

> SPSS-Audio Broadcast Webinars



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Q & A

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> Commonly Asked Questions

SPSS

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> Commonly Asked Questions

SPSS

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Yes

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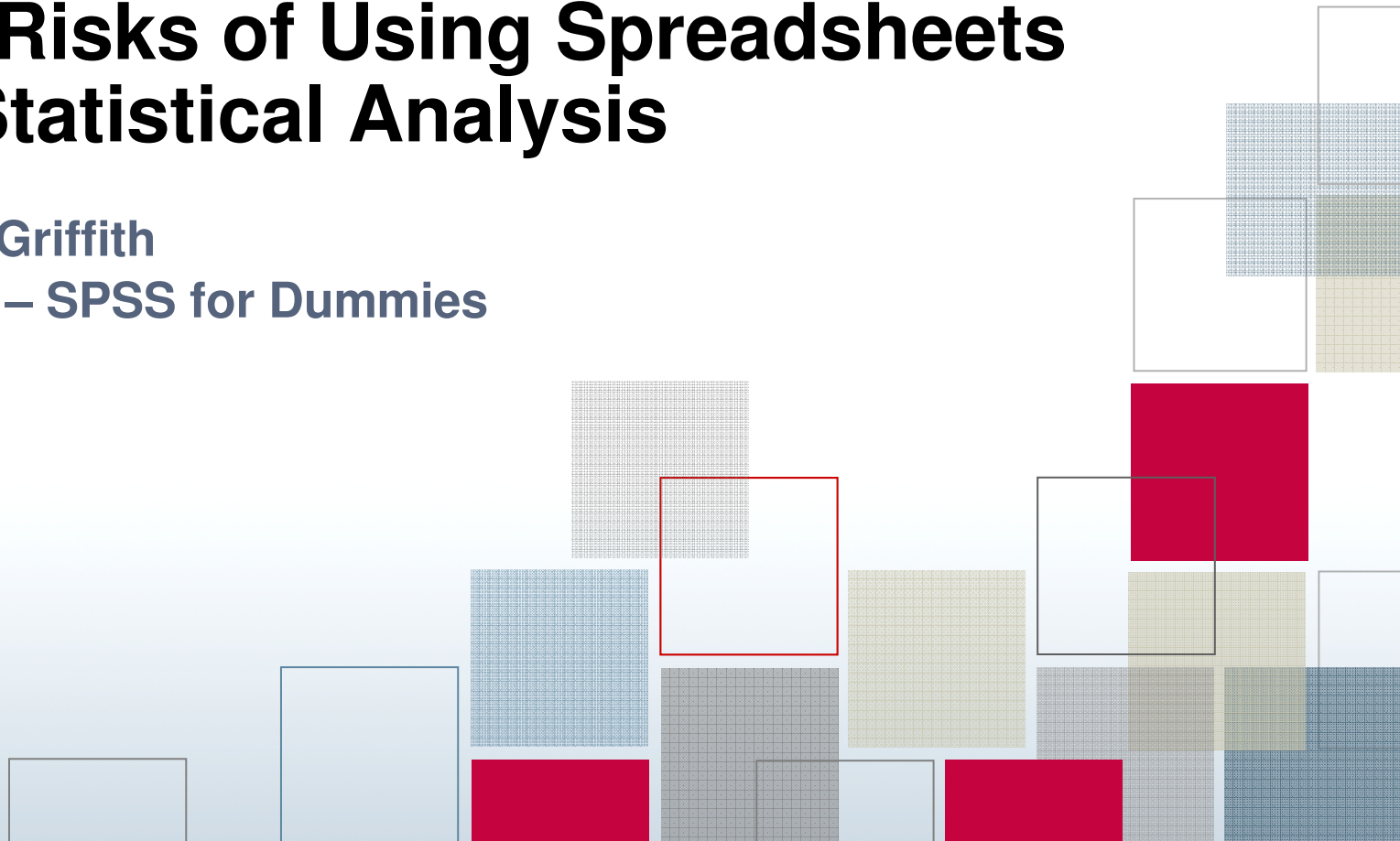
Yes

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> The Risks of Using Spreadsheets for Statistical Analysis

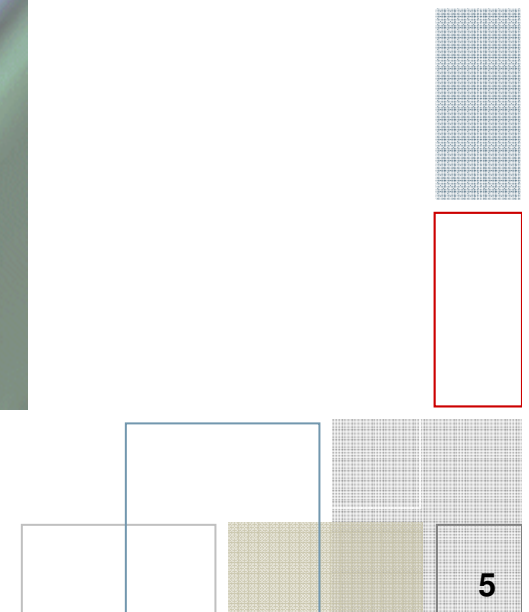
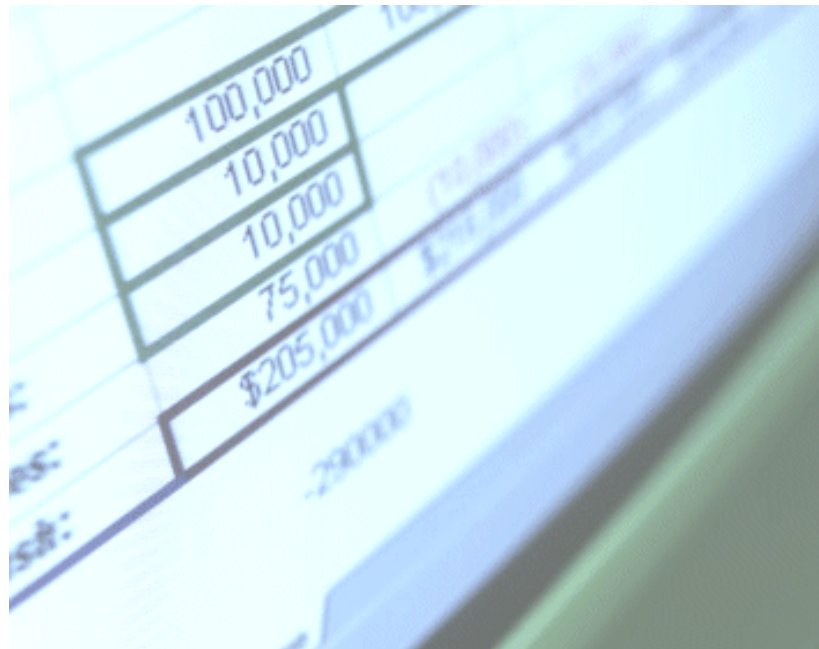
Arthur Griffith

Author – SPSS for Dummies



> A Spreadsheet Is Easy To Use

- You already know how to use it
- It's already on the computer
- Illusion



> Spreadsheet Design

- Spreadsheet designing is programming
- Programming is error prone
- Spreadsheets are seldom checked

$$E(R, t) = \sum_{i=1}^N ||p_i - (Rq_i + t)||^2$$

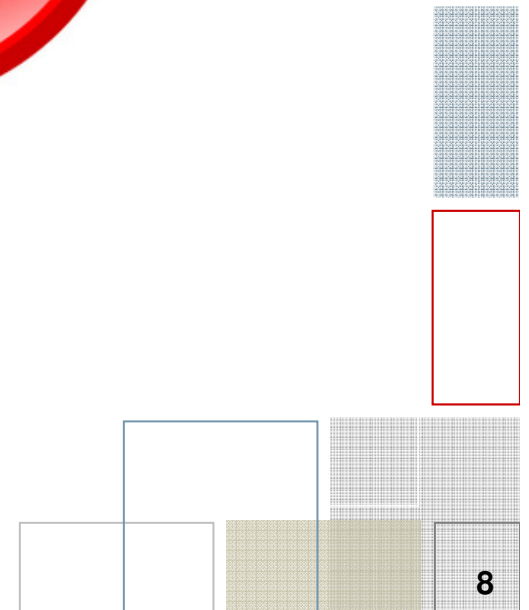
$$c_p = \frac{1}{N} \sum_{i=1}^N p_i$$

SPSS Statistics

Microsoft Excel

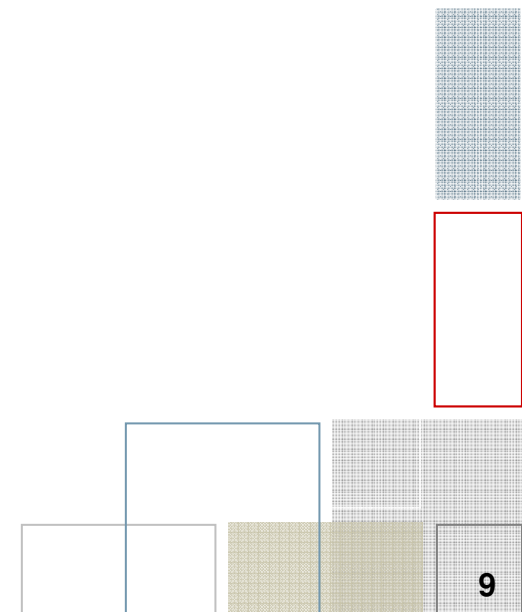
> Three kinds of errors

- Oops
- Eureka
- Cassandra



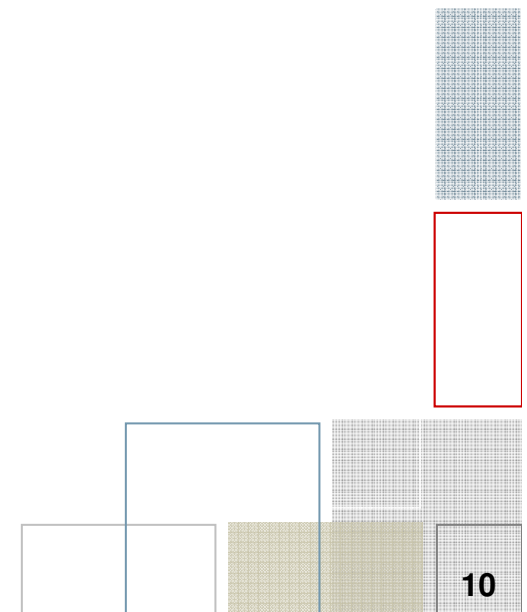
> Naive Equations

- 1
- 2
- 3
- 900000001
- 900000002
- 900000003



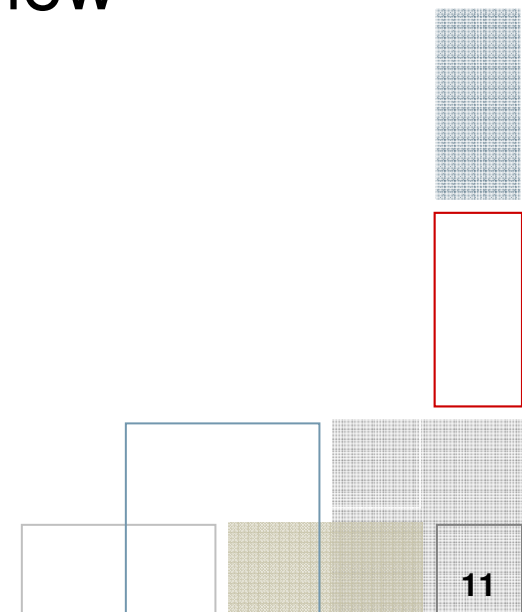
> Causes of Spreadsheet Errors

- Mistakes in logic
- Incorrectly copied formulas
- Accidentally overwritten formulas
- Misuse of built-in functions
- Omitted factors
- Data input errors
- Sorting numbers
- Cell orientation
- Adding new data



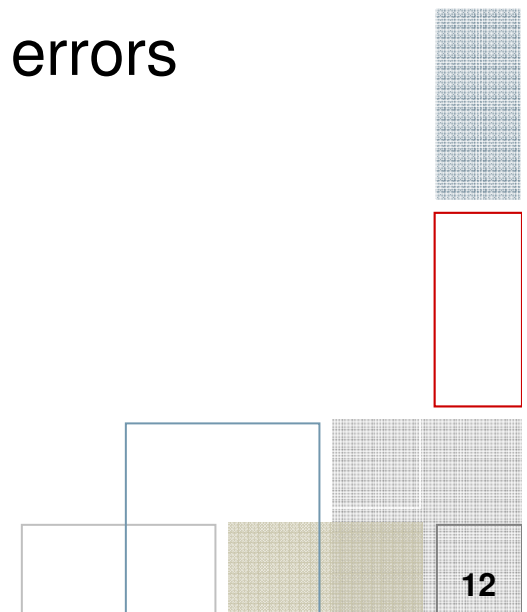
> Spreadsheet error studies

- 90% contain at least 1 error
- Studies conducted visual inspections of spreadsheets
- Possible many errors were not found
- Attempts to correct errors introduced new errors



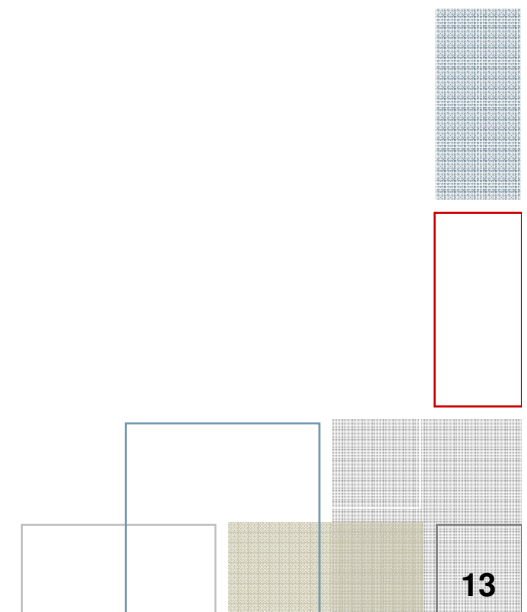
> Spreadsheet Error Studies

- P. Brown, J. Gould. An experimental study of people creating spreadsheets, ACM Transactions on Office Information Systems 5 (1987)
 - 17 errors in one spreadsheet
 - 94% of deployed spreadsheets contained errors
 - Average -- 5.2% of cells were in error



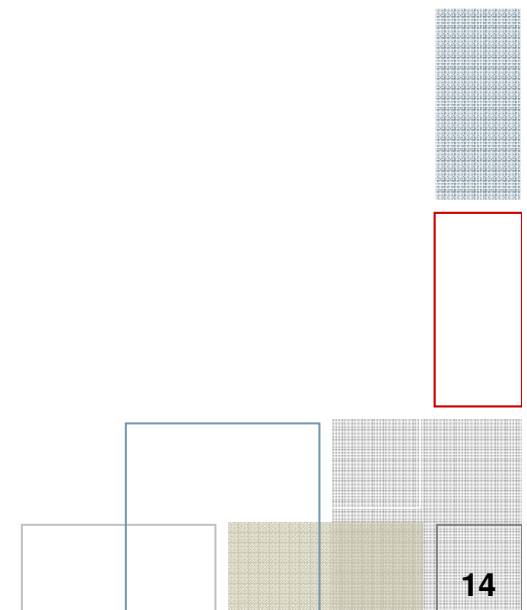
> Spreadsheet Error Studies

- T. Teo, M. Tan. Quantitative and qualitative errors in spreadsheet development, Proceedings of the 30th Hawaii International Conference on Systems Sciences (1997)
 - 30% of eureka errors corrected during modification
 - 49% had new mechanical errors
 - 30% new logical errors
 - 65% new omission errors



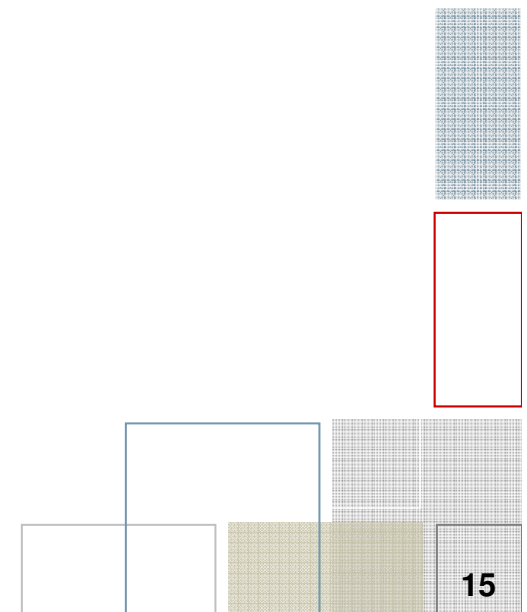
> Spreadsheet Error Studies

- Professor Ray Panko, University of Hawaii.
- <http://www.panko.cba.hawaii.edu/ssr/>
 - 90% or more contained errors
 - Lowest error rate 86%
 - Highest error rate 100%



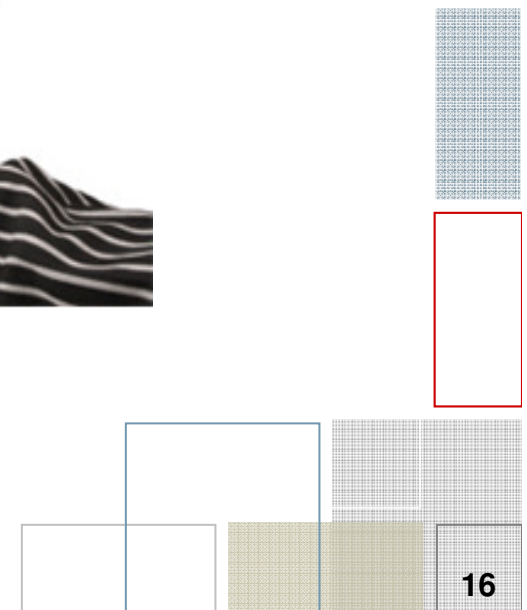
> Stability of spreadsheets?

- Patches continuously issued
- Common practice for software that is released before thoroughly tested
- Patched spreadsheets had more errors



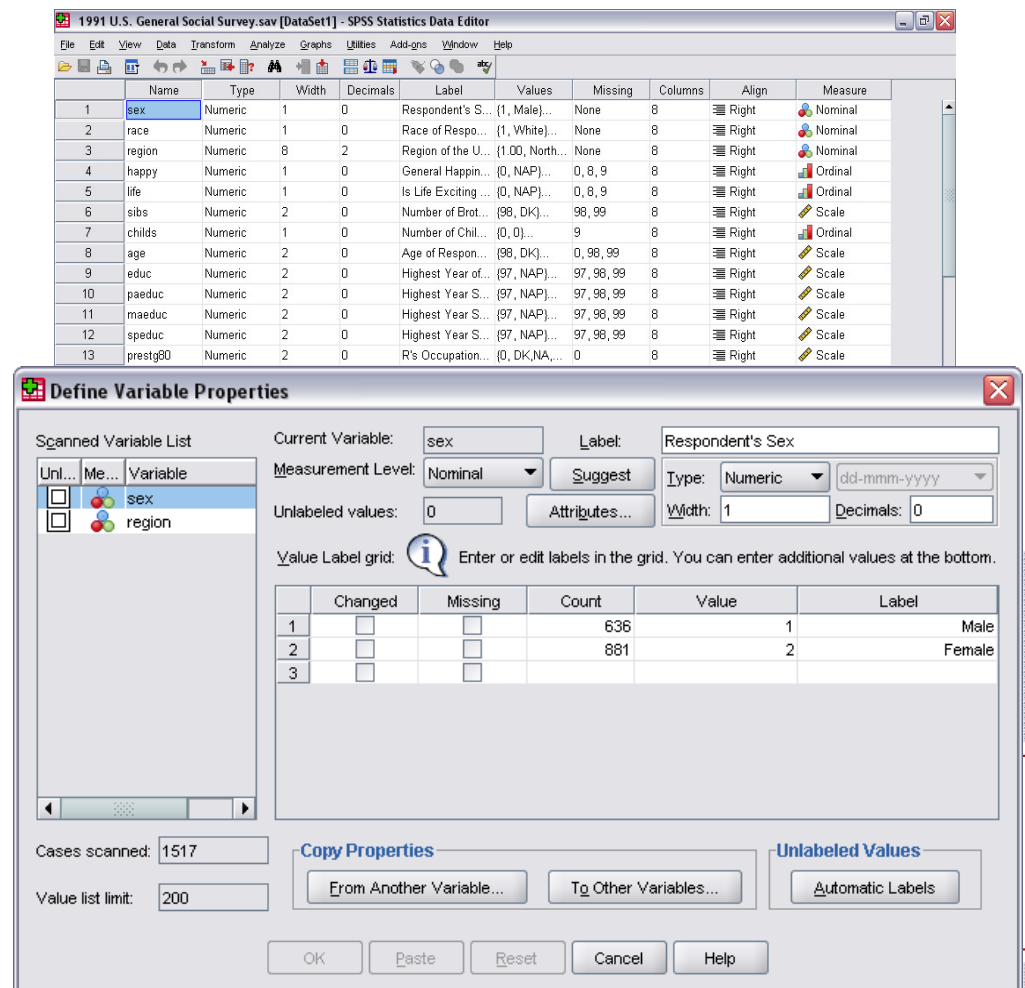
> Data Entry

- Range
- Relative location
- Overwrite
- Cell address



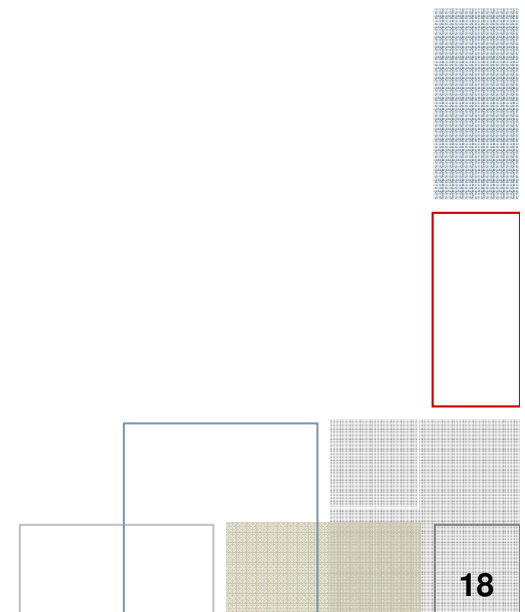
> Data Entry

- Define the data
- Enter the data
- Analyze the data



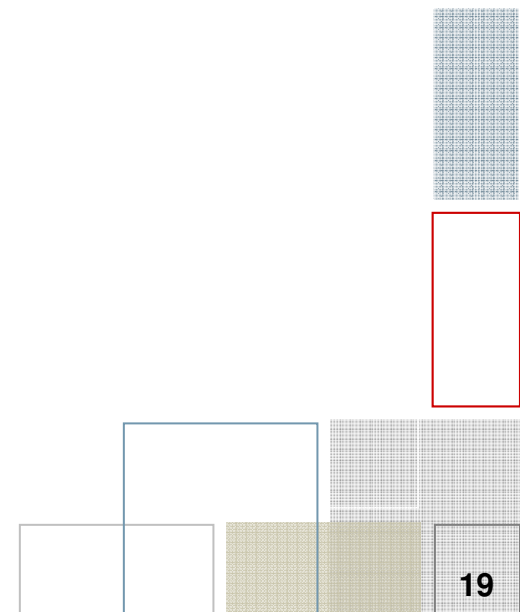
> Checking Data

- Easy to make mistakes when typing numbers
- In spreadsheets, the numbers will be included as is in calculations
- Hopefully answer is bizarre enough to call your attention to it



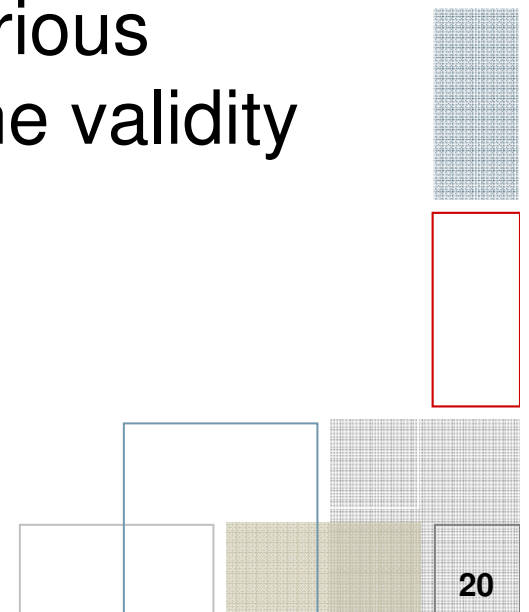
> How SPSS Statistics is different

- SPSS takes error checking more seriously
- Automatic procedures can locate values that appear out of line
- Range limits will detect bogus values



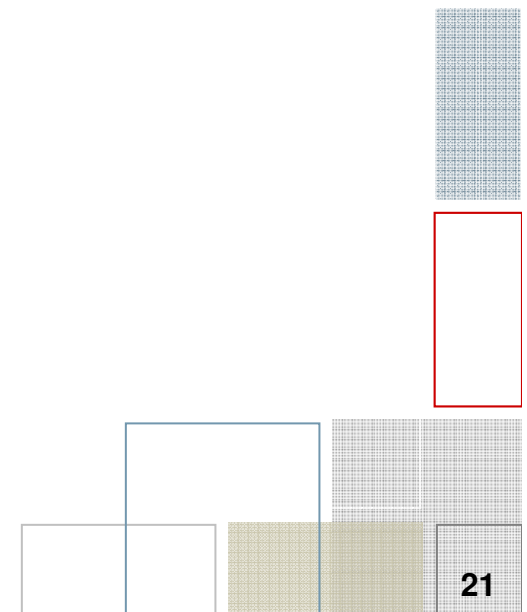
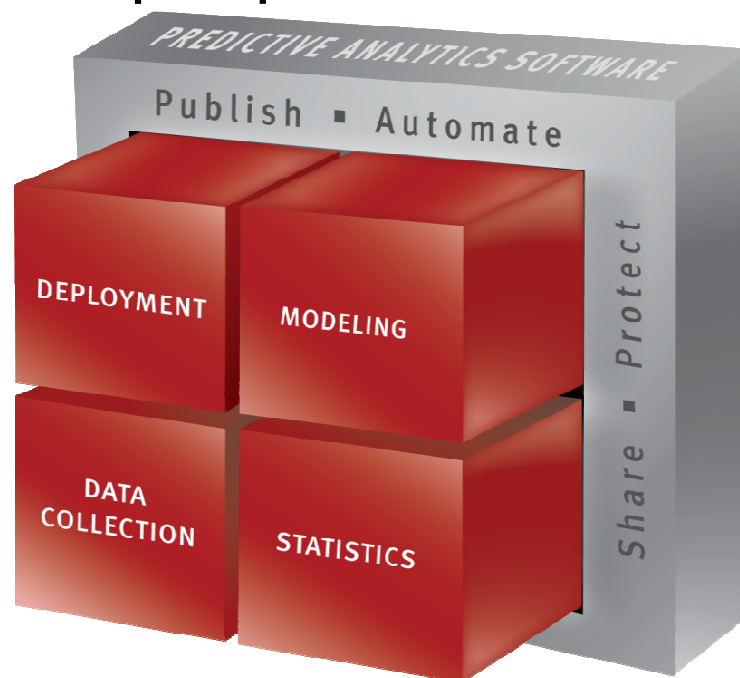
> Future Projections

- Spreadsheets can only show information about relationships among the data entered
- Spreadsheets have dedicated functions that can be used for forecasting
- These functions do not provide the tests and numerical analysis techniques that serious mathematicians would use to check the validity of the results



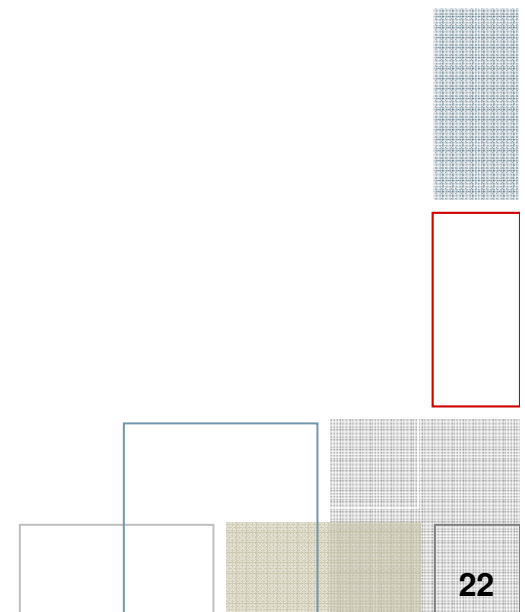
> There's a better way

- SPSS Predictive Analytics Software
- Build predictive models using your data
- Find out how what opinions, attitudes, and concepts effect people's decisions



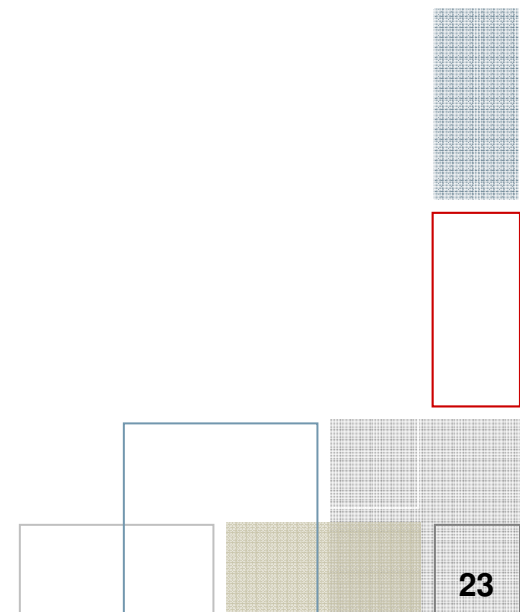
> Discovery

- Spreadsheets are popular
- Error rates are high
- Inappropriate uses



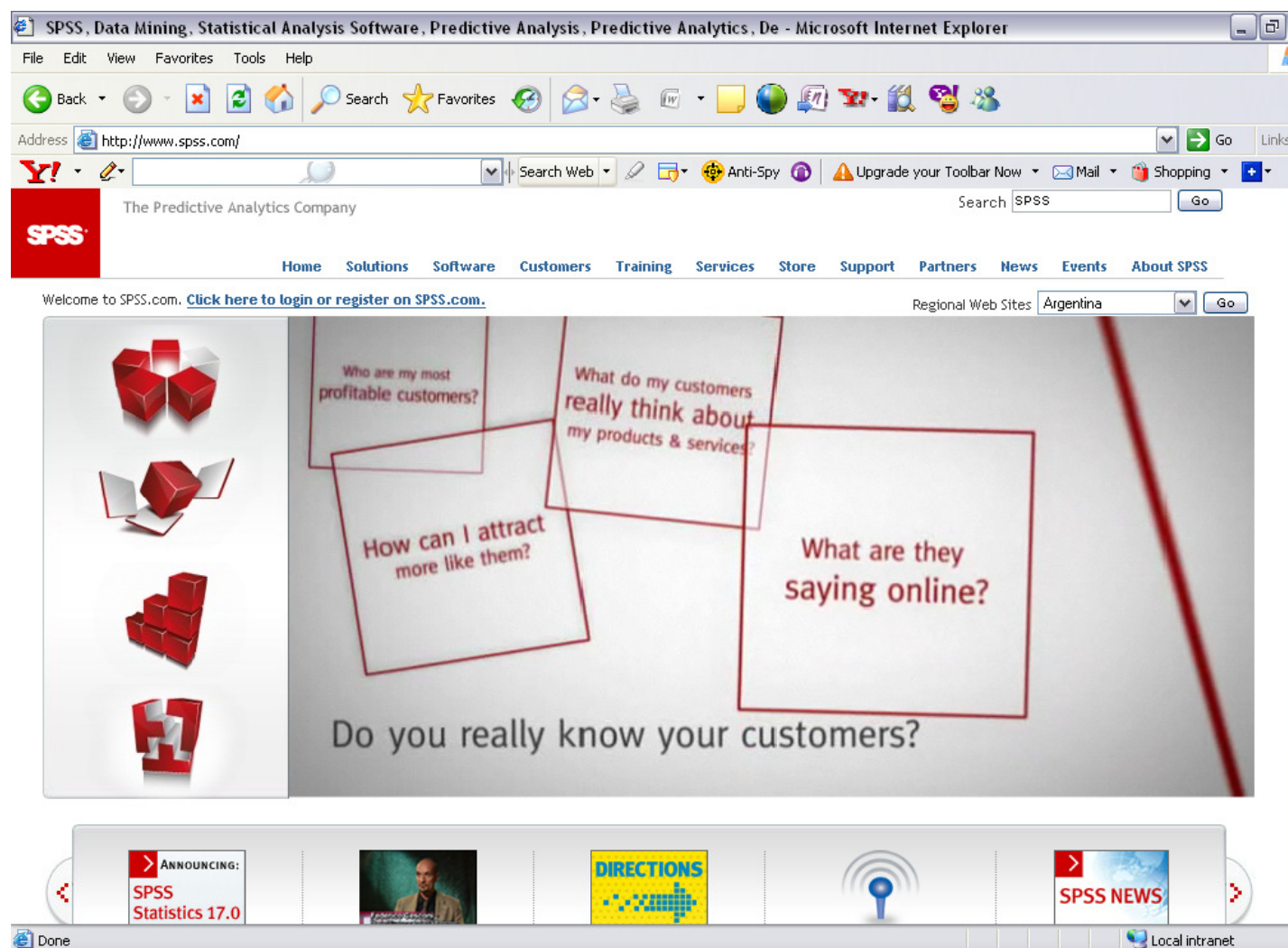
> Conclusion

- Spreadsheets are used more than realized
- Error rates in spreadsheets is astounding
- Spreadsheets are called upon to address problems beyond its capabilities
- Everyone's data is different
- All requirements are unique



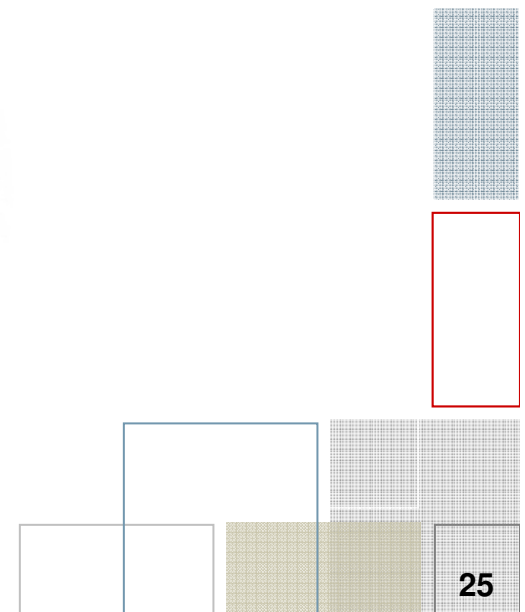
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> Q&A

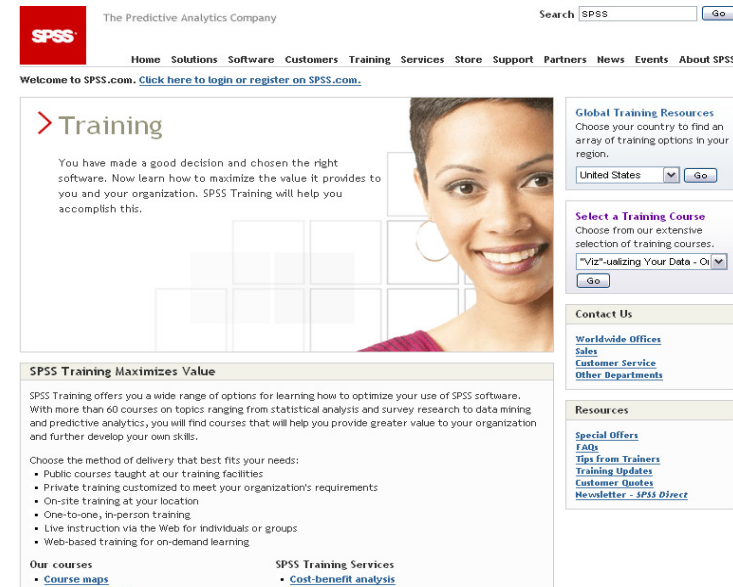
- Please submit your text questions
- Click on the ? in the bottom right hand panel of your screen
- Questions will be answered in the order they are received



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- **Sales questions and pricing**

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- **Speaker Information:**

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