

BA KW | Vorlesung

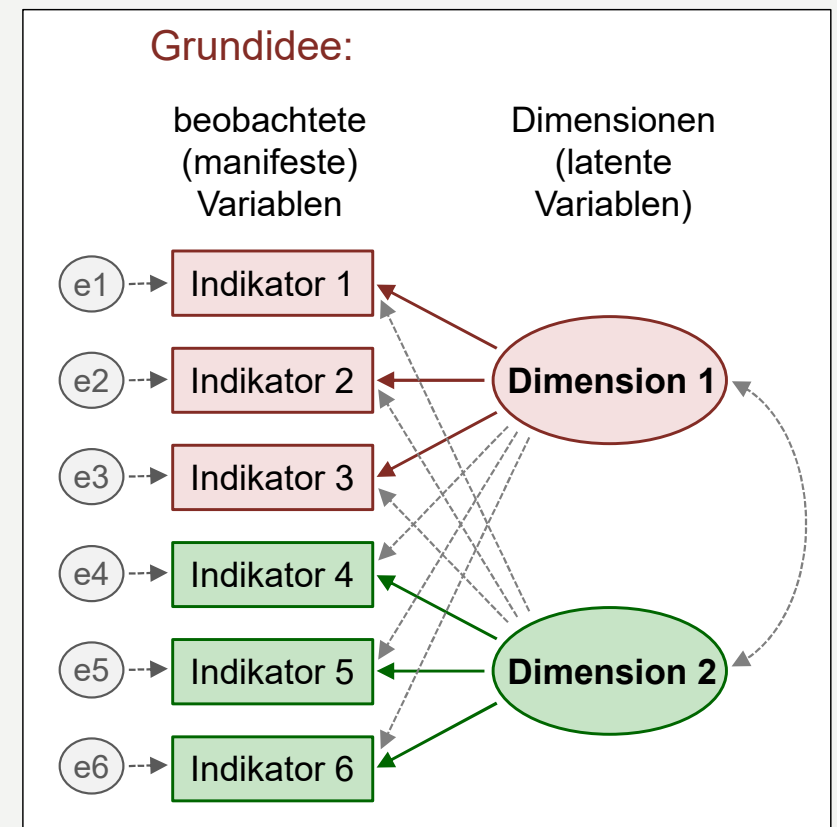
Einführung in die Statistik

Ausblick: weitere Verfahren

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Faktorenanalyse

- Multivariates Verfahren zur Reduktion von beobachteten Variablen auf zugrunde liegende Dimensionen
 - **Explorative Faktorenanalyse (EFA):** Entdeckung einer dimensionalen Struktur hinter den Indikatoren durch Extraktion von Faktoren
 - **Hauptkomponentenanalyse (PCA):** Reduktion von Variablen auf eine überschaubare Zahl von Komponenten
 - **Konfirmatorische Faktorenanalyse (CFA):** Überprüfung einer postulierten dimensionalen Struktur anhand eines Strukturgleichungsmodells



Faktorenanalyse: Beispiel

Problemstellung:

- Aus einer Reihe von Indikatoren von Einflüssen auf Journalismus soll ein brauchbarer Index konstruiert werden

Government officials

Politicians

Censorship

Business people

Advertising considerations

Profit expectations

Advertisers

Market and audience research

Professional conventions

Newsroom conventions

Media laws

Management

Ownership

Supervisors and higher editors

Colleagues in other media

Friends, acquaintances, family

Readers, listeners or viewers

Competing news organizations

News deadlines

Procedures and standards

Shortage of resources

Faktorenanalyse: Beispiel

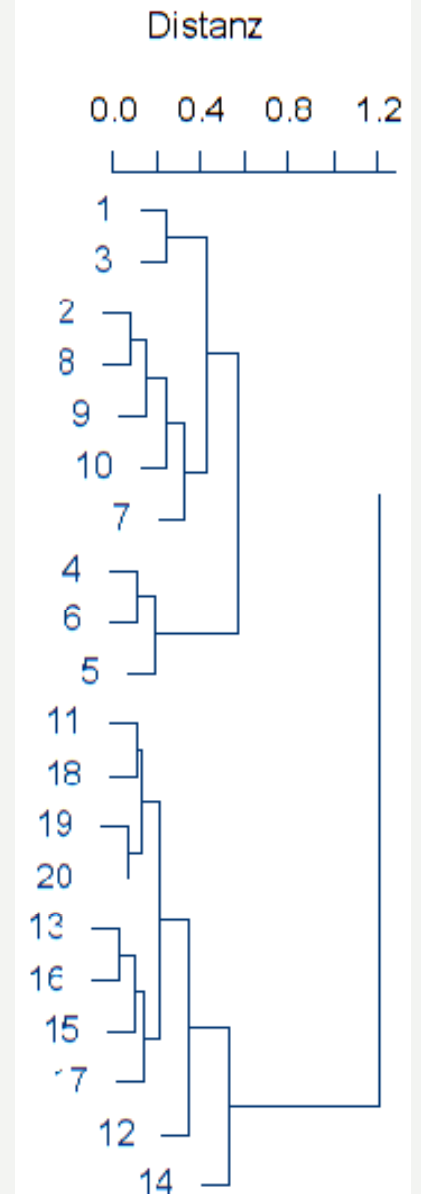
TABLE 2
Dimensionality of Influences

Source of Influence	Component					
	Political Influences	Economic Influences	Professional Influences	Organizational Influences	Reference Groups	Procedural Influences
Government Officials	0.849	0.003	0.081	0.136	0.106	0.047
Politicians	0.844	0.038	0.043	0.131	0.141	0.009
Censorship	0.679	0.119	-0.014	0.099	0.077	0.185
Business People	0.649	0.365	0.021	0.126	0.158	0.010
Advertising Considerations	0.156	0.801	-0.053	0.211	0.026	-0.024
Profit Expectations	0.047	0.766	-0.004	0.187	0.100	0.051
Advertisers	0.284	0.753	0.025	0.059	0.100	0.055
Market and Audience Research	-0.076	0.603	0.270	0.087	0.123	0.147
Professional Conventions	0.004	-0.015	0.814	0.009	0.026	0.107
Newsroom Conventions	-0.071	0.013	0.753	0.127	0.069	0.158
Media Laws	0.215	0.106	0.655	0.091	0.021	0.129
Management	0.182	0.214	0.102	0.838	0.025	0.092
Ownership	0.192	0.298	0.004	0.750	0.000	0.037
Supervisors and Higher Editors	0.100	0.055	0.129	0.729	0.189	0.163
Colleagues in Other Media	0.181	0.046	0.003	0.065	0.812	0.082
Friends, Acquaintances, Family	0.107	0.026	-0.073	0.190	0.766	0.060
Readers, Listeners, or Viewers	-0.021	0.264	0.419	-0.095	0.545	0.023
Competing News Organizations	0.214	0.202	0.182	-0.006	0.531	0.240
News Deadlines	0.058	0.029	0.115	0.056	0.071	0.838
Procedures and Standards	0.030	0.058	0.224	0.126	0.077	0.743
Shortage of Resources	0.106	0.065	0.062	0.067	0.104	0.633
<i>Eigenvalue</i>	5.195	2.285	1.805	1.514	1.269	1.140
<i>Variance explained</i>	24.7%	10.9%	8.6%	7.2%	6.0%	5.4%
<i>Cronbach's alpha</i>	0.84	0.81	0.68	0.71	0.67	0.78

PCA with Varimax rotation; variance explained = 62.9%; KMO=0.810; Bartlett's test $p < 0.001$

Clusteranalyse

- Multivariates Verfahren zur Entdeckung von Ähnlichkeitsstrukturen zwischen beobachteten Objekten bzw. Subjekten
 - Multivariate Ähnlichkeiten bzw. Unähnlichkeiten (Distanzen) werden in ein Proximitätsmaß überführt
 - Anhand eines Fusionierungsalgorithmus werden ähnliche Fälle schrittweise zu Gruppen (Cluster) zusammengeführt
 - Anhand eines Vergleiches der Cluster über die zugrunde liegenden Variablen hinweg können inhaltliche Profile der Gruppen erstellt werden





Clusteranalyse: Beispiel

Problemstellung:

- Anhand von Indikatoren zum journalistischen Rollenverständnis sollen Gruppen von ähnlichen Journalist:innen gebildet werden
 - Concentrate mainly on news that attract the widest possible audience
 - Provide the audience with the information that is most interesting
 - Be an absolutely detached observer
 - Provide citizens with information they need to make political decisions
 - Act as watchdog of the government
 - Act as watchdog of business elites
 - Influence public opinion
 - Advocate for social change
 - Set the political agenda
 - Motivate people to participate in civic activity and political discussion
 - Support official policies to bring about prosperity and development
 - Convey a positive image of political and business leadership



Clusteranalyse: Beispiel

Table 2. Profiles of global professional milieus of journalists

	Populist disseminator	Detached watchdog	Critical change agent	Opportunist facilitator
Concentrate mainly on news that attract the widest possible audience	++		--	
Provide the audience with the information that is most interesting	+++	+	---	-
Be an absolutely detached observer	+	++		--
Provide citizens with information they need to make political decisions		++		--
Act as watchdog of the government	--	++	+	-
Act as watchdog of business elites	---	++	++	
Influence public opinion		---	++	
Advocate for social change		---	++	
Set the political agenda		-	+	
Motivate people to participate in civic activity and political discussion			+	-
Support official policies to bring about prosperity and development		--	--	+++
Convey a positive image of political and business leadership			---	+++
N	415	401	410	428

Content of cells indicates the clusters' mean deviations from the overall mean in standard deviations: +++/--- = 0.75 SD, ++/-- = 0.5 SD, +/- = 0.25 SD.



Clusteranalyse: Beispiel

Figure 1: Distribution of professional milieus across countries

