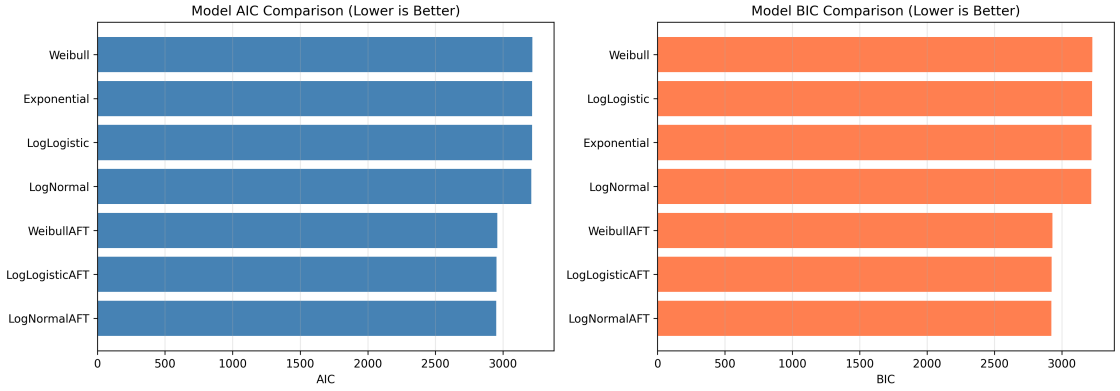
Survival Analysis Report

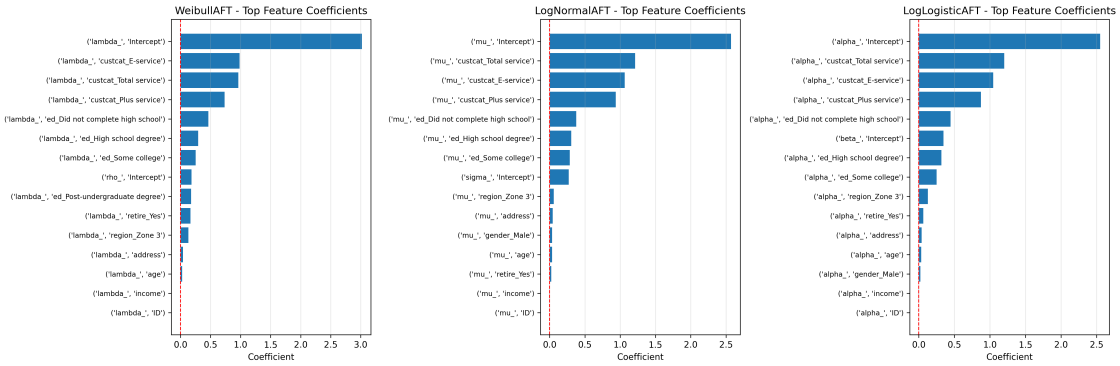
Model Comparison and Key Findings

Across all models, the LogNormal AFT model consistently provided the best fit, showing the lowest AIC and BIC scores. This indicates that churn behavior in the dataset is best captured by a log-normal distribution of survival times and that customer characteristics meaningfully accelerate or slow down the time until churn. In practical terms, the pattern of results suggests that churn is not random but strongly shaped by observable customer attributes.



Interpreting the Coefficients

The AFT coefficients provide a clear interpretation: positive values lengthen expected survival time, while negative values shorten it. Customers with longer service histories tend to stay significantly longer, reinforcing the idea that loyalty builds over time. Subscribers of higher-tier bundles, particularly E-service and Plus-service, also exhibit slower churn, likely due to higher engagement or perceived value. Meanwhile, customers with lower education levels churn more quickly, and demographic differences—especially older and retired users—suggest that stability increases with age. Finally, geographic variation remains meaningful, with Region Zone 3 customers showing higher long-term retention.



Who Are the Most Valuable Customers?

In defining customer value, we consider both revenue potential and the likelihood of remaining subscribed. Long-tenured users, premium-plan subscribers, older customers, and those residing in Zone 3 consistently show high survival probabilities and stable revenue behavior. These groups represent the most valuable segments in the dataset because they require lower retention spending while contributing predictable long-term revenue.

Retention Budget Estimate

If we assume the dataset represents the full population of 1000 subscribers, the estimated one-year survival probability is about 78%, leaving roughly 220 customers at risk of churning within the next year. With an average monthly revenue of \$40, the annual CLV for a retained customer is about \$480. Allocating approximately 15% of CLV to retention yields a budget of about \$72 per at-risk customer. This translates to an annual retention budget of approximately \$15,840, which appears reasonable given the churn dynamics observed in the data.