

Analysing Raw Data with Stat::Fit

Tutorial

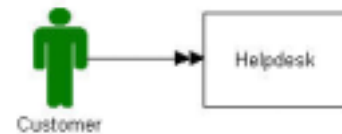


Introduction

Stat::Fit takes your raw data (e.g. activity times or number of items) and transforms them into a single distribution that represents your collected data. For example, service times at a reservation desk can be automatically fitted into a single distribution (without you having to do laborious calculations) and placed in the Time field in an activity within ProcessModel. When your model is running the distribution will force it to behave as if it were using the real information you had collected. Stat::Fit is accessed from the **Tools** menu on the main toolbar. You can also cut and paste your data from MS Excel and avoid hours of repetitive data entry.

Getting Started

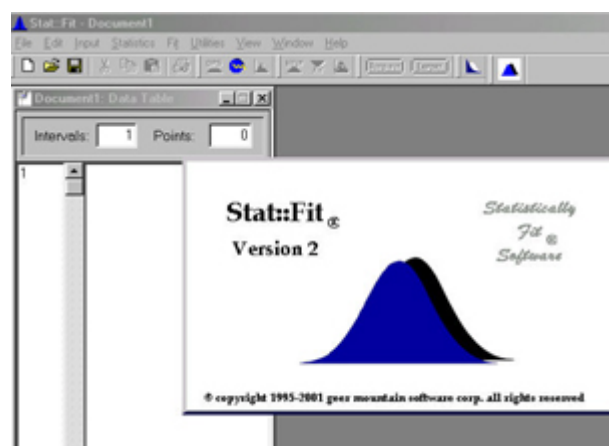
1. You are now going to create a simple model and run Stat::Fit to determine the best distribution for using in an Activity called **Helpdesk**. You should begin by recreating the model we have shown opposite in ProcessModel: (remember to change the name of the process to Helpdesk)



2. Now you are going to open Stat::Fit and type in twenty service times (these represent the lengths of time that it has taken to deal with queries from twenty customers at the helpdesk). Go to **Tools** on your main toolbar and click on Stat::Fit as shown in the drop down menu opposite. Once you have done this the screen below should appear to allow you to proceed with Stat::Fit:



3. To create a new project and enter the twenty service times shown below, click in the empty cell in the right hand column next to the number 1 and enter the first value shown below i.e. 2.3, then hit the ENTER key to insert the next value:

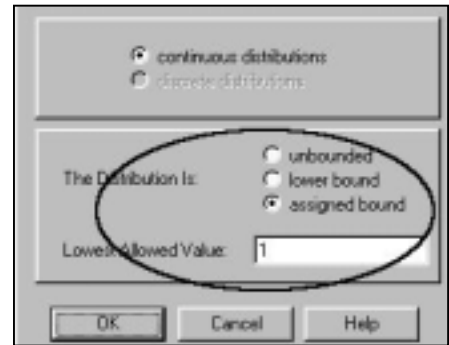


2.3	1.3	1	1.5	3.2	2.5	4	6	3.5	4.25	3.25	6.25	5	2.25	9	5.5	7.5	3.75	4	5
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4. You are now going to find the best distribution to use based on the twenty service times you have just entered. To do this you should click on the **Auto::Fit** button. It is on the main Stat::Fit toolbar shown opposite:



5. When you click the **Auto::Fit** button a dialog box (shown below) will appear to confirm information on the range of data you have just entered.

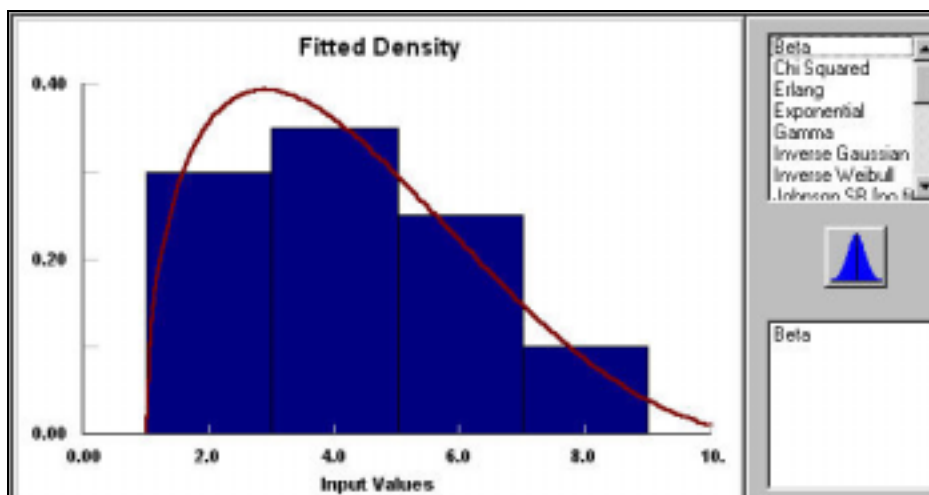


This shows that it is a continuous distribution and it has a fixed lower bound of 1. You should now click the **OK** button. Stat::Fit will now automatically search for the best distribution that fits your raw data depicted by the twenty service times and it will rank them accordingly.

6. You should now see the results opposite that reveal the **Beta** distribution to be the closest fit.

Auto-Fit of Distributions		
distribution	rank	acceptance
Beta[1., 11.3, 1.53, 3.36]	98.	do not reject
Triangular[0., 9.85, 2.46]	91.9	do not reject
Weibull[1., 1.65, 3.58]	23.6	do not reject

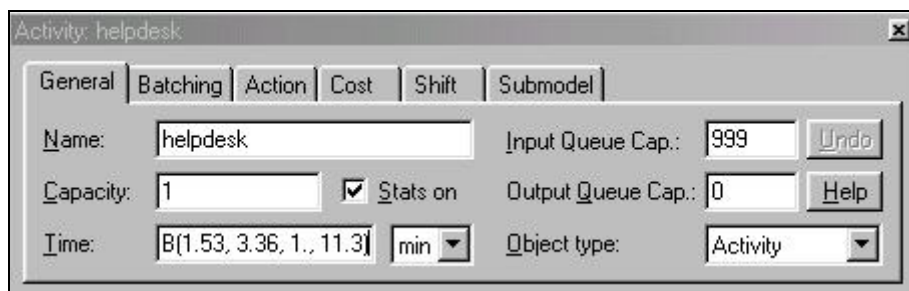
7. Now click on the **Beta** distribution and see what happens. Stat::Fit will automatically produce a comparison chart (shown below). The Comparison graph shows you the data entered (in blue columns) and the red curve line of the distribution used.



8. You will now **Export** the **Beta** distribution and paste it into your activity called Helpdesk. If you look at the diagram above you will see the Export button circled. Go ahead and click it. The dialog box below will pop up. Make sure you select the Weibull distribution by clicking the drop down menu arrow that is circled. The check box for the Clipboard should also be selected (again it is circled). Click OK.



9. Now it is time to maximise ProcessModel so you can enter the distribution. Click on the ProcessModel application, it should be minimised at the foot of your screen. **Double click** on the Helpdesk activity to open its dialog box. Click in the Time field (make sure you delete the default figure 1 in the box) and then right click and select **Paste** to enter the distribution. The menu below shows you what should appear:



10. Entering this distribution now means that each customer entering this activity will take a length of time drawn from the **Beta** distribution representing the actual recorded data you had entered. This will lead to greater accuracy within your model and ensures that “real information” is being utilised.

We hope you have enjoyed this tutorial. You can simulate your model if you wish and add resources to develop it further. Remember that data hidden away in Excel, Word or other file formats can be copied over and analysed. This can be very useful when you have a couple of hundred entries to get through. BlueOrange Support Team.