



Create Your Own Betting Systems

Analysing Your Systems Using Chi Square

A lot of bettors use systems to find their selections. One of the problems that system creators face is analysing whether the results have been due to luck or due to skill. There are lots of ways to test this at one of the most popular is using Chi Square test.

Using this test we will be able to see if our results are significantly better than they would be if we had been placing random bets. You may also want to use this method at regular intervals to make sure that your results are saying the same or similar.

Although the mathematics behind this test is very complex, we can calculate it without needing to understand of the maths but you will need Excel or another spreadsheet program. In order to calculate the Chi Square you will need a list of the results of your selections. The first step is to calculate the true probability of your horses winning. We do this using the sum:

$$\text{one divided by (SP odds -1)}$$

We use the SP odds because we know that the SP is an accurate representation of a horse's chance of winning the race. You need to do this sum for every selection in your results. Now that we have the true probability for every horse that you had bet on, we want to calculate the average of these probabilities.

Once we have the average of these probabilities, we can calculate the average odds that we have been betting at. To calculate the average odds we simply reverse our earlier equation:

$$\text{one divided by the average probability}$$

We now know the average SP probability of our horses winning and the average odds of our selections. This is useful information to know anyway.

The next stage is to determine how many winners we would have expected to have if we had just been betting randomly at how accurate probability. Again this is a simple step, you simply multiply the number of selections (for example 500) by the average SP probability that we calculated earlier. If our probability had been 0.30 and we had 500 selections, then 500 multiplied by 0.30 would give us 150 expected winners if we had been betting randomly at this probability.

The Chi Square test will cause us to know the actual amount of winners, the actual amount of losers, expected amount of winners, and the expected amount of losers. We already know that the expected amount of winners would be 150. Out of 500 bets this would mean that the expected amount of losers would be 500-150, which gives us 350.

Of course we will already know the amount of winners we have had out of the 500. In our example let us say that we have had 200 winners. This would mean that we have had 300 losers. In Excel the

command for calculating the Chi Square is 'CHITEST', if you are not using Excel then you will have to look at the command for your spreadsheet.

All you need to do is enter:

=CHITEST(Actual Winners : Actual Losers, Expected Winners: Expected Losers)

(If you are a <http://www.cyobs.co.uk> member I have set you up an excel spreadsheet with this formula. [Click Here](#) to download.)

This is the command for Excel, you will need to adjust this for whichever spreadsheet you are using.

In our example this would give us a Chi test result of 0.00000106. The result of a Chi test will always be between one and zero. A one means that there is a 100% chance that your results are due to luck, or zero means that there is a 0% chance of your results are due to luck. Our example is close enough to 0 that we can consider our results are 0% due to luck.

Some people prefer to look at it from the point of view of what percentage is due to skill rather than luck. To do this you simply perform the calculation one minus the results of your Chi test. Using our example this would give us 0.99999894 and we know whether 99.99% certainty, that our results are down to skill.

You can use this method to go through past systems and analyse what percentage is due to luck and what percentage due to skill. I would suggest that you would be looking to make sure that your system has a minimum of 95% certainty that the results are due to skill, or a 5% certainty that the results are down to luck.

Best regards,

Michael Wilding

Michael runs a website called Puntology which is a course in learning to make a living from betting.

http://www.cyobs.co.uk/go_puntology.htm
