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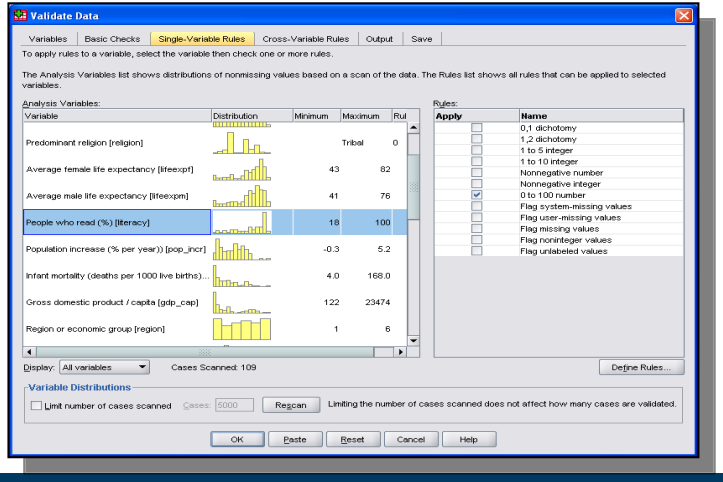

Data Cleaning with IBM SPSS Statistics

Jarlath Quinn – Analytics Consultant

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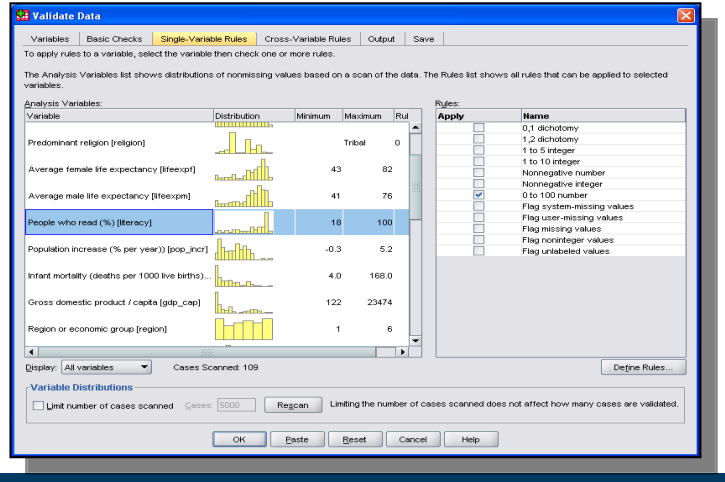


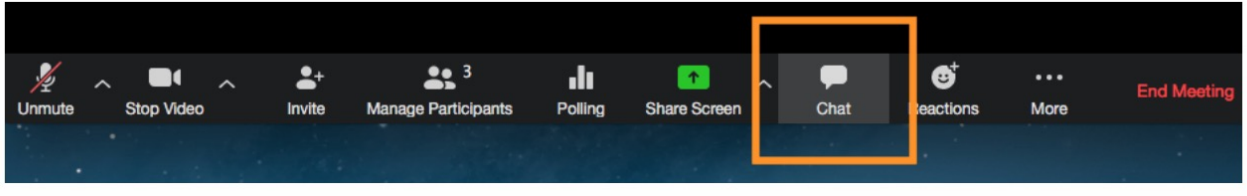
Data Cleaning with IBM SPSS Statistics

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

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Data formatting problems

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Problems with the data itself

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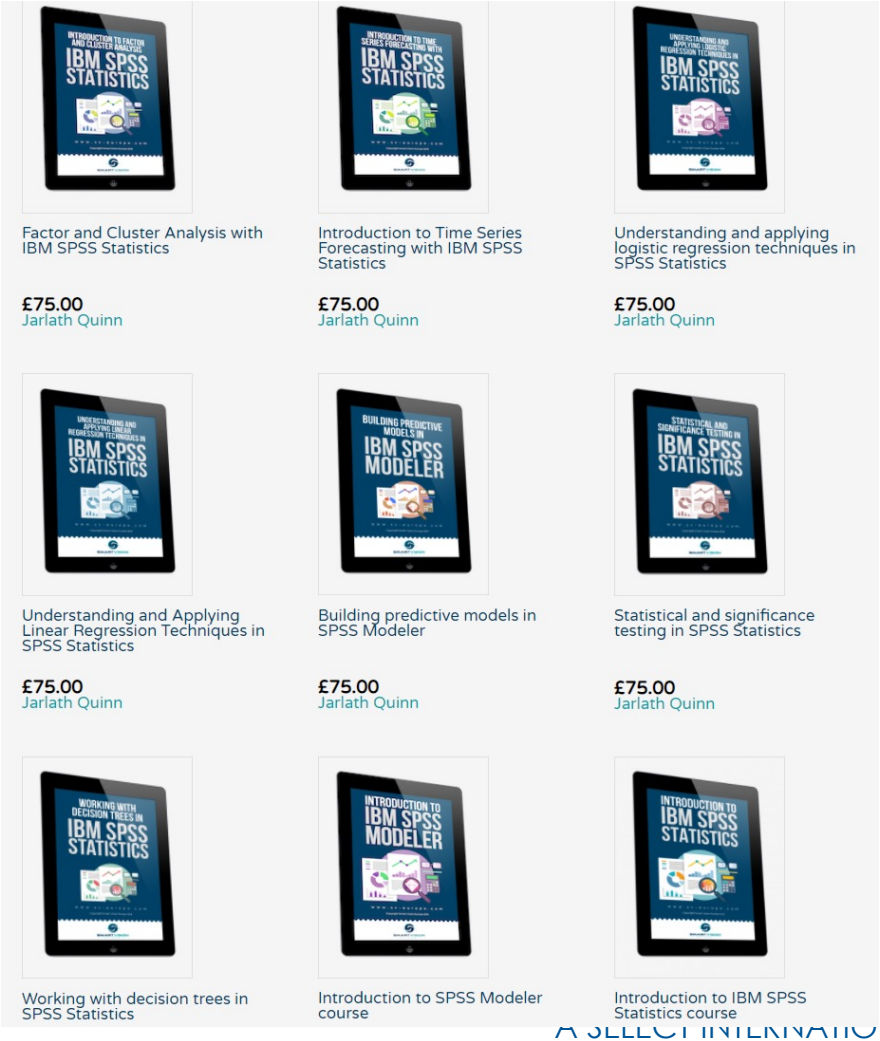
Data cleaning with syntax

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

Online training materials free to Smart Vision customers or available for purchase



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Working with Smart Vision Europe

- **Consulting Services**

Project Support

Purchase 1-2 days of consultancy time to have an expert work alongside you on your own project

Analytics Advice

Give us 3-5 days to investigate your data & analytical strategy and we'll present our recommendations re: improvements & alternatives

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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- **Sourcing Software**
  - You can buy your analytical software from us often with discounts
  - Assist with selection, pilot, implementation & support of analytical tools
  - http://www.sv-europe.com/buy-spss-online/
- **Training and Consulting Services**
  - Guided consulting & training to develop in house skills
  - Delivery of classroom training courses / side by side training support
  - Identification & recruitment of analytical skills into your organisation
- **Advice and Support**
  - offer 'no strings attached' technical and business advice relating to analytical activities
  - Technical support services

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Thank you