

The parameter estimate of the gender effect and goodness of fit for bacteria *Dehalobacterium* (proportion of zeros: 50%) using different methods. Female is the reference category for gender.

Model	Logit*		count distribution		P-value for overall effect**	AIC
	β_1 (SE)	$Pr(> t)$	γ_1 (SE)	$Pr(> t)$		
LOLS	NA	NA	-0.059 (0.127)	0.641	0.641	2736
Poisson	NA	NA	0.030 (0.032)	0.338	0.338	9373
NB	NA	NA	0.041 (0.208)	0.843	0.843	2439 ^{††}
WRS	NA	NA	NA	NA	0.598	NA
2P-LOLS	0.059(0.193)	0.762	-0.120 (0.157)	0.445	0.713	2520
PH	0.036(0.193)	0.853	0.032 (0.032)	0.322	0.601	5243
ZIP	0.046 (0.189)	0.807	0.032 (0.032)	0.320	0.592	5270
NBH	0.036(0.193)	0.853	0.049 (0.175)	0.779	0.945	2405[†]
ZINB	0.052(0.242)	0.828	0.040(0.181)	0.825	0.961	2422 ^{††}
2P-WRS	NA	NA	NA	NA	0.816	NA