Usage of the Function qs() in R

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Usage `qs(cont.table)`

Argument

cont.table matrix with entries of a square contingency table.

Value

deviance.pval exact p-value using the deviance

pearson.pval exact p-value using the Pearson test statistic

fisher.pval sum of probabilities for tables in the reference set that are at most as likely as the observed table

counts size of the reference set

deviance.counts number of tables in the reference set for which the deviance is at least as big as for the observed table

pearson.counts number of tables in the reference set for which the Pearson statistic is at least as big as for the observed table.

fisher.counts number of tables in the reference set that are at most as likely as the observed table

deviance.asymptotic p-value obtained by using the chi-square approximation for the deviance

pears.asymptotic p-value obtained by using the chi-square approximation for the Pearson statistic

Details The function qs() performs exact conditional goodness of fit tests for quasi-symmetry for square contingency tables, as described by Booth and Capanu (2003): 'Exact conditional p-value calculation for the quasi-symmetry model'.

Example The ethnicities of 4520 couples of first-generation immigrants were reported by Pagini and Morgan(1990): Intermarriage and social distance among us-immigrants at the turn of the century.

The following table shows husband's ethnicities by wife's ethnicities for immigrants married in the USA. (BR=British, Ir=Irish, Sc=Scandinavian, Ge=German, It=Italian, Po=Polish, CJ=Central European Jewish, EJ= Eastern European Jewish)

	Wife							
Husband	Br	Ir	Sc	Ge	It	Po	CJ	EJ
Br	**314**	63	10	15	0	1	1	0
Ir	27	**625**	2	5	0	0	0	0
Sc	4	9	**835**	20	1	0	0	0
Ge	26	26	10	**1096**	0	4	0	0
It	3	6	0	4	**477**	1	0	0
Po	1	0	0	7	0	**421**	0	0
CJ	1	0	0	1	0	1	**112**	11
EJ	1	0	0	1	0	1	30	**347**

The following R code was used to perform the analysis for this table:

```
> ethnic <- matrix(c(314,63,10,15,0,1,1,0,
+ 27,625,2,5,0,0,0,0,
+ 4,9,835,20,1,0,0,0,
+ 26,26,10,1096,0,4,0,0,
+ 3,6,0,4,477,1,0,0,
+ 1,0,0,7,0,421,0,0,
+ 1,0,0,1,0,1,112,11,
+ 1,0,0,1,0,1,30,347),8,8,byrow=TRUE)

   > qs(ethnic)
```