Analeptic effect on athletes, an experiment in adrenaline, energy drinks, Methamphetamine and running speed

Nowadays, all sports competitions banned using analeptic since it would cause unfair and involved something we could not predict. Therefore, the purpose of our study is to see if using energy drinks and injections does strengthen athletes' performance on outdoor 100m running.

In the procedure of collecting data, we use randomly assignment. In our experiment, we have treatments (controllable variable) in 3 levels (adrenaline, energy drinks, Methamphetamine,) and we have gender as the nuisance block, and outdoor 100m running time as our response variable.

We used blocked design. Gender is a nuisance factor that we are not interesting, but after blocking on gender, the p-value decreased from 0.031 to 0.0309 and power increased. The effect of treatments is become more statically significant after we blocking on gender.

According to our study, we only can understand the significance of the difference among adrenaline, methamphetamine and energy drink to strengthen athletes' ability, but we cannot find out the result of the individual treatment improvement, which is how much a treatment can shorten athletes' seconds on their runs. We have thought about SP/RM design which may conclude a better outcome by adding another treatment factor with 2 levels in before getting injection treatment and after.