**WEKA Market Basket Analysis**

1. What departments are items purchased from most frequently (individually and in combination)?

Butcher shop, paper goods, bakery, canned goods, and fruits/veggies are the top 5 departments at Kroger. I recommend placing paper products close to the food section of the store.

1. butchershop=Y papergoods=Y 548 ==> deli=Y 524 <conf:(0.96)> lift:(1.16) lev:(0.07) [71] conv:(3.84)

2. bakery=Y cannedgoods=Y 551 ==> deli=Y 523 <conf:(0.95)> lift:(1.15) lev:(0.07) [68] conv:(3.32)

3. butchershop=Y cannedgoods=Y 550 ==> deli=Y 521 <conf:(0.95)> lift:(1.15) lev:(0.07) [67] conv:(3.21)

4. fruits&vegs=Y bakery=Y 577 ==> deli=Y 545 <conf:(0.94)> lift:(1.14) lev:(0.07) [68] conv:(3.06)

5. cannedgoods=Y papergoods=Y 552 ==> deli=Y 521 <conf:(0.94)> lift:(1.14) lev:(0.07) [65] conv:(3.02)

6. papergoods=Y 646 ==> deli=Y 609 <conf:(0.94)> lift:(1.14) lev:(0.08) [76] conv:(2.98)

7. bakery=Y cannedgoods=Y 551 ==> fruits&vegs=Y 519 <conf:(0.94)> lift:(1.36) lev:(0.14) [136] conv:(5.09)

8. bakery=Y 729 ==> deli=Y 686 <conf:(0.94)> lift:(1.14) lev:(0.08) [84] conv:(2.9)

9. fishmkt=Y papergoods=Y 535 ==> deli=Y 503 <conf:(0.94)> lift:(1.14) lev:(0.06) [61] conv:(2.84)

10. bakery=Y health&beauty=Y 601 ==> deli=Y 562 <conf:(0.94)> lift:(1.13) lev:(0.07) [66] conv:(2.63)

1. What departments do males purchase from most frequently (individually and in combination)?

Men buy most frequently from the Deli, Beer Bar, and Bakery. This shows the three sections should be placed near each other, and any men-specific products should be placed within eyesight.

1. deli=Y 297 ==> gender=M 297 <conf:(1)> lift:(1) lev:(0) [0] conv:(0)

2. beerbar=Y 264 ==> gender=M 264 <conf:(1)> lift:(1) lev:(0) [0] conv:(0)

3. deli=Y beerbar=Y 252 ==> gender=M 252 <conf:(1)> lift:(1) lev:(0) [0] conv:(0)

4. bakery=Y 237 ==> gender=M 237 <conf:(1)> lift:(1) lev:(0) [0] conv:(0)

5. deli=Y bakery=Y 227 ==> gender=M 227 <conf:(1)> lift:(1) lev:(0) [0] conv:(0)

6. bakery=Y 237 ==> deli=Y 227 <conf:(0.96)> lift:(1.01) lev:(0.01) [2] conv:(1.17)

7. gender=M bakery=Y 237 ==> deli=Y 227 <conf:(0.96)> lift:(1.01) lev:(0.01) [2] conv:(1.17)

8. bakery=Y 237 ==> gender=M deli=Y 227 <conf:(0.96)> lift:(1.01) lev:(0.01) [2] conv:(1.17)

9. beerbar=Y 264 ==> deli=Y 252 <conf:(0.95)> lift:(1.01) lev:(0.01) [2] conv:(1.1)

10. gender=M beerbar=Y 264 ==> deli=Y 252 <conf:(0.95)> lift:(1.01) lev:(0.01) [2] conv:(1.1)

1. What departments do females purchase from most frequently (individually and in combination)?

Women purchase most frequently from the fish market, health/beauty, fruits/veggies, and canned goods departments at Kroger. I recommend placing advertisements in the Health/Beauty section about the benefits of fish oil on the skin.

1. fishmkt=Y 653 ==> gender=F 653 <conf:(1)> lift:(1) lev:(0) [0] conv:(0)

2. health&beauty=Y 586 ==> gender=F 586 <conf:(1)> lift:(1) lev:(0) [0] conv:(0) 3. fruits&vegs=Y 577 ==> gender=F 577 <conf:(1)> lift:(1) lev:(0) [0] conv:(0)

4. cannedgoods=Y 577 ==> gender=F 577 <conf:(1)> lift:(1) lev:(0) [0] conv:(0)

5. fishmkt=Y health&beauty=Y 558 ==> gender=F 558 <conf:(1)> lift:(1) lev:(0) [0] conv:(0)

6. fruits&vegs=Y fishmkt=Y 549 ==> gender=F 549 <conf:(1)> lift:(1) lev:(0) [0] conv:(0)

7. health&beauty=Y 586 ==> fishmkt=Y 558 <conf:(0.95)> lift:(1) lev:(0) [0] conv:(0.97)

8. gender=F health&beauty=Y 586 ==> fishmkt=Y 558 <conf:(0.95)> lift:(1) lev:(0) [0] conv:(0.97)

9. health&beauty=Y 586 ==> gender=F fishmkt=Y 558 <conf:(0.95)> lift:(1) lev:(0) [0] conv:(0.97)

10. gender=F 686 ==> fishmkt=Y 653 <conf:(0.95)> lift:(1) lev:(0) [0] conv:(0.97)

1. What departments do 20 to 30 year-olds purchase from most frequently (individually and in combination)?

People aged 20-30 mostly buy from the Deli, Fish Market, Milk/Dairy, Beer Bar, and the Cheese department. I recommend placing the Deli next to the Beer Bar so this group can enjoy a cold brew with their lunch.

1. deli=Y 246 ==> agegrp=2030s 246 <conf:(1)> lift:(1) lev:(0) [0] conv:(0)

2. fishmkt=Y 220 ==> agegrp=2030s 220 <conf:(1)> lift:(1) lev:(0) [0] conv:(0)

3. milk&dairy=Y 210 ==> agegrp=2030s 210 <conf:(1)> lift:(1) lev:(0) [0] conv:(0)

4. deli=Y fishmkt=Y 210 ==> agegrp=2030s 210 <conf:(1)> lift:(1) lev:(0) [0] conv:(0)

5. beerbar=Y 209 ==> agegrp=2030s 209 <conf:(1)> lift:(1) lev:(0) [0] conv:(0)

6. cheeseshop=Y 206 ==> agegrp=2030s 206 <conf:(1)> lift:(1) lev:(0) [0] conv:(0)

7. agegrp=2030s 257 ==> deli=Y 246 <conf:(0.96)> lift:(1) lev:(0) [0] conv:(0.92)

8. fishmkt=Y 220 ==> deli=Y 210 <conf:(0.95)> lift:(1) lev:(-0) [0] conv:(0.86)

9. agegrp=2030s fishmkt=Y 220 ==> deli=Y 210 <conf:(0.95)> lift:(1) lev:(-0) [0] conv:(0.86)

10. fishmkt=Y 220 ==> agegrp=2030s deli=Y 210 <conf:(0.95)> lift:(1) lev:(-0) [0] conv:(0.86)

1. What departments do 40 to 50 year-olds purchase from most frequently (individually and in combination)?

People aged 40-50 most often purchase from Canned Goods, Fruits/Veggies, Coffee Shops, and the Wine Cellar. I recommend sending this segment emails with promotional coupons for these categories of items.

1. cannedgoods=Y 237 ==> agegrp=4050s 237 <conf:(1)> lift:(1) lev:(0) [0] conv:(0)

2. fruits&vegs=Y 234 ==> agegrp=4050s 234 <conf:(1)> lift:(1) lev:(0) [0] conv:(0)

3. coffeeshop=Y 231 ==> agegrp=4050s 231 <conf:(1)> lift:(1) lev:(0) [0] conv:(0)

4. fruits&vegs=Y cannedgoods=Y 223 ==> agegrp=4050s 223 <conf:(1)> lift:(1) lev:(0) [0] conv:(0)

5. cannedgoods=Y coffeeshop=Y 221 ==> agegrp=4050s 221 <conf:(1)> lift:(1) lev:(0) [0] conv:(0)

6. fruits&vegs=Y coffeeshop=Y 217 ==> agegrp=4050s 217 <conf:(1)> lift:(1) lev:(0) [0] conv:(0)

7. winecellar=Y 212 ==> agegrp=4050s 212 <conf:(1)> lift:(1) lev:(0) [0] conv:(0)

8. coffeeshop=Y 231 ==> cannedgoods=Y 221 <conf:(0.96)> lift:(1.01) lev:(0) [1] conv:(1.01)

9. agegrp=4050s coffeeshop=Y 231 ==> cannedgoods=Y 221 <conf:(0.96)> lift:(1.01) lev:(0) [1] conv:(1.01)

10. coffeeshop=Y 231 ==> agegrp=4050s cannedgoods=Y 221 <conf:(0.96)> lift:(1.01) lev:(0) [1] conv:(1.01)

1. What departments do 60- to 70-year-olds purchase from most frequently (individually and in combination)?

People aged 60-70 most often buy from Health/Beauty, Deli, Wine Cellar, and the Bakery. I recommend placing the Health/Beauty aisle next to the food section so they do not have to walk too far.

1. health&beauty=Y 430 ==> agegrp=6070s 430 <conf:(1)> lift:(1) lev:(0) [0] conv:(0)

2. deli=Y 380 ==> agegrp=6070s 380 <conf:(1)> lift:(1) lev:(0) [0] conv:(0)

3. winecellar=Y 380 ==> agegrp=6070s 380 <conf:(1)> lift:(1) lev:(0) [0] conv:(0)

4. bakery=Y 372 ==> agegrp=6070s 372 <conf:(1)> lift:(1) lev:(0) [0] conv:(0)

5. winecellar=Y health&beauty=Y 360 ==> agegrp=6070s 360 <conf:(1)> lift:(1) lev:(0) [0] conv:(0)

6. deli=Y bakery=Y 349 ==> agegrp=6070s 349 <conf:(1)> lift:(1) lev:(0) [0] conv:(0)

7. winecellar=Y 380 ==> health&beauty=Y 360 <conf:(0.95)> lift:(1.09) lev:(0.06) [29] conv:(2.34)

8. agegrp=6070s winecellar=Y 380 ==> health&beauty=Y 360 <conf:(0.95)> lift:(1.09) lev:(0.06) [29] conv:(2.34)

9. winecellar=Y 380 ==> agegrp=6070s health&beauty=Y 360 <conf:(0.95)> lift:(1.09) lev:(0.06) [29] conv:(2.34)

10. bakery=Y 372 ==> deli=Y 349 <conf:(0.94)> lift:(1.22) lev:(0.13) [62] conv:(3.58)