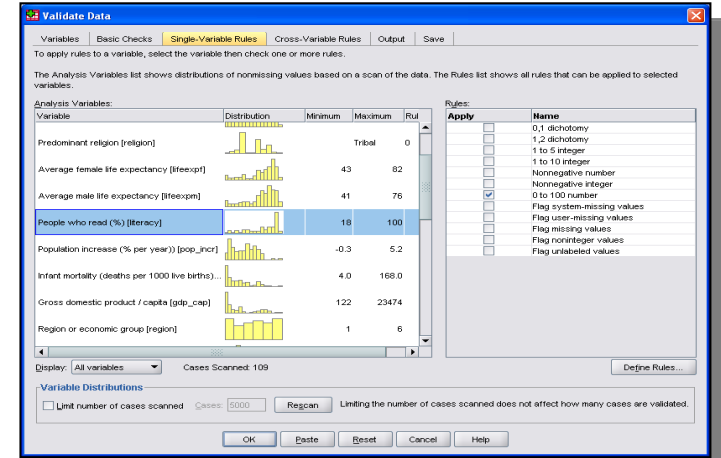


Data Cleaning with IBM SPSS Statistics

Jarlath Quinn – Analytics Consultant



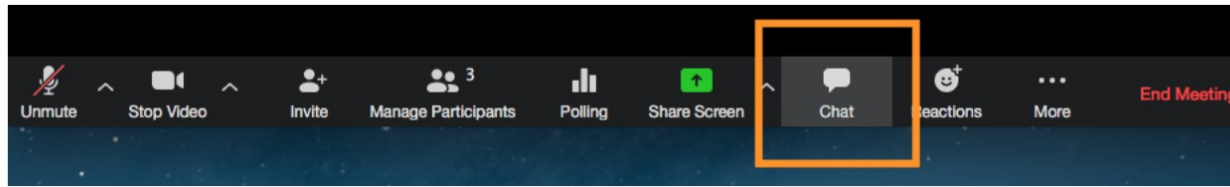
Data Cleaning with IBM SPSS Statistics

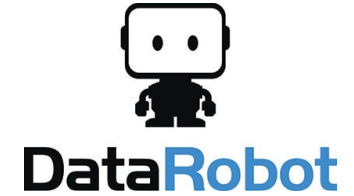
Jarlath Quinn – Analytics Consultant

Just waiting for all attendees to join...

FAQ's

- Is this session being recorded? Yes
- Can I get a copy of the slides? Yes, we'll email links to download materials after the session has ended.
- Can we arrange a re-run for colleagues? Yes, just ask us.
- How can I ask questions? All lines are muted so please use the chat panel – if we run out of time we will follow up with you.





- Gold accredited partner to IBM, Predictive Solutions and DataRobot specialising in advanced analytics & big data technologies
- Work with open-source technologies (R, Python, Spark etc.)
- Team each has 15 to 30 years of experience working in the advanced and predictive analytics industry
- Deep experience of applied advanced analytics applications across sectors
 - Retail
 - Gaming
 - Utilities
 - Insurance
 - Telecommunications
 - Media
 - FMCG



Errors and problems in data

- Data cleaning is an almost universal problem for anyone who works with data
- Errors and irrelevancies in data can occur due to:
 - Data input mistakes such as misplaced keystrokes
 - Inconsistencies in recording information between different data entry operators or due to changes over time
 - Information collected on non-applicable events or subjects
 - Mismatches between database tables
 - Differences in how various systems encode or represent data such as date/time fields

Challenges in data cleaning

- Typical tasks include:
 - Identifying records/fields with a high percentage of missing values, a high degree of variability or conversely, too little variability
 - Correcting values that are out of range: e.g. people aged 199 or years employed with minus numbers
 - Identifying and removing duplicate records
 - Ensuring a variables are correctly formatted e.g. removing decimal places from age
 - Checking that the values in combinations of variables do not contradict each other or imply errors in the data: e.g. all car drivers should be at least 17 years old
 - Creating syntax to correct data issues automatically

Two broad classes of data errors

- In SPSS, most issues with data fall into one of two categories:
 - Data formatting issues can be caused by how the data were stored in other systems
 - Problems with the data file itself can be caused by human error or systematic failures

Problems with how the data has been formatted/imported:

- Date/time variables
- Defining missing values
- Variable/value labels
- Variable types – strings vs numeric
- Variable names

Problems with the data itself:

- Actual errors
- Irrelevant values/variables/records
- Inconsistencies
- Duplicates
- Illogical relationships



Data formatting problems



Problems with the data itself



Data cleaning with syntax

Additional Resources

- [SPSS FAQs](#) everything from finding out what you have installed to how to merge files or change the language
- [Video Guides](#) a wide range of SPSS “how to” topics with mini demos
- [SPSS Software](#) information on products, modules and pricing
- [Eat your greens](#) blog series on statistical testing and procedures

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SPSS Statistics



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course



Introduction to IBM SPSS
Statistics course

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Analytics Advice

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Analytical Deep-Dive

Let us explore your data landscape to test hypotheses, identify problem areas, find key outcome drivers or develop new applications



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 - Delivery of classroom training courses / side by side training support
 - Identification & recruitment of analytical skills into your organisation
- **Advice and Support**
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 - Technical support services



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Thank you