This tweet has been going around and spurring a lot of controversy in the League of Legends community.

In this tweet, Phreak says “Rumble is 3-7 at MSI so far if you don’t count RNG’s completely free wins regardless of comp. Champ is giga-overrated in that role. Hes a good mid laner. Hes a bad jungler. Draft better

Is he right? If he is right, surely theres more champions with stats like this also. I wanted to go through and analyze, and fix some of the mistakes that phreak made in this tweet, and use some different metrics to show where the champions being picked at MSI truly stand.

First things first, why is what phreak said so demonstrably bad? The main crime lies in the removal of wins by RNG. He is only taking away the wins from rumble and none of the games where rumble was picked against RNG. This very clearly skews the results to look more in his side of the argument by only removing wins, and not losses. He should instead be looking to weight each win by how likely it was to happen in the first place. So that’s what I went and did

To do this, we need to find the expected win rate of each team in each game. This can be easily calculated by using the win rates of each of the teams.

You can use the log5 formula Chance of Team A winning against Team B = A\*(1 – B) / (A\*(1 – B) + (1 – A)\*B)

Ill show this using a game between Cloud9 and Damwon Kia

So DK won 5/6 games in the group and Cloud9 won 4/6

So we can fill that into our formula and find that Damwon has a 71% chance to win a game against C9 based on results of the group.

For each champion then, we can find each instance it was picked, and find the chance it had to win that game assuming it had no impact winning or losing on the game. We can then compare that to the true proportion of games that they won to find how much this champion has been impacting wins or losses throughout the tournament. Do that for every champion that’s played 5 or more games and we end up with this graph.

So a couple of things stand out immediately from this graph. To me, I am looking at rumble and seeing that he, lost 8% more games than we expected from him.

The worse and most obvious in this graph are Nocturne, Renekton, Rell, and Gangplank, with Renekton down almost at 18% lower win rate than expected.

Now, what do these numbers actually tell us. Well, they tell us exactly what I said, Rumble has lost 9% more games than we expect, and Renekton has lost almost 20% more games than we expect. We can not use these numbers, and these numbers only to conclude that rumble, nocturne, and renekton are all bad champs. We can use them to make a hypothesis that they might be overvalued currently, but we can not conclude that they are necessarily bad champs. Because similarly, while you might say that their numbers are bad because they are bad champs, you can also say that the numbers are bad because teams are using them incorrectly. Two possible explanations producing the same numbers.

Lets now compare these numbers to the ban rates of each champ. Ban rates are often thought to show how strong a champ is, because it represents how afraid people are to play against it.

Lets look at the top 4 most frequent bans in drafts, Renekton, Morgana, Varus, and Rumble. Of these, only morgana has even remotely a positive win rate vs their expected win rates. So now seeing the bans, what can we say? Are they being banned because every team has no idea what they are doing, or is it because the champions are actually good.

Here lies the central issues with what phreak is saying and what he is trying to do. He is using the numbers to force a conclusion, instead of using the numbers to draw a hypothesis. Saying rumble is bad instead of asking why is rumble doing bad. It might be because rumble is a bad champion, but it might also be that rumble is not being utilized properly, or one of many other possible hypothesis you can draw from this data.

Now ive been using these win rates taken from games at MSI but how strong really is this data. How much can we trust that these win rates, given enough games, are the true win rates of each of these champs. To explain this, I need to talk about Confidence Intervals. A basic explanation of a confidence interval, is that it gives us a range of values, of which we are sure to a certain confidence level that the true value is contained in the range. Now that might have sounded like jargon so let me explain using the example of win rates. We will need to take a range of values, a low number and a high number, of which we are 95% sure that the true win rate will be contained between the low number and the high number.

So, this will show us, the lowest, and highest values which the true win rates could actually be if more games were played. What does this graph look like? So, this might look confusing, but you just need to understand, the true win rate – expected win rate can lie anywhere on the black line for each champion. So while Rumble currently has a value of -8.0, it is also very possible that his true value is +20, it is just as likely however, that it is down near -40. This is to show you that these MSI win rates can not be used for any serious analysis. There simply has not been enough games played to fully determine the true win rates of each champ. Only very few pieces of information can be taken from these graphs that are actually useful, and that’s only for champs who have been picked extremely often.

So, is phreak right in saying that rumble is not a good champ? He might be, but he also very well might now be. That is something that can not be determined at this stage with these number of games played.

Obviously, win rate, pick rate, and ban rate are the easiest and most accessible stats so those are the ones I will be using for the purposes of these demonstrations.