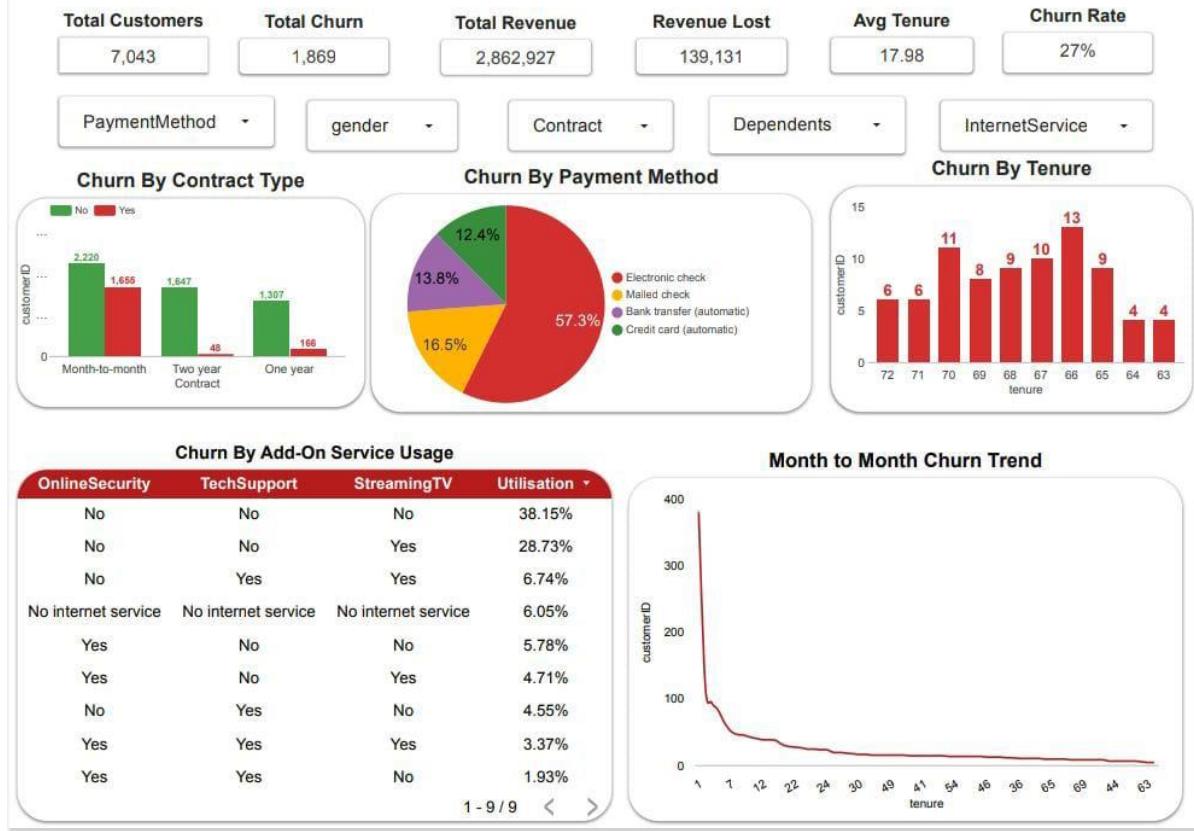
(Data Analyst, PL 300 & DP 900 Certified)

For any queries & connections

Click on the icons below

[**kaggle**](#)

PhoneNow Churn Dashboard



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1.what is Churning?

Churning refers to the rate at which customers stop using a product or service over a given period. It can include actions such as cancelling subscriptions, not renewing contracts, or switching to competitors.

2. Introduction & Objective

Customer churn is a critical concern for telecom providers like PhoneNow, impacting both revenue and long-term business sustainability. This analysis aims to identify key factors influencing customer churn and provide actionable insights to improve retention strategies.

Key Objectives:

- Understand the characteristics of churned vs. retained customers.
- Identify services, contract types, and demographic factors that contribute to churn.
- Analyze revenue impact due to churn and provide data-driven recommendations.

- Utilize Looker Studio for interactive analysis and visualization.
-

3. Background Story

At **PhoneNow**, the **Retention Manager, Janet**, is under pressure. Over the past month, an alarming number of customers have decided to end their subscriptions, raising concerns at the executive level.

PhoneNow has always prioritized **customer-centric growth**, offering reliable services such as **phone lines, internet, and streaming entertainment**. However, the recent **spike in customer churn** threatens to undermine years of effort and investment.

Janet has spent sleepless nights analyzing potential causes, but the **data is overwhelming**. Customers are leaving for various reasons—some cite **high bills**, others face **technical issues**, while a few **vanish without explanation**. The management team has now tasked her with answering critical questions:

Key Questions:

- **Who are these customers?**
- **Why are they leaving?**
- **How can we retain them?**

Realizing the enormity of the task, Janet turns to **you**—a key member of the **Digital Accelerator team**. With your expertise in **data analytics**, you are tasked with analyzing **customer churn data** and creating a **visually compelling dashboard** in **Looker Studio**.

The Mission:

Your goal? To **uncover actionable insights** that will help Janet, and her team develop effective **retention strategies** and **reduce customer churn**.

The **stakes are high**—your findings will shape PhoneNow's **retention strategies** and could significantly impact **revenue and customer loyalty**. Janet trusts your ability to uncover **patterns, trends, and root causes**, hoping that your insights will provide the breakthrough **PhoneNow needs to stabilize its customer base**.

4. Problem Statement

What is the core issue?

PhoneNow is experiencing a significant increase in customer churn, threatening its revenue streams and long-term sustainability. Management needs to identify the root causes of this churn and address them promptly.

Why is it important to solve this problem?

Customer churn impacts PhoneNow in several critical ways:

1. **Revenue Loss:** Losing customers directly affects monthly recurring revenue and lifetime customer value.
 2. **Operational Costs:** Acquiring new customers is far more expensive than retaining existing ones.
 3. **Brand Reputation:** A high churn rate signals dissatisfaction, which can erode the company's reputation in a competitive market.
-

5. Stakeholder Involvement

To tackle the churn problem effectively, it is essential to engage key stakeholders, each bringing unique insights that shape the analysis and drive actionable outcomes.

Internal Stakeholders

1. Retention Manager (Janet)

- Oversees customer retention strategies.
- Needs insights into churn patterns, key metrics, and dashboard visualizations.
- **Impact:** Informs targeted retention strategies.

2. Marketing Team

- Designs customer engagement campaigns.
- Needs customer segmentation, demographic insights, and promotional effectiveness metrics.
- **Impact:** Enables data-driven, personalized marketing.

3. Customer Support Team

- Manages complaints, technical issues, and service tickets.
- Needs analysis of ticket impact on churn and service gaps.
- **Impact:** Improves customer experience and reduces churn.

4. Finance Team

- Tracks financial performance and revenue impact.

- Needs churn revenue loss quantification, retention impact projections, and cost-benefit analysis.
- **Impact:** Guides resource allocation for retention efforts.

5. Executive Leadership

- Oversees strategic direction and decision-making.
- Needs high-level insights, KPI visualizations, and financial impact analysis.
- **Impact:** Drives leadership buy-in for retention initiatives.

External Stakeholders

1. Customers

- Users of PhoneNow services and the focus of retention strategies.
- Need improved service quality, pricing, and issue resolution.
- **Impact:** Addressing pain points enhances customer satisfaction and retention.

Stakeholder Collaboration & Data Requirements

To align analysis with stakeholder needs, collaboration across teams is essential. Key data elements include:

- **Churn Details:** Identify customers who left and their profiles.
- **Service Usage:** Highlight underused services and dissatisfaction points.
- **Ticket Logs:** Assess unresolved issue impact on churn.
- **Demographics & Contracts:** Analyze patterns across customer segments.
- **Revenue Metrics:** Measure churn's financial impact for prioritization.

Dataset Link: [PhonenNow Churned Dataset](#)

6. Data Dictionary

This section provides an overview of the key variables in the dataset, including their descriptions, data types, and significance in the churn analysis.

Customer Demographics

- **customerID** (String) – Unique identifier for each customer.
- **gender** (Categorical: Male/Female) – Customer's gender.
- **SeniorCitizen** (Integer: 0/1) – Indicates whether the customer is a senior citizen.
- **Partner** (Categorical: Yes/No) – Indicates if the customer has a partner.
- **Dependents** (Categorical: Yes/No) – Indicates if the customer has dependents.

Account Information

- **Tenure** (Integer) – Number of months the customer has been with PhoneNow.
- **Contract** (Categorical: Month-to-month/One year/Two year) – Type of contract.
- **Paperless Billing** (Categorical: Yes/No) – Indicates if the customer uses paperless billing.
- **Payment Method** (Categorical: Electronic check/Mailed check/Bank transfer/Credit card) – Customer's preferred payment method.

Service Subscription

- **Phone Service** (Categorical: Yes/No) – Indicates if the customer has phone service.
- **Multiple Lines** (Categorical: Yes/No/No phone service) – Indicates if the customer has multiple lines.
- **Internet Service** (Categorical: DSL/Fiber optic/No) – Type of internet service.
- **Online Security** (Categorical: Yes/No/No internet service) – Indicates if the customer has online security.
- **Online Backup** (Categorical: Yes/No/No internet service) – Indicates if the customer has online backup.
- **Device Protection** (Categorical: Yes/No/No internet service) – Indicates if the customer has device protection.
- **Tech Support** (Categorical: Yes/No/No internet service) – Indicates if the customer has tech support.
- **Streaming TV** (Categorical: Yes/No/No internet service) – Indicates if the customer has a streaming TV service.
- **Streaming Movies** (Categorical: Yes/No/No internet service) – Indicates if the customer has a streaming movies service.

Billing & Payment Details

- **Monthly Charges** (Float) – Monthly amount billed to the customer.

- **Total Charges** (Float) – Total amount billed to the customer.

Support Interactions

- **numAdminTickets** (Integer) – Number of administrative tickets raised by the customer.
- **numTechTickets** (Integer) – Number of technical tickets raised by the customer.

Target Variable

- **Churn** (Categorical: Yes/No) – Indicates whether the customer has churned.
-

7. Data Cleaning & Preprocessing

Tools Used: Excel, Power Query

Before analysis, the dataset underwent extensive cleaning and preprocessing to ensure data integrity.

Data Handling Steps:

- The dataset contains **23 columns** and **7,043 rows**.
- **Missing Values: 9 null values** were found in the **Total Charges** column. These were replaced with **0**, as the affected customers had a **tenure of 0 months**.
- **Categorical Encoding:** Converted categorical variables like InternetService and Contract into numerical formats for analysis.
- **Outlier Treatment:** Capped extreme values in MonthlyCharges to remove anomalies

Cleaned Dataset link: [PhoneNow_Churn_Cleaned](#)

8. Data Exploration with Visualizations

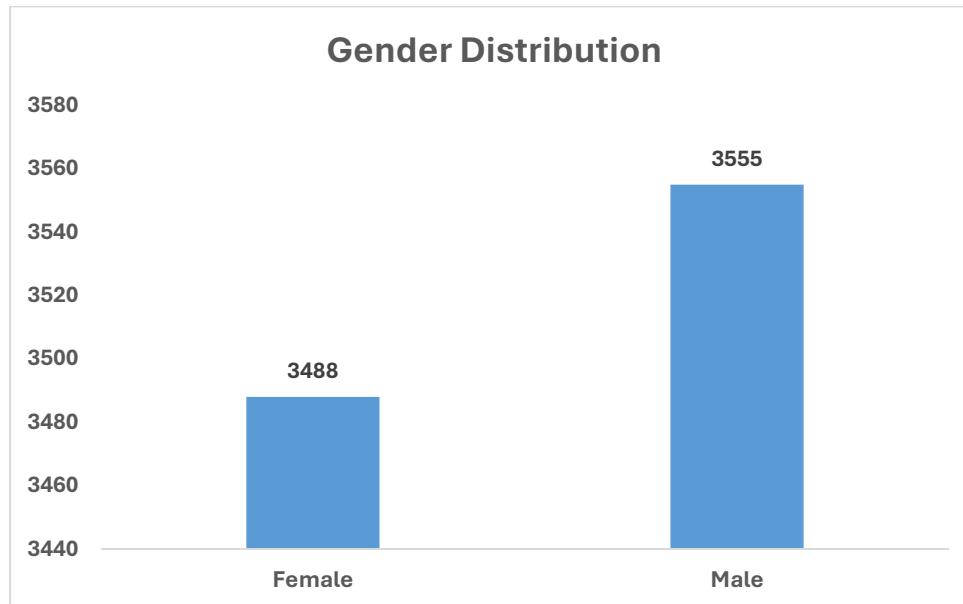
Univariate Analysis

Univariate analysis examines the distribution of individual variables in the dataset. This helps in understanding key characteristics of customer demographics, contract types, and service preferences.

Categorical Variables

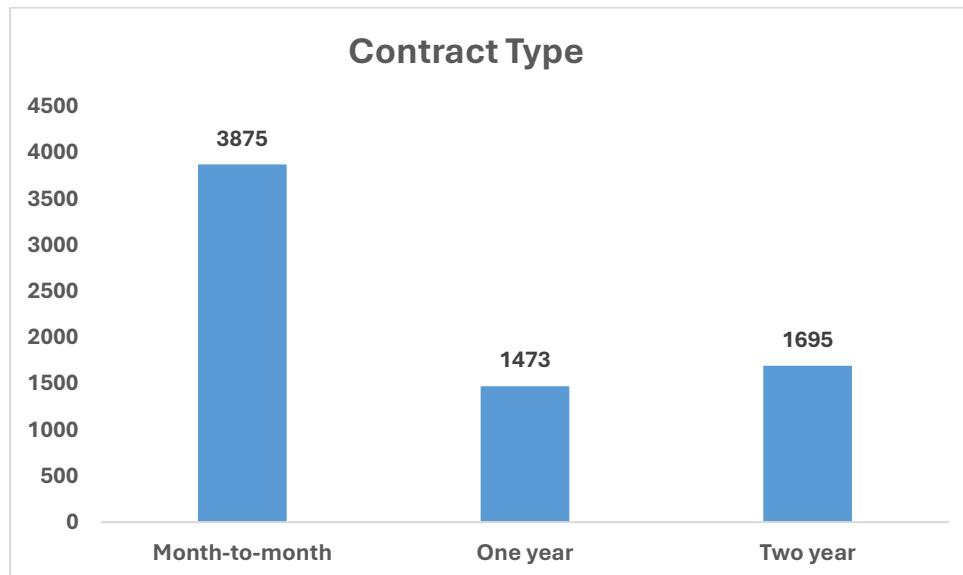
1. Gender Distribution

- The dataset has a fairly balanced gender distribution, with **3,555 male** and **3,488 female** customers.
- This suggests that gender does not have a strong influence on customer distribution.



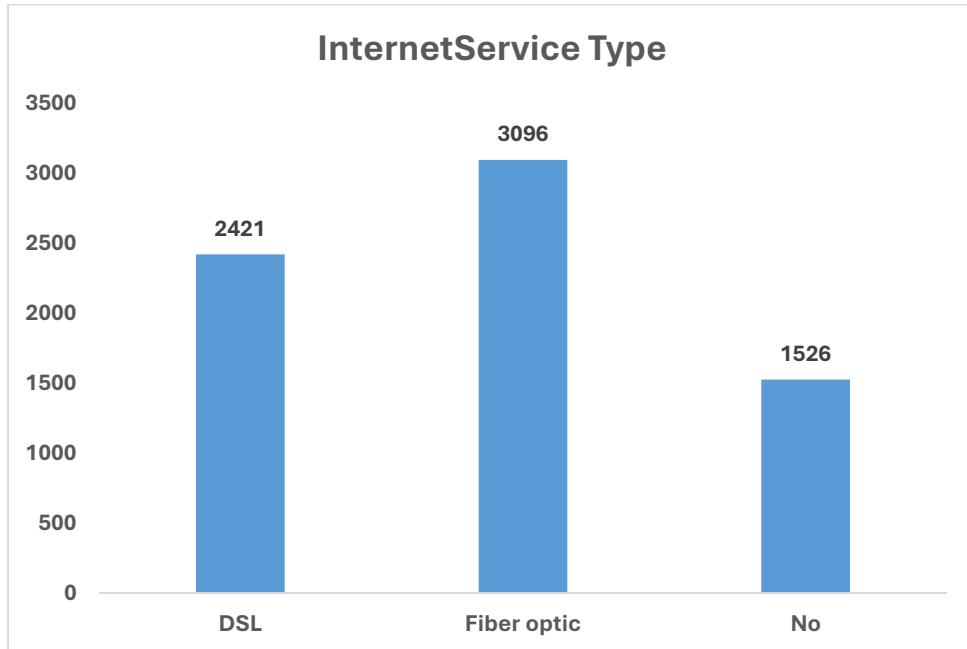
2. Contract Type

- The majority of customers (**3,875**) are on a **month-to-month** contract, while fewer have **one-year (1,473)** or **two-year (1,695)** contracts.
- This indicates that most customers prefer flexible, short-term contracts.



3. Internet Service Type

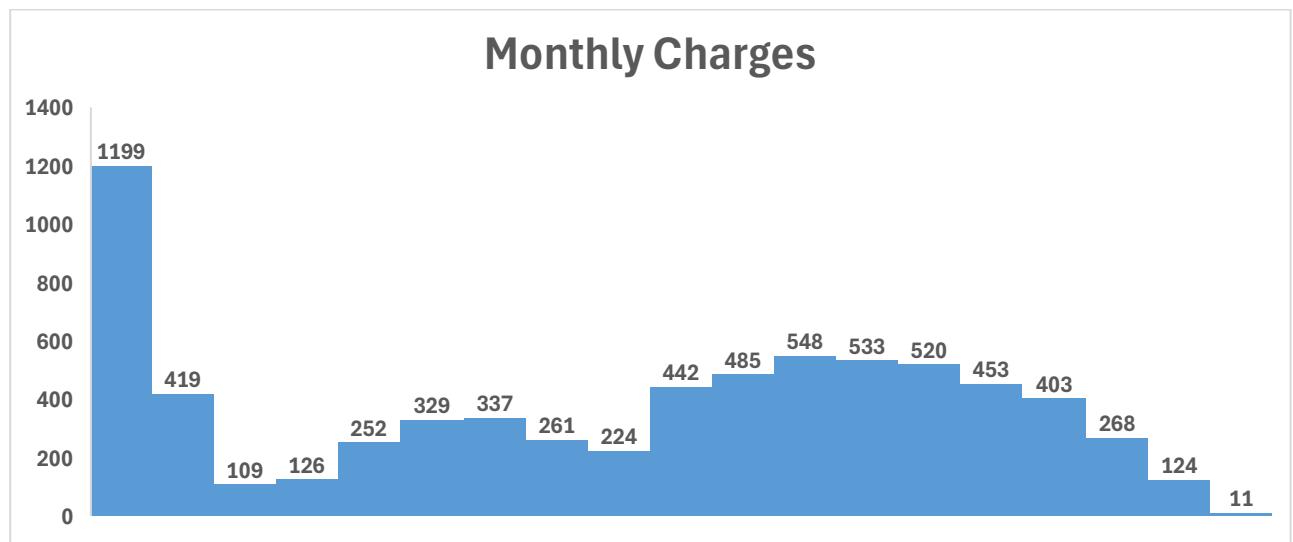
- Most customers use **Fiber Optic (3,096)** or **DSL (2,421)** internet services, while **1,526** customers do not have internet service.
- Fiber Optic has the highest count, possibly due to its faster speed and popularity.



Numerical Variables

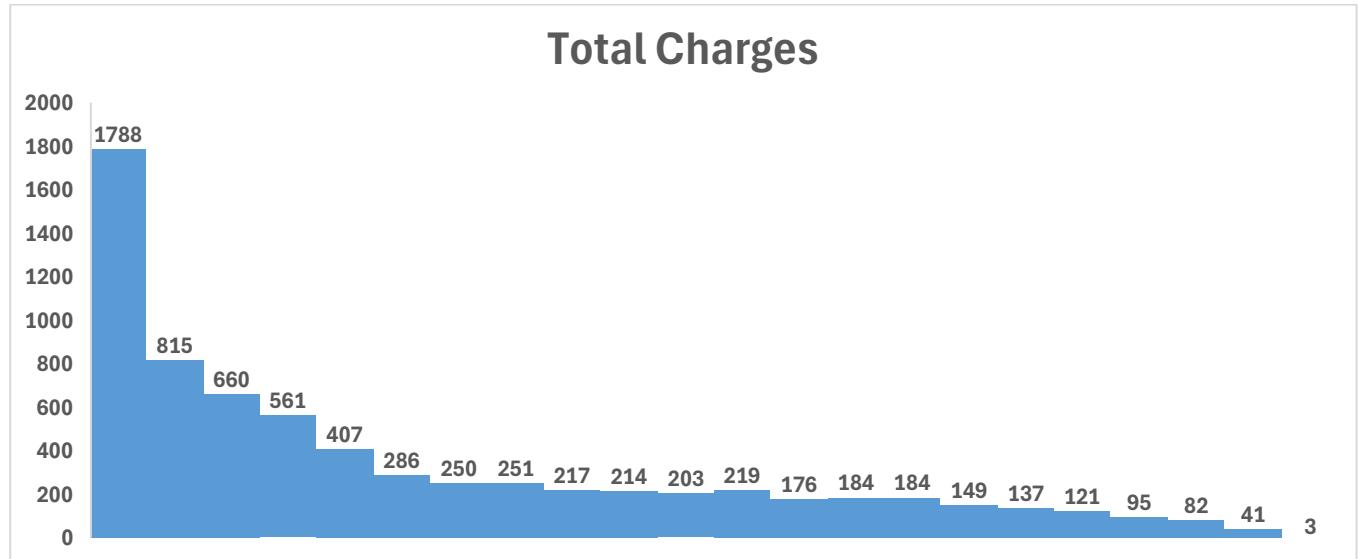
1. Monthly Charges

- The histogram shows a **right-skewed distribution**, meaning more customers have lower monthly charges, while fewer have very high charges.
- This suggests that most customers subscribe to basic or mid-range plans.



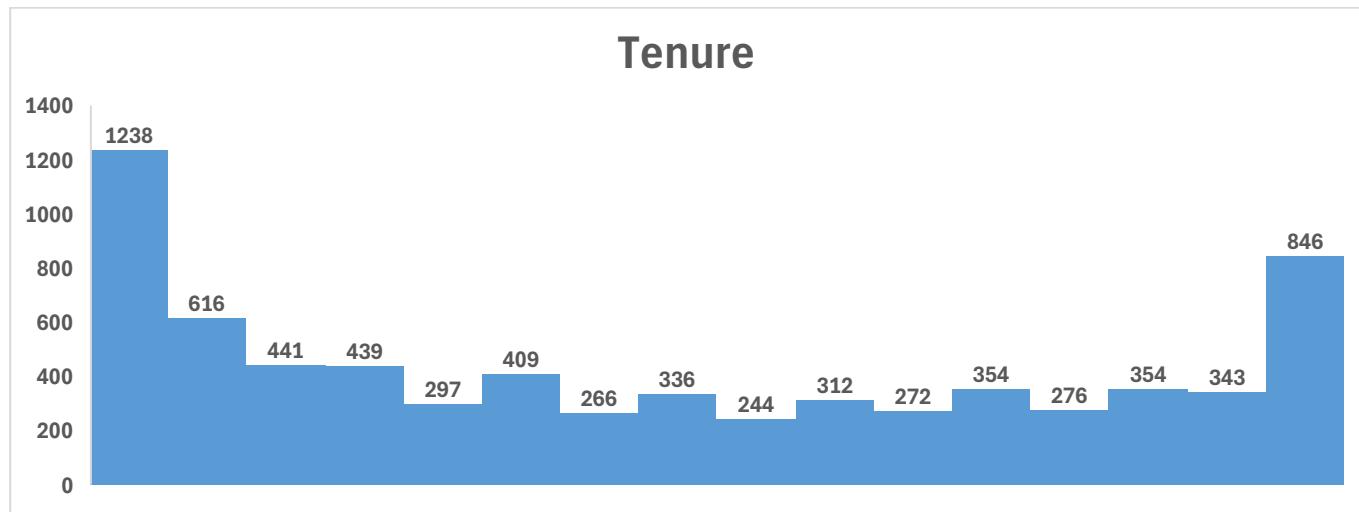
2. Total Charges

- The total charges histogram also exhibits a **right-skewed pattern**, indicating that newer customers with lower accumulated charges form a significant portion of the dataset.



3. Tenure (Customer Duration)

- The distribution shows a **high concentration of customers with shorter tenures**, implying a significant number of new users.
- This suggests a possible retention challenge, which could be explored in the churn analysis.

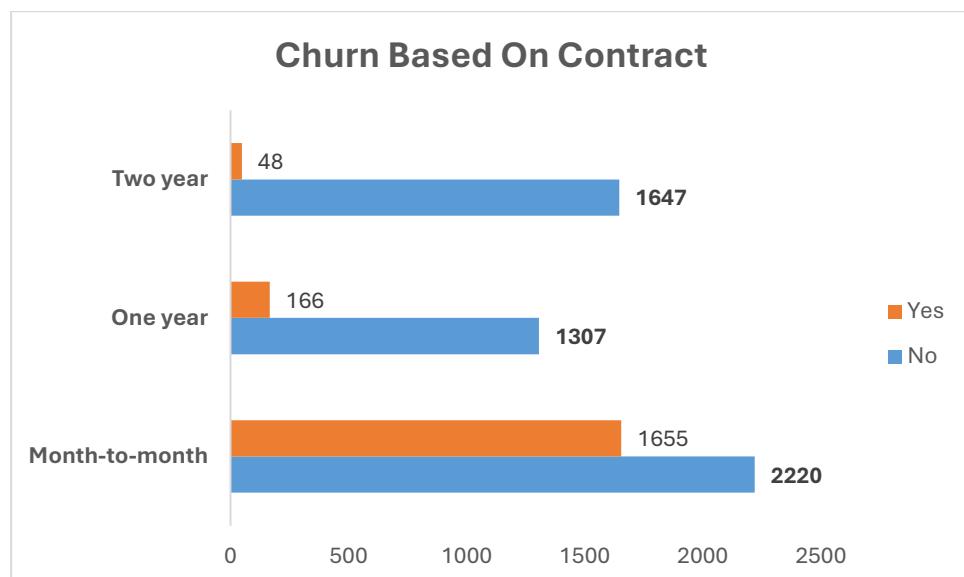


Bivariate Analysis

The bivariate analysis explores the relationship between two variables to understand how different factors contribute to customer churn. Various visualization techniques have been used to uncover patterns and trends in the dataset.

1. Churn Based on Contract Type

- **Visualization Used:** Bar Chart
- **Findings:**
 - Customers on a Month-to-Month contract have the highest churn rate (1,655 churned out of 3,875).
 - One-year and Two-year contracts have significantly lower churn rates, indicating that customers with long-term commitments are less likely to leave.
 - This suggests that longer contracts reduce churn and can be a key focus area for retention strategies.



2. Churn Based on Monthly Charges

- **Visualization Used:** Box Plot

Observations from the Box Plot:

1. Interquartile Range (IQR):

- The middle 50% of the churned customers have monthly charges between approximately **60 and 90**.

2. Median:

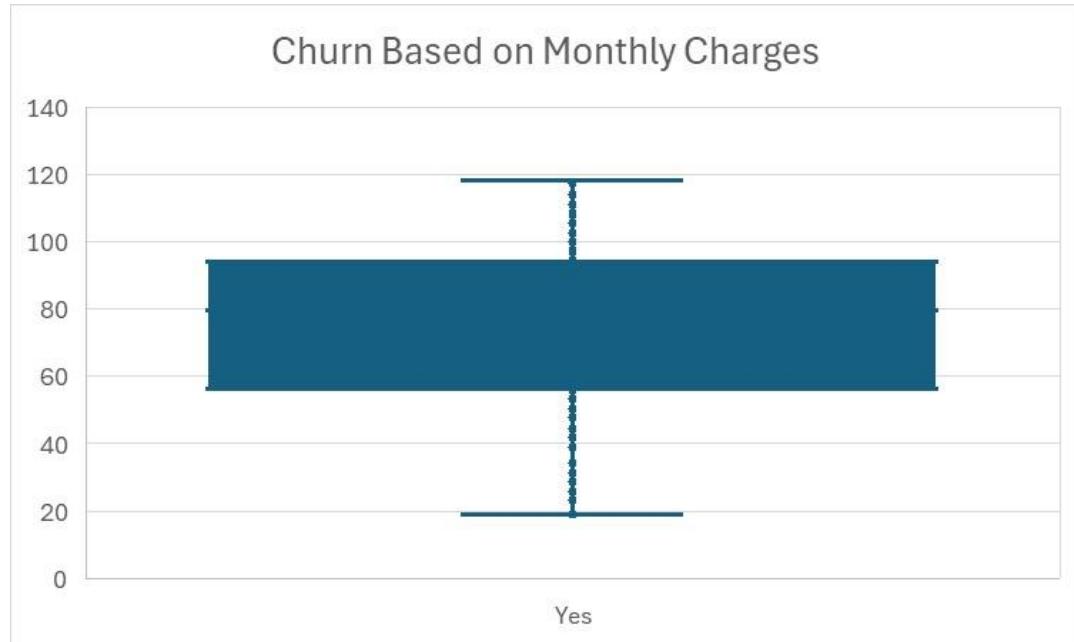
- The median monthly charge for churned customers is **around 75-80**.

3. Outliers:

- Some customers pay significantly higher or lower than the main range, which is evident from the whiskers.

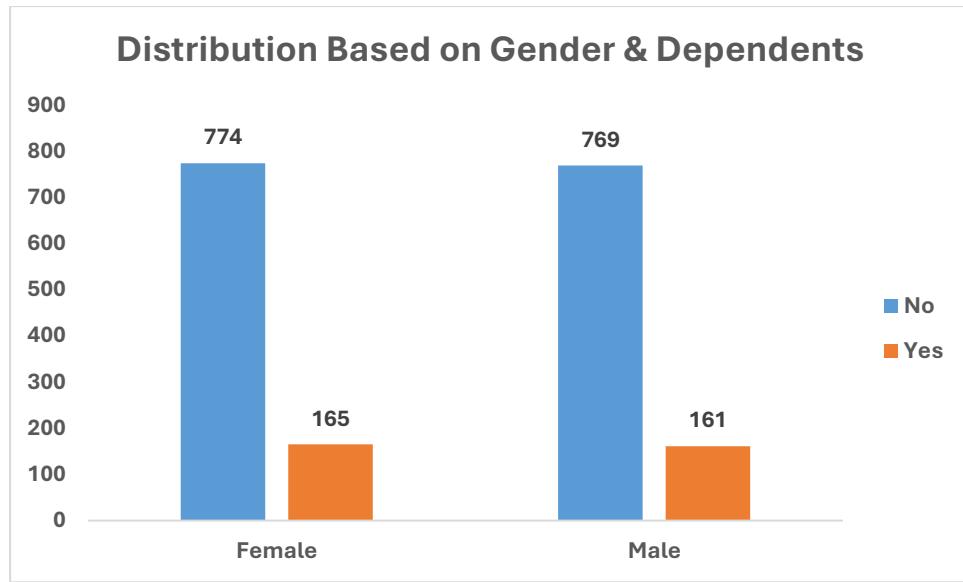
4. Lower & Upper Boundaries:

- Minimum charges are around **20**, while the highest values reach **120+**.



3. Churn Distribution by Gender & Dependents

- **Visualization Used:** Clustered Column Chart
- **Findings:**
 - Gender does not play a significant role in churn, as both male and female customers have similar churn rates.
 - Customers with dependents are less likely to churn, possibly due to the need for stability in services.
 - Customers without dependents are more prone to churn, indicating that family-related responsibilities might influence retention.

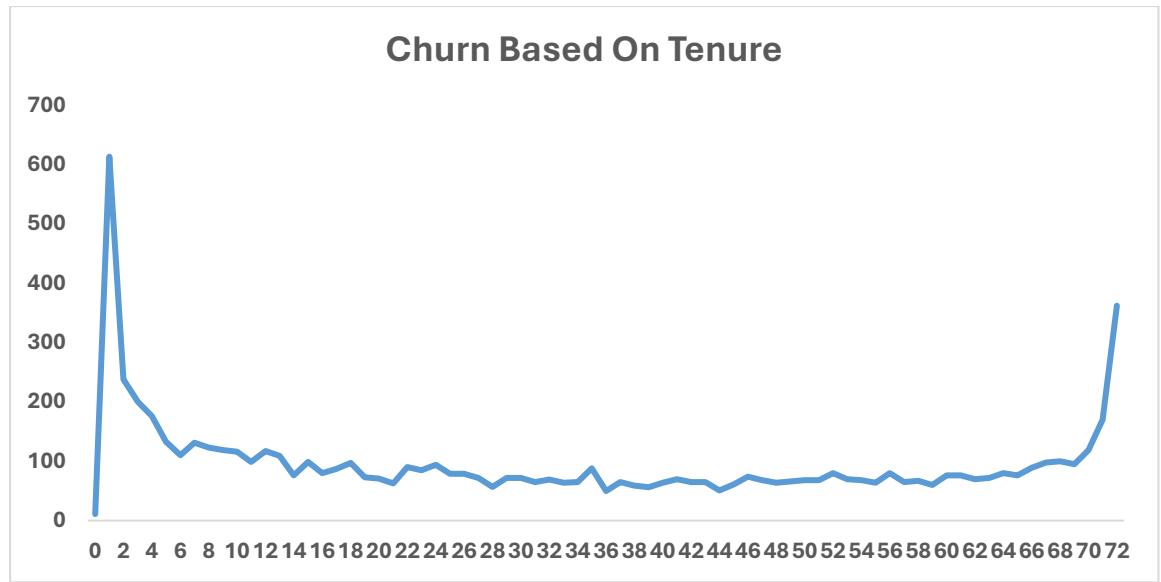


Time Analysis

The time analysis focuses on how customer tenure impacts churn rates over time. Understanding churn trends based on tenure helps identify when customers are most likely to leave, allowing for targeted retention strategies.

Churn Based on Tenure

- **Visualization Used:** Line Chart
- **Findings:**
 - Churn is **highest for new customers** (tenure close to 0).
 - The churn rate **declines gradually** as tenure increases, indicating that longer-tenured customers are more loyal.
 - A **small spike in churn is observed at the maximum tenure**, possibly due to contract expirations or service dissatisfaction over time.
 - This suggests that **early customer engagement is critical** for reducing churn, and efforts should be made to retain customers within the first few months.



9. Summary of Data Cleaning and Preprocessing

The data cleaning and preprocessing phase for the **Phone Now Churn Analysis** project involved several key steps to ensure data quality and accuracy:

1. Handling Missing Values:

- Checked for missing values in all columns.
- Applied appropriate imputation strategies, such as filling missing values with the mean, mode, or using logical assumptions based on the dataset.

2. Data Standardization and Formatting:

- Converted categorical values into a consistent format.
- Standardized numerical columns for proper analysis.
- Ensured currency values were correctly formatted (corrected non-dollar values where necessary).

3. Outlier Detection and Treatment:

- Identified outliers in numerical columns such as Monthly Charges and Total Charges.
- Used methods like box plots to analyze distributions.

4. Feature Engineering:

- Created new features to improve analysis.
- Ensured the dataset was structured for effective visualization and modeling.

5. Data Validation:

- Conducted cross-checks to ensure all cleaning processes-maintained data integrity.
- Confirmed that all necessary transformations were correctly applied.

Excel Visuals link: [Excel_Churned_Visuals](#)

10. Detailed Data Analysis and Insights

Data Import and Dashboard Structuring in Looker Studio

Imported the dataset into Google Looker Studio and uploaded the Excel file.

Checked for missing values and verified data types to ensure data integrity.

After confirming the data was clean, proceeded to structure the dashboard layout for visualization.

KPIs and Filters in Looker Studio

Key Performance Indicators (KPIs):

Scorecards were used to display critical KPIs, including:

- **Total Customers: 7043**
- **Total Churned Customers: 1869**
- **Total Revenue: 2862927**
- **Revenue Lost: 139131**
- **Churn Rate: 27%**
- **Average Tenure: 17.98 Months**

Filters Created:

Interactive filters were added to enhance data exploration based on:

- **Contract**
 - **Payment Method**
 - **Gender and Department**
 - **Internet Services**
-

Analysis of Churn by Contract Type

Step 1: Objective

❖ Goal:

To analyze the relationship between contract type and customer churn to identify:

- Which contract types have the highest churn rates.
- The stability of customers with long-term contracts.
- Potential strategies to improve customer retention.

❖ Why It Matters:

- Understanding churn by contract type helps optimize retention strategies.
- Month-to-month contracts may indicate a higher risk of customer churn.
- Businesses can offer incentives to encourage long-term commitments.

Step 2: Methodology

❖ Observation:

The dataset contains customer churn data categorized by contract type:

- **Month-to-Month**
- **One-Year**
- **Two-Year**

❖ Action Taken:

- A **Column Chart** was created to visualize churn across different contract types.
- The number of churned vs. retained customers was plotted for each contract type.

❖ Why This Approach?

- Provides a clear comparison of churn rates across contract types.
- Helps businesses focus retention efforts on high-churn segments.
- Identifies which contract type contributes most to customer loss.

Step 3: Findings – Churn by Contract Type

❖ Observation:

There is a significant variation in churn rates across different contract types.

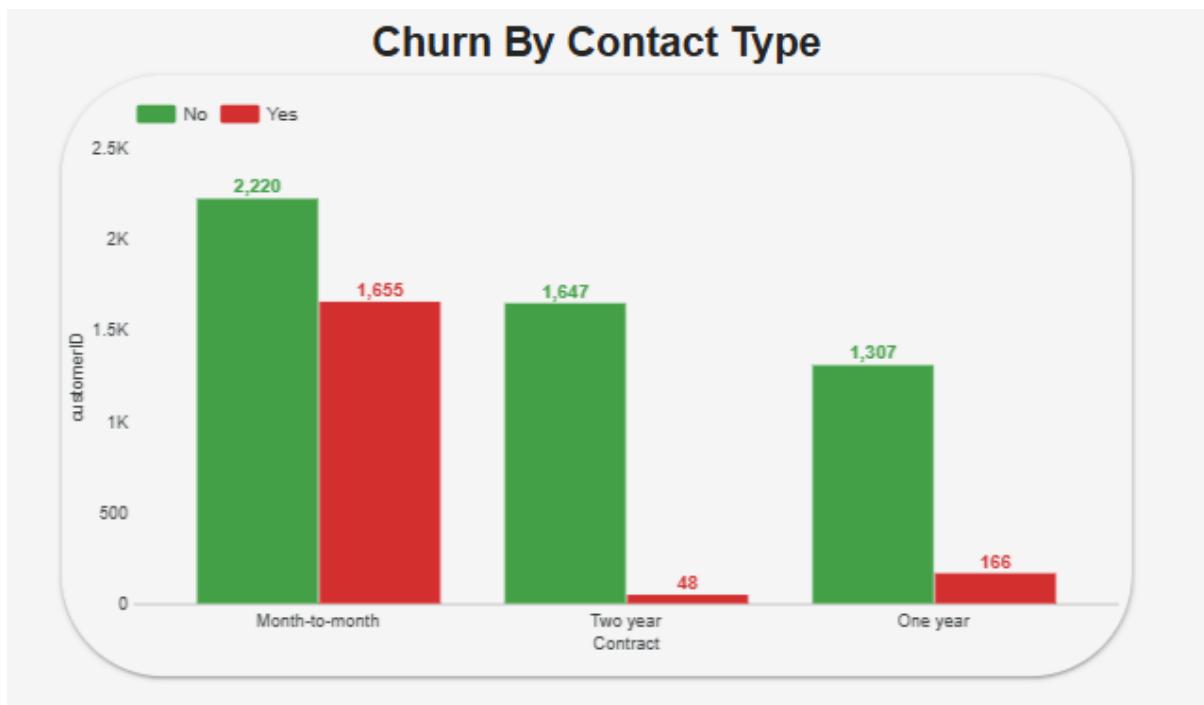
❖ Results:

- **Month-to-Month contracts** have the highest churn (1,655 customers).
- **One-Year contracts** show moderate churn (166 customers).
- **Two-Year contracts** have the lowest churn (48 customers).

❖ Insights:

- Customers with **longer-term contracts are less likely to churn**.
- Businesses should consider **incentives** for long-term commitments to improve retention.

- Additional customer engagement strategies may be required for **month-to-month customers** to reduce churn risk.



Analysis of Churn by Payment Method

Step 1: Objective

❖ Goal:

To analyze how different payment methods impact customer churn and identify:

- Which payment methods have the highest churn rates.
- Potential risks associated with specific payment types.
- Opportunities to improve customer retention strategies.

❖ Why It Matters:

- Understanding churn by payment method helps businesses improve billing strategies.
- Identifying high-churn payment methods allows targeted retention efforts.
- Payment method preferences can indicate customer satisfaction and trust.

Step 2: Methodology

❖ Observation:

The dataset contains customer churn data categorized by **Payment Method**:

- Credit Card (Automatic)
- Electronic Check
- Mailed Check
- Bank Transfer (Automatic)

Action Taken:

- A **Pie Chart** was created to visualize churn distribution by payment method.
- The proportion of churned customers was analyzed for each payment type.

Why This Approach?

- Provides a clear **visual representation** of churn rates across different payment methods.
- Helps identify **risk-prone** payment options.
- Enables businesses to adjust **billing strategies** accordingly.

Step 3: Findings – Churn by Payment Method

Observation:

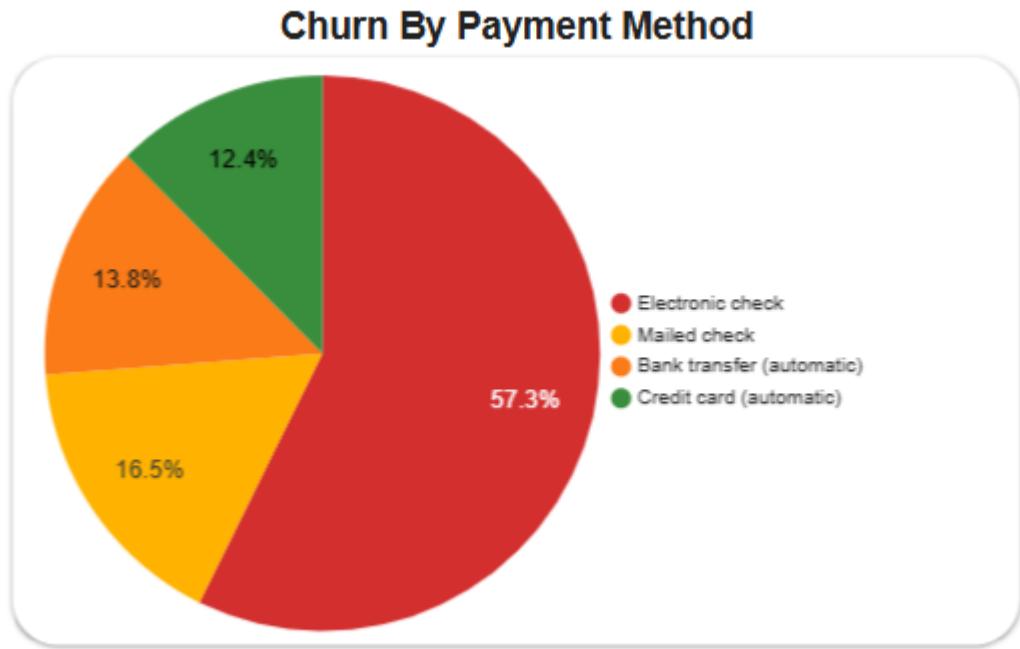
There is a noticeable difference in churn rates among payment methods.

Results:

- **Electronic Check** users have the highest churn rate (57.3%).
- **Mailed Check** accounts for 16.5% of churned customers.
- **Bank Transfer (Automatic)** has a churn rate of 13.8%.
- **Credit Card (Automatic)** has the lowest churn rate at 12.4%.

Insights:

- Customers using **Electronic Check** may face payment difficulties or prefer more flexible options.
- Encouraging **auto-pay features** for electronic check users could help reduce churn.
- Businesses can focus on **promoting secure and convenient payment methods** to improve retention.



Analysis of Churn by Tenure

Step 1: Objective

❖ Goal:

To analyze how customer tenure impacts churn and identify:

- The tenure ranges with the highest churn rates.
- Patterns indicating when customers are most likely to leave.
- Opportunities to improve customer retention based on tenure insights.

❖ Why It Matters:

- Helps businesses **predict churn risk** based on customer tenure.
- Identifies the **critical periods** where intervention is needed.
- Provides insights for **loyalty programs and retention strategies**.

Step 2: Methodology

❖ Observation:

The dataset contains **customer churn data categorized by tenure length** (in months).

❖ Action Taken:

- A **Bar Chart** was created to visualize the number of churned customers across different tenure values.
- The frequency of churn at each tenure point was analyzed.

❖ Why This Approach?

- Provides a **clear distribution** of churned customers over time.

- Helps identify **tenure periods** with high churn risk.
- Supports **targeted retention efforts** at critical tenure points.

Step 3: Findings – Churn by Tenure

❖ Observation:

Churn is not evenly distributed across tenure periods, with some months showing significantly higher churn.

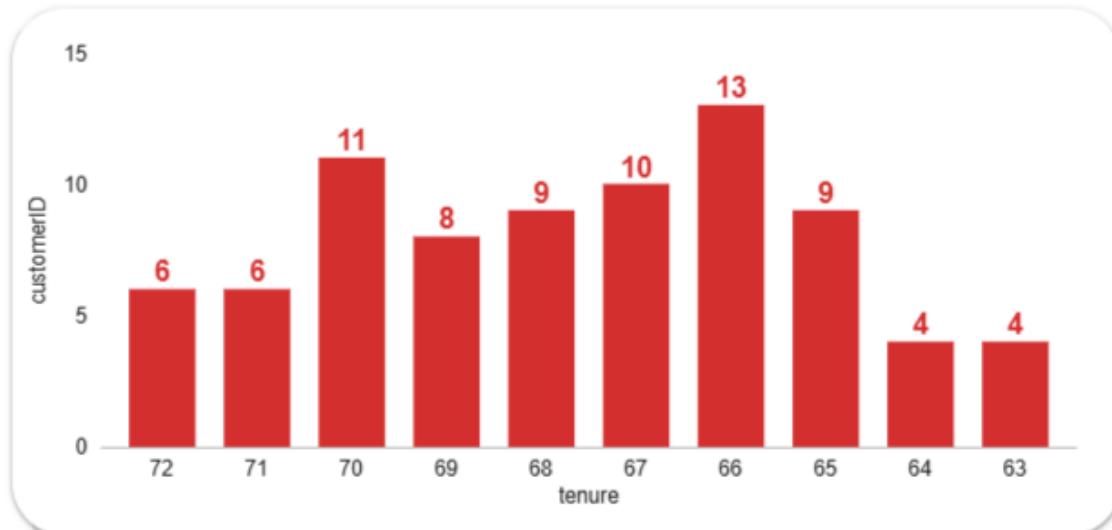
❖ Results:

- **Tenure of 66 months** has the highest churn count (13 customers).
- **Tenure of 70 months** also has a high churn rate (11 customers).
- Other high churn periods include **67 (10 customers), 68 (9 customers), and 65 (9 customers) months**.
- Lower churn is observed at **64 and 63 months (4 customers each)**.

❖ Insights:

- **Mid-to-long tenure customers (63-72 months)** show fluctuating churn patterns.
- The peak at **66 months** could indicate dissatisfaction after a specific contract period or service change.
- Implementing **customer engagement strategies** at the **60+ month mark** could improve retention.
- Businesses should analyze possible **service issues, pricing changes, or customer expectations** leading to churn in these months.

Churn By Tenure



Analysis of Churn by Add-On Service Usage

Step 1: Objective

❖ Goal:

To analyze how the usage of additional services (Online Security, Tech Support, and Streaming TV) affects churn by identifying:

- Whether customers without add-on services have higher churn rates.
- The impact of individual services on retention.
- Opportunities to improve customer engagement through bundled services.

❖ Why It Matters:

- Helps understand **which add-on services contribute to customer retention**.
- Identifies **high-risk groups** that may need targeted retention strategies.
- Provides insights into **potential service bundles** that can reduce churn.

Step 2: Methodology

❖ Observation:

The dataset contains churn utilization percentages based on three add-on services:

- **Online Security**
- **Tech Support**
- **Streaming TV**

❖ Action Taken:

- A **table was created** to compare churn percentages across different service combinations.
- Utilization rates were analyzed to determine how service adoption impacts churn.

❖ Why This Approach?

- Allows a **side-by-side comparison** of service combinations and churn rates.
- Helps in **identifying which services have the strongest influence on retention**.
- Enables businesses to create **data-driven service bundles** to reduce churn.

Step 3: Findings – Churn by Add-On Service Usage

❖ Observation:

Customers **without add-on services** show significantly higher churn rates compared to those who subscribe to additional services.

❖ Results:

- **Customers with no Online Security, Tech Support, or Streaming TV have the highest churn (38.15%).**
- **Customers with only Streaming TV but no security or support still have high churn (28.73%).**
- **Adding Tech Support reduces churn significantly (6.74%).**
- **Customers who have Online Security and Tech Support but no Streaming TV have the lowest churn (1.93%).**
- **Customers with all three services have slightly higher churn than those with just**

Online Security and Tech Support, suggesting Streaming TV has minimal impact on retention.

❖ Insights:

- **Security & Support services** significantly reduce churn, showing their importance in retention.
- Customers who **only use Streaming TV without security or support have higher churn**, suggesting that entertainment alone isn't enough to retain users.
- **Service bundling strategies** focusing on **security and support packages** could help **reduce churn rates further**.
- Encouraging customers to **adopt multiple services** could be an effective strategy for improving long-term retention.

Churn By Add-On Service Usage

OnlineSecurity	TechSupport	StreamingTV	Utilisation ▾
No	No	No	38.15%
No	No	Yes	28.73%
No	Yes	Yes	6.74%
No internet service	No internet service	No internet service	6.05%
Yes	No	No	5.78%
Yes	No	Yes	4.71%
No	Yes	No	4.55%
Yes	Yes	Yes	3.37%
..	100% 1 - 9 / 9 < >

Analysis of Month-to-Month Churn Trend

Step 1: Objective

❖ Goal:

To analyze how customer churn varies over time based on tenure and identify:

- The **critical periods** when churn is highest.
- The **stability points** where churn rates decline.
- Potential **retention strategies** based on customer behavior trends.

❖ Why It Matters:

- Helps identify **high-risk timeframes** where intervention is needed.
- Supports businesses in **developing targeted retention campaigns** for new

customers.

- Provides insights into **long-term customer loyalty and stability**.

Step 2: Methodology

❖ Observation:

The dataset tracks **customer churn over different tenure periods**.

❖ Action Taken:

- A **line graph was created** to visualize churn trends over time.
- The **number of churned customers was plotted** against their tenure duration.

❖ Why This Approach?

- Allows **clear identification of high churn periods**.
- Helps businesses understand **when customers are most likely to leave**.
- Enables proactive **retention strategies** to reduce early churn.

Step 3: Findings – Month-to-Month Churn Trend

❖ Observation:

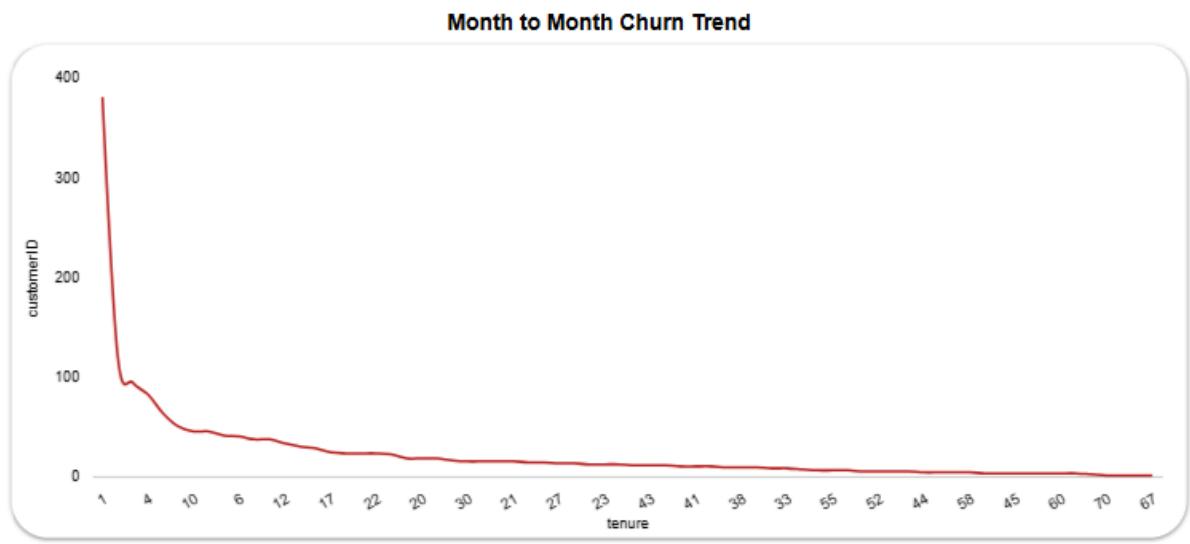
- Churn is **highest in the first month**, with a sharp decline afterward.
- Churn **gradually decreases** as tenure increases.
- After approximately **24 months, churn stabilizes** at a much lower rate.

❖ Results:

- **More than 400 customers churn in their first month**, showing **high early attrition**.
- Churn **drops significantly** after the first few months, suggesting that customers who stay longer are more likely to remain loyal.
- Long-term customers **rarely churn**, indicating **strong retention beyond two years**.

❖ Insights:

- **Onboarding experience and early engagement are critical** – improving first-month retention could drastically reduce overall churn.
- Offering **incentives or personalized support within the first few months** can help retain new customers.
- Businesses should focus on **retaining customers past the first year**, as churn stabilizes afterward.
- Customers **who stay beyond 24 months have a much lower likelihood of leaving**, highlighting the importance of **long-term engagement strategies**.



Analysis of Churn by Senior Citizens and Dependents

Step 1: Objective

❖ Goal:

To analyze the impact of **dependent status and seniority** on customer churn by answering:

- **Do customers with dependents churn less than those without?**
- **How does seniority influence churn behavior?**
- **What insights can help in retention strategies?**

❖ Why It Matters:

- Understanding **churn among senior citizens and dependents** can help tailor **customer retention efforts**.
- Businesses can **optimize service plans** to increase engagement and reduce churn.

Step 2: Methodology

❖ Observation:

The dataset classifies customers into:

- **Senior Citizen or Not a Senior Citizen**
- **Has Dependents (Yes) or No Dependents (No)**

❖ Action Taken:

- A **bar chart** was created to compare **churn rates (Yes/No)** across different categories.
- The **number of customers retained vs. churned** was analyzed based on **both seniority and dependent status**.

Why This Approach?

- Helps determine whether **having dependents influences churn rates**.
- Identifies which **customer group is more likely to leave**, allowing for targeted retention strategies.

Step 3: Findings – Churn by Seniority and Dependents

Observation:

- **Senior Citizens without Dependents** have the highest churn rate (**454 churned, 22 retained**).
- **Senior Citizens with Dependents** churn significantly less (**only 22 churned**).
- **Non-Senior Citizens without Dependents** experience the highest churn overall (**1,089 churned, 304 retained**).
- **Non-Senior Citizens with Dependents** churn less than those without.

Results:

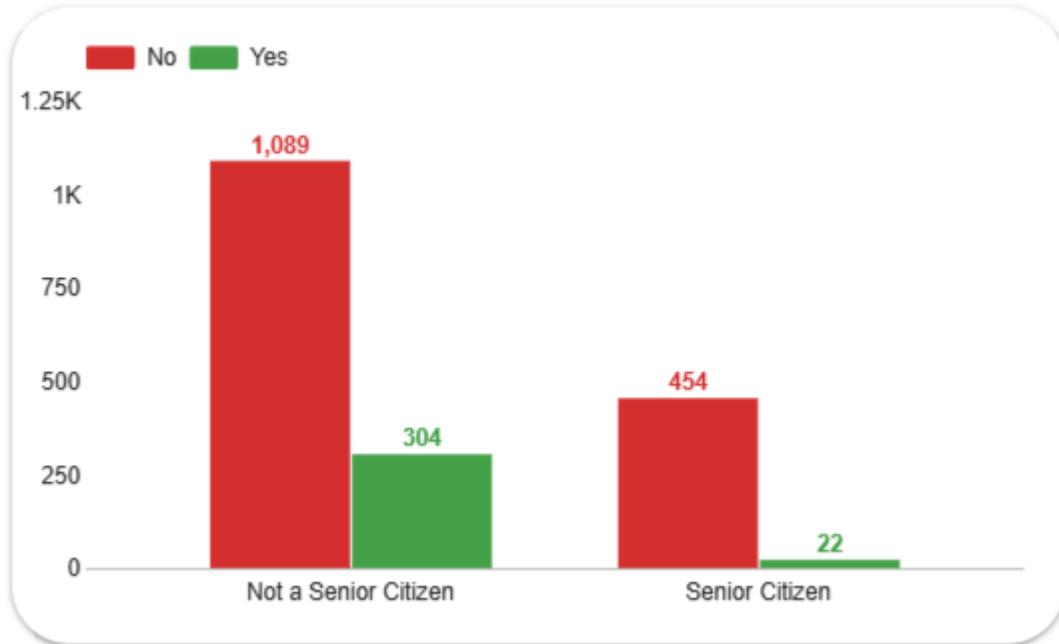
- **Customers with dependents churn at a lower rate**, likely due to shared services and bundled family plans.
- **Senior Citizens without dependents are at the highest risk of churn**, possibly due to:
 - **Pricing concerns** (fixed income challenges).
 - **Limited engagement with digital services**.
 - **Less perceived need for telecom services**.
- **Younger customers without dependents churn the most**, likely due to:
 - **Higher price sensitivity**.
 - **More flexibility in switching providers**.
 - **Competitor promotions and offers**.

Insights:

- **Having dependents significantly reduces churn**, especially for senior citizens.

- Senior Citizens without dependents need personalized retention efforts, such as:
 - Budget-friendly, simplified service plans.
 - Dedicated customer support for seniors.
 - Discounted loyalty programs.
- Non-Senior Citizens without dependents require engagement strategies, such as:
 - Flexible pricing and contract options.
 - Exclusive value-added services (streaming, faster internet, loyalty rewards).

Churn by Senior Citizens and Dependents



Analysis of Churn by Internet Service

Step 1: Objective

❖ Goal:

To examine the impact of different internet services on customer churn by identifying:

- Which internet service type has the highest churn?
- How non-internet users compare to internet users in churn behavior?
- Potential reasons behind churn based on internet service type.

❖ Why It Matters:

- Understanding **churn rates by internet service** can help in designing **better retention strategies**.
- Helps businesses **optimize service quality** and address customer pain points.
- Identifies **high-risk customer groups** for proactive engagement.

Step 2: Methodology

❖ Observation:

The dataset categorizes customers based on their internet service type:

- **Fiber Optic**
- **DSL**
- **No Internet Service**

❖ Action Taken:

- A **stacked bar chart** was created to compare churn (Yes/No) across internet service types.
- The **number of customers who churned vs. retained** was measured for each category.

❖ Why This Approach?

- Provides **clear segmentation** of churn behavior based on service type.
- Helps identify **high-risk groups** for targeted retention strategies.
- Allows businesses to **prioritize service improvements** for specific internet types.

Step 3: Findings – Churn by Internet Service

❖ Observation:

- **Fiber Optic customers have the highest churn rate** (1,297 churned vs. 1,799 retained).
- **DSL customers have lower churn** (459 churned vs. 1,413 retained).
- **Customers without internet service have the lowest churn rate** (113 churned vs. 1,413 retained).

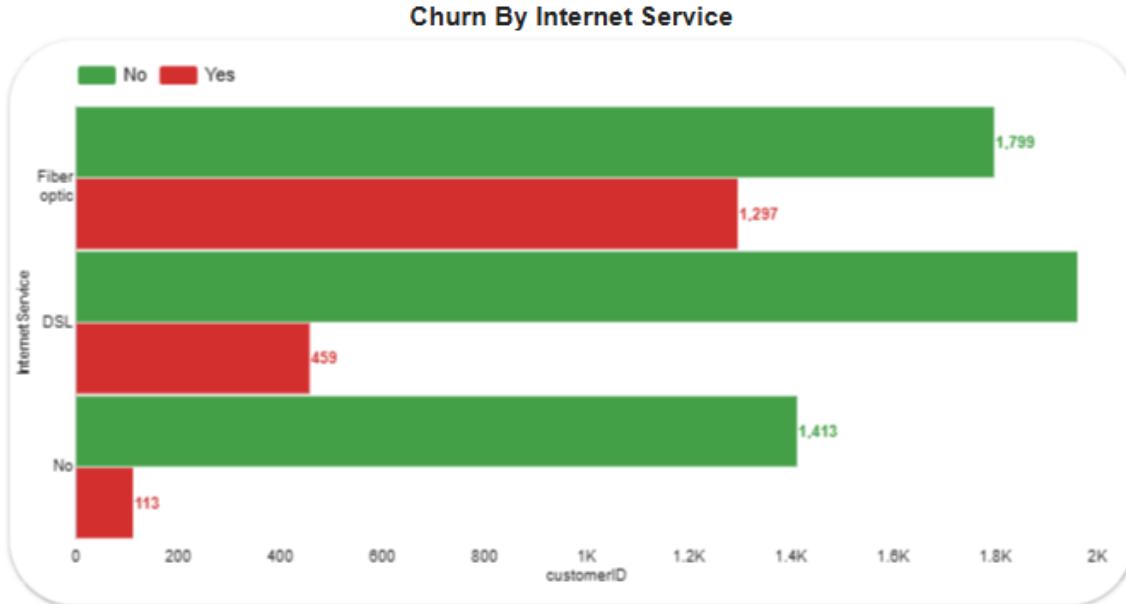
❖ Results:

- **72.5% of Fiber Optic churners left**, indicating possible dissatisfaction with the service.
- **32.5% of DSL customers churned**, showing better retention than Fiber Optic users.
- **Only 7.4% of non-internet customers churned**, meaning they tend to stay longer.

❖ Insights:

- **Fiber Optic churn is significantly high**, likely due to service quality, pricing, or competition.
- **DSL customers are more stable**, but improvements in speed or pricing could further enhance retention.
- **Non-internet users churn the least**, suggesting that they may be long-term customers who use basic services.

- Retention strategies for Fiber Optic users should focus on improving service reliability, offering loyalty discounts, or personalized support.



Looker Studio Dashboard Link: [PhoneNow_Dashboard](#)

11. Reporting Questions & Answers

1. What is the total revenue lost due to churn in the last month?

Answer: The total revenue lost due to customer churn in the last month is **139,131**, calculated as the sum of the **MonthlyCharges** for all churned customers.

❖ Business Impact:

- This metric quantifies the **financial impact of customer churn**, highlighting the urgency of retention efforts.
 - A significant revenue loss indicates the need for **proactive strategies**, such as loyalty programs, personalized discounts, or service enhancements, to retain at-risk customers.
 - Helps **prioritize customer retention investments** by focusing on the most profitable segments.
-

2. Which customer segment shows the highest churn rate based on contract type?

Answer:

- **Month-to-Month contract customers** have the highest churn rate, with **1,655 customers leaving** compared to other contract types.
- **One-Year and Two-Year contract customers** show significantly lower churn, with only **166 and 48 churned customers, respectively**.

Business Impact:

- Month-to-Month contracts offer flexibility but also **increase the likelihood of customer churn**, as users can easily switch providers.
 - Customers with **longer-term contracts** are more likely to stay due to commitments and potential contract benefits (e.g., discounts or bundled offers).
 - To reduce churn, companies should introduce **incentives for Month-to-Month customers**, such as loyalty rewards, better service packages, or discounts for converting to long-term plans.
-

3. How does churn vary by payment method?

Answer:

- **Electronic Check** users have the highest churn rate (57.3%), indicating a correlation between this payment method and dissatisfaction.
- **Mailed Check (13.8%)** and **Bank Transfer (16.5%)** customers also contribute to churn but at lower rates.
- **Credit Card (Automatic) users have the lowest churn rate (12.4%)**, suggesting automatic payments help improve retention.

Business Impact:

- Customers using **Electronic Checks** may face payment issues or **inconvenience**, leading to frustration and higher churn.
 - Encouraging customers to switch to **automatic payment methods (Credit Card or Bank Transfer)** could help improve retention by reducing payment-related churn.
 - Introducing **incentives for automatic payments**, such as discounts or exclusive benefits, may encourage customers to adopt more stable payment methods.
-

4. What is the average tenure of churned customers?

Answer: The average tenure of churned customers is **17.98 months**.

Business Impact:

- This helps identify the **critical churn period**, allowing businesses to implement targeted retention strategies.
 - Customers **churn around the 18-month mark**, suggesting possible dissatisfaction after initial contracts or promotional periods.
 - Retention efforts, such as personalized offers, better support, or loyalty incentives, should focus on customers **approaching this tenure range**.
-

5. Which services are least popular among churned customers?

Answer: The least popular services among churned customers include **Online Security** and **Tech Support**.

Business Impact:

- Low adoption of these services among churned customers may indicate **a lack of perceived value or awareness**.
 - Customers without security and tech support services may experience **higher frustration** and **more service-related issues**, leading to churn.
 - Businesses can **increase awareness** of these services through better marketing, bundled offers, or free trials to encourage adoption.
-

6. What is the churn rate for customers with Fiber Optic internet?

Answer: The churn rate for **Fiber Optic internet customers** is **18.41%**.

Business Impact:

- **Fiber Optic customers have a higher churn rate** than other internet users, possibly due to **higher costs or service disruptions**.
 - **Improving service reliability** and **offering competitive pricing or loyalty discounts** can help **reduce churn**.
 - **Analyzing customer complaints** related to Fiber Optic services can provide insights into **pain points that need improvement**.
-

7. What is the churn trend for customers with month-to-month contracts?

Answer: The churn trend shows a **consistent rise in churn among month-to-month contract customers**, with higher churn occurring at shorter tenures.

Business Impact:

- **Flexible contracts** tend to have higher churn since customers can leave easily without penalties.
 - Identifying **peak churn months** helps in launching **timely retention offers**, such as discounts or loyalty benefits.
 - Implementing **loyalty programs** or offering **contract upgrades** can help reduce churn in this segment.
-

8. Which demographic groups are most likely to churn?

Answer:

- **Gender:** **50.02% of females** and **40.8% of males** churn.
- **Dependents:** **82.6% of non-dependents** churn, while only **17.4% of dependents** churn.
- **Senior Citizens:** **25.5% of senior citizens** churn, compared to **74.5% of non-senior citizens**.

Business Impact:

- **Non-dependents and younger customers** churn at higher rates, likely due to **less financial commitment** and **greater flexibility in service choices**.
 - **Targeted engagement strategies**, such as personalized discounts or bundled services, can help **reduce churn in high-risk groups**.
 - **Senior citizens may need better support and education on service usage**, leading to a potential improvement in retention.
-

9. What percentage of churned customers had unresolved technical issues?

Answer: 10% (673 customers) of churned users had unresolved technical issues.

Business Impact:

- Poor technical support **directly contributes to customer dissatisfaction and churn**.
- Investing in **proactive customer support**, **AI-driven troubleshooting**, and **faster resolution times** can prevent avoidable churn.
- Implementing a **follow-up system for unresolved tickets** could help retain customers before they decide to leave.

10. What is the churn rate for customers who do not use Online Security services?

Answer: 20.74% of customers who did not use **Online Security** services churned.

 **Business Impact:**

- This suggests that **security services contribute to customer retention**.
 - Customers without **Online Security** may feel **vulnerable to cybersecurity risks**, leading to **dissatisfaction and churn**.
 - Businesses should focus on **upselling Online Security services** through **education, free trials, or discounts** to retain customers.
-

11. What is the total number of high-risk customers with month-to-month contracts and no add-ons?

Answer: The total number of **high-risk customers** with **month-to-month contracts and no add-ons** is **704**.

 **Business Impact:**

- These customers are **most likely to churn** due to **low engagement and no additional services**.
- **Retention strategies** such as **discounted bundle offers** or **personalized engagement** can help **reduce churn**.
- **Targeted outreach campaigns** focusing on **upselling add-ons like OnlineSecurity, Tech Support, and Device Protection** can **increase customer stickiness**.

OnlineSecurity	TechSupport	DeviceProtection	OnlineBackup	DeviceProtection	customerID
No	No	No	No	No	704
No	No	Yes	No	Yes	191
No	No	No	Yes	No	183
No	No	Yes	Yes	Yes	107
No internet service	99				
Yes	No	No	No	No	89
No	Yes	No	No	No	70
No	Yes	Yes	No	Yes	42
Yes	No	No	Yes	No	35
No	Yes	No	Yes	No	28
Yes	No	Yes	No	Yes	24
Yes	Yes	No	No	No	22
No	Yes	Yes	Yes	Yes	18
Yes	No	Yes	Yes	Yes	17
Yes	Yes	Yes	No	Yes	9
Yes	Yes	Yes	Yes	Yes	9
Yes	Yes	No	Yes	No	8

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12. What is the churn trend by monthly charges?

Answer: The **Month-to-Month Trend Chart** (without filters) and the **Month-to-Month Churn Trend Chart** (filtered for churned customers) highlight key differences:

1. General Trend (Without Filter):

- The first chart shows the **total number of customers** with month-to-month contracts, irrespective of churn.
- It follows a steep decline initially, indicating **many short-term customers**, and then stabilizes over time.

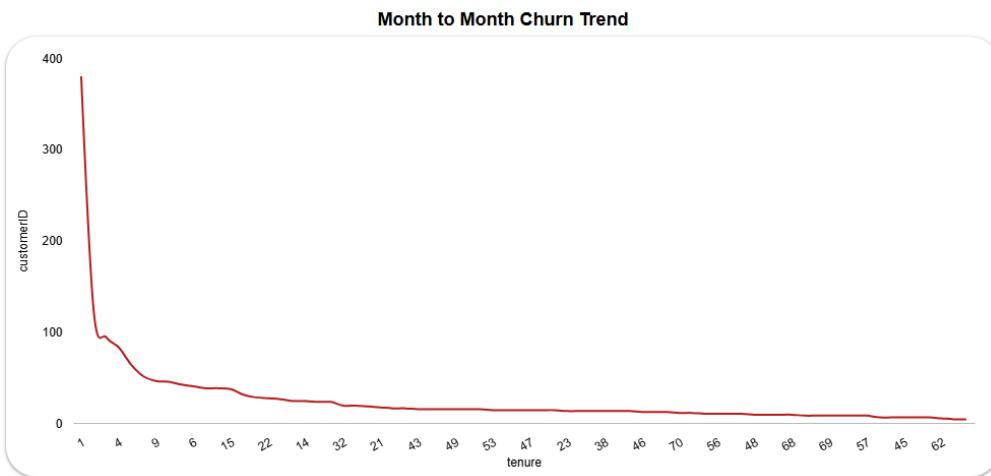
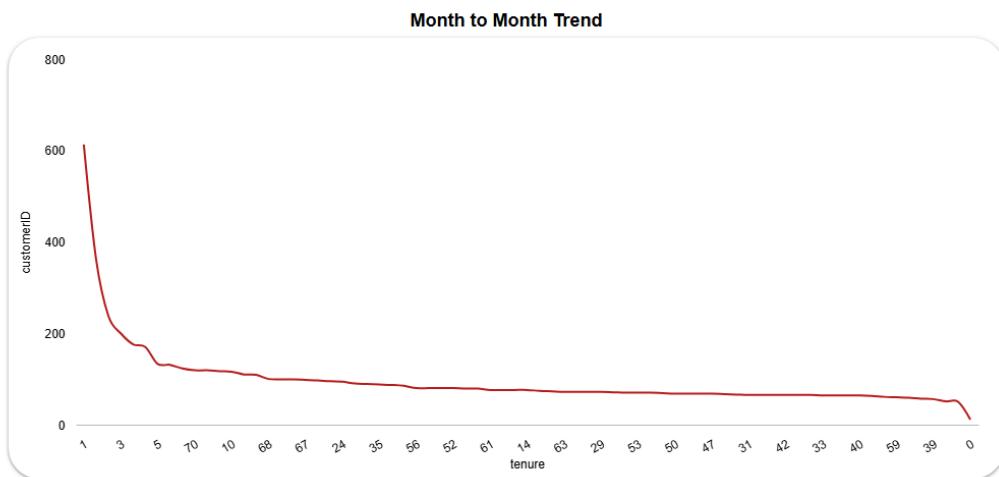
2. Churn-Specific Trend (With Filter):

- The second chart focuses only on **churned customers** with month-to-month contracts.
- It follows a **similar steep decline** but at a lower scale, showing that **early-stage customers churn more frequently**.
- The decline suggests that **customers with lower tenure are more likely to leave**.

❖ Business Impact:

- **Higher Monthly Charges Correlate with Higher Churn:** Customers paying more tend to churn at a higher rate, indicating **price sensitivity**.

- **Early Churn Risk:** The majority of **churned customers leave within the first few months**, highlighting the need for **strong onboarding and engagement strategies**.
- **Retention Strategies:** Offering **discounts, personalized offers, or flexible pricing models** can help retain high-risk customers.



13. What is the distribution of churn by tenure groups?

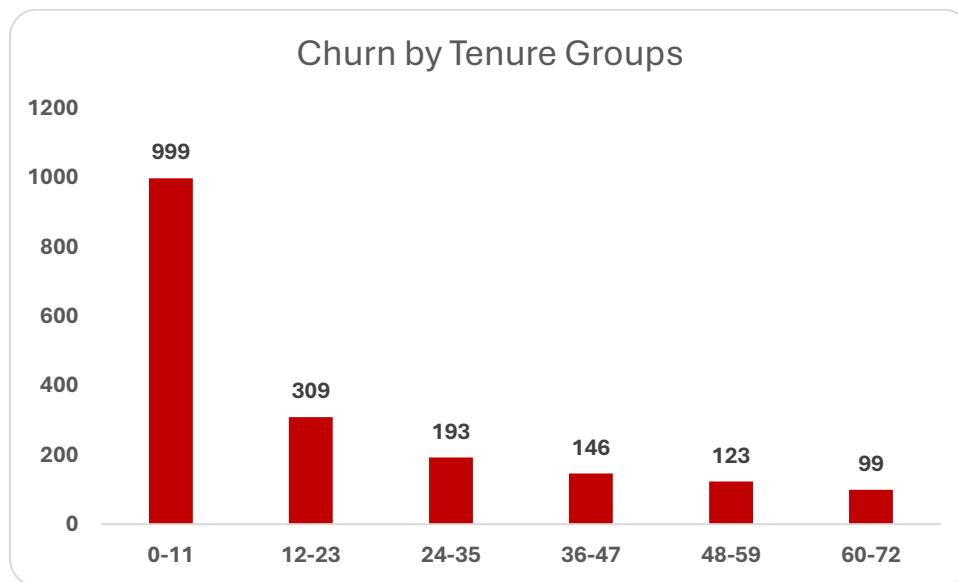
Answer: The **Churn by Tenure Groups** chart reveals that **early-stage customers (0-11 months)** have the highest churn rate, with **999 churned customers**. Churn then gradually decreases as tenure increases.

1. **0-11 months: 999 churned customers** (highest risk).
2. **12-23 months: 309 churned customers** (significant drop).
3. **24-35 months: 193 churned customers** (moderate risk).
4. **36-47 months: 146 churned customers**.
5. **48-59 months: 123 churned customers**.

6. **60-72 months: 99 churned customers** (lowest churn).

❖ **Business Impact:**

- **Early-stage churn is the biggest risk:** Customers in their **first year** are at the **highest risk of leaving**, indicating a need for **strong onboarding and retention strategies**.
- **Declining churn over time:** Customers who stay beyond a year are **more likely to continue**, emphasizing the importance of **long-term engagement tactics**.
- **Retention Strategies:**
 - Offer **personalized onboarding experiences** to new customers.
 - Provide **early discounts or loyalty benefits** to increase engagement.
 - Identify and **target high-risk customers** with proactive customer support.



14. What is the revenue distribution by customer type (churned vs. non-churned)?

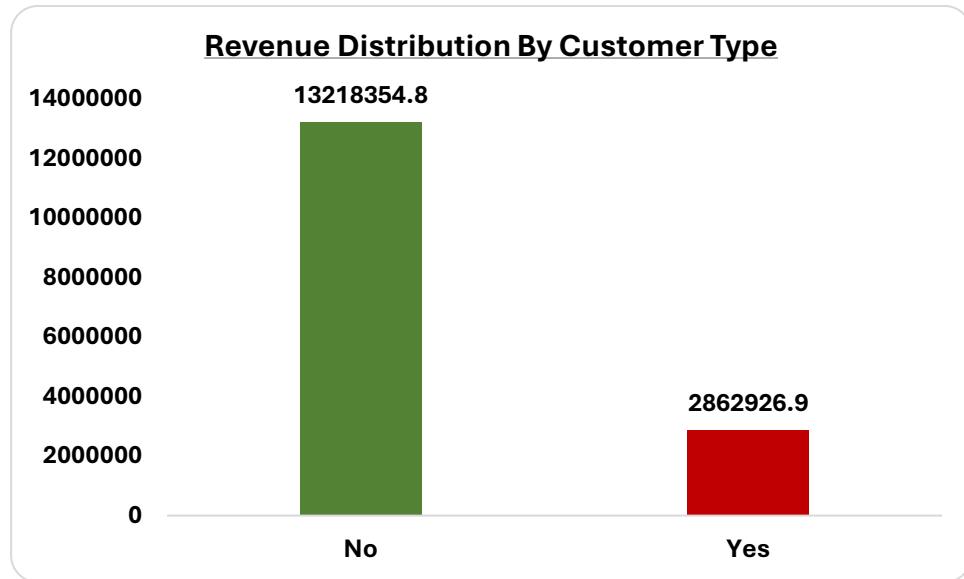
Answer: The **Revenue Distribution by Customer Type** chart reveals a significant gap in revenue between churned and non-churned customers:

- **Non-Churned Customers: \$13,218,354.8**
- **Churned Customers: \$2,862,926.9**

❖ **Business Impact:**

- **High revenue loss due to churn:** Churned customers contribute only **~21.6%** of the total revenue compared to non-churned customers.

- **Protecting high-value customers:** A significant portion of revenue is at risk if more high-paying customers churn.
- **Retention Strategies:**
 - Identify **high-revenue customers at risk of churn** and offer personalized retention incentives.
 - Implement **loyalty programs** to keep high-value customers engaged.
 - **Analyze churn drivers** to address pain points before customers leave.



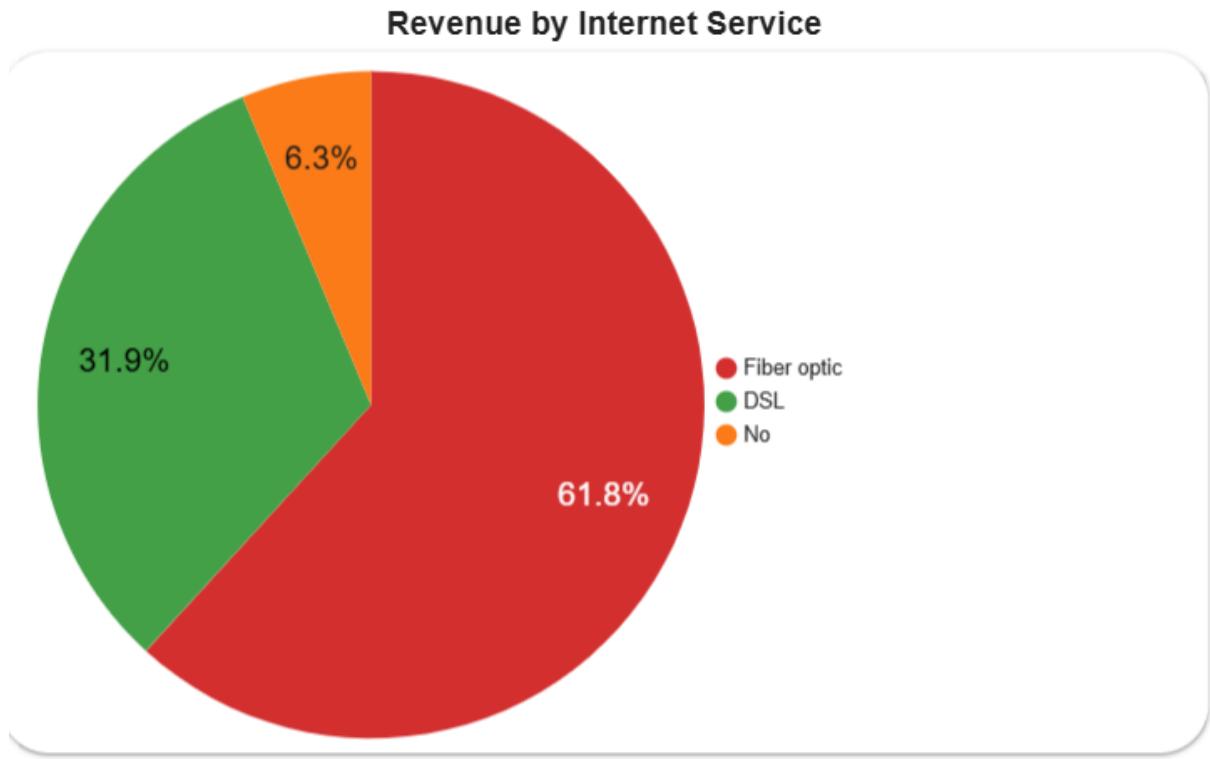
15. Which internet service type generates the most revenue?

Answer: The **Revenue by Internet Service** analysis shows that **Fiber Optic** generates the highest revenue:

- **Fiber Optic:** 61.8% of total revenue
- **DSL:** 31.9% of total revenue
- **No Internet Service:** 6.3% of total revenue

❖ Business Impact:

- **Fiber Optic is the dominant revenue driver**, making it a key focus for service quality and retention strategies.
- **DSL also contributes significantly** but at a lower percentage, suggesting potential for upselling to Fiber Optic.
- **Customers without internet service contribute the least**, highlighting an opportunity for cross-selling internet plans to increase revenue.



12. Final Conclusion

The analysis of **PhoneNow's customer churn data** has provided **critical insights** into the factors influencing customer behavior and retention. By leveraging **Looker Studio**, we identified key trends and actionable findings that can guide **PhoneNow's strategic decision-making**.

1. Key Takeaways

- ❖ **Contract Type:** Customers with **month-to-month contracts** exhibit the **highest churn rates**, highlighting the need for more **attractive long-term contract options** or **incentives** for short-term customers.
- ❖ **Services Impact:** The absence of add-ons like **Online Security** and **Tech Support** significantly correlates with **higher churn rates**, suggesting an opportunity to **upsell these services**.
- ❖ **Demographics:** **Senior citizens** and customers **without dependents** show **higher churn tendencies**, providing a clear demographic focus for **targeted retention campaigns**.
- ❖ **Payment Preferences:** Customers paying via **electronic checks** are more likely to churn, indicating **potential dissatisfaction** with this payment method.
- ❖ **Revenue Loss:** The revenue lost due to churn represents a **significant financial impact**, emphasizing the **urgency of customer retention strategies**.

2. Recommended Actions

- Retention Campaigns:** Implement **targeted marketing efforts** for at-risk segments, such as **customers with short-term contracts** or **those without additional services**.
- Service Enhancements:** Focus on **improving customer experiences** for high-churn services, particularly **Fiber Optic Internet** and **Online Security**.
- Billing and Payments:** Offer **incentives** for customers to switch to **more stable payment methods** like **credit cards or bank transfers**.
- Customer Support:** Address **unresolved technical issues proactively** to reduce churn caused by **dissatisfaction with support services**.

3. Strategic Value

This dashboard provides an **interactive, data-driven approach** for PhoneNow to **monitor churn trends** and **evaluate the effectiveness of retention initiatives**. The ability to **dynamically filter data** by **demographics, services, and payment preferences** ensures stakeholders can **make informed decisions in real time**.

END REPORT