



# Portfolio

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Hakam Raves

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# Problem solver who leverages skillset



Target-oriented, fast learner and competitive team player, shaped by 10 years as a student-athlete with notable achievements and hands on job experience.

## Personal Information

[raves.hakam@gmail.com](mailto:raves.hakam@gmail.com)

+6282311117335 (Whatsapp)

Jakarta Barat, Indonesia

## Education

Bachelor of Computer Science – Pertamina University Nov 2023

Master of Computer Science – Binus University March 2026(Expected)

Master of Applied Economy – Padjajaran University March 2026(Expected)

## Find Me On

[linkedin.com/in/hakamraves](https://linkedin.com/in/hakamraves)

[github.com/ravssh](https://github.com/ravssh)

## Skills

Data Science

Data Analyst

Machine Learning

Data Viz

Business Intelligence

Internet of Things

Econometrics

## Tools

Python/R Studio

SQL

Looker Studio

Power BI

Streamlit

Arduino IDE

Microsoft Excel (Pivot Table & Chart,

Data Analysis, Vlookup & Hlookup)

## Fresh talent with hands-on experience



### Software Developer Intern – Indonesia Biru Foundation (Internship)

Apr 2021 – Sep 2021 (6 Month)

A Non Governmental-Organization focused on marine research, restoration and community development.

Joined digital marketing department as a contributor for digital transformation such as Website Developer and Android Developer for 6 months.

**Project 1** – Indonesia Biru Foundation Landing Page and Coral Reef Adoption System

**Project 2** – Indonesia Biru Android Application (Solution to find diving spots for tourists in the Lombok area)

Tools frequently used : Figma, Java

# Fresh talent with hands-on experience



## Technical Specialist Data Analyst – PERTAMINA Lubricants (Internship)

Oct 2023 – Sep 2024 (1 Year)

Oil & gas state-owned company focused on production and sales of lubricants and derivative products

Sales and Marketing division that performed after-sales activity, i've worked on **Data Analyst** Project with Coordinator of Field Engineer.

**Project 1** – Transformed manual after-sales activity dashboard to automated report and dashboard system

**Project 2** – After-sales services optimization, analyze travel hours, activity hours, activity weight, and activity value, which led to a 40% reduction in SLA activity.

**Project 3** - Performance analytics, analyze KPI for 12 Field Engineers through data cleaning and preprocessing of timesheet data using Python, enabling data-driven performance evaluations.

**Project 4** – Travel budget forecasting, created 6 Month travel expenses forecasts for 12 Field Engineer by utilizing past spending trends and 40% SLA after-sales activity reduction, allowing for a 40% budget reserve for strategic planning.

**Project 5** – Designed and implemented data-driven assessments framework and data preprocessing for Field Engineer Award. Ensuring objective and consistent performance measurement.

Tools frequently used : Looker Studio, Google Sheets, Google Apps Script, Microsoft Excel (Pivot Table, Data Analysis)

# Fresh talent with hands-on experience



## Coding Teacher – Kalananti by Ruangguru (Freelance)

Jun 2025 – Now

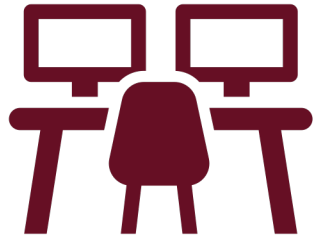
Coding and robotic course by Ruangguru for Elementary, Middle and Senior High School Student.

As a teacher I built digital and computational thinking skills.

Basic coding instructor(Python, MIT App Inventor, Java) interactive programs with structured logic, input/output handling, and error-free execution, emphasizing problem-solving and financial literacy use cases.

Mainly teach python for Senior High School and private class using Bahasa Indonesia and English as medium of interaction.

Tools frequently used : Python, Java, MIT App Inventor



## Project Showcase

# Case I: Telco Customer Churn with Data Analyst and Machine Learning

Telecommunication company have **customer** data that contain customer demographic, service subscriptions, contract and payment details.

	customerID	gender	SeniorCitizen	Partner	Dependents	tenure	PhoneService	MultipleLines	InternetService	OnlineSecurity	OnlineBackup	DeviceProtection	TechSupport	StreamingTV	StreamingMovies	Contract	PaperlessBilling	PaymentMethod	MonthlyCharges	TotalCharges	Churn
0	7590-VHVEG	Female	0	Yes	No	1	No	No phone service	DSL	No	Yes	No	No	No	No	Month-to-month	Yes	Electronic check	29.85	29.85	No
1	5575-GNVDE	Male	0	No	No	34	Yes	No	DSL	Yes	No	Yes	No	No	No	One year	No	Mailed check	56.95	1889.5	No
2	3668-QPYBK	Male	0	No	No	2	Yes	No	DSL	Yes	Yes	No	No	No	No	Month-to-month	Yes	Mailed check	53.85	108.15	Yes
3	7795-CFOCW	Male	0	No	No	45	No	No phone service	DSL	Yes	No	Yes	Yes	No	No	One year	No	Bank transfer (automatic)	42.30	1840.75	No
4	9237-HQITU	Female	0	No	No	2	Yes	No	Fiber optic	No	Yes	No	No	No	No	Month-to-month	Yes	Electronic check	70.70	151.65	Yes
5	9305-CDSKC	Female	0	No	No	8	Yes	Yes	Fiber optic	No	No	Yes	No	Yes	Yes	Month-to-month	Yes	Electronic check	99.65	820.5	Yes
6	1452-KIOVK	Male	0	No	Yes	22	Yes	Yes	Fiber optic	No	Yes	No	No	Yes	No	Month-to-month	Yes	Credit card (automatic)	89.10	1949.4	No
7	6713-OKOMC	Female	0	No	No	10	No	No phone service	DSL	Yes	No	No	No	No	No	Month-to-month	No	Mailed check	29.75	301.9	No
8	7892-POOKP	Female	0	Yes	No	28	Yes	Yes	Fiber optic	No	No	Yes	Yes	Yes	Yes	Month-to-month	Yes	Electronic check	104.80	3046.05	Yes
9	6388-TABGU	Male	0	No	Yes	62	Yes	No	DSL	Yes	Yes	No	No	No	No	One year	No	Bank transfer (automatic)	56.15	3487.95	No
10	9763-GRSKD	Male	0	Yes	Yes	13	Yes	No	DSL	Yes	No	No	No	No	No	Month-to-month	Yes	Mailed check	49.95	587.45	No
11	7469-LKBCI	Male	0	No	No	16	Yes	No	No	No internet service	No internet service	No internet service	No internet service	No internet service	No internet service	Two year	No	Credit card (automatic)	18.95	326.8	No
12	8091-TTVAX	Male	0	Yes	No	58	Yes	Yes	Fiber optic	No	No	Yes	No	Yes	Yes	One year	No	Credit card (automatic)	100.35	5681.1	No
13	0280-XJGEX	Male	0	No	No	49	Yes	Yes	Fiber optic	No	Yes	Yes	No	Yes	Yes	Month-to-month	Yes	Bank transfer (automatic)	103.70	5036.3	Yes
14	5129-JLPIS	Male	0	No	No	25	Yes	No	Fiber optic	Yes	No	Yes	Yes	Yes	Yes	Month-to-month	Yes	Electronic check	105.50	2686.05	No
15	3655-SNQYZ	Female	0	Yes	Yes	69	Yes	Yes	Fiber optic	Yes	Yes	Yes	Yes	Yes	Yes	Two year	No	Credit card (automatic)	113.25	7895.15	No
16	8191-XWSZG	Female	0	No	No	52	Yes	No	No	No internet service	No internet service	No internet service	No internet service	No internet service	No internet service	One year	No	Mailed check	20.65	1022.95	No
17	9959-WOFKT	Male	0	No	Yes	71	Yes	Yes	Fiber optic	Yes	No	Yes	No	Yes	Yes	Two year	No	Bank transfer (automatic)	106.70	7382.25	No
18	4190-MFLUW	Female	0	Yes	Yes	10	Yes	No	DSL	No	No	Yes	Yes	No	No	Month-to-month	No	Credit card (automatic)	55.20	528.35	Yes
19	4183-MYFRB	Female	0	No	No	21	Yes	No	Fiber optic	No	Yes	Yes	No	No	Yes	Month-to-month	Yes	Electronic check	90.05	1862.9	No
20	8779-QRDMV	Male	1	No	No	1	No	No phone service	DSL	No	No	Yes	No	No	Yes	Month-to-month	Yes	Electronic check	39.65	39.65	Yes

In depth business insight and solve the problem by **analyze** customer data by customer profiling, **predict** churn and strategy to **improve** retention rate.

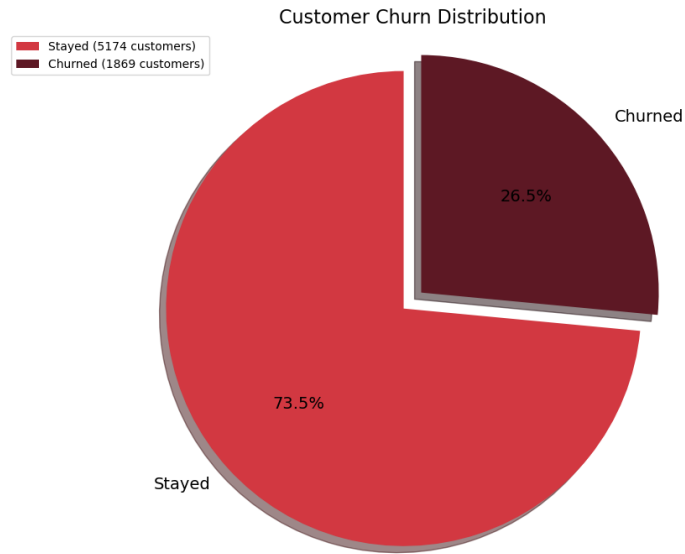
Tools

-Python  
-Microsoft Excel

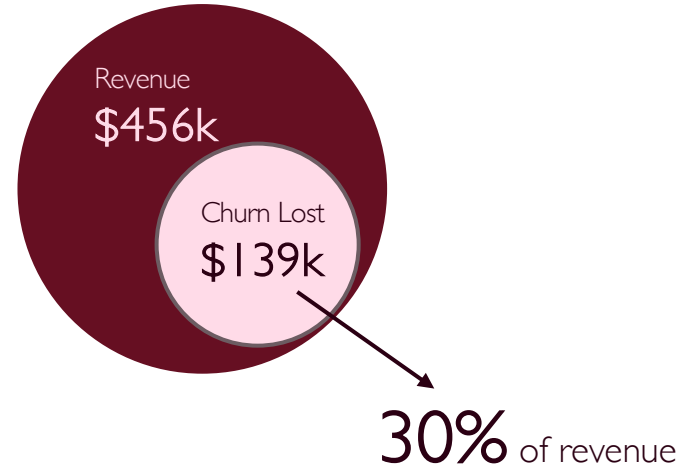
Full project repository

[github.com/ravsssh/TelcoCustomer](https://github.com/ravsssh/TelcoCustomer)

## 26% of churned customer represent \$139,000 in monthly charges lost



While retain **73.5%** of customers, the remaining churn presents a room for improvement.



Each churned customer on avg a loss of approx **\$74/month**

Churn -> Dissatisfaction or unmet needs. This can lead the company vulnerable to competitors who might offer better **service, pricing, or features.**

### Problem Statement

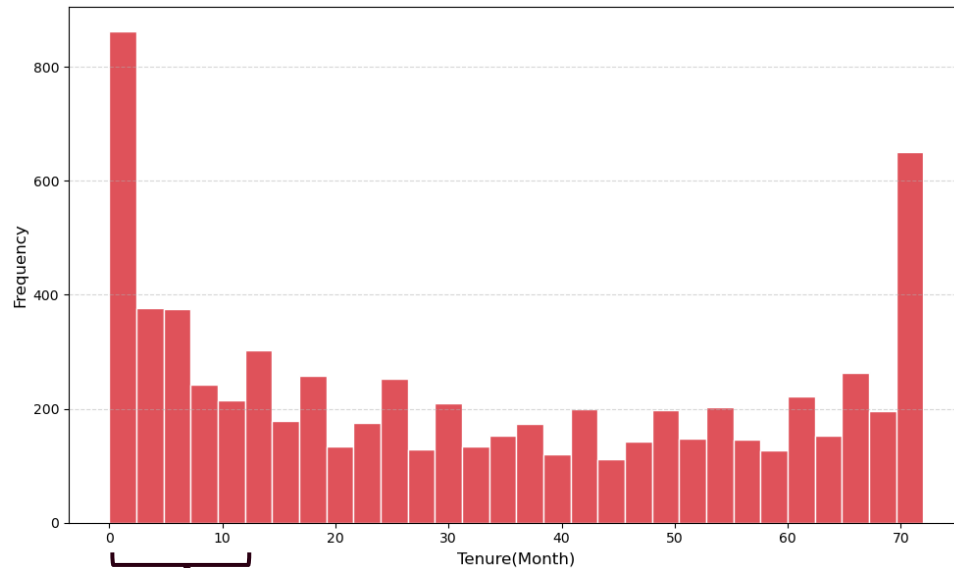
- Reducing churn protects **30% monthly revenue** and strength **market share**
- Understanding customer churn **factor** and **retention** strategy
- Realtime churn prediction to overcome churn customer



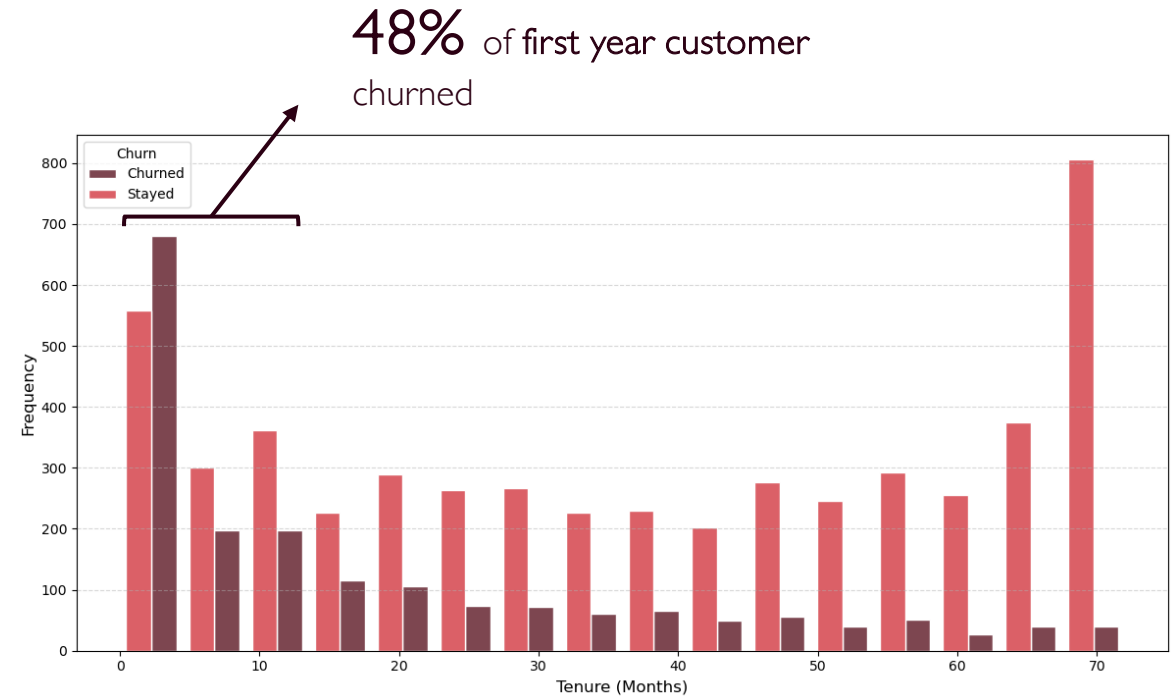
Strategic Pillar	Objective Goal
Customer Profiling	Insights why customers churn and stay
Churn Prediction	Predict customer churn and Risk Level
Action to customer	Reduce churn rate



New and loyal customer is the majority, which new customer tend to churn and loyal customer tend to stay



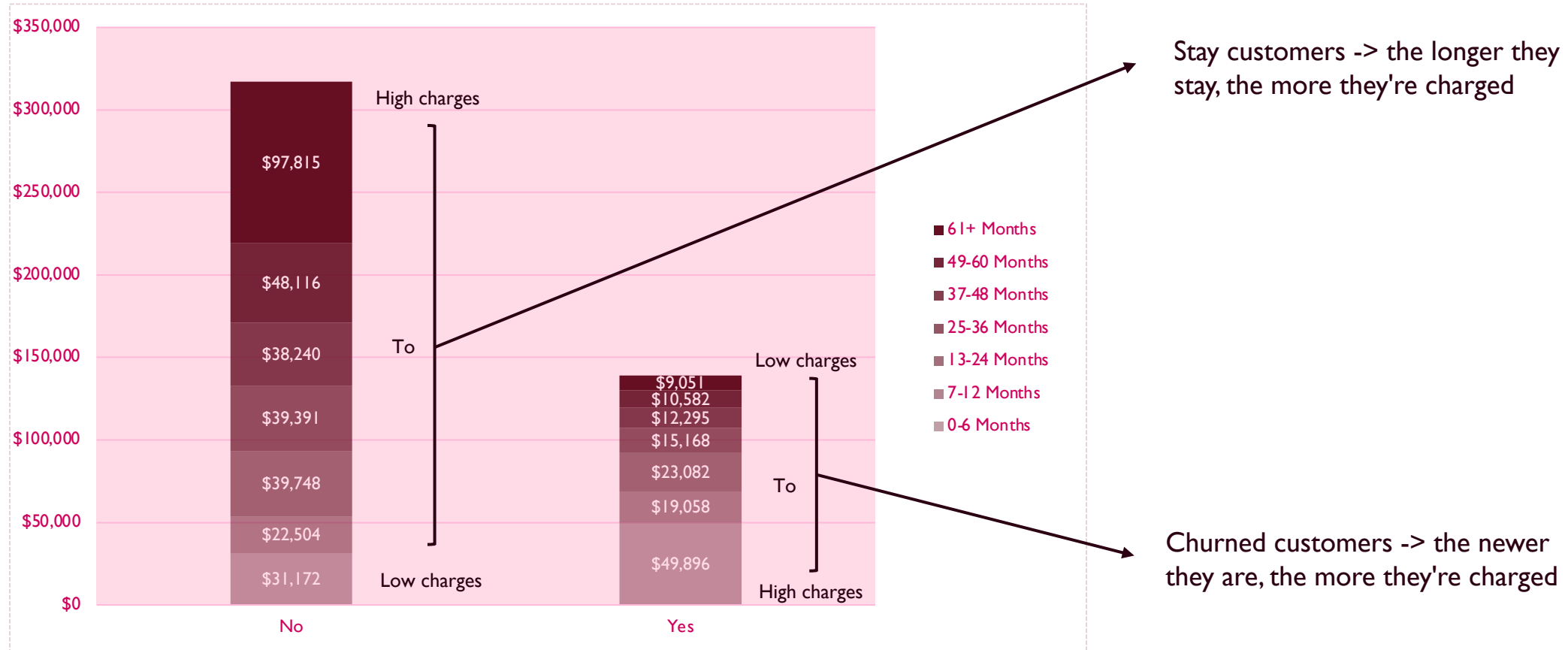
29% is first year customer



### Key Insights

- Target **first month customer experience** and **bonus for loyal customer**
- New customer tend to churn and loyal customer tend to stay

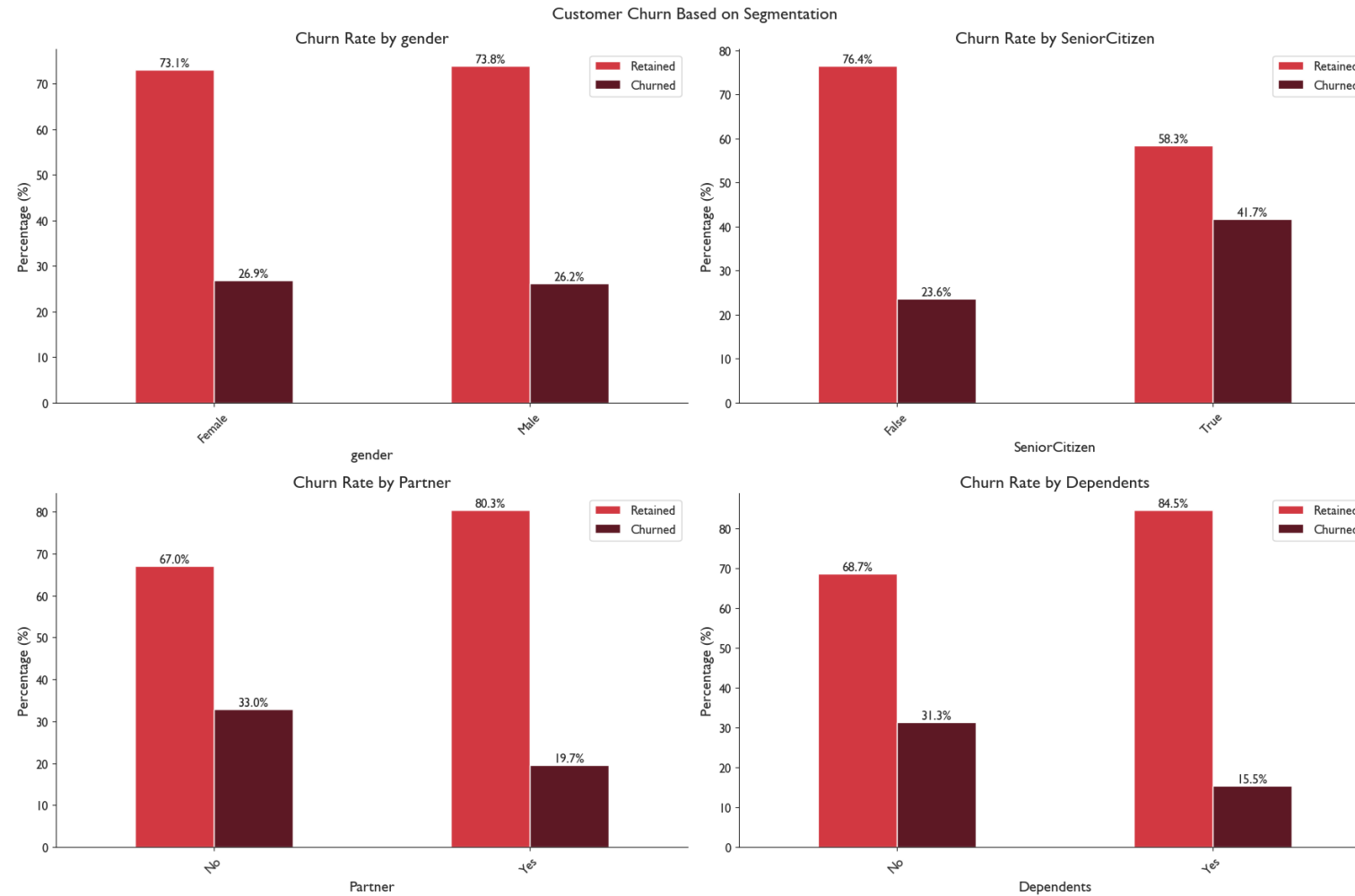
# Pricing tolerance develops with tenure and relationship, New customers pay more when they leave



## Key Insights

- Total churned monthly revenue originates from newest customers (0-6 months) for nearly **36% (\$49,896)** of all lost monthly charges
- Stayed customer monthly charges low to high by tenure but churned customer vice versa
- New customers leave when overcharged while loyal customer stay despite higher prices

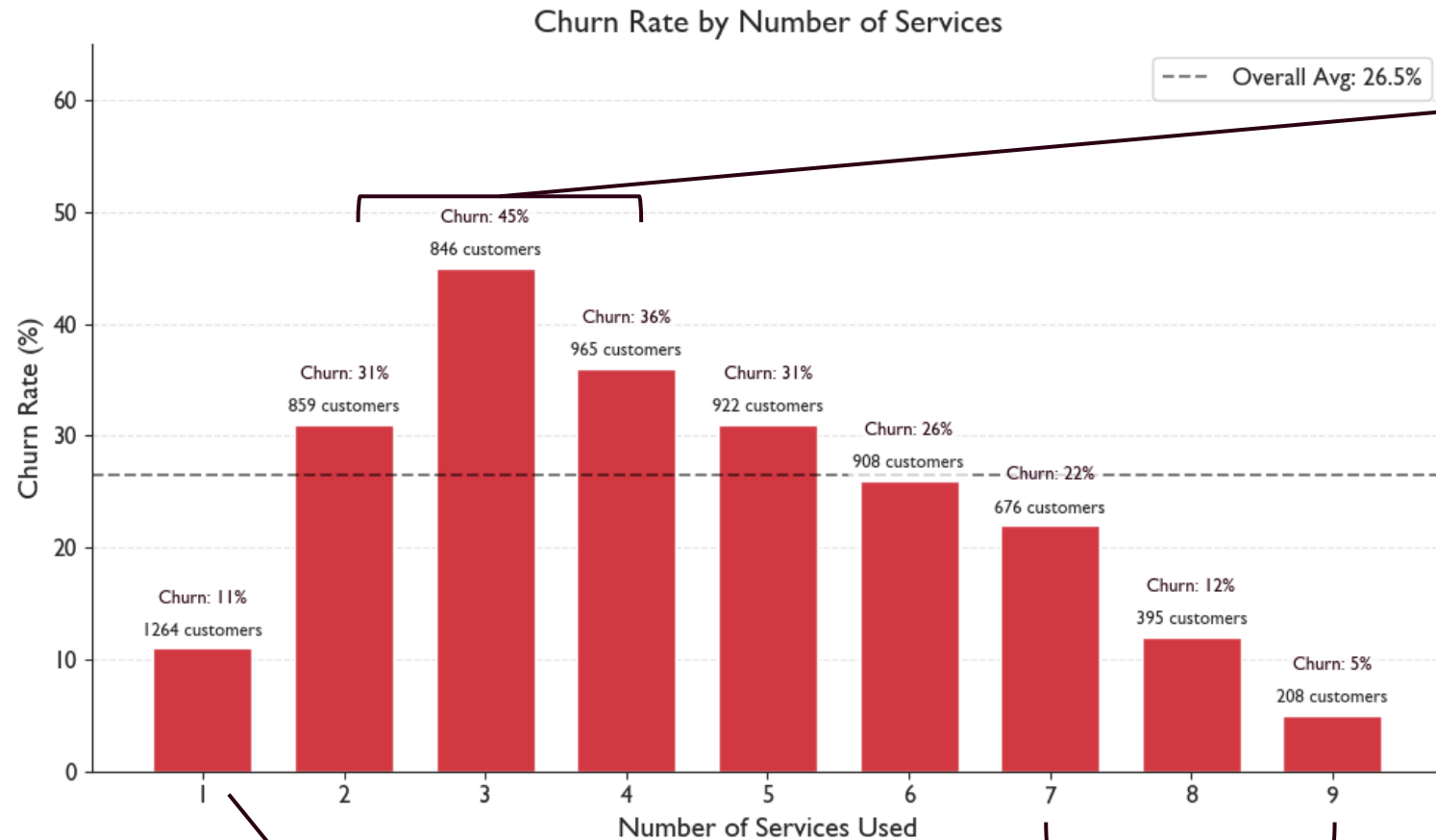
# Churned customer affected by partner, dependents and senior status



## Key Insights

- Gender has **nothing** with churn
- Senior citizen affect by almost **20%** customer churn
- Partner and dependents status by average affect **13-15%** customer churn

# Dangerous service acquisition trap



Highest churn rate occur at 2-4 service usage not single-service customer.

While successfully upselling customer into more service, but they becoming more likely to churn.

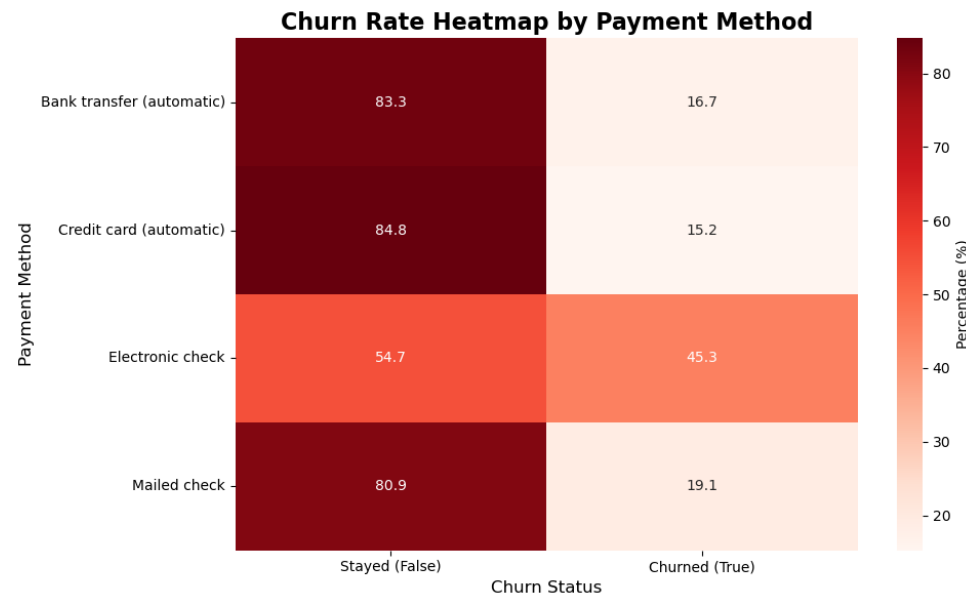
## Key Insight

- Fiber optic is consistently show high churn in every service combination
- The more service customer use the more loyal
- Online Backup, Online Security, Device Protection and Tech Support is services that most retained customer

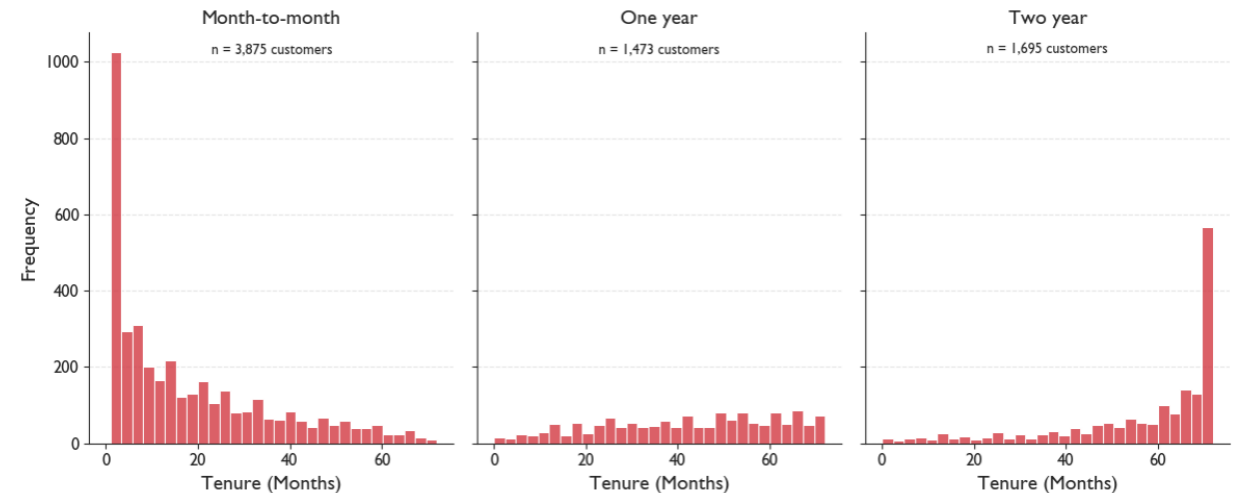
Mostly one service usage customer is phone service user only

High service usage customer is the most loyal.

# Most popular, yet most risky: E-Check and Month-to-month Contract



The most used payment method is E-Check

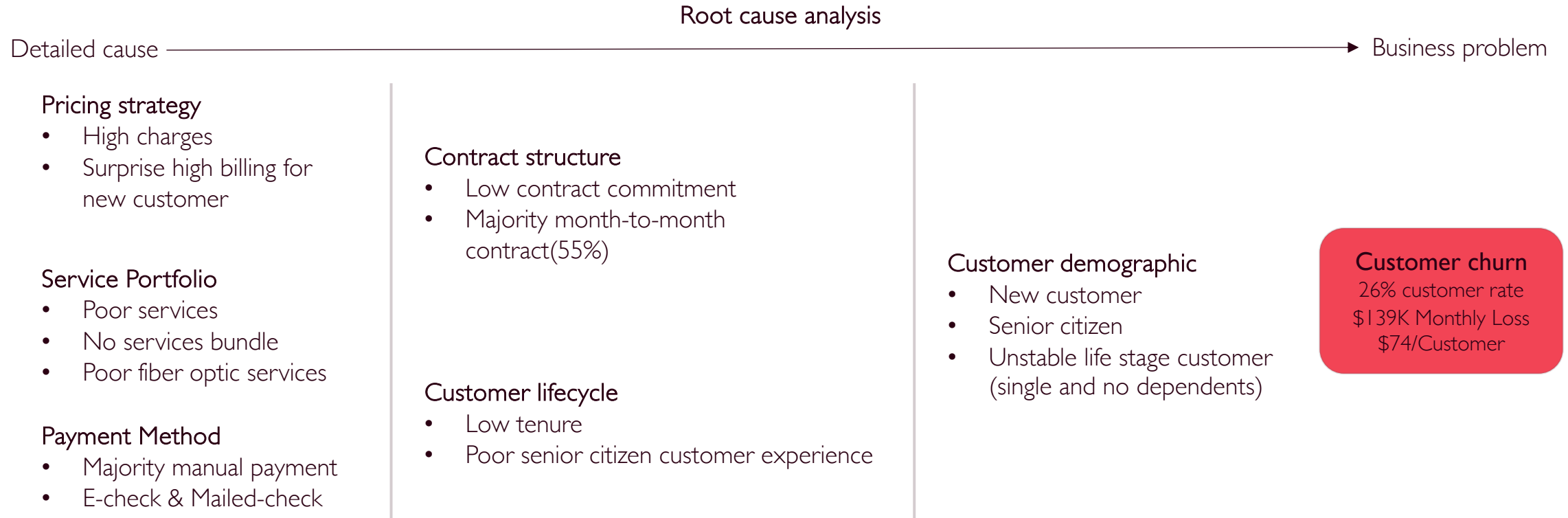


The most used contract method is Month-to-month

## Key Insights

- Except e-check other payment method have low churn rate
- Two year contract customer mostly loyal customer
- Most popular, yet most risky

# What makes customer churn



# What makes customer stay

## Service optimization

- Multi-service adoption
- Service satisfaction
- Full ecosystem
- Support service

## Relationship Maturity

- High tenure
- Price tolerance (low charges to high charges)
- Engagement depth

## Customer demographic

- Non-senior citizen
- Partnered customer
- Stabil customer (dependents)

## Commitment structures

- Long contract
- Payment method (automatic payment)
- Switching cost

# Prediction Model (ANN)

Model 93% detecting churn customer in data test (Recall 93%).

Predicted churn customer categorize to:

- High risk -> 70% probability
- Medium risk -> 50% probability
- Low-medium risk -> 30% probability
- Low Risk -> under 30%



	CustomerID	Actual_Churn	Churn_Probability	Predicted_Churn_0.15_threshold	Risk_Level
0	7590-VHVEG	0.0	0.792	1	High Risk
1	5575-GNVDE	0.0	0.004	0	Low Risk
2	3668-QPYBK	1.0	0.559	1	Medium Risk
3	7795-CFOCW	0.0	0.003	0	Low Risk
4	9237-HQITU	1.0	0.935	1	High Risk
5	9305-CDSKC	1.0	0.980	1	High Risk
6	1452-KIOVK	0.0	0.482	1	Low-Medium Risk
7	6713-OKOMC	0.0	0.259	1	Low Risk
8	7892-POOKP	1.0	0.912	1	High Risk
9	6388-TABGU	0.0	0.013	0	Low Risk

Top 3 features driving churn:

- Tenure
- Month-to-month contract
- Fiber optic internet service

Top 3 features prevent churn:

- Bank transfer (automatic)
- Online security
- Tech support



## Action suggestion

- Enhance onboarding program and built customer relationship that develop tenure and price tolerance
- Enhance customer support for senior citizen
- Review pricing strategy and service portfolio with customer demographic need matching (family plan or partner plan)
- Audit fiber optic service, investigate service quality, pricing and customer satisfaction
- Create loyalty bonus program
- Redesign service bundling, create pathways that move customers directly from one service to 7+ (full ecosystem)
- Revamp ux for improvement in payment and contract to aim longer and automatic payment with added incentive
- Implement machine learning model in customer relationship management dashboard for early warn

# Still much to go!



## Personal Information

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Thank You!

## Find Me On

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