



Effect of Number of Friends Invited on Retention & Purchases



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Phase 1: Identifying KPI & Recommendations

Two Key Performance Indicators

Retention Rate of New Users

Retention is a critical KPI in the media streaming industry because it reflects **user engagement and long-term platform sustainability**

Song/Video Purchases

Song/Video Purchases is directly linked to **profitability and revenue generation.**

Effect of Number of Friends Invited on Retention

Retention Rate of Users with No Friends Invited



Day 1

Retention rate is **68.3%** (sharp drop)

Day 30

Retention falls further to **only 29.9%**

Retention Rate of Users with At Least 1 Friend Invited



Retention rate is **95.8%** (lower drop-off)

Retention remains **at 50.3%**

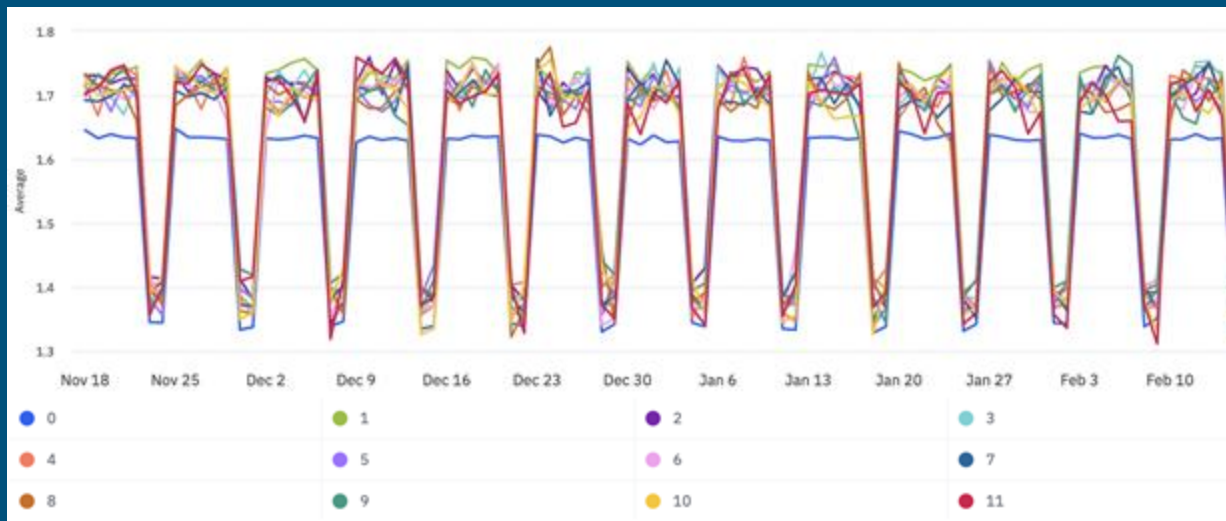
Retention Rate of Users with No Friends Invited

Users who do not invite friends tend to disengage quickly, leading to higher churn.

Retention Rate of Users with At Least 1 Friend Invited

Users who invite friends are much more likely to stay engaged, possibly due to social reinforcement and shared experiences.

Effect of Number of Friends Invited on Song and Video Purchases



- Users who invited at least one friend had **higher purchase rates** compared to those who did not invite friends at all.
- Insight: The number of friends invited **not only impacts retention** but also positively correlates **with monetization**, indicating that social engagement drives both user stickiness and revenue.

Conclusion



Future Qualitative Studies

- **User Interviews & Surveys:** to understand why inviting friends influences retention.
- **Competitive Analysis:** to study how other media streaming services encourage social engagement.



Important User Problem

Users who do not invite friends **churn at a higher rate** and spend less money on the platform.



Potential Solutions

- **Incentivized Social Features:**
ex) discounted content, free trials, exclusive content access
- **Enhanced Social Viewing:**
ex) watch parties or shared playlists
- **Personalized Friend Recommendations**

Phase 2: Design of Experiment (A/B Test)

Hypothesis Statement

Based on our data, we believe that users who do not invite any friends are less likely to retain.

We hypothesize that offering a discount to customers who invite at least one friend per month will increase the retention rate (our KPI).

Design of Experiment

KPI: Retention Rate

Control Rate: 5%

Daily Traffic: 10,000 visits per day

A/B Testing

- Reason: Because I'm testing a single intervention (offering a discount) versus the control

Design of Experiment

Alpha: 0.001

- Reason: While 0.05 is a common threshold, I chose 0.001 because a false positive (concluding the discount increases retention when it actually harms the business) would be very costly.

Beta: 0.20 (80% power)

- Reason: This is a standard level to ensure sufficient power without requiring an excessively large sample size.

Design of Experiment

Sample Size Calculation:

- Using R's `power.prop.test()` function, the required sample size per group is approximately 946 participants under the specified significance level ($\alpha = 0.001$) and power (80%) to detect an increase from 5% to 10%.

Daily Traffic:

- With 10,000 daily visits, the required sample size can be achieved in just one day.

Test Duration Decision:

- Although one day is statistically sufficient, I will run the test for one week to capture day-to-day variability and ensure robust results.

Thank you