	Transaction ID	Items Bought
0	1	Bread, Butter
1	2	Bread, Butter, Milk
2	3	Bread, Milk
3	4	Butter, Milk
4	5	Bread, Butter
5	6	Bread, Butter, Milk
6	7	Milk
7	8	Bread, Butter, Milk
8	9	Bread, Butter
9	10	Bread, Milk

Combination 1: Bread → Butter

A = Antecedent = Bread

B = Consequent = Butter

Support(A) = 0.8 = X

Support(B) = 0.7 = Y

Support(A ∩ B) = 0.6 = Z

Confidence = Z/X = 0.75 = G

Lift = G/Y = 0.75/0.7 = 1.07

Conviction = (1 - Y) / (1 - G) = 0.3 / 0.25 = 1.2

% Bread Occurs in Transaction = 0.8

% Butter Occurs in Transaction = 0.7

% Both occur = 0.6

Combination 2: Bread → Milk

A = Antecedent = Bread

B = Consequent = Milk

Support(A) = 0.8 = X

Support(B) = 0.6 = Y

Support(A ∩ B) = 0.5 = Z

Confidence = Z/X = 0.625 = G

Lift = G/Y = 0.625/0.6 = 1.04

Conviction = (1 - Y) / (1 - G) = 0.4 / 0.375 = 1.07

% Bread Occurs in Transaction = 0.8

% Milk Occurs in Transaction = 0.6

% Both occur = 0.5

Combination 3: Butter → Bread

A = Antecedent = Butter

B = Consequent = Bread

Support(A) = 0.7 = X

Support(B) = 0.8 = Y

Support(A ∩ B) = 0.6 = Z

Confidence = Z/X = 0.857 = G

Lift = G/Y = 0.857/0.8 = 1.07

Conviction = (1 - Y) / (1 - G) = 0.2 / 0.143 = 1.40

% Butter Occurs in Transaction = 0.7

% Bread Occurs in Transaction = 0.8

% Both occur = 0.6

Combination 4: Butter → Milk

A = Antecedent = Butter

B = Consequent = Milk

Support(A) = 0.7 = X

Support(B) = 0.6 = Y

Support(A ∩ B) = 0.4 = Z

Confidence = Z/X = 0.57 = G

Lift = G/Y = 0.57/0.6 = 0.95

Conviction = (1 - Y) / (1 - G) = 0.4 / 0.43 = 0.93

% Butter Occurs in Transaction = 0.7

% Milk Occurs in Transaction = 0.6

% Both occur = 0.4

Combination 5: Milk → Bread

A = Antecedent = Milk

B = Consequent = Bread

Support(A) = 0.6 = X

Support(B) = 0.8 = Y

Support(A ∩ B) = 0.5 = Z

Confidence = Z/X = 0.833 = G

Lift = G/Y = 0.833/0.8 = 1.04

Conviction = (1 - Y) / (1 - G) = 0.2 / 0.167 = 1.20

% Milk Occurs in Transaction = 0.6

% Bread Occurs in Transaction = 0.8

% Both occur = 0.5

Combination 6: Milk → Butter

A = Antecedent = Milk

B = Consequent = Butter

Support(A) = 0.6 = X

Support(B) = 0.7 = Y

Support(A ∩ B) = 0.4 = Z

Confidence = Z/X = 0.667 = G

Lift = G/Y = 0.667/0.7 = 0.95

Conviction = (1 - Y) / (1 - G) = 0.3 / 0.333 = 0.90

% Milk Occurs in Transaction = 0.6

% Butter Occurs in Transaction = 0.7

% Both occur = 0.4

Sure, here's the analysis in a copyable format:

Bread → [Item] Combinations

1. **Sorted by Lift**

Lift measures how much more likely the consequent is to occur given the antecedent compared to if the two were independent.

1. **Bread → Butter**
   - Lift: 1.07
   - Confidence: 0.75
   - Conviction: 1.2
   - Support(A ∩ B): 0.6

2. **Bread → Milk**
   - Lift: 1.04
   - Confidence: 0.625
   - Conviction: 1.07
   - Support(A ∩ B): 0.5

2. **Sorted by Confidence**

Confidence measures how often the consequent is true when the antecedent is true.

1. **Bread → Butter**
   - Confidence: 0.75
   - Lift: 1.07
   - Conviction: 1.2
   - Support(A ∩ B): 0.6

2. **Bread → Milk**
   - Confidence: 0.625
   - Lift: 1.04
   - Conviction: 1.07
   - Support(A ∩ B): 0.5

3. **Sorted by Conviction**
Conviction measures the strength of the implication.

1. **Bread → Butter**
   - Conviction: 1.2
   - Lift: 1.07
   - Confidence: 0.75
   - Support(A ∩ B): 0.6

2. **Bread → Milk**
   - Conviction: 1.07
   - Lift: 1.04
   - Confidence: 0.625
   - Support(A ∩ B): 0.5

4. **Sorted by Support(A ∩ B)**
Support(A ∩ B) measures how frequently both items appear together.

1. **Bread → Butter**
   - Support(A ∩ B): 0.6
   - Lift: 1.07
   - Confidence: 0.75
   - Conviction: 1.2

2. **Bread → Milk**
   - Support(A ∩ B): 0.5
   - Lift: 1.04
   - Confidence: 0.625
   - Conviction: 1.07