



PARTICIPANT INFORMATION FOR QUT RESEARCH PROJECT
– Survey –

Statistical Quality in Health and Biomedical Research

QUT Ethics Approval Number 2000000458

Research team.

Principal Researcher:	Lee Jones	PhD student
Associate Researcher(s):	Associate Professor Dimitrios Vagenas Professor Adrian Barnett	Principal Supervisor Associate Supervisor

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Queensland University of Technology (QUT)**

Why is the study being conducted?

This research project is part of a PhD by Lee Jones.

Over 240 billion dollars is invested in health research each year. It is estimated that 85% of these resources are wasted through poorly designed and analysed studies. Published manuscripts often contain errors and misinterpretation of results leading to conclusions being exaggerated and ineffective treatments reaching the frontline of the health care system. Improving statistical quality even incrementally, could have a substantial effect on research money being directed towards innovative health care solutions, which may improve quality of life and increase lifespan.

This study will examine statistical quality in health and biomedical research by focusing on linear regression models which provide foundational knowledge used throughout health and medical research. We are hoping to recruit 40 statisticians to review 100 randomly selected published papers from PLOS ONE, a large medical and science journal at the forefront of open data access. Each selected paper will be rated twice to ensure reliability of conclusions. Our results will highlight the most common issues for regression analyses and demonstrate where training and reporting guidelines need to be strengthened.

We recognise job titles of statisticians are often field dependent, for example "data scientist", "data analyst", and can be different across academic and private industry. Therefore, you are invited to participate in this research project because you have worked (current or past) in a statistical role.

What does participation involve?

Participation will involve reviewing five articles by completing a 27-item survey for each paper and brief demographic questions that will take approximately 2.5 hours of your time (30 minutes per paper).

The survey will include detailed questions on how researchers address linear regression assumptions, modeling approaches and interpretation of analysis. Below is a sample of the questions asked.

The assumptions below should only be answered considering the linear regression models in the paper

Did the authors check the normality assumption?

- ☐ No
☐ Yes

What was checked with regards to normality? (tick as many that apply)

- ☐ Unclear
☐ Y variable
☐ X variable
☐ Sub groups of Y
☐ Residuals
☐ Other

How was normality assessed? (tick as many that apply)

- ☐ Unclear
☐ Not described
☐ Descriptive statistics (skewness, kurtosis etc.)
☐ Plots (including residual plots)
☐ Statistical test
☐ Other



Your participation in this research is entirely voluntary. If you agree to participate, you do not have to complete any question(s) you are uncomfortable answering. Your decision to participate or not, will in no way impact upon your current or future relationship with QUT or the research team. You may withdraw from the study at any time. If this occurs, providing you give us consent, your partial responses will be used. If you do not wish for your partial/complete responses to be used, you can contact the research team to withdraw your responses. Should this occur, your responses will be archived but not used in the research.

You will be able to review your responses before submitting and save a copy of your responses after submitting the survey.

What are the possible benefits for me if I take part?

It is expected that this research project will not directly benefit you. The outcomes of the research, however, may benefit health research and ultimately the community.

To recognise your contribution the research team is offering to add you to the acknowledgement section of any future publication.

What are the possible risks for me if I take part?

There are minimal risks associated with your participation in this research project. These include time taken to review articles and identification of data.

Time was spent by the research team to reduce survey burden by limiting the number of items to a focused survey looking at the quality of reporting for linear regression.

Reviews are an accepted part of academic life, but to reduce the risk of statistician being individually identified we have asked for a minimum amount of demographic data and will de-identify your

responses using a generic identification code for statisticians. To enable open science the de-identified raw data and code produced from this research will be made available upon publication.

What about privacy and confidentiality?

All comments and responses are coded, i.e. it will not be possible for others to re-identify you. A re-identifying code stored separately to personal information (e.g. name, email), will only be accessible to the research team, and the code plus identifying information will be destroyed after five years.

Any data collected as part of this research will be stored securely as per QUT's Management of research data policy. Data will be stored for a minimum of 5 years and can be disclosed if it is to protect you or others from harm, if specifically required by law, or if a regulatory or monitoring body such as the ethics committee requests it.

How do I give my consent to participate?

Submission of the consent form is required for participation in this research project.

What if I have questions about the research project?

If you have any questions or require further information, please contact one of the listed researchers:

Ms Lee Jones	phone: +61 7 3138 6053	email: lee.jones@qut.edu.au
A/Prof Dimitrios Vagenas	phone: +61 7 3138 0047	email: dimitrios.vagenas@qut.edu.au
Prof Adrian Barnett	phone: +61 7 3138 6010	email: a.barnett@qut.edu.au

What if I have a concern or complaint regarding the conduct of the research project?

QUT is committed to research integrity and the ethical conduct of research projects. If you wish to discuss the study with someone not directly involved, particularly in relation to matters concerning policies, information or complaints about the conduct of the study or your rights as a participant, you may contact the QUT Research Ethics Advisory Team on +61 7 3138 5123 or email humanethics@qut.edu.au.

Thank you for helping with this research project. Please keep/print this sheet for your information.

