LISBON SCHOOL OF ECONOMICS & MANAGEMENT
UNIVERSIDADE DE LISBOA

SPSS – Multi-item Scales

Quantitative Data Analysis

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Summary

- Multi-item scales
  - Reliability / Cronbach's Alpha coefficient
  - Factor analysis (OH11) can provide additional insights to the analysis of multi-item scales

SPSS

- Open file “OH4 - survey analysis v2.sav”

Multi-item scales

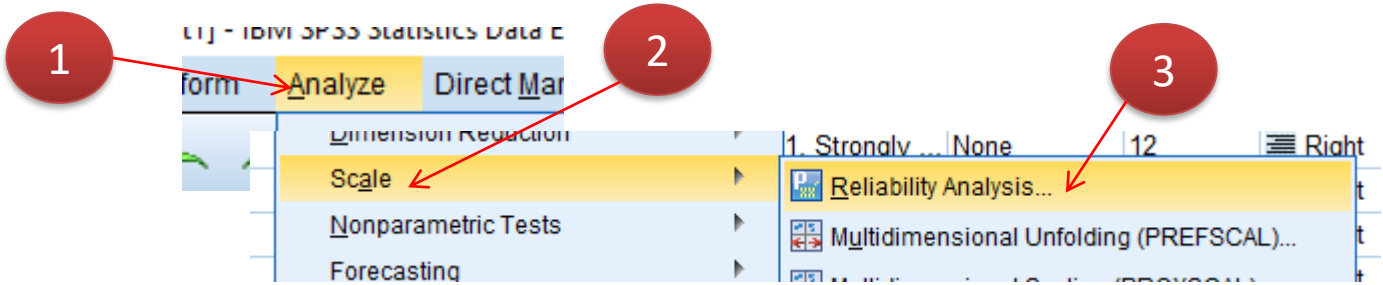
- Creating multi-item scales
  - Combination (aggregation) of several items
    - E.g. Calculating the average (or sum) of items related to a concept
  - Assessing reliability
    - Internal consistency estimate – Cronbach's alpha
    - Cronbach's alpha coefficient – One of the most commonly used indicators of internal consistency
    - Cronbach's Alpha coefficient varies from 0 to 1

Reliability

- Cronbach alpha coefficient of a scale should be above 0.7 (Field, 2013; Mooi, 2011; Pallant, 2011)
  - In exploratory studies, a value of 0.60 is acceptable, while in the more advanced stages of research, values of 0.80 or higher are regarded as satisfactory (Mooi, 2011)
- With short scales (e.g. scales with fewer than ten items) it is common to find quite low Cronbach values
  - It may be better to report the mean inter-item correlation for the items – optimal range for the inter-item correlation: 0.2 to 0.4 (Pallant, 2011, p. 6)

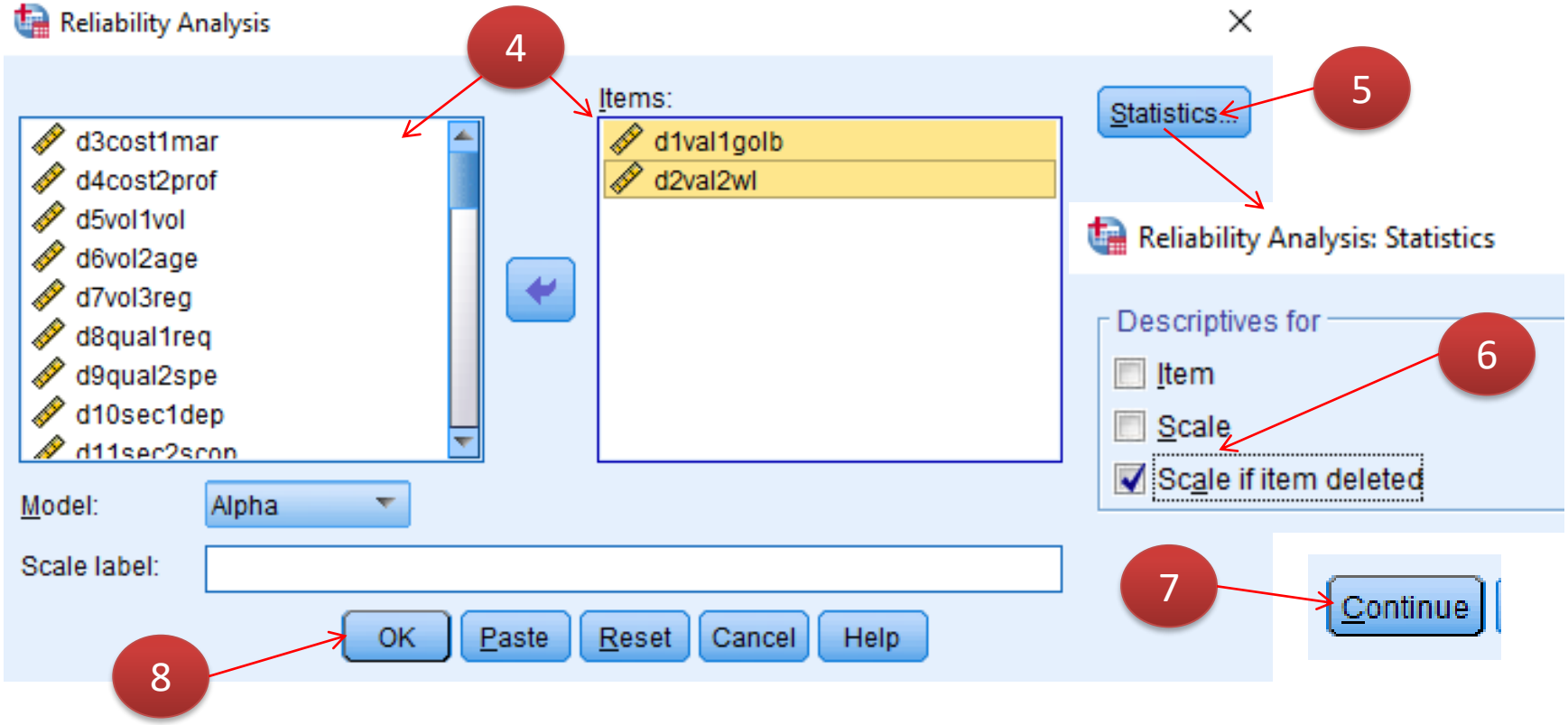
Reliability

- Assessing reliability
  - Variables
    - Overall relationship value
    - Direct functions
      - Profit, volume, quality and safeguard
    - Indirect functions
      - Market, scout, innovation and social support



Reliability

- Reliability – Variable value



Reliability

- Reliability analysis result
  - Relationship Value

Reliability Statistics

Cronbach's Alpha	N of Items
,826	2

Indicates a high level of internal consistency for this scale

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
d1val1golb:O relacionamento com este cliente é globalmente:	5,16	1,649	,709	.
d2val2wl:Considerando as vantagens (ganhos) e desvantagens (custos) associados ao relacionamento com esse cliente, este relacionamento é:	5,33	2,140	,709	.

Reliability

- Reliability analysis result
  - Scout

Reliability Statistics

Cronbach's Alpha	N of Items
,189	4

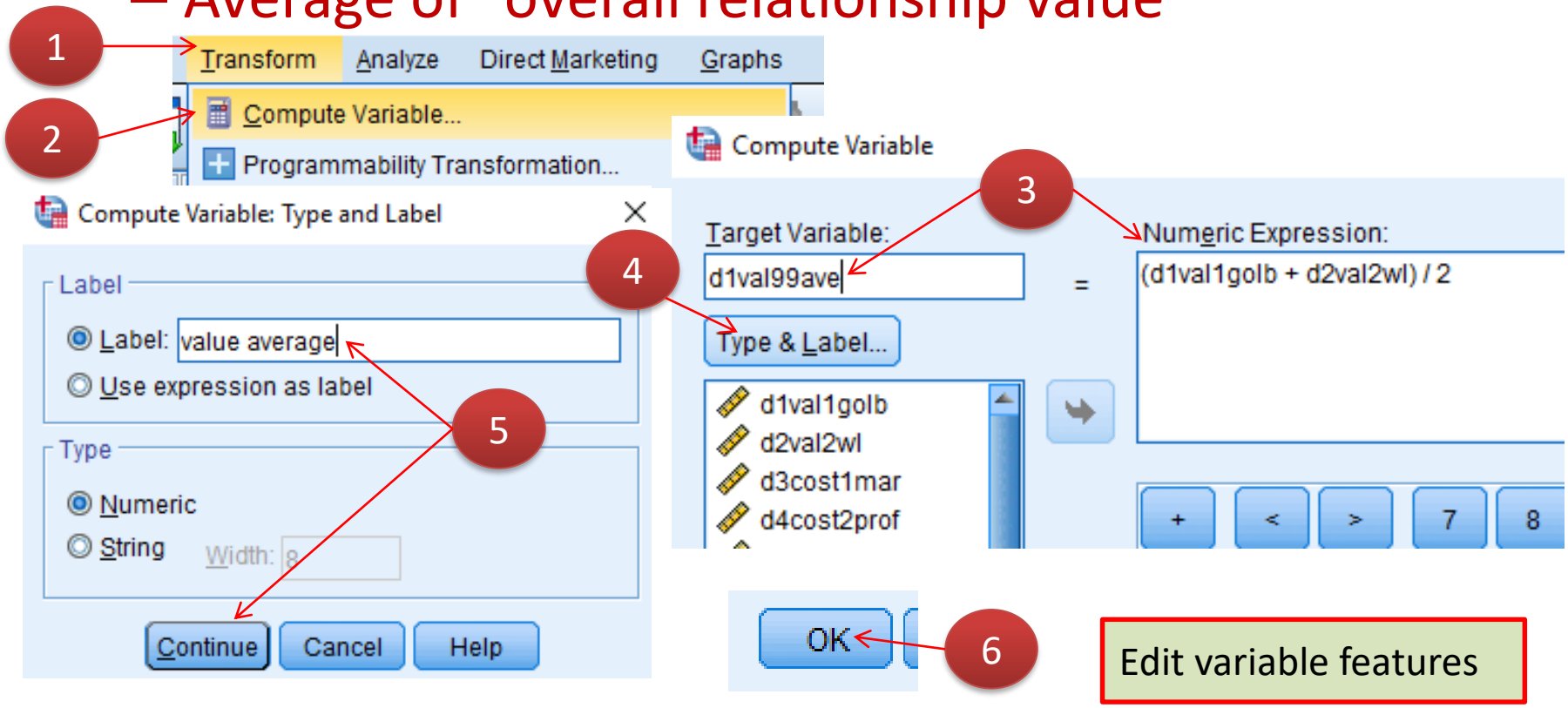
Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
i3acc1info:Este cliente dá informação sobre o mercado, clientes, fornecedores, concorrentes:	11,45	4,746	,507	-,679[a]
i4acc2good:Este cliente aumentou o valor de relacionamentos com outros clientes:	11,44	5,609	,564	-,581[a]
i5acc3badinv:Este cliente diminuiu o valor de relacionamentos com outros clientes:	11,22	16,354	-,593	,808
i6acc4oth:Este cliente suporta o contacto com organizações governamentais e /ou entidades / pessoas importantes para a minha empresa:	12,39	5,904	,365	-,321[a]

Presents the value that Cronbach's alpha would have if that particular item was deleted from the scale

Multi-item scale

- Creating a multi-item scale
  - Average of "overall relationship value"



Multi-item scale

- New variables (multi-item scales)…

"value average" is the newly created variable: d1val99ave; "scout average"…

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
value average	198	2	7	5,24	1,270
profit average	198	2	7	4,68	1,324
volume average	198	1	7	4,49	1,412
quality average	198	2	7	5,28	1,291
safeguard average	198	2	7	4,66	1,094
market average	198	1	7	4,56	1,428
scout average	198	1	7	3,74	1,348
innovation average	198	1	7	4,53	1,384
social average	198	1	7	4,42	1,603
Valid N (listwise)	198				

Multi-item scale

- New variables (multi-item scales)…

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innovation average	198				1,384
social average	198				1,603
Valid N (listwise)	198				

Follow the same procedure for all Multi-item scales

To report the multi-item scales: in excel/word add 2 columns with the “Cronbach alpha coefficient” and “Number of items”