

### Projekt 1 in a nutshell



### Menschlicher Humor ist sehr individuell...



Cattell & Luborsky, 1947



...und für Computer sehr schwer zu verstehen.

Herman Hollerith Zentrum

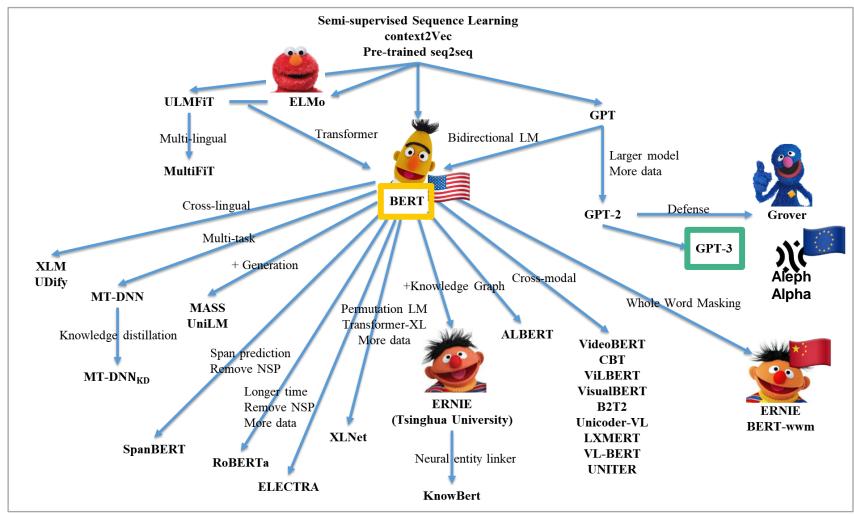
# Natural Language Processing

NLP nutzt verschiedene Ansätze, um **menschliche Sprache verarbeiten und interpretieren** zu können.

Ziel ist, dass ein Computer **Sprache semantisch** und kontextuell "verstehen" kann.







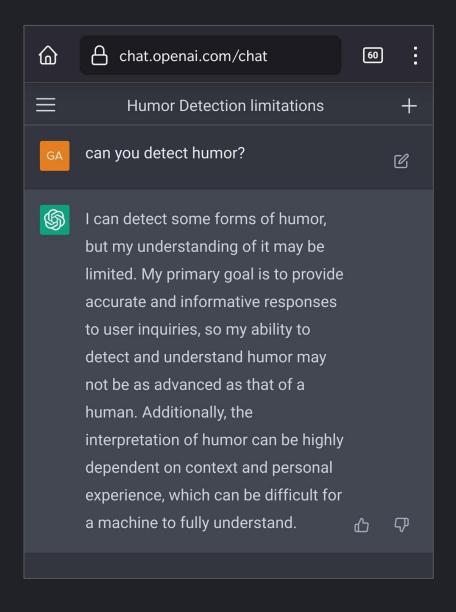
Must-Read Papers on Pre-trained Language Models – Wang & Zhang, 2019; aktualisierte Version



**ChatGPT** 



GPT-3 und GPT-4-unreleased sind nicht mehr open source



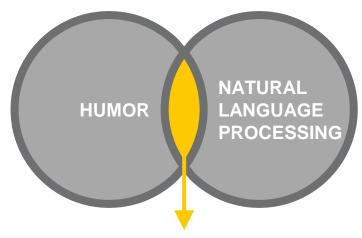
### **Projektplan**

2022

**Projekt 1** Theorie verstehen

HEUTE

Projekt 2 Theorie anwenden



Humorerkennung im Natural Language Processing Humortheorie, NLP-Ansätze, Forschungsstand



"Hey Computer, ist das lustig?"
Prototypische Implementierung einer WebApp

**01**Technische Realisierung

**02** Evaluation der Ergebnisse

03
Prototypische WebApp

Technische Realisierung

Evaluation der Ergebnisse

Prototypische WebApp



"One Liner"
Gelabelte Daten
99.965 Witze
100.001 Nicht-Witze
Englischsprachig

text, humor "Joe biden rules out 2020 bid: 'guys, i'm not running'",False Watch: darvish gave hitter whiplash with slow pitch, False What do you call a turtle without its shell? dead., True 5 reasons the 2016 election feels so personal, False "Pasco police shot mexican migrant from behind, new autopsy shows", False "Martha stewart tweets hideous food photo, twitter responds accordingly", False What is a pokemon master's favorite kind of pasta? wartortellini!, True Why do native americans hate it when it rains in april? because it brings mayflowers.,True "Obama's climate change legacy is impressive, imperfect and vulnerable", False "My family tree is a cactus, we're all pricks.", True Donald trump has found something mysterious for rudy giuliani to do.False How donald trump and ted cruz's love affair is all relationships, False Want to know why athletes chose to #takeaknee? look at our broken justice system, False How are music and candy similar? we throw away the rappers., True Famous couples who help each other stay healthy and fit.False Study finds strong link between zika and guillain-barre syndrome, False Alec baldwin and wife hilaria welcome another baby boy, False "Trump says iran is complying with nuclear deal, but remains a dangerous threat", False Kim kardashian baby name: reality star discusses the 'k' name possibility (video), False "I just ended a 5 year relationship i'm fine, it wasn't my relationship :p",True Here's what the oscar nominations should look like, False Dating tip: surprise your date! show up a day early., True Reflections from dayos: leaders deliberate what's next for climate action after paris deal. False What do you call an explanation of an asian cooking show? a wok-through., True Swimming toward a brighter future: how i was introduced to the world of autism, False Why did little miss muffet have gps on her tuffet? to keep her from losing her whey.,True The pixelated 'simpsons' should be a real couch gag, False All pants are breakaway pants if you're angry enough, True Watch: former british open champ makes embarrassing putting fail, False Chrissy teigen's 2015 grammy dress is skintight and perfect. False "Ugh, i just spilled red wine all over the inside of my tummy.", True The next iphone update will help you save lives, False Celebrating the fourth of july with airport profiling, False "The big bend, a u-shaped skyscraper, could become the longest in the world", False Oscars 2016 red carpet: all the stunning looks from the academy awards. False Why do jews have big noses? because the air is free, True Interesting fact: by the year 2020 all actors on american tv shows will be australian., True I'd tell you a chemistry joke but i know i won't get a reaction. True Arkansas approves law to let people carry guns in bars and at public colleges, False On set with paul mitchell: from our network, False Did you know diarrhea is genetic? it runs in your jeans, True "My sons ebola joke what do africans have for breakfast? ebola cereal :) (be kind,he's only 14 lol)",True What was the sci-fi remake of a streetcar named desire? interstelllllllaaaaaaar,True What do you call a clan of barbarians you cant see? invisigoths.True

github.com/Moradnejad/ColBERT-Using-BERT-Sentence-Embedding-for-Humor-Detection

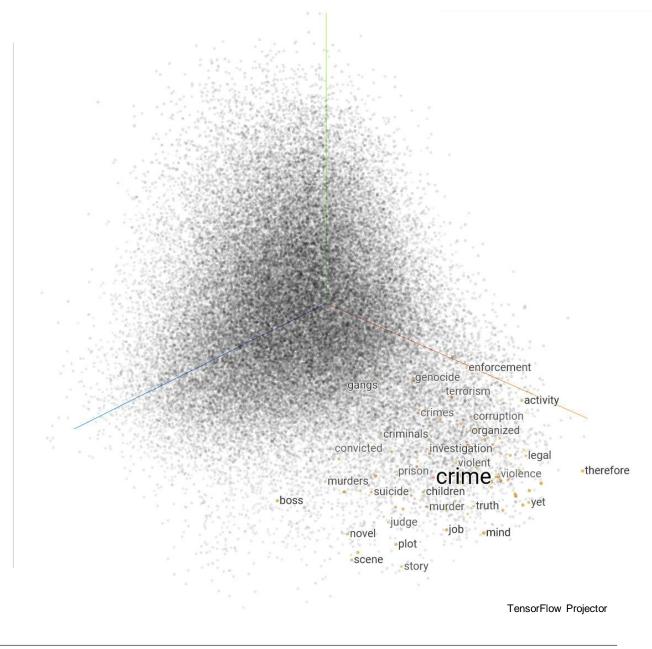
DBE Projektag | Projekt 2 | März 2022

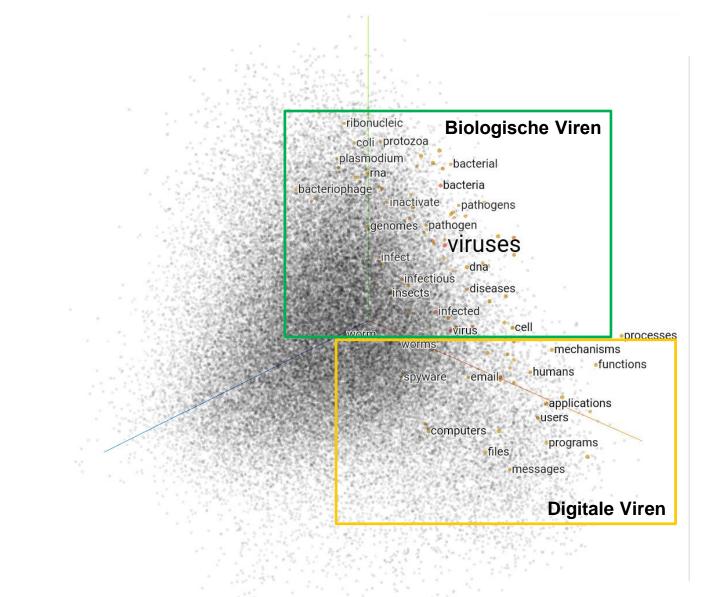
Maria Fürholzer Gowseegan Kanagaratnam Luke Roy Lucas Schweizer

### Beispiel

### Word2Vec 71k

Umwandlung von 71.291 Wörtern in numerische Repräsentationen (= Vektoren), um mathematisch **Zusammenhänge der Wörter** zueinander berechnen und erkennen zu können



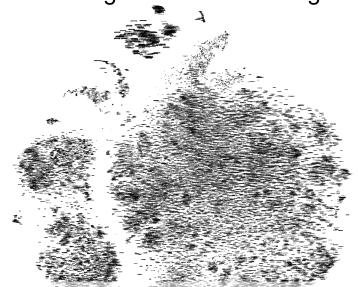


### Word2Vec

- Kontextunabhängig
  Ein Vektor (Embedding) für jedes Wort
- Reihenfolgeunabhängig
  Keine Beachtung der Wortreihenfolge

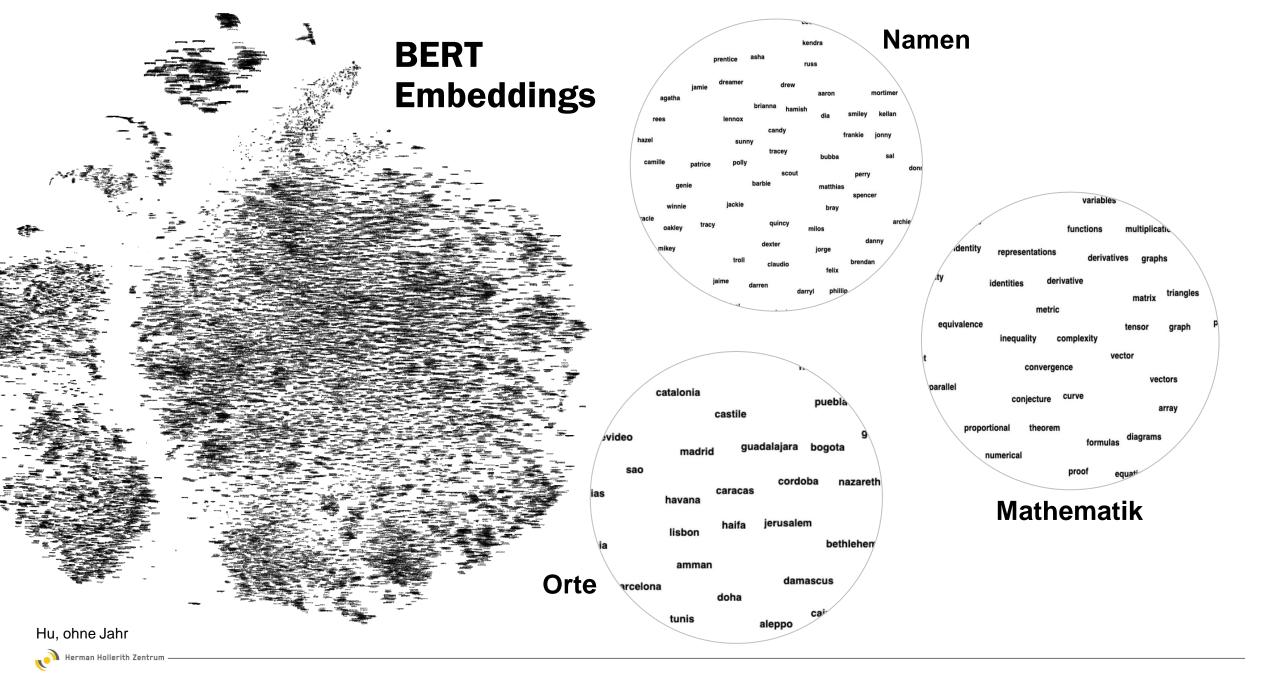
### **BERT**

- Kontextabhängig x Vektoren (Embeddings) für jedes Wort Sitzbank vs Geldbank
- Reihenfolgeabhängig
  Beachtung der Wortreihenfolge im Satz



Sprachmodelle berechnen die kontextuellen Beziehungen zwischen Wörtern und repräsentieren damit die natürliche Sprache als Vektor. Diese Vektoren sind für den Einsatz in Deep Learning Methoden geeignet.





### **Technische Realisierung**







Pre-trained Language Model smallBERT Konfigurationen



Deep Learning Model
Classifier





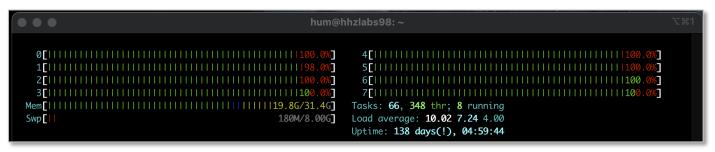




### Kritische Reflexion der Umsetzung

### Erkenntnis

NLP-Methoden benötigen sehr viele Ressourcen





### Problem & Lösungsversuch

- > Limitierte Ressourcen des INF-Servers (Intel Xeon 8-core, 32GB RAM)
- > IBM Cloud: leider konnte das Skript nicht adhoc auf den GPUs initialisiert werden

```
hum@hhzlabs98
------
OS: Ubuntu 22.04.1 LTS x86_64
Host: VMware Virtual Platform None
Kernel: 5.15.0-50-generic
Uptime: 138 days, 4 hours, 54 mins
Packages: 814 (dpkg), 4 (snap)
Shell: bash 5.1.16
Resolution: 800x600
Terminal: /dev/pts/1
CPU: Intel Xeon E5-2640 0 (8) @ 2.500GHz
GPU: 00:0f.0 VMware SVGA II Adapter
Memory: 4892MiB / 32104MiB
```

### **Output Ergebnis**

- > Automatisiertes Skript für das Pre-Processing und zum Trainieren sowie Abspeichern der Modelle
- > Sieben smallBERT Konfigurationen konnten erfolgreich trainiert werden (26 Modelle in 7 verschiedenen Konfigs)



Technische Realisierung

Evaluation der Ergebnisse

Prototypische WebApp



### **Evaluation der Modellgüte**

### **Probleme**

Fehler im Python-Skript

Alle Modelle wurden <u>nur</u> mit der standardmäßigen Accuracy-Metrik gespeichert; dass weitere Metriken nicht mitgespeichert werden, war uns nicht bewusst

- → Accuracy = wie wahrscheinlich, dass Humor
- → 1 Accuracy = wie wahrscheinlich, dass kein Humor
- Fehler in der Entwicklungsumgebung

Zellen-Output ist in remote Jupyter Notebooks nicht mehr aufrufbar; somit sind die Metriken, die <u>während</u> des Trainings dargestellt worden sind, verloren gegangen

### Lösung

- Eigene Evaluationslogik mit Testdatensatz entwickelt
- 30 Witze und 30 Nicht-Witze in englischer Sprache
- Logik Best Case Accuracy
  - → 30 Witze à 100% und 30 Nicht-Witze à 0% Accuracy
  - $\rightarrow$  Optimaler Wert = 30 (ergibt sich aus 30 \* 100% + 30 \* 0%)
  - → Summe aller 60 Accuracy-Kennzahlen pro Modell
  - → Ermittlung des Abstands zum Optimum
  - → Je kleiner der Abstand, desto höher die Modellgüte
  - → Zusätzlich farbliche Codierung der Ergebnisse



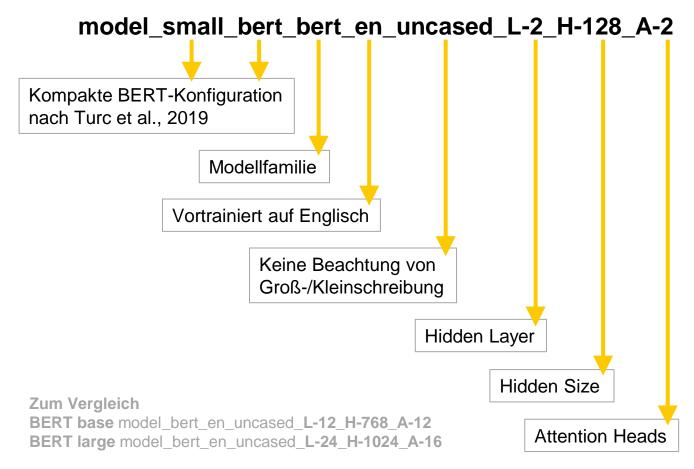
=ABS(SUMME(Accuracy)-30)

															WITZE																
GÜTE	MODELL	My wife to	I went to h	I failed ma	Did you kn	Don't you	Two wifi e	What's the	Refusing to	Desnite th	The rotation	A hook fell I	f you don'	A ghost wa		How do yo	Maybe if v	Build a ma	Why did th	What do w Th	e troubl V	Nhy don't I	wanted n V	What's the	What do v	Don't snell T	here's a r	Atheism is	The other	Animal tes Wh	hat do v
	model small ber			96.07%	96.71%	98,46%	81.65%	98.27%	78.83%	41.96%	91.48%	97.67%	93.08%	97.89%	97.44%	98.26%	97.34%	96.28%	97.44%		95.11%	96.66%	98.32%	97.76%	98.16%	93.57%	97.22%	24.28%	97.81%		98.26%
	model small ber	-		97.36%	97.91%		58.44%	98.01%	74.00%	64.25%	90.69%	98.85%	93.95%	98.92%	98.56%	98.27%	97.72%	96.47%	98.39%		94.54%	98.26%	99.08%	98.82%	98.83%	96.40%	98.41%	24.61%	98.83%		98.35%
	model albert en	-		97.93%	98.96%	98.98%	57.14%	97.58%	80.25%	54.95%	88.97%	99.40%	88.17%	99.45%	99.27%	99.09%	97.14%	95.16%	98.49%		94.54%	98.84%	99.55%	99.49%	99.53%	92.23%	98.26%	26.47%	99.39%		98.47%
	model small ber			97.15%	98.22%	98.53%		97.91%	84.77%	61.65%	91.57%	97.54%	95.23%	98.01%	98.51%		96.93%	95.67%	98.01%		93.80%	98.01%	98.38%	98.35%	98.66%	95.64%	97.50%	31.64%	98.20%		98.61%
	model small ber	_		97.15%	98.06%	98.16%	88.05%	97.82%	86.28%	83.98%	93.70%	97.90%	97.01%	97.81%	97.82%	98.40%	97.21%	97.33%	98.15%		96.51%	97.89%	98.12%	97.96%	97.72%	97.17%	98.09%	46.50%	97.88%		98.18%
	model small ber	_		97.29%	97.47%	98.38%	90.63%	98.30%	90.52%	80.12%	94.96%	97.43%	96.96%	98.09%	97.59%	97.85%	98.33%	96.31%	97.35%		96.32%	98.36%	98.02%	98.24%	97.95%	97.36%	97.86%	55.80%	97.37%		98.10%
	model small ber	_	97.39%	98.01%	98.14%	98.75%	87.20%	97.03%	86.35%	68.86%	91.38%	98.14%	97.56%	97.90%	97.20%	98.46%	98.13%	93.85%	98.27%	98.26%	97.96%	98.53%	98.35%	98.69%	98.16%	93.64%	98.07%	14.80%	98.33%	97.53%	98.52%
17.2	model small ber	t 99.36%	95.77%	92.27%	99.00%	91.97%	59.63%	73.19%	92.54%	45.68%	91.15%	98.97%	72.29%	98.21%	97.63%	99.07%	93.89%	84.38%	98.48%	99.11%	96.41%	95.68%	99.25%	99.39%	99.21%	36.40%	83.56%	33.09%	99.20%	98.71%	96.72%
17.2	model_small_ber	t 99.60%	97.39%	97.74%	99.48%	99.19%	54.57%	98.47%	73.92%	52.30%	64.99%	99.43%	91.89%	99.36%	98.39%	99.72%	98.24%	85.11%	99.66%	99.66%	89.50%	99.55%	99.51%	99.77%	99.76%	38.82%	90.87%	9.68%	99.28%	98.96%	99.50%
19.8	model_small_ber	t_ 99.89%	68.63%	65.50%	99.87%	31.62%	94.54%	39.56%	96.99%	92.86%	97.77%	99.83%	4.14%	98.52%	99.36%	99.97%	19.81%	75.86%	97.97%	99.96%	98.95%	82.78%	99.81%	99.98%	99.98%	3.69%	3.08%	89.51%	99.71%	98.04%	96.99%
20.0	model_small_ber	99.99%	0.01%	0.00%	100.00%	0.01%	99.97%	0.01%	99.99%	99.72%	99.99%	99.98%	0.00%	0.07%	99.98%	100.00%	0.03%	0.11%	99.31%	100.00%	99.99%	99.26%	99.99%	100.00%	100.00%	0.00%	0.00%	99.98%	99.99%	100.00%	99.74%
20.6	model_small_ber	99.76%	37.36%	69.29%	99.71%	44.27%	84.69%	38.86%	97.29%	82.11%	93.50%	99.16%	31.07%	98.74%	99.63%	99.77%	71.54%	46.17%	91.67%	99.82%	98.01%	81.51%	99.77%	99.86%	99.84%	4.09%	10.51%	81.32%	99.48%	99.60%	85.67%
20.8	model_small_ber	t 99.90%	64.43%	38.13%	99.97%	16.09%	94.31%	15.62%	99.24%	97.83%	99.58%	99.82%	1.89%	97.63%	99.98%	99.95%	7.46%	71.93%	93.82%	99.97%	99.75%	67.44%	99.89%	99.99%	100.00%	1.06%	2.34%	92.74%	99.62%	99.64%	56.97%
	model_small_ber			98.82%	99.64%		75.75%	99.52%	94.68%	75.97%	98.42%	99.70%	96.89%	99.71%	99.65%	99.78%	99.38%	99.27%	99.62%		99.49%	99.43%	99.70%	99.83%	99.79%	95.69%	99.29%	52.21%	99.66%		99.69%
	model_small_ber			99.45%	99.30%	97.92%	94.54%	99.27%	92.74%	84.87%	96.07%	99.21%	87.94%	99.37%	98.97%	99.41%	98.44%	96.85%	99.60%		97.14%	99.52%	99.54%	99.76%	99.67%	92.76%	97.92%	62.23%	99.53%		99.57%
23.6	model_small_ber	t 99.54%	99.41%	99.47%	99.39%	99.17%	93.15%	99.39%	93.65%	93.06%	97.63%	99.39%	97.11%	99.63%	99.47%	99.71%	99.25%	99.26%	99.58%	99.71%	97.58%	99.55%	99.55%	99.52%	99.74%	97.26%	99.28%	83.40%	99.24%		99.70%
	model_small_ber			98.35%	99.74%	94.71%	83.36%	90.06%	97.65%	94.37%	97.66%	99.67%	70.10%	99.12%	99.39%	99.84%	98.53%	89.39%	99.69%		99.18%	97.55%	99.77%	99.88%	99.86%	42.89%	95.17%	59.40%	99.69%		98.63%
	model_small_ber	_		47.98%	99.92%	64.23%	67.13%	73.12%	99.86%	99.15%	99.81%	99.58%	4.50%	99.11%	99.90%	99.95%	45.50%	66.10%	99.68%	00.00.	99.85%	99.67%	99.91%	99.97%	99.96%	12.50%	48.69%	99.67%	99.85%		99.13%
	model_small_ber	-		99.46%	99.64%		95.82%	99.54%	95.65%	91.88%	96.84%	99.63%	85.35%	99.47%	99.28%	99.84%	99.56%	97.54%	99.74%		93.32%	99.56%	99.64%	99.93%	99.89%	83.18%	93.52%	79.45%	99.69%		99.72%
	model_small_ber			99.58%	99.38%	99.35%	97.52%	99.67%	95.92%	89.66%	98.36%	99.63%	94.29%	99.62%	99.26%	99.68%	99.48%	99.02%	99.62%		98.85%	99.59%	99.67%	99.71%	99.70%	98.74%	99.50%	69.35%	99.60%		99.69%
	model_small_ber	-		93.94%	99.78%	66.90%	90.70%	75.13%	99.79%	97.09%	99.74%	99.66%	11.08%	94.51%	99.58%	99.97%	83.09%	75.91%	99.46%		99.80%	97.62%	99.51%	99.99%	99.98%	1.34%	20.66%	99.08%	99.89%		99.21%
	model_small_ber	1		99.49%	99.87%	20.85%	95.90%	89.86%	98.94%	98.16%	99.11%	99.80%	26.36%	99.52%	99.54%	99.92%	97.88%	90.39%	99.79%		99.67%	98.35%	99.91%	99.96%	99.97%	22.66%	65.40%	93.77%	99.79%		99.79%
	model_small_ber	-		99.17%	99.89%	89.72%	87.04%	97.07%	99.62%	98.16%	99.10%	98.48%	40.95%	99.00%	99.17%	99.92%	97.87%	94.14%	99.73%		99.57%	99.72%	99.91%	99.93%	99.94%	48.36%	57.37%	85.92%	99.38%		99.66%
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<b>G</b> ÜТ <b>E</b> 9.6	MODELL model_small_ber	Germany is	Cost of livi 63.71%	Along with 3.04%	Nowadays 4.19%	This TF Hul	They threv I	Himalayan 40.74%	The centra	The Chief J 8.43%	Since 2021 27.76%	The start o J 54.09%	ulius Caes 25.37%	NI NATO forn 16.77%	CHT-WITZ Brussels is 1 2.91%	ZE The Weser 1 83.68%	The town I 38.79%	pandas is a 12.99%	Matko Des 58.72%	In 1349; th Fai 12.26%	rming is T 59.57%	The electic B	Sorn into t 89.09%	lowever t 55.92%	In Decemb 29.83%	It is a conc H 93.79%	le also sei T 37.83%	The compa 38.07%	The gestat 32.50%	The univer The	e city is 86.85%
<b>GÜTE</b> 9.6 9.7	MODELL model_small_ber model_small_ber	Germany i: t 2.90% t 5.27%	Cost of livi 63.71% 55.73%	Along with 3.04% 8.84%	Nowadays 4.19% 9.53%	This TF Hul 31.66% 47.72%	They threv   95.08%   98.19%	Himalayan 40.74% 21.12%	The centra 33.40% 22.93%	The Chief J 8.43% 4.97%	Since 2021 27.76% 17.12%	The start o J 54.09% 67.87%	ulius Caes 25.37% 22.71%	NI NATO forn 16.77% 10.22%	CHT-WITZ Brussels is 7 2.91% 3.46%	ZE The Weser T 83.68% 85.81%	The town I 38.79% 45.55%	pandas is a 12.99% 16.68%	Matko Des 58.72% 72.68%	In 1349; th Fal 12.26% 34.28%	rming is T 59.57% 66.15%	The electic E 17.01% 20.38%	80rn into t H 89.09% 88.26%	55.92% 71.67%	In Decemb 29.83% 24.20%	It is a conc H 93.79% 89.29%	le also se T 37.83% 19.20%	The compa 38.07% 50.10%	The gestat 32.50% 34.21%	The univer The 58.09% 8	e city is 86.85% 72.34%
GÜTE 9.6 9.7 11.9	MODELL model_small_ber model_small_ber model_albert_en	Germany i: t 2.90% t 5.27% 10.00%	Cost of livi 63.71% 55.73% 71.47%	Along with 3.04% 8.84% 11.12%	Nowadays 4.19% 9.53% 20.18%	This TF Hul 31.66% 47.72% 49.22%	They threy   95.08% 98.19% 99.29%	Himalayan 40.74% 21.12% 38.87%	The centra 33.40% 22.93% 18.02%	The Chief J 8.43% 4.97% 7.88%	Since 2021 27.76% 17.12% 31.52%	The start o J 54.09% 67.87% 80.31%	ulius Caes 25.37% 22.71% 30.28%	NI NATO forn 16.77% 10.22% 18.15%	CHT-WITZ Brussels is 2.91% 3.46% 3.59%	The Weser 1 83.68% 85.81% 84.28%	The town I 38.79% 45.55% 68.52%	pandas is a 12.99% 16.68% 28.05%	Matko Des 58.72% 72.68% 81.92%	In 1349; th Fai 12.26% 34.28% 44.87%	rming is T 59.57% 66.15% 80.02%	The electic E 17.01% 20.38% 30.25%	89.09% 88.26% 94.38%	55.92% 71.67% 78.52%	In Decemb 29.83% 24.20% 25.92%	93.79% 89.29% 94.55%	37.83% 19.20% 32.67%	The compa 38.07% 50.10% 64.10%	The gestat 32.50% 34.21% 31.63%	The univer The 58.09% 8 19.73% 7 21.35% 8	86.85% 72.34% 80.12%
GÜTE 9.6 9.7 11.9 12.1	MODELL model_small_ber model_small_ber model_albert_en model_small_ber	Germany i. t 2.90% t 5.27% 10.00% t 17.71%	Cost of livi 63.71% 55.73% 71.47% 46.86%	Along with 3.04% 8.84% 11.12% 10.03%	Nowadays 4.19% 9.53% 20.18% 17.49%	This TF Hul 31.66% 47.72% 49.22% 19.78%	They threy I 95.08% 98.19% 99.29% 91.73%	Himalayan 40.74% 21.12% 38.87% 64.57%	The centra 33.40% 22.93% 18.02% 15.65%	The Chief J 8.43% 4.97% 7.88% 5.77%	Since 2021 27.76% 17.12% 31.52% 32.63%	The start o J 54.09% 67.87% 80.31% 76.60%	ulius Caes 25.37% 22.71% 30.28% 17.84%	NI NATO form 16.77% 10.22% 18.15% 21.42%	CHT-WITZ Brussels is 2.91% 3.46% 3.59% 4.63%	83.68% 85.81% 84.28% 77.95%	7he town I 38.79% 45.55% 68.52% 75.74%	pandas is a 12.99% 16.68% 28.05% 38.61%	Matko Des 58.72% 72.68% 81.92% 64.82%	In 1349; th Fai 12.26% 34.28% 44.87% 21.94%	rming is T 59.57% 66.15% 80.02% 80.35%	17.01% 20.38% 30.25% 53.66%	89.09% 88.26% 94.38% 86.05%	55.92% 71.67% 78.52% 49.22%	29.83% 24.20% 25.92% 31.16%	1t is a conc H 93.79% 89.29% 94.55% 91.34%	19.20% 32.67% 62.34%	The compa 38.07% 50.10% 64.10% 75.61%	The gestat 32.50% 34.21% 31.63% 48.91%	The univer The 58.09% 8 19.73% 7 21.35% 8 42.65% 8	86.85% 72.34% 80.12% 82.15%
9.6 9.7 11.9 12.1 13.1	MODELL model_small_ber model_small_ber model_small_ber model_small_ber	Germany i: t 2.90% t 5.27% 10.00% t 17.71% t 13.82%	Cost of livi 63.71% 55.73% 71.47% 46.86% 44.22%	Along with 3.04% 8.84% 11.12% 10.03% 9.46%	Nowadays 4.19% 9.53% 20.18% 17.49% 10.59%	This TF Hul 31.66% 47.72% 49.22% 19.78% 58.34%	They threv I 95.08% 98.19% 99.29% 91.73% 96.67%	Himalayan 40.74% 21.12% 38.87% 64.57% 18.99%	The centra 33.40% 22.93% 18.02% 15.65% 64.01%	The Chief J 8.43% 4.97% 7.88% 5.77% 6.15%	Since 2021 27.76% 17.12% 31.52% 32.63% 29.47%	The start c J 54.09% 67.87% 80.31% 76.60% 73.91%	25.37% 22.71% 30.28% 17.84% 48.20%	NI NATO forn 16.77% 10.22% 18.15% 21.42% 18.81%	CHT-WITZ Brussels is 2.91% 3.46% 3.59% 4.63% 11.34%	The Weser T 83.68% 85.81% 84.28% 77.95% 91.70%	38.79% 45.55% 68.52% 75.74% 41.41%	pandas is a 12.99% 16.68% 28.05% 38.61% 26.05%	Matko Des 58.72% 72.68% 81.92% 64.82% 54.66%	In 1349; th Fal 12.26% 34.28% 44.87% 21.94% 53.46%	rming is T 59.57% 66.15% 80.02% 80.35% 70.02%	The electic E 17.01% 20.38% 30.25% 53.66% 19.63%	89.09% 88.26% 94.38% 86.05% 85.87%	55.92% 71.67% 78.52% 49.22% 70.67%	29.83% 24.20% 25.92% 31.16% 57.83%	93.79% 89.29% 94.55% 91.34% 92.11%	37.83% 19.20% 32.67% 62.34% 19.31%	The compa 38.07% 50.10% 64.10% 75.61% 65.99%	The gestat 32.50% 34.21% 31.63% 48.91% 71.07%	The univer The 58.09% 8 19.73% 7 21.35% 8 42.65% 8 67.77% 7	86.85% 72.34% 80.12% 82.15% 78.15%
9.6 9.7 11.9 12.1 13.1 14.6	MODELL model_small_ber model_small_ber model_small_ber model_small_ber model_small_ber	Germany i. t 2.90% t 5.27% 10.00% t 17.71% t 13.82% t 6.72%	Cost of livi 63.71% 55.73% 71.47% 46.86% 44.22% 61.27%	Along with 3.04% 8.84% 11.12% 10.03% 9.46% 3.62%	Nowadays 4.19% 9.53% 20.18% 17.49% 10.59% 4.70%	This TF Hul 31.66% 47.72% 49.22% 19.78% 58.34% 79.12%	They threy 95.08% 98.19% 99.29% 91.73% 96.67% 97.38%	Himalayan 40.74% 21.12% 38.87% 64.57% 18.99% 31.25%	The centra 33.40% 22.93% 18.02% 15.65% 64.01% 68.11%	The Chief J 8.43% 4.97% 7.88% 5.77% 6.15% 5.40%	Since 2021 27.76% 17.12% 31.52% 32.63% 29.47% 50.01%	54.09% 67.87% 80.31% 76.60% 73.91% 86.55%	25.37% 22.71% 30.28% 17.84% 48.20% 66.77%	NI NATO forn 16.77% 10.22% 18.15% 21.42% 18.81% 32.03%	CHT-WITZ Brussels is 2.91% 3.46% 3.59% 4.63% 11.34% 8.34%	83.68% 85.81% 84.28% 77.95% 91.70% 94.29%	75.74% 68.52% 41.41% 63.98%	pandas is a 12.99% 16.68% 28.05% 38.61% 26.05% 15.06%	58.72% 72.68% 81.92% 64.82% 54.66% 66.01%	11349; th Fai 12.26% 34.28% 44.87% 21.94% 53.46% 34.14%	rming is T 59.57% 66.15% 80.02% 80.35% 70.02% 83.41%	The electic E 17.01% 20.38% 30.25% 53.66% 19.63% 28.97%	89.09% 88.26% 94.38% 86.05% 85.87% 89.34%	55.92% 71.67% 78.52% 49.22% 70.67% 72.80%	29.83% 24.20% 25.92% 31.16% 57.83% 58.13%	93.79% 89.29% 94.55% 91.34% 92.11% 92.59%	e also se T 37.83% 19.20% 32.67% 62.34% 19.31% 21.66%	The compa 38.07% 50.10% 64.10% 75.61% 65.99% 70.29%	The gestat 32.50% 34.21% 31.63% 48.91% 71.07% 73.63%	The univer The 58.09% 8 19.73% 7 21.35% 8 42.65% 8 67.77% 7 62.00% 8	86.85% 72.34% 80.12% 82.15% 78.15% 82.00%
9.6 9.7 11.9 12.1 13.1 14.6 15.5	MODELL model small_ber model albert_en model small_ber model small_ber model small_ber model small_ber model small_ber	Germany i. t 2.90% t 5.27% 10.00% t 17.71% t 13.82% t 6.72% 43.62%	Cost of livi 63.71% 55.73% 71.47% 46.86% 44.22% 61.27% 36.91%	Along with 3.04% 8.84% 11.12% 10.03% 9.46%	Nowadays 4.19% 9.53% 20.18% 17.49% 10.59%	This TF Hul 31.66% 47.72% 49.22% 19.78% 58.34%	They threv I 95.08% 98.19% 99.29% 91.73% 96.67%	Himalayan 40.74% 21.12% 38.87% 64.57% 18.99%	The centra 33.40% 22.93% 18.02% 15.65% 64.01%	The Chief J 8.43% 4.97% 7.88% 5.77% 6.15%	Since 2021 27.76% 17.12% 31.52% 32.63% 29.47%	The start c J 54.09% 67.87% 80.31% 76.60% 73.91%	25.37% 22.71% 30.28% 17.84% 48.20%	NI NATO forn 16.77% 10.22% 18.15% 21.42% 18.81%	CHT-WITZ Brussels is 2.91% 3.46% 3.59% 4.63% 11.34%	The Weser T 83.68% 85.81% 84.28% 77.95% 91.70%	38.79% 45.55% 68.52% 75.74% 41.41%	pandas is a 12.99% 16.68% 28.05% 38.61% 26.05%	Matko Des 58.72% 72.68% 81.92% 64.82% 54.66%	in 1349; th Fai 12.26% 34.28% 44.87% 21.94% 53.46% 34.14% 50.22%	rming is T 59.57% 66.15% 80.02% 80.35% 70.02%	The electic E 17.01% 20.38% 30.25% 53.66% 19.63%	89.09% 88.26% 94.38% 86.05% 85.87%	55.92% 71.67% 78.52% 49.22% 70.67%	29.83% 24.20% 25.92% 31.16% 57.83%	93.79% 89.29% 94.55% 91.34% 92.11%	37.83% 19.20% 32.67% 62.34% 19.31%	The compa 38.07% 50.10% 64.10% 75.61% 65.99%	The gestat 32.50% 34.21% 31.63% 48.91% 71.07%	The univer The 58.09% 8 19.73% 7 21.35% 8 42.65% 67.77% 7 62.00% 8 86.80% 9	86.85% 72.34% 80.12% 82.15% 78.15%
9.6 9.7 11.9 12.1 13.1 14.6 15.5	MODELL model_small_ber model_small_ber model_small_ber model_small_ber model_small_ber	Germany i: t 2.90% t 5.27% i 10.00% t 17.71% t 13.82% t 6.72% t 43.62% 66.57%	Cost of livi 63.71% 55.73% 71.47% 46.86% 44.22% 61.27% 36.91%	Along with 3.04% 8.84% 11.12% 10.03% 9.46% 3.62% 34.76%	Nowadays 4.19% 9.53% 20.18% 17.49% 10.59% 4.70% 19.76%	This TF Hul 31.66% 47.72% 49.22% 19.78% 58.34% 79.12% 55.04%	They three 95.08% 98.19% 99.29% 91.73% 96.67% 97.38% 96.96%	Himalayan 40.74% 21.12% 38.87% 64.57% 18.99% 31.25% 40.36%	The centra 33.40% 22.93% 18.02% 15.65% 64.01% 68.11% 74.01%	The Chief J 8.43% 4.97% 7.88% 5.77% 6.15% 5.40% 15.82%	Since 2021 27.76% 17.12% 31.52% 32.63% 29.47% 50.01% 60.85%	The start c J 54.09% 67.87% 80.31% 76.60% 73.91% 86.55% 94.63%	25.37% 22.71% 30.28% 17.84% 48.20% 66.77% 60.27%	NI NATO forn 16.77% 10.22% 18.15% 21.42% 18.81% 32.03% 49.44%	CHT-WITZ Brussels is 1 2.91% 3.46% 3.59% 4.63% 11.34% 8.34% 31.29%	83.68% 85.81% 84.28% 77.95% 91.70% 94.29% 95.87%	7he town I 38.79% 45.55% 68.52% 75.74% 41.41% 63.98% 78.03%	pandas is a 12.99% 16.68% 28.05% 38.61% 26.05% 15.06% 32.61%	Matko Des 58.72% 72.68% 81.92% 64.82% 54.66% 66.01% 51.09%	in 1349; th Fai 12.26% 34.28% 44.87% 21.94% 53.46% 34.14% 50.22% 87.41%	rming is T 59.57% 66.15% 80.02% 80.35% 70.02% 83.41% 64.26%	The electic E 17.01% 20.38% 30.25% 53.66% 19.63% 28.97% 22.53%	89.09% 88.26% 94.38% 86.05% 85.87% 89.34% 89.87%	55.92% 71.67% 78.52% 49.22% 70.67% 72.80% 68.25%	29.83% 24.20% 25.92% 31.16% 57.83% 58.13% 64.67%	93.79% 89.29% 94.55% 91.34% 92.11% 92.59% 92.26%	e also se T 37.83% 19.20% 32.67% 62.34% 19.31% 21.66% 21.98%	The compa 38.07% 50.10% 64.10% 75.61% 65.99% 70.29% 61.04%	The gestat 32.50% 34.21% 31.63% 48.91% 71.07% 73.63% 74.72%	The univer The 58.09%	86.85% 72.34% 80.12% 82.15% 78.15% 82.00% 91.89%
9.6 9.7 11.9 12.1 13.1 14.6 15.5 17.2	MODELL model small_ber	Germany is t 2.90% t 5.27% i 10.00% t 17.71% t 13.82% t 6.72% t 43.62% t 43.62% t 71.93%	Cost of livi 63.71% 55.73% 71.47% 46.86% 44.22% 61.27% 36.91% 92.91% 90.26%	Along with 3.04% 8.84% 11.12% 10.03% 9.46% 3.62% 34.76% 47.02%	Nowadays 4.19% 9.53% 20.18% 17.49% 4.70% 4.70% 64.07%	This TF Hul 31.66% 47.72% 49.22% 19.78% 58.34% 79.12% 55.04% 78.86%	They threv 95.08% 98.19% 99.29% 91.73% 96.67% 97.38% 96.96% 98.58%	Himalayan 40.74% 21.12% 38.87% 64.57% 18.99% 31.25% 40.36% 80.85%	The centra 33.40% 22.93% 18.02% 15.65% 64.01% 68.11% 74.01% 4.28%	The Chief J 8.43% 4.97% 7.88% 5.77% 6.15% 5.40% 15.82% 32.37%	Since 2021 27.76% 17.12% 31.52% 32.63% 29.47% 50.01% 60.85% 47.47%	The start c J 54.09% 67.87% 80.31% 76.60% 73.91% 86.55% 94.63% 80.33%	25.37% 22.71% 30.28% 17.84% 48.20% 66.77% 60.27% 86.01%	NI NATO form 16.77% 10.22% 18.15% 21.42% 18.81% 32.03% 49.44% 66.62%	CHT-WITZ Brussels is 7 2.91% 3.46% 3.59% 4.63% 11.34% 8.34% 31.29% 36.39%	83.68% 85.81% 84.28% 77.95% 91.70% 94.29% 95.87% 94.30%	7he town I 38.79% 45.55% 68.52% 75.74% 41.41% 63.98% 78.03% 85.47%	pandas is a 12.99% 16.68% 28.05% 38.61% 26.05% 15.06% 32.61% 64.97%	58.72% 72.68% 81.92% 64.82% 54.66% 66.01% 51.09% 87.31%	n 1349; th Fai 12.26% 34.28% 44.87% 21.94% 53.46% 34.14% 50.22% 87.41% 83.39%	rming is T 59.57% 66.15% 80.02% 80.35% 70.02% 83.41% 64.26% 87.66%	The electic E 17.01% 20.38% 30.25% 53.66% 19.63% 28.97% 22.53% 31.30%	89.09% 88.26% 94.38% 86.05% 85.87% 89.34% 89.87% 95.63%	55.92% 71.67% 78.52% 49.22% 70.67% 72.80% 68.25% 72.17%	29.83% 24.20% 25.92% 31.16% 57.83% 58.13% 64.67% 42.85%	93.79% 89.29% 94.55% 91.34% 92.11% 92.59% 92.26% 96.53%	19.20% 19.20% 32.67% 62.34% 19.31% 21.66% 21.98% 78.44%	The compa 38.07% 50.10% 64.10% 75.61% 65.99% 70.29% 61.04% 89.35%	The gestat 32.50% 34.21% 31.63% 48.91% 71.07% 73.63% 74.72% 61.27%	The univer The 58.09%	86.85% 72.34% 80.12% 82.15% 78.15% 82.00% 91.89% 92.99%
GÜTE 9.6 9.7 11.9 12.1 13.1 14.6 15.5 17.2 17.2	MODELL model small ber model albert en model small ber	Germany i. t 2.90% t 5.27% i 10.00% t 17.71% t 13.82% t 67.2% t 43.62% t 71.93% t 71.93% t 96.22%	Cost of livi 63.71% 55.73% 71.47% 46.86% 44.22% 61.27% 36.91% 92.91% 90.26% 99.41%	Along with 3.04% 8.84% 11.12% 10.03% 9.46% 3.62% 34.76% 47.02% 24.39%	Nowadays 4.19% 9.53% 20.18% 17.49% 10.59% 4.70% 19.76% 64.07% 80.72%	This TF Hul 31.66% 47.72% 49.22% 19.78% 58.34% 79.12% 55.04% 78.86% 47.15%	They threv 95.08% 98.19% 99.29% 91.73% 96.67% 97.38% 96.96% 98.58% 99.10%	Himalayan 40.74% 21.12% 38.87% 64.57% 18.99% 31.25% 40.36% 80.85% 76.14%	The centra 33.40% 22.93% 18.02% 15.65% 64.01% 68.11% 74.01% 4.28% 7.23%	The Chief J 8.43% 4.97% 7.88% 5.77% 6.15% 5.40% 15.82% 32.37% 31.38%	Since 2021 27.76% 17.12% 31.52% 32.63% 29.47% 50.01% 60.85% 47.47% 73.25%	54.09% 67.87% 80.31% 76.60% 73.91% 86.55% 94.63% 80.33% 82.79%	25.37% 22.71% 30.28% 17.84% 48.20% 66.77% 60.27% 86.01% 56.34%	NI NATO form 16.77% 10.22% 18.15% 21.42% 18.81% 32.03% 49.44% 66.62% 46.81%	CHT-WITZ Brussels is 7 2.91% 3.46% 3.59% 4.63% 11.34% 8.34% 31.29% 36.39% 38.64%	7E The Wese T 83.68% 85.81% 84.28% 77.95% 91.70% 94.29% 95.87% 94.30% 75.28%	The town I 38.79% 45.55% 68.52% 75.74% 41.41% 63.98% 78.03% 85.47% 85.20%	pandas is a 12.99% 16.68% 28.05% 38.61% 26.05% 15.06% 32.61% 64.97% 84.10%	Matko Des 58.72% 72.68% 81.92% 64.82% 54.66% 66.01% 51.09% 87.31% 61.51%	n 1349; th Fai 12.26% 34.28% 44.87% 21.94% 53.46% 34.14% 50.22% 87.41% 83.39% 74.04%	rming is T 59.57% 66.15% 80.02% 80.35% 70.02% 83.41% 64.26% 87.66% 96.37%	The electic E 17.01% 20.38% 30.25% 53.66% 19.63% 28.97% 22.53% 31.30% 44.44%	89.09% 88.26% 94.38% 86.05% 85.87% 89.34% 89.87% 95.63% 98.13%	55.92% 71.67% 78.52% 49.22% 70.67% 72.80% 68.25% 72.17% 80.96%	29.83% 24.20% 25.92% 31.16% 57.83% 64.67% 42.85% 62.22%	93.79% 89.29% 94.55% 91.34% 92.11% 92.59% 92.26% 96.53% 99.28%	19.20% 19.20% 32.67% 62.34% 19.31% 21.66% 21.98% 78.44% 91.30%	The compa 38.07% 50.10% 64.10% 75.61% 65.99% 70.29% 61.04% 89.35% 93.07%	The gestat 32.50% 34.21% 31.63% 48.91% 71.07% 73.63% 74.72% 61.27% 41.32%	The univer The 19.73%	86.85% 72.34% 80.12% 82.15% 78.15% 82.00% 91.89% 92.99% 95.79%
GÜTE 9.6 9.7 11.9 12.1 13.1 14.6 15.5 17.2 17.2 19.8 20.0	MODELL model small ber	Germany i. t 2.90% t 5.27% i 10.00% t 17.71% t 13.82% t 6.72% t 43.62% t 71.93% t 71.93% t 99.98%	Cost of livi 63.71% 55.73% 71.47% 46.86% 44.22% 61.27% 36.91% 92.91% 90.26% 99.41%	Along with 3.04% 8.84% 11.12% 10.03% 9.46% 3.62% 34.76% 47.02% 24.39% 96.88%	Nowadays 4.19% 9.53% 20.18% 17.49% 10.59% 4.70% 19.76% 64.07% 80.72% 98.66%	This TF Hul 31.66% 47.72% 49.22% 19.78% 58.34% 79.12% 55.04% 78.86% 47.15% 97.12%	They threv 95.08% 98.19% 99.29% 91.73% 96.67% 97.38% 96.96% 98.58% 99.10%	Himalayan 40.74% 21.12% 38.87% 64.57% 18.99% 31.25% 40.36% 80.85% 76.14% 88.11%	The centra 33.40% 22.93% 18.02% 15.65% 64.01% 68.11% 74.01% 4.28% 7.23% 28.07%	The Chief J 8.43% 4.97% 7.88% 5.77% 6.15% 5.40% 15.82% 32.37% 31.38% 80.29%	Since 2021 27.76% 17.12% 31.52% 32.63% 29.47% 50.01% 60.85% 47.47% 73.25% 99.44%	54.09% 67.87% 80.31% 76.60% 73.91% 86.55% 94.63% 80.33% 82.79% 58.46%	25.37% 22.71% 30.28% 17.84% 48.20% 66.77% 60.27% 86.01% 56.34% 80.41%	NINATO form 16.77% 10.22% 18.15% 21.42% 18.81% 32.03% 49.44% 66.62% 46.81% 65.86%	CHT-WITZ Brussels is 2.91% 3.46% 3.59% 4.63% 11.34% 8.34% 8.34% 31.29% 36.39% 38.64% 83.28%	7E The Wese 1 83.68% 85.81% 84.28% 77.95% 91.70% 94.29% 95.87% 94.30% 75.28% 97.12%	7he town I 38.79% 45.55% 68.52% 75.74% 41.41% 63.98% 78.03% 85.47% 85.20% 91.63%	pandas is a 12.99% 16.68% 28.05% 38.61% 26.05% 15.06% 32.61% 64.97% 84.10% 96.40%	Matko Des 58.72% 72.68% 81.92% 64.82% 54.66% 66.01% 51.09% 87.31% 61.51% 92.91%	n 1349; th Fa 12.26% 34.28% 44.87% 21.94% 53.46% 34.14% 50.22% 87.41% 83.39% 74.04% 99.96%	rming is T 59.57% 66.15% 80.02% 80.35% 70.02% 83.41% 64.26% 87.66% 99.37% 97.41%	The electic E 17.01% 20.38% 30.25% 53.66% 19.63% 28.97% 22.53% 31.30% 44.44% 84.85%	89.09% 88.26% 94.38% 86.05% 85.87% 89.34% 89.87% 95.63% 98.13% 96.59%	71.67% 71.67% 78.52% 49.22% 70.67% 72.80% 68.25% 72.17% 80.96% 98.20%	29.83% 24.20% 25.92% 31.16% 57.83% 58.13% 64.67% 42.85% 62.22% 90.15%	93.79% 89.29% 94.55% 91.34% 92.11% 92.59% 96.53% 99.28% 99.28%	19.20% 19.20% 32.67% 62.34% 19.31% 21.66% 21.98% 78.44% 91.30% 93.80%	75.61% 65.99% 70.29% 61.04% 89.35% 96.93%	71.07% 71.07% 71.07% 73.63% 74.72% 61.27% 76.01%	The univer The 58.09% 8 19.73% 21.35% 42.65% 8 67.77% 62.00% 8 68.80% 9 47.81% 9 71.81% 9 9.99% 9 9.99%	e city is 86.85% 72.34% 80.12% 82.15% 78.15% 82.00% 91.89% 92.99% 95.79% 96.08%
9.6 9.7 11.9 12.1 13.1 14.6 15.5 17.2 17.2 20.0	MODELL model small ber	Germany i: 2.90% t 2.90% t 5.27% 10.00% t 17.71% t 13.82% t 6.72% t 43.62% t 66.57% t 71.93% t 99.98% t 95.69%	Cost of livi 63.71% 55.73% 71.47% 46.86% 44.22% 61.27% 92.91% 90.26% 99.41% 100.00%	Along with 3.04% 8.84% 11.12% 10.03% 9.46% 3.62% 47.02% 24.39% 96.88% 99.88%	Nowadays 4.19% 9.53% 20.18% 17.49% 10.59% 4.70% 4.70% 80.72% 98.66% 99.98%	This TF Hul 31.66% 47.72% 49.22% 19.78% 58.34% 79.12% 78.86% 47.15% 97.12%	They threw 95.08% 98.19% 99.29% 91.73% 96.67% 97.38% 96.96% 98.58% 99.10% 99.54%	Himalayan 40.74% 21.12% 38.87% 64.57% 18.99% 40.36% 80.85% 76.14% 88.11% 99.98%	The centra 33.40% 22.93% 18.02% 15.65% 64.01% 68.11% 74.01% 4.28% 7.23% 28.07% 99.49%	The Chief J 8.43% 4.97% 7.88% 5.77% 6.15% 5.40% 32.37% 31.38% 80.29% 99.98%	Since 202: 27.76% 17.12% 31.52% 32.63% 29.47% 50.01% 60.85% 47.47% 73.25% 99.44%	74.09% 67.87% 80.31% 76.60% 73.91% 86.55% 94.63% 80.33% 82.79% 58.46% 99.97%	ulius Caes 25.37% 22.71% 30.28% 17.84% 48.20% 66.77% 60.27% 86.01% 56.34% 80.41%	NINATO form 16.77% 10.22% 18.15% 21.42% 18.81% 32.03% 49.44% 66.62% 46.81% 65.86% 99.99%	CHT-WITZ Brussels is 2.91% 3.46% 3.59% 4.63% 11.34% 8.34% 8.34% 31.29% 36.39% 38.64% 83.28% 99.64%	83.68% 85.81% 84.28% 77.95% 91.70% 94.29% 95.87% 94.30% 75.28% 99.99%	38.79% 45.55% 68.52% 75.74% 41.41% 63.98% 78.03% 85.47% 85.20% 91.63% 99.98%	pandas is a 12.99% 16.68% 28.05% 38.61% 26.05% 15.06% 32.61% 64.97% 84.10% 96.40%	Matko Des 58.72% 72.68% 81.92% 64.82% 54.66% 66.01% 51.09% 87.31% 61.51% 92.91%	n 1349; th Fa 12.26% 34.28% 44.87% 21.94% 53.46% 34.14% 50.22% 87.41% 83.39% 74.04% 99.96% 97.70%	rming is T 559.57% 66.15% 80.02% 80.35% 70.02% 83.41% 64.26% 87.66% 99.37% 99.93%	The electic E 17.01% 20.38% 30.25% 53.66% 19.63% 28.97% 22.53% 31.30% 44.44% 84.85% 99.95%	89.09% 88.26% 94.38% 86.05% 85.87% 89.34% 89.87% 95.63% 98.13% 96.59%	55.92% 71.67% 78.52% 49.22% 70.67% 72.80% 68.25% 72.17% 80.96% 98.20%	29.83% 24.20% 25.92% 31.16% 57.83% 58.13% 64.67% 42.85% 62.22% 90.15%	93.79% 89.29% 94.55% 91.34% 92.11% 92.59% 92.26% 96.53% 99.28% 99.98%	19.20% 37.83% 19.20% 32.67% 62.34% 19.31% 21.66% 21.98% 78.44% 91.30% 93.80% 99.99%	\$\frac{38.07\%}{50.10\%}\$ \$50.10\%\$ \$64.10\%\$ \$75.61\%\$ \$65.99\%\$ \$70.29\%\$ \$61.04\%\$ \$89.35\%\$ \$93.07\%\$ \$96.93\%\$ \$99.99\%	The gestat 32.50% 34.21% 31.63% 48.91% 71.07% 73.63% 44.72% 61.27% 41.32% 76.01%	The univer The 58.09%	e city is 86.85% 72.34% 80.12% 82.15% 78.15% 82.00% 91.89% 92.99% 95.79% 96.08% 99.99%
9.6 9.7 11.9 12.1 13.1 14.6 15.5 17.2 19.8 20.0 20.6 20.8	MODELL model small_ber	Germany I: t 2.90% t 5.27% t 10.00% t 17.71% t 13.82% t 6.72% t 43.62% t 66.57% t 71.93% t 99.98% t 99.98%	Cost of livi 63.71% 55.73% 71.47% 46.86% 44.22% 61.27% 36.91% 92.91% 90.26% 99.41% 100.00% 98.70%	Along with 3.04% 8.84% 11.12% 10.03% 9.46% 34.76% 47.02% 24.39% 96.88% 99.88% 71.25%	Nowadays 4.19% 9.53% 20.18% 17.49% 10.59% 4.70% 64.07% 64.07% 98.66% 99.98% 94.63%	This TF Hu 31.66% 47.72% 49.22% 19.78% 58.34% 79.12% 55.04% 78.86% 47.15% 97.12% 99.99% 91.35%	They threv 95.08% 98.19% 99.29% 91.73% 96.67% 97.38% 96.96% 98.58% 99.10% 99.54% 99.99%	Himalayan 40.74% 21.12% 38.87% 64.57% 18.99% 31.25% 40.36% 80.85% 76.14% 99.98% 98.02%	The centra 33.40% 22.93% 18.02% 15.65% 64.01% 68.11% 74.01% 4.28% 7.23% 28.07% 99.49%	The Chief」 8.43% 4.97% 7.88% 5.77% 6.15% 5.40% 15.82% 32.37% 80.29% 99.98% 94.51%	Since 202: 27.76% 17.12% 31.52% 32.63% 29.47% 50.01% 60.85% 47.47% 73.25% 99.44% 99.99% 91.98%	The start c 54.09% 67.87% 80.31% 76.60% 73.91% 86.55% 94.63% 80.33% 82.79% 58.46% 99.97% 87.29%	25.37% 22.71% 30.28% 17.84% 48.20% 66.77% 60.27% 86.01% 56.34% 80.41% 99.99%	NI NATO form 16.77% 10.22% 18.15% 21.42% 18.81% 32.03% 49.44% 66.62% 46.81% 65.86% 99.99% 91.99%	CHT-WITZ Brussels is 2.91% 3.46% 3.59% 4.63% 11.34% 8.34% 31.29% 36.39% 38.64% 83.28% 99.64% 82.68%	83.68% 85.81% 84.28% 77.95% 91.70% 94.29% 95.87% 94.30% 97.12% 99.99% 97.59%	38.79% 45.55% 68.52% 75.74% 41.41% 63.98% 78.03% 85.47% 85.20% 91.63% 99.98% 98.50%	pandas is a 12.99% 16.68% 28.05% 38.61% 26.05% 15.06% 32.61% 64.97% 84.10% 99.97% 95.87%	Matko Des 58.72% 72.68% 81.92% 64.82% 54.66% 66.01% 51.09% 87.31% 92.91% 98.72% 93.23%	n 1349; th Fai 12.26% 34.28% 44.87% 21.94% 53.46% 34.14% 50.22% 87.41% 83.39% 74.04% 99.96% 97.70%	rming is T 59.57% 66.15% 80.02% 80.35% 70.02% 83.41% 64.26% 87.66% 96.37% 99.41% 99.93%	The electic 17.01% 20.38% 30.25% 53.66% 19.63% 28.97% 22.53% 31.30% 44.44% 84.85% 99.95% 84.53%	89.09% 88.26% 94.38% 86.05% 85.87% 89.34% 89.87% 95.63% 98.13% 96.59% 100.00% 99.47%	55.92% 71.67% 78.52% 49.22% 70.67% 72.80% 68.25% 72.17% 80.96% 98.20% 99.99%	29.83% 24.20% 25.92% 31.16% 57.83% 58.13% 64.67% 42.85% 90.15% 99.96% 89.41%	93.79% 89.29% 94.55% 91.34% 92.11% 92.59% 92.26% 96.53% 99.28% 99.02% 99.98%	e also se 1 37.83% 19.20% 32.67% 62.34% 19.31% 21.66% 21.98% 78.44% 91.30% 93.80% 99.99%	The compa 38.07% 50.10% 64.10% 75.61% 65.99% 70.29% 61.04% 89.35% 93.07% 96.93% 99.99% 98.19%	71.07% 74.72% 75.01% 31.63% 48.91% 71.07% 73.63% 74.72% 41.32% 76.01% 99.98% 92.59%	The univer The 58.09% & 19.73% & 121.35% & 42.65% & 67.77% & 62.00% & 84.81% & 97.81% & 99.99% & 99.30	86.85% 72.34% 80.12% 82.15% 78.15% 82.00% 91.89% 92.99% 95.79% 96.08% 99.99%
GÜTE 9.6 9.7 11.9 12.1 13.1 14.6 15.5 17.2 19.8 20.0 20.6 20.8 21.7	MODELL model small ber	Germany I: t 2.90% t 5.27% t 10.00% t 17.71% t 13.82% t 66.57% t 71.93% t 96.22% t 99.88% t 99.89% t 98.99% t 98.99% t 98.99%	Cost of livi 63.71% 55.73% 71.47% 46.86% 44.22% 61.27% 36.91% 92.91% 90.26% 99.41% 100.00% 98.70% 99.92%	Along with 3.04% 8.84% 11.12% 10.03% 9.46% 3.62% 34.76% 47.02% 24.39% 96.88% 99.88% 71.25% 98.36%	Nowadays 4.19% 9.53% 20.18% 17.49% 10.59% 4.70% 64.07% 80.72% 98.66% 99.98% 94.63%	This TF Hul 31.66% 47.72% 49.22% 19.78% 58.34% 79.12% 55.04% 47.15% 97.12% 99.99% 91.35% 96.74%	They threv 95.08% 98.19% 99.29% 91.73% 96.67% 97.38% 96.96% 98.58% 99.10% 99.54% 99.99%	Himalayan 40.74% 21.12% 38.87% 64.57% 18.99% 40.36% 80.85% 76.14% 88.11% 99.98% 98.02% 96.83%	The centra 33.40% 22.93% 18.02% 15.65% 64.01% 74.01% 4.28% 7.23% 28.07% 99.49% 39.40%	The Chief J 8.43% 4.97% 7.88% 5.77% 6.15% 5.40% 15.82% 32.37% 31.38% 80.29% 99.98% 94.51% 96.29%	Since 2021 27.76% 17.12% 31.52% 32.63% 29.47% 50.01% 60.85% 47.47% 73.25% 99.44% 99.99.99%	The start of 54.09% 67.87% 80.31% 76.60% 86.55% 94.63% 80.33% 82.79% 58.46% 99.97% 87.29% 95.95%	25.37% 22.71% 30.28% 17.84% 48.20% 66.77% 60.27% 86.01% 55.34% 99.99% 95.20%	NINATO form 16.77% 10.22% 18.15% 21.42% 18.81% 32.03% 49.44% 66.62% 46.81% 65.86% 99.99% 91.99% 86.39%	CHT-WIT2 Brussels is 3 2.91% 3.46% 3.59% 4.63% 11.34% 8.34% 31.29% 36.39% 38.64% 83.28% 99.64% 82.68% 95.15%	83.68% 85.81% 84.28% 77.95% 91.70% 94.29% 95.87% 94.30% 75.28% 97.12% 99.99%	78.25% 45.55% 68.52% 75.74% 41.41% 63.98% 78.03% 85.47% 99.63% 99.98% 99.850% 98.50%	pandas is a 12.99% 16.68% 28.05% 38.61% 26.05% 15.06% 32.61% 64.97% 84.10% 96.40% 99.97% 95.87%	Matko Des 58.72% 72.68% 81.92% 64.82% 54.66% 51.09% 87.31% 61.51% 92.91% 93.23% 87.54%	n 1349; th Fai 12.26% 34.28% 44.87% 21.94% 53.46% 34.14% 50.22% 87.41% 83.39% 74.04% 99.96% 97.70% 96.23% 77.00%	rming is T 59.57% 66.15% 80.02% 80.35% 70.02% 83.41% 64.26% 87.66% 96.37% 99.93% 99.93% 99.02%	The electic 17.01% 20.38% 30.25% 53.66% 28.97% 22.53% 31.30% 44.44% 84.85% 99.95% 99.96%	89.09% 88.26% 94.38% 86.05% 85.87% 89.34% 89.87% 95.63% 98.13% 96.59% 100.00% 99.47%	55.92% 71.67% 78.52% 49.22% 70.67% 72.80% 68.25% 72.17% 80.96% 98.20% 99.99% 92.40%	29.83% 24.20% 25.92% 31.16% 57.83% 58.13% 64.67% 42.85% 62.22% 90.15% 99.95% 89.41%	93.79% 89.29% 94.55% 91.34% 92.11% 92.59% 92.26% 96.53% 99.28% 99.02% 99.90% 99.90%	e also se 1 37.83% 19.20% 32.67% 62.34% 19.31% 21.66% 21.98% 78.44% 91.30% 93.80% 99.99% 98.44%	The compa 38.07% 50.10% 64.10% 75.61% 65.99% 70.29% 61.04% 89.35% 93.07% 96.93% 99.99% 98.19%	The gestat 32.50% 34.21% 31.63% 48.91% 71.07% 73.63% 74.72% 61.27% 41.32% 76.01% 99.98% 97.29%	The univer The 58.09% & 19.73% & 21.35% & 42.65% & 67.77% & 62.00% & 86.80% & 74.81% & 99.99% & 94.81% & 99.99% & 97.30% & 97.30% & 97.00%	e city is 86.85% 72.34% 80.12% 82.15% 78.15% 82.00% 91.89% 95.79% 96.08% 99.99% 99.40% 99.74%
GÜTE  9.6  9.7  11.9  12.1  13.1  14.6  15.5  17.2  19.8  20.0  20.6  20.8  21.7  23.5	MODELL model small ber	Germany it t 2.90% t 5.27% t 10.00% t 17.71% t 13.82% t 6.72% t 43.62% t 66.57% t 71.93% t 99.98% t 95.69% t 98.99% t 66.86% t 87.20%	Cost of livi 63.71% 55.73% 71.47% 46.86% 44.22% 61.27% 36.91% 90.26% 99.41% 100.00% 98.70% 99.92% 96.17% 94.81%	Along with 3.04% 8.84% 11.12% 10.03% 9.46% 34.76% 47.02% 24.39% 96.88% 99.88% 71.25% 27.34%	Nowadays 4.19% 9.53% 20.18% 17.49% 10.59% 4.70% 64.07% 80.72% 98.66% 99.98% 73.16%	This TF Hu 31.66% 47.72% 49.22% 19.78% 58.34% 79.12% 55.04% 77.12% 97.12% 99.99% 91.35% 96.74% 73.55%	70 They three 95.08% 98.19% 99.1.73% 96.67% 97.38% 99.58% 99.10% 99.54% 99.99% 99.53% 99.51%	Himalayan 40.74% 21.12% 38.87% 64.57% 18.99% 40.36% 80.85% 76.14% 89.18% 99.02% 96.83% 96.03%	The centra 33.40% 22.93% 18.02% 15.65% 64.01% 74.01% 4.28% 7.23% 28.07% 99.49% 39.40% 34.51%	The Chief J 8.43% 4.97% 7.88% 5.77% 6.15% 5.40% 15.82% 32.37% 31.38% 80.29% 99.985 94.51% 96.29% 31.57%	5ince 2021 27.76% 17.12% 31.52% 29.47% 50.01% 60.85% 47.47% 73.25% 99.44% 99.99% 91.98% 72.22%	The start of 54,09% 67.87% 80.31% 76.60% 73.91% 86.55% 94.63% 82.79% 58.46% 99.77% 87.29% 95.95% 95.18%	ulius Caes 25.37% 22.71% 30.28% 17.84% 48.20% 66.77% 60.27% 86.01% 56.34% 80.41% 99.99% 95.20% 96.77% 67.43%	NINATO form 16.77% 10.22% 18.15% 21.42% 18.81% 32.03% 49.44% 66.62% 46.81% 65.86% 99.99% 91.99% 86.39% 52.67%	CHT-WITZ Brussels is 2.91% 3.46% 3.46% 4.63% 4.63% 4.63% 3.59% 3.8.64% 8.34% 31.29% 38.64% 82.68% 99.64% 42.68%	83.68% 85.81% 85.81% 87.7.95% 91.70% 94.29% 95.87% 97.12% 99.99% 97.528% 97.528% 99.99% 96.62%	78.25% 68.52% 75.74% 63.98% 78.03% 85.47% 85.20% 99.98% 99.98% 99.98% 98.50% 91.19%	pandas is a 12.99% 16.85% 38.61% 26.05% 15.06% 32.61% 64.97% 84.10% 99.97% 99.87% 97.99% 88.44%	Matko Des 58.72% 72.68% 81.92% 64.82% 54.66% 66.01% 51.09% 87.31% 61.51% 92.91% 98.72% 93.23% 87.54% 96.64%	n 1349; th Fai 12.26% 34.28% 44.87% 21.94% 53.46% 34.14% 50.22% 87.41% 83.39% 74.04% 99.96% 97.70% 96.23% 77.00% 93.43%	rming is T 59.57% 66.15% 80.02% 80.35% 70.02% 83.41% 64.26% 87.66% 99.37% 99.93% 99.93% 99.02% 98.59%	The electit I 17.01% 20.38% 30.25% 53.66% 19.63% 22.53% 44.44% 84.85% 99.95% 84.53% 68.37%	89.09% 88.26% 94.38% 86.05% 85.87% 89.34% 89.87% 95.63% 98.13% 96.59% 100.00% 99.47% 99.15%	71.67% 78.52% 49.22% 70.67% 72.80% 68.25% 72.17% 80.96% 98.20% 99.99% 92.40% 87.20%	29.83% 24.20% 25.92% 31.16% 57.83% 64.67% 42.85% 62.22% 90.15% 99.958 89.41% 99.23% 76.29%	93.79% 89.29% 94.55% 91.34% 92.11% 92.59% 92.26% 99.28% 99.02% 99.98% 99.00% 99.90% 99.90%	e also se 1 37.83% 19.20% 32.67% 62.34% 19.31% 21.66% 21.98% 78.44% 91.30% 99.99% 99.99% 99.21% 87.90%	The compa 38.07% 50.10% 64.10% 75.61% 65.99% 70.29% 61.04% 89.35% 99.307% 99.99% 98.19% 99.32% 94.49%	The gestat 32.50% 34.21% 31.63% 48.91% 71.07% 73.63% 74.72% 61.27% 41.32% 76.01% 99.98% 97.29% 55.77%	The univer The 58.09%	e city is 86.85% 72.34% 80.12% 82.15% 78.15% 82.00% 91.89% 92.99% 95.79% 96.08% 99.99% 99.40% 99.74% 98.48% 96.50%
9.6 9.7 11.9 12.1 13.1 14.6 15.5 17.2 19.8 20.0 20.6 20.8 21.7 23.5 23.6 23.9	MODELL model small ber	Germany I: t 2.90% t 5.27% 10.00% t 17.71% t 13.82% t 66.57% t 71.93% t 99.89% t 99.89% t 96.86% t 87.20% t 88.89% t 87.20% t 87.20% t 82.34% t 82.34%	Cost of livi 63.71% 55.73% 71.47% 46.86% 44.22% 61.27% 36.91% 90.26% 99.41% 100.00% 98.70% 99.92% 96.17% 94.81%	Along with 3.04% 8.84% 11.12% 10.03% 9.46% 3.62% 47.02% 24.39% 96.88% 99.88% 71.25% 98.36% 27.34% 91.18% 88.66% 67.29%	Nowadays 4.19% 9.18% 17.49% 10.59% 4.70% 19.76% 80.72% 98.66% 99.463% 99.38% 74.85% 70.49%	This TF Hu 31.66% 47.72% 49.22% 19.78% 58.34% 79.12% 55.046% 47.15% 97.12% 91.35% 96.74% 73.55% 82.00% 69.72% 74.59%	They three 95.08% 98.19% 99.29% 91.73% 96.67% 96.67% 99.54% 99.54% 99.54% 99.95% 99.51% 99.41%	Himalayan 40,74% 21,12% 38,87% 64,57% 18,99% 31,25% 40,36% 76,14% 88,11% 99,80% 96,03% 91,16% 84,50% 94,55%	The centra 33.40% 22.93% 18.02% 15.65% 64.01% 68.11% 74.01% 4.28% 7.23% 28.07% 99.49% 34.51% 45.04% 66.57% 16.89%	The Chief J 8.43% 4.97% 7.88% 5.77% 6.15% 5.40% 15.82% 32.37% 80.29% 99.98% 94.51% 96.29% 21.16%	5ince 2021 27.76% 17.12% 31.52% 32.63% 29.47% 50.01% 60.85% 47.47% 99.44% 99.99% 91.98% 99.74% 99.74%	The start of 54,09%, 67.87%, 80.31%, 76.60%, 73.91%, 86.55%, 94.63%, 80.33%, 82.79%, 58.46%, 99.97%, 87.29%, 95.95%, 95.85%, 92.49%,	25.37% 22.71% 30.28% 17.84% 48.20% 66.77% 66.27% 86.01% 56.34% 80.41% 99.99% 95.20% 67.7% 67.43% 42.54% 65.89% 66.24%	NINATO form 16.77% 10.22% 18.15% 21.42% 18.81% 32.03% 46.62% 46.81% 65.86% 91.99% 86.39% 52.67% 76.28% 44.81% 86.75%	CHT-WITZ Brussels is 2.91% 3.46% 3.46% 4.63% 4.63% 4.1.34% 8.34% 31.29% 36.39% 88.64% 88.28% 99.64% 67.01% 82.00% 76.07%	83.68% 85.81% 84.28% 77.95% 91.70% 94.29% 95.87% 94.30% 97.12% 99.99% 97.528% 97.12% 99.99% 96.62% 85.69%	75.74% 45.55% 68.52% 75.74% 41.41% 63.98% 78.03% 85.20% 91.63% 99.98% 98.50% 91.99% 94.94% 94.34%	pandas is a 12.99% 16.68% 28.05% 38.61% 26.05% 15.06% 32.619% 84.10% 96.40% 99.97% 97.99% 88.44% 91.98% 83.53% 95.47%	58.72% 72.68% 81.92% 64.82% 64.82% 54.66% 66.01% 51.09% 92.91% 92.91% 98.72% 93.23% 87.54% 96.64% 84.00% 91.52%	n 1349; th Fai 12.26% 34.28% 44.87% 21.94% 53.46% 34.14% 50.22% 87.41% 83.39% 74.04% 99.66% 97.70% 96.23% 77.00% 93.43% 98.29%	ming is 159.57% 66.15% 80.02% 80.02% 80.35% 70.02% 83.41% 64.26% 87.66% 99.33% 99.93% 99.93% 99.92% 98.59% 98.63% 99.736% 99.736% 99.33%	The electit I 17.01% 20.38% 30.25% 53.66% 19.63% 28.97% 24.444% 84.85% 99.95% 68.37% 80.86% 90.06% 80.86% 90.06%	89.09% 88.26% 94.38% 86.05% 85.87% 89.34% 89.563% 98.13% 96.59% 100.00% 99.47% 99.67% 99.15% 99.59% 99.244%	55.92% 71.67% 78.52% 49.22% 70.67% 72.80% 68.25% 72.17% 80.96% 98.20% 99.99% 92.40% 87.20% 95.83% 87.20%	29.83% 24.20% 25.92% 31.16% 57.83% 64.67% 42.85% 99.15% 99.96% 89.41% 99.23% 76.29%	1t is a conc H 93.79% 89.29% 89.29% 94.55% 91.34% 92.11% 92.59% 99.26% 96.53% 99.28% 99.99% 99.99% 99.90% 99.90% 99.90% 99.90% 99.90% 99.90%	e also se 1 37.83% 19.20% 32.67% 62.34% 19.31% 21.66% 78.44% 91.30% 93.80% 99.99% 98.44% 99.21% 87.90% 55.38% 80.85%	38.07% 50.10% 64.10% 75.61% 65.99% 70.29% 61.04% 89.35% 93.07% 99.99% 99.819% 99.32% 94.49% 92.65% 94.49%	71.07% 73.63% 74.72% 71.07% 73.63% 74.72% 61.27% 76.01% 99.98% 92.59% 97.29% 77.62%	The univer The 58.09% & 19.73% & 121.35% & 42.65% & 67.77% & 7.62.00% & 8.68.00% & 71.81% & 9.999% & 9.91% & 97.30% & 9.91% &	e city is 86.85% 72.34% 80.12% 82.15% 78.15% 82.00% 91.89% 92.99% 95.79% 99.99% 99.99% 99.94% 99.54% 98.48%
GÜTE  9.6  9.7  11.9  12.1  13.1  14.6  15.5  17.2  19.8  20.0  20.6  20.8  21.7  23.5  23.6  23.9	MODELL model small ber	Germany I: t 2.90% t 5.27% t 10.00% t 17.71% t 13.82% t 66.57% t 71.93% t 96.22% t 99.98% t 99.98% t 98.99% t 98.99% t 98.99% t 98.99% t 98.99% t 98.99%	Cost of livi 63.71% 55.73% 71.47% 46.86% 44.22% 61.27% 36.91% 99.26% 99.41% 100.00% 98.70% 99.92% 96.17% 94.81% 92.53% 98.86%	Along with 3.04% 8.84% 11.12% 9.46% 3.62% 347.02% 24.39% 96.88% 97.25% 27.34% 91.18% 88.66% 67.29% 96.65%	Nowadays 4.19% 9.53% 17.49% 10.59% 4.70% 19.60% 80.72% 99.66% 99.463% 79.438% 73.16% 70.49% 99.70%	This TF Hu 31.66% 47.72% 49.22% 19.78% 58.34% 79.12% 55.04% 47.15% 97.12% 99.99% 91.35% 82.00% 69.72% 74.59% 99.50%	76 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Himalayan 40,74% 21,12% 38,87% 64,57% 18,99% 31,25% 40,36% 80,36% 76,14% 88,11% 99,98% 96,03% 91,16% 84,50% 94,55% 99,78%	The centra 33.40% 22.93% 18.02% 15.65% 64.01% 68.11% 74.01% 4.28% 7.23% 28.07% 99.49% 11.59% 39.40% 45.04% 66.57% 16.89% 85.85%	The Chief」 8.43% 4.97% 7.88% 5.77% 6.15% 5.40% 15.82% 32.37% 80.29% 99.98% 94.51% 96.29% 31.57% 21.16% 12.37% 67.55% 99.04%	5ince 2021 27.76% 17.12% 31.52% 32.63% 29.47% 50.01% 60.85% 47.47% 73.25% 99.44% 99.99% 91.98% 72.22% 96.46% 86.26% 86.26%	The start of 54.09% 67.87% 80.31% 76.60% 73.91% 86.55% 94.63% 82.79% 58.46% 99.97% 87.29% 95.18% 92.49% 87.58% 99.80% 97.65%	25.37% 22.71% 30.28% 17.84% 48.20% 66.77% 60.27% 86.01% 56.34% 80.41% 99.99% 95.20% 67.43% 42.54% 65.89% 66.24% 99.55%	NINATO form 16.77% 10.22% 18.15% 21.42% 18.81% 32.03% 49.44% 65.86% 99.99% 91.99% 86.39% 52.67% 76.28% 44.81% 86.75% 99.70%	CHT-WITZ Brussels is 2.91% 3.46% 3.46% 4.63% 4.63% 4.63% 4.63% 3.59% 38.64% 83.28% 99.64% 82.68% 67.01% 82.00% 76.07% 98.86%	83.68% 85.68% 85.81% 84.28% 77.95% 91.70% 94.29% 95.87% 97.12% 99.99% 97.12% 99.99% 96.62% 85.69% 94.01%	78.455% 45.55% 68.52% 75.74% 41.41% 63.98% 78.03% 85.20% 91.63% 99.850% 98.56% 91.19% 94.93% 79.40% 94.34% 99.62%	pandas is a 12.99% 16.68% 28.05% 38.61% 25.05% 15.06% 32.61% 64.97% 84.10% 99.40% 99.97% 97.99% 88.44% 91.98% 83.53% 95.47% 92.83%	Matko Des 58.72% 72.68% 81.92% 64.82% 64.66% 66.01% 51.09% 87.27% 92.91% 98.72% 93.23% 87.54% 96.64% 84.00% 91.52% 95.22% 98.57%	n 1349; th Fai 12.26% 34.28% 44.87% 21.94% 53.46% 34.14% 50.22% 87.41% 83.39% 74.04% 99.96% 97.70% 96.23% 77.00% 93.43% 93.43% 98.29% 96.88%	ming is 7 59.57% 66.15% 88.0.22% 80.35% 70.02% 83.41% 64.26% 87.66% 97.41% 99.02% 98.59% 98.63% 97.36% 99.33% 99.82%	The electit I 17.01% 20.38% 30.25% 53.66% 19.63% 22.53% 34.444% 84.85% 99.95% 84.53% 68.37% 80.86% 58.33% 99.066% 97.73%	89.09% 88.26% 94.38% 86.05% 85.87% 89.34% 89.87% 95.63% 98.13% 96.59% 100.00% 99.67% 99.15% 99.59% 99.47% 99.59% 99.49% 99.59% 99.49%	55.92% 71.67% 78.52% 49.22% 70.67% 72.80% 68.25% 72.17% 80.96% 98.20% 99.99% 92.40% 87.31% 72.52% 99.33%	29.83% 24.20% 25.92% 31.16% 57.83% 64.67% 42.85% 62.22% 90.15% 99.96% 89.41% 99.23% 76.29% 70.49% 86.71% 80.96% 97.71%	1t is a conc H 93.79% 89.29% 994.55% 91.34% 92.11% 92.26% 99.28% 99.02% 99.98% 99.70% 99.69% 99.90% 99.90% 99.90% 99.90%	e also se 1 37.83% 19.20% 32.67% 62.34% 19.31% 21.66% 21.98% 78.44% 91.30% 99.99% 99.21% 87.90% 55.38% 80.85% 83.69% 99.25%	38.07% 50.10% 64.10% 75.61% 65.99% 70.29% 61.04% 93.07% 96.93% 99.39% 99.32% 94.49% 92.65% 94.04% 94.04%	71.07% 73.63% 48.91% 71.07% 73.63% 74.72% 61.27% 41.32% 76.01% 99.88% 97.29% 55.77% 77.62% 74.68% 99.70%	The univer The 58.09% & 19.73% & 19.73% & 19.73% & 19.75%	e city is 86.85% 72.34% 80.12% 82.15% 78.157 82.00% 91.89% 92.99% 95.79% 99.40% 99.74% 98.48% 96.50% 99.524% 98.40%
GÜTE  9.6  9.7  11.9  12.1  13.1  14.6  15.5  17.2  19.8  20.0  20.6  20.8  21.7  23.5  23.6  23.9  24.4	MODELL model small ber	Germany i t 2.90% t 5.27% t 10.00% t 17.71% t 13.82% t 66.57% t 71.93% t 71.93% t 96.22% t 99.98% t 66.866 t 87.20% t 98.99% t 66.8666 t 87.20% t 98.70% t 98.70% t 87.70%	Cost of livi 63.71% 55.73% 71.47% 46.86% 44.22% 61.27% 36.91% 92.91% 90.26% 99.41% 100.00% 98.70% 99.92% 96.17% 94.81% 92.53% 98.86% 99.86% 82.49%	Along with 3.04% 8.84% 11.03% 9.46% 34.76% 47.02% 24.39% 99.88% 71.25% 98.36% 27.34% 91.18% 88.66% 67.29%	Nowadays 4.19% 9.53% 20.18% 17.49% 10.59% 4.70% 19.76% 64.07% 80.72% 98.66% 99.83% 94.63% 99.38% 73.16% 74.85% 70.49% 97.03% 99.70%	This TF Hu 31.66% 47.72% 49.22% 19.78% 58.34% 79.12% 55.04% 74.15% 97.12% 99.99% 91.35% 96.74% 73.55% 82.00% 69.72% 74.59% 99.50%	They three 95.08% 98.19% 98.19% 91.73% 96.67% 96.67% 99.58% 99.10% 99.54% 99.95% 99.51% 99.91% 99.91% 99.91%	Himalayan 40.74% 21.12% 38.87% 64.57% 18.99% 31.25% 40.36% 80.85% 76.14% 88.11% 99.98% 96.03% 91.16% 84.50% 94.55% 99.78% 93.37%	The centra 33.40% 22.93% 18.02% 64.01% 68.11% 74.01% 4.28% 7.23% 28.07% 99.49% 11.59% 45.04% 66.57% 16.89% 85.85% 42.67%	The Chief J 8.43% 4.97% 7.88% 5.77% 6.15% 5.40% 15.82% 32.37% 31.38% 80.29% 99.98% 94.51% 96.29% 21.16% 12.37% 67.55% 99.04% 58.06%	5ince 2021 27.76% 17.12% 31.52% 29.47% 50.01% 60.85% 47.47% 73.25% 99.44% 99.99% 91.98% 99.74% 72.22% 96.46% 86.26% 86.33% 99.39%	The start of 54,09% 67.87% 80.31% 76.60% 73.91% 86.55% 94.63% 82.79% 58.46% 99.97% 87.29% 95.18% 92.49% 87.58% 98.80% 97.65% 95.95%	25.37% 22.71% 30.28% 17.84% 48.20% 66.77% 60.27% 80.41% 99.99% 95.20% 95.20% 67.43% 42.54% 66.24% 99.95% 75.94%	NINATO form 16.77% 10.22% 18.15% 21.42% 18.81% 32.03% 49.44% 66.62% 46.81% 65.86% 99.99% 91.99% 52.67% 76.28% 44.81% 86.75% 99.70% 35.23%	CHT-WITZ Brussels is 2.91% 3.46% 3.59% 4.63% 11.34% 8.34% 31.29% 38.64% 83.28% 99.64% 82.68% 99.64% 67.01% 82.00% 76.07% 98.86% 75.89%	83.68% 85.81% 84.28% 91.77.95% 91.70% 94.29% 95.87% 97.12% 99.99% 97.528% 99.99% 96.62% 85.69% 94.01% 98.23% 99.86% 99.86%	78.20% 78.79% 45.55% 68.52% 75.74% 41.41% 63.98% 78.03% 85.47% 85.20% 91.63% 99.88% 99.50% 94.93% 79.40% 94.93% 94.34% 99.62% 99.62%	pandas is a 12.99% 16.68% 38.61% 26.05% 15.06% 36.41% 96.40% 99.97% 84.10% 99.97% 88.44% 91.98% 83.53% 95.47%	Matko Des 58.72% 72.68% 81.92% 64.82% 54.66% 66.01% 51.09% 87.31% 61.51% 92.91% 98.72% 93.23% 87.54% 96.64% 84.00% 91.52% 95.52% 96.14%	n 1349; th Fai 12.26% 34.28% 44.87% 21.94% 53.46% 34.14% 50.22% 87.419 83.39% 74.04% 99.96% 97.70% 96.23% 77.00% 93.43% 93.43% 98.29% 96.88% 85.15%	ming is 759.57% 66.15% 80.02% 80.35% 70.02% 83.41% 64.26% 87.66% 96.37% 99.41% 99.93% 99.02% 98.63% 97.36% 94.76% 99.33% 99.82% 96.15%	The electit I 17.01% 20.38% 30.25% 53.66% 19.63% 22.53% 31.30% 44.44% 84.85% 99.95% 84.53% 99.95% 86.37% 80.86% 58.33% 90.06% 97.73% 67.71%	89.09% 88.26% 94.38% 86.05% 85.87% 89.34% 89.87% 95.63% 98.13% 96.59% 100.00% 99.47% 99.67% 99.15% 99.244% 98.04% 99.73%	55.92% 71.67% 78.52% 49.22% 49.22% 70.67% 72.80% 68.25% 72.17% 80.96% 99.99% 92.40% 95.83% 87.20% 95.83% 87.20% 99.83% 87.20%	29.83% 24.20% 25.92% 31.16% 57.83% 64.67% 42.85% 62.22% 99.15% 99.96% 89.41% 99.23% 76.29% 70.49% 80.76% 80.96%	93.79% 94.55% 94.55% 91.34% 92.11% 92.59% 92.26% 99.28% 99.02% 99.98% 99.02% 99.46% 99.02%	e also se 1 37.83% 19.20% 32.67% 62.34% 19.31% 21.66% 21.98% 78.44% 91.30% 99.99% 84.44% 99.21% 87.90% 55.38% 80.85% 83.69% 99.25% 83.69%	38.07% 50.10% 64.10% 75.61% 65.99% 70.29% 61.04% 89.35% 93.07% 96.93% 99.99% 94.49% 92.65% 94.04% 94.84% 93.60%	71.07% 73.63% 74.72% 71.07% 73.63% 74.72% 61.27% 76.01% 99.98% 92.59% 97.29% 77.62% 74.68% 91.50% 99.70%	The univer The 58.09% & 19.73%	e city is 86.85% 72.34% 80.12% 82.15% 82.00% 99.29% 99.74% 99.40% 99.50% 99.29% 99.40% 99.40% 99.40% 99.40% 99.40% 99.40% 99.84% 99.85%
9.6 9.7 11.9 12.1 13.1 14.6 15.5 17.2 17.2 20.6 20.8 21.7 23.5 23.6 23.9 24.4	MODELL model small ber	Germany I t 2.90% t 10.00% t 17.71% t 13.82% t 43.62% t 66.57% t 71.93% t 96.22% t 99.88% t 95.69% t 87.20% t 82.34% t 96.79% t 87.70% t 87.70%	Cost of livi 63.71% 55.73% 71.47% 46.86% 44.22% 61.27% 36.91% 90.26% 99.41% 100.00% 98.70% 99.92% 96.17% 94.81% 92.53% 98.86% 99.86% 82.49%	Along with 3.04% 8.84% 11.12% 10.03% 9.46% 34.76% 47.02% 96.88% 99.88% 71.25% 98.36% 27.34% 91.18% 88.66% 67.29% 96.65% 91.16%	Nowadays 4.19% 9.18% 17.49% 10.59% 4.70% 64.07% 80.72% 98.66% 99.98% 73.16% 74.85% 70.49% 97.03% 99.70%	This TF Hul 31.66% 47.72% 49.22% 19.78% 58.34% 79.12% 55.04% 78.86% 47.15% 97.12% 99.99% 91.35% 69.74% 73.55% 82.00% 69.72% 74.59% 99.59% 91.94% 80.47%	7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Himalayan 40,74% 21,12% 64,57% 18,99% 31,25% 80,85% 76,14% 88,11% 99,98% 96,03% 91,16% 84,50% 94,55% 99,78% 99,37%	The centre 33.40% 22.93% 18.02% 15.65% 64.01% 68.11% 74.01% 4.28% 7.23% 28.07% 99.49% 34.51% 66.57% 16.89% 85.85% 42.67% 50.19%	The Chief』 8.43% 4.97% 7.88% 5.77% 6.15% 5.40% 15.82% 32.37% 31.38% 80.29% 99.98% 94.51% 96.29% 31.57% 67.55% 99.04% 58.06% 58.86%	5ince 2021 27.76% 17.12% 31.52% 32.63% 29.47% 50.01% 60.85% 47.47% 73.25% 99.44% 99.99% 91.98% 99.74% 66.26% 86.26% 86.26% 86.33% 99.39% 96.46% 86.48%	The start of 54,09% 67.87% 80.31% 76.60% 73.91% 86.55% 94.63% 80.33% 82.79% 58.46% 99.97% 87.29% 95.95% 95.18% 92.49% 87.58% 99.80% 97.65% 95.55% 95.12%	25.37% 22.71% 30.28% 17.84% 48.20% 66.77% 60.27% 86.01% 56.34% 80.41% 99.99% 67.43% 42.54% 65.89% 66.24% 99.55% 75.94% 82.61%	NINATO form 16.77% 10.22% 18.15% 21.42% 18.81% 32.03% 49.44% 66.62% 46.81% 65.86% 99.99% 86.39% 52.67% 76.28% 44.81% 86.75% 99.70% 35.23% 62.89%	CHT-WITZ Brussels is 2.91% 3.46% 3.46% 4.63% 4.63% 4.63% 4.63% 31.29% 36.39% 38.64% 83.28% 99.54% 82.68% 95.15% 4.4.48% 67.01% 82.00% 76.07% 98.86% 52.78%	83.68% 85.81% 85.81% 84.28% 77.95% 91.70% 94.29% 94.30% 75.28% 97.12% 99.99% 96.62% 85.69% 94.01% 98.23% 99.86% 97.25%	38.79% 45.55% 68.52% 75.74% 41.41% 63.98% 75.63% 85.47% 85.20% 91.63% 99.98% 98.56% 91.19% 94.93% 79.40% 94.34% 99.62% 95.09%	pandas is a 12.99% 16.68% 28.05% 38.61% 26.05% 15.06% 84.10% 96.40% 99.97% 95.87% 97.99% 88.44% 91.98% 83.53% 95.47% 92.83% 95.44% 86.84%	58.72% 72.68% 81.92% 64.82% 64.82% 54.66% 66.01% 51.09% 87.31% 61.51% 92.91% 93.23% 87.54% 96.64% 84.00% 91.52% 98.57% 96.14% 86.03%	n 1349; th Fai 12.26% 44.87% 21.94% 53.46% 34.14% 50.22% 87.41% 83.39% 74.04% 99.96% 97.70% 96.23% 77.00% 93.43% 93.43% 98.29% 96.88% 85.15% 92.37%	ming is 759.57% 66.15% 80.02% 80.35% 70.02% 83.41% 64.26% 87.66% 96.37% 97.41% 99.93% 99.02% 98.59% 99.85% 97.36% 99.33% 99.82% 96.15% 96.95%	The electic 17:01% 20:38% 30:25% 53:66% 19:63% 28:75% 22:53% 31:30% 44:44% 84:85% 99:95% 84:53% 99:95% 68:37% 80:86% 58:33% 90:06% 97:73% 67:71% 80:87% 80:87%	88.06% 88.26% 94.38% 86.05% 85.87% 89.34% 89.87% 95.63% 98.13% 96.59% 100.00% 99.47% 99.67% 99.15% 99.559% 92.44% 98.04% 99.73% 92.00% 98.43%	55.92% 71.67% 78.52% 49.22% 70.67% 72.80% 68.25% 72.17% 80.96% 98.20% 99.99% 97.40% 98.05% 87.20% 99.33% 87.31% 72.52% 89.33% 87.21%	29.83% 24.20% 25.92% 31.16% 57.83% 58.13% 64.67% 42.85% 62.22% 90.15% 99.15% 99.96% 89.41% 99.23% 76.29% 70.49% 86.71% 80.96% 97.71% 67.69%	1t is a conc H 93.79% 89.29% 94.55% 91.34% 92.11% 92.59% 96.53% 99.22% 99.02% 99.98% 99.70% 99.60% 99.17% 99.50% 99.98% 99.92% 99.98% 99.98% 99.98%	93.80% 99.91% 87.93% 19.20% 19.20% 19.31% 19.31% 21.66% 21.68% 19.30% 93.80% 99.99% 87.90% 99.99% 87.90% 88.85% 83.69% 99.25% 83.69% 99.25%	38.07% 50.10% 64.10% 75.61% 65.99% 70.29% 89.35% 93.07% 96.93% 99.99% 94.49% 94.49% 94.49% 94.65% 94.04% 99.56% 93.60%	The gestat 32.50% 34.21% 31.63% 48.91% 71.07% 73.63% 74.72% 61.27% 61.27% 76.01% 99.98% 92.59% 97.29% 77.62% 74.68% 99.50% 99.70% 80.65%	The univer The 58.09%	e city is 86.85% 72.34% 80.12% 80.12% 82.15% 82.15% 82.15% 99.40% 99.40% 99.40% 99.40% 99.40% 99.40% 99.84% 98.55% 99.84% 98.55% 98.48% 98.55% 98.48%
GÜTE  9.6 9.7 11.9 12.1 13.1 14.6 15.5 17.2 17.2 20.0 20.6 20.8 21.7 23.5 23.6 23.9 24.4 24.5 24.5	MODELL model small ber	Germany I t 2,90% t 5,27% 10,00% t 17,71% t 13,82% t 66,57% t 71,93% t 99,98% t 99,98% t 99,98% t 98,99% t 88,20% t 68,66% t 82,34% t 68,79% t 78,11% t 99,76% t 78,11% t 78,176%	Cost of livi 63.71% 55.73% 71.47% 46.86% 44.22% 61.27% 36.91% 90.26% 99.41% 100.00% 98.70% 99.92% 96.17% 94.81% 92.53% 98.86% 99.86% 82.49% 97.70% 99.80%	Along with 3.04% 8.84% 11.12% 10.03% 9.46% 3.62% 47.02% 24.39% 99.88% 71.25% 98.36% 67.29% 96.65% 90.77% 91.16% 98.00%	Nowadays 4.19% 9.53% 17.49% 10.59% 47.0% 19.76% 94.07% 80.72% 98.68% 99.483% 99.38% 74.85% 74.85% 99.38% 99.38% 73.165% 99.38% 99.38%	This TF Hu 31.66% 47.72% 49.22% 19.78% 58.34% 79.12% 55.04% 647.15% 97.12% 99.99% 91.35% 82.00% 69.72% 74.59% 99.50% 91.94% 80.47% 99.48%	7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Himalayan 40,74% 21,12% 38,87% 64,57% 18,99% 31,25% 40,36% 76,14% 88,11% 99,80% 99,80% 96,83% 91,15% 94,55% 99,78% 93,37% 91,77% 98,38%	The centra 33.40% 22.93% 18.02% 15.65% 64.01% 68.11% 74.01% 4.28% 7.23% 28.07% 99.49% 31.59% 39.40% 34.51% 45.04% 66.57% 16.89% 85.85% 42.67% 50.19% 76.44%	The Chief J 8.43% 4.97% 7.88% 5.77% 6.15% 5.40% 32.37% 31.38% 80.29% 99.451% 96.29% 31.57% 21.16% 12.37% 67.55% 99.04% 58.06% 58.06% 58.06%	\$\frac{202}{27.76\%}\$ 17.12\% 31.52\% 32.63\% 29.47\% 50.01\% 60.85\% 47.47\% 73.25\% 99.99\% 99.99\% 99.74\% 72.22\% 96.46\% 86.33\% 99.39\% 99.39\% 96.48\% 84.69\% 99.21\%	The start of 54.09% 67.87% 80.31% 76.60% 73.91% 86.55% 80.33% 82.79% 58.46% 99.97% 87.29% 95.12% 95.12% 95.55% 95.18% 99.80% 97.65% 99.37%	25.37% 22.71% 30.28% 17.84% 48.20% 66.77% 66.27% 86.01% 56.34% 80.41% 99.99% 95.20% 67.73% 67.43% 42.54% 66.24% 99.55% 75.94% 82.61%	NINATO form 16.77% 10.22% 18.15% 21.42% 18.81% 32.03% 49.44% 66.62% 46.81% 65.86% 99.199% 86.39% 52.67% 76.28% 44.81% 86.75% 99.70% 35.23% 62.89% 95.74%	CHT-WITZ Brussels is 2,91% 3.46% 3.46% 4.63% 4.63% 4.1.34% 8.34% 31.29% 36.39% 4.83.28% 99.64% 83.28% 99.515% 4.48% 67.01% 67.01% 98.86% 75.89% 92.97%	83.68% 85.81% 85.81% 85.81% 91.70% 91.70% 94.29% 95.87% 94.30% 75.28% 97.12% 99.99% 96.62% 85.69% 99.09% 96.62% 85.69% 99.86% 97.45% 97.25%	38.79% 45.55% 68.52% 75.74% 41.41% 63.98% 78.03% 85.47% 85.20% 91.63% 99.80% 99.89% 99.49% 94.34% 99.62% 95.09% 96.46%	pandas is : 12.99% 16.68% 28.05% 38.61% 26.05% 15.06% 84.10% 96.40% 99.57% 97.99% 88.44% 91.98% 95.47% 92.83% 95.44% 86.84% 98.81%	58.72% 52.72% 72.68% 81.92% 64.82% 64.82% 54.66% 65.01% 51.09% 87.31% 61.51% 92.91% 93.23% 87.54% 96.64% 84.00% 91.52% 95.22% 98.57% 96.14% 86.03% 89.45%	n 1349; th Fai 12.26% 34.28% 44.87% 21.94% 53.46% 34.14% 83.39% 74.04% 99.76% 96.23% 77.00% 96.23% 77.00% 96.88% 85.15% 92.37% 97.24%	rming is T 59.57%   59.57%   66.15%   80.02%   80.35%   70.02%   83.41%   64.26%   87.66%   87.66%   99.33%   99.93%   99.93%   99.93%   99.63%   94.76%   99.33%   99.82%   99.65%   94.99%   96.95%   94.99%	The electit I 17.01% 20.38% 30.25% 53.66% 19.63% 28.97% 23.130% 44.44% 84.85% 99.36% 68.37% 80.86% 55.33% 90.06% 97.73% 67.71% 80.87% 80.87% 99.03% 97.03%	89.09% 88.26% 94.38% 86.05% 85.87% 89.34% 99.67% 99.67% 99.15% 99.55% 99.244% 99.73% 99.73% 99.07%	55.92% 71.67% 78.52% 49.22% 70.67% 72.80% 68.25% 72.17% 80.96% 98.20% 99.99% 92.40% 87.20% 95.83% 87.21% 99.33% 89.25% 89.25% 89.25%	29.83% 24.20% 25.92% 31.16% 57.83% 58.13% 64.67% 42.85% 62.22% 90.15% 99.15% 99.23% 76.29% 70.49% 86.71% 80.96% 97.71% 67.69% 82.52% 84.08%	1t is a conc H 93.79% 89.29% 89.29% 94.55% 91.34% 92.11% 92.59% 99.28% 99.28% 99.97% 99.60% 99.46% 99.02% 99.98% 99.98% 99.98% 99.88% 99.88% 99.88% 99.88% 99.88% 99.88%	93.09% 99.25% 83.69% 99.25% 83.69% 99.25% 83.99% 99.25%	38.07% 50.10% 64.10% 75.61% 65.99% 70.29% 61.04% 89.35% 93.07% 96.93% 99.99% 98.19% 99.32% 94.49% 92.65% 94.04% 94.84% 99.56% 93.60% 95.52% 99.48%	7.62% 99.5% 99.7% 99.7% 99.7% 99.7% 99.7% 99.8% 99.8% 99.98% 99.98% 97.29% 97.29% 97.29% 99.80% 99.80% 99.80%	The univer The 58.09% & 19.73% & 121.35% & 42.65% & 67.77% & 7.62.00% & 8.68.00% & 71.81% & 97.30% & 99.99% & 99.99% & 99.99% & 99.99% & 99.99% & 99.56% & 99.49% & 9	e city is 86.85% 86.85% 80.12% 80.12% 80.12% 82.15% 82.15% 82.15% 82.00% 91.89% 92.99% 96.08% 99.579% 99.40% 99.40% 99.524% 98.48% 99.55% 98.85% 99.85%
GÜTE  9.6  9.7  11.9  12.1  13.1  14.6  15.5  17.2  19.8  20.0  20.6  20.8  21.7  23.5  24.4  24.5  24.7	MODELL model small ber	Germany I: t 2.90% t 5.27% t 10.00% t 17.71% t 13.82% t 6.6.72% t 43.62% t 43.62% t 96.22% t 99.82% t 99.88% t 98.99% t 98.99% t 82.34% t 87.10% t 82.34% t 87.76% t 79.76% t 79.76% t 99.76% t 77.6% t 79.76% t 99.76%	Cost of livi 63.71% 55.73% 71.47% 46.86% 44.22% 61.27% 39.91% 90.26% 99.41% 100.00% 98.70% 99.92% 96.17% 94.81% 92.53% 98.86% 99.86% 82.49% 99.80% 99.80%	Along with 3.04% 8.84% 11.12% 10.03% 9.46% 3.62% 47.02% 24.39% 96.88% 99.88% 71.25% 98.36% 27.34% 91.16% 96.65% 90.77% 91.16%	Nowadays 4.19% 9.53% 17.49% 10.59% 4.70% 80.72% 98.69% 99.463% 99.38% 74.85% 70.49% 99.70% 99.70% 99.61%	This TF Hu 31.66% 47.72% 49.22% 19.78% 58.34% 79.12% 57.04% 79.12% 99.99% 91.35% 62.00% 62.00% 62.00% 69.95% 99.50% 91.94% 80.47% 99.48% 88.03%	They three 95.08% 98.19% 99.19% 91.73% 96.67% 97.38% 99.10% 99.54% 99.93% 99.91% 99.94% 99.94% 99.94% 99.94% 99.94%	Himalayan 40,74% 21,12% 38,87% 64,57% 18,99% 31,25% 40,365% 76,14% 88,11% 99,80% 96,03% 91,16% 84,50% 99,78% 99,78% 99,37% 99,37% 99,37% 98,37% 98,75%	The centra 33.40% 22.93% 18.02% 15.65% 64.01% 68.11% 74.01% 4.28% 7.23% 28.07% 99.49% 11.59% 39.40% 34.51% 45.04% 66.57% 50.19% 76.44% 72.65%	The Chief」 8.43% 4.97% 7.88% 5.77% 6.15% 5.40% 15.82% 32.37% 31.38% 80.29% 99.98% 94.51% 96.29% 21.16% 12.37% 67.55% 99.04% 58.06% 55.85% 97.38%	\$\frac{202}{27.76\%}\$ 17.12\% 31.52\% 32.63\% 29.47\% 50.01\% 60.85\% 47.47\% 73.25\% 99.44\% 99.99\% 99.74\% 72.22\% 66.46\% 86.26\% 86.36\% 99.39\% 96.46\% 86.46\% 86.9\% 99.21\% 98.74\%	The start of 54.09% 67.87% 80.31% 76.60% 73.91% 86.55% 94.633% 82.79% 58.46% 99.97% 87.29% 95.18% 92.49% 87.58% 97.65% 95.95% 95.18% 99.95% 95.95% 95.95% 99.95% 99.97% 98.97%	25,37% 22,71% 30,28% 17,84% 48,20% 66,77% 60,27% 86,01% 56,34% 80,41% 99,99% 95,20% 96,77% 67,43% 42,54% 65,89% 66,24% 99,55% 75,94% 82,61% 98,75% 89,97%	NINATO form 16.77% 10.22% 18.15% 21.42% 18.81% 32.03% 49.44% 66.62% 46.81% 65.86% 99.99% 91.99% 86.39% 52.67% 76.28% 44.81% 48.67.5% 99.70% 35.23% 62.89% 95.74% 86.75%	CHT-WITZ Brussels is 2.91% 3.46% 3.46% 4.63% 4.63% 4.63% 31.29% 38.64% 83.28% 99.64% 89.64% 67.01% 82.00% 67.01% 98.86% 75.89% 52.78% 99.31%	83.68% 85.81% 85.81% 87.95% 91.70% 94.29% 95.87% 97.12% 99.99% 96.62% 85.69% 94.01% 98.23% 99.86% 97.45% 99.986% 97.45%	78.03% 45.55% 45.55% 68.52% 75.74% 41.41% 63.98% 78.03% 85.20% 91.63% 99.85% 99.56% 91.19% 94.34% 99.62% 95.09% 94.34% 99.62% 96.46% 98.41%	pandas is a 12.99% 16.68% 28.05% 38.61% 26.05% 15.06% 32.61% 64.97% 84.10% 99.97% 97.99% 88.44% 91.98% 35.53% 95.47% 92.83% 95.47% 98.81% 99.24%	Matko Des 58.72% 72.68% 81.92% 64.82% 64.82% 66.01% 51.09% 61.51% 92.91% 98.72% 98.72% 96.64% 84.00% 91.52% 95.22% 98.57% 96.14% 86.03% 89.45% 96.65%	n 1349; th Fai 12.26% 34.28% 44.87% 21.94% 53.46% 34.14% 50.22% 87.41% 83.39% 74.04% 99.66% 97.70% 96.23% 77.00% 93.43% 98.29% 96.88% 85.15% 92.37% 97.24%	ming is 7 59.57% 66.15% 80.02% 80.35% 70.02% 83.41% 64.26% 87.66% 96.37% 99.43% 99.93% 99.93% 99.93% 99.93% 99.33% 99.82% 96.15% 96.95% 94.99%	The electit I 17.01% 20.38% 30.25% 53.66% 19.63% 28.97% 22.53% 44.44% 84.85% 99.95% 84.53% 99.36% 68.37% 80.66% 97.73% 67.71% 80.87% 97.67%	89.09% 88.26% 94.38% 86.05% 85.87% 89.34% 89.87% 95.63% 98.13% 96.59% 100.00% 99.47% 99.15% 99.59% 99.47% 99.73% 99.73% 99.73% 99.97% 99.97%	55.92% 71.67% 78.52% 49.22% 70.67% 72.80% 68.25% 72.17% 80.96% 98.20% 99.99% 97.240% 98.05% 87.20% 95.33% 87.21% 99.33% 89.25% 87.21%	29.83% 24.20% 31.16% 57.83% 58.13% 64.67% 42.85% 62.22% 90.15% 99.96% 89.41% 67.69% 80.71% 67.69% 80.96% 97.71% 67.69% 82.52% 84.08% 94.91%	1t is a conc H 93.79% 89.29% 99.455% 91.34% 92.11% 92.59% 99.26.53% 99.28% 99.02% 99.97% 99.60% 99.46% 99.90% 99.90% 99.90% 99.46% 99.27% 99.50% 99.82% 99.28% 99.90% 99.90% 99.90% 99.90% 99.90% 99.90% 99.90% 99.90% 99.90%	e also se 1 37.83% 19.20% 32.67% 62.34% 19.31% 21.66% 21.98% 93.80% 99.99% 98.44% 99.21% 87.90% 55.38% 80.85% 80.85% 99.25% 83.69% 99.25% 83.69% 99.25% 83.69% 99.25% 83.69% 99.25% 83.69% 99.25% 83.69% 99.25% 83.69% 99.25% 83.69% 99.25% 83.69% 99.25% 83.69% 99.25%	38.07% 50.10% 64.10% 75.61% 65.99% 70.29% 61.04% 93.07% 96.93% 99.99% 99.32% 94.49% 92.65% 94.04% 95.56% 95.66% 95.56%	71.07% 73.63% 74.91% 71.07% 73.63% 74.72% 41.32% 76.01% 99.98% 97.29% 55.77% 77.62% 74.68% 99.70% 93.46% 80.65% 98.96%	The univer The 58.09% & 19.73% & 19.73% & 42.65% & 67.77% & 62.00% & 84.81% & 97.81% & 99.99% & 98.56% & 98.56% & 98.56% & 99.40% & 99.59%	e city is 86.85% 72.34% 86.85% 72.34% 87.25% 88.15% 88.125% 88.125% 82.00% 91.85% 99.95% 99.40% 99.40% 99.55% 99.84% 99.84% 99.84% 99.85% 99.84% 99.85% 99.84% 99.75% 99.74% 99.75% 99.74%
GÜTE  9.6  9.7  11.9  12.1  13.1  14.6  15.5  17.2  19.8  20.0  20.6  20.8  21.7  23.5  23.6  23.9  24.4  24.5  24.7  25.4	MODELL model small ber	Germany I: t 2.90% t 5.27% t 10.00% t 17.71% t 13.82% t 66.57% t 71.93% t 99.58% t 99.59% t 87.20% t 87.20% t 87.76% t 78.11% t 99.55% t 99.55% t 99.55%	Cost of livi 63.71% 55.73% 71.47% 46.86% 44.22% 61.27% 36.91% 99.26% 99.41% 100.00% 99.92% 96.17% 94.81% 92.53% 98.86% 99.86% 82.49% 97.70% 99.96.77% 99.00%	Along with 3.04% 8.84% 11.12% 10.03% 9.46% 34.76% 47.02% 24.39% 96.88% 97.85% 27.34% 91.18% 88.66% 67.29% 96.65% 90.77% 91.16% 98.03% 99.39%	Nowadays 4.19% 9.53% 20.18% 10.59% 4.70% 19.76% 64.07% 80.72% 99.66% 99.466% 74.85% 70.49% 99.70% 99.70% 99.461% 99.461% 99.461%	This TF Hu 31.66% 47.72% 49.22% 19.78% 58.34% 79.12% 55.04% 47.15% 97.12% 99.95% 82.00% 69.72% 74.59% 99.50% 91.94% 80.47% 99.48% 88.03% 99.05%	They three 95.08% 98.19% 99.19% 91.73% 96.67% 97.38% 99.10% 99.54% 99.95% 99.95% 99.91% 99.94% 99.94% 99.95% 99.98%	Himalayan 40,74% 21,12% 38.87% 18.99% 31,25% 40,36% 80,36% 76,14% 88,11% 99,98% 96,03% 91,16% 84,50% 94,55% 99,78% 99,78% 99,78% 99,78% 99,38% 98,37% 98,37% 98,38% 99,38%	The centra 33.40% 22.93% 18.02% 15.65% 64.01% 68.11% 74.01% 4.28% 7.23% 28.07% 99.49% 11.59% 45.04% 66.57% 16.89% 85.85% 42.67% 50.19% 76.44% 47.31%	The Chief」 8.43% 4.97% 7.88% 5.77% 6.15% 5.40% 15.82% 32.37% 31.38% 80.29% 99.51% 94.51% 21.16% 12.37% 67.55% 99.04% 58.06% 55.85% 97.38% 75.85%	5ince 2021 27.76% 17.12% 31.52% 29.47% 50.01% 60.85% 47.47% 73.25% 99.44% 99.97% 72.22% 96.46% 86.26% 86.33% 99.39% 96.48% 84.69% 99.21% 99.74%	The start of 54,09% 67.87% 80.31% 76.60% 73.91% 86.55% 94.63% 82.79% 58.46% 99.77% 87.29% 95.95% 95.18% 97.65% 95.95% 95.95% 95.12% 90.37% 90.00%	ulius Caes 25.37% 22.71% 30.28% 17.84% 48.20% 66.77% 60.27% 86.01% 56.34% 80.41% 99.99% 95.20% 67.43% 42.54% 65.89% 66.24% 99.55% 75.94% 82.61% 98.75%	NINATO form 16.77% 10.22% 18.15% 21.42% 18.81% 32.03% 49.44% 65.86% 99.99% 91.99% 52.67% 76.28% 44.81% 86.75% 99.70% 35.23% 62.89% 95.74% 86.75% 86.75%	CHT-WITZ Brussels is 2.91% 3.46% 3.46% 4.63% 4.63% 4.63% 4.63% 3.59% 38.64% 83.28% 99.64% 82.68% 67.01% 82.00% 75.89% 52.78% 99.86% 75.89% 99.79% 93.31%	83.68% 85.81% 84.28% 87.95% 91.70% 94.29% 95.87% 97.12% 99.99% 96.62% 85.69% 94.01% 99.86% 97.45% 99.42% 99.84% 99.84%	78.25% 10.25%	pandas is a 12.99% 16.68% 26.05% 15.06% 36.41% 84.10% 99.40% 99.57% 97.99% 88.44% 91.98% 83.53% 95.47% 92.83% 99.24% 86.84% 99.24%	Matko Des 58.72% 72.68% 81.92% 64.82% 64.82% 64.60% 65.10% 93.73% 61.51% 92.91% 98.72% 93.23% 87.54% 96.64% 84.00% 91.52% 95.22% 98.57% 96.14% 86.03% 89.45% 96.65% 96.49%	n 1349; th Fai 12.26% 34.28% 44.87% 21.94% 53.46% 34.14% 83.39% 74.04% 99.96% 97.70% 96.23% 77.00% 93.43% 93.43% 98.29% 96.88% 85.15% 92.37% 97.24% 99.24%	ming is 7 59.57% 66.15% 80.02% 80.35% 70.02% 83.41% 64.26% 87.66% 96.37% 99.93% 99.02% 99.85% 97.36% 94.76% 99.33% 99.82% 96.15% 96.95% 94.99% 99.81% 99.81%	The electit I 17.01% 20.38% 30.25% 53.66% 19.63% 22.53% 31.30% 44.44% 84.85% 99.95% 84.53% 68.37% 80.86% 58.33% 99.0.66% 97.73% 67.71% 80.87% 97.03% 76.77% 76.17%	89.09% 88.26% 94.38% 86.05% 85.87% 89.34% 89.87% 95.63% 90.67% 99.47% 99.15% 99.59% 99.47% 99.15% 99.77% 99.73% 99.73% 99.77% 99.35%	55.92% 71.67% 78.52% 49.22% 70.67% 72.80% 68.25% 72.17% 80.96% 98.20% 99.99% 92.40% 87.31% 72.52% 87.31% 89.33% 89.25% 87.21% 91.57%	29.83% 24.20% 25.92% 31.16% 57.83% 64.67% 42.85% 62.22% 90.15% 99.96% 89.41% 70.49% 86.71% 80.96% 97.71% 67.69% 82.52% 84.08% 94.91% 81.81%	93.79% 89.29% 94.55% 91.34% 92.11% 92.26% 99.28% 99.28% 99.02% 99.98% 99.00% 99.46% 99.02% 99.17% 99.289 99.289 99.299	e also se 1 37.83% 19.20% 32.67% 62.34% 19.31% 21.66% 21.98% 73.80% 99.99% 99.21% 87.90% 55.38% 80.85% 83.69% 99.25% 83.99% 73.68% 95.89% 91.56%	38.07% 50.10% 64.10% 64.10% 65.99% 70.29% 61.04% 89.35% 93.07% 96.93% 99.19% 94.49% 92.65% 94.04% 94.84% 99.56% 93.60% 99.48% 99.48%	71.07% 73.63% 74.72% 61.27% 74.72% 61.27% 74.72% 61.27% 76.01% 99.98% 92.59% 97.29% 77.62% 74.68% 99.70% 99.70% 99.70% 99.70% 99.70%	The univer The 58.09% & 19.73% & 19.73% & 121.35% & 42.65% & 86.00% & 86.80% & 47.81% & 57.81	e city is 86.85% 72.34% 82.15% 82.00% 92.99% 95.79% 99.40% 99.40% 99.40% 99.50% 99.848% 99.848% 99.84% 99.84% 99.84% 99.84%
9.6 9.7 11.9 12.1 13.1 14.6 15.5 17.2 17.2 20.6 20.8 21.7 23.5 23.6 23.9 24.4 24.5 24.5 24.7 25.5 26.3	MODELL model small ber	Germany i t 2.90% t 5.27% 10.00% t 17.71% t 13.82% t 66.57% t 71.93% t 96.22% t 99.98% t 66.86% t 87.20% t 98.99% t 66.86% t 87.20% t 98.99% t 67.9% t 99.76% t 99.76% t 99.76% t 99.76%	Cost of livi 63.71% 55.73% 71.47% 46.86% 44.22% 61.27% 36.91% 99.26% 99.41% 100.00% 98.70% 99.481% 92.53% 98.86% 99.86% 82.49% 97.70% 99.80% 99.60%	Along with 3.04% 8.84% 11.12% 10.03% 9.46% 34.76% 47.02% 24.39% 96.88% 71.25% 98.36% 67.29% 96.65% 99.37% 91.16% 99.39% 99.39% 99.39% 96.16%	Nowadays 4.19% 9.19% 10.18% 17.49% 10.59% 4.70% 64.07% 80.72% 98.66% 99.98% 73.16% 74.85% 70.49% 97.03% 99.70% 94.61% 99.61% 99.01% 99.03% 99.01%	This TF Hu 31.66% 47.72% 49.22% 19.78% 58.34% 79.12% 55.04% 77.15% 97.12% 99.99% 91.35% 96.74% 73.55% 82.00% 69.72% 74.59% 99.50% 91.94% 80.47% 99.48% 88.03% 99.05%	They three 95.08% 98.19% 98.19% 91.73% 96.67% 96.67% 99.54% 99.54% 99.95% 99.93% 99.94% 99.94% 99.94% 99.95% 99.95% 99.95%	Himalayan 40,74% 21,12% 64,57% 18,99% 31,25% 80,85% 76,14% 88,11% 99,98% 98,02% 96,03% 91,16% 84,50% 94,55% 99,78% 99,78% 99,78%	The centre 33.40% 22.93% 18.02% 15.65% 64.01% 68.11% 74.01% 4.28% 7.23% 28.07% 99.49% 34.51% 66.57% 16.89% 85.85% 42.67% 50.19% 76.44% 72.65% 47.31% 49.31%	The Chief』 8.43% 4.97% 7.88% 5.77% 6.15% 5.40% 15.82% 32.37% 31.38% 80.29% 99.98% 94.51% 96.29% 31.57% 67.55% 99.04% 55.85% 97.38% 75.85% 76.12% 96.74%	5ince 2021 27.76% 17.12% 31.52% 32.63% 29.47% 50.01% 60.85% 47.47% 73.25% 99.44% 99.99% 91.98% 99.74% 72.22% 96.46% 86.26% 86.33% 99.39% 96.48% 84.69% 99.21% 99.21% 99.374%	The start of 54,09% 67.87% 80.31% 76.60% 73.91% 86.55% 94.63% 82.79% 58.46% 99.97% 87.29% 95.12% 95.95% 95.12% 90.37% 90.00% 97.10%	25.37% 22.71% 30.28% 17.84% 48.20% 66.77% 60.27% 86.01% 56.34% 80.41% 99.59% 67.43% 42.54% 65.89% 66.24% 99.55% 75.94% 82.61% 98.75% 89.97% 89.97%	NINATO form 16.77% 10.22% 18.15% 21.42% 18.81% 32.03% 49.44% 66.62% 46.81% 65.86% 99.99% 86.39% 52.67% 76.28% 44.81% 86.75% 99.70% 35.23% 62.89% 95.74% 86.75% 86.75%	CHT-WITZ Brussels is 2.91% 3.46% 3.46% 4.63% 4.63% 4.63% 4.63% 31.29% 38.64% 83.28% 99.54% 82.68% 95.15% 4.4.48% 67.01% 82.00% 76.07% 98.86% 52.78% 92.97% 93.31% 96.81%	83.68% 85.81% 85.81% 94.29% 94.29% 94.29% 94.30% 75.28% 97.12% 99.99% 96.62% 85.69% 94.01% 98.23% 99.86% 97.25% 99.42% 99.42%	38.79% 45.55% 68.52% 75.74% 41.41% 63.98% 75.74% 85.20% 91.63% 99.850% 98.56% 91.19% 94.93% 79.40% 94.43% 99.62% 99.62% 99.82% 98.41% 97.82%	pandas is a 12.99% 16.68% 28.05% 38.61% 26.05% 15.06% 84.10% 96.40% 99.97% 97.99% 88.44% 99.978 83.53% 95.47% 92.83% 95.47% 98.81% 99.24% 99.24% 98.26%	58.72% 72.68% 81.92% 64.82% 64.82% 65.109% 87.31% 61.51% 92.91% 93.23% 87.54% 96.64% 84.00% 91.52% 98.57% 96.14% 86.03% 89.45% 96.65%	n 1349; th Fai 12.26% 34.28% 44.87% 21.94% 53.46% 34.14% 50.22% 87.411% 83.39% 74.04% 99.96% 97.70% 96.23% 77.00% 93.43% 98.29% 96.88% 85.15% 92.37% 97.24% 99.24%	rming is 1 59.57% 66.15% 80.02% 80.35% 70.02% 83.341% 64.26% 87.66% 99.33% 99.02% 98.59% 98.63% 97.41% 99.33% 99.28% 99.86% 99.86% 99.88% 99.89% 94.99% 99.89% 99.81%	The electit I 17.01% 20.38% 30.25% 53.66% 19.63% 28.75% 22.55% 31.30% 44.44% 84.85% 99.95% 84.53% 99.95% 68.37% 80.86% 58.33% 90.06% 97.73% 67.71% 97.03% 97.67% 76.17% 93.17%	88.06% 88.26% 94.38% 86.05% 85.87% 89.34% 89.87% 95.63% 98.13% 96.59% 100.00% 99.47% 99.67% 99.15% 99.559% 92.44% 98.04% 99.77% 99.37% 99.37% 99.37% 99.35% 99.3	55.92% 71.67% 78.52% 49.22% 70.67% 72.80% 68.25% 72.17% 80.96% 98.20% 99.99% 87.20% 97.40% 97.55% 87.20% 97.33% 87.21% 99.33% 87.21% 99.33% 87.21% 99.33% 87.21% 99.33%	29.83% 24.20% 25.92% 25.92% 57.83% 64.67% 42.85% 62.22% 90.15% 99.96% 89.41% 99.23% 76.29% 70.49% 86.71% 80.96% 97.71% 67.69% 82.52% 84.08% 94.91% 84.16%	1t is a conc H 93.79% 89.29% 89.29% 94.55% 91.34% 92.11% 92.59% 99.22% 99.28% 99.02% 99.98% 99.70% 99.66% 99.17% 99.50% 99.82% 99.98% 99.98% 99.98% 99.98% 99.98% 99.98% 99.98% 99.98% 99.98%	93.80% 99.99% 99.99% 99.99% 99.99% 99.99% 99.84% 99.21% 87.90% 99.21% 87.90% 99.99% 99.90% 99	75.61% 64.10% 75.61% 65.99% 70.29% 61.04% 89.35% 93.07% 96.93% 99.99% 94.49% 92.65% 94.04% 94.84% 93.60% 95.52% 99.52%	The gestat 32.50% 34.21% 31.633% 48.91% 71.07% 73.63% 74.72% 61.27% 41.32% 76.01% 99.98% 92.59% 97.29% 55.77% 77.62% 74.68% 91.50% 99.70% 93.46% 80.65% 98.96% 96.57% 96.57% 97.31%	The univer The 58.09%	e city is 86.85% 80.12% 80.12% 82.15% 78.15% 91.89% 99.99% 99.57% 99.99% 99.40% 99.74% 99.59% 99.84% 98.48% 99.59% 99.84% 99.59% 99.84% 99.59% 99.84% 99.59%
GÜTE  9.6 9.7 11.9 12.1 13.1 14.6 15.5 17.2 17.2 20.0 20.6 20.8 21.7 23.5 23.6 23.9 24.4 24.5 24.5 24.5 24.5 24.5 26.3 26.3	MODELL model small ber	Germany I t 2,90% t 5,27% 10,00% t 17,71% t 13,82% t 66,57% t 71,93% t 96,22% t 99,58% t 99,58% t 99,58% t 87,20% t 87,20% t 87,76% t 78,11% t 99,55% t 99,55% t 99,55% t 99,55% t 99,55% t 99,55% t 99,55% t 99,55% t 99,55%	Cost of livi 63.71% 55.73% 71.47% 46.86% 44.22% 61.27% 36.91% 99.26% 99.41% 100.00% 98.70% 99.92% 96.17% 94.81% 92.53% 98.86% 99.86% 99.86% 99.67% 99.00% 99.00%	Along with 3.04% 8.84% 11.12% 10.03% 9.46% 34.76% 47.02% 24.39% 96.88% 97.85% 27.34% 91.18% 88.66% 67.29% 96.65% 90.77% 91.16% 98.03% 99.39%	Nowadays 4.19% 9.53% 20.18% 10.59% 4.70% 19.76% 64.07% 80.72% 99.66% 99.466% 74.85% 70.49% 99.70% 99.70% 99.461% 99.461% 99.461%	This TF Hu 31.66% 47.72% 49.22% 19.78% 58.34% 79.12% 55.04% 47.15% 97.12% 99.95% 82.00% 69.72% 74.59% 99.50% 91.94% 80.47% 99.48% 88.03% 99.05%	They three 95.08% 98.19% 99.19% 91.73% 96.67% 97.38% 99.10% 99.54% 99.95% 99.95% 99.91% 99.94% 99.94% 99.95% 99.98%	Himalayan 40,74% 21,12% 38.87% 18.99% 31,25% 40,36% 80,36% 76,14% 88,11% 99,98% 96,03% 91,16% 84,50% 94,55% 99,78% 99,78% 99,78% 99,78% 99,38% 98,37% 98,37% 98,38% 99,38%	The centra 33.40% 22.93% 18.02% 15.65% 64.01% 68.11% 74.01% 4.28% 7.23% 28.07% 99.49% 11.59% 45.04% 66.57% 16.89% 85.85% 42.67% 50.19% 76.44% 47.31%	The Chief」 8.43% 4.97% 7.88% 5.77% 6.15% 5.40% 15.82% 32.37% 31.38% 80.29% 99.51% 94.51% 21.16% 12.37% 67.55% 99.04% 58.06% 55.85% 97.38% 75.85%	5ince 2021 27.76% 17.12% 31.52% 29.47% 50.01% 60.85% 47.47% 73.25% 99.44% 99.97% 72.22% 96.46% 86.26% 86.33% 99.39% 96.48% 84.69% 99.21% 99.74%	The start of 54,09% 67.87% 80.31% 76.60% 73.91% 86.55% 94.63% 82.79% 58.46% 99.77% 87.29% 95.95% 95.18% 97.65% 95.95% 95.95% 95.12% 90.37% 90.00%	ulius Caes 25.37% 22.71% 30.28% 17.84% 48.20% 66.77% 60.27% 86.01% 56.34% 80.41% 99.99% 95.20% 67.43% 42.54% 65.89% 66.24% 99.55% 75.94% 82.61% 98.75%	NINATO form 16.77% 10.22% 18.15% 21.42% 18.81% 32.03% 49.44% 65.86% 99.99% 91.99% 52.67% 76.28% 44.81% 86.75% 99.70% 35.23% 62.89% 95.74% 86.75% 86.75%	CHT-WITZ Brussels is 2.91% 3.46% 3.46% 4.63% 4.63% 4.63% 4.63% 3.59% 38.64% 83.28% 99.64% 82.68% 67.01% 82.00% 75.89% 52.78% 99.86% 75.89% 99.79% 93.31%	83.68% 85.81% 84.28% 87.95% 91.70% 94.29% 95.87% 97.12% 99.99% 96.62% 85.69% 94.01% 99.86% 97.45% 99.42% 99.84% 99.84%	78.25% 10.25%	pandas is a 12.99% 16.68% 26.05% 15.06% 36.41% 84.10% 99.40% 99.57% 97.99% 88.44% 91.98% 83.53% 95.47% 92.83% 99.24% 86.84% 99.24%	Matko Des 58.72% 72.68% 81.92% 64.82% 64.82% 64.60% 65.10% 93.73% 61.51% 92.91% 98.72% 93.23% 87.54% 96.64% 84.00% 91.52% 95.22% 98.57% 96.14% 86.03% 89.45% 96.65% 96.49%	n 1349; th Fai 12.26% 34.28% 44.87% 21.94% 53.46% 34.14% 50.22% 87.41% 83.39% 74.04% 99.96% 97.70% 96.23% 77.00% 96.23% 77.00% 96.88% 82.97% 97.24% 99.24% 99.24% 99.24% 92.94% 82.98%	ming is 7 59.57% 66.15% 80.02% 80.35% 70.02% 83.41% 64.26% 87.66% 96.37% 99.93% 99.02% 99.85% 97.36% 94.76% 99.33% 99.82% 96.15% 96.95% 94.99% 99.81% 99.81%	The electit I 17.01% 20.38% 30.25% 53.66% 19.63% 22.53% 31.30% 44.44% 84.85% 99.95% 84.53% 68.37% 80.86% 58.33% 99.0.66% 97.73% 67.71% 80.87% 97.03% 76.77% 76.17%	89.09% 88.26% 94.38% 86.05% 85.87% 89.34% 89.87% 95.63% 90.67% 99.47% 99.15% 99.59% 99.47% 99.15% 99.77% 99.73% 99.73% 99.77% 99.35%	55.92% 71.67% 78.52% 49.22% 70.67% 72.80% 68.25% 72.17% 80.96% 98.20% 99.99% 92.40% 87.31% 72.52% 87.31% 89.33% 89.25% 87.21% 91.57%	29.83% 24.20% 25.92% 31.16% 57.83% 64.67% 42.85% 62.22% 90.15% 99.96% 89.41% 70.49% 86.71% 80.96% 97.71% 67.69% 82.52% 84.08% 94.91% 81.81%	93.79% 89.29% 94.55% 91.34% 92.11% 92.26% 99.28% 99.28% 99.02% 99.98% 99.00% 99.46% 99.02% 99.17% 99.289 99.289 99.299	e also se 1 37.83% 19.20% 32.67% 62.34% 19.31% 21.66% 21.98% 73.80% 99.99% 99.21% 87.90% 55.38% 80.85% 83.69% 99.25% 83.99% 73.68% 95.89% 91.56%	38.07% 50.10% 64.10% 64.10% 65.99% 70.29% 61.04% 89.35% 93.07% 96.93% 99.19% 94.49% 92.65% 94.04% 94.84% 99.56% 93.60% 99.48% 99.48%	71.07% 73.63% 74.72% 61.27% 74.72% 61.27% 74.72% 61.27% 76.01% 99.98% 92.59% 97.29% 77.62% 74.68% 99.70% 99.70% 99.70% 99.70% 99.70%	The univer The 58.09%	e city is 86.85% 72.34% 82.15% 82.00% 92.99% 95.79% 99.40% 99.40% 99.40% 99.40% 99.488 98.55% 98.48% 99.84% 99.84% 99.84%



### Das Modell mit der höchsten Güte







### Erkenntnisse in den Testdaten über alle Modelle hinweg

- ▶ BERT-konfigurationspezifische Eigenheiten: Englische Sprache wird am besten erkannt; Groß-/Kleinschreibung wird nicht beachtet; Bedeutung mehrdeutiger Wörter wird richtig erkannt
- Einige Modelle scheinen **nicht-englische Eigennamen** (Orte, Flüsse, Personen) nicht richtig einordnen zu können Beispiele: Flüsse Fulda und Werra, Olaf Scholz → Zusammenhang mit englischer Sprache?
- Schwarzer Humor (Verbrechen, Krankheit, Tod) wird teilweise nicht erkannt; anderseits werden aber auch teilweise unangemessene Inhalte als Humor klassifiziert → Zusammenhang mit Trainingsdatensatz oder BERT-Entwicklungsethik?
- Themen wie Politik, Religion und Ethik werden von guten Modellen scheinbar neutral betrachtet → Zusammenhang mit Trainingsdatensatz oder mit BERT-Entwicklungsethik?
- Einige der umfangreicheren Modell-Konfigurationen neigen zu starkem Overfitting → Datensatz zu "klein"?

### Vermutung: Antrainierte Al-Neutralität bei spezifischen Themen

GÜTE	MODELL	Atheism is a non-prophet organization.
9.6	model_small_bert_be	24.28%
9.7	model_small_bert_be	24.61%
11.9	model_albert_en_bas	26.47%
12.1	model_small_bert_be	31.64%
13.1	model_small_bert_be	46.50%
14.6	model_small_bert_be	55.80%
15.5	model_small_bert_be	14.80%
17.2	model_small_bert_be	33.09%
17.2	model_small_bert_be	9.68%
19.8	model_small_bert_be	89.51%
20.0	model_small_bert_be	99.98%
20.6	model_small_bert_be	81.32%
20.8	model_small_bert_be	92.74%
21.7	model_small_bert_be	52.21%
23.5	model_small_bert_be	62.23%
23.6	model_small_bert_be	83.40%
23.9	model_small_bert_be	59.40%
24.4	model_small_bert_be	99.67%
24.5	model_small_bert_be	79.45%
24.5	model_small_bert_be	69.35%
24.7	model_small_bert_be	99.08%
25.4	model_small_bert_be	93.77%
25.5	model_small_bert_be	85.92%
26.3	model_small_bert_be	96.13%
26.3	model_small_bert_be	87.89%
27.6	model_small_bert_be	94.55%

Atheism is a non-prophet organization.

Eigentlich zuverlässige Modelle verhalten sich neutral und klassifizieren den religiösen Witz als Nicht-Witz

Lediglich die Overfitting-Modelle klassifizieren den religiösen Witz als Witz

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### **Inhaltliche Aspekte**

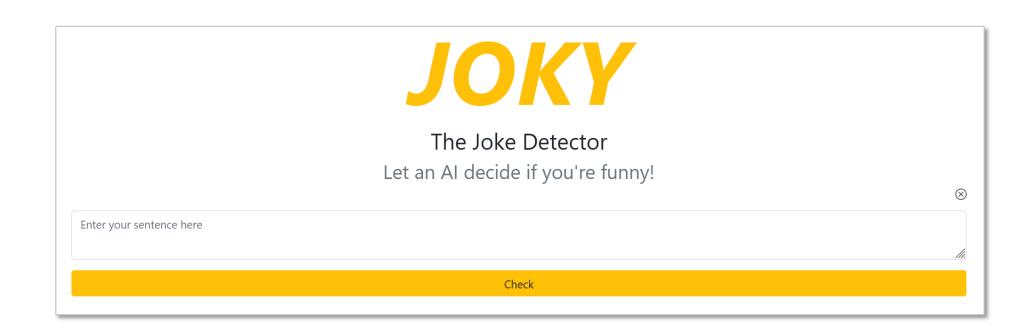
- NLP ist verdammt komplex! Humorerkennung ist noch komplexer!
- Unsichere Interpretation der Genauigkeit, da BERT-Embeddings für uns eine Blackbox sind und es sich um ein sehr subjektives Thema handelt
- Durch die Nutzung von BERT ist ein genereller englischer Sprach- und Kultur-Bias zu erwarten
- Durch die gelabelten Trainingsdaten (isJoke = TRUE / FALSE) wurde bereits ein **spezifisches**, **subjektives Humorempfinden** (= Bias) in das Modelltraining eingebracht
- Auch eine **menschliche Testgruppe** (bspw. mittels Amazon Mechanical Turk) hätte **keine 100% Genauigkeit beim Thema Humor**

**01**Technische Realisierung

**02**Evaluation der Ergebnisse

03
Prototypische WebApp





### **IBM**Cloud Code Engine



### **Funktionsweise**

- 1. User tippen englischen Satz ein
- 2. Modell berechnet, mit welcher Wahrscheinlichkeit es sich bei der Eingabe um einen Witz bzw. nicht um einen Witz handelt
- Direkte Ausgabe der Wahrscheinlichkeit und entsprechende schlagfertige
   Rückmeldung an die User



### The Joke Detector

Let an AI decide if you're funny!



"I don't get this joke...Maybe it's because it isn't one?"

This is not a joke and I'm 52.5% sure about it.

It was the second major conflict in the Opium Wars, which were fought over the right to import opium to China, and resulted in a second defeat for the Qing dynasty and the forced legalisation of the opium trade.

Check



 $\otimes$ 



### The Joke Detector

Let an AI decide if you're funny!



Did you copy that from Wikipedia or the news?

This is not a joke and I'm 76.5% sure about it.

Berlin is the capital and largest city of Germany by both area and population.

Check





### The Joke Detector

Let an Al decide if you're funny!



Damn, that's funny as hell! Have you ever tried a comedy career?

This is a joke and I'm 98.5% sure about it.

Yesterday I saw a guy spill all his Scrabble letters on the road. I asked him, "What's the word on the street?"

Check



### **Technische Aspekte**

- Einbindung von NLP-Modellen bedarf großer Rechenleistung
- Der INF-Server hatte für größere BERT-Modelle zu wenig Leistung
- Auf der IBM Cloud mit GPUs (Danke an Lukes Manager bei IBM) konnte unser automatisiertes Skript leider nicht adhoc initialisiert werden
- Ein remote Jupyter Notebook ist nicht ideal für den Use Case
  "Automatisiertes Training von ML-Modellen im Hintergrund"

  Zellen-Output geht verloren, siehe Restoring computation output after disconnect in Jupyter notebook
- Wenig praxisnahe Dokumentation zur Optimierung von BERT in Zusammenspiel mit Tensor Flow



https://bit.ly/3JAVTrm

## Ausprobieren und gemeinsam diskutieren.

Vielen Dank!

### **Quellenverzeichnis und Dokumentation**

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