




Institute  
and Faculty  
of Actuaries

Multivariate modelling in  
the London Market

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Agenda

- Blue Water hull
- Rock star non appearance
- Travel
- Equine
- Non standard auto
- General aviation
- Crop hail

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What do I mean by multivariate analysis?

- Building a model which helps predict the future value for a metric using more than one variable.
- Here ...mostly generalised linear modelling of new data

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One way analysis

- "The way a child looks at things." Deputy Active Underwriter

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Blue Water Hull

- Persistence pays
- Trying and seeing works
- New found belief in data
- Changed UW decision making



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Rock Star Non appearance

- Quick, insightful and effective
- UW sponsorship key
- Data design
- Patience
- Simple analysis of new data
- Changed UW decision making



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Travel

- Quick
- Insightful
- Analysis by cause of loss for first time
- Analysis of frequency and severity



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Equine

- Pre-bind GLM on a prospective risk
- Quick
- Effective
- Persuasive
- Equine knowledge essential



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General Aviation

- Slow
- Insightful
- Data design mistakes
- Always craving better data
- Ultimately very valuable



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Non standard auto

- Unanalysed data
- Quick
- Immediate findings



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Crop Hail

- Use of geographic data
- Unexpected findings
- Quick



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What works?

- Modelling frequency and severity separately
- Modelling different causes of loss separately
- Understanding correlations between variables
- Exploring the marginal impact of variables
- Extending the data to create new variables
- Re-grouping and re-banding the variable values and levels for the purpose
- Dialogue with underwriters at a meaningful level

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What multivariate analysis is NOT?

- Fitting a sophisticated statistical model to data
- Something you need thousands of claims to do
- All about statistical significance
- A long expensive process
- Finding the best fit without understanding what real world process you are modelling
- More dangerous than a one way analysis



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Summary

- Interesting
- Revealing
- Quick
- Easy
- Valuable



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