Comprehensive Top Association Rules Report

Total Transactions: 23,054

Executive Summary
The analysis of market-basket associations reveals key co-purchase patterns among customers. Across all transactions, the strongest relationship is between **Beetroot, Potato, Red Onion A** and **Red Onion B, Tomato**, with a **Lift of 5.58** and **Confidence of 31.1%**. This means customers who buy **Beetroot, Potato, Red Onion A** are **5.58×** more likely to also buy **Red Onion B, Tomato** than random chance — an ideal target for co-promotion or bundling. The following pages summarize the top patterns across three perspectives: **Core Basket:** High-support and high-confidence rules (frequent pairings). **Hidden Opportunities:** High-lift rules (rare but powerful relationships). **Strategic Focus:** Balanced rules combining frequency and strength.

1. Top 15 Rules by Support & Confidence

High-frequency patterns with high reliability. Ideal for core product bundling.

Antecedents	Consequents	Support	Confidence	Lift	Insight
Beetroot	Carrot	6.4%	36.2%	1.60	Buyers of Beetroot are 1.6× more likely to also buy Carrot.
Beetroot, Potato	Carrot	5.4%	37.6%	1.67	Buyers of Beetroot, Potato are 1.7× more likely to also buy Carrot.
Carrot, Potato	Beetroot	5.4%	32.1%	1.80	Buyers of Carrot, Potato are 1.8× more likely to also buy Beetroot.
Beetroot	Carrot, Potato	5.4%	30.5%	1.80	Buyers of Beetroot are 1.8× more likely to also buy Carrot, Potato.
Carrot, Potato, Red Onion A	Tomato	4.2%	86.3%	1.56	Buyers of Carrot, Potato, Red Onion A are 1.6× more likely to also buy Tomato.
Carrot, Red Onion A	Potato, Tomato	4.2%	67.1%	1.57	Buyers of Carrot, Red Onion A are 1.6× more likely to also buy Potato, Tomato.
Carrot, Tomato	Potato, Red Onion A	4.2%	31.4%	1.51	Buyers of Carrot, Tomato are 1.5× more likely to also buy Potato, Red Onion A.
Beetroot, Tomato	Carrot	4.0%	42.9%	1.90	Buyers of Beetroot, Tomato are 1.9× more likely to also buy Carrot.
Carrot, Tomato	Beetroot	4.0%	30.3%	1.71	Buyers of Carrot, Tomato are 1.7× more likely to also buy Beetroot.
Beetroot, Tomato	Red Onion A	3.9%	41.1%	1.53	Buyers of Beetroot, Tomato are 1.5× more likely to also buy Red Onion A.
Beetroot, Potato, Tomato	Carrot	3.6%	46.8%	2.07	Buyers of Beetroot, Potato, Tomato are 2.1× more likely to also buy Carrot.

Antecedents	Consequents	Support	Confidence	Lift	Insight
Beetroot, Tomato	Carrot, Potato	3.6%	37.9%	2.25	Buyers of Beetroot, Tomato are 2.2× more likely to also buy Carrot, Potato.
Carrot, Potato, Tomato	Beetroot	3.6%	34.1%	1.92	Buyers of Carrot, Potato, Tomato are 1.9× more likely to also buy Beetroot.
Beetroot, Red Onion A	Potato, Tomato	3.3%	68.5%	1.60	Buyers of Beetroot, Red Onion A are 1.6× more likely to also buy Potato, Tomato.
Beetroot, Potato, Tomato	Red Onion A	3.3%	43.2%	1.61	Buyers of Beetroot, Potato, Tomato are 1.6× more likely to also buy Red Onion A.

2. Top 15 Rules by Lift

Strongest non-random associations. Reveal hidden or premium affinities.

Antecedents	Consequents	Support	Confidence	Lift	Insight
Beetroot, Potato, Red Onion A	Red Onion B, Tomato	1.2%	31.1%	5.58	Buyers of Beetroot, Potato, Red Onion A are 5.6× more likely to also buy Red Onion B, Tomato.
Carrot, Red Onion B	Beetroot, Potato, Tomato	1.0%	39.8%	5.20	Buyers of Carrot, Red Onion B are 5.2× more likely to also buy Beetroot, Potato, Tomato.
Carrot, Potato, Red Onion B	Beetroot, Tomato	1.0%	48.4%	5.12	Buyers of Carrot, Potato, Red Onion B are 5.1× more likely to also buy Beetroot, Tomato.
Potato, Red Onion A, Red Onion B	Beetroot, Tomato	1.2%	46.1%	4.88	Buyers of Potato, Red Onion A, Red Onion B are 4.9× more likely to also buy Beetroot, Tomato.
Red Onion A, Red Onion B	Beetroot, Potato, Tomato	1.2%	37.2%	4.86	Buyers of Red Onion A, Red Onion B are 4.9× more likely to also buy Beetroot, Potato, Tomato.
Carrot, Potato, Red Onion A	Beetroot, Tomato	2.0%	40.7%	4.31	Buyers of Carrot, Potato, Red Onion A are 4.3× more likely to also buy Beetroot, Tomato.
Carrot, Red Onion B	Beetroot, Tomato	1.1%	40.5%	4.29	Buyers of Carrot, Red Onion B are 4.3× more likely to also buy Beetroot, Tomato.
Carrot, Red Onion A	Beetroot, Potato, Tomato	2.0%	31.6%	4.13	Buyers of Carrot, Red Onion A are 4.1× more likely to also buy Beetroot, Potato, Tomato.
Red Onion A, Red Onion B	Beetroot, Tomato	1.3%	38.0%	4.02	Buyers of Red Onion A, Red Onion B are 4.0× more likely to also buy Beetroot, Tomato.

Antecedents	Consequents	Support	Confidence	Lift	Insight
Red Onion A, Red Onion B, Tomato	Beetroot, Potato	1.2%	56.7%	3.94	Buyers of Red Onion A, Red Onion B, Tomato are 3.9× more likely to also buy Beetroot, Potato.
Beetroot, Red Onion A	Carrot, Potato, Tomato	2.0%	41.0%	3.90	Buyers of Beetroot, Red Onion A are 3.9× more likely to also buy Carrot, Potato, Tomato.
Beetroot, Red Onion B	Carrot, Potato, Tomato	1.0%	40.4%	3.85	Buyers of Beetroot, Red Onion B are 3.9× more likely to also buy Carrot, Potato, Tomato.
Beetroot, Red Onion A, Tomato	Potato, Red Onion B	1.2%	32.2%	3.78	Buyers of Beetroot, Red Onion A, Tomato are 3.8× more likely to also buy Potato, Red Onion B.
Beetroot, Potato, Red Onion A, Tomato	Red Onion B	1.2%	37.8%	3.73	Buyers of Beetroot, Potato, Red Onion A, Tomato are 3.7× more likely to also buy Red Onion B.
Beetroot, Potato, Red Onion A	Carrot, Tomato	2.0%	49.2%	3.69	Buyers of Beetroot, Potato, Red Onion A are 3.7× more likely to also buy Carrot, Tomato.

3. Top 15 Rules by Combined Strength (Support + Confidence + Lift)

The 'best of all worlds': frequent, reliable, and strongly associated. Highest strategic value.

Antecedents	Consequents	Support	Confidence	Lift	Insight
Carrot, Potato, Red Onion A	Tomato	4.2%	86.3%	1.56	Buyers of Carrot, Potato, Red Onion A are 1.6× more likely to also buy Tomato.
Beetroot, Carrot, Potato, Red Onion A	Tomato	2.0%	94.8%	1.71	Buyers of Beetroot, Carrot, Potato, Red Onion A are 1.7× more likely to also buy Tomato.
Beetroot, Carrot, Red Onion A	Tomato	2.1%	91.4%	1.65	Buyers of Beetroot, Carrot, Red Onion A are 1.7× more likely to also buy Tomato.
Carrot, Potato, Red Onion B	Beetroot, Tomato	1.0%	48.4%	5.12	Buyers of Carrot, Potato, Red Onion B are 5.1× more likely to also buy Beetroot, Tomato.
Carrot, Red Onion A	Potato, Tomato	4.2%	67.1%	1.57	Buyers of Carrot, Red Onion A are 1.6× more likely to also buy Potato, Tomato.
Beetroot, Carrot, Red Onion A	Potato, Tomato	2.0%	85.7%	2.01	Buyers of Beetroot, Carrot, Red Onion A are 2.0× more likely to also buy Potato, Tomato.

Antecedents	Consequents	Support	Confidence	Lift	Insight
Beetroot	Carrot	6.4%	36.2%	1.60	Buyers of Beetroot are 1.6× more likely to also buy Carrot.
Potato, Red Onion A, Red Onion B	Beetroot, Tomato	1.2%	46.1%	4.88	Buyers of Potato, Red Onion A, Red Onion B are 4.9× more likely to also buy Beetroot, Tomato.
Carrot, Potato, Red Onion A, Red Onion B	Tomato	1.2%	94.8%	1.71	Buyers of Carrot, Potato, Red Onion A, Red Onion B are 1.7× more likely to also buy Tomato.
Carrot, Red Onion B	Beetroot, Potato, Tomato	1.0%	39.8%	5.20	Buyers of Carrot, Red Onion B are 5.2× more likely to also buy Beetroot, Potato, Tomato.
Beetroot, Potato, Red Onion A	Red Onion B, Tomato	1.2%	31.1%	5.58	Buyers of Beetroot, Potato, Red Onion A are 5.6× more likely to also buy Red Onion B, Tomato.
Red Onion A, Red Onion B, Tomato	Beetroot, Potato	1.2%	56.7%	3.94	Buyers of Red Onion A, Red Onion B, Tomato are 3.9× more likely to also buy Beetroot, Potato.
Beetroot, Red Onion A	Potato, Tomato	3.3%	68.5%	1.60	Buyers of Beetroot, Red Onion A are 1.6× more likely to also buy Potato, Tomato.
Potato, Red Onion A, Red Onion B, Tomato	Beetroot	1.2%	62.6%	3.52	Buyers of Potato, Red Onion A, Red Onion B, Tomato are 3.5× more likely to also buy Beetroot.
Carrot, Potato, Red Onion A	Beetroot, Tomato	2.0%	40.7%	4.31	Buyers of Carrot, Potato, Red Onion A are 4.3× more likely to also buy Beetroot, Tomato.

• *Support = frequency of co-purchase | Confidence = reliability of rule | Lift = strength vs. random chance*
• *All tables use word-wrapping for long itemsets. Rules sorted within each section as described.*

4. Business Recommendations

Key actions derived from the patterns observed in this report:

• Bundle high-lift item pairs in weekly promotions or combo discounts.
• Place top-support items together in flash sales.
• Use hidden opportunity rules (high lift, low support) to design discovery campaigns.