Einführung in die statistische Datenanalyse mit R

Kommunikation von Daten und Analysen

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Kursinhalte bisher

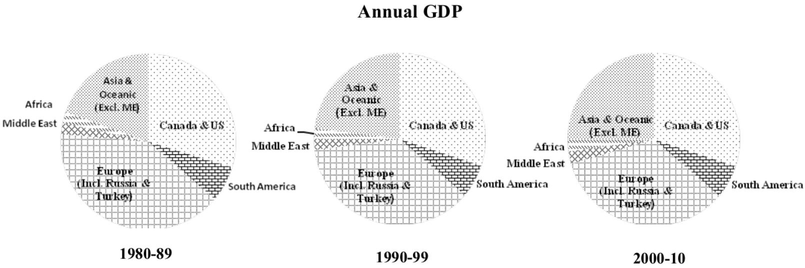
- reine Datenverarbeitung in R
- Berechnung statistischer Modelle
  - stetige abhängige Variable: OLS-Modell
  - binäre abhängige Variable: Logit-Modell
- Interpretation von Modellergebnissen

Was fehlt?

- Aufbereitung und Präsentation von
  - Daten
  - Zusammenhängen
  - Ergebnissen

→ **verständliche** Abbildungen und Tabellen

Nicht so! Warum?



Nicht so! Warum?

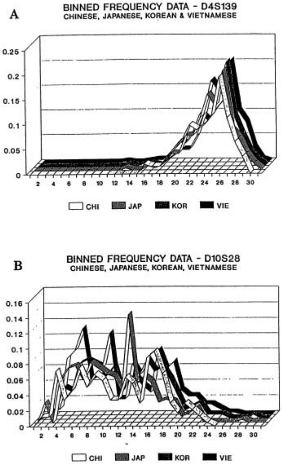


FIG. 4. *Fixed bin distribution (histogram) for two loci and four Asian subpopulations (used with permission from John Hartmann): the boundaries of the 30 bins (vertical axis) are determined by the FBI; these bins are not of equal length. Sample sizes (numbers of individuals) for Chinese, Japanese, Korean and Vietnamese are* 103, 125, 93 *and* 215 *for* D4S139 *and* 120, 137, 100 *and* 193 *for* D10S28. *The horizontal axis is the bin number; bins are not of equal length.*

Nicht so! Warum?

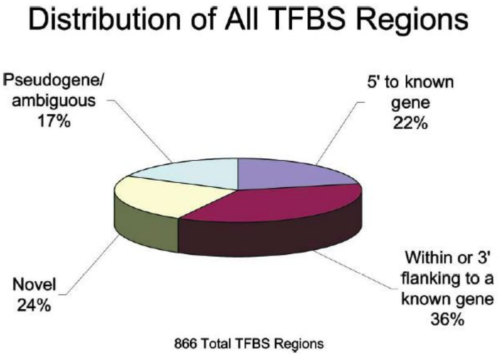


Figure 1. Classification of TFBS Regions

TFBS regions for Sp1, cMyc, and p53 were classified based upon proximity to annotations (RefSeq, Sanger hand-curated annotations, GenBank full-length mRNAs, and Ensembl predicted genes). The proximity was calculated from the center of each TFBS region. TFBS regions were classified as follows: within 5 kb of the 5′ most exon of a gene, within 5 kb of the 3′ terminal exon, or within a gene, novel or outside of any annotation, and pseudogene/ambiguous (TFBS overlapping or flanking pseudogene annotations, limited to chromosome 22, or TFBS regions falling into more than one of the above categories).

Nicht so! Warum?

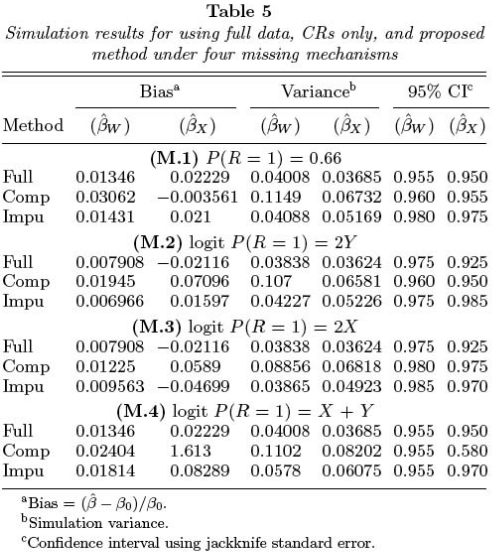


Table 5

Simulation results for using full data, CRs only, and proposed method under four missing mechanisms

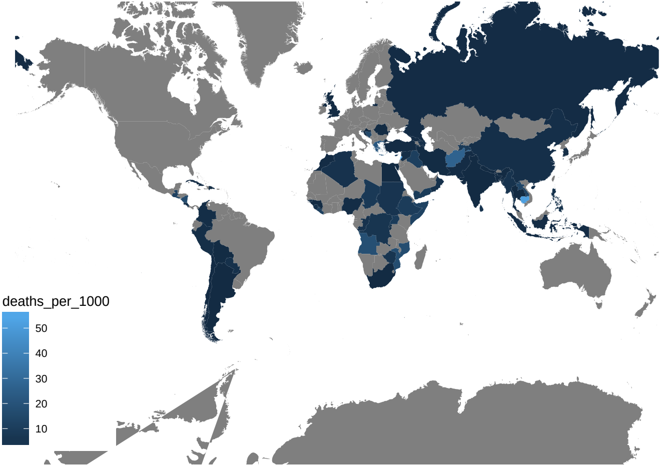
	Bias[a]		Variance[b]		95% CI[c]	
Method	$(\hat{\beta}_W)$	$(\hat{\beta}_X)$	$(\hat{\beta}_W)$	$(\hat{\beta}_X)$	$(\hat{\beta}_W)$	$(\hat{\beta}_X)$
(M.1) $P(R=1)=0.66$						
Full	0.01346	0.02229	0.04008	0.03685	0.955	0.950
Comp	0.03062	−0.003561	0.1149	0.06732	0.960	0.955
Impu	0.01431	0.021	0.04088	0.05169	0.980	0.975
(M.2) logit $P(R=1)=2Y$						
Full	0.007908	−0.02116	0.03838	0.03624	0.975	0.925
Comp	0.01945	0.07096	0.107	0.06581	0.960	0.950
Impu	0.006966	0.01597	0.04227	0.05226	0.975	0.985
(M.3) logit $P(R=1)=2X$						
Full	0.007908	−0.02116	0.03838	0.03624	0.975	0.925
Comp	0.01225	0.0589	0.08856	0.06818	0.980	0.975
Impu	0.009563	−0.04699	0.03865	0.04923	0.985	0.970
(M.4) logit $P(R=1)=X+Y$						
Full	0.01346	0.02229	0.04008	0.03685	0.955	0.950
Comp	0.02404	1.613	0.1102	0.08202	0.955	0.580
Impu	0.01814	0.08289	0.0578	0.06075	0.955	0.970

[a] Bias $= (\hat{\beta} - \beta_0)/\beta_0$.

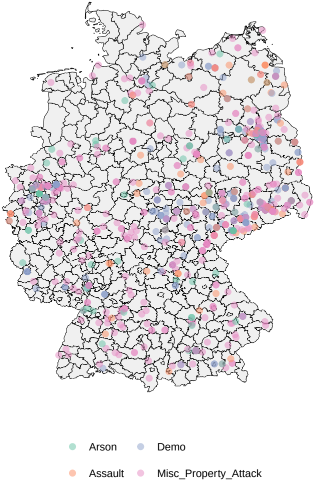
[b] Simulation variance.

[c] Confidence interval using jackknife standard error.

Lacina: Tote pro 1000 Einwohner



Rechte Gewalt in Deutschland (2014–2015)

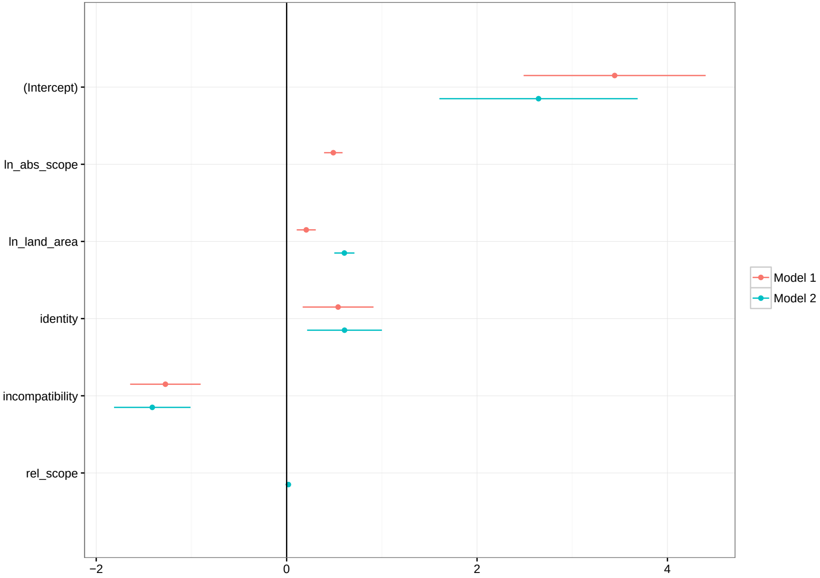


Buhaug/Gates: Regressionsergebnisse – Tabelle

	location	
	(1)	(2)
ln_abs_scope	0.490^{***}	
	(0.050)	
rel_scope		0.019^{***}
		(0.002)
ln_land_area	0.206^{***}	0.606^{***}
	(0.051)	(0.054)
identity	0.541^{***}	0.608^{***}
	(0.190)	(0.200)
incompatibility	-1.273^{***}	-1.411^{***}
	(0.189)	(0.205)
Constant	3.445^{***}	2.646^{***}
	(0.488)	(0.531)
N	243	243
R^2	0.620	0.575
Adjusted R^2	0.613	0.568
Residual Std. Error (df = 238)	1.126	1.190
F Statistic (df = 4; 238)	97.017^{***}	80.587^{***}

$^{*}p < .1$; $^{**}p < .05$; $^{***}p < .01$

Buhaug/Gates: Regressionsergebnisse – Grafik


(Intercept)
ln_abs_scope
ln_land_area
identity
incompatibility
rel_scope
Model 1
Model 2