

# Support

| Transaction ID | Product ID |
|----------------|------------|
| 11231          | IA45Y      |
| 11231          | DDD7M      |
| 11231          | BDR5U0     |
| 11231          | KLYT6      |
| 11232          | TTR45H     |
| 11232          | HJL9B      |
| 11232          | DDD7M      |
| 11232          | IA45Y      |
| 11232          | BDR5U0     |
| 11232          | KLYT6      |
| 11233          | KLYT6      |
| 11233          | IA45Y      |
| 11233          | DDD7M      |
| 11234          | KLYT6      |
| 11234          | BDR5U0     |
| 11235          | DDD7M      |
| 11235          | KLYT6      |
| 11235          | BDR5U0     |
| 11235          | IA45Y      |

Probability that the two item sets occur together

**KLYT6 ==> IA45Y**

**KLYT6** and **IA45Y** both occur together in **4/5** transactions

**(KLYT6 and IA45Y)/All Transactions**

**Support = 0.8**

Support is symmetric:  
 $\text{support}(\text{KLYT6} \Rightarrow \text{IA45Y}) =$   
 $\text{support}(\text{IA45Y} \Rightarrow \text{KLYT6})$

# Confidence

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|----------------|------------|
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| 11234          | KLYT6      |
| 11234          | BDR5U0     |
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| 11235          | KLYT6      |
| 11235          | BDR5U0     |
| 11235          | IA45Y      |

Conditional probability of a transaction containing item set RHS given that it contains item set LHS

**KLYT6 ==> IA45Y**

**4/5** of the transactions that contain **KLYT6** also contain **IA45Y**

**(KLYT6 and IA45Y) / KLYT6**

**Confidence = 0.8**

# Expected Confidence

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|----------------|------------|
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| 11232          | TTR45H     |
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| 11232          | DDD7M      |
| 11232          | IA45Y      |
| 11232          | BDR5U0     |
| 11232          | KLYT6      |
| 11233          | KLYT6      |
| 11233          | IA45Y      |
| 11233          | DDD7M      |
| 11234          | KLYT6      |
| 11234          | BDR5U0     |
| 11235          | DDD7M      |
| 11235          | KLYT6      |
| 11235          | BDR5U0     |
| 11235          | IA45Y      |

Assuming LHS and RHS are independent, proportion of transactions that contain the items in RHS

**KLYT6 ==> IA45Y**

**4/5** of the transactions contain **IA45Y**

**IA45Y** / All transactions

**Expected confidence = 0.8**

# Lift

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| 11232          | TTR45H     |
| 11232          | HJL9B      |
| 11232          | DDD7M      |
| 11232          | IA45Y      |
| 11232          | BDR5U0     |
| 11232          | KLYT6      |
| 11233          | KLYT6      |
| 11233          | IA45Y      |
| 11233          | DDD7M      |
| 11234          | KLYT6      |
| 11234          | BDR5U0     |
| 11235          | DDD7M      |
| 11235          | KLYT6      |
| 11235          | BDR5U0     |
| 11235          | IA45Y      |

Confidence of the rule divided by the expected confidence

**KLYT6 ==> IA45Y**

$$\text{Lift} = 0.8/0.8 = 1$$

Lift can be interpreted as a measure of association between the two item sets. Values greater than 1 indicate positive correlation, values equal to 1 indicate zero correlation, and values less than 1 indicate negative correlation. Lift is symmetric.