



WIZ WHY[®]

Analyzer and Predictor

In the Main Window the user selects the data set to be analyzed and the dependent variable.

All the reports can be printed and exported to a database.

The dependent variable can be either categorical or continuous and it can be analyzed either as Boolean (Yes / No) or as having multi-values.

Predictions can be issued either for data entered on-line, or for data in a file.

The Rule Report lists *all* the if-then rules in the data.

The Trend Report summarizes the data by displaying the main trends.

The Unexpected Rule Report lists the interesting phenomena in the data (that is, if-then rules that are unlikely relative to more basic rules).

The If-and-only-if Rules Report (in the center of the screen) displays necessary and sufficient conditions, that explain all the cases in the data.

The Unexpected Cases Report lists the cases deviating from the discovered rules.

The screenshot shows the WizWhy Analyzer interface. The main window displays a list of conditions explaining when sales are more than 100.00. A detailed report for condition 1 is shown, including a list chart.

Conditions

- Total operating expenses is 142.90 ... 96,053.00 (average = 2,953.09)
- Cash is 61.40 ... 57,171.10 (average = 1,435.84) and Equity (common) is 112.10 ... 47,761.00 (average = 4,790.56) and Net income is 10.80 ... 10,717.00 (average = 821.09)
- Current liabilities is 18.80 ... 20,078.00 (average = 987.00) and Equity (common) is 90.20 ... 33,703.00 (average = 1,635.48) and Net income is 6.30 ... 5,151.00 (average = 254.07)
- Liabilities and equity is 2,322.60 ... 716,937.00 (average = 39,684.36)
- Current liabilities is 18.80 ... 20,078.00 (average = 1,194.90) and Cash and marketable securities is 70.80 ... 24,717.00 (average = 600.43)

When at least one of the conditions holds, the probability that Sales is more than 100.000 is 0.988 (400 out of 405 cases)

When all the conditions do not hold, the probability that Sales is not more than 100.000 is 0.955 (506 out of 530 cases)

The total number of cases explained by the set of conditions: 906
The total number of cases in the data: 935
Success rate: 0.969 (906 / 935)

List Chart

Details:	
Total	Errors
<input checked="" type="checkbox"/> 230 cases (24.6%)	0 cases (0.0%)
<input checked="" type="checkbox"/> 144 cases (15.4%)	3 cases (2.1%)
<input checked="" type="checkbox"/> 20 cases (2.1%)	0 cases (0.0%)
<input checked="" type="checkbox"/> 541 cases (57.9%)	33 cases (6.1%)
<input type="checkbox"/> Empty - 65 cases (6.5%)	
<input type="checkbox"/> Explained value holds	
<input type="checkbox"/> Explained value does not hold	

Total : 1000 records

Each rule can be visualized. In this chart WizWhy displays the relation between the first conditions and the other conditions.

WizWhy reveals all the if-then rules in the data, and on the basis of these rules: (1) summarizes the data, (2) points out interesting phenomena in the data, (3) reveals necessary and sufficient conditions, (4) points out cases deviating from the rules, and (5) issues predictions for new cases. In this picture you see a list of necessary and sufficient conditions explaining when the sales (the dependent variable) of companies in the US stock market are higher than \$100 million: If at least one of the conditions holds, then in 99% of the cases the sales are higher than \$100 million; and if all the conditions do not hold, then in 95% of the cases the sales are below (or equal to) \$100 million.