

Introductory course
Quantitative approaches

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Quantitative research

- Quantitative content analysis
- Questionnaires
 - Phone interviews
 - Personal interviews
 - Respondents fill in

What to ask about?

- Questions often refer to a **variable**.
- Formulation of the question relates to the **operational definition** of the variable.
- Sometimes combine questions so that several questions together constitute an **index**.

Open and closed questions

- **Open questions:**
 - No given answers.
 - Difficult to process statistically.
- **Closed questions:**
 - Given alternatives for answers.
 - Presupposes that we know what respondents may answer.

Examples

- How often are you on the Internet?
 - Many times a day, Every day, Weekly, Monthly, More seldom, Never.
- Can you access the Internet at home whenever you want to?
 - Yes, No.
- To what degree do you agree with the following statement? Social networking sites informs me of what my friends are doing?
 - Agree, Partly agree, Partly disagree, Disagree.
- Do you think you will use the following social networking sites mor, less or equally often/seldom in 12 months?
 - Facebook, YouTube, Netby etc.

Some challenges

- Don't know-answers
- Yes-effects
- In the middle-answers
- Interviewer effect
- Non-response (bortfall)



Kinds of analysis

- Univariate analysis
- Bivariate analysis
- Multivariate analysis

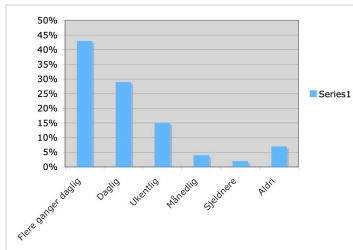
Univariate analysis - one variable

- Frequencies
- Central tendency
- Diffusion (spredning)

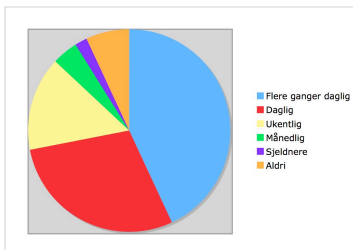
Frequencies

Participation in social networking sites	Absolute frequencies	Relative frequencies	Cumulative frequencies
Many times a day	326	43%	43%
Dayly	216	29%	72%
Weekly	112	15%	87%
Monthly	27	4%	91%
More seldom	17	2%	93%
Never	52	7%	100%
Sum	750	100%	100%

Ways of presenting Deltakelse i nettsamfunn



Ways of presenting Participation in social networking sites



Central tendency

- **Modus**
 - The most frequent value.
- **Median**
 - The value that divides a distribution in two (presupposes ordinal scale of measurement).
- **Mean (gjennomsnitt)**
 - The total of all units value divided by the number of units (presupposes summen av alle enheters verdi dividert med antallet enheter (presupposes intervall or ratio).

Frequencies

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Diffusion

- Modal percentage (modalprosent)
 - Share of units in modus.
- Semi-interquartile range (kvartilavvik)
 - mid half ($Q = Q3 - Q1/2$).
- Variance og standard deviation (varians og standardavvik)
 - Measurement on units' mean distance from mean value for all units.

Bivariate analysis - two variables

Independent variable → dependent variable

Background/
personal → Attitude/actions

Bivariate analysis

Procedure

- Make data matrix
- Calculate frequencies
- Percentuate
- Compare and find percent difference (prosentdifferanse)
- Interpret

Frequencies

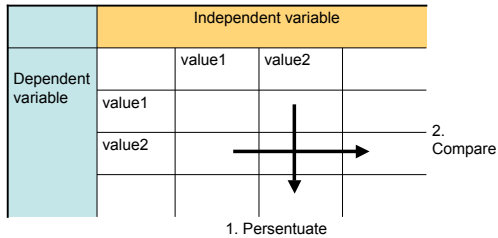
Participation in social networking sites	Gender		Total
	Female	Male	
Several times a day	217	109	326
Daily	148	68	216
Weekly	60	52	112
Monthly	13	14	27
More seldom	3	14	17
Never	24	28	52
Total	465	285	750

Frequencies II

Recoded variable:

Participation in social networking sites	Gender		Total
	Female	Male	
Several times a day/daily	365	177	542
Weekly or more seldom/never	100	108	208
Total	465	285	750

Percentuate



Percentuate II

Recoded variable:

Participation in social networking sites	Gender		Total
	Female	Male	
Several times a day/daily	365	177	542
Weekly or more seldom/never	100	108	208
Total	465	285	750

365 is x% of 465

$\frac{365 \times 100}{465}$

Percentuate

Participation in social networking sites	Gender		Total
	Female	Male	
Several times a day/daily	79%	62%	72%
Weekly or more seldom/never	21%	38%	28%
Total	100%	100%	100%

Percent differences

Participation in social networking sites	Gender		Total
	Female	Male	
Several times a day/daily	79%	62%	72%
Weekly or more seldom/never	21%	38%	28%
Total	100%	100%	100%

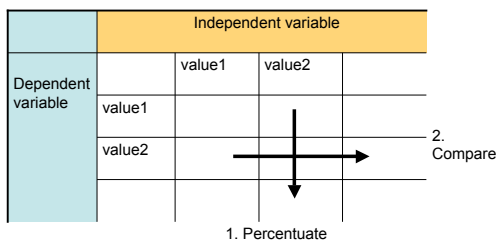
$$62 - 79 = -17$$

$$38 - 21 = 17$$

Multivariate analysis

Participation in social networking sites	Female		Male		Total
	16-17 yrs	18-19 yrs	16-17 yrs	18-19 yrs	
Often (daily or more)	146	219	79	98	542
Seldom	35	65	52	56	208
Total	181	284	131	154	750

Percentuate



Percentuate II

Participation in social networking sites	Female		Male		Total
	16-17 yrs	18-19 yrs	16-17 yrs	18-19 yrs	
Often (daily of more)	81%	77%	60%	64%	72%
Seldom	19%	23%	40%	36%	28%
Total	100%	100%	100%	100%	100%

Percent differences

Participation in social networking sites	Female		Male		Total
	16-17 yrs	18-19 yrs	16-17 yrs	18-19 yrs	
Often (daily of more)	81%	77%	60%	64%	72%
	$p_{.}$	p_1	p_2	p_{12}	

Prediction effect = (effect 1 + effekt 2)/2

Effect of gender = $((p_2 - p_{.}) + (p_{12} - p_1))/2 = ((60 - 81) + (64 - 77))/2 = (-21 - 13)/2 = -17$

Effect of age = $((p_1 - p_{.}) + (p_{12} - p_2))/2 = ((77 - 81) + (64 - 60))/2 = (-4 + 4)/2 = 0$
