

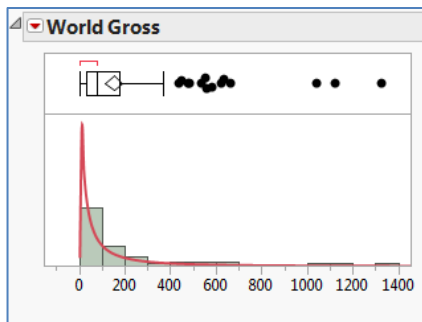
# Fitting Distributions

This guide provides information on fitting various continuous or discrete distributions to data.

## Fitting One Continuous Distribution

1. From an open JMP data table, select **Analyze > Distribution**.
2. Select one or more continuous variables from **Select Columns**, click **Y, Columns**, then click **OK**.  
Here we chose the variable 'World Gross'
3. Select **Continuous Fit** from the red triangle for the variable and select a distribution (LogNormal was selected in the example below).
4. In the resulting fitted distribution output, click on the red triangle and select **Goodness of Fit** (shown) or **Diagnostic Plot** to assess the fit of the distribution.

Hollywood Movies.jmp (Help > Sample Data Folder)



Fitted Lognormal Distribution				
Parameter	Estimate	Std Error	Lower 95%	Upper 95%
Scale $\mu$	4.0999667	0.1599346	3.7841341	4.4157994
Shape $\sigma$	1.8094529	0.1130908	1.6085466	2.0559442
Measures				
-2*LogLikelihood	1564.654			
AICc	1568.75			
BIC	1574.3581			
Goodness-of-Fit Test				
	A <sup>2</sup>	Simulated p-Value		
Anderson-Darling	3.5881138	<.0001*		

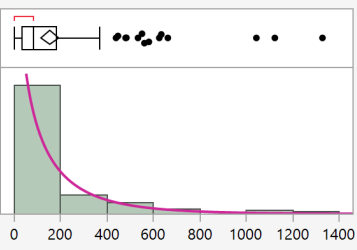
Note: Ho = The data is from the Lognormal distribution. Small p-values reject Ho.

The small  $p$ -value suggest that the LogNormal Distribution does not provide good fit to the data.

## Fitting All Continuous Distributions

Select **Continuous Fit**, then **Fit All** from the red triangle for the variable. JMP will compare available continuous distributions. Note: The distribution with the lowest AIC value provides the best fit to the data. Goodness of Fit tests can be performed by selecting **Goodness of Fit** under the Red Triangle for the Fitted Distribution output.

World Gross



Compare Distributions

Show	Distribution	AICc ^	AICc Weight	.2	.4	.6	.8	BIC	-2*LogLikelihood
<input checked="" type="checkbox"/>	Weibull	1532.1905	0.6163	<div></div>				1537.7986	1528.0945
<input type="checkbox"/>	Gamma	1533.1383	0.3837	<div></div>				1538.7463	1529.0423
<input type="checkbox"/>	Exponential	1550.7541	0.0001	<div></div>				1553.5744	1548.7224
<input type="checkbox"/>	SHASH	1555.4559	5.5e-6	<div></div>				1566.5388	1547.1307
<input type="checkbox"/>	Johnson Su	1565.2096	0	<div></div>				1576.2925	1556.8844
<input type="checkbox"/>	Lognormal	1568.75	0	<div></div>				1574.3581	1564.654
<input type="checkbox"/>	Normal 2 Mixture	1604.4369	0	<div></div>				1618.2052	1593.945
<input type="checkbox"/>	Normal 3 Mixture	1604.6992	0	<div></div>				1626.3054	1587.4891
<input type="checkbox"/>	Student's t	1634.5779	0	<div></div>				1642.9405	1628.3844
<input type="checkbox"/>	Cauchy	1634.6055	0	<div></div>				1640.2136	1630.5095
<input type="checkbox"/>	Normal	1745.3687	0	<div></div>				1750.9767	1741.2727

## Fitting Discrete Distributions

If the continuous variable contains only integer values, four discrete distributions are available under **Discrete Fit**.

Continuous Fit	
Discrete Fit	<ul style="list-style-type: none"> <li>Fit Poisson</li> <li>Fit Negative Binomial</li> <li>Fit Binomial</li> <li>Fit Beta Binomial</li> </ul>
Remove	

Visit **Basic Analysis > Distributions > Options for Continuous Variables > Fit Distributions** in **JMP Help** to learn more