Better Conversations, Better Support:
Strengthening Consulting through Practical Education and Community

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Building a common ground for consulting

- Shared understanding, communication, and confidence underpin effective consulting.

- Knowledge asymmetry between researchers and statisticians creates barriers.
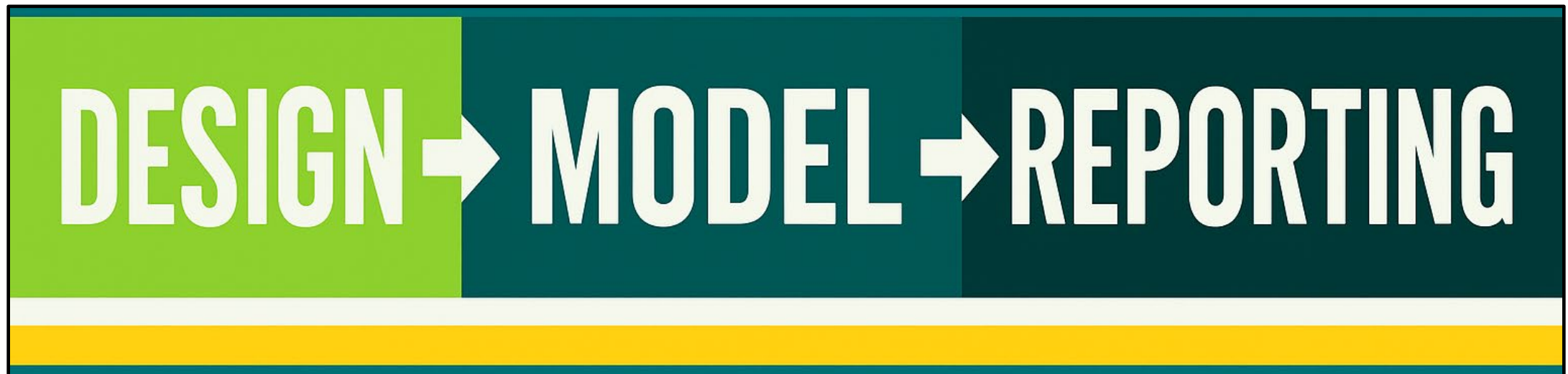
- Fear of statistics reduces engagement and clarity.

Challenges that undermine effective consulting

- Researchers under-prepared for statistical conversations.
- Statisticians can lack agronomic context.
- User-friendly software can lead to misuse without conceptual grounding.
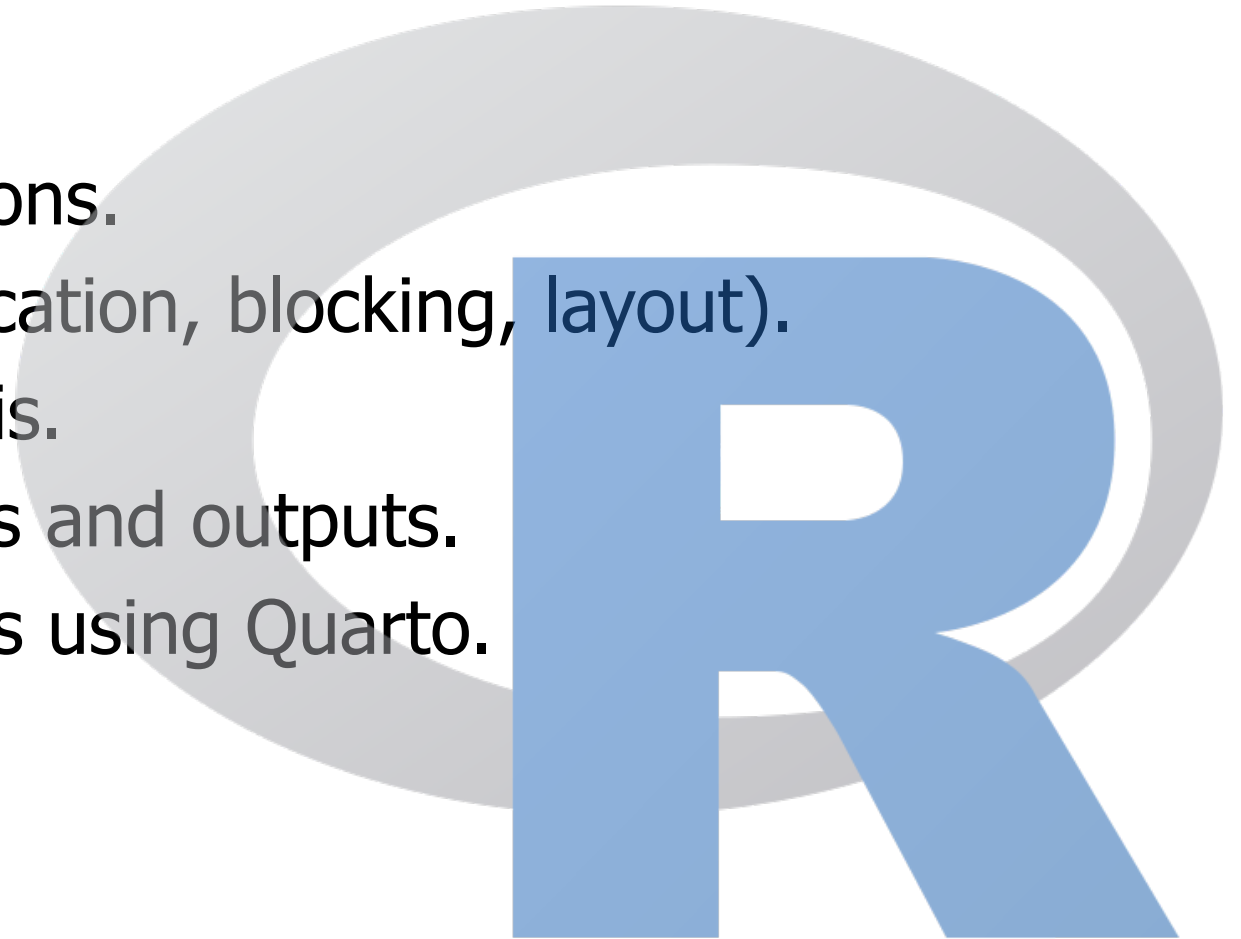- Consulting meetings start from confusion, not insight.

Build the foundations first

- Workshops provide targeted, practical education.
- Focus on real agronomic examples and applied learning.
- Foundation-building enables better consulting conversations.
- Workshops cover complete analytical pipeline:

What participants learn

- Frame clear research questions.
- Create robust designs (replication, blocking, layout).
- Use R confidently for analysis.
- Interpret model assumptions and outputs.
- Produce reproducible reports using Quarto.
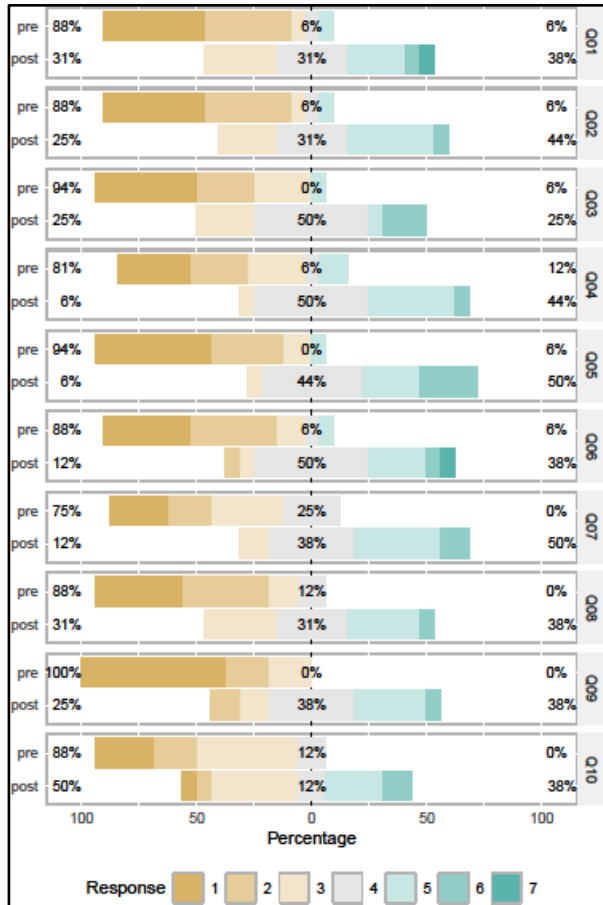
The *biometryassist* R package

- Provides accessible tools aligned with workshop teaching.

- Streamlines design, modelling, diagnostics, and reporting.

- Reduces cognitive load so users can focus on concepts.

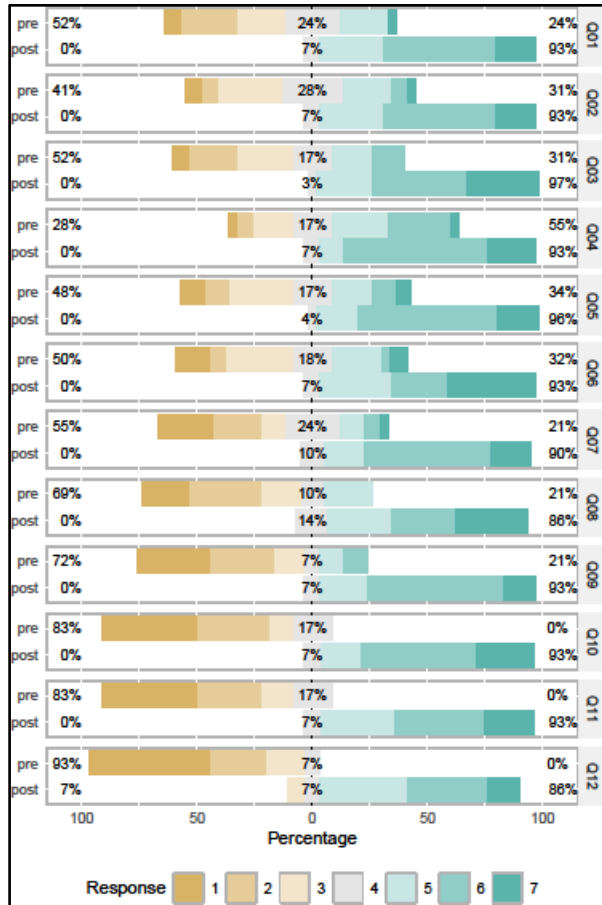- Supports consistent, reproducible analytical workflows.
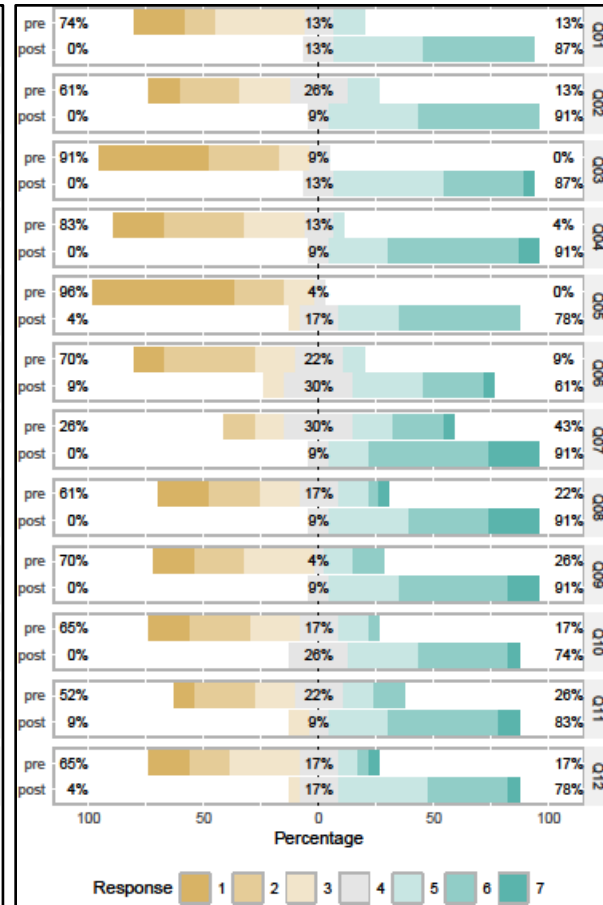
Survey self-efficacy results
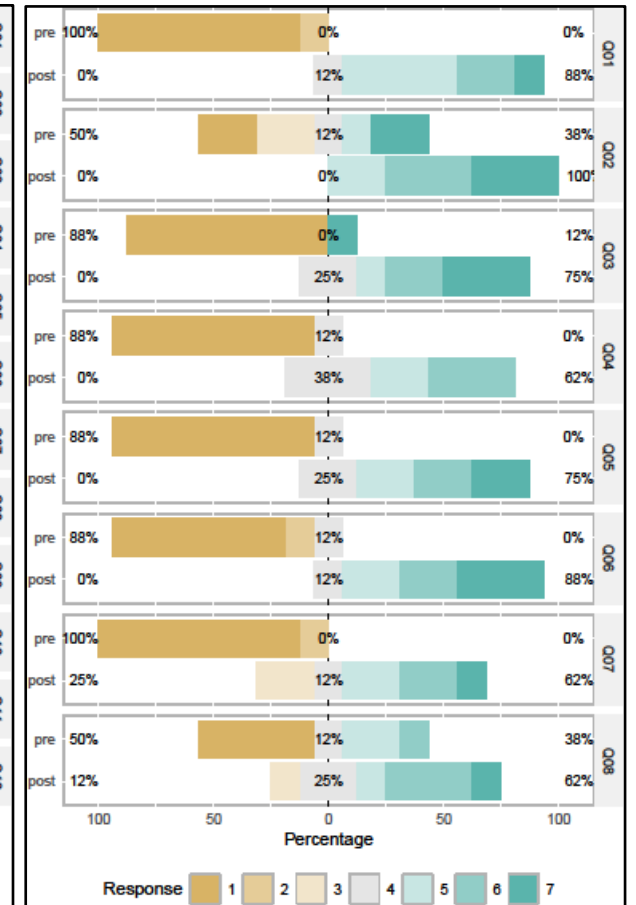
Clear gains in confidence and skills

- Significant increases in confidence across all workshops.
- Median improvements range from +1.5 to +4.4.
- Strong engagement across the entire program, including CoP.
- Skills translate directly into more productive consulting conversations.
- Researchers become more independent and better prepared.

The Community of Practice (CoP)

- Monthly Zoom sessions keep the learning going well beyond the workshops.

- Teams chat space provides a place to troubleshoot smaller questions as they arise.

- Researchers bring real project problems for discussion and guidance.

- A collaborative, supportive environment helps build skills and confidence.

- Mini-workshops offer focused, advanced capability building.

Feedback

AAGI
Analytics for
the Australian
Grains Industry

I am more confident in my skills when it comes to designing and analysing experiments, troubleshooting issues, and seeking out appropriate help. - Corinne

Firstly, the workshops I attended were very focused on 'real-life' data analysis rather than theoretical options for doing data analysis. I certainly helped me on the project I was working at that time. Secondly, I simply love the idea of follow-up meetings. I never learned ALL in the workshops - it is a slow process of finding new problems and solving them over time. However the help through these follow-up meetings certainly makes the process of learning more enjoyable. Thanks for doing that - Hammad

The workshop was highly practical and helped me develop a foundational understanding of basic statistical concepts such as variance decomposition and multiple comparisons. These were taught through relevant agronomy examples, with a strong emphasis on analysis steps that I found especially valuable. - Huan

Benefits across the grains industry

- More reliable trials
- Cleaner data and clearer insights
- Reduced waste in time and resources
- Faster delivery of results
- Greater workforce capability
- Stronger innovation
- Better outcomes for growers

Take-Home Messages

- Good consulting is built on shared understanding and confidence.
- Workshops provide practical, foundational skills.
- CoP ensures ongoing, applied learning.
- *biometryassist* enables reproducible, consistent analysis.
- Together, these elements transform consulting relationships.

Acknowledgements

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