

In-Class Exercise: Computing Support, Confidence, and Lift

Here are the baskets from eight shoppers:

Basket	Items
1	Coke, Pop-Tarts, Donuts
2	Cheerios, Coke, Donuts, Napkins
3	Waffles, Cheerios, Coke, Napkins
4	Bread, Milk, Coke, Napkins
5	Coffee, Bread, Waffles
6	Coke, Bread, Pop-Tarts
7	Milk, Waffles, Pop-Tarts
8	Coke, Pop-Tarts, Donuts, Napkins

Compute the support, confidence, and lift for the following rules:

	Rule	Support	Confidence	Lift
1	{Coke, Pop-Tarts} → {Donuts}			
2	{Coke} → {Pop-Tarts, Donuts}			
3	{Coke} → {Donuts, Napkins}			
4	{Coffee} → {Bread, Waffles}			
5	{Coke} → {Donuts}			

- 1) Which rule has the strongest association? How do you know?

- 2) Consider a customer who is walking through the store with only a bottle of coke in their shopping cart. You then see them put pop-tarts in their cart. Do you become more or less sure than you were before that they will buy donuts? Explain.

Computing lift based on aggregate purchase numbers

1) Consider two products, the Squishee and the Peanut Butter Bowl. Here's a profile of 18,500 customers:

		Squishee	
		No	Yes
Peanut Butter Bowl	No	10000	2000
	Yes	1500	5000

18500

What is the lift for the rule {Peanut Butter Bowl} → {Squishee}?
 (Are people who bought a Peanut Butter Bowl more likely than chance to buy a Squishee too?)

2) Consider two products, Potato Chips and Krusty-O's. Here's a profile of 10,500 customers:

		Krusty-O's	
		No	Yes
Potato Chips	No	5000	1000
	Yes	4000	500

10500

What is the lift for the rule {Potato Chips} → {Krusty-O's}?
 (Are people who bought Potato Chips more likely than chance to buy Krusty-O's too?)