LaLaFood Demand Growth Analysis

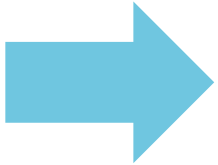
Dataset: *Click here*

Challenge 1

Uncovering the Key to Better Restaurant Discovery

Conversion Rates

25%

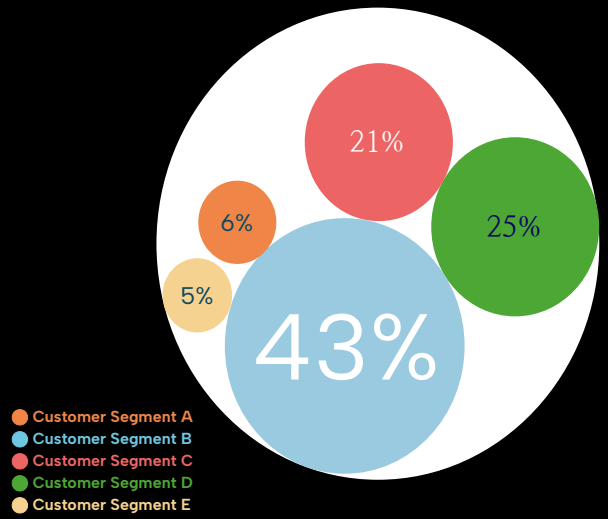


Conversion Rates

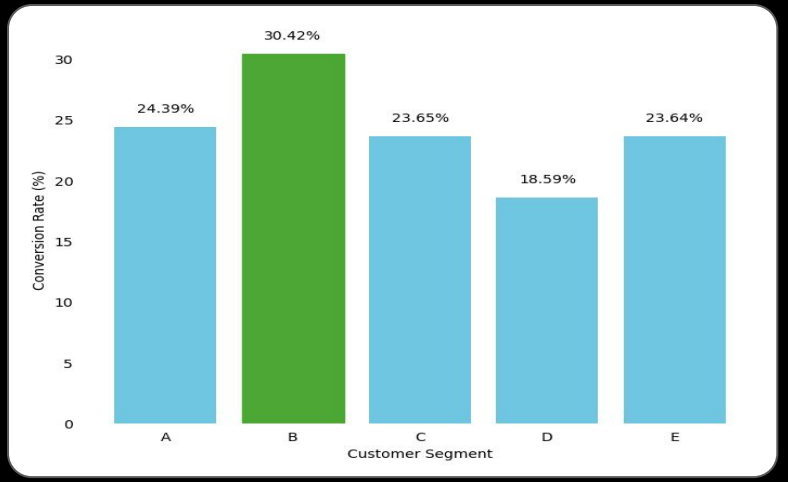
28%

Increase LalaFood’s conversion rate f**rom 25% in October 2024 by 12% (to 28%) by the end of 2024** to drive more bookings and enhance user engagement.

Session Distribution by Customer Segment



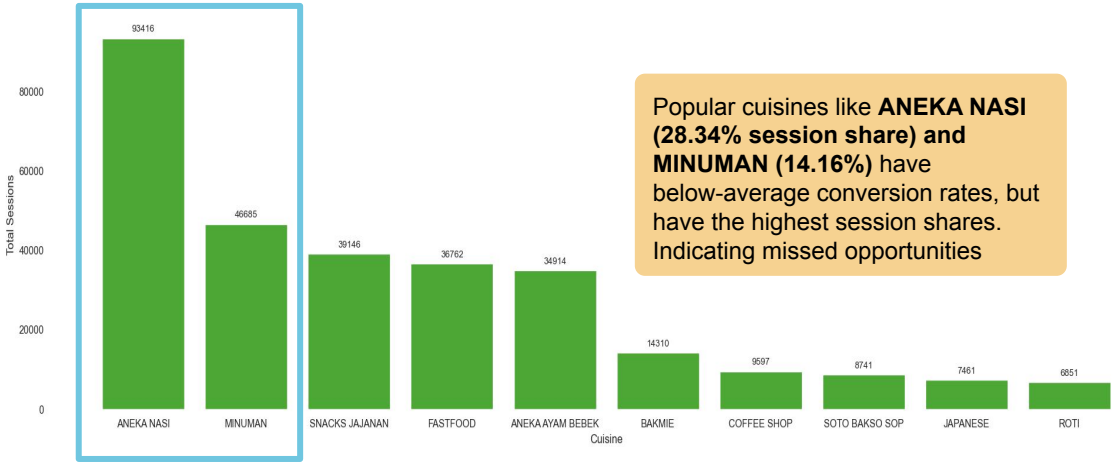
Conversion Rates by Customer Segment



Segment B has the highest conversion rate at 30.42%, Indicating that customers in this segment are the most likely to complete a booking. I**ncreasing Segment B's conversion rate by 5% (from 30.42% to 35.42%) could add 2.15% to the overall conversion rate.**

Segment D has the lowest conversion rate at 18.59%, Suggesting that customers in this segment are the least likely to convert. **Improving Segment D's conversion rate by 5% (from 18.59% to 23.59%) could add 1.28% to the overall conversion rate, leveraging their large session share**.

Niche cuisines like **THAI (46.67%) and HEALTHY FOOD (42.86%)** have the highest conversion rates but very low session shares (<0.1%).

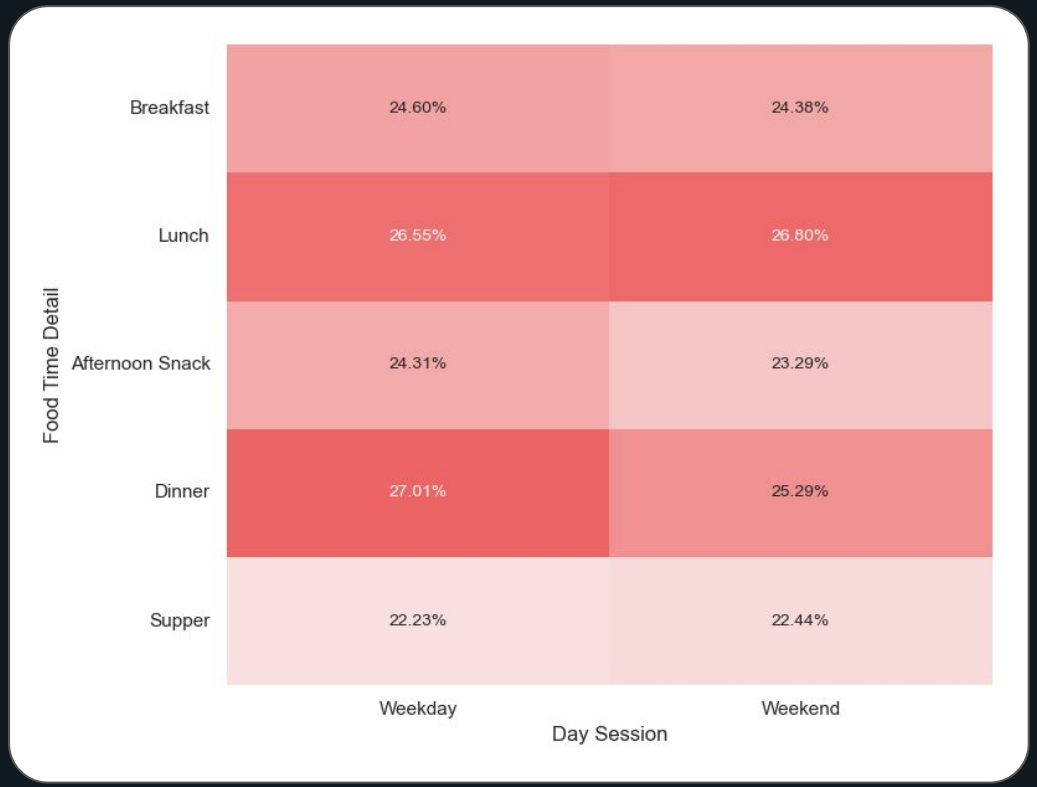


Popular cuisines like **ANEKA NASI (28.34% session share) and MINUMAN (14.16%)** have below-average conversion rates, but have the highest session shares. Indicating missed opportunities

High session share doesn't always translate to high conversion rates

Increasing the visibility of high-conversion cuisines could boost overall conversions, while improving conversion rates for popular cuisines could have a larger impact due to their high session shares.

Conversion Rates by Day and Time (%)



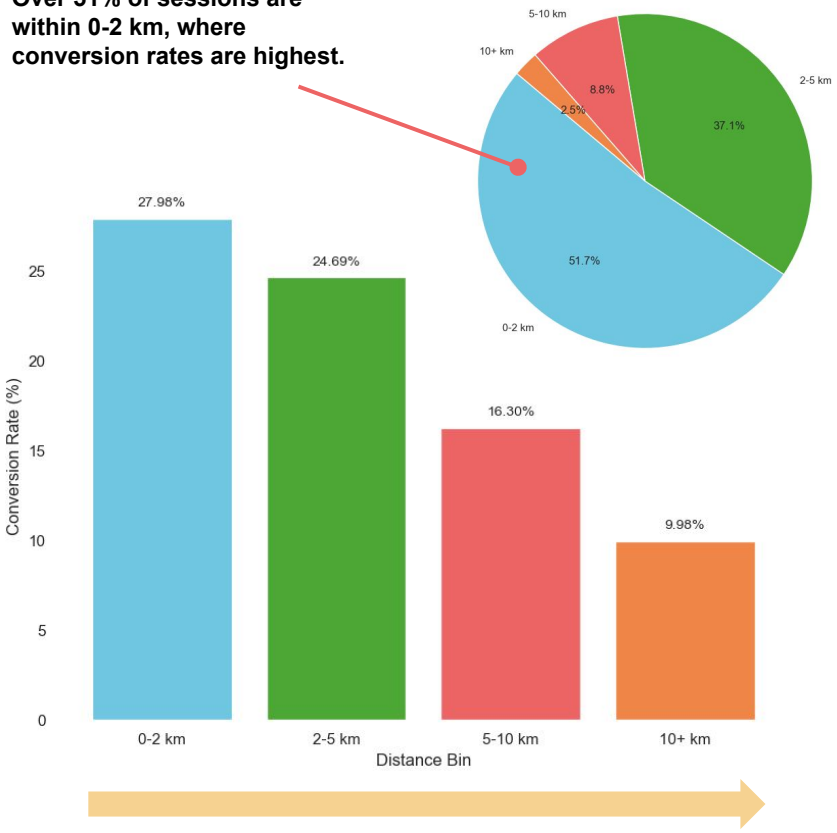
Weekday Dinner (27.01%) and Weekend Lunch (26.80%) have the highest conversion rates, making them peak periods for bookings**.**

Weekday sessions dominate activity (67.49% of sessions), with Weekday Dinner contributing the most to conversions (6.23%).

Increasing Weekday Dinner's conversion rate by 5% (from 27.01% to 32.01%) could add 1.15% to the overall conversion rate.

Improving Weekday Lunch's conversion rate by 5% (from 26.55% to 31.55%) could add 0.69% to the overall conversion rate, leveraging its 13.87% session share.

Over 51% of sessions are within 0-2 km, where conversion rates are highest.



Conversion rates decrease as distance increases, with 0-2 km having the highest at 27.98%.

Prioritize restaurants within 0-2 km in search results and recommendations to leverage their high conversion rate.

Boost conversions in the 2-5 km range with incentives like free delivery, given its 37.07% session share.

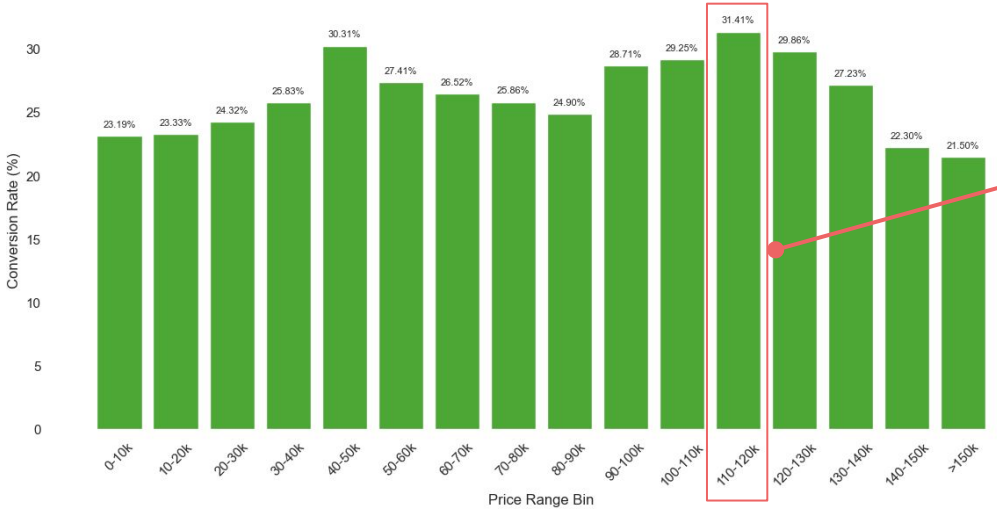
Shifting 10% of 2-5 km sessions to 0-2 km could add 0.12% to the overall conversion rate.

Increasing the 2-5 km conversion rate by 3% (from 24.69% to 27.69%) could add 1.11% to the overall conversion rate, leveraging its large session share.

Conversion rates peak at 32.62% for 4-5 star restaurants with 100+ reviews, compared to 11.29% for 0-3 stars with 0-10 reviews.

Shifting 10% of 4-5 star, 0-10 review sessions to 4-5 star, 100+ review restaurants could add 0.32% to the overall conversion rate.

Increasing the 4-5 star, 0-10 review conversion rate by 5% (from 17.33% to 22.33%) could add 1.06% to the overall conversion rate.

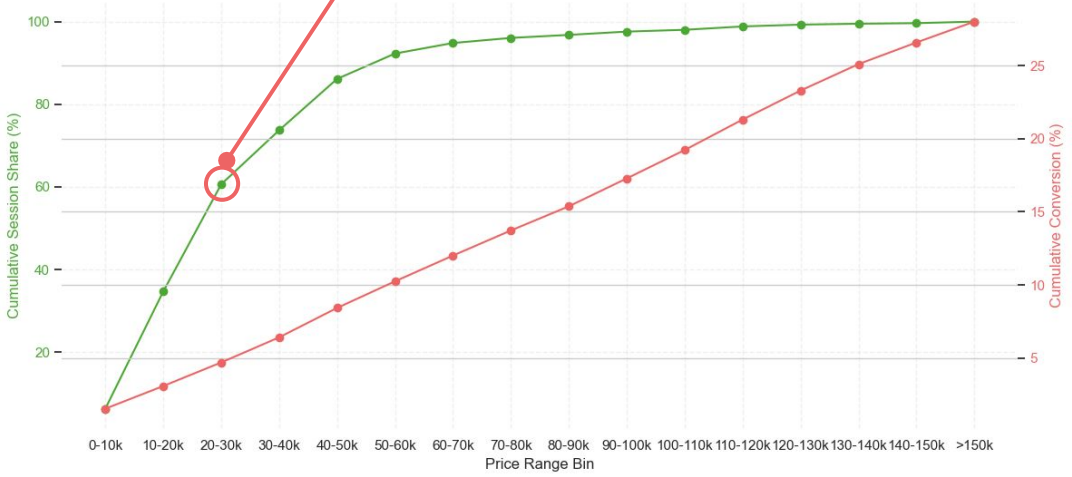


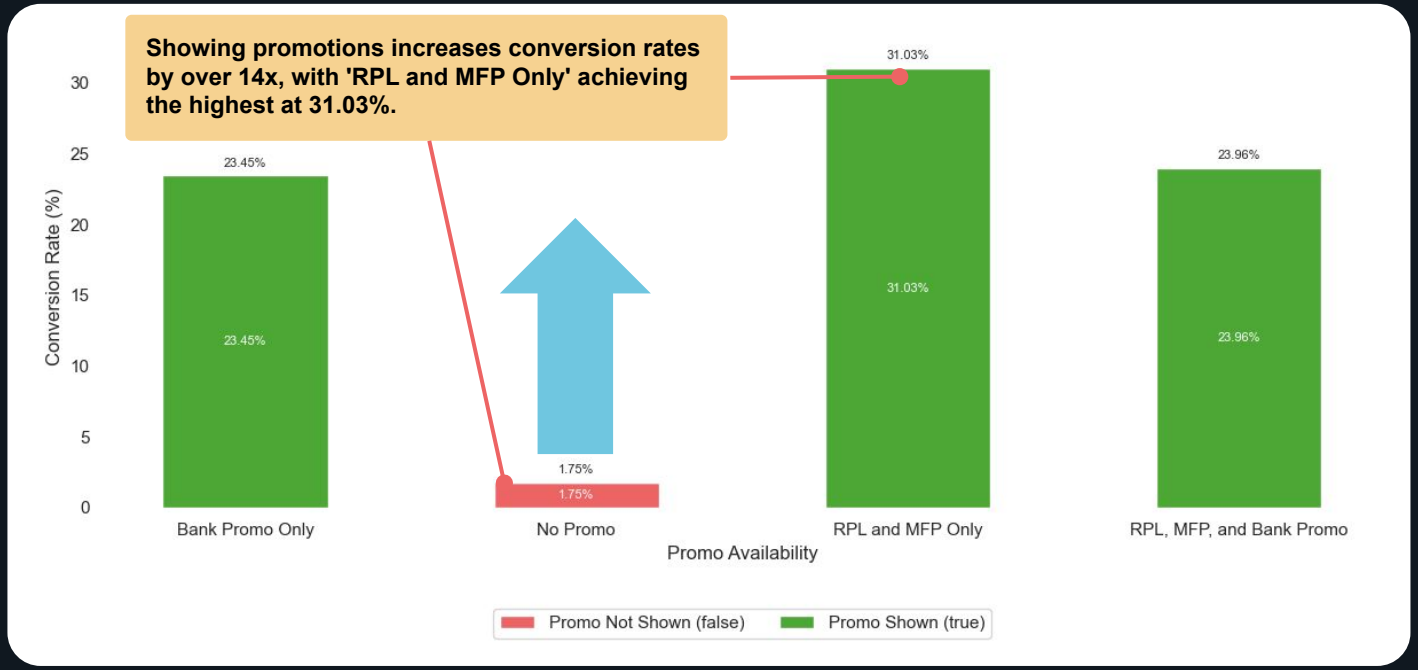
Conversion rates peak in the 110k-120k range at 31.41%, showing that mid-to-high price ranges are highly effective at converting users.

Because the lower class price bins 10k - 30k, have a high session share we also can prioritize this segment to boost conversion rates.

Promote the 40k-50k and 110k-120k Ranges: Highlight restaurants in these ranges to leverage their high conversion rates. A "Recommended Dining" section featuring these price points could increase conversions by 1-2% if their session share rises by 5%

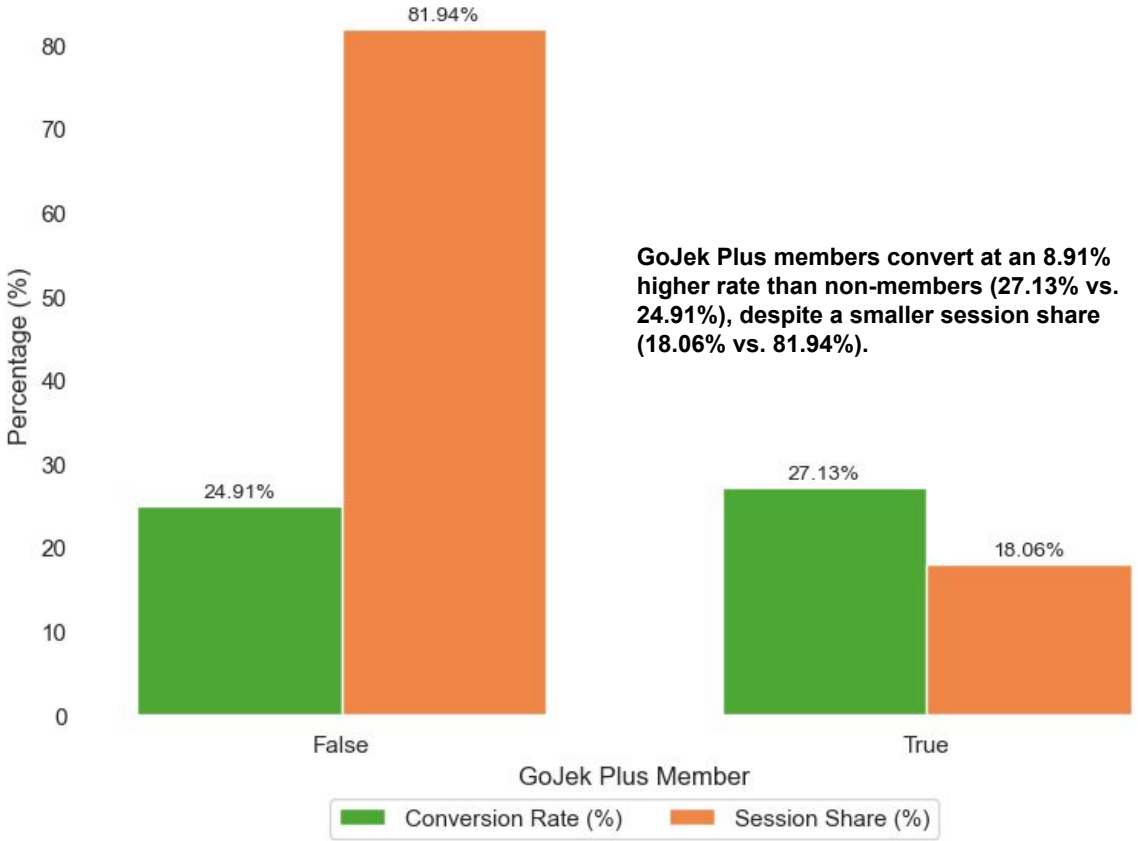
Segmented Recommendations: Use customer segmentation to target budget users with 10k-20k options and mid-to-high spenders with 40k-50k and 110k-120k options, optimizing both session share and conversion efficiency.





Showing promotions boosts conversion rates by 1437.71% (26.91% vs. 1.75% without promos). Ensure promotions are shown in 99% of sessions, prioritizing 'RPL and MFP Only' to leverage its high conversion rate.

Shifting 6% of 'No Promo' sessions to a promo-shown scenario could add 5,320 bookings



GoJek Plus members convert at an 8.91% higher rate than non-members (27.13% vs. 24.91%), despite a smaller session share (18.06% vs. 81.94%).

The low session share of GoJek Plus members (18.06%) presents a significant opportunity to increase membership and boost overall conversions.

Converting 10% of non-members to GoJek Plus could add 599 bookings by increasing their conversion rate to 27.13%.

Increasing GoJek Plus members' conversion rate by 3% could add 1,786 bookings, leveraging their 18.06% session share

Key Factors Influencing Customer Transactions via Statistical Modeling

Performed statistical modeling using **Logistic Regression** and **XGBoost** tto analyze customer transactions in the LalaFood dataset (imbalanced: 74.61% non-bookings, 25.39% bookings). After initial modeling, we tuned XGBoost to improve performance, focusing on recall and F1-score due to the class imbalance.

Performance for Test Set :

Performance	Logistic Regression	Initial XGBoost	Tuned XGBoost
Accuracy	0.7811	0.8205	0.8230
Precision	0.6922	0.6176	0.6198
Recall	0.2252	0.7414	0.7562
F1-Score	0.3398	0.8255	0.8284
AUC-ROC	0.8151	0.7941	0.8007

Tuned XGBoost is the best model because its high recall, balanced F1-score, minimal overfitting, and robust ROC-AUC make it ideal for predicting transactions in an imbalanced dataset.

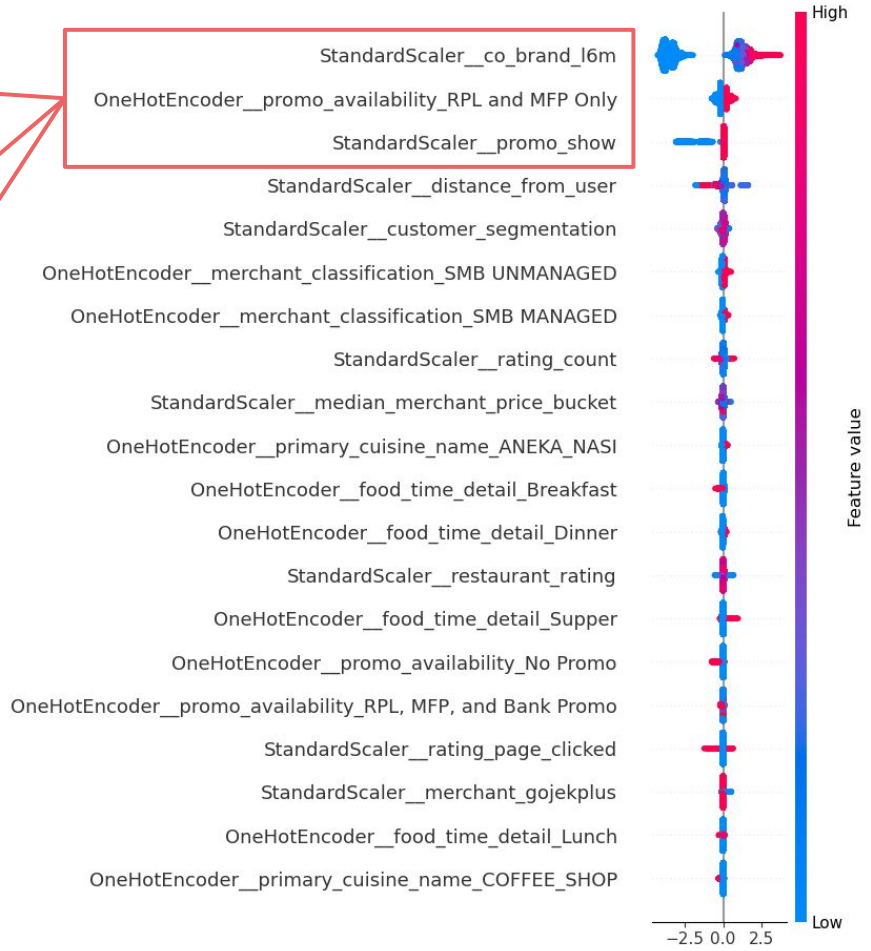
co_brand_l6m, co-branding activity over the last 6 months is a major driver of bookings. Customers are much more likely to book from restaurants with high co-branding engagement.

promo_availability_RPL and MFP Only, The RPL and MFP Only promotion type is highly effective at driving bookings.

promo_show, Showing promotions to users significantly boosts booking likelihood.

Using SHAP Value we can determine the most Influences Strong Predictors of Conversion. co-branding activity, promo availability for RPL and MFP Only, and promo show is the strong predictors of booking conversion.

SHAP Value



Negative Influences

These features increase the likelihood of a transaction.

- **co_brand_l6m,** restaurants with high co-branding activity over the last 6 months, are significantly more likely to attract bookings.
- **promo_availability_RPL and MFP Only**, RPL and MFP Only promotion type is highly effective at driving transactions. Its presence consistently increases the predicted probability of booking, making it a key promotional strategy for LalaFood.
- **promo_show**, when promotions are shown to users (high promo_show), the likelihood of booking increases. This feature's positive impact highlights the importance of visibility in promotional campaigns.

Positive Influences

These features decrease the likelihood of a transaction.

- **distance_from_user,** greater distance between the user and the restaurant reduces the likelihood of booking, likely due to higher delivery times or costs.
- **day_session_detail_Weekend**, weekend sessions decrease the likelihood of booking. This could be due to increased competition, users dining out, or different user behavior on weekends, making it a challenge for LalaFood to drive transactions during this time.
- **promo_availability_No Promo**, the absence of promotions significantly decreases the likelihood of booking.

The tuned XGBoost model is better because it increases recall (capturing more bookings), improves the F1-score (better balance), enhances ROC-AUC (better discriminative power), and significantly reduces overfitting (smaller training-test gap).

Alignment with LalaFood's Goal: The tuned XGBoost model's recall of 0.7562 ensures that 75.62% of potential bookings are identified, directly supporting LalaFood's objective of maximizing transactions. The balanced F1-score (0.8284) ensures the model doesn't overpredict bookings, maintaining efficiency.

Reliability for Production: The small training-test gap (0.0047) indicates the model generalizes well, meaning its performance on the test set is likely to translate to real-world data. The high ROC-AUC (0.8007) further confirms the model's robustness.

Recommendation and Impact Summary

Insight: GoJek Plus members have an 8.91% higher conversion rate than non-members.

- **Recommendation**: Promote the GoJek Plus program to non-members, especially during checkout, to encourage sign-ups.
- **Impact**: If 10% of non-members (81.94% session share, 270,066 sessions) sign up for GoJek Plus (27,007 sessions), their conversion rate increases from 24.91% to 27.13%. **This could lead to a 0.18% overall increase in conversions**.

Insight: Showing promotions boosts conversion rates by 1437.71%, with 'RPL and MFP Only' achieving the highest at 31.03%.

- **Recommendation**: Ensure 99% of sessions show 'RPL and MFP Only' promotions, prioritizing high-conversion price bins (e.g., 40k-50k) and GoJek Plus members.
- **Impact**: If 6% of sessions (19,776 sessions, currently 'No Promo' at 1.75%) are shifted to a promo-shown scenario (26.91%), **this could boost overall conversions by 1.51%**

Insight: Weekday Dinner has a high conversion rate (27.01%) and contributes 6.23% to overall conversions (23.07% session share).

- **Recommendation**: Target Weekday Dinner by increasing its conversion rate by 5% (from 27.01% to 32.01%) with time-limited incentives and top-rated restaurant recommendations.
- **Impact**: With 23.07% session share (76,042 sessions), a 5% increase in conversion rate **could lead to a 1.67% overall increase in conversions.**

Insight: 51% of sessions are within 0-2 km, with a conversion rate of 27.98%; niche cuisines have high conversion potential.

- **Recommendation**: Implement a “Flexible Nearby Restaurants” feature, dynamically recommending 0-2 km, 4-5 star restaurants with 100+ reviews, including niche cuisines, during Weekday Dinner. Increase the 0-2 km conversion rate by 2.5% (to 30.48%).
- **Impact**: For 0-2 km sessions (168,091 sessions), a 2.5% increase outside Weekday Dinner (50% of sessions, 84,046 sessions) **could lead to a 0.64% overall increase in conversions.**

Go-to-Market Strategy

- **Product Update**: Roll out a “Flexible Nearby Restaurants” feature in the LalaFood app, defaulting search results to 0-2 km with a filter for distance and cuisine variety. Add GoJek Plus sign-up pop-ups at checkout. Automate 99% promotion display with 'RPL & MFP Only'.
- **Marketing Campaign**: Launch a “Weekday Dinner Deals” campaign, promoting 'RPL & MFP Only' promotions and nearby restaurants via push notifications at 5:30 PM (“10% Off Top-Rated Nearby Restaurants, 6-9 PM”).
- **Loyalty Program Push**: Target non-members with in-app notifications and emails (3+ orders/month), offering a free GoJek Plus trial.
- **A/B Testing**: Test the “Flexible Nearby Restaurants” feature and promotion strategy with a small user group to measure conversion uplift before a full rollout.
- **Timeline**:
    - November 2024: Launch GoJek Plus trial, automate promotions.
    - December 2024: Roll out Weekday Dinner and nearby restaurant campaigns, evaluate results by year-end.

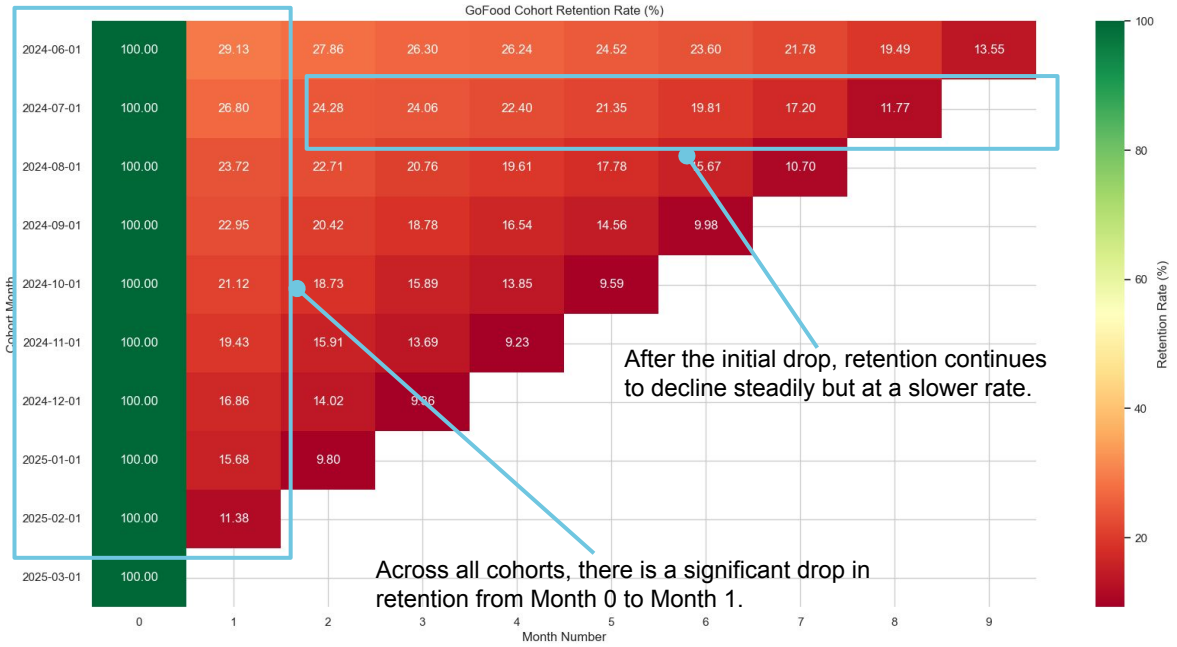
Impact Summary

- **Total Conversion Rate Increase**: Combining the above recommendations, LalaFood could see a 0.18% + 1.51% + 1.67% + 0.64% = 3.48% absolute increase in conversion rates (from 25% to 28%), a ≈ 13% relative increase, meeting the year-end goal.
- **Business Impact**: With 329,590 monthly sessions, this could lead to an additional 11,477 bookings per month (329,590×0.0348)

Challenge 2

LalaFood Product Retention Analysis

Cohort Analysis



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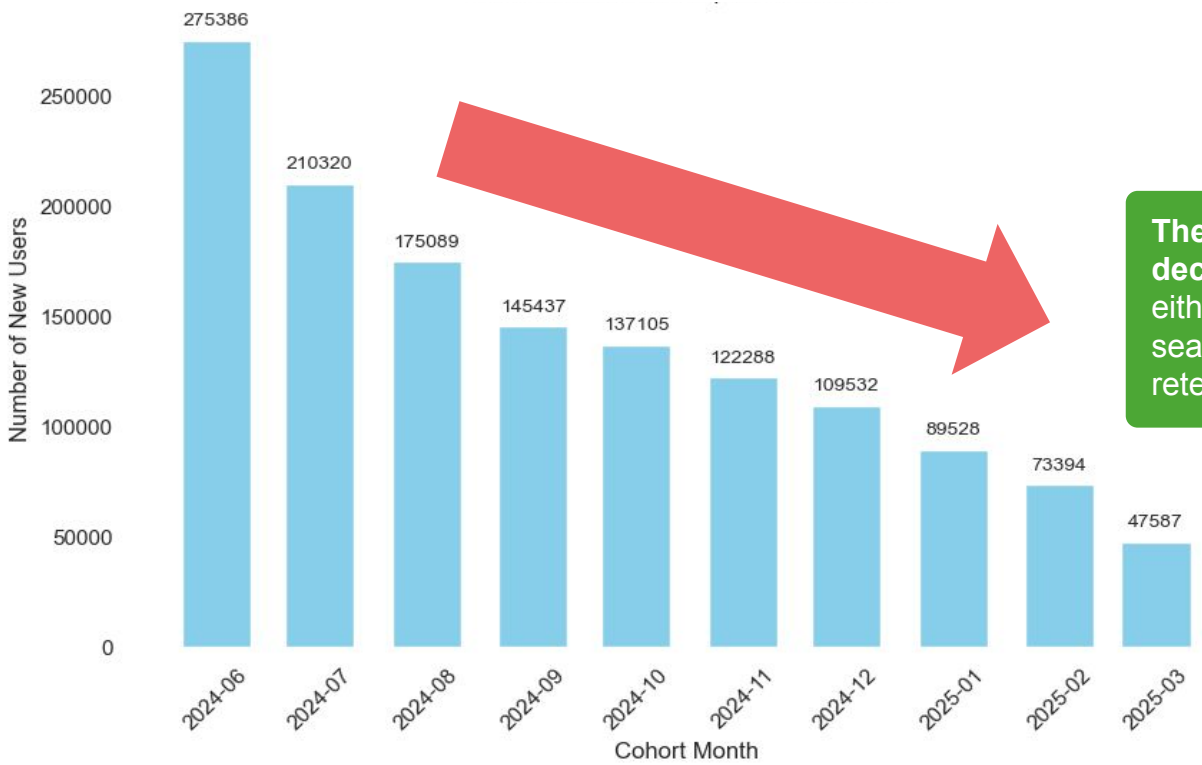
Cohort: ***Click here***

Significant drop in retention from Month 0 to Month 1. This indicates that a large majority of users do not return after their first transaction.

Retention continues to decline steadily but at a slower rate. The decline becomes more pronounced after Month 4 or 5, with retention rates often falling below 15% by Month 6.

Number of New Users per Cohort Month



The number of new users (cohort size) decreases each month. This suggests either a decline in user acquisition or seasonality effects, which could impact retention strategies

Summary of Insights and Strategies

Key Trends and Drop-off Points:

- The most significant drop-off occurs from Month 0 to Month 1 (70–88% drop), indicating users don’t return after their first transaction.
- A secondary drop-off happens around Month 4 to Month 5, where retention falls below 15%.
- Recent cohorts (e.g., January 2025) show worse retention, possibly due to user experience issues or seasonal effects.
- Long-term retention stabilizes at 10–15%, showing a small loyal user base.

Actionable Strategies:

- **Month 0–1**: Enhance onboarding, incentivize the second transaction, and improve the first transaction experience.
- **Month 4–5**: Introduce loyalty programs, personalized re-engagement, and subscription models.
- **Long-Term**: Offer exclusive benefits for loyal users and build a community.
- **Recent Cohorts**: Investigate feedback, address user pain points, and adjust for seasonal trends.
- **General**: Leverage data analytics, improve app usability, and benchmark against competitors.