Lab Session 1 – Telecom Churn
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Objective:
1. To analyze the data of a telecommunication firm and isolate the factors that lead to the churn of customers.
2. To propose a solution based on the analysis of the given data to reduce churn and in turn increase company profit.

What is Churn?

Churn, when used in the context of telecommunication, is used to describe customer loss. In today's world where the customer has a number of options to choose a telecom provider and can switch freely between them, customer retention is become a must for all telecom industries and therefore it is necessary for them to find out when and if a user will churn.

By finding out this information, the company can offer attractive offers and manage to retain the customer. The more customers the company manages to retain; the more money/profit it earns as compared to its rivals.

The primary goal of this analysis is to identify those customers who are most likely to switch over to another service provider. Customers are valuable assets and all companies at the end of the day want to retain their customers. In the present day scenario, customers tend to stay with a given company for a long time and churning could lead to a loss of an asset.

Analysis:

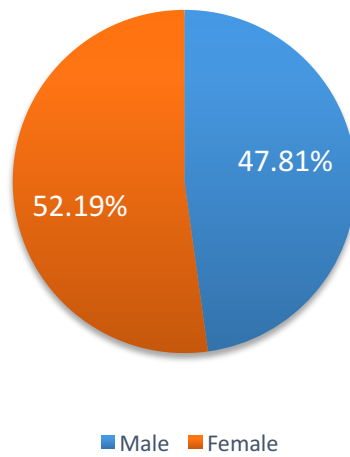Average age of churner - 36.51824818

Proportion of married users –

Row Labels	Count of churn
Unmarried	53.65%
Married	46.35%
Grand Total	**100.00%**

Martial Status of churners

46.35% 53.65%

■ Unmarried ■ Married
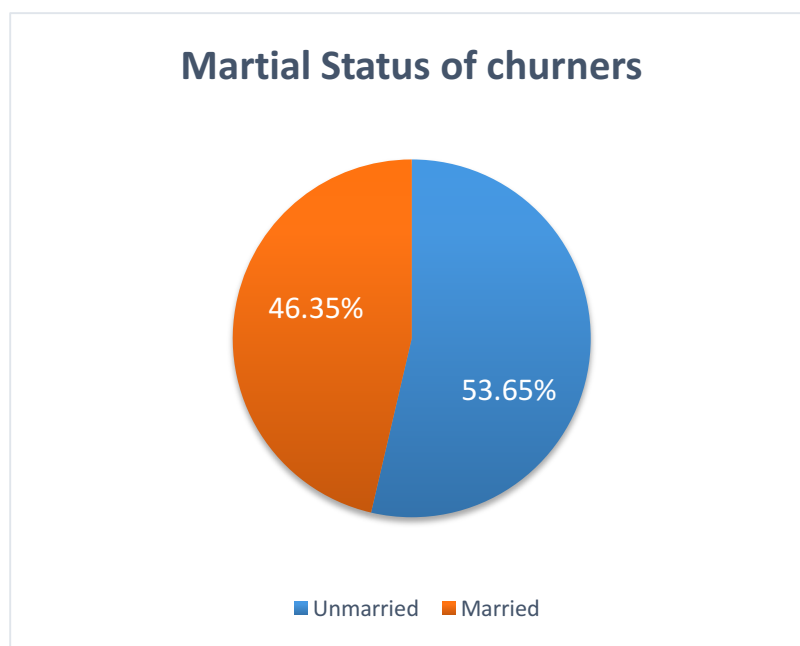
Proportions of male and female users –

Row Labels	Count of churn
Male	47.81%
Female	52.19%
Grand Total	**100.00%**

Gender of chuners

47.81%

52.19%

■ Male ■ Female

Region-wise proportion of churners –

Row Labels	Count of churn
1	32.85%
2	34.31%
3	32.85%
Grand Total	**100.00%**

Region-wise churn

32.85%

32.85%

34.31%

■ 1 ■ 2 ■ 3
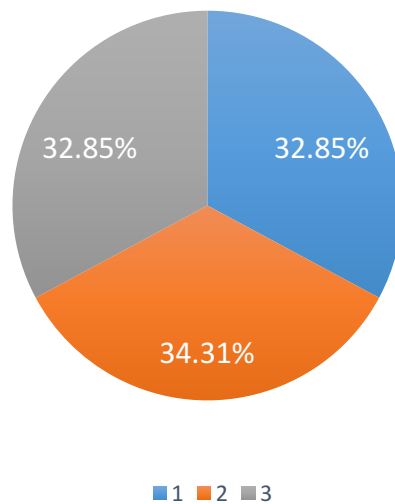
Education status-wise –

Row Labels	Count of churn
1	11.68%
2	22.99%
3	21.53%
4	33.58%
5	10.22%
Grand Total	**100.00%**

Count of churn
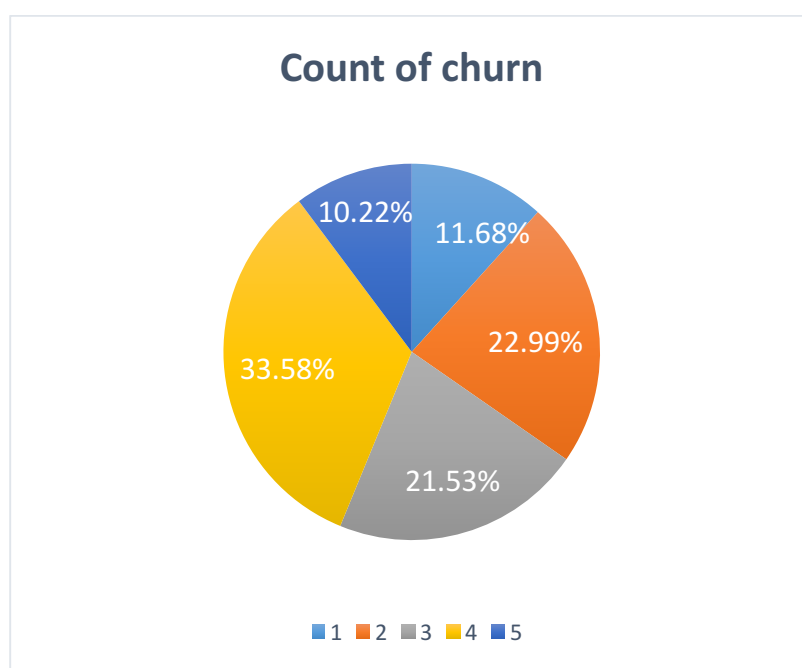
Proportion of churners gender, education status and region-wise –

Row Labels	ed 1	ed 2	ed 3	ed 4	ed 5	Grand Total
Region 1	**2.55%**	**4.01%**	**7.66%**	**13.50%**	**5.11%**	**32.85%**
Men	1.09%	1.09%	2.92%	6.57%	2.55%	14.23%
Women	1.46%	2.92%	4.74%	6.93%	2.55%	18.61%
Region 2	**4.38%**	**10.22%**	**6.57%**	**10.58%**	**2.55%**	**34.31%**
Men	2.92%	4.74%	2.19%	4.38%	1.46%	15.69%
Women	1.46%	5.47%	4.38%	6.20%	1.09%	18.61%
Regoin 3	**4.74%**	**8.76%**	**7.30%**	**9.49%**	**2.55%**	**32.85%**
Men	2.19%	4.74%	2.19%	6.57%	2.19%	17.88%
Women	2.55%	4.01%	5.11%	2.92%	0.36%	14.96%
Grand Total	**11.68%**	**22.99%**	**21.53%**	**33.58%**	**10.22%**	**100.00%**
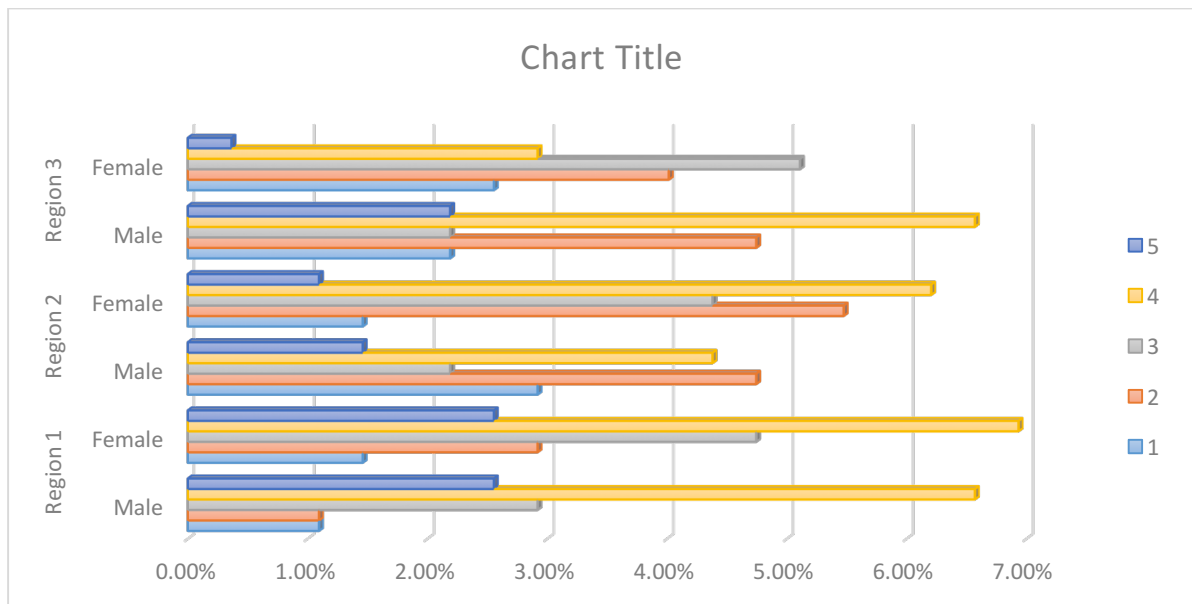
Proportion of churners in the high-income group region-wise –

| Row Labels	1	2	3	Grand Total
9-58	19.71%	23.72%	24.82%	68.25%
59-108	8.39%	5.84%	4.01%	18.25%
109-158	3.28%	2.55%	1.46%	7.30%
159-208	0.73%	1.09%	1.46%	3.28%
209-258	0.36%	0.36%	0.00%	0.73%
259-308	0.36%	0.00%	0.36%	0.73%
309-358	0.00%	0.00%	0.73%	0.73%
359-408	0.00%	0.36%	0.00%	0.36%
409-458	0.00%	0.36%	0.00%	0.36%
Grand Total	32.85%	34.31%	32.85%	100.00%
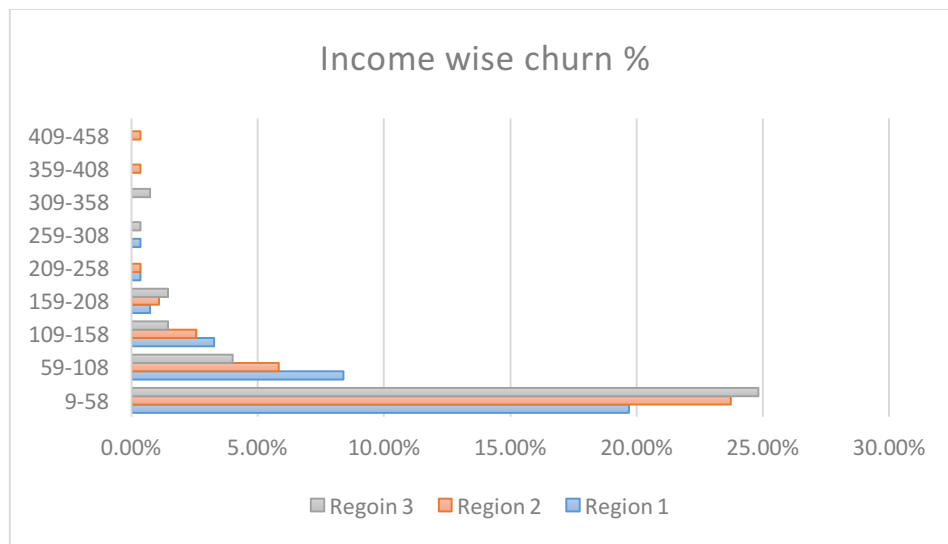
Report

From the data retrieved above, we find that:

1. The average age of the churner is - 36.51824818
2. Majority of the overall churners were female and unmarried with an education status of 4.
3. Region 2 has the maximum number of customers that churned.
4. The least churn was achieved in region 1 and 3 which were the same number of people.
5. Education wise, people with the education status of 1 and 5 were the lowest in numbers.
6. People with high income don't churn much.

Moreover, the data shows that people who had internet services were the ones who churned more than people who did not.

Row Labels	Count of churn
No Internet	41.97%
Internet	58.03%
Grand Total	**100.00%**

Churn ratio

41.97%
58.03%

■ No Internet ■ Internet
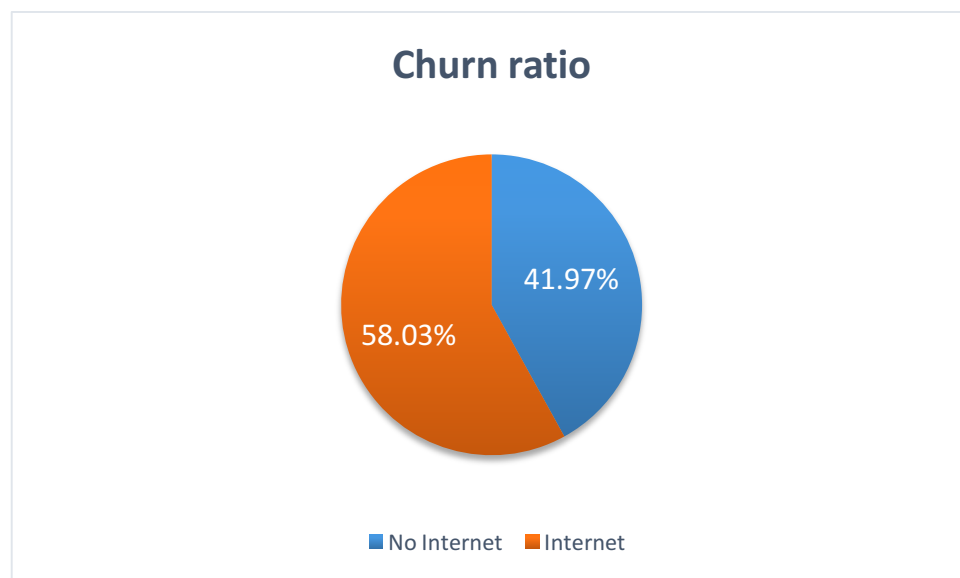
My suggestion would be to send customers in the age group of 25-45 promotional offers with internet facility, more voice minutes for the retention of the customers.