



PRESENTER

Vishal Bharti

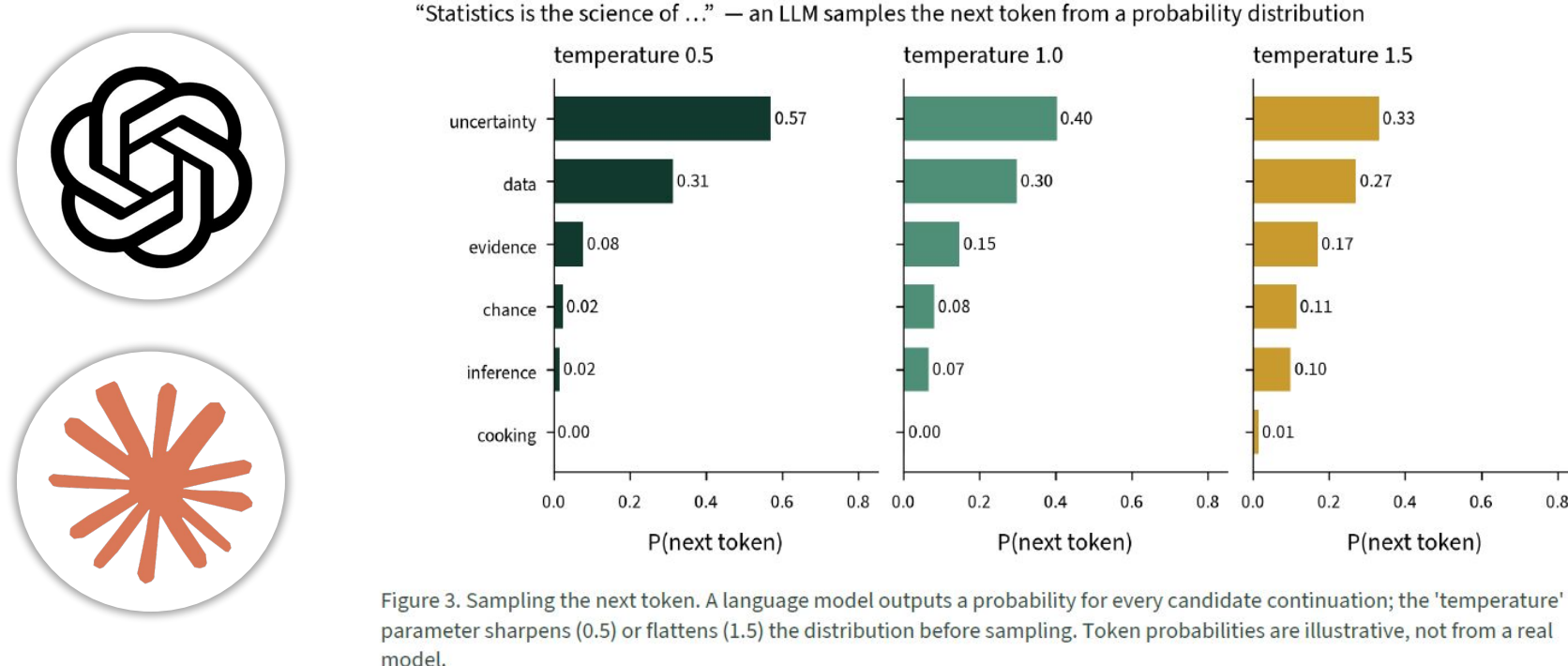
Abstract :

- Statistics underpin trustworthy research. Our audit of 23,000 biomedical papers found only 4.49% had automatically checkable p-values.
- Missing test statistics and degrees of freedom hinder verification.
- StickForStats supports reproducible analysis through automated assumption checks, guided test selection and recorded workflows.

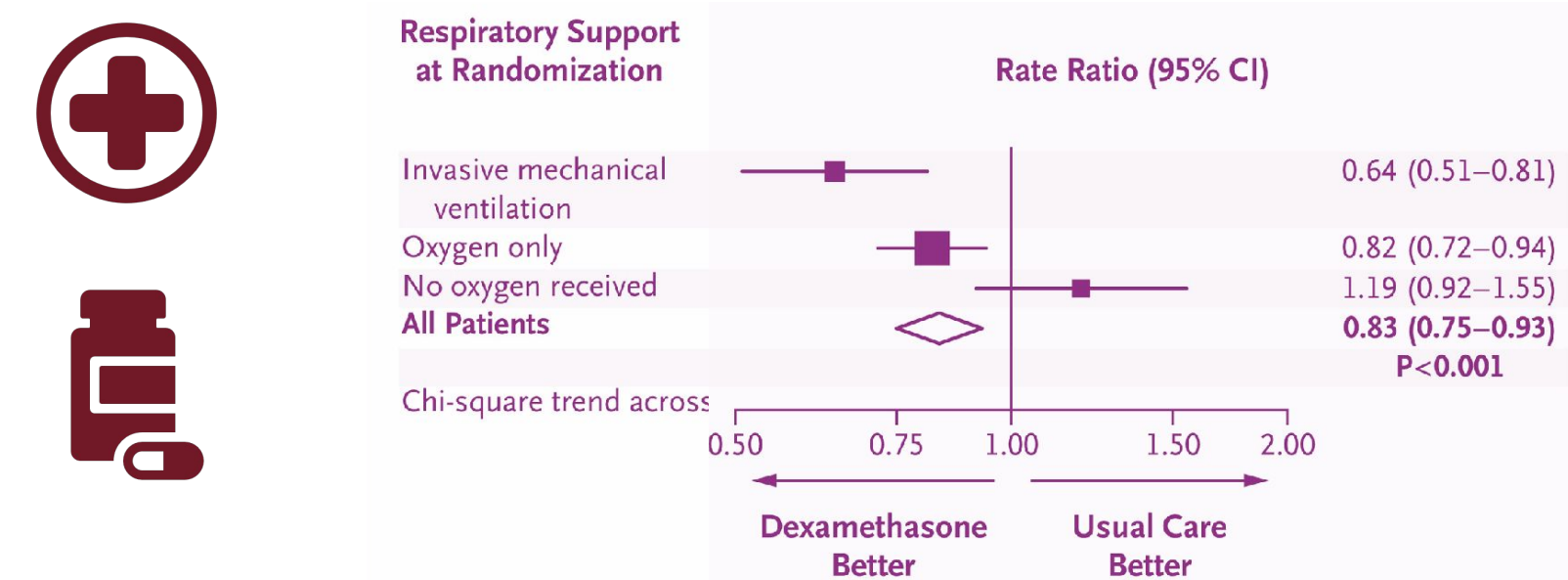
Background :

Why do we need statistics?

Large Language Models work on statistics:

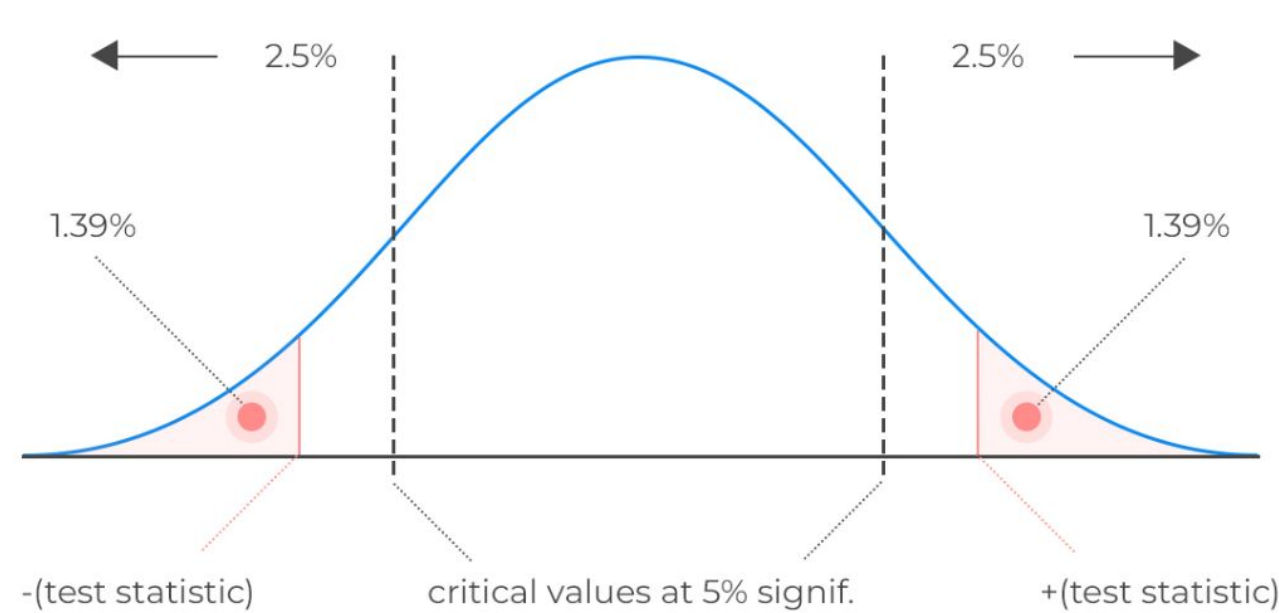


Statistics identifies evidence of dexamethasone for improved survival in ventilated COVID-19 patients

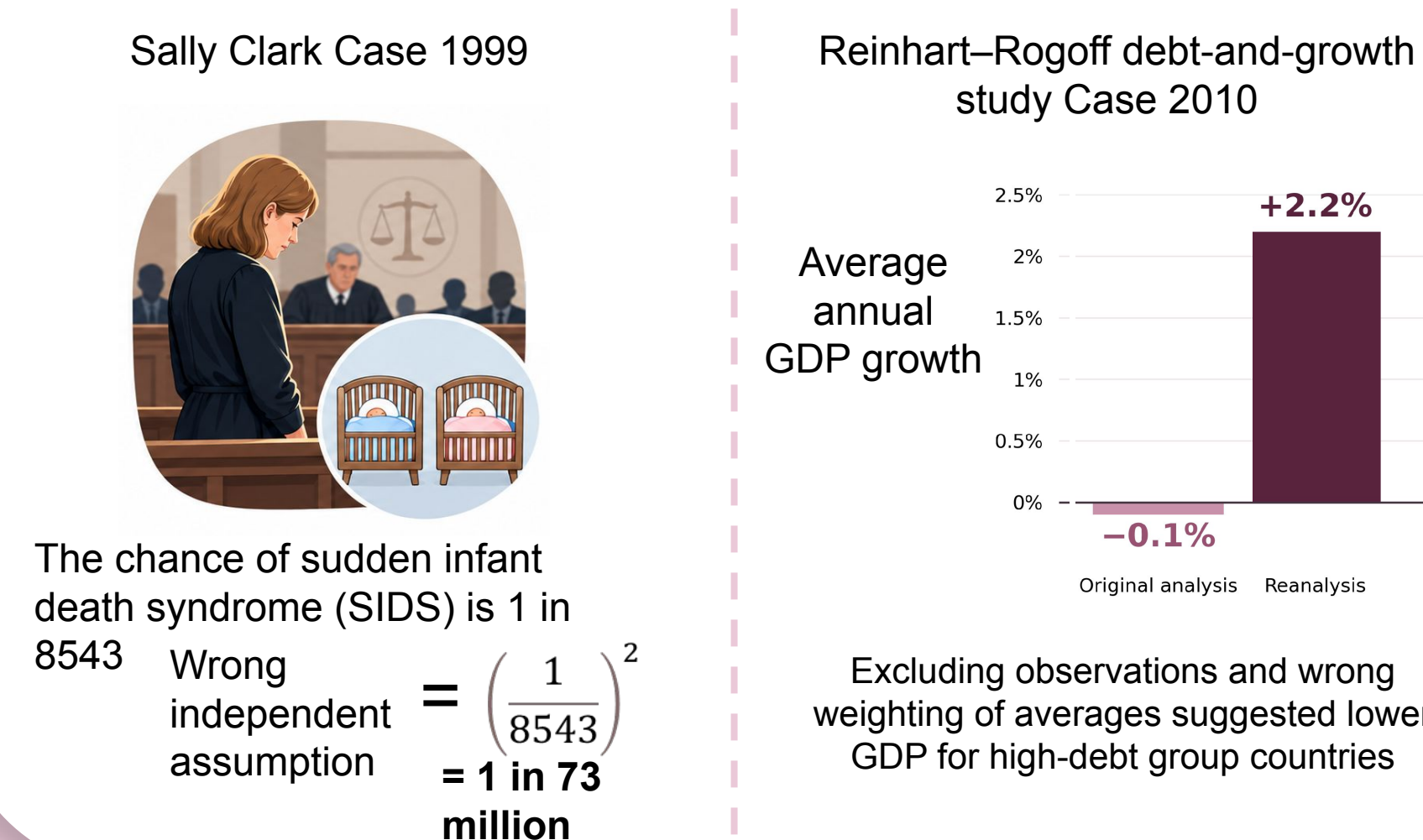
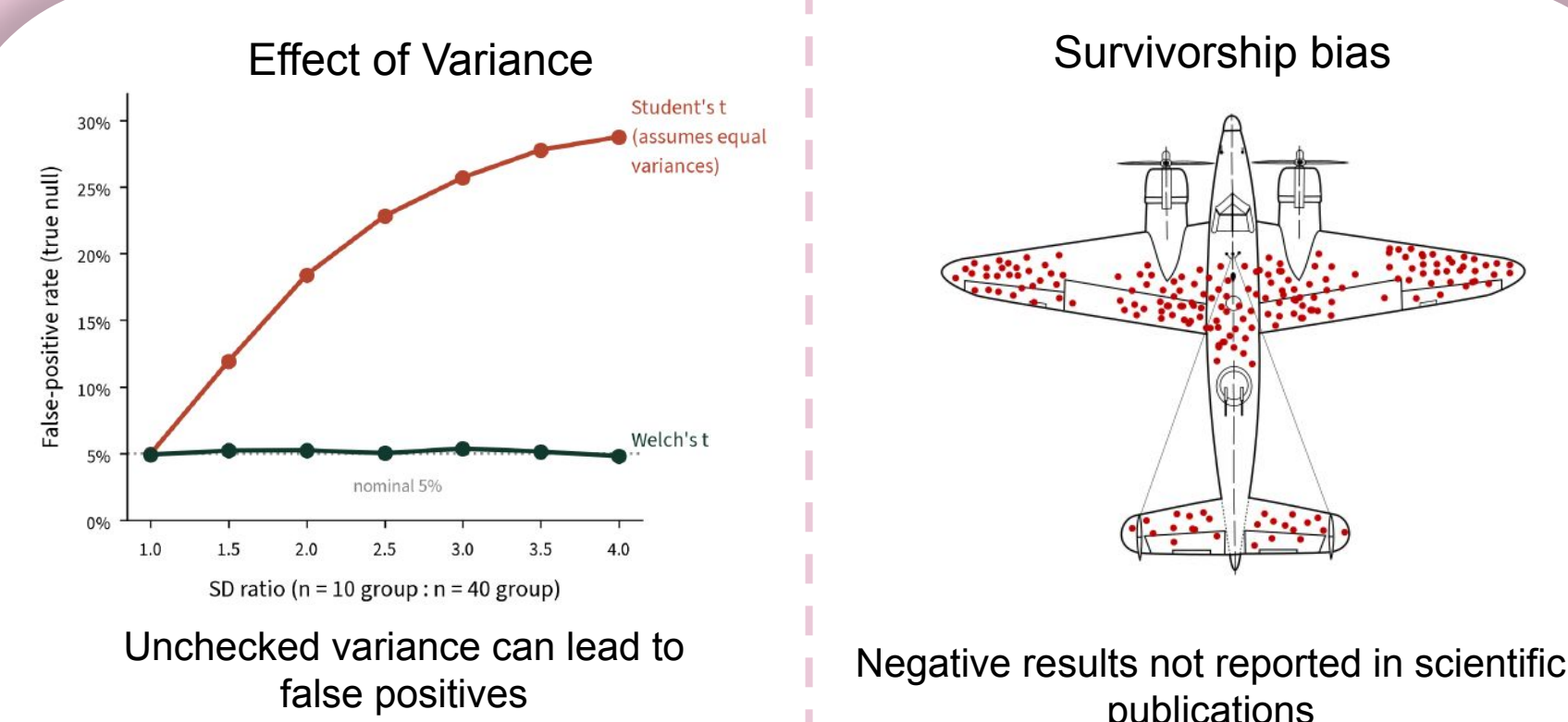


What does a complete test result look like?

p-value is the likelihood of an event; **t-statistic** is the signal over noise; **df**: degrees of freedom depends on sample size



Consequences of wrong statistics!



Most biomedical articles print no statistical result a reader can recompute

Audit of randomly selected 23,000 open-access PMC articles (2020 to 2025)



Looking through text about information on test statistic-value and degrees of freedom (df) to recalculate p-value

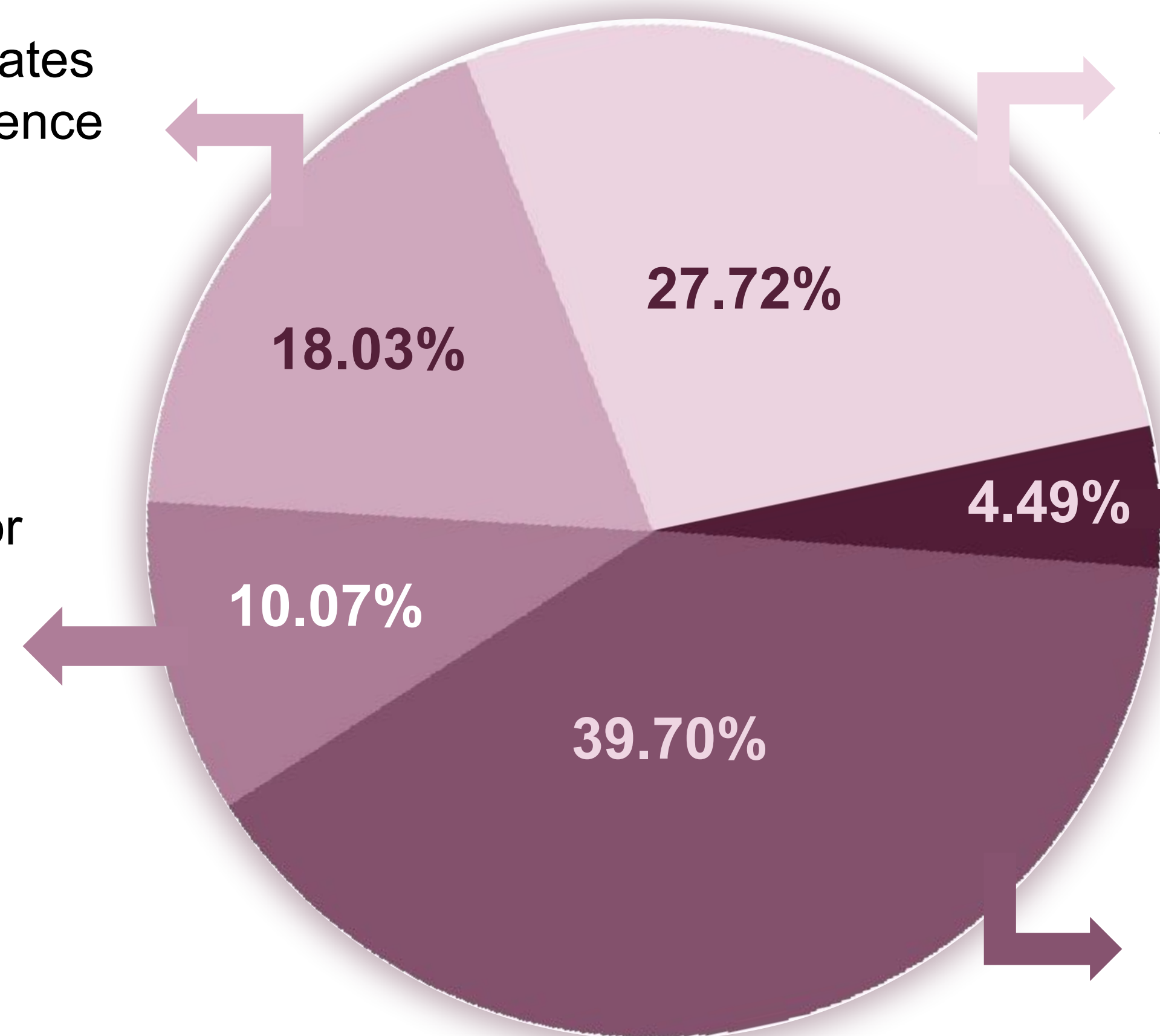
Only estimates and confidence intervals

Incomplete or unpaired statistical reporting

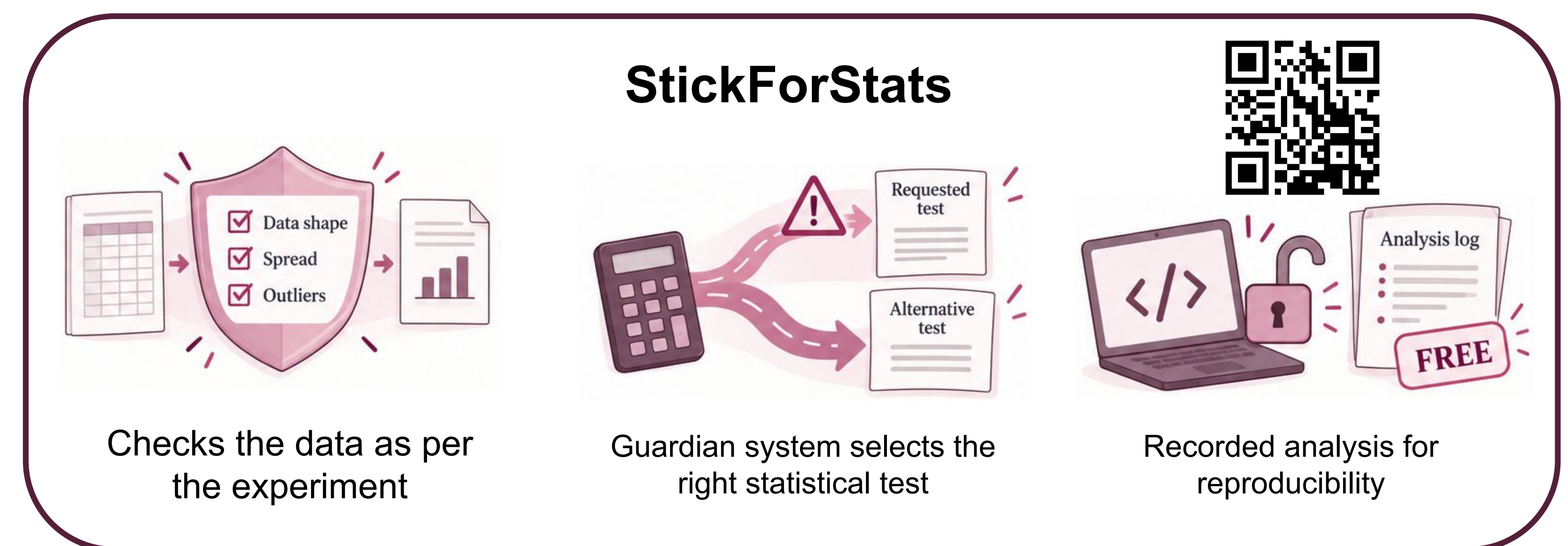
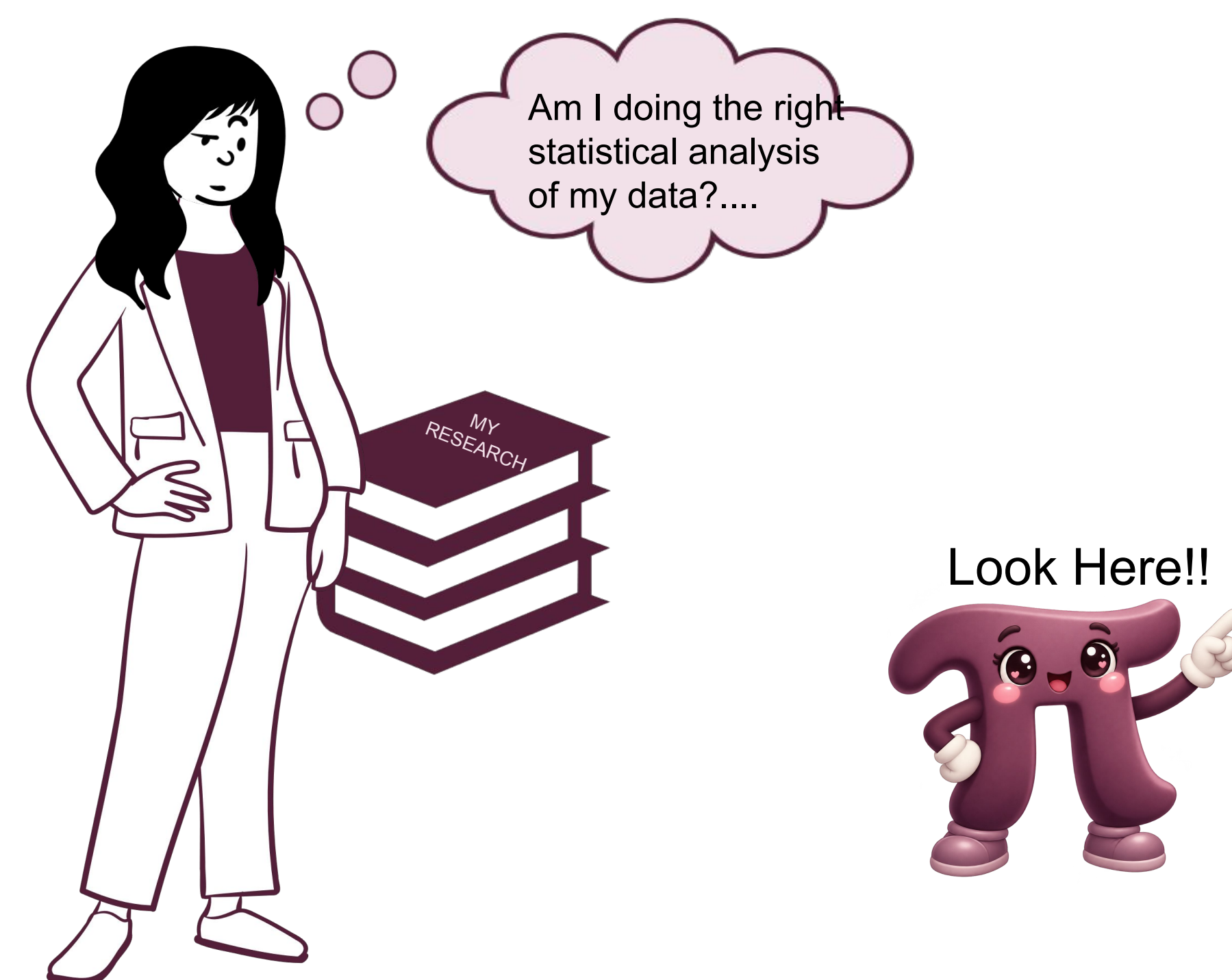
No inferential statistics

p-value, statistic value, and df checkable

p-value and test named but not statistic value



StickForStats for guided and automated statistical analysis



Free, open-sourced software for statistical analysis

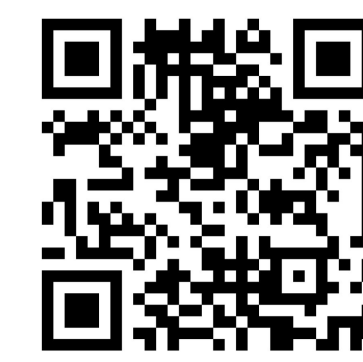
Take Home message: Print the test statistic, its df and the exact p for every test, and let the reader judge significance



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Interesting stories involving statistics



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