

Simulation Result For Two-Level Slope Model With High Prevalence

The mean prevalence for this simulation is 79 %

Shafayet Khan Shafee

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Histograms for $\log(\widehat{MOR})$ When Number of Cluster is 10

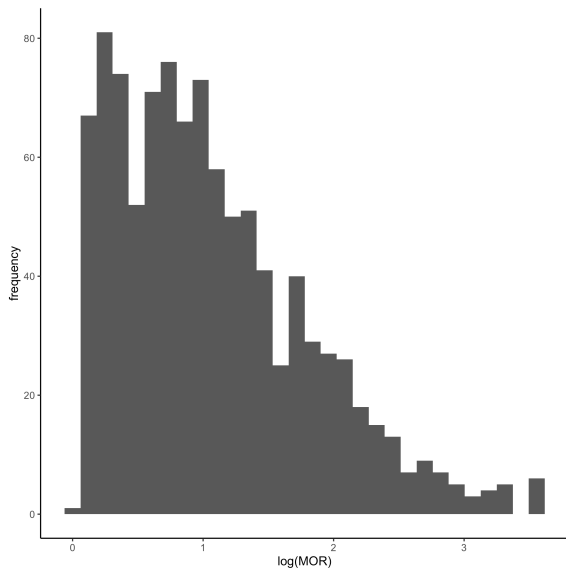


Figure 1: For cluster size 5

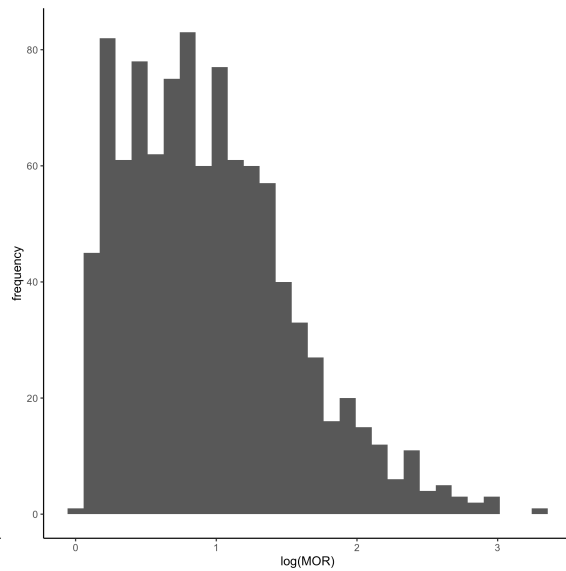


Figure 2: For cluster size 10

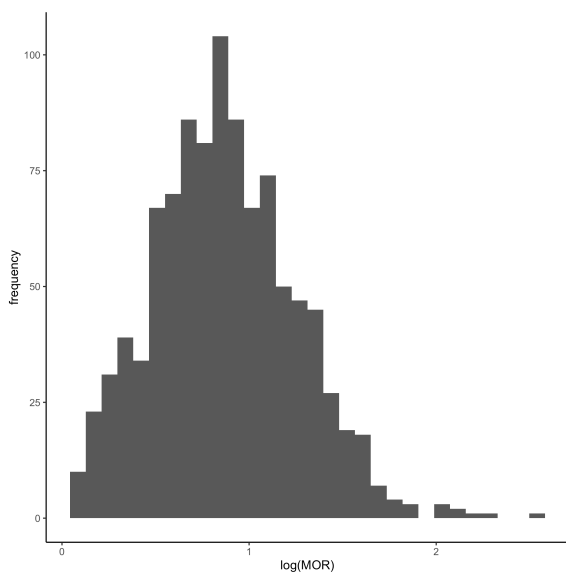


Figure 3: For cluster size 30

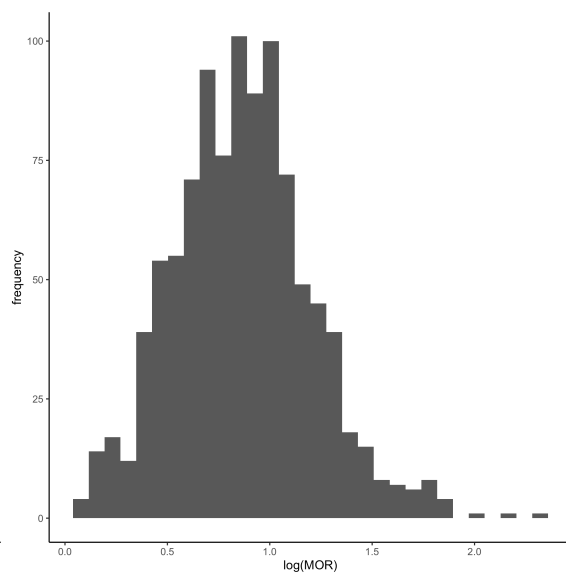


Figure 4: For cluster size 50

Histograms for $\log(\widehat{MOR})$ When Number of Cluster is 30

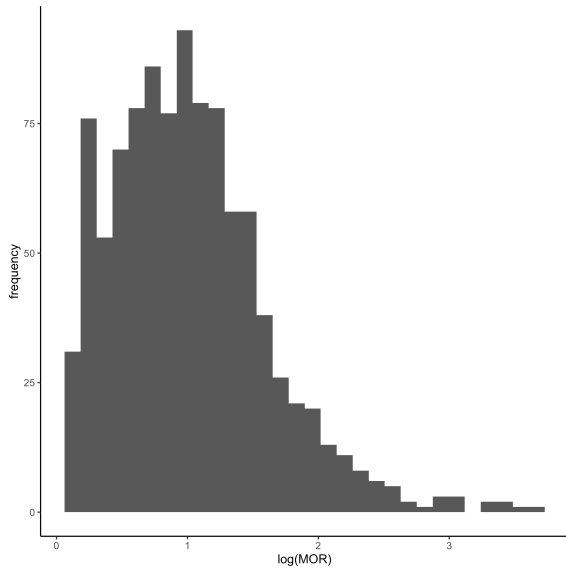


Figure 5: For cluster size 5

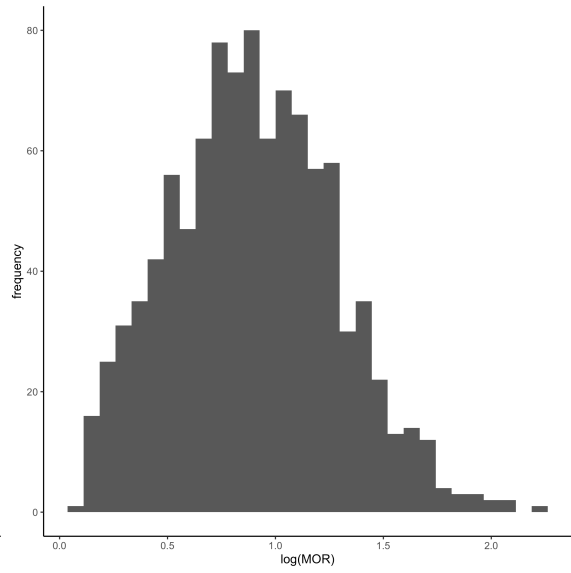


Figure 6: For cluster size 10

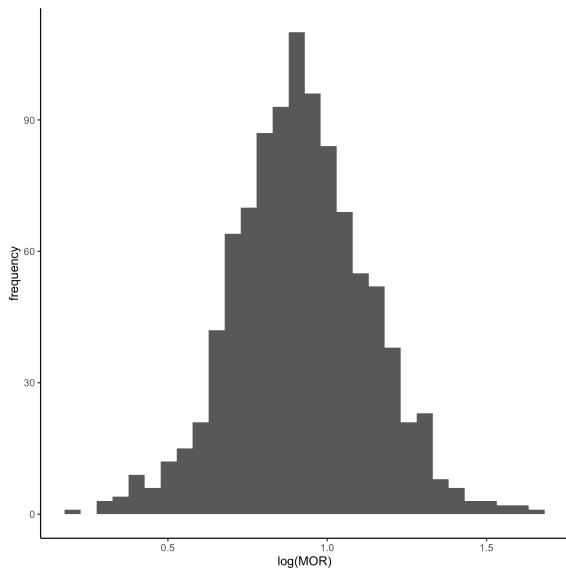


Figure 7: For cluster size 30

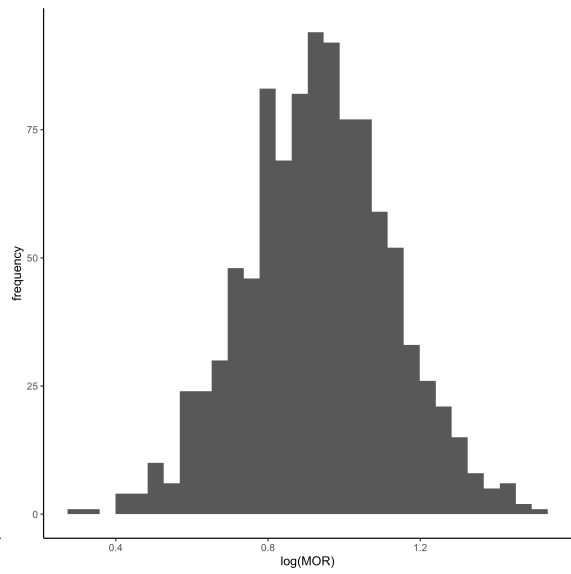


Figure 8: For cluster size 50

Histograms for $\log(\widehat{MOR})$ When Number of Cluster is 50

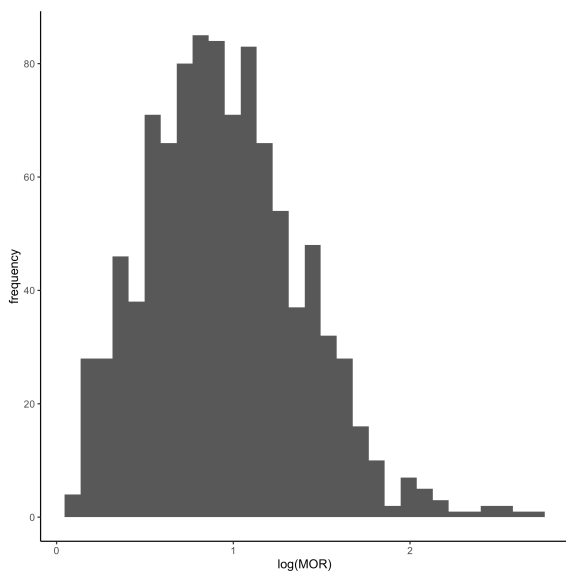


Figure 9: For cluster size 5

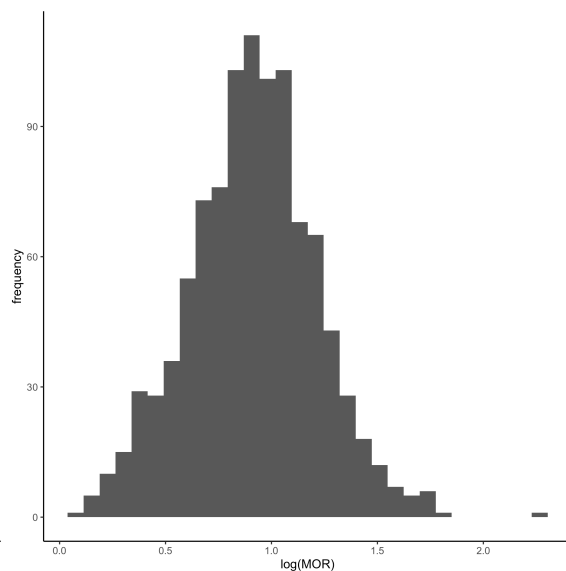


Figure 10: For cluster size 10

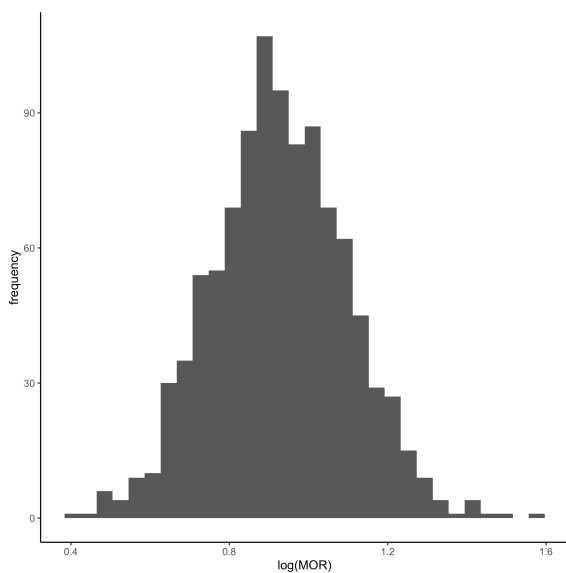


Figure 11: For cluster size 30

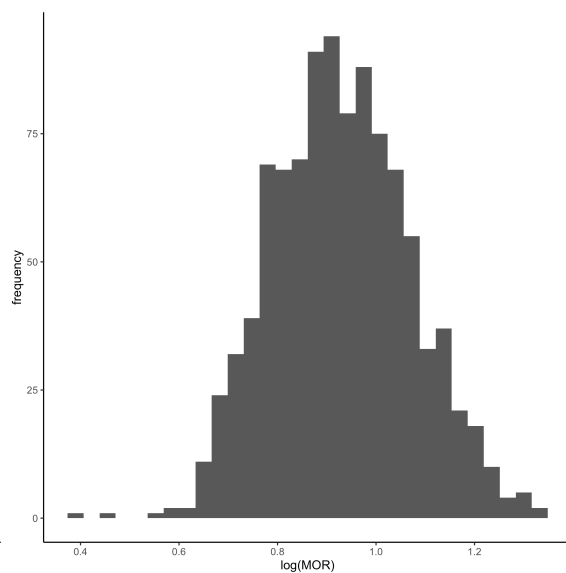


Figure 12: For cluster size 50

Histograms for $\log(\widehat{MOR})$ When Number of Cluster is 100

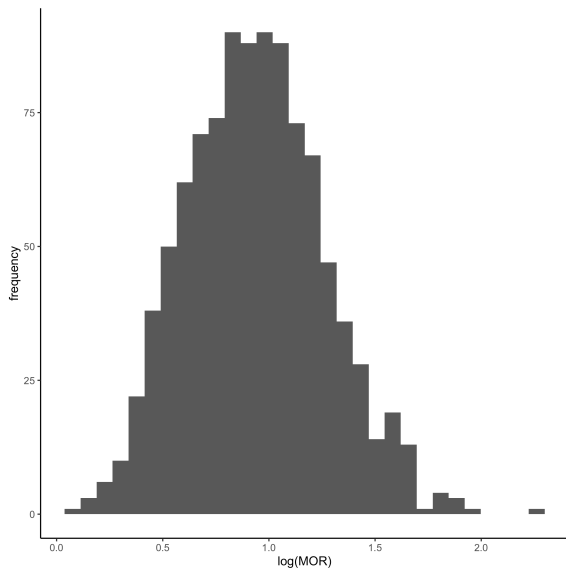


Figure 13: For cluster size 5

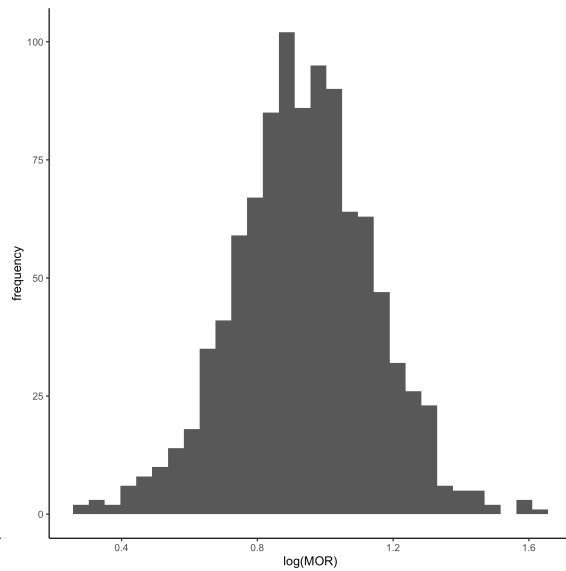


Figure 14: For cluster size 10

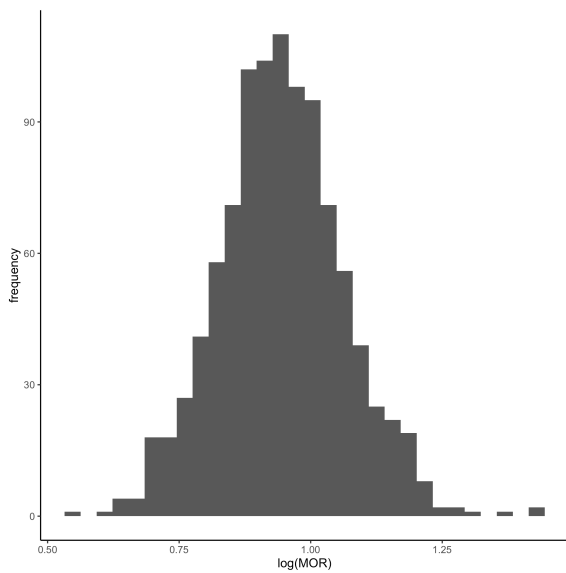


Figure 15: For cluster size 30

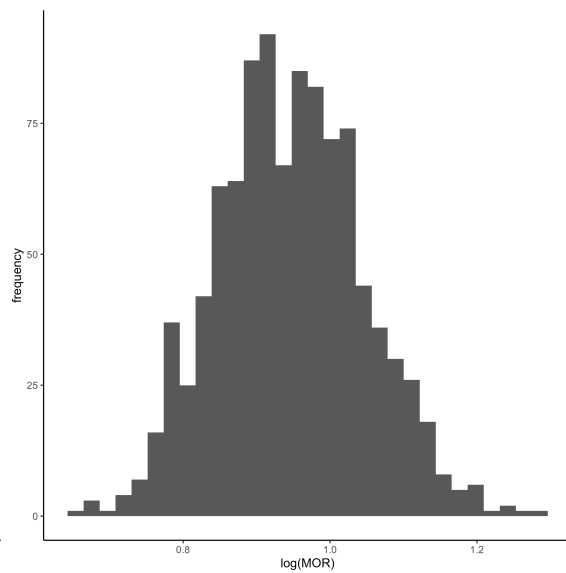


Figure 16: For cluster size 50

Simulation Result Table

Number of Cluster	Cluster Size	$\widehat{\beta}_0$	$\widehat{\beta}_1$	$\widehat{\beta}_2$	$\widehat{\sigma}_{u_1}^2$	$\widehat{\sigma}_{u_2}^2$	$\widehat{\sigma}_{u_{12}}^2$	MOR	\widehat{MOR}	Relative Bias (%)	\widehat{SE}_{MOR}	Simulation \widehat{SE}_{MOR}	Ratio ¹	CI cov- erage (95%)	Runs used	Runs Re- quired
10	5	2.28	2.16	0.86	1.83	3.47	-0.04	2.64	4.07	54.06	4.14	2.08	1.99	0.99	1000	1436
10	10	2.17	1.98	0.85	1.38	2.94	-0.10	2.62	3.20	22.10	2.25	1.81	1.25	0.98	1000	1038
10	30	2.02	1.78	0.72	0.98	1.97	-0.03	2.60	2.58	-0.93	1.49	1.46	1.02	0.93	1000	1001
10	50	2.02	1.76	0.69	0.95	1.91	-0.06	2.60	2.53	-2.77	1.39	1.40	0.99	0.90	1000	1000
30	5	2.16	1.89	0.76	1.50	2.82	-0.05	2.61	3.43	31.35	1.95	1.80	1.08	0.98	1000	1009
30	10	2.04	1.79	0.72	1.03	2.13	0.00	2.60	2.64	1.41	1.47	1.46	1.00	0.95	1000	1000
30	30	1.99	1.75	0.70	0.97	1.96	-0.03	2.60	2.56	-1.45	1.24	1.24	1.00	0.94	1000	1000
30	50	2.01	1.75	0.68	1.00	1.97	-0.01	2.60	2.59	-0.33	1.20	1.21	0.99	0.92	1000	1000
50	5	2.06	1.81	0.71	1.20	2.41	-0.05	2.61	2.88	10.39	1.63	1.55	1.05	0.98	1000	1000
50	10	2.01	1.77	0.69	1.01	2.12	0.01	2.60	2.60	0.07	1.34	1.35	0.99	0.96	1000	1000
50	30	2.00	1.74	0.67	0.98	1.98	-0.03	2.60	2.57	-1.14	1.18	1.19	0.99	0.93	1000	1000
50	50	2.00	1.74	0.69	0.97	1.95	-0.02	2.60	2.56	-1.47	1.15	1.15	1.00	0.93	1000	1000
100	5	2.03	1.77	0.69	1.08	2.12	-0.02	2.60	2.70	3.78	1.40	1.38	1.01	0.98	1000	1000
100	10	1.99	1.73	0.68	1.01	1.97	-0.03	2.60	2.60	0.21	1.22	1.23	0.99	0.96	1000	1000
100	30	2.00	1.75	0.67	1.00	1.97	-0.01	2.60	2.59	-0.24	1.12	1.13	1.00	0.94	1000	1000
100	50	1.99	1.74	0.68	0.99	1.98	0.00	2.60	2.59	-0.30	1.10	1.10	1.00	0.94	1000	1000

Note:

The mean prevalence for this simulation is 79%

¹ Ratio = $\frac{\widehat{SE}_{MOR}}{\text{Simulation } \widehat{SE}_{MOR}}$

Here,

- True $\sigma_{u_1}^2 = 1$, $\sigma_{u_2}^2 = 2$, $\sigma_{u_{12}}^2 = 0$
- True Values of $\beta_0 = 2$, $\beta_1 = 1.75$, $\beta_2 = 0.67$
- “Runs used” column represent how many simulation runs were used to calculate the numbers in the corresponding row.