

Supplementary Tables for Clark and Barr (2017): Standard Deviations of Relative Risk Estimators in Simulation Study

Table 1: Standard deviations (SDs) of relative risk (RR) estimators for $x_1 = 0.5$ vs $x_1 = -0.5$ when $\text{logit}(P[Y = 1]) = \alpha + \beta_1 x_1 + \beta_2 x_2$. Sample size is 1000 and $x_1, x_2 \sim U(-2, 2)$. *Median prob* refers to the probability that $Y = 1$ when both covariates are at their median value. *Logit*, *log*, *poisson* and *log-logit* refer to binary regression with logit link (logistic regression) and log link, Poisson regression with log link and binary regression with blended log-logit link, respectively.

median prob.	true RR	SD of estimated RR				prob.reject
		logit	log	poisson	log-logit	
0.3	1.200	0.053	0.049	0.049	0.049	0.0
0.3	1.500	0.074	0.058	0.061	0.058	21.3
0.3	3.000	0.262	0.055	0.088	0.108	99.6
0.5	1.200	0.037	0.030	0.033	0.032	35.2
0.5	1.500	0.056	0.033	0.041	0.043	88.0
0.5	3.000	0.258	0.030	0.060	0.181	99.9

Table 2: Standard deviations (SDs) of relative risk (RR) estimators for $x_1 = 2$ vs $x_1 = 1$ when $\text{logit}(P[Y = 1]) = \alpha + \beta_1 x_1 + \beta_2 x_2$. Sample size is 1000 and $x_1, x_2 \sim U(-2, 2)$. *Median prob* refers to the probability that $Y = 1$ when both covariates are at their median value. *Logit*, *log*, *poisson* and *log-logit* refer to binary regression with logit link (logistic regression) and log link, Poisson regression with log link and binary regression with blended log-logit link, respectively.

median prob.	true RR	SD of estimated RR				prob.reject
		logit	log	poisson	log-logit	
0.3	1.173	0.038	0.049	0.049	0.049	0.0
0.3	1.332	0.031	0.058	0.061	0.058	21.3
0.3	1.346	0.028	0.055	0.088	0.060	99.6
0.5	1.098	0.014	0.030	0.060	0.026	99.9
0.5	1.143	0.018	0.030	0.033	0.032	35.2
0.5	1.206	0.013	0.033	0.041	0.026	88.0

Table 3: Standard deviations (SDs) of relative risk (RR) estimators for $x_1 = -1$ vs $x_1 = -2$ when $\text{logit}(P[Y = 1]) = \alpha + \beta_1 x_1 + \beta_2 x_2$. Sample size is 1000 and $x_1, x_2 \sim U(-2, 2)$. *Median prob* refers to the probability that $Y = 1$ when both covariates are at their median value. *Logit*, *log*, *poisson* and *log-logit* refer to binary regression with logit link (logistic regression) and log link, Poisson regression with log link and binary regression with blended log-logit link, respectively.

median prob.	true RR	SD of estimated RR				prob.reject
		logit	log	poisson	log-logit	
0.3	1.224	0.065	0.049	0.049	0.049	0.0
0.3	1.634	0.107	0.058	0.061	0.058	21.3
0.3	4.583	0.499	0.055	0.088	0.108	99.6
0.5	1.260	0.059	0.030	0.033	0.032	35.2
0.5	1.865	0.128	0.033	0.041	0.043	88.0
0.5	8.200	1.210	0.030	0.060	0.181	99.9

Table 4: Standard deviations (SDs) of relative risk (RR) estimators for $x_1 = 0.5$ vs $x_1 = -0.5$ when $\text{logit}(P[Y = 1]) = \alpha + \beta_1 x_1 + \beta_2 x_2$. Sample size is 1000 and $x_1, x_2 \sim N(0, \frac{4}{3})$. *Median prob* refers to the probability that $Y = 1$ when both covariates are at their median value. *Logit*, *log*, *poisson* and *log-logit* refer to binary regression with logit link (logistic regression) and log link, Poisson regression with log link and binary regression with blended log-logit link, respectively.

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		logit	log	poisson	log-logit	
0.3	1.200	0.054	0.040	0.048	0.047	2.0
0.3	1.500	0.079	0.048	0.055	0.055	46.4
0.3	3.000	0.281	0.050	0.067	0.128	98.8
0.5	1.200	0.037	0.025	0.031	0.032	41.3
0.5	1.500	0.058	0.030	0.036	0.046	90.8
0.5	3.000	0.281	0.031	0.051	0.196	99.8

Table 5: Standard deviations (SDs) of relative risk (RR) estimators for $x_1 = 2$ vs $x_1 = 1$ when $\text{logit}(P[Y = 1]) = \alpha + \beta_1 x_1 + \beta_2 x_2$. Sample size is 1000 and $x_1, x_2 \sim N(0, \frac{4}{3})$. *Median prob* refers to the probability that $Y = 1$ when both covariates are at their median value. *Logit*, *log*, *poisson* and *log-logit* refer to binary regression with logit link (logistic regression) and log link, Poisson regression with log link and binary regression with blended log-logit link, respectively.

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0.3	1.346	0.029	0.050	0.067	0.068	98.8
0.5	1.098	0.014	0.031	0.051	0.022	99.8
0.5	1.143	0.018	0.025	0.031	0.032	41.3
0.5	1.206	0.013	0.030	0.036	0.027	90.8

Table 6: Standard deviations (SDs) of relative risk (RR) estimators for $x_1 = -1$ vs $x_1 = -2$ when $\text{logit}(P[Y = 1]) = \alpha + \beta_1 x_1 + \beta_2 x_2$. Sample size is 1000 and $x_1, x_2 \sim N\left(0, \frac{4}{3}\right)$. *Median prob* refers to the probability that $Y = 1$ when both covariates are at their median value. *Logit*, *log*, *poisson* and *log-logit* refer to binary regression with logit link (logistic regression) and log link, Poisson regression with log link and binary regression with blended log-logit link, respectively.

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0.3	1.634	0.114	0.048	0.055	0.055	46.4
0.3	4.583	0.563	0.050	0.067	0.128	98.8
0.5	1.260	0.058	0.025	0.031	0.032	41.3
0.5	1.865	0.132	0.030	0.036	0.046	90.8
0.5	8.200	1.378	0.031	0.051	0.196	99.8