

(42)

Given, dataset that contains five items $\{A, B, C, D, E\}$

Suppose the rules $\{A, B\} \rightarrow C$ has the same confidence as $\{A, B\} \rightarrow D$

1a)

Given statement,

The confidence of $\{A, B\} \rightarrow \{C, D\}$ is the same as the confidence of $\{A, B\} \rightarrow \{C\}$

This statement is false, Because, The confidence rule is the probability of itemset C being given that itemsets A and B are purchased. If the confidence of $\{A, B\} \rightarrow C$ is the same as $\{A, B\} \rightarrow D$ means the occurrence of $\{A, B\}$ is same as occurrence of $\{A, B\}$ in D .

The confidence of the rule $\{A, B\} \rightarrow \{C, D\}$ could be higher than $\{A, B\} \rightarrow C$. But if D rarely occurs with C , the confidence might be lower.

1b)

Given statement,

All the transactions that contain $\{A, B, C\}$ also contain $\{A, B, D\}$

This statement is false. Because, the presence of $\{A, B, C\}$ in a transaction does not imply the presence of $\{A, B, D\}$. The association rules $\{A, B\} \rightarrow C$ and $\{A, B\} \rightarrow D$ do not guarantee that C and D always occur together.