Advocacy Strategies Analysis using Chi-squared test

This is an R Markdown (http://rmarkdown.rstudio.com) Notebook. When you execute code within the notebook, the results appear beneath the code.

Try executing this chunk by clicking the *Run* button within the chunk or by placing your cursor inside it and pressing *Ctrl+Shift+Enter*.

Do different types of legitimacy indicate a difference in strategy frequency?

Results are in table III at the end

```
## Loading required package: reshape2
```

```
## Using Use, Quadrant, Donor, Local, Type as id variables
```

```
## [1] "Participatory 1 : Active participation"
##
##  Pearson's Chi-squared test with simulated p-value (based on 10000
##  replicates)
##
## data:  temp
## X-squared = 5.4022, df = NA, p-value = 0.07119
##
##
##  Pearson's Chi-squared test with simulated p-value (based on 10000
##  replicates)
##
## data:  temp
## X-squared = 3.2283, df = NA, p-value = 0.1205
##
##
##  Pearson's Chi-squared test with simulated p-value (based on 10000
##  replicates)
##
## data:  temp
## X-squared = 3.7585, df = NA, p-value = 0.09489
##
## Therefore variables Q1 Use may be marginally independent.
## **Therefore variables Q2 Use are NOT marginally independent (p= 0.09659034 )**
## Therefore variables Q3 Use may be marginally independent.
## [1] "Participatory 2 : Mobilize for contentious politics"
##
##  Pearson's Chi-squared test with simulated p-value (based on 10000
##  replicates)
##
## data:  temp
## X-squared = 5.0371, df = NA, p-value = 0.09889
##
##
##  Pearson's Chi-squared test with simulated p-value (based on 10000
##  replicates)
##
## data:  temp
## X-squared = 1.9771, df = NA, p-value = 0.2868
##
##
##  Pearson's Chi-squared test with simulated p-value (based on 10000
##  replicates)
##
## data:  temp
## X-squared = 4.352, df = NA, p-value = 0.07179
##
## Therefore variables Q1 Use may be marginally independent.
## **Therefore variables Q2 Use are NOT marginally independent (p= 0.07419258 )**
## Therefore variables Q3 Use may be marginally independent.
## [1] "Participatory 3 : Issue public statements"
##
##  Pearson's Chi-squared test with simulated p-value (based on 10000
##  replicates)
##
## data:  temp
## X-squared = 3.0179, df = NA, p-value = 0.2991
##
##
##  Pearson's Chi-squared test with simulated p-value (based on 10000
##  replicates)
##
## data:  temp
## X-squared = 0.14674, df = NA, p-value = 1
##
##
##  Pearson's Chi-squared test with simulated p-value (based on 10000
##  replicates)
```

```
##
## data:  temp
## X-squared = 3, df = NA, p-value = 0.1969
##
## Therefore variables Q1 Use may be marginally independent.
## Therefore variables Q2 Use may be marginally independent.
## Therefore variables Q3 Use may be marginally independent.
## [1] "Participatory 4 : Build CSO coalitions"
##
##  Pearson's Chi-squared test with simulated p-value (based on 10000
##  replicates)
##
## data:  temp
## X-squared = 1.4189, df = NA, p-value = 0.6985
##
##
##  Pearson's Chi-squared test with simulated p-value (based on 10000
##  replicates)
##
## data:  temp
## X-squared = 1.4171, df = NA, p-value = 0.5369
##
##
##  Pearson's Chi-squared test with simulated p-value (based on 10000
##  replicates)
##
## data:  temp
## X-squared = 0.096429, df = NA, p-value = 1
##
## Therefore variables Q1 Use may be marginally independent.
## Therefore variables Q2 Use may be marginally independent.
## Therefore variables Q3 Use may be marginally independent.
## [1] "Participatory 5 : Build interest groups (articulate common interests)"
##
##  Pearson's Chi-squared test with simulated p-value (based on 10000
##  replicates)
##
## data:  temp
## X-squared = 2.0491, df = NA, p-value = 0.3775
##
##
##  Pearson's Chi-squared test with simulated p-value (based on 10000
##  replicates)
##
## data:  temp
## X-squared = 0.91712, df = NA, p-value = 0.3903
##
##
##  Pearson's Chi-squared test with simulated p-value (based on 10000
##  replicates)
##
## data:  temp
## X-squared = 1.6875, df = NA, p-value = 0.5354
##
## Therefore variables Q1 Use may be marginally independent.
## Therefore variables Q2 Use may be marginally independent.
## Therefore variables Q3 Use may be marginally independent.
## [1] "Participatory 6 : Support to/empower individuals to achieve rights"
##
##  Pearson's Chi-squared test with simulated p-value (based on 10000
##  replicates)
##
## data:  temp
## X-squared = 3.825, df = NA, p-value = 0.1621
##
##
##  Pearson's Chi-squared test with simulated p-value (based on 10000
##  replicates)
##
```

```
## data:  temp
## X-squared = 3.7565, df = NA, p-value = 0.1055
##
##
##  Pearson's Chi-squared test with simulated p-value (based on 10000
##  replicates)
##
## data:  temp
## X-squared = 0.675, df = NA, p-value = 0.6875
##
## Therefore variables Q1 Use may be marginally independent.
## Therefore variables Q2 Use may be marginally independent.
## Therefore variables Q3 Use may be marginally independent.
## [1] "Participatory 7 : "
##
##  Pearson's Chi-squared test with simulated p-value (based on 10000
##  replicates)
##
## data:  temp
## X-squared = 0, df = NA, p-value = 1
##
##
##  Pearson's Chi-squared test with simulated p-value (based on 10000
##  replicates)
##
## data:  temp
## X-squared = 0, df = NA, p-value = 1
##
##
##  Pearson's Chi-squared test with simulated p-value (based on 10000
##  replicates)
##
## data:  temp
## X-squared = 0, df = NA, p-value = 1
##
## Therefore variables Q1 Use may be marginally independent.
## Therefore variables Q2 Use may be marginally independent.
## Therefore variables Q3 Use may be marginally independent.
## [1] "Transactional 1 : Apply expertise"
##
##  Pearson's Chi-squared test with simulated p-value (based on 10000
##  replicates)
##
## data:  temp
## X-squared = 5.1607, df = NA, p-value = 0.06879
##
##
##  Pearson's Chi-squared test with simulated p-value (based on 10000
##  replicates)
##
## data:  temp
## X-squared = 3.6685, df = NA, p-value = 0.09509
##
##
##  Pearson's Chi-squared test with simulated p-value (based on 10000
##  replicates)
##
## data:  temp
## X-squared = 3, df = NA, p-value = 0.1875
##
## Therefore variables Q1 Use may be marginally independent.
## Therefore variables Q2 Use may be marginally independent.
## **Therefore variables Q3 Use are NOT marginally independent (p= 0.0939906 )**
## [1] "Transactional 2 : Advocate for policy"
##
##  Pearson's Chi-squared test with simulated p-value (based on 10000
##  replicates)
##
## data:  temp
```

```
## X-squared = 6.8979, df = NA, p-value = 0.0364
##
##
##  Pearson's Chi-squared test with simulated p-value (based on 10000
##  replicates)
##
## data:  temp
## X-squared = 0.4819, df = NA, p-value = 0.6202
##
##
##  Pearson's Chi-squared test with simulated p-value (based on 10000
##  replicates)
##
## data:  temp
## X-squared = 4.9091, df = NA, p-value = 0.0406
##
## **Therefore variables Q1 Use are NOT marginally independent (p= 0.009768311 )**
## **Therefore variables Q2 Use are NOT marginally independent (p= 0.04069593 )**
## Therefore variables Q3 Use may be marginally independent.
## [1] "Transactional 3 : Train state staff"
##
##  Pearson's Chi-squared test with simulated p-value (based on 10000
##  replicates)
##
## data:  temp
## X-squared = 1.1964, df = NA, p-value = 0.5567
##
##
##  Pearson's Chi-squared test with simulated p-value (based on 10000
##  replicates)
##
## data:  temp
## X-squared = 0.14674, df = NA, p-value = 1
##
##
##  Pearson's Chi-squared test with simulated p-value (based on 10000
##  replicates)
##
## data:  temp
## X-squared = 0.75, df = NA, p-value = 0.6715
##
## Therefore variables Q1 Use may be marginally independent.
## Therefore variables Q2 Use may be marginally independent.
## Therefore variables Q3 Use may be marginally independent.
## [1] "Transactional 4 : Personal lobbying"
##
##  Pearson's Chi-squared test with simulated p-value (based on 10000
##  replicates)
##
## data:  temp
## X-squared = 1.3752, df = NA, p-value = 0.5651
##
##
##  Pearson's Chi-squared test with simulated p-value (based on 10000
##  replicates)
##
## data:  temp
## X-squared = 0.4819, df = NA, p-value = 0.6232
##
##
##  Pearson's Chi-squared test with simulated p-value (based on 10000
##  replicates)
##
## data:  temp
## X-squared = 1.2273, df = NA, p-value = 0.4122
##
## Therefore variables Q1 Use may be marginally independent.
## Therefore variables Q2 Use may be marginally independent.
## Therefore variables Q3 Use may be marginally independent.
```

```
## [1] "Transactional 5 : Convene institutions"
##
##  Pearson's Chi-squared test with simulated p-value (based on 10000
##  replicates)
##
## data:  temp
## X-squared = 3.0959, df = NA, p-value = 0.2241
##
##
##  Pearson's Chi-squared test with simulated p-value (based on 10000
##  replicates)
##
## data:  temp
## X-squared = 1.9771, df = NA, p-value = 0.2949
##
##
##  Pearson's Chi-squared test with simulated p-value (based on 10000
##  replicates)
##
## data:  temp
## X-squared = 0.35526, df = NA, p-value = 0.6768
##
## Therefore variables Q1 Use may be marginally independent.
## Therefore variables Q2 Use may be marginally independent.
## Therefore variables Q3 Use may be marginally independent.
## [1] "Transactional 6 : Monitor government"
##
##  Pearson's Chi-squared test with simulated p-value (based on 10000
##  replicates)
##
## data:  temp
## X-squared = 12.536, df = NA, p-value = 0.0019
##
##
##  Pearson's Chi-squared test with simulated p-value (based on 10000
##  replicates)
##
## data:  temp
## X-squared = 2.3478, df = NA, p-value = 0.2685
##
##
##  Pearson's Chi-squared test with simulated p-value (based on 10000
##  replicates)
##
## data:  temp
## X-squared = 6.75, df = NA, p-value = 0.027
##
## **Therefore variables Q1 Use are NOT marginally independent (p= 0.00059994 )**
## **Therefore variables Q2 Use are NOT marginally independent (p= 0.02539746 )**
## Therefore variables Q3 Use may be marginally independent.
## [1] "Transactional 7 : Create/ support hybrid CSO/state institutions"
##
##  Pearson's Chi-squared test with simulated p-value (based on 10000
##  replicates)
##
## data:  temp
## X-squared = 0.51721, df = NA, p-value = 0.8311
##
##
##  Pearson's Chi-squared test with simulated p-value (based on 10000
##  replicates)
##
## data:  temp
## X-squared = 0.13073, df = NA, p-value = 1
##
##
##  Pearson's Chi-squared test with simulated p-value (based on 10000
##  replicates)
##
```

```
## data:  temp
## X-squared = 0.49091, df = NA, p-value = 0.6321
##
## Therefore variables Q1 Use may be marginally independent.
## Therefore variables Q2 Use may be marginally independent.
## Therefore variables Q3 Use may be marginally independent.
```

table III

```
## Loading required package: xtable
```

Variable	Active participation	Mobilize for contentious politics	Issue public statements	Build CSO coalitions	Build interest groups (articulate common interests)	Support to/empower individuals to achieve rights	Apply expertise	Advocate for policy	Train state staff	Personal lobbying	Convene institutions	Monitor government	Create/ support hybrid CSO/state institutions
Quadrant	Yes (p=0.071)	Yes (p=0.099)	No	No	No	No	Yes (p=0.069)	Yes (p=0.036)	No	No	No	Yes (p=0.0019)	No
Local	No	No	No	No	No	No	Yes (p=0.095)	No	No	No	No	No	No
Donor	Yes (p=0.095)	Yes (p=0.072)	No	No	No	No	No	Yes (p=0.041)	No	No	No	Yes (p=0.027)	No
Quad	Q2 (p=0.097)	Q2 (p=0.074)					Q3 (p=0.094)	Q1 (p=0.0098) Q2 (p=0.041)				Q1 (p=6e-04) Q2 (p=0.025)	

Test for differences in strategies using marginal sum of strategies used (first column of table IV)

```
##
##  Pearson's Chi-squared test
##
## data:  temp
## X-squared = 9.9229, df = 2, p-value = 0.007003
```

```
## Therefore legitimacy varies with the strategies chosen at a significant level
```

```
## Test for local legitimacy
```

```
##
##  Pearson's Chi-squared test
##
## data:  temp
## X-squared = 9.5753, df = 1, p-value = 0.001972
```

```
## Therefore local legitimacy varies with the strategies chosen at a significant level
```

```
## Test for donor legitimacy
```

```
##
##  Pearson's Chi-squared test
##
## data:  temp
## X-squared = 0.13875, df = 1, p-value = 0.7095
```

```
## Therefore donor legitimacy does NOT vary with the strategies chosen at a significant level. Donor legitimacy and strategy use are marginally independent.
```

Test for differences in type of strategies given legitimacy

```
##
##  Pearson's Chi-squared test
##
## data:  temp
## X-squared = 24.183, df = 6, p-value = 0.0004834
##
## **Therefore variables Use Type are NOT jointly independent of Quadrant (p= 0.0004833786 ).**
```

```
##
##  Pearson's Chi-squared test
##
## data:  temp
## X-squared = 10.587, df = 3, p-value = 0.01418
##
## **Therefore variables Use Type are NOT jointly independent of Local (p= 0.01418243 ).**
```

```
##
##  Pearson's Chi-squared test
##
## data:  temp
## X-squared = 13.715, df = 3, p-value = 0.00332
##
## **Therefore variables Use Type are NOT jointly independent of Donor (p= 0.00331977 ).**
```

When you save the notebook, an HTML file containing the code and output will be saved alongside it (click the *Preview* button or press *Ctrl+Shift+K* to preview the HTML file).