

# LogXact<sup>®</sup> 11

## The Most Reliable Software for Exact Regression

The complexity of conducting regression analysis over multiple covariates is well-documented. The challenge only intensifies when coupled with small sample sizes or missing data sets. LogXact aims to provide simple and accurate solutions for such difficulties.

Users performing analysis on binary data, count data and all types of categorical data benefit from LogXact's tools for exact inference, Monte Carlo methods, MCMC, and Firth's procedures. LogXact's powerful algorithms are built to analyze stratified and unstratified data sets of all sizes, and models are provided for cases of missing categorical (discrete) data.

## New In LogXact 11

- Negative Binomial and Poisson Regression: regression procedures for count data offering Firth's bias correction for the MLE
- Additional procedures for Bias Corrected (Firth) including Probit and ClogLog regression for binary data, Poisson regression for stratified and unstratified data
- Profile Likelihood based Confidence Intervals for likelihood and penalized likelihood estimates

## Also available in LogXact 11:

- Firth's Corrected MLE: Extend bias correction methods to stratified data
- Profile Likelihood Based Confidence Intervals: Determine confidence intervals for the MLE and PMLE
- Mid-p corrections: Overcome the conservatism of traditional confidence intervals with a mid-p adjustment

## Only in LogXact

LogXact takes pride in being the first to offer the widely acclaimed and highly demanded PMLE procedure that minimizes separation bias while exhibiting significantly lower error rates compared to typical maximum likelihood estimators.

LogXact provides users with an array of options with which to tackle missing data problems for categorical discrete covariates. It is the only software that allows users to fit general linear models in cases of missing categorical covariates.

## LogXact<sup>®</sup> PROCs for SAS Users

Did you know you can use Cytel's nonparametric and exact inference methods within SAS? LogXact<sup>®</sup> PROCs plug into SAS, providing immediate access to:

- All tests and procedures - all fully referenced and validated
- More nonparametric inference exact statistics
- Automation of batch jobs and documentation for submittals within SAS

**All within SAS.**

**Cytel**

[www.cytel.com](http://www.cytel.com)

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# LogXact 11 Tests



The most logistic regression and exact methods.  
Now with R integration and expanded OS support.

## Binary Data

	Exact	Monte Carlo	MCMC	Asymptotic	Bias Corrected Estimates
Unstratified Logistic Regression	YES	YES	YES		YES
Stratified Logistic Regression	YES	YES	YES		
Probit Model				YES	Version 11
Complementary Log Log Model				YES	Version 11

## Count Data

	Exact	Monte Carlo	Asymptotic	Bias Corrected Estimates
Stratified Poisson Regression	YES	YES	YES	Version 11
Unstratified Poisson Regression	YES	YES	YES	Version 11

## Polytonomous Data

	Exact	Monte Carlo	Asymptotic
Multinomial Logit Model	YES	YES	YES
Proportional Odd Logit Model			YES
Adjacent Categories Logit Model	YES	YES	YES
Continuation Ratio Logit Model	YES	YES	YES