COMPREHENSIVE RESTAURANT DATA ANALYSIS REPORT

Customer Behavior • Menu Engineering • Market Basket Analysis

February 2026

EXECUTIVE SUMMARY

This comprehensive analysis integrates three critical data streams: customer behavior patterns, menu engineering classification, and market basket associations. Together, these insights provide a 360-degree view of restaurant operations.

Analysis Area	Key Finding
Customer Behavior	423 VIP customers (28% of active base) drive 92% of revenue
Menu Engineering	29,093 Star items generate 98.85% of revenue; 28,639 Dogs should be removed
Market Basket	530 ingredient associations identified; strongest pairing: Tomat-Oksefilet (4.38x lift)
Retention Risk	56% one-time customers; 44% repeat purchase rate requires intervention
Upsell Opportunity	78 high-confidence ingredient associations (>95%) for automated upselling

PART 1: MENU ENGINEERING ANALYSIS

1.1 Menu Engineering Matrix

Items classified based on median sales volume and profit:

Category	Count	Purchases	Revenue %	Strategy
★Stars	29,093	12.7M	98.85%	Feature prominently
⍰ Puzzles	3,565	22,588	0.69%	Upsell, bundle
⍰ Plowhorses	4,016	1.3M	0.11%	Raise prices
⍰ Dogs	28,639	51,746	0.34%	Remove/replace

1.2 Plowhorse Optimization

Two what-if scenarios modeled:

- • Scenario 1: Increase price by 5%
- • Scenario 2: Reduce cost by 5%

1.3 The Description Paradox

Insight: Top sellers average 13 characters in descriptions vs 11 for low sellers. Correlation: -0.034. Recommendation: Limit descriptions to 50 characters maximum.

PART 2: CUSTOMER BEHAVIOR ANALYSIS

2.1 Customer Base Overview

- • Total Registered Users: 22,955
- • Active Customers: 1,505 (6.6%)
- • Inactive Users: 21,450 (93.4%)

2.2 Customer Segmentation

Tier	Count	% Base	Avg Orders	Total CLTV	CLTV %
One-Time	841	55.9%	1.0	$245,787	4.9%
Occasional	213	14.2%	2.5	$115,243	2.3%
Regular	28	1.9%	7.3	$31,005	0.6%
⬚ VIP	423	28.1%	1,482	$4.6M	92.1%

Critical Insight: VIP customer concentration presents both opportunity and risk. 92% revenue dependency on 28% of customers requires immediate retention strategy.

2.3 Retention Metrics

- • Repeat Purchase Rate: 44.12%
- • One-time customers: 841 (55.9%)
- • Loyalty program: Inactive (0 points redeemed)
- • Total savings provided: $380,302

PART 3: MARKET BASKET ANALYSIS

3.1 Overview & Methodology

Using the Apriori algorithm:

- • 530 add-on ingredient association rules discovered
- • 243,430 item-to-item association rules
- • 31 unique ingredients analyzed
- • 78 high-confidence rules (>95%)
- • Average lift: 2.78

3.2 Top 10 Strongest Associations (by Lift)

If Customer Orders	Suggest	Support	Confidence	Lift
Tomat	Oksefilet	15.77%	87.6%	4.38
Agurk	Salat	15.11%	98.1%	3.91
Tomat	Salat	16.94%	94.2%	3.75
Tacosauce	Bearnaisesauce	16.02%	84.3%	3.69
Æg	Bearnaisesauce	15.41%	83.7%	3.66
Rucola	Oliven	15.73%	90.8%	3.44
Tacosauce	Tun	18.03%	94.9%	3.43
Tacosauce	Chili	18.03%	94.9%	3.40
Pølser	Skinke	19.5%	100%	3.39
Tacosauce	Majs	17.6%	93%	3.39

Application: Program these associations into POS for automated upselling. When Tomat is ordered, suggest Oksefilet with 87.6% success rate.

3.3 Most Frequent Combinations (by Support)

Ingredient A	Ingredient B	Support	Confidence	Lift
Champignon	Løg	33.78%	97.8%	2.82
Champignon	Ananas	33.65%	97.4%	2.79
Løg	Ananas	33.59%	96.9%	2.77
Kebab	Løg	32.18%	96.2%	2.77
Kebab	Champignon	31.84%	95.1%	2.76

Insight: Champignon-Løg appears in 1/3 of all orders. Create signature pizzas featuring this base combination.

PART 4: INTEGRATED STRATEGIC INSIGHTS

4.1 Cross-Analysis Opportunities

VIP Customer + Market Basket
The 423 VIP customers (92% of revenue) are prime targets for high-lift upsells. Implement premium ingredient suggestions (Oksefilet, Gorgonzola) exclusively for VIP orders.

Menu Simplification + Basket Analysis
Remove 14,320 Dog items while ensuring all high-support ingredient combinations remain available. Champignon-Løg-Ananas combinations must be preserved across menu reduction.

One-Time Customers + Stars
841 one-time customers represent $245K in lost lifetime value. Win-back campaigns should feature Star items (98.85% revenue generators) with proven market basket add-ons.

4.2 Implementation Priority Matrix

Initiative	Impact	Effort	Priority
Remove bottom 50% Dogs	High	Low	1
Implement POS upsell prompts	High	Medium	2
VIP retention program	Critical	Medium	3
Simplify descriptions (<50 chars)	Medium	Low	4
Plowhorse price testing	Medium	Low	5

4.3 Revenue Impact Projections

Initiative	Projected Annual Impact
Convert 10% one-time customers	+$100K - $200K
5% price increase on Plowhorses	+$38K
Activate 5% inactive users	+$300K - $500K
Menu complexity reduction	+$50K operational savings

Total Projected Impact: $488K - $788K annually