

Customer Churn Analysis

Statistical & Business Analytics Project

Presented by: Lakshmi Kanth Pulipaka, B.Tech – Artificial Intelligence & Machine Learning

Understanding customer churn patterns and identifying key drivers using data analysis and statistical methods.



Problem Statement & Objectives

Problem Statement

- Customer churn leads to significant revenue loss
- Retaining existing customers is more cost-effective than acquiring new ones
- Businesses need early identification of churn-prone customers

Project Objectives

- Measure customer churn rate
- Identify key factors influencing churn
- Validate findings using statistical techniques

Dataset & Methodology

Dataset Overview

- Customer-level historical data
- Key features: tenure, monthly charges, total charges, churn status

Methodology

- Data cleaning and preprocessing
- Exploratory Data Analysis (EDA)
- Statistical hypothesis testing
- Insight generation

Exploratory Data Analysis (EDA)

Key EDA Activities

- Calculated overall churn rate
- Analyzed tenure distribution across churned and retained customers
- Examined correlations between numerical variables

Insights

- Higher churn observed among low-tenure customers
- Tenure shows strong influence on churn behavior

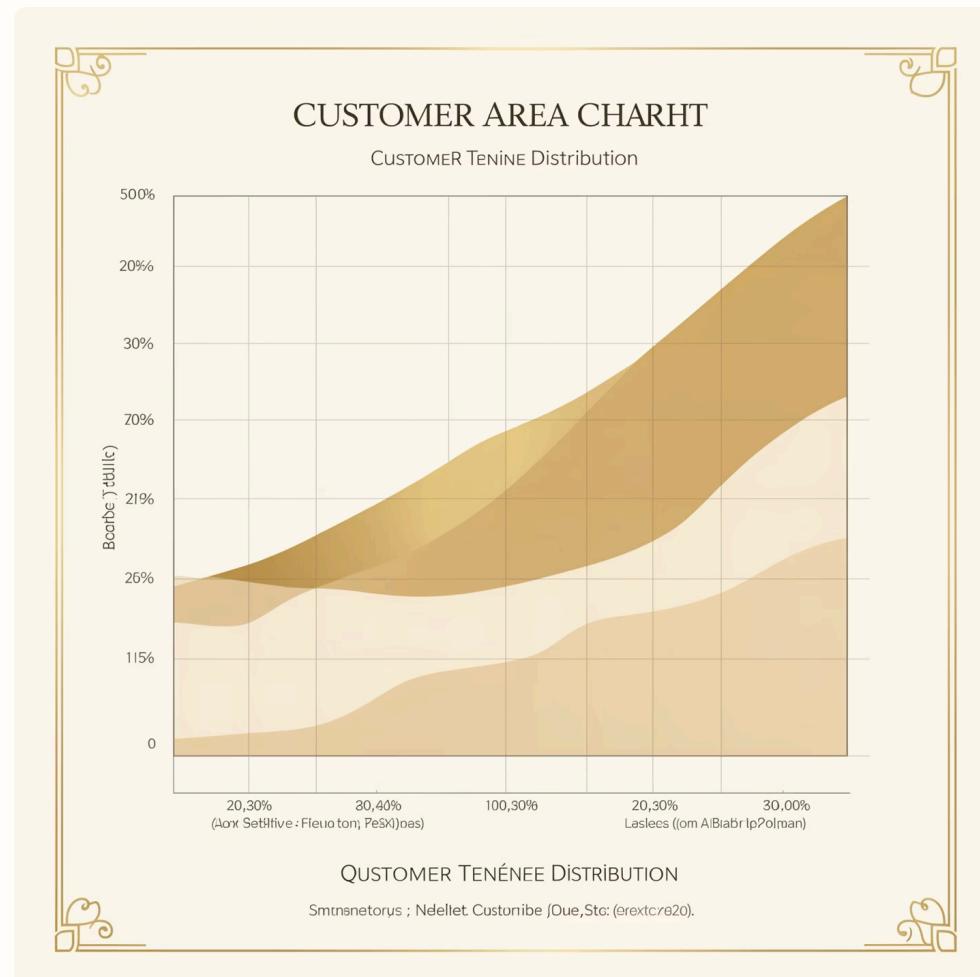
Statistical Analysis & Findings

Statistical Techniques Used

- Hypothesis testing (Independent t-test)
- Comparison between churned and non-churned customers

Key Findings

- Statistically significant difference in tenure
- Customers with shorter tenure are more likely to churn



CORPRAYOTON NIEENFCT												
EA	SK	O	S00	2A	7L1	Fego	7V1K	I/0000	Pu.	Mvotr	TLO	
He Dler	Bno	Meahom	Virdaum	Bz2	G6	Lra	Is6	Tao	Dess00	Elo	Uoro	
Bo D0	Wol	Vlathma	Sagboo	600	SNita	Vood	Resb	Sad006	560	2018		
00 N0	Ahom	Uaaham	Baaion	000	SNit2	Vora	Boye	Sad006	Gzbes	2000		
Auti	Nuahom	Bardom	Eco	S/Vira	Vora	Itayo	Sad000	Batoes	560			
Md -	Sodn	Vobm	Marleo	200	Volou	Sam	Pstnob	Pas,PIG	Retno	2000		
Va NO	Admi	Noriam	Farlom	bro	SAhia,	3000	Rakca	Dat,000	haml	Lanoo		
VA 3laja -	Vatot	Raaberd	Szaboro	100		Ire	Luth	SabSOE	Kamo	S000		
Q7	Gzjom	Ruahiam	Bnabord	4m	2 Wma,	Bont	Darling	Brrateth0	Meoir	2ea		
N2 N3	Strone	VarHem	Eahoid	Eso	Dott	3000	Lak	Vobu	Maolrl	2200		
Os d	Snni	Vuahom	Vaahond	Bn		VnK	Pum	Mera	Eabes	Dmo		
Da ono	IVAT	ASACFH	EajBO	Sar000	KIW	OON	onn	WOW	OPITE	KUM	100	

Business Insights & Recommendations

Business Insights

- Churn risk is highest during early customer lifecycle
- Customer engagement in initial months is critical

Recommendations

- Improve onboarding experience
- Introduce early retention programs
- Monitor churn indicators proactively

Conclusion & Thank You

Conclusion

- Data-driven analysis identified key churn drivers
- Statistical validation strengthened decision-making
- Insights support effective retention strategies

Thank you for your attention!

