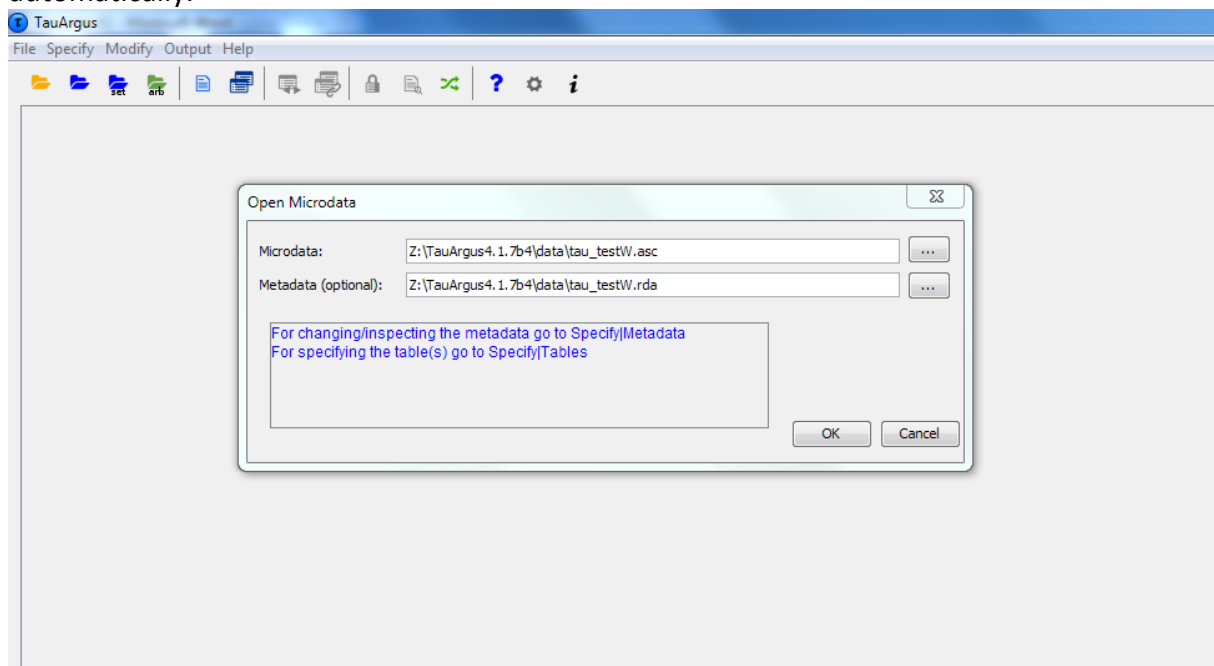


Step-by-step test procedure – τ -Argus

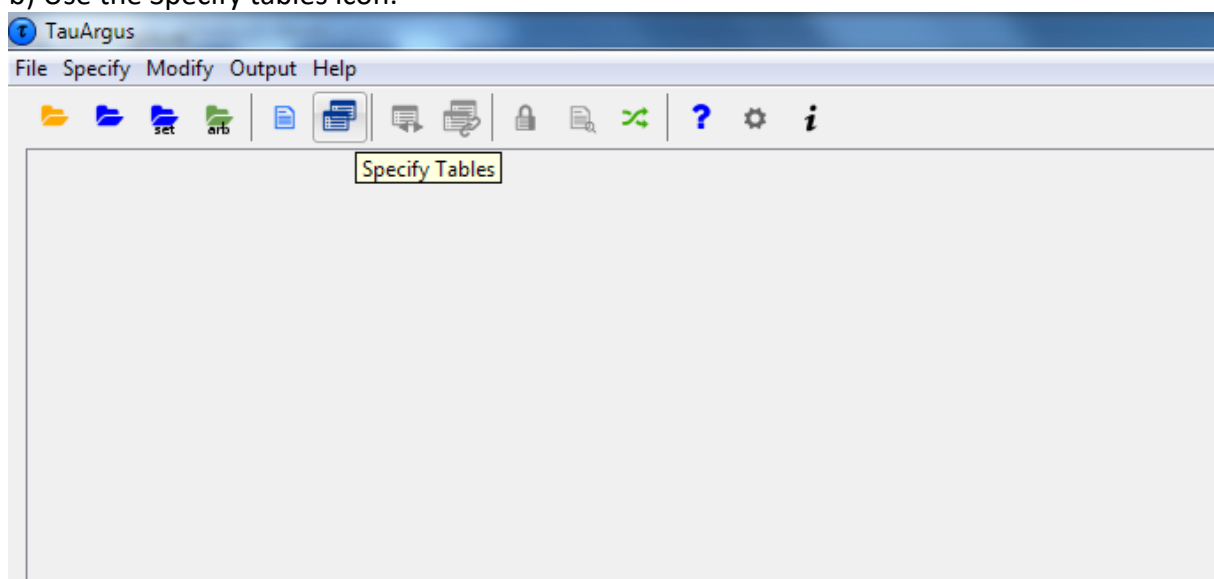
This document provides a step-by-step procedure to test the main features of τ -Argus. This test procedure uses the dataset provided in the installation package to compute two tables and applies modular and hypercube method to protect these. It uses τ -Argus 4.1.7b4.

a) Open τ -Argus. Use File Open microdata, or the yellow folder icon and select tau_testW.asc that should be in the data folder where you unzipped τ -Argus.

The metadata (.rda file) is placed in the same folder and τ -Argus should see that and select it automatically.



b) Use the Specify tables icon.



c) And specify two tables.

The first one using the explanatory variables IndustryCode and Region and the response variable Var1, using two rules: dominance rule ($n=1, k=85$) and frequency rule (3, 10%). The second one using the same explanatory variables but the response variable <freq> instead of Var1, using only the frequency rule.

Specify Tables

Explanatory Variables

Year
IndustryCode
Size
Region

IndustryCode
Region

Cell items

Var1
Var2
Var3
Var4
Var5
Var6
Var7
Var8
<freq>

Response variable:
<freq>

Shadow variable:

Cost variable:
☐ Unity
☐ Frequency
☒ Variable
☐ Distance function

Lambda: 1.0

Parameters

Dom rule: ☐ P%-rule ☐ Reg. rule

☐ Dominance rule

☐ P%-rule

☐ Request rule

	n	k
Ind-1	1	85
Ind-2	0	0
Hold-1	0	0
Hold-2	0	0

☒ Minimum frequency

Ind: 3 10 %

Hold: 0 10 %

☐ Zero unsafe

Range: 10.0

☐ Apply weights

☐ Missing=safe

☐ Use holdings info

Manual safety range: 10 %

Expl. vars	Rule	Resp. var	Shadow & cost var
IndustryCode,Region	IND.: n=1, k=85, MinFreq = 3	Var1	Shadow=Default, Cost=Default
IndustryCode,Region	IND.: No rule, MinFreq = 3	<freq>	Shadow=Default, Cost=Default

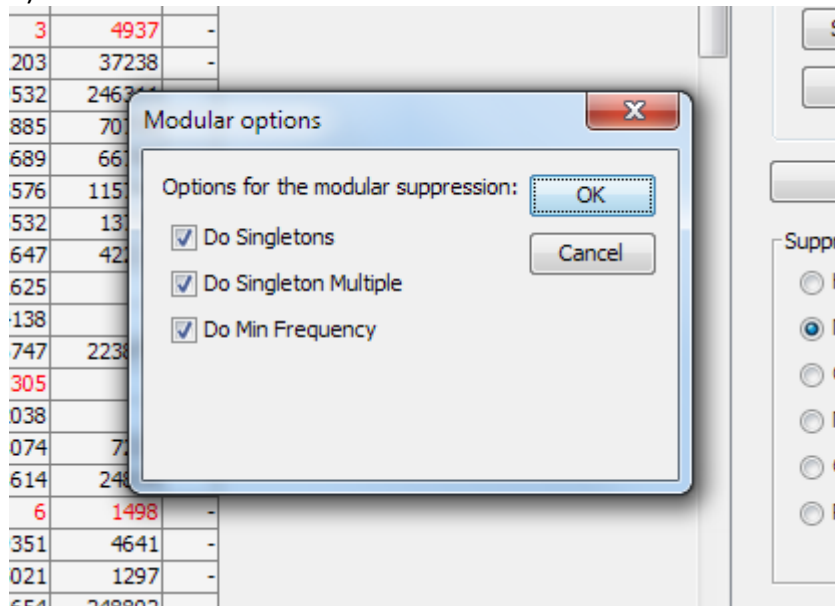
Compute tables Cancel

d) τ -Argus will explore the dataset, make the tables and apply the primary rules. Select Modular, then click Supress.

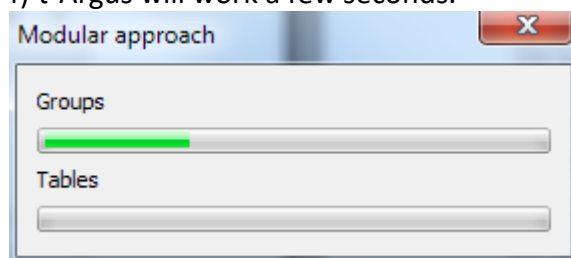
The screenshot displays the TauArgus software interface. The main window shows a table titled "IndustryCode x Region" with columns: - Total, + Nr, + Os, + Ws, + Zd, and 99. The table contains 24 rows of data, with some cells highlighted in red. To the right of the table is a "Cell Information" panel with fields for Value, Status, Shadow, Cost, #contributions, and Top n of shadow. Below this is a "Change status" panel with buttons for "Set to safe", "Set to unsafe", "Set to protected", "Set cost", "A priori info", and "All Non-StructEmpty". At the bottom right is a "Suppress" panel with radio buttons for Hypercube, Modular (selected), Optimal, Network, CTA, and Rounding, and buttons for "Suppress", "Undo suppress", and "Audit". At the bottom of the main window are controls for "Select view...", "Hor. levels", "Number of decimals", "Output view", "Table summary", "Vert. levels", and "3 dig. separator".

	- Total	+ Nr	+ Os	+ Ws	+ Zd	99
- Total	86700593	22605912	19076360	23714113	21304208	-
+ 103	3209	-	-	2700	509	-
+ 140	745	673	72	-	-	-
+ 142	34313	21939	2531	1619	8224	-
+ 145	20939	1760	3842	2542	12795	-
+ 150	231105	30016	27467	152597	21025	-
+ 151	2545241	891208	291398	686934	675701	-
+ 152	357482	11582	220600	44179	81121	-
+ 153	912230	310205	144818	382229	74978	-
+ 154	425648	9601	157026	13097	245924	-
+ 155	1804869	480203	556495	375617	392554	-
+ 156	503531	230168	78141	97714	97508	-
+ 157	1104975	315321	165827	478968	144859	-
+ 158	4518446	838358	1451520	1113849	1114719	-
+ 159	1303373	150592	163122	470866	518793	-
+ 160	690920	179777	151658	296171	63314	-
+ 170	22320	16457	923	3	4937	-
+ 171	161590	64557	8592	51203	37238	-
+ 172	443678	75601	2234	119532	246311	-
+ 173	363915	79677	34598	178885	70755	-
+ 174	338279	97314	70478	103689	66798	-
+ 175	557250	106974	130956	203576	115744	-
+ 176	67819	19824	28708	5532	13755	-
+ 177	266119	129744	12511	81647	42217	-
+ 180	4050	1162	1263	1625	-	-
+ 181	4138	-	-	4138	-	-
+ 182	788559	196196	111737	256747	223879	-
+ 190	305	-	-	305	-	-
+ 191	76814	12622	2151	62038	3	-
+ 192	89411	20686	3422	58074	7229	-
+ 193	260257	6591	213	228614	24839	-
+ 200	4092	440	2148	6	1498	-
+ 201	39624	14501	11131	9351	4641	-
+ 202	62690	4983	21389	35021	1297	-
+ 203	827042	244297	175289	158654	248802	-
+ 204	237180	95461	13988	47073	80658	-
+ 205	106438	21503	15156	4713	65066	-
+ 210	54778	54778	-	-	-	-
+ 211	895968	758118	67815	68744	1291	-
+ 212	1854755	709481	407849	463485	273940	-
+ 220	39902	-	32081	1846	5975	-
+ 221	2803355	517613	1155337	401789	728616	-
+ 222	4216966	856505	1371620	747210	1241631	-
+ 223	255290	3028	201388	43539	7335	-
+ 231	44221	-	-	44221	-	-
+ 232	783264	5886	128168	86773	562437	-
+ 233	24639	-	-	-	24639	-
+ 240	100965	31419	24069	5251	40226	-
+ 241	4839451	1665789	650308	1084520	1438834	-
+ 242	131593	28654	47780	31967	23192	-

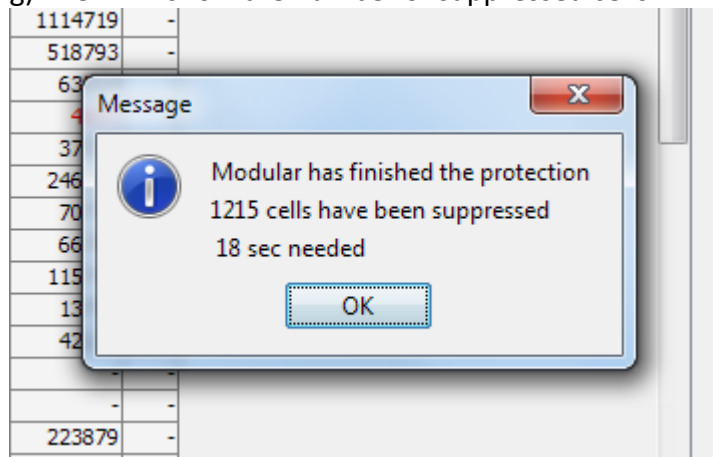
e) Click OK on the next box.



f) τ -Argus will work a few seconds.



g) Then will show the number of suppressed cells.



h) Use the Table summary button to verify that you get these results :

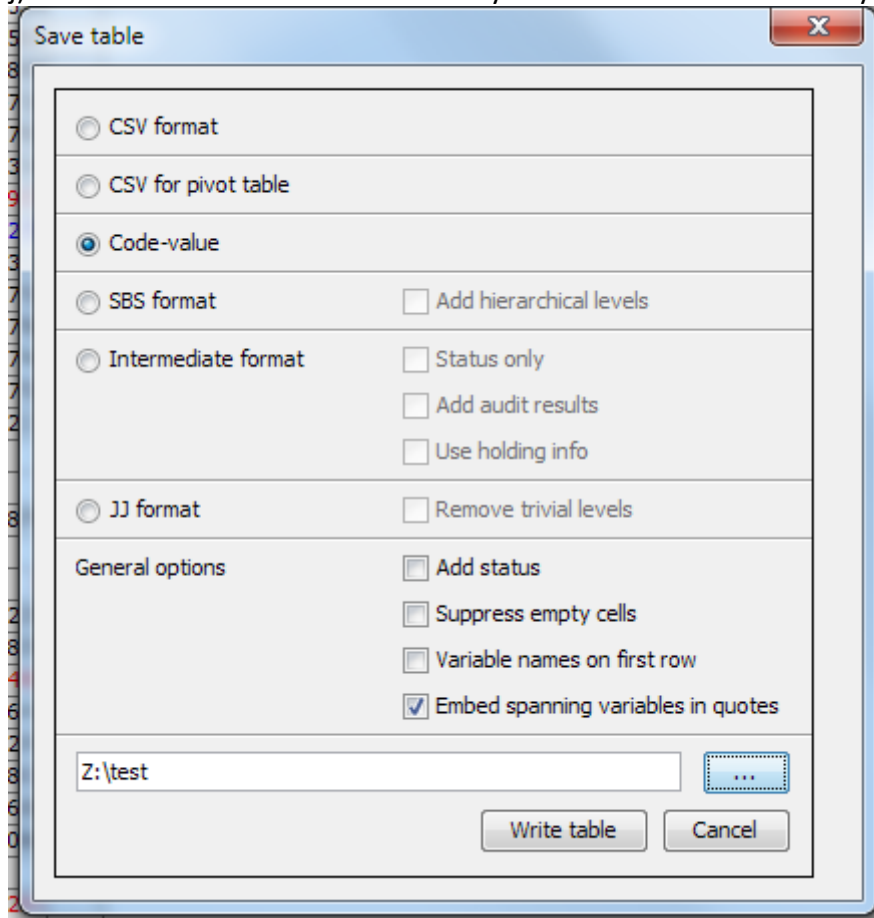
The screenshot shows the TauArgus software interface. The main window displays a table titled "IndustryCode x Region" with columns: - Total, + Nr, + Os, + Ws, + Zd, and 99. The table contains data for various industry codes and regions. A summary dialog box is open, titled "Summary for table no: 1 (IndustryCode x Region | Var1)". The dialog box contains a table with columns: Expl. var, #Codes, Status, Freq, #rec, Sum resp, and Sum cost. The table lists various status codes and their corresponding frequencies and sums. The dialog box also includes a "Close" button.

Expl. var	#Codes	Status	Freq	#rec	Sum resp	Sum cost
IndustryCode	711	Safe	5713	486067	989239577	989239577
Region	18	Safe (manual)	0	0	0	0
		Unsafe	983	1440	2098309	2098309
		Unsafe (request)	0	0	0	0
		Unsafe (freq)	348	696	1000541	1000541
		Unsafe (zero cell)	0	0	0	0
		Unsafe (singleton)	0	0	0	0
		Unsafe (singleton) (manual)	0	0	0	0
		Unsafe (manual)	0	0	0	0
		Protected	0	0	0	0
		Secondary	1215	24473	48068689	48068689
		Secondary (from manual)	0	0	0	0
		Empty (non-struct.)	0	0	0	0
		Empty	4539	0	0	0
		Total	12798	512676	1040407116	1040407116

i) Click on the Save Table icon

The screenshot shows the TauArgus software interface. The main window displays a table titled "IndustryCode x Region" with columns: - Total, + Nr, + Os, + Ws, + Zd, and 99. The table contains data for various industry codes and regions. A "Save Table" button is highlighted in the top right corner of the table area.

j) Use Code-value and choose where you want to save the file on your computer.



The image shows a 'Save table' dialog box with a title bar containing a close button (X). The dialog contains several radio buttons for file formats: 'CSV format', 'CSV for pivot table', 'Code-value' (which is selected), 'SBS format', 'Intermediate format', and 'JJ format'. To the right of 'SBS format' is a checkbox 'Add hierarchical levels'. To the right of 'Intermediate format' are three checkboxes: 'Status only', 'Add audit results', and 'Use holding info'. To the right of 'JJ format' is a checkbox 'Remove trivial levels'. Below these is a section titled 'General options' containing four checkboxes: 'Add status', 'Suppress empty cells', 'Variable names on first row', and 'Embed spanning variables in quotes' (which is checked). At the bottom, there is a text field containing 'Z:\test' and a button with three dots. Below the text field are two buttons: 'Write table' and 'Cancel'.

Save table

☐ CSV format

☐ CSV for pivot table

☒ Code-value

☐ SBS format ☐ Add hierarchical levels

☐ Intermediate format ☐ Status only
☐ Add audit results
☐ Use holding info

☐ JJ format ☐ Remove trivial levels

General options ☐ Add status
☐ Suppress empty cells
☐ Variable names on first row
☒ Embed spanning variables in quotes

Z:\test

Write table Cancel

k) τ -Argus will show the report. Verify that the coding tree for both variables IndustryCode and Region have been used and are detailed in the report.

The screenshot shows a window titled "View Report" with a blue header bar. The main content area displays the "τ-ARGUS Report" in large blue text. Below the title, the date and time "Wed Dec 12 15:53:53 CET 2018" are shown. A table lists the source files: Original file (Z:\TauArgus4.1.7b4\data\tau_testW.asc), Meta file (Z:\TauArgus4.1.7b4\data\tau_testW.rda), and Table file (Z:\test.txt). Below this, it states "Table generated from microdata" and "Table structure". A table with three columns (Function, Var, # codes) details the variables: Response var (Var1), Explanatory var1 (IndustryCode with 711 codes), and Explanatory var2 (Region with 18 codes). A "Safety Rule:" label is at the bottom left. "Print" and "Close" buttons are at the bottom right.

τ-ARGUS Report

Wed Dec 12 15:53:53 CET 2018

Original file:	Z:\TauArgus4.1.7b4\data\tau_testW.asc
Meta file:	Z:\TauArgus4.1.7b4\data\tau_testW.rda
Table file:	Z:\test.txt

Table generated from microdata

Table structure

Function	Var	# codes
Response var:	Var1	
Explanatory var1:	IndustryCode	711
Explanatory var2:	Region	18

Safety Rule:

Print Close

l) Verify that you have both the report saved as an .html file, and the output saved as a .txt file with the suppressed cells marked with " x "

```
test - Bloc-notes
Fichier  Edition  Format  Affichage  ?
["Total","Total",86700593
"Total","Nr",22605912
"Total"," 1",10362885
"Total"," 2",9301035
"Total"," 3",2941992
"Total","Os",19076360
"Total"," 4",642440
"Total"," 5",2728336
"Total"," 6",11503550
"Total"," 7",4202034
"Total","Ws",23714113
"Total"," 8",2536835
"Total"," 9",19014602
"Total","10",2162676
"Total","Zd",21304208
"Total","11",13926263
"Total","12",7377945
"Total","99",-
"103","Total",3209
"103","Nr",-
"103"," 1",-
"103"," 2",-
"103"," 3",-
"103","Os",-
"103"," 4",-
"103"," 5",-
"103"," 6",-
"103"," 7",-
"103","Ws",x
"103"," 8",x
"103"," 9",x
"103","10",-
"103","Zd",x
"103","11",x
"103","12",-
"103","99",-
"1030","Total",3209
"1030","Nr",-
```

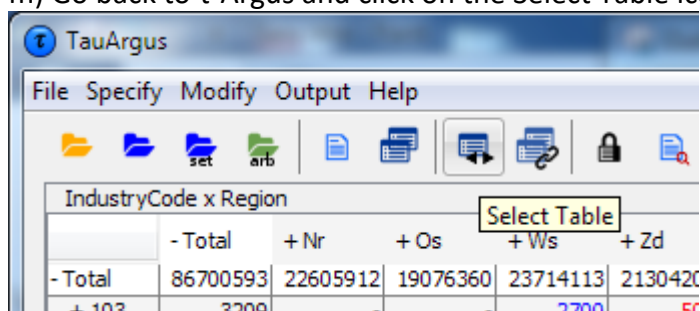


test.html

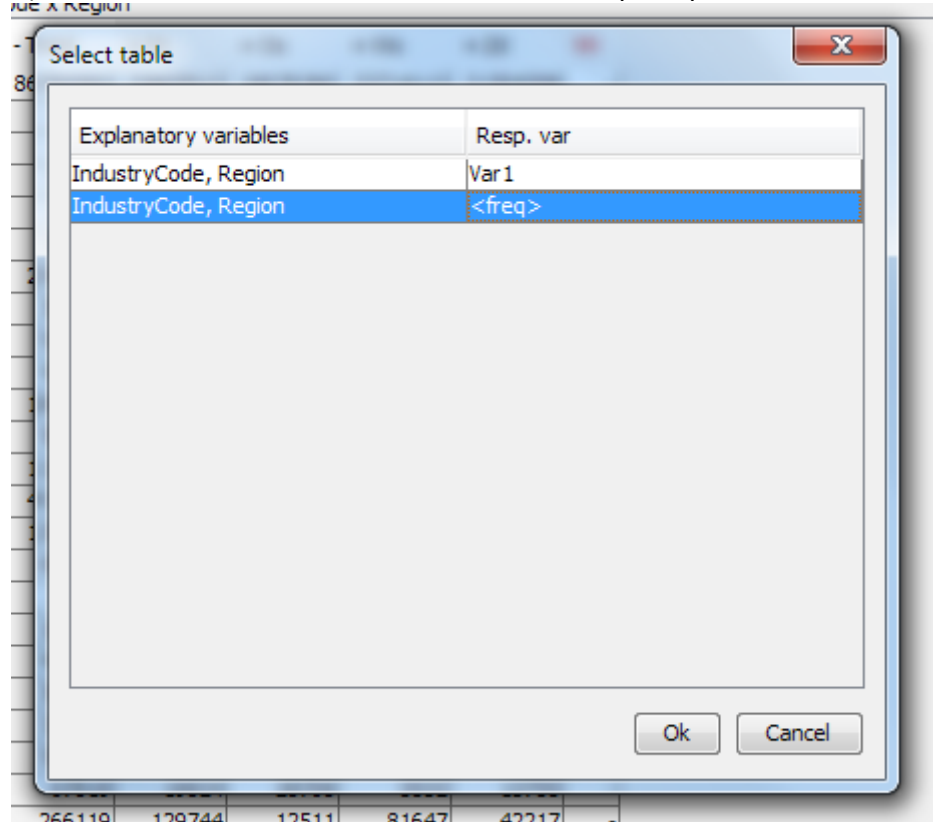


test.txt

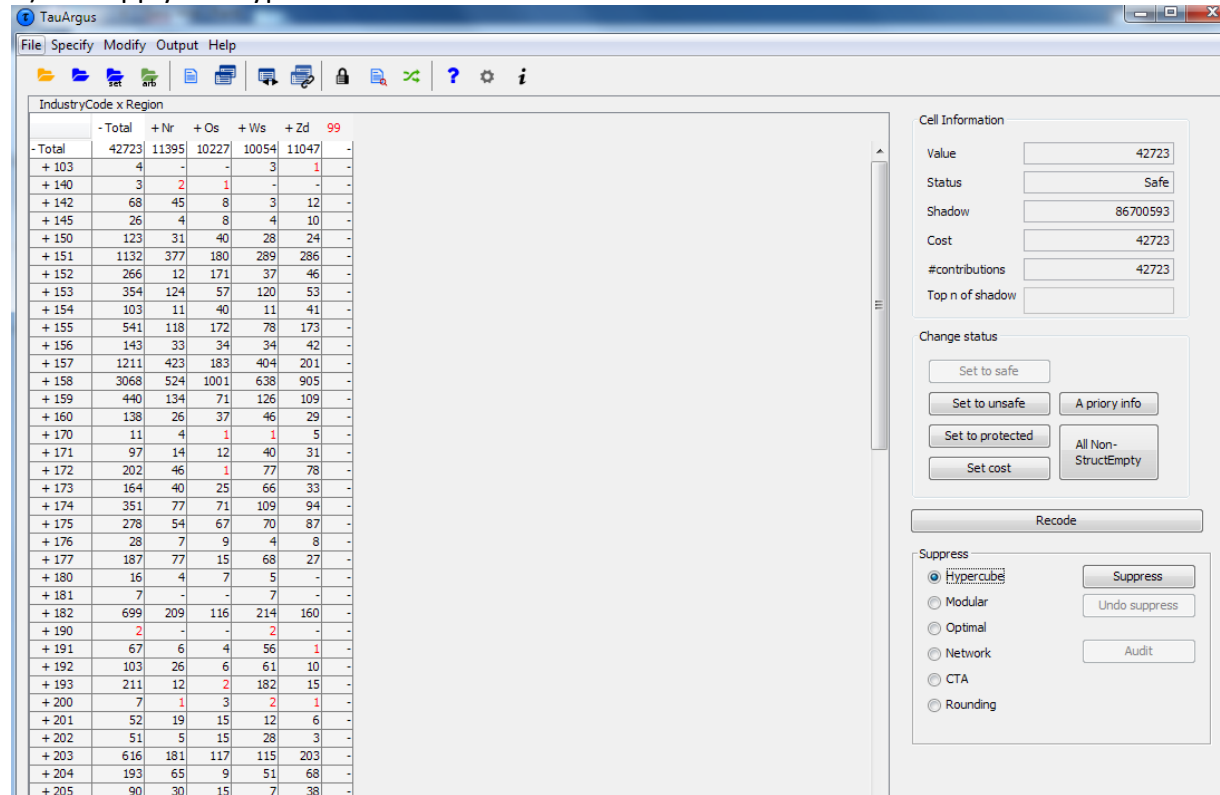
m) Go back to τ-Argus and click on the Select Table icon.



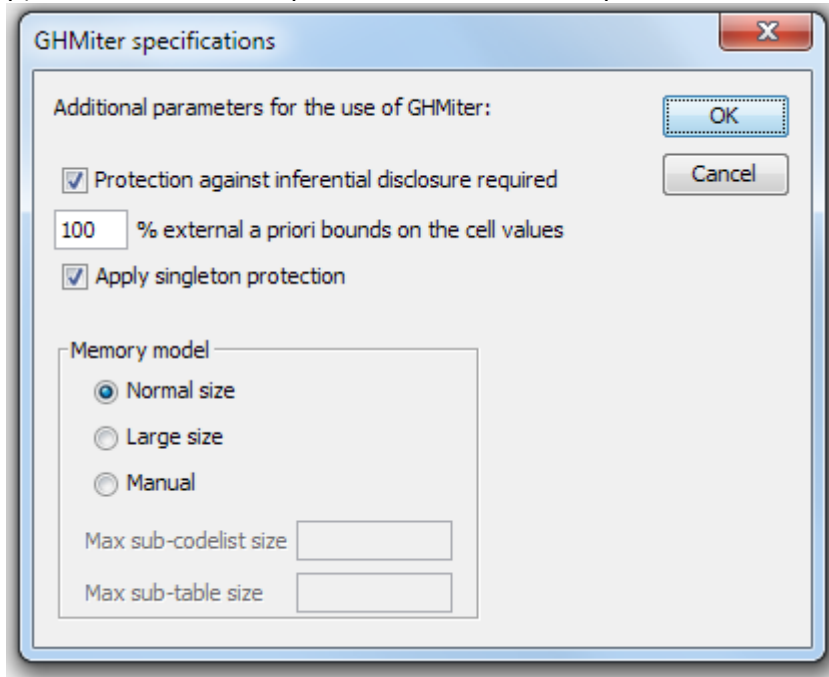
n) Choose the second tabulation with the <freq> response variable.



o) And apply the hypercube method.



p) Leave the default options on the GHMiter specifications box.



GHMiter specifications

Additional parameters for the use of GHMiter:

☒ Protection against inferential disclosure required

100 % external a priori bounds on the cell values

☒ Apply singleton protection

Memory model

☒ Normal size

☐ Large size

☐ Manual

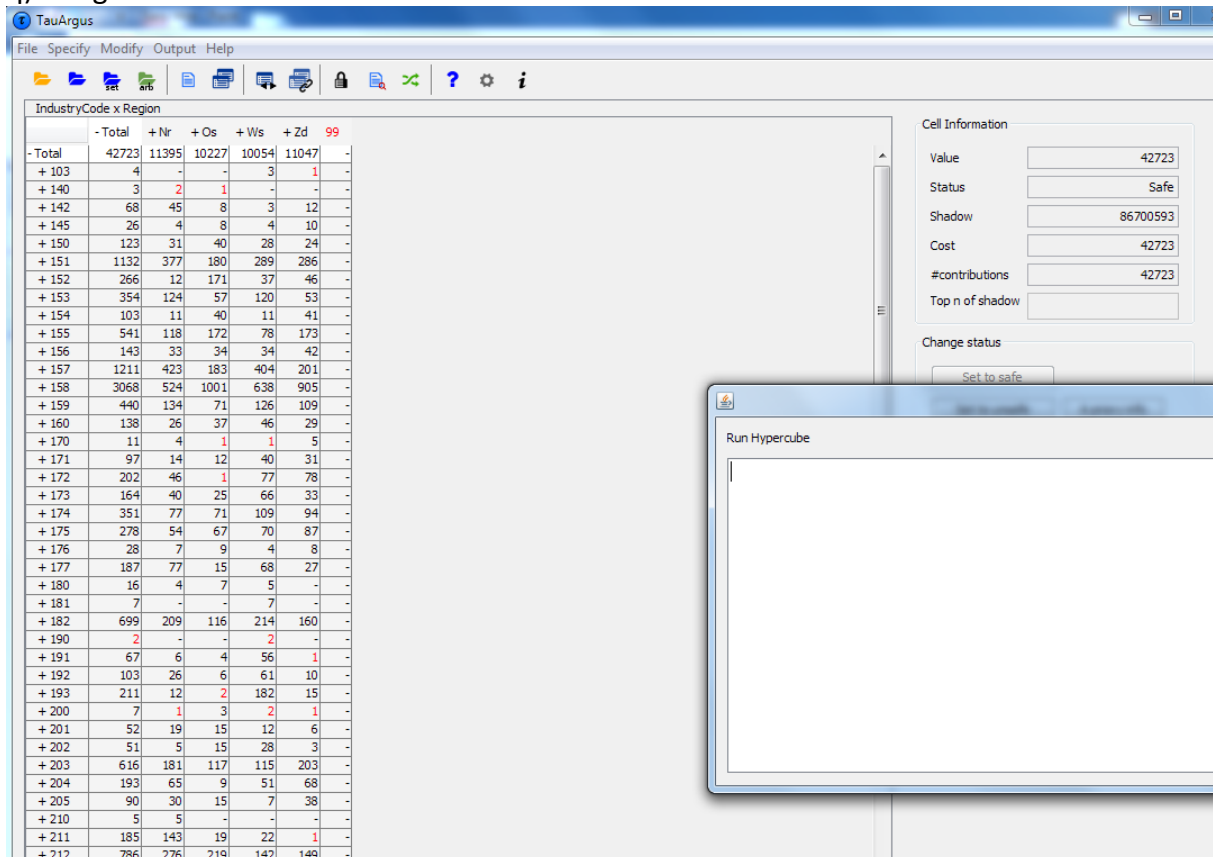
Max sub-codelist size

Max sub-table size

OK

Cancel

q) τ -Argus GHMiter method will take a few seconds to work.



TauArgus

File Specify Modify Output Help

IndustryCode x Region

	- Total	+ Nr	+ Os	+ Ws	+ Zd	99
- Total	42723	11395	10227	10054	11047	-
+ 103	4	-	-	3	1	-
+ 140	3	2	1	-	-	-
+ 142	68	45	8	3	12	-
+ 145	26	4	8	4	10	-
+ 150	123	31	40	28	24	-
+ 151	1132	377	180	289	286	-
+ 152	266	12	171	37	46	-
+ 153	354	124	57	120	53	-
+ 154	103	11	40	11	41	-
+ 155	541	118	172	78	173	-
+ 156	143	33	34	34	42	-
+ 157	1211	423	183	404	201	-
+ 158	3068	524	1001	638	905	-
+ 159	440	134	71	126	109	-
+ 160	138	26	37	46	29	-
+ 170	11	4	1	1	5	-
+ 171	97	14	12	40	31	-
+ 172	202	46	1	77	78	-
+ 173	164	40	25	66	33	-
+ 174	351	77	71	109	94	-
+ 175	278	54	67	70	87	-
+ 176	28	7	9	4	8	-
+ 177	187	77	15	68	27	-
+ 180	16	4	7	5	-	-
+ 181	7	-	-	7	-	-
+ 182	699	209	116	214	160	-
+ 190	2	-	-	2	-	-
+ 191	67	6	4	56	1	-
+ 192	103	26	6	61	10	-
+ 193	211	12	2	182	15	-
+ 200	7	1	3	2	1	-
+ 201	52	19	15	12	6	-
+ 202	51	5	15	28	3	-
+ 203	616	181	117	115	203	-
+ 204	193	65	9	51	68	-
+ 205	90	30	15	7	38	-
+ 210	5	5	-	-	-	-
+ 211	185	143	19	22	1	-
+ 212	786	276	219	142	149	-

Cell Information

Value

Status

Shadow

Cost

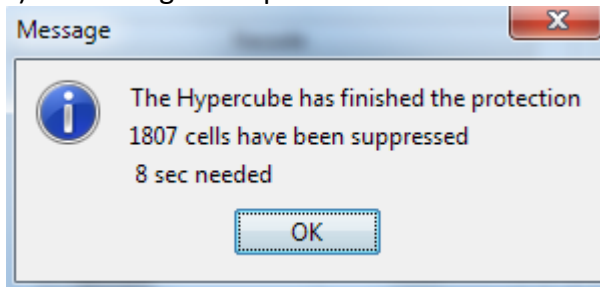
#contributions

Top n of shadow

Change status

Run Hypercube

r) Then τ -Argus will provide the number of cells suppressed.



s) Use the Table summary button to verify that you get these results.

The screenshot shows the TauArgus software interface. The main window displays a table titled 'IndustryCode x Region'. The table has columns for various codes and counts. A summary dialog box is open, titled 'Summary for table no: 2 (IndustryCode x Region | <freq>)', showing a detailed breakdown of the data.

Table: IndustryCode x Region

	- Total	+Nr	+ Os	+ Ws	+ Zd	99
- Total	42723	11395	10227	10054	11047	-
+ 103	4	-	-	3	1	-
+ 140	3	2	1	-	-	-
+ 142	68	45	8	3	12	-
+ 145	26	4	8	4	10	-
+ 150	123	31	40	28	24	-
+ 151	1132	377	180	289	286	-
+ 152	266	12	171	37	46	-
+ 153	354	124	57	120	53	-
+ 154	103	11	40	11	41	-
+ 155	541	118	172	78	173	-
+ 156	143	33	34	34	42	-
+ 157	1211	423	183	404	201	-
+ 158	3068	524	1001	638	905	-
+ 159	440	134	71	126	109	-
+ 160	138	26	37	46	29	-
+ 170	11	4	1	1	5	-
+ 171	97	14	12	40	31	-
+ 172	202	46	1	77	78	-
+ 173	164	40	25	66	33	-
+ 174	351	77	71	109	94	-
+ 175	278	54	67	70	87	-
+ 176	28	7	9	4	8	-
+ 177	187	77	15	68	27	-
+ 180	16	4	7	5	-	-
+ 181	7	-	-	7	-	-
+ 182	699	209	116	214	160	-
+ 190	2	-	-	2	-	-
+ 191	67	6	4	56	1	-
+ 192	103	26	6	61	10	-
+ 193	211	12	2	182	15	-
+ 200	7	1	3	2	1	-
+ 201	52	19	15	12	6	-
+ 202	51	5	15	28	3	-
+ 203	616	181	117	115	203	-
+ 204	193	65	9	51	68	-
+ 205	90	30	15	7	38	-
+ 210	5	5	-	-	-	-
+ 211	185	143	19	22	1	-
+ 212	786	276	219	142	149	-
+ 220	22	-	14	2	6	-
+ 221	1725	421	583	246	475	-
+ 222	3284	662	1109	578	935	-
+ 223	104	5	69	23	7	-
+ 231	5	-	-	5	-	-
+ 232	176	30	50	21	75	-
+ 233	2	-	-	-	2	-
+ 240	52	8	19	10	15	-
+ 241	858	319	163	123	253	-
+ 242	103	14	49	22	18	-

Summary for table no: 2 (IndustryCode x Region | <freq>)

Expl. var	#Codes	Status	Freq	#rec	Sum resp	Sum cost
IndustryCode	711	Safe	5192	472731	472731	472731
Region	18	Safe (manual)	0	0	0	0
		Unsafe	0	0	0	0
		Unsafe (request)	0	0	0	0
		Unsafe (freq)	1260	1737	1737	1737
		Unsafe (zero cell)	0	0	0	0
		Unsafe (singleton)	0	0	0	0
		Unsafe (singleton) (manual)	0	0	0	0
		Unsafe (manual)	0	0	0	0
		Protected	0	0	0	0
		Secondary	1807	38208	38208	38208
		Secondary (from manual)	0	0	0	0
		Empty (non-struct.)	0	0	0	0
		Empty	4539	0	0	0
		Total	12798	512676	512676	512676

Cell Information:

- Value
- Status
- Shadow
- Cost

CTA

Rounding

Select view... Hor. levels: 1 Number of decimals: 0 Output view

Table summary Vert. levels: 1 3 dig. separator