

R Functions for Correlation Analysis¹

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¹References: [R Functions for Correlation Analysis](#).

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Table 1: R Functions for Correlation Analysis

Y	X	Statistical Analysis	R function	
Quantitative Variable	None	Mean test (one sample)	t.test()	
	None	Variance test (one sample)	qchisq()	
	1 categorical variable 2 categories	Mean test (two samples)	t.test()	
	1 categorical variable 2 categories	Variance test (two samples)	var.test() ansari.test() mood.test()	
	1 categorical variable 2 categories	ANOVA (one-way)	aov() with_summary()	
	1 categorical variable ≥ 2 categories	Variance test (multiple samples)	Bartlett.test() fligner.test()	
	≥ 2 categorical variable ≥ 2 categories	ANOVA (two-way or multi-way)	aov() & summary()	
	1 quantitative variable	Correlation Test	cor.test()	
	1 quantitative variable	Regression	lm() & summary()	
	≥ 2 quantitative variables	Multivariate linear model	lm() & summary() glm() & summary()	
	Quantitative and categorical variables	GEE, mixed model, etc.	Contributed packages	
	2 categories (0,1)	None	Proportion test (one sample)	binom.test()
	2 categories (0,1)	1 categorical variable ≥ 2 categories	Proportion test (multiple samples)	prop.test()
	≥ 2 categories	≥ 1 categorical variable(s) ≥ 2 categories	Proportion test (multiple samples)	chisq.test() fisher.test()
≥ 1 categorical variable(s) ≥ 2 categories		Independence and interaction test (ANOVA of frequency data)	glm(family=poisson) with summary()	
\geq quantitative/categorical variables		Logistic regression	glm() with summary()	