

Supplemental Document

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1 Simulation results

The results from all five simulations are shown in this supplement document:

1.1 Total Hardwood Count Posteriors from BGLGM & BayLog

1.1.1 Simulation 1

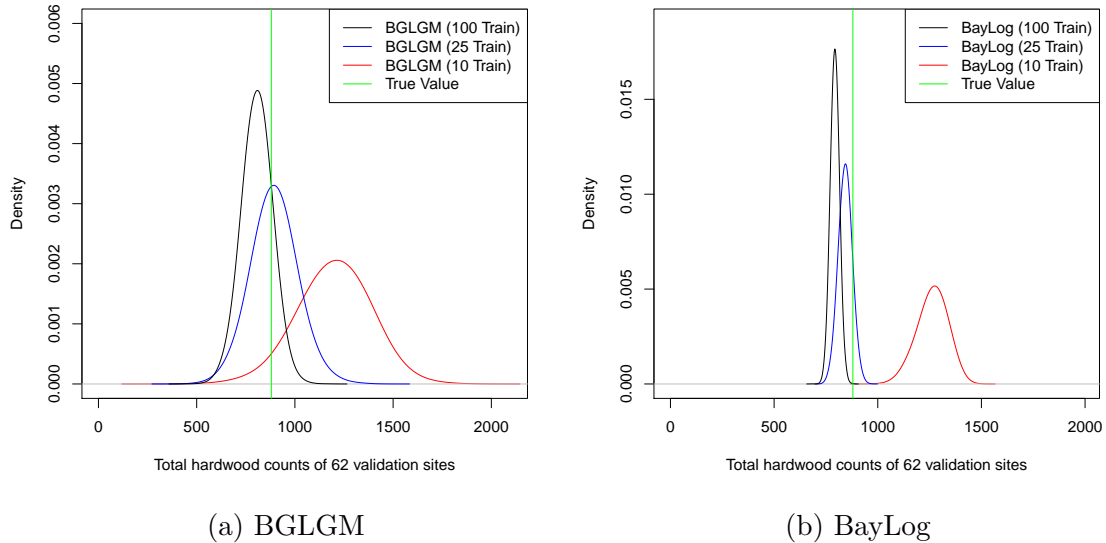
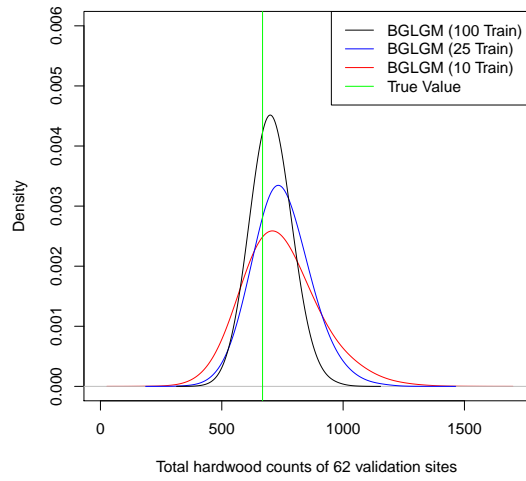
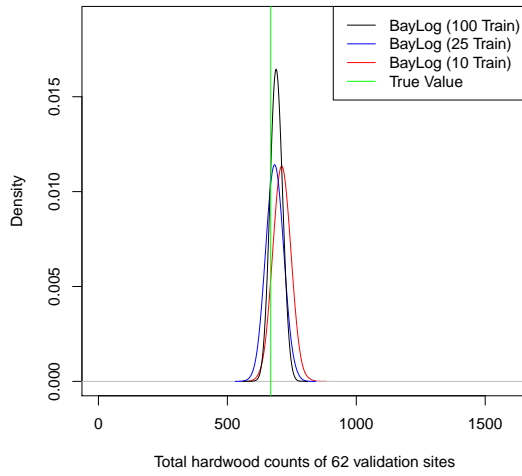


Figure 1: Comparing BGLGM posterior distributions of total number of hardwood trees to the BayLog posterior distribution - simulation 1.

1.1.2 Simulation 2



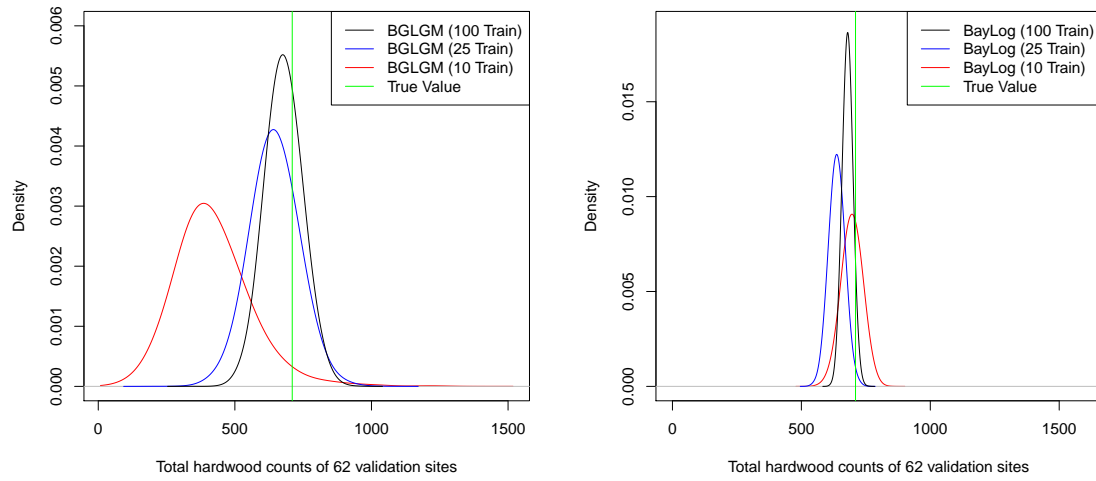
(a) BGLGM



(b) BayLog

Figure 2: Comparing BGLGM posterior distributions of total number of hardwood trees to the BayLog posterior distribution - simulation 2.

1.1.3 Simulation 3



(a) BGLGM

(b) BayLog

Figure 3: Comparing BGLGM posterior distributions of total number of hardwood trees to the BayLog posterior distribution - simulation 3.

1.1.4 Simulation 4

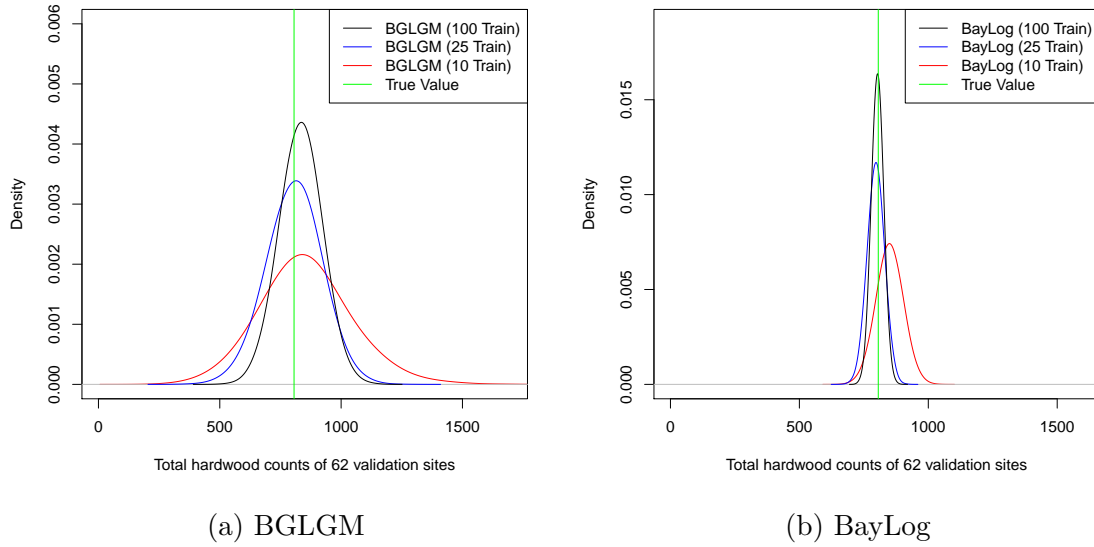


Figure 4: Comparing BGLGM posterior distributions of total number of hardwood trees to the BayLog posterior distribution - simulation 4.

1.1.5 Simulation 5

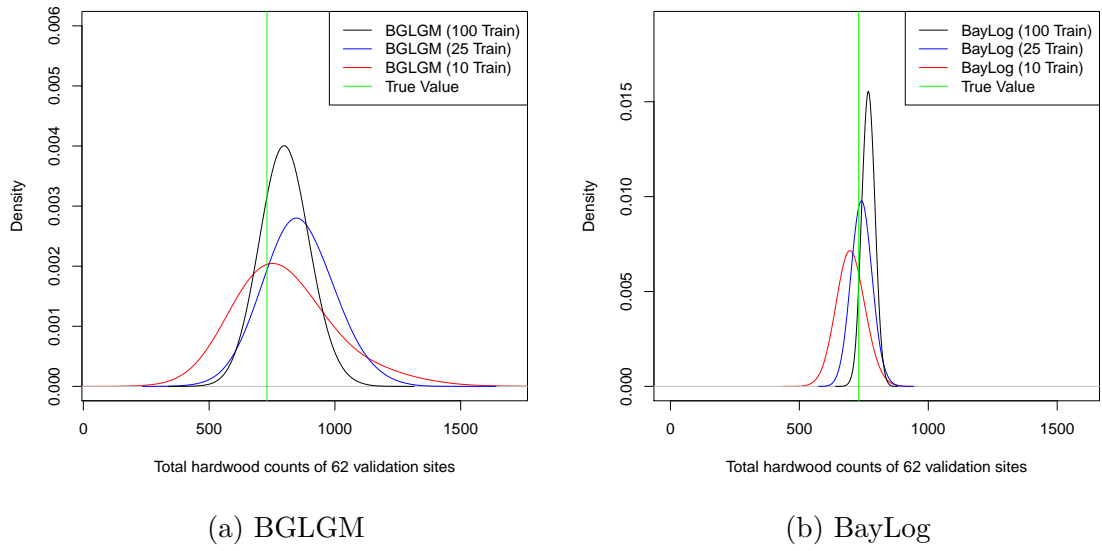
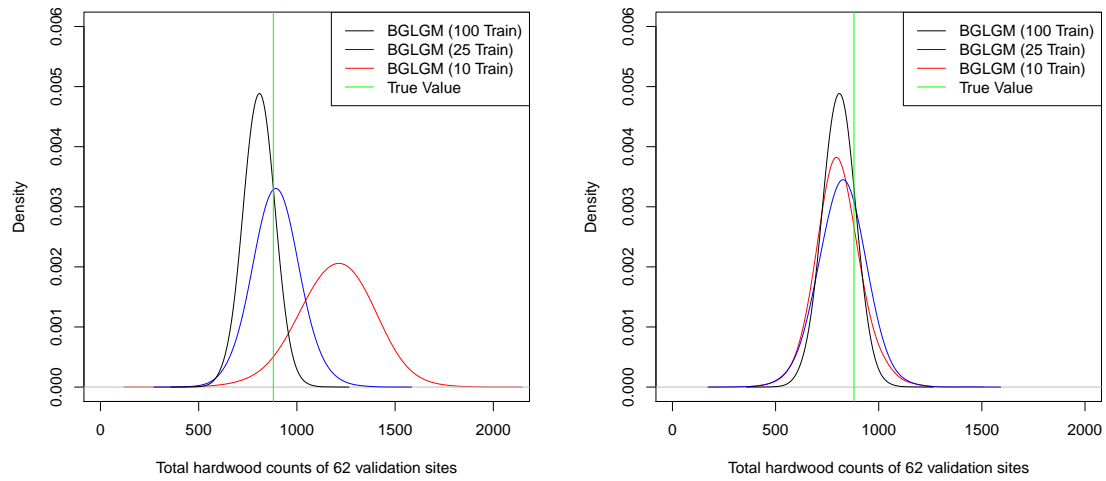


Figure 5: Comparing BGLGM posterior distributions of total number of hardwood trees to the BayLog posterior distribution - simulation 5.

1.2 Total Hardwood Count Posteriors from BGLGM Random vs Stratified

1.2.1 Simulation 1 - Random & Stratified Comparisons



(a) BGLGM / Random

(b) BGLGM / Stratified

Figure 6: Comparing BGLGM posterior distributions of total number of hardwood trees from random sampling vs stratified sampling - simulation 1.

1.2.2 Simulation 2 - Random & Stratified Comparisons

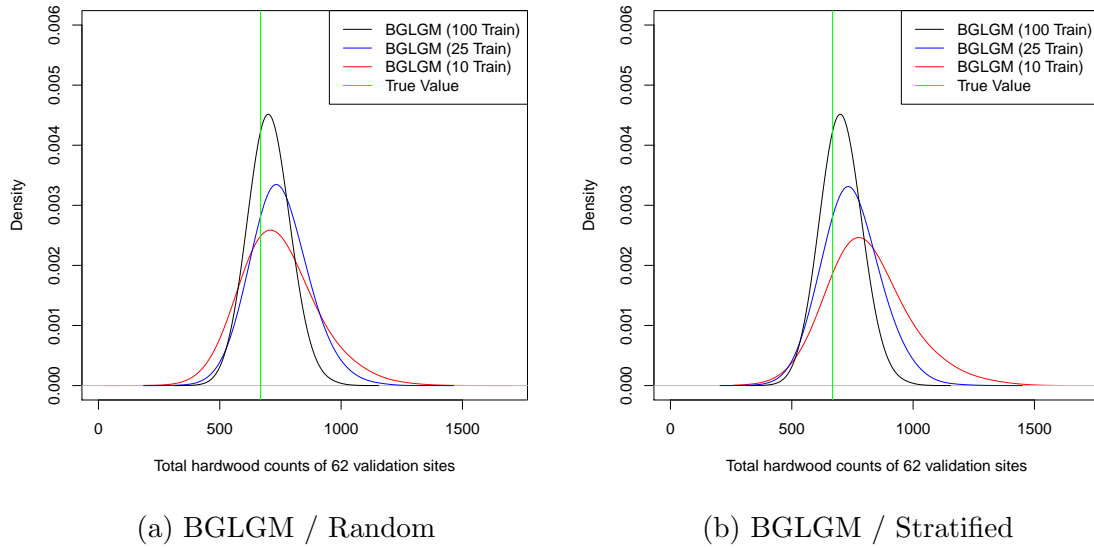


Figure 7: Comparing BGLGM posterior distributions of total number of hardwood trees from random sampling vs stratified sampling - simulation 2.

1.2.3 Simulation 3 - Random & Stratified Comparisons

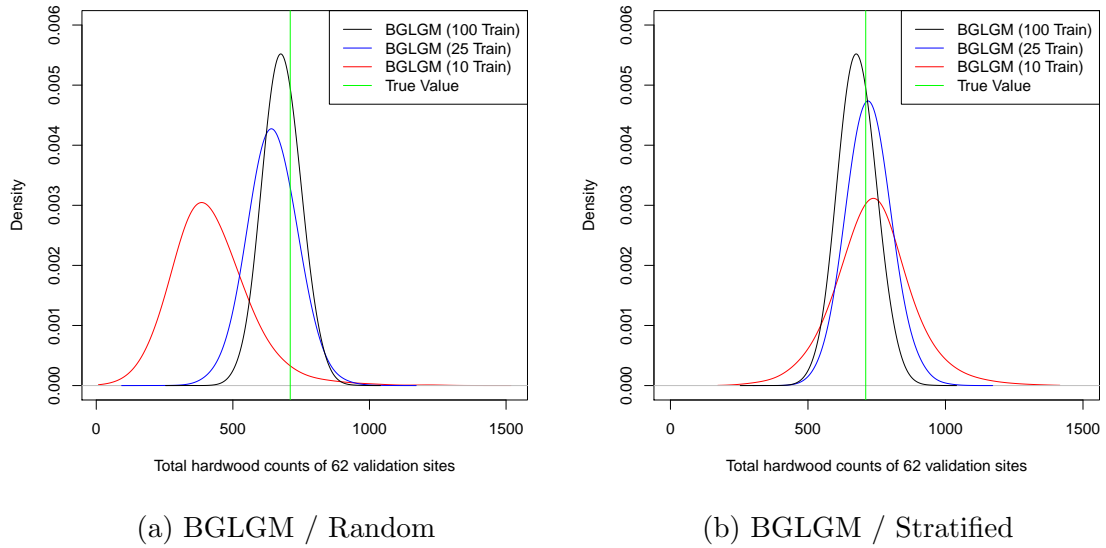


Figure 8: Comparing BGLGM posterior distributions of total number of hardwood trees from random sampling vs stratified sampling - simulation 3.

1.2.4 Simulation 4 - Random & Stratified Comparisons

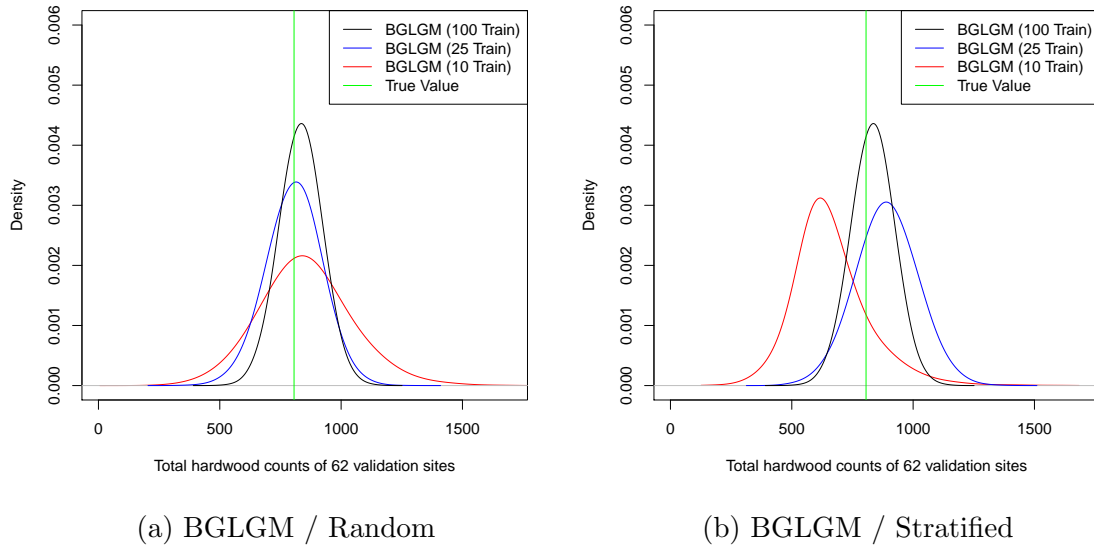


Figure 9: Comparing BGLGM posterior distributions of total number of hardwood trees from random sampling vs stratified sampling - simulation 4.

1.2.5 Simulation 5 - Random & Stratified Comparisons

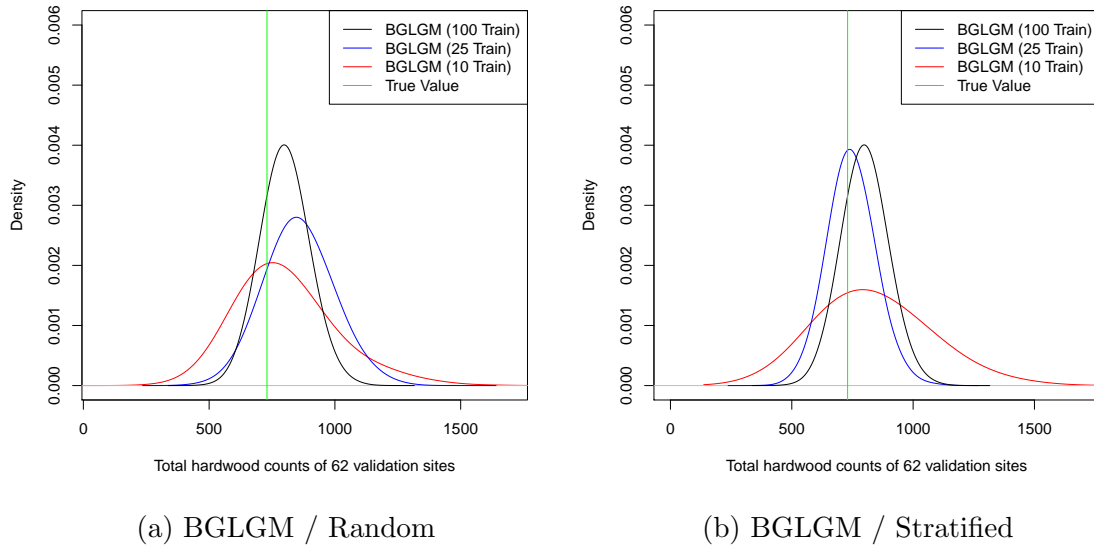
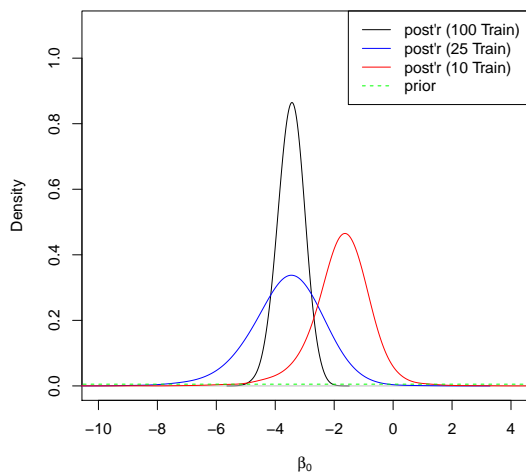


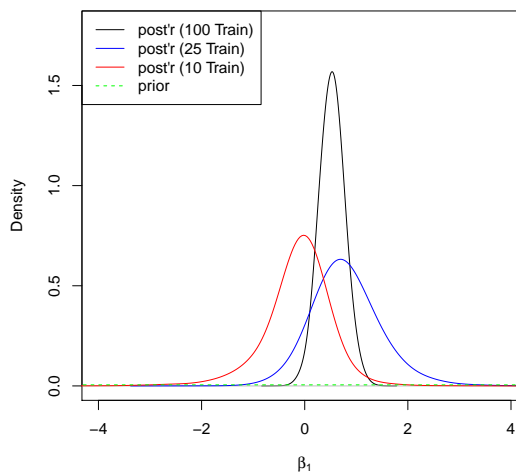
Figure 10: Comparing BGLGM posterior distributions of total number of hardwood trees from random sampling vs stratified sampling - simulation 5.

1.3 Posterior & Prior of model parameters

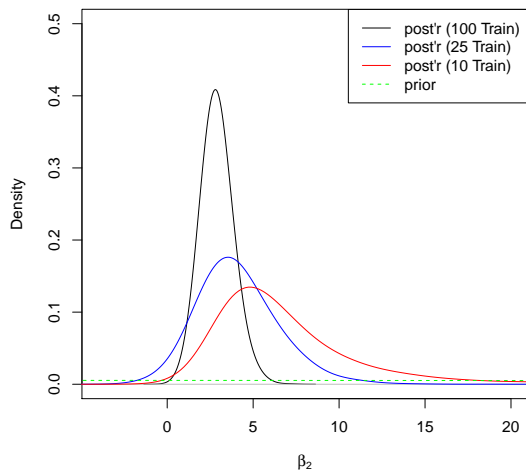
1.3.1 Simulation 1 - Stratified sampling



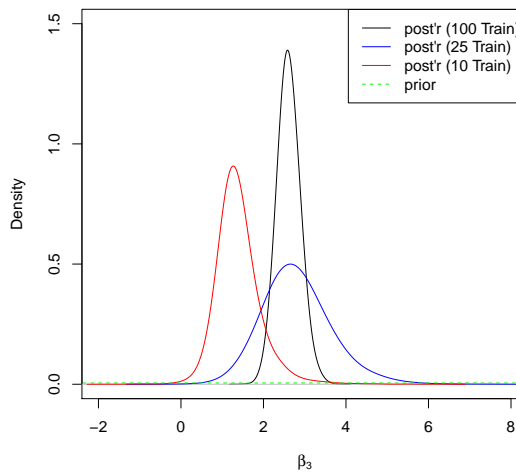
(a) Intercept Posteriors



(b) $\beta_{1,elev}$ Posteriors

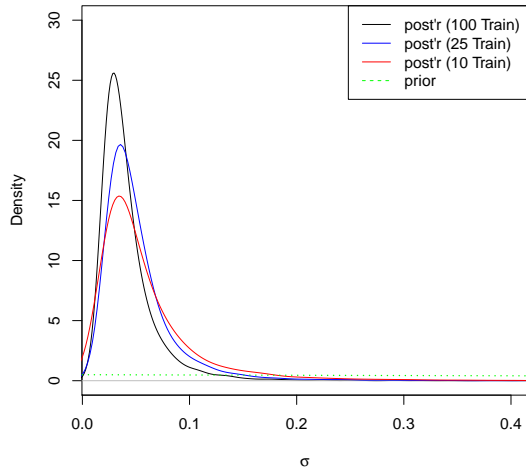


(c) $\beta_{2,veg-}$ Posteriors

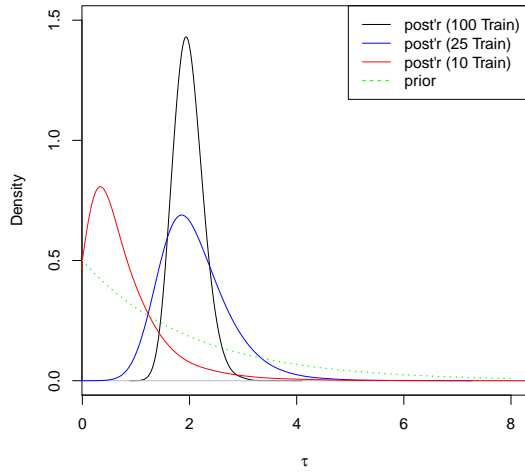


(d) $\beta_{3,veg+}$ Posteriors

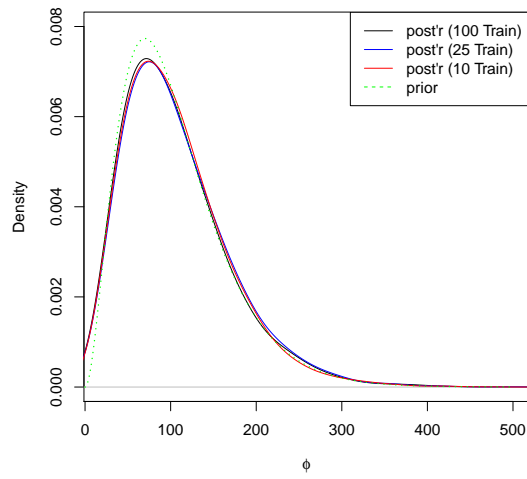
Figure 11: Priors and posteriors of β 's from simulation 1 - stratified sampling.



(a) σ Posteriors



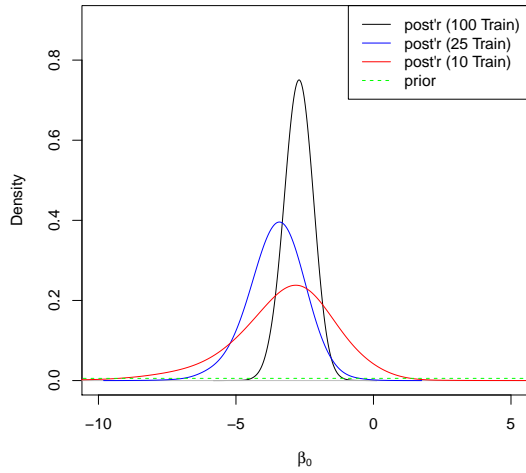
(b) τ Posteriors



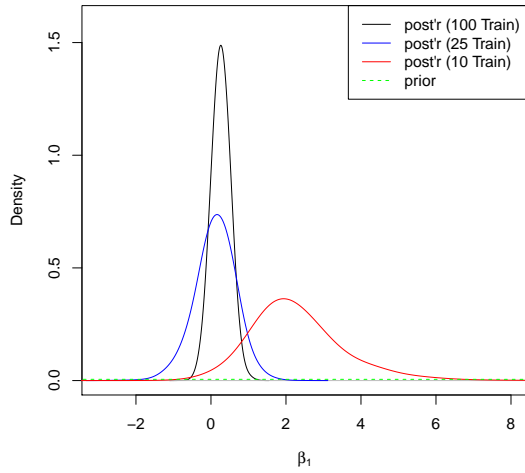
(c) ϕ Posteriors

Figure 12: Priors and posteriors of σ , τ , and ϕ from simulation 1 - stratified sampling.

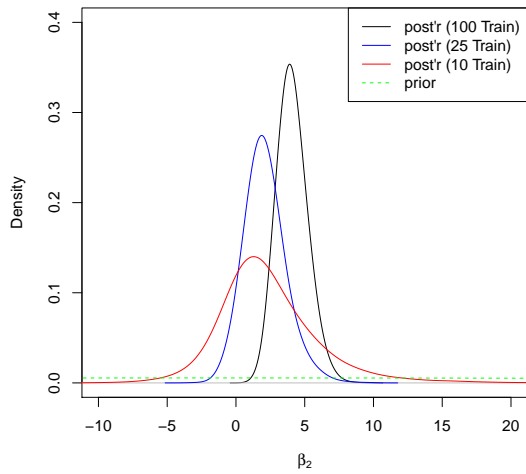
1.3.2 Simulation 2 - Random sampling



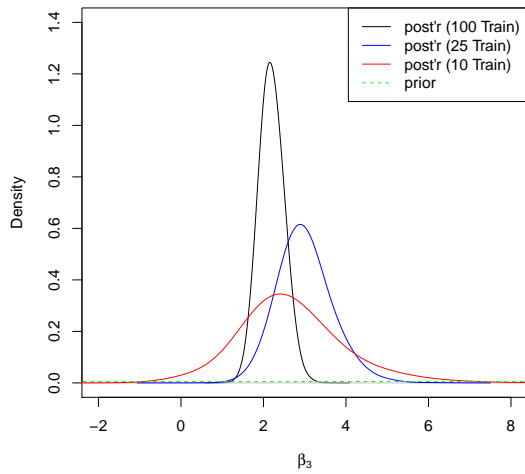
(a) Intercept Posteriors



(b) $\beta_{1,elev}$ Posteriors

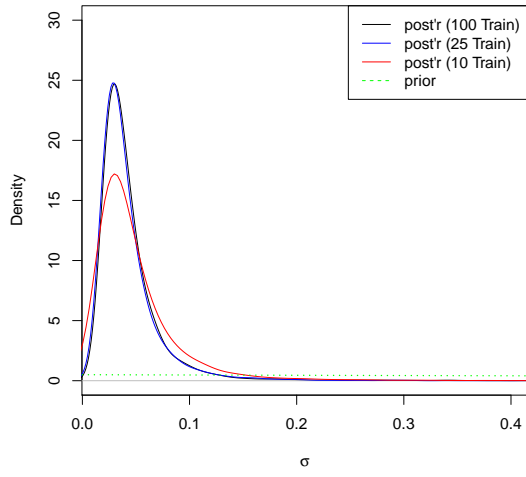


(c) $\beta_{2,veg-}$ Posteriors

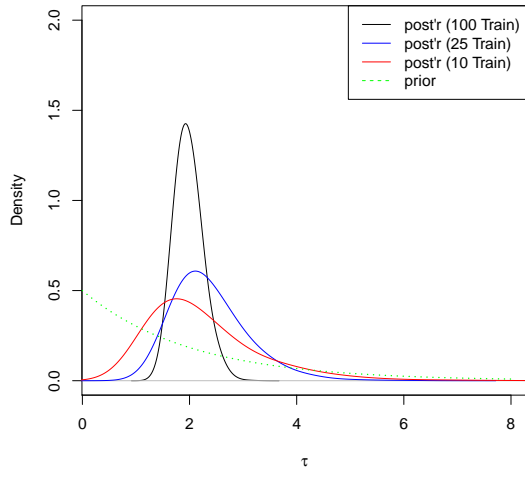


(d) $\beta_{3,veg+}$ Posteriors

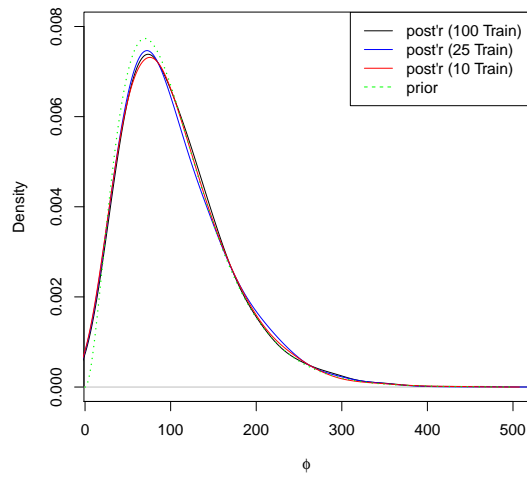
Figure 13: Priors and posteriors of β 's from simulation 2 - random sampling.



(a) σ Posteriors



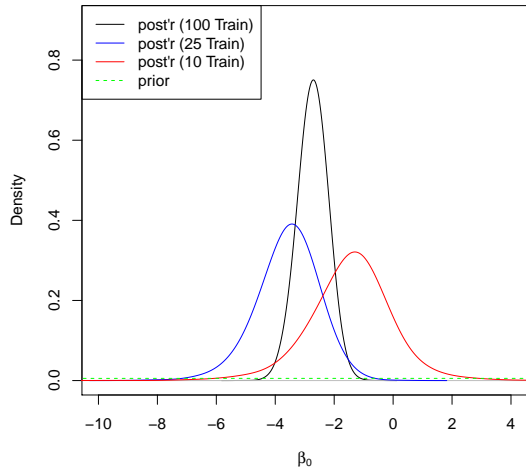
(b) τ Posteriors



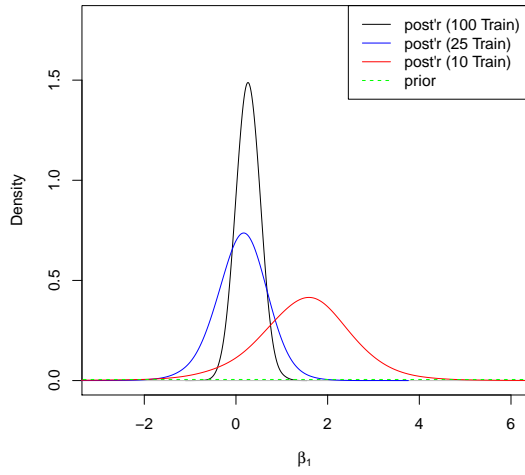
(c) ϕ Posteriors

Figure 14: Priors and posteriors of σ, τ , and ϕ from simulation 2 - random sampling.

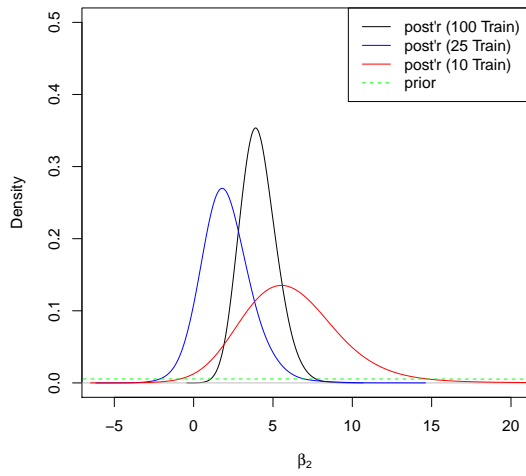
1.3.3 Simulation 2 - Stratified sampling



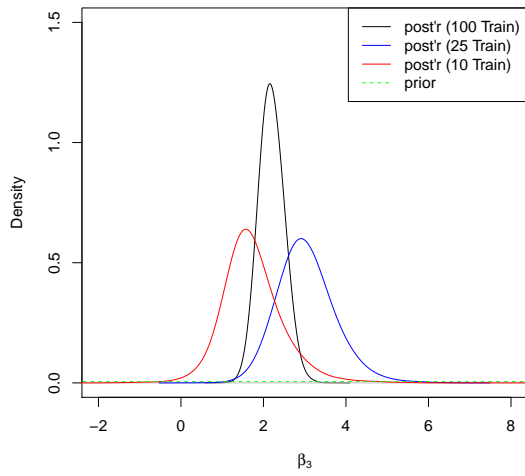
(a) Intercept Posteriors



(b) $\beta_{1,elev}$ Posteriors

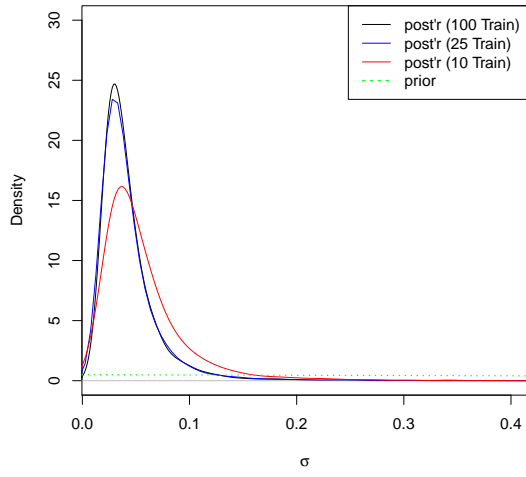


(c) $\beta_{2,veg-}$ Posteriors

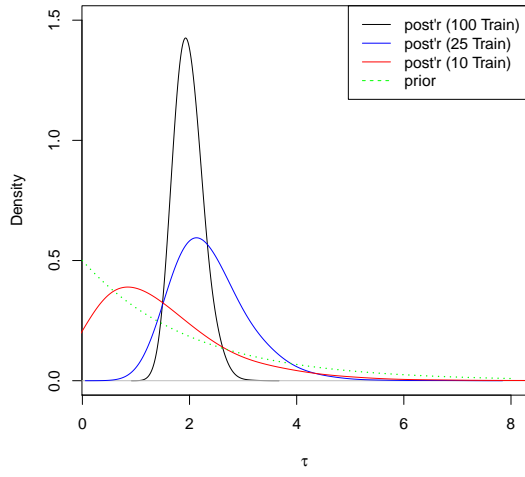


(d) $\beta_{3,veg+}$ Posteriors

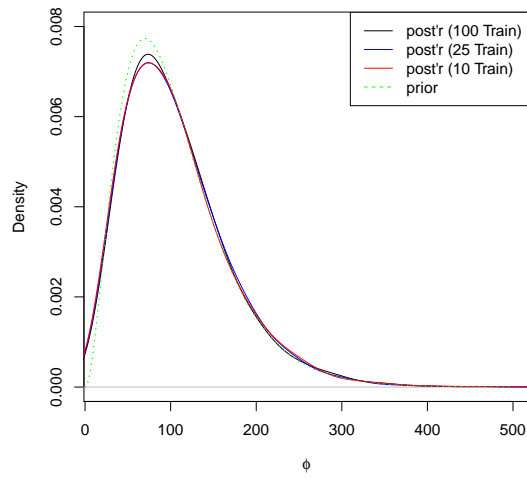
Figure 15: Priors and posteriors of β 's from simulation 2 - stratified sampling.



(a) σ Posteriors



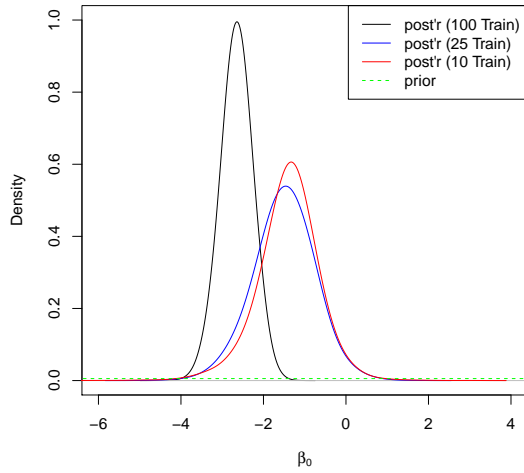
(b) τ Posteriors



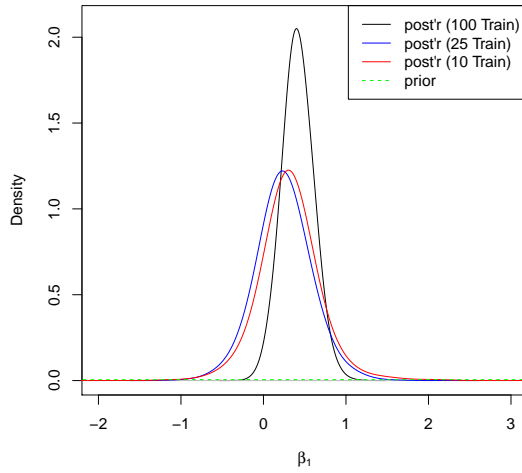
(c) ϕ Posteriors

Figure 16: Priors and posteriors of σ , τ , and ϕ from simulation 2 - stratified sampling.

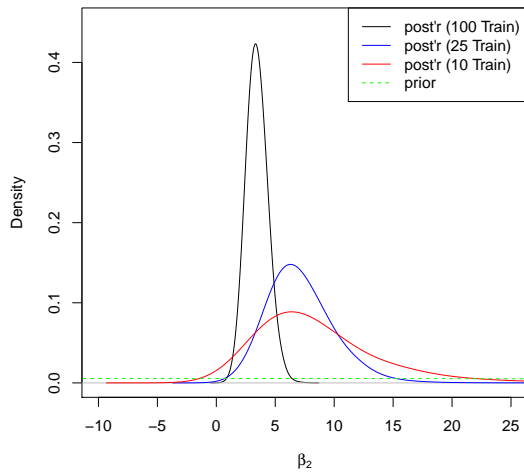
1.3.4 Simulation 3 - Random sampling



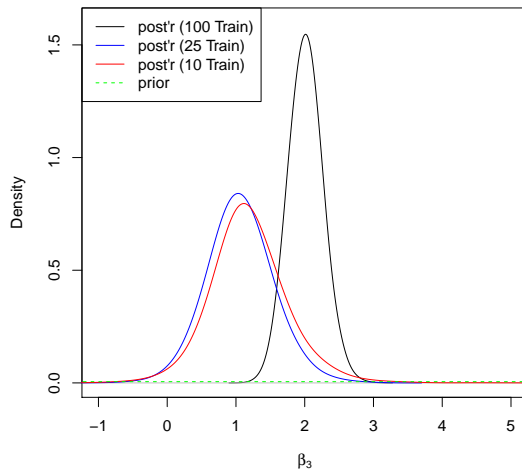
(a) Intercept Posteriors



(b) $\beta_{1,elev}$ Posteriors

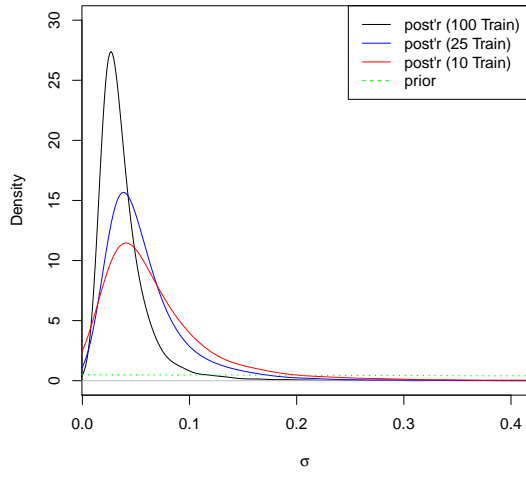


(c) $\beta_{2,veg-}$ Posteriors

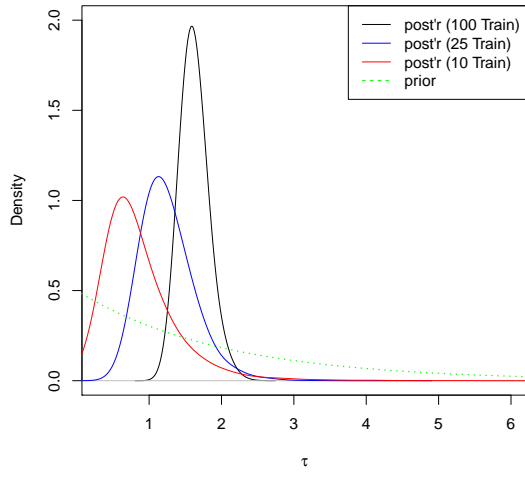


(d) $\beta_{3,veg+}$ Posteriors

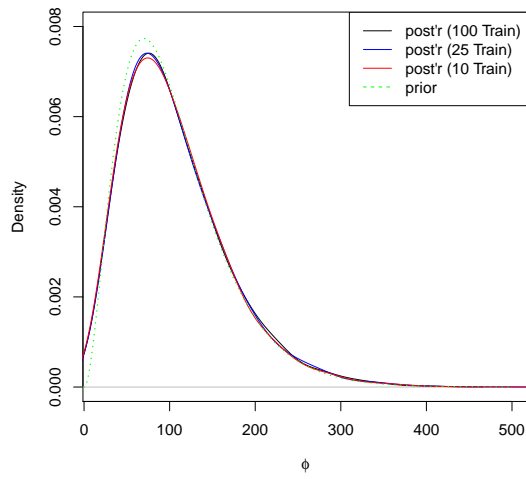
Figure 17: Priors and posteriors of β 's from simulation 3 - random sampling.



(a) σ Posteriors



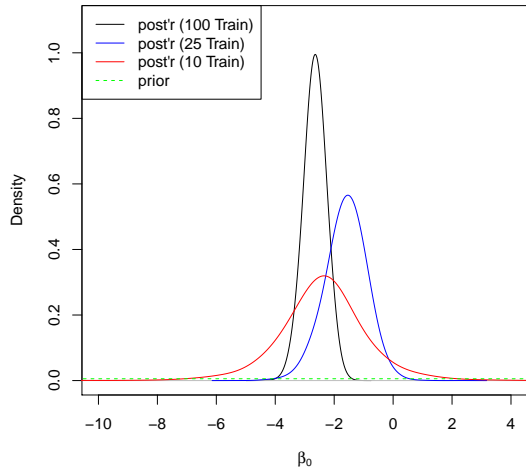
(b) τ Posteriors



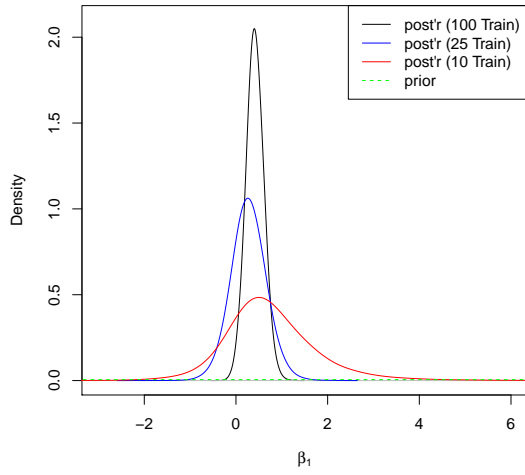
(c) ϕ Posteriors

Figure 18: Priors and posteriors of σ, τ , and ϕ from simulation 3 - random sampling.

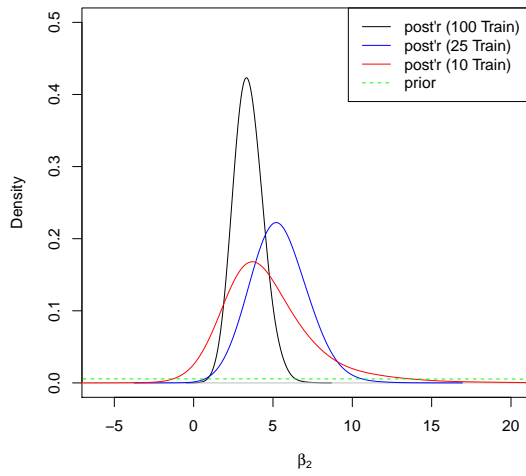
1.3.5 Simulation 3 - Stratified sampling



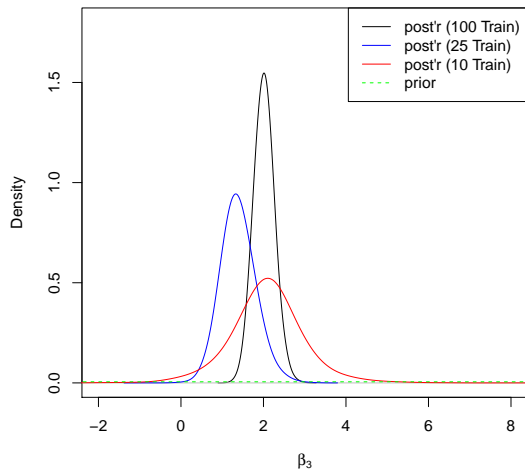
(a) Intercept Posteriors



(b) $\beta_{1,elev}$ Posteriors

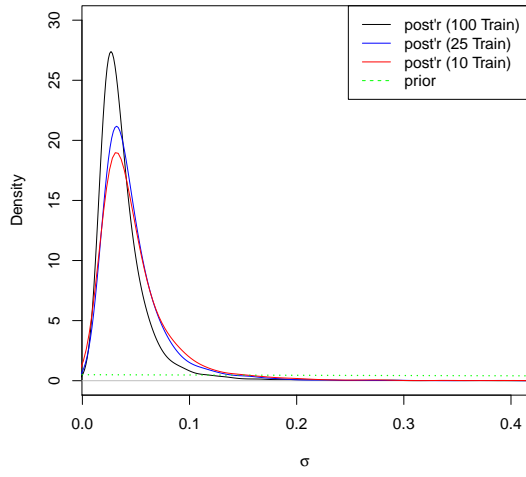


(c) $\beta_{2,veg-}$ Posteriors

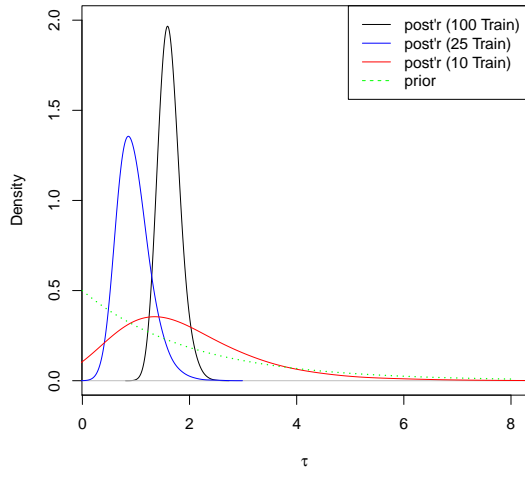


(d) $\beta_{3,veg+}$ Posteriors

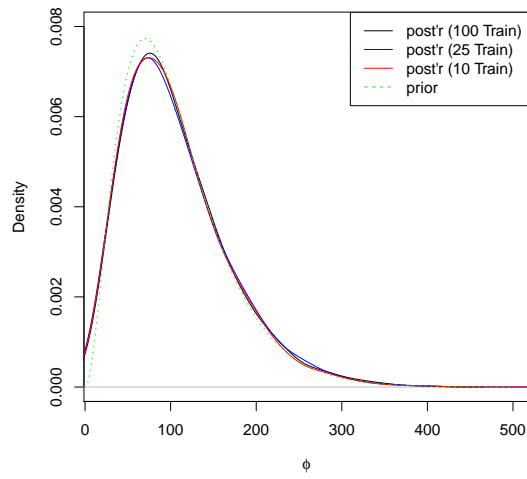
Figure 19: Priors and posteriors of β 's from simulation 3 - stratified sampling.



(a) σ Posteriors



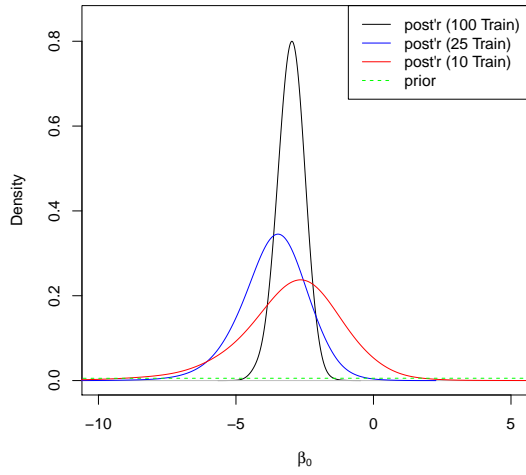
(b) τ Posteriors



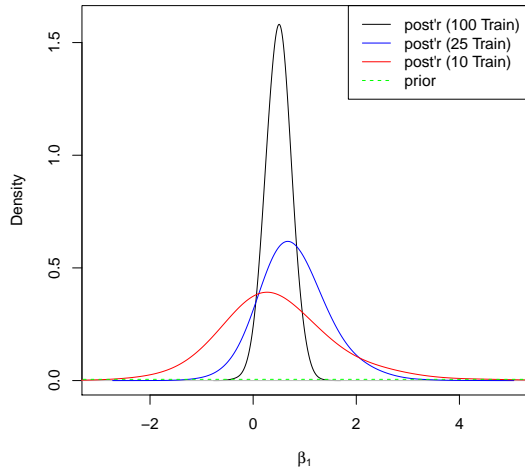
(c) ϕ Posteriors

Figure 20: Priors and posteriors of σ , τ , and ϕ from simulation 3 - stratified sampling.

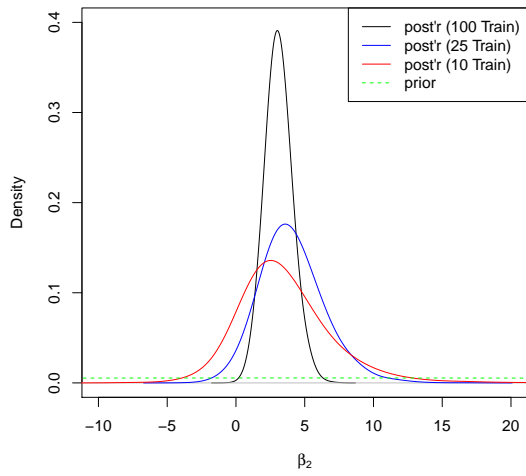
1.3.6 Simulation 4 - Random sampling



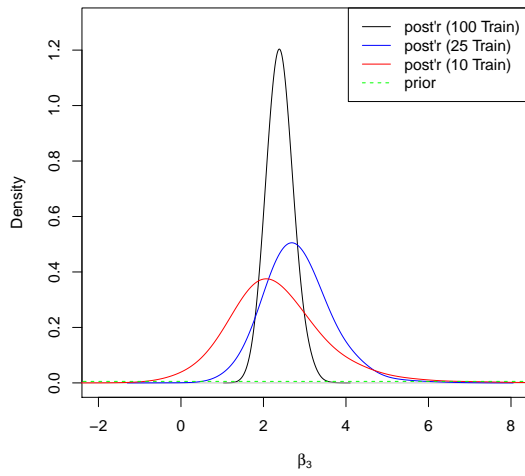
(a) Intercept Posteriors



(b) $\beta_{1,elev}$ Posteriors

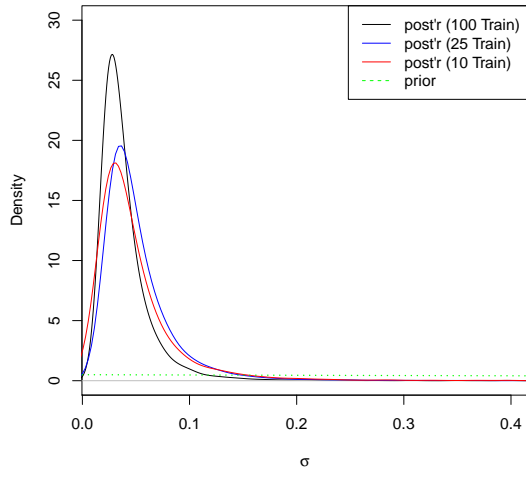


(c) $\beta_{2,veg-}$ Posteriors

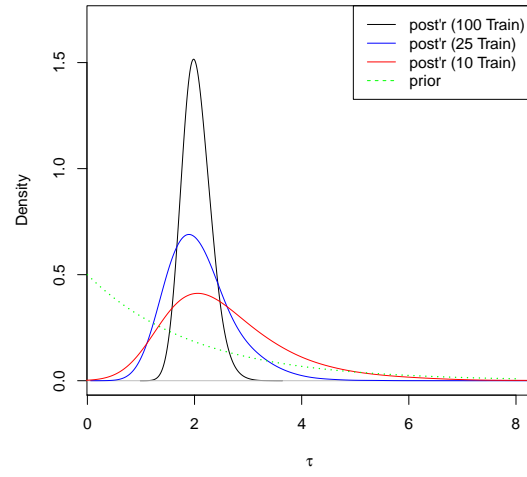


(d) $\beta_{3,veg+}$ Posteriors

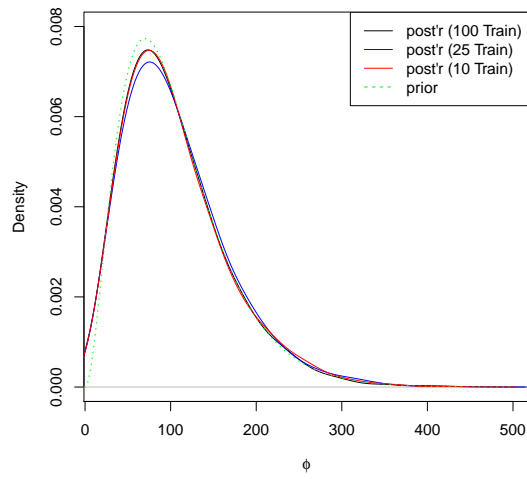
Figure 21: Priors and posteriors of β 's from simulation 4 - random sampling.



(a) σ Posteriors



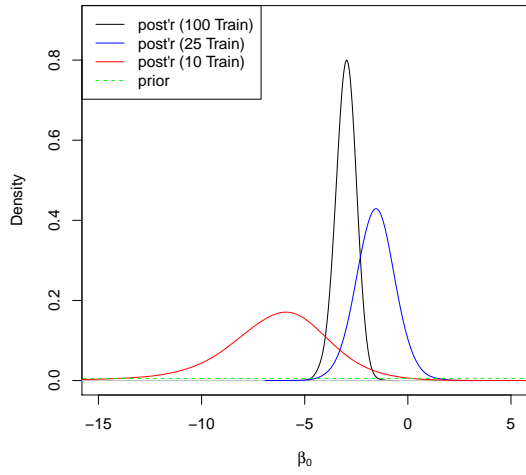
(b) τ Posteriors



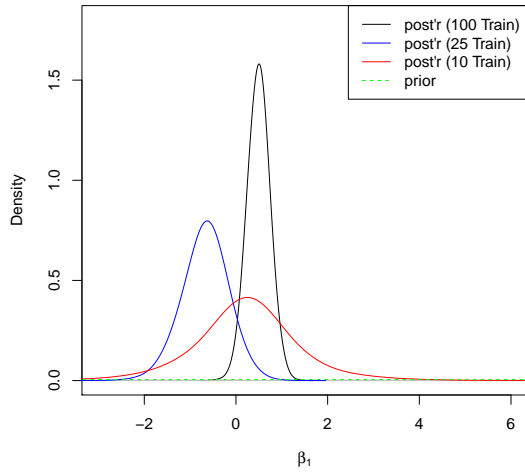
(c) ϕ Posteriors

Figure 22: Priors and posteriors of σ, τ , and ϕ from simulation 4 - random sampling.

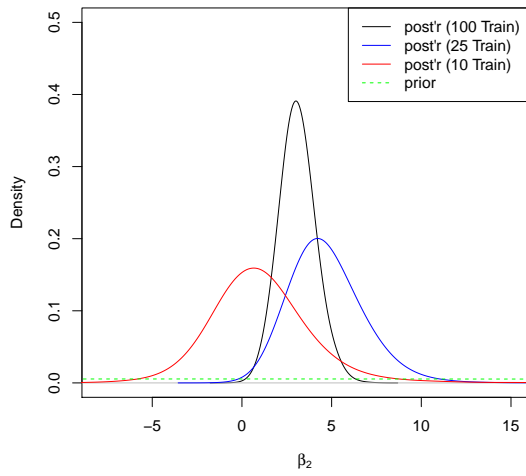
1.3.7 Simulation 4 - Stratified sampling



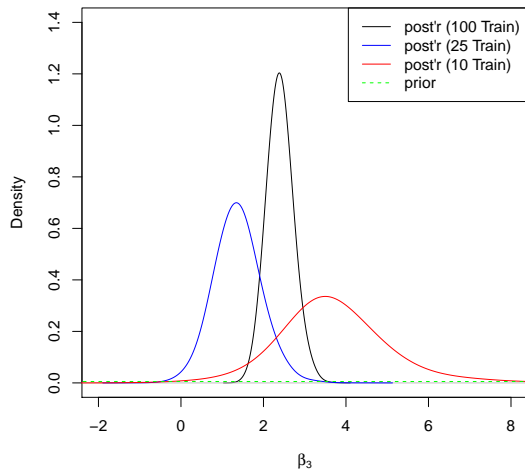
(a) Intercept Posteriors



(b) $\beta_{1,elev}$ Posteriors

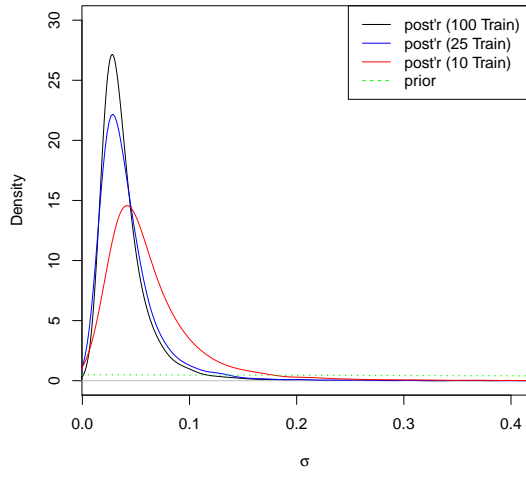


(c) $\beta_{2,veg-}$ Posteriors

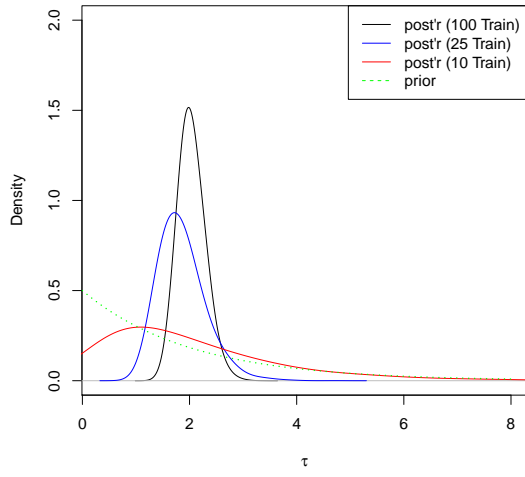


(d) $\beta_{3,veg+}$ Posteriors

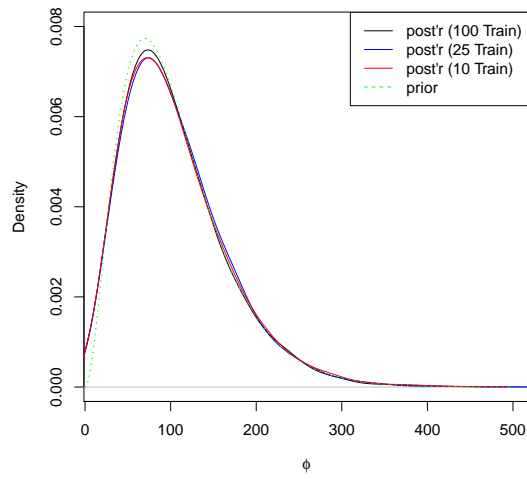
Figure 23: Priors and posteriors of β 's from simulation 4 - stratified sampling.



(a) σ Posteriors



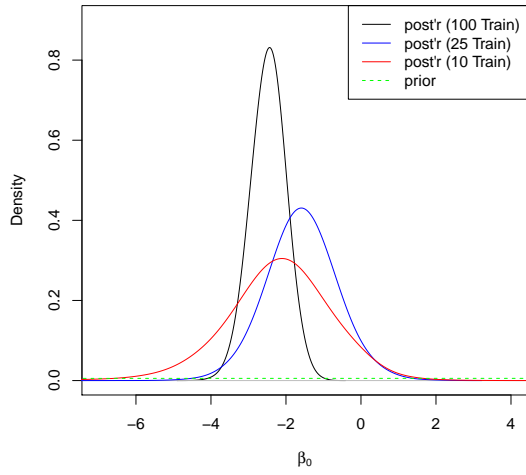
(b) τ Posteriors



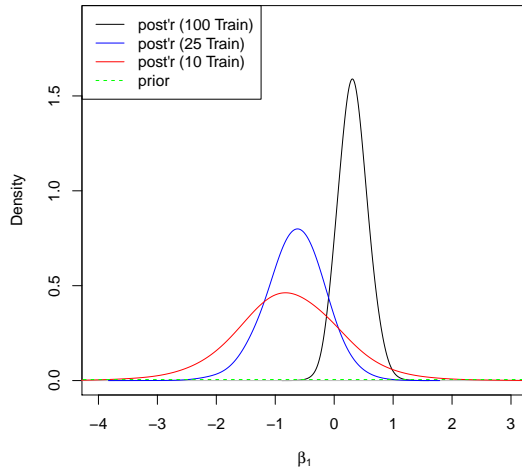
(c) ϕ Posteriors

Figure 24: Priors and posteriors of σ , τ , and ϕ from simulation 4 - stratified sampling.

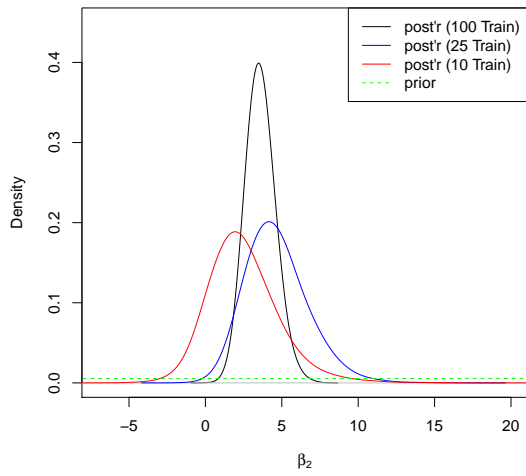
1.3.8 Simulation 5 - Random sampling



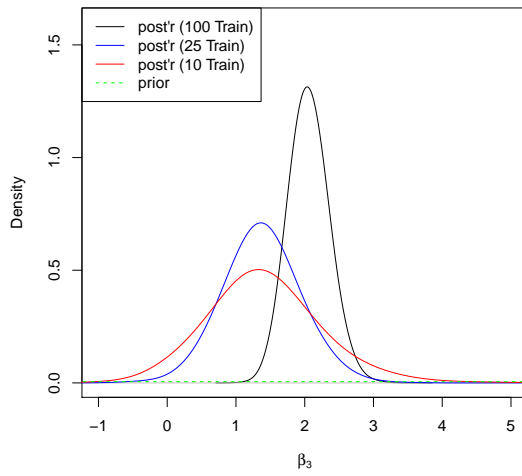
(a) Intercept Posteriors



(b) $\beta_{1,elev}$ Posteriors

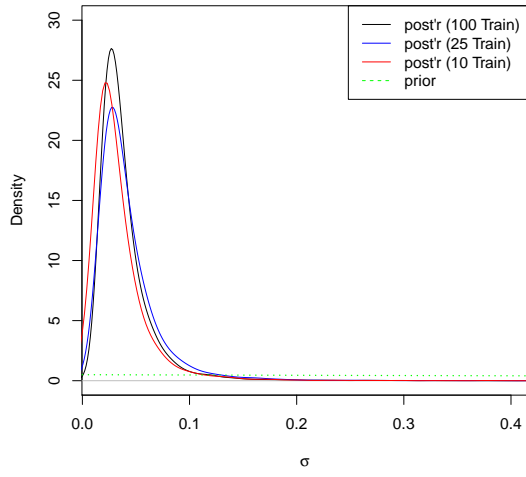


(c) $\beta_{2,veg-}$ Posteriors

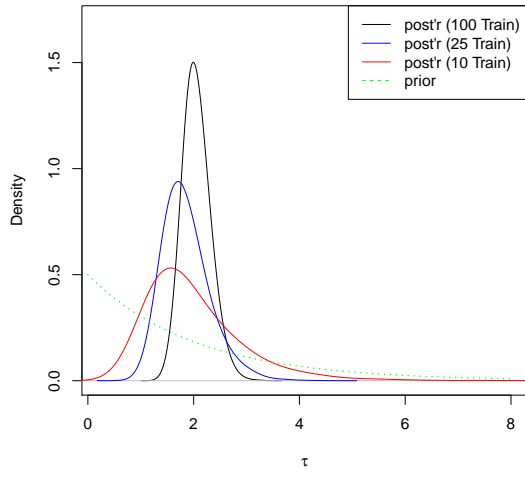


(d) $\beta_{3,veg+}$ Posteriors

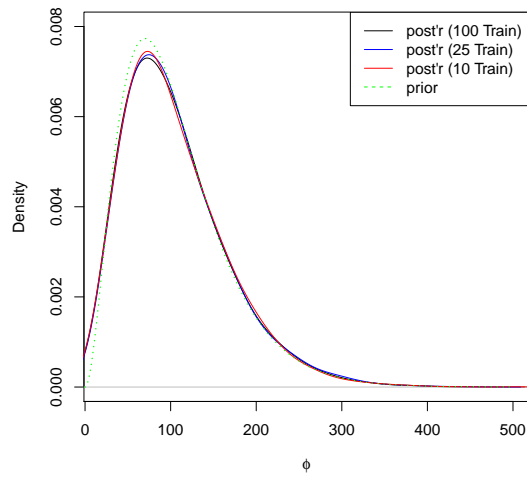
Figure 25: Priors and posteriors of β 's from simulation 5 - random sampling.



(a) σ Posteriors



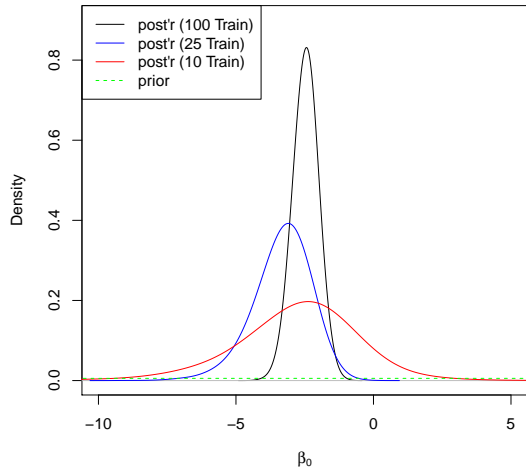
(b) τ Posteriors



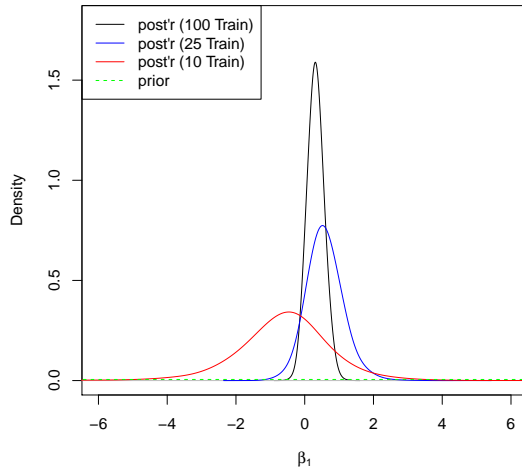
(c) ϕ Posteriors

Figure 26: Priors and posteriors of σ, τ , and ϕ from simulation 5 - random sampling.

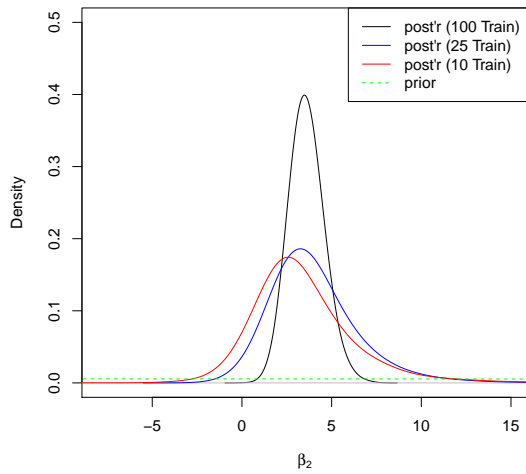
1.3.9 Simulation 5 - Stratified sampling



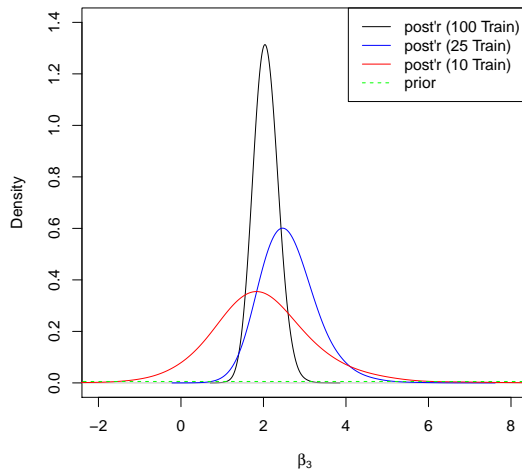
(a) Intercept Posteriors



(b) $\beta_{1,elev}$ Posteriors

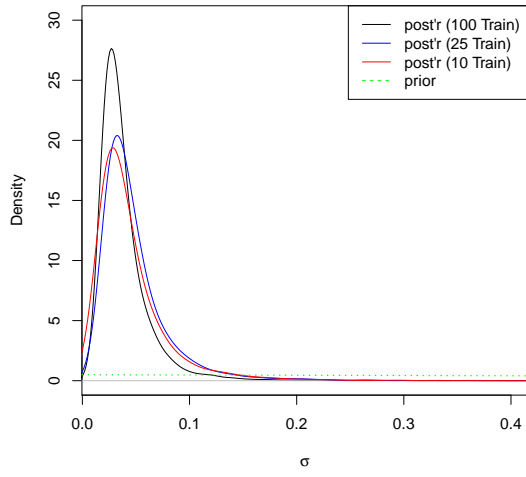


(c) $\beta_{2,veg-}$ Posteriors

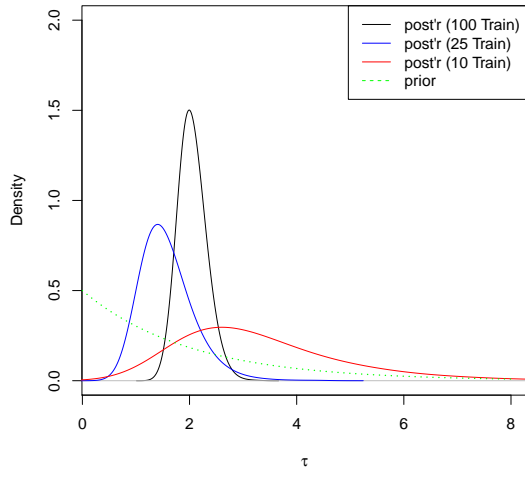


(d) $\beta_{3,veg+}$ Posteriors

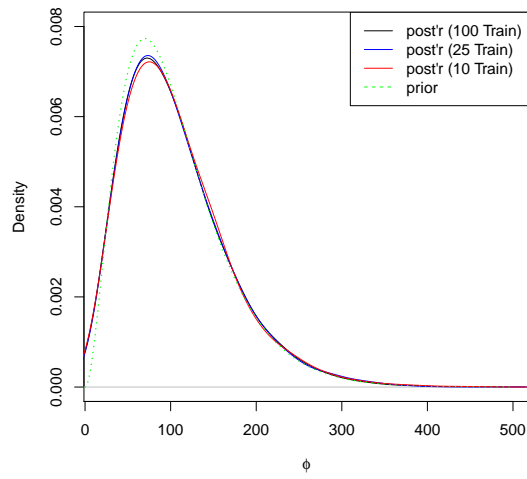
Figure 27: Priors and posteriors of β 's from simulation 5 - stratified sampling.



(a) σ Posteriors



(b) τ Posteriors

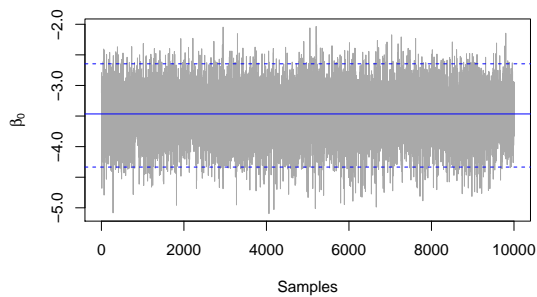


(c) ϕ Posteriors

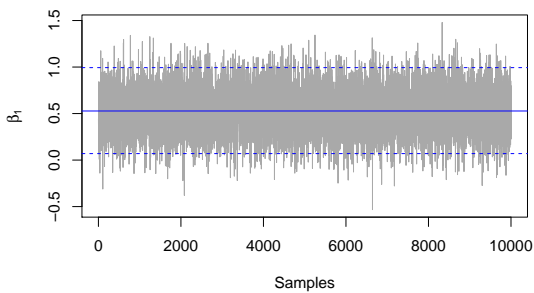
Figure 28: Priors and posteriors of σ , τ , and ϕ from simulation 5 - stratified sampling.

1.4 MCMC Trace Plots

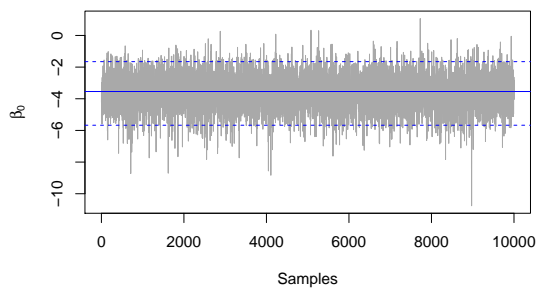
1.4.1 Simulation 1 - Random sampling



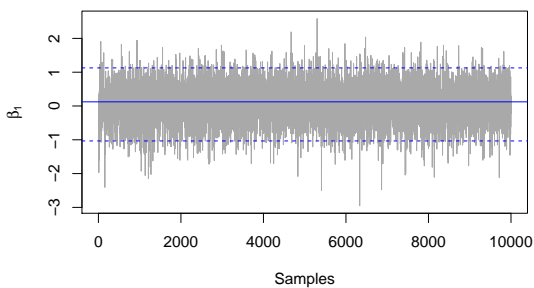
(a) 100 training sites — Intercept



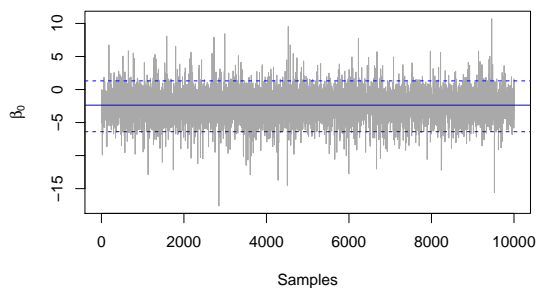
(b) 100 training sites — β_1



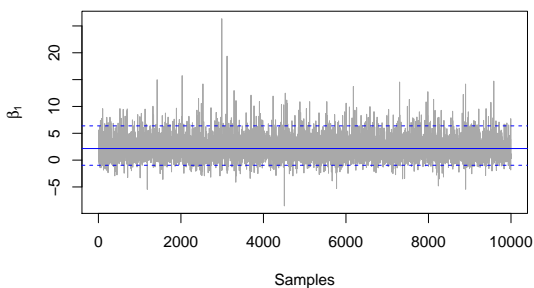
(c) 25 training sites — Intercept



(d) 25 training sites — β_1

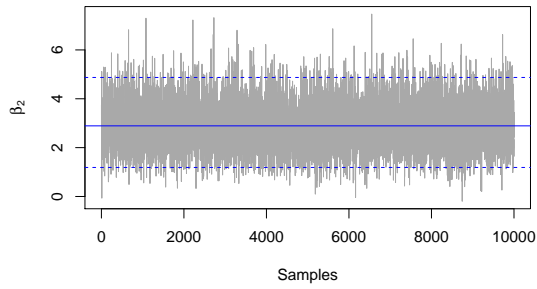


(e) 10 training sites — Intercept

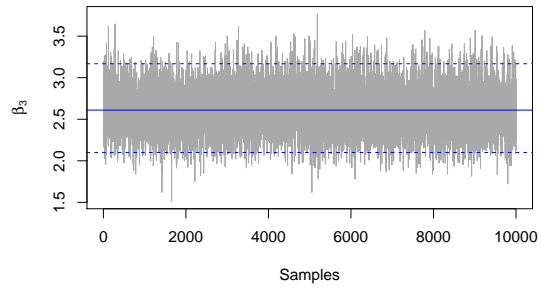


(f) 10 training sites — β_1

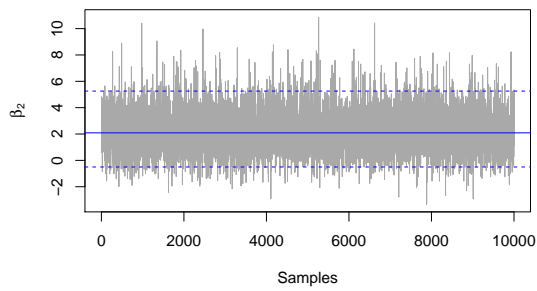
Figure 29: MCMC Trace plots of β_0 and β_1 from simulation 1 (random sampling), with their corresponding mean, 2.5%, and 97.5% quantiles.



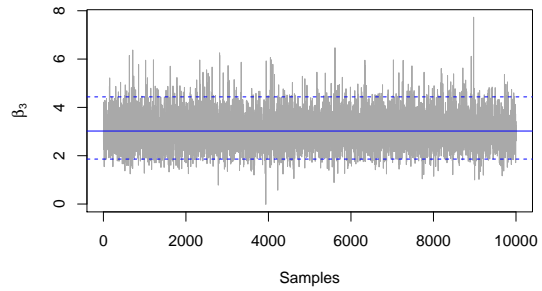
(a) 100 training sites — β_2



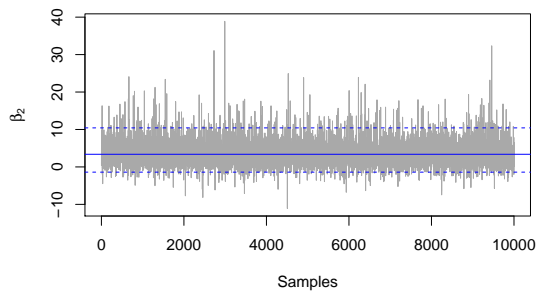
(b) 100 training sites — β_3



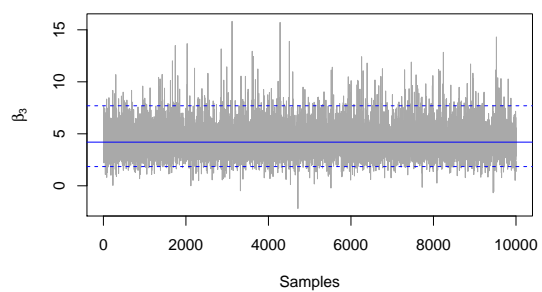
(c) 25 training sites — β_2



(d) 25 training sites — β_3

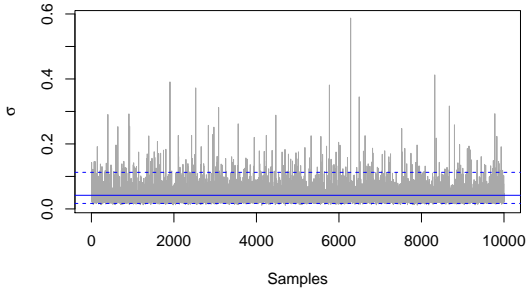


(e) 10 training sites — β_2

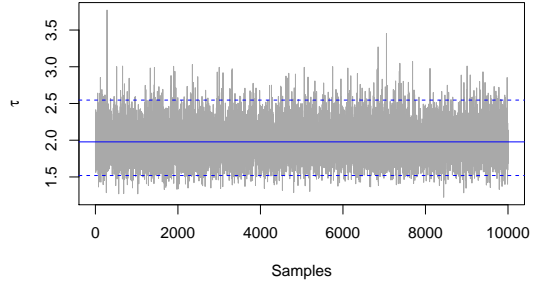


(f) 10 training sites — β_3

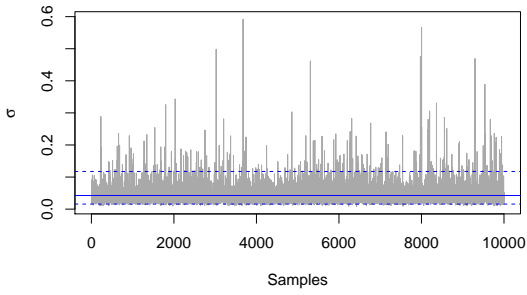
Figure 30: MCMC Trace plots of β_2 and β_3 from simulation 1 (random sampling), with their corresponding mean, 2.5%, and 97.5% quantiles.



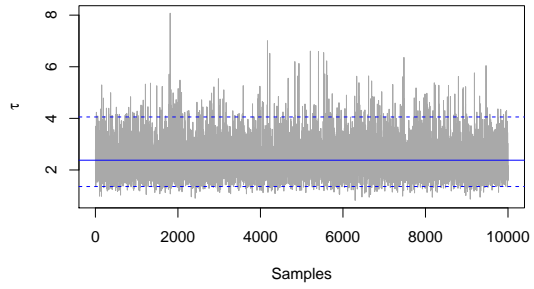
(a) 100 training sites — σ



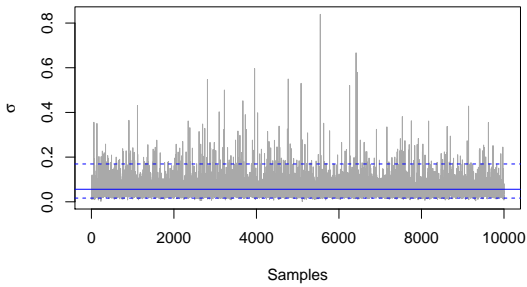
(b) 100 training sites — τ



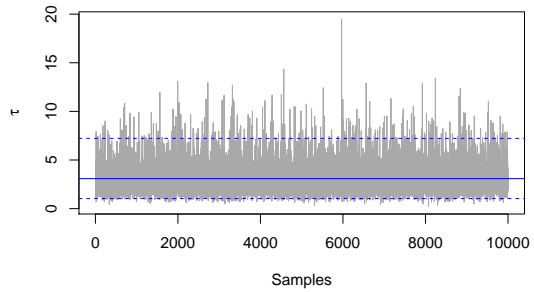
(c) 25 training sites — σ



(d) 25 training sites — τ

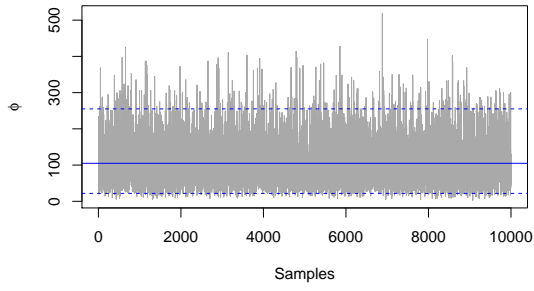


(e) 10 training sites — σ

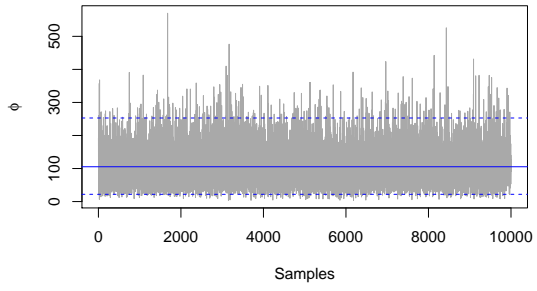


(f) 10 training sites — τ

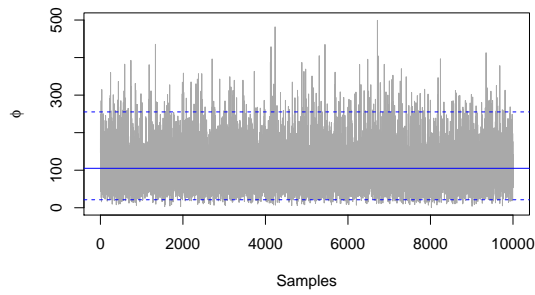
Figure 31: MCMC Trace plots of σ and τ from simulation 1 (random sampling), with their corresponding mean, 2.5%, and 97.5% quantiles.



(a) 100 training sites — ϕ



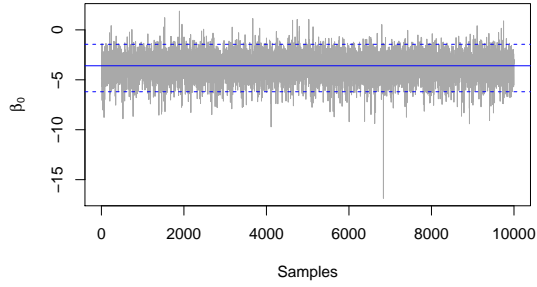
(b) 25 training sites — ϕ



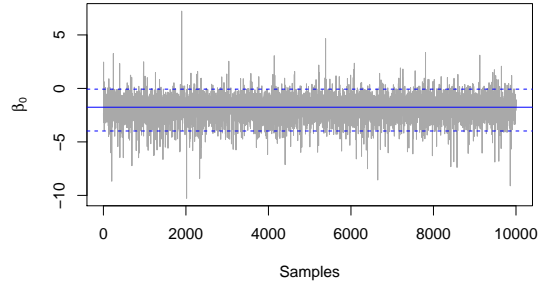
(c) 10 training sites — ϕ

Figure 32: MCMC Trace plots of ϕ from simulation 1 (random sampling), with their corresponding mean, 2.5%, and 97.5% quantiles.

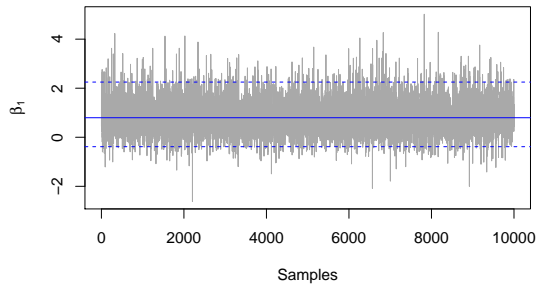
1.4.2 Simulation 1 - Stratified sampling



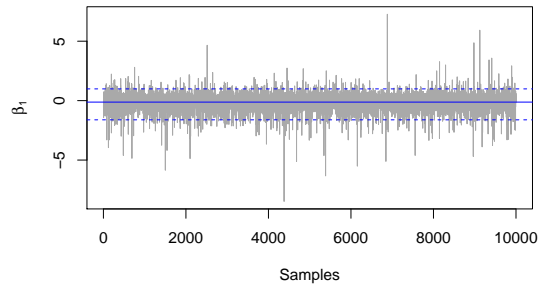
(a) 25 training sites — Intercept



(b) 10 training sites — Intercept

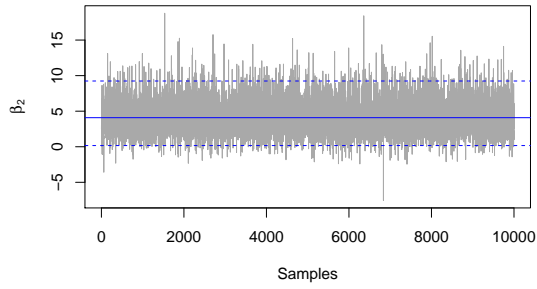


(c) 25 training sites — β_1

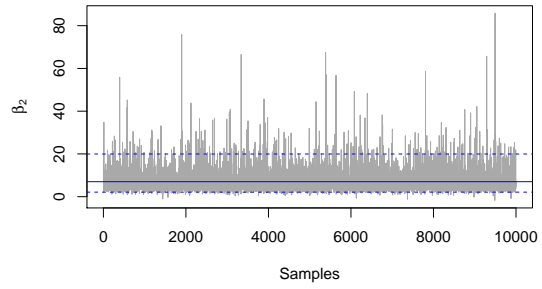


(d) 10 training sites — β_1

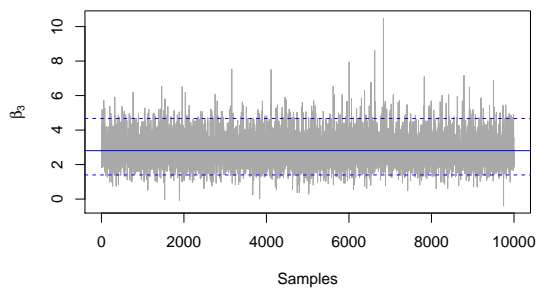
Figure 33: MCMC Trace plots of β_0 and β_1 from simulation 1 (stratified sampling), with their corresponding mean, 2.5%, and 97.5% quantiles.



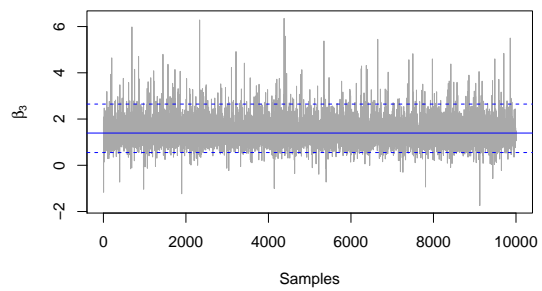
(a) 25 training sites — β_2



(b) 10 training sites — β_2

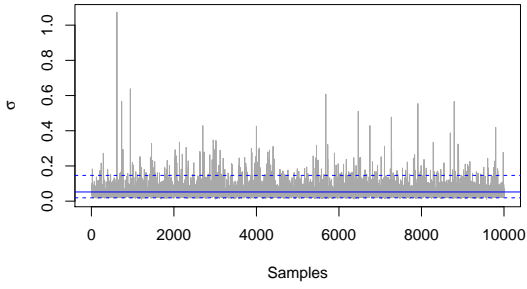


(c) 25 training sites — β_3

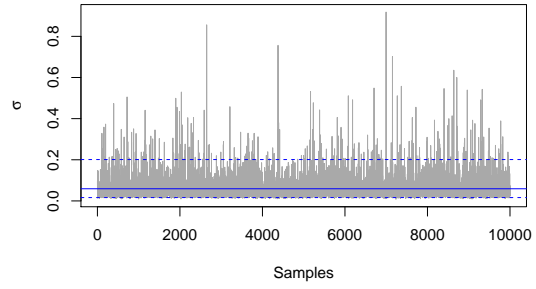


(d) 10 training sites — β_3

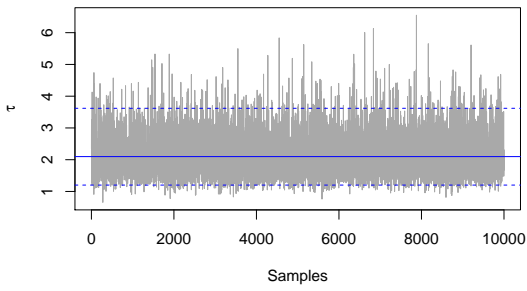
Figure 34: MCMC Trace plots of β_2 and β_3 from simulation 1 (stratified sampling), with their corresponding mean, 2.5%, and 97.5% quantiles.



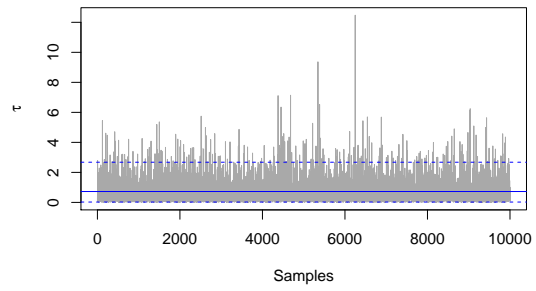
(a) 25 training sites — σ



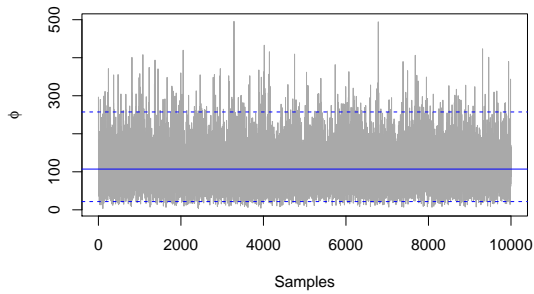
(b) 10 training sites — σ



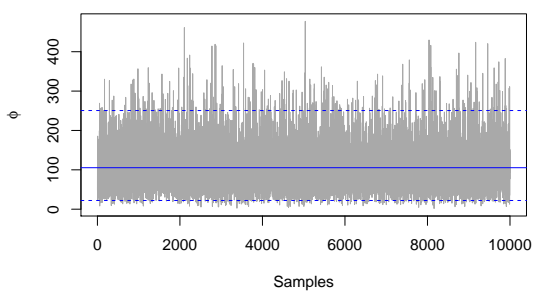
(c) 25 training sites — τ



(d) 10 training sites — τ



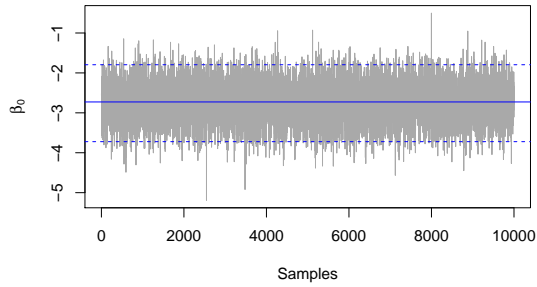
(e) 25 training sites — ϕ



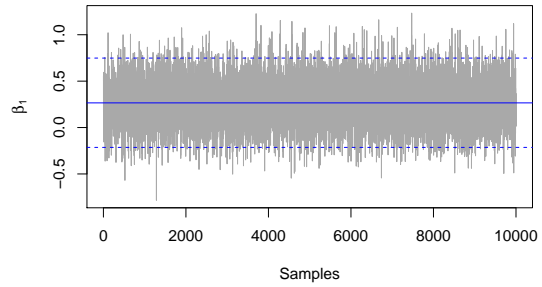
(f) 10 training sites — ϕ

Figure 35: MCMC Trace plots of σ, τ and ϕ from simulation 1 (stratified sampling), with their corresponding mean, 2.5%, and 97.5% quantiles.

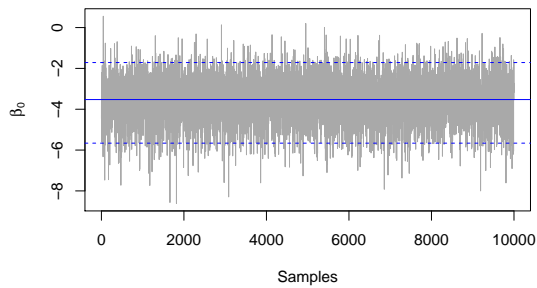
1.4.3 Simulation 2 - Random sampling



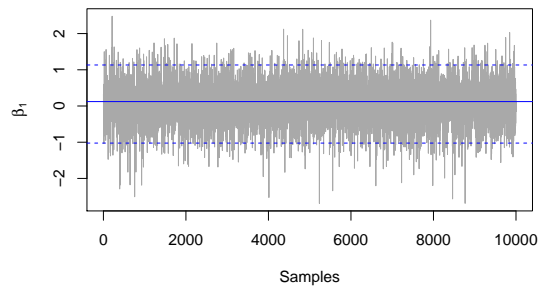
(a) 100 training sites — Intercept



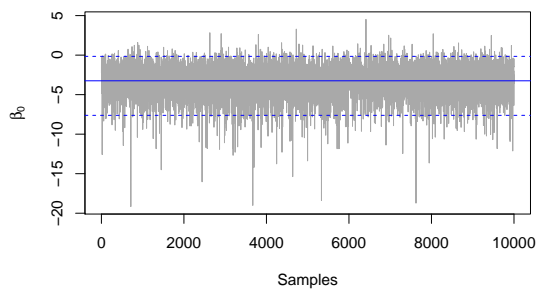
(b) 100 training sites — β_1



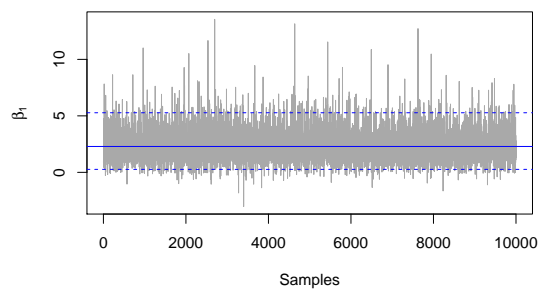
(c) 25 training sites — Intercept



(d) 25 training sites — β_1

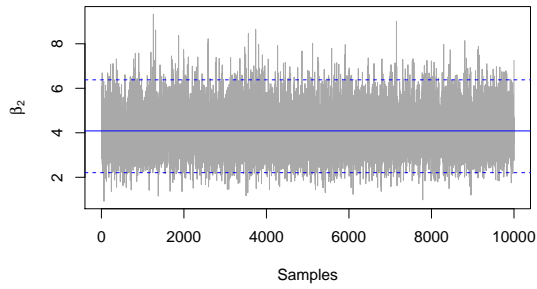


(e) 10 training sites — Intercept

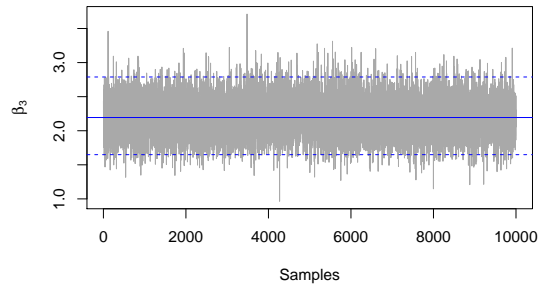


(f) 10 training sites — β_1

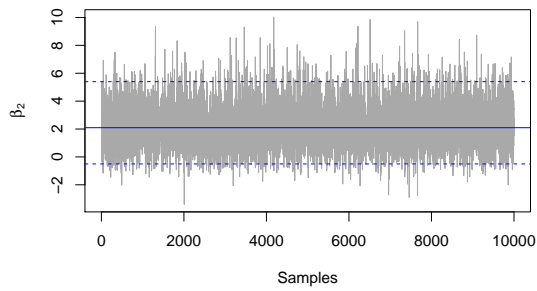
Figure 36: MCMC Trace plots of β_0 and β_1 from simulation 2 (random sampling), with their corresponding mean, 2.5%, and 97.5% quantiles.



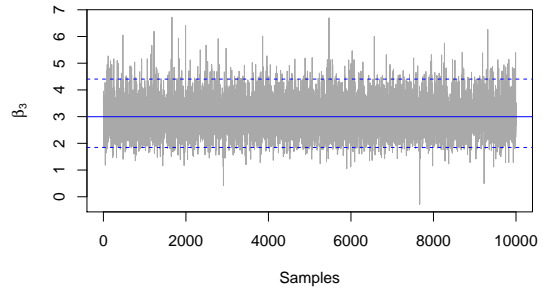
(a) 100 training sites — β_2



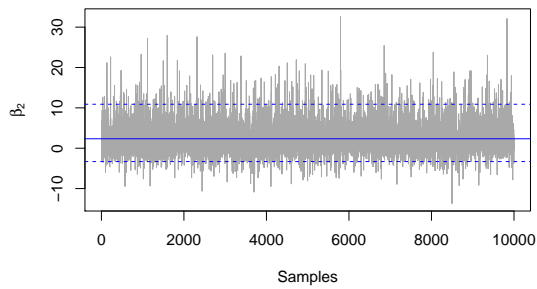
(b) 100 training sites — β_3



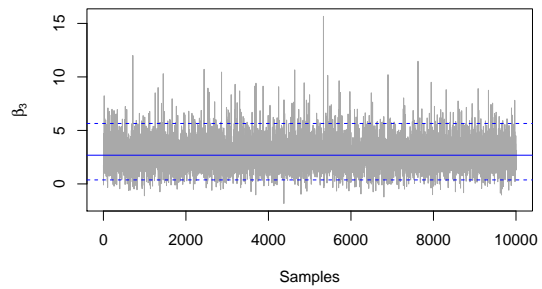
(c) 25 training sites — β_2



(d) 25 training sites — β_3

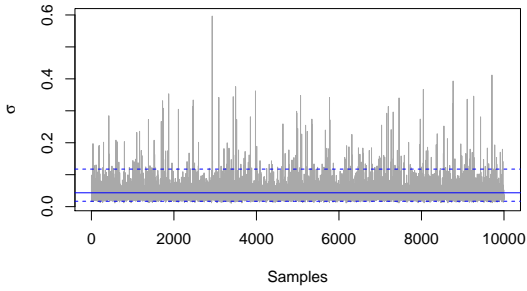


(e) 10 training sites — β_2

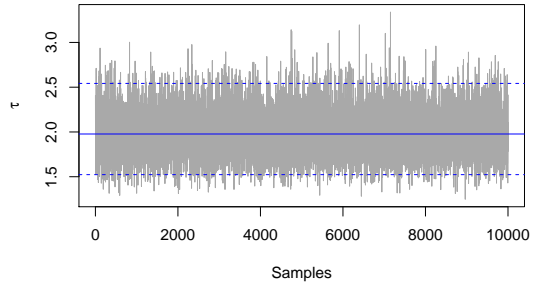


(f) 10 training sites — β_3

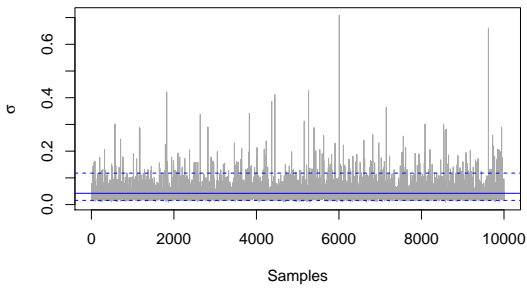
Figure 37: MCMC Trace plots of β_2 and β_3 from simulation 2 (random sampling), with their corresponding mean, 2.5%, and 97.5% quantiles.



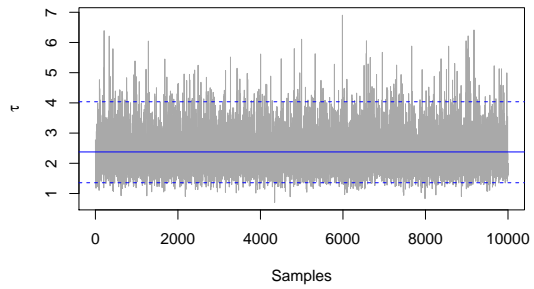
(a) 100 training sites — σ



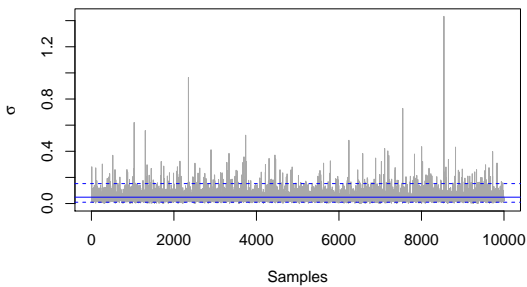
(b) 100 training sites — τ



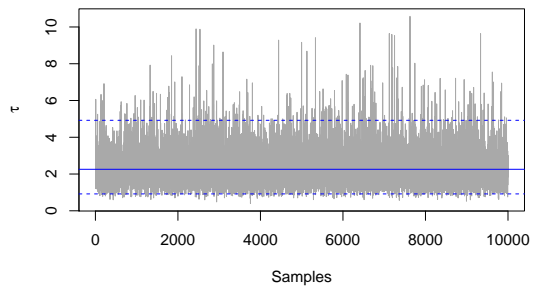
(c) 25 training sites — σ



(d) 25 training sites — τ

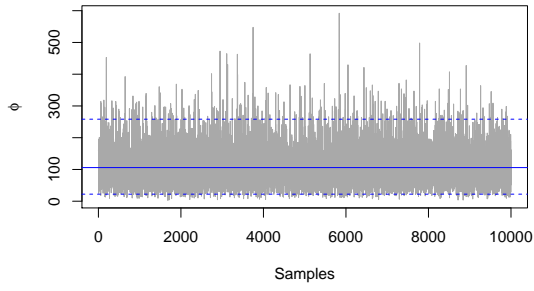


(e) 10 training sites — σ

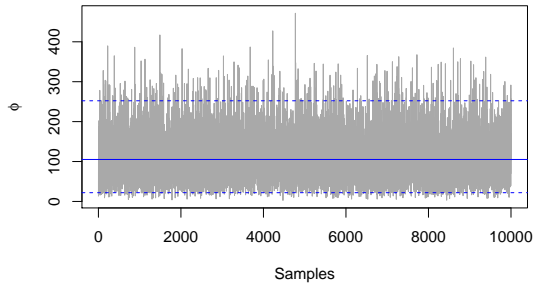


(f) 10 training sites — τ

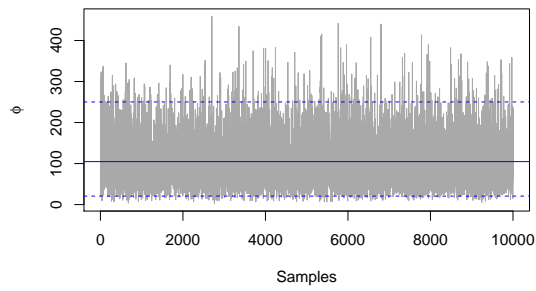
Figure 38: MCMC Trace plots of σ and τ from simulation 2 (random sampling), with their corresponding mean, 2.5%, and 97.5% quantiles.



(a) 100 training sites — ϕ



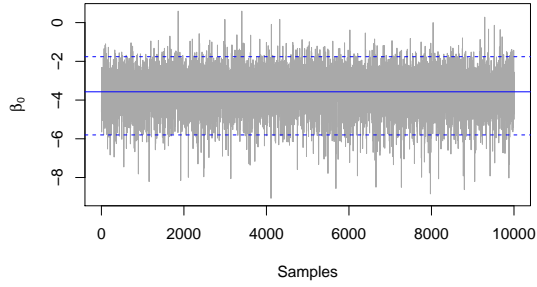
(b) 25 training sites — ϕ



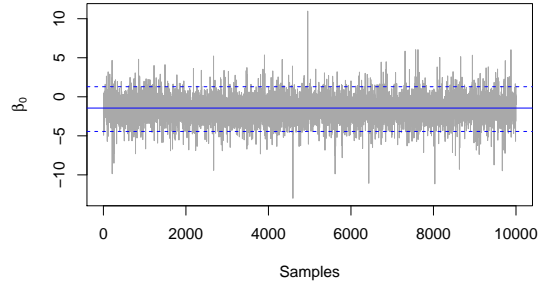
(c) 10 training sites — ϕ

Figure 39: MCMC Trace plots of ϕ from simulation 2 (random sampling), with their corresponding mean, 2.5%, and 97.5% quantiles.

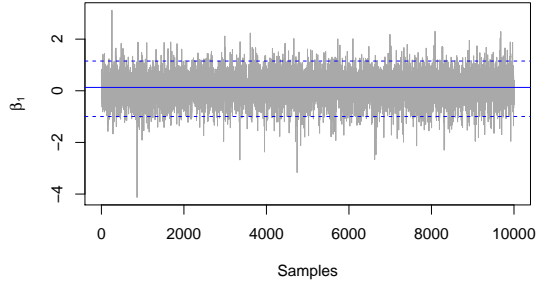
1.4.4 Simulation 2 - Stratified sampling



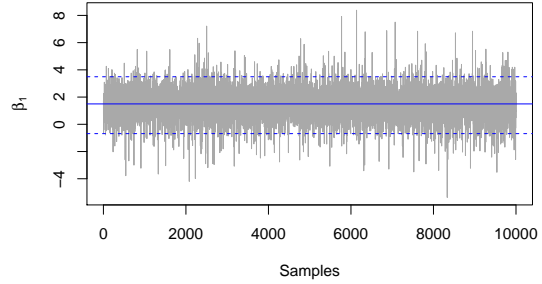
(a) 25 training sites — Intercept



(b) 10 training sites — Intercept

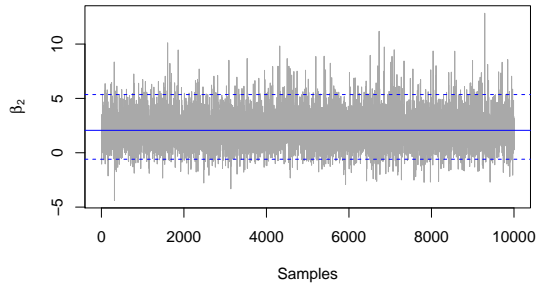


(c) 25 training sites — β_1

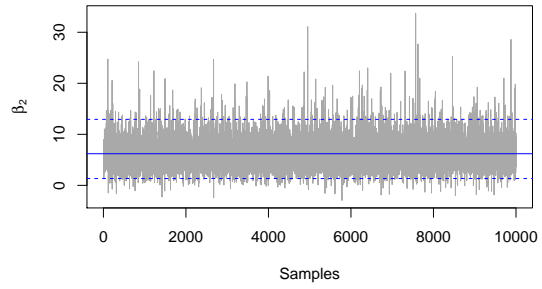


(d) 10 training sites — β_1

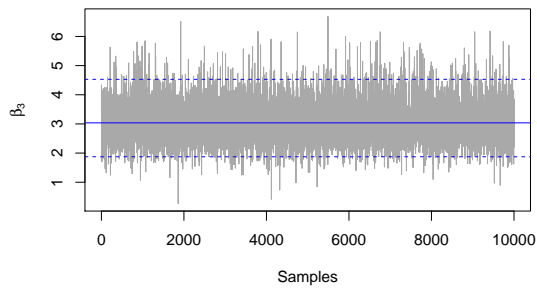
Figure 40: MCMC Trace plots of β_0 and β_1 from simulation 2 (stratified sampling), with their corresponding mean, 2.5%, and 97.5% quantiles.



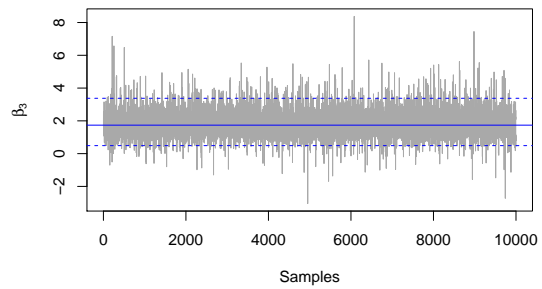
(a) 25 training sites — β_2



(b) 10 training sites — β_2

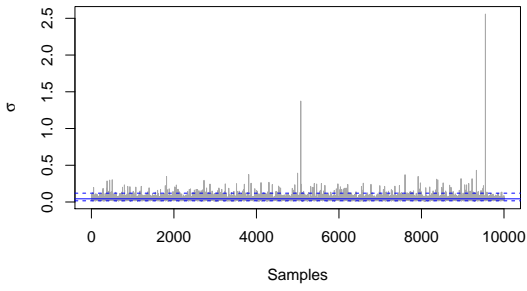


(c) 25 training sites — β_3

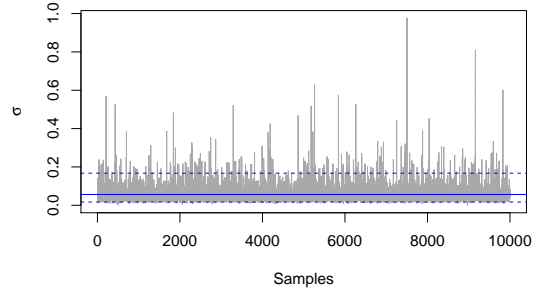


(d) 10 training sites — β_3

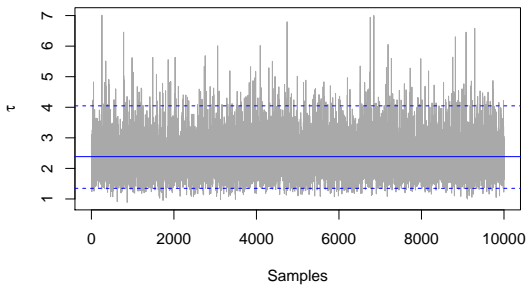
Figure 41: MCMC Trace plots of β_2 and β_3 from simulation 2 (stratified sampling), with their corresponding mean, 2.5%, and 97.5% quantiles.



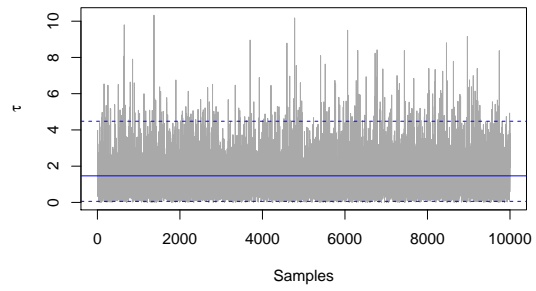
(a) 25 training sites — σ



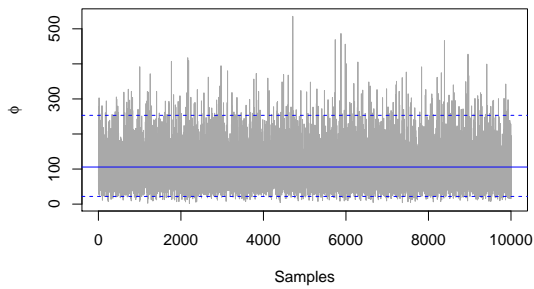
(b) 10 training sites — σ



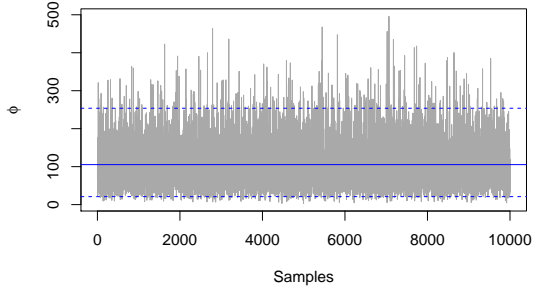
(c) 25 training sites — τ



(d) 10 training sites — τ



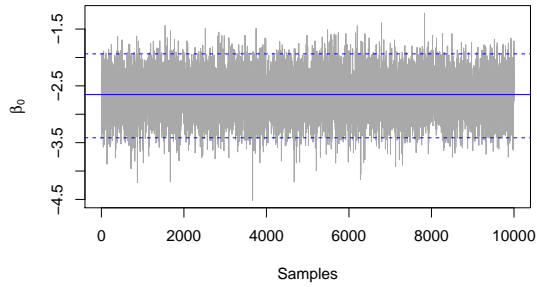
(e) 25 training sites — ϕ



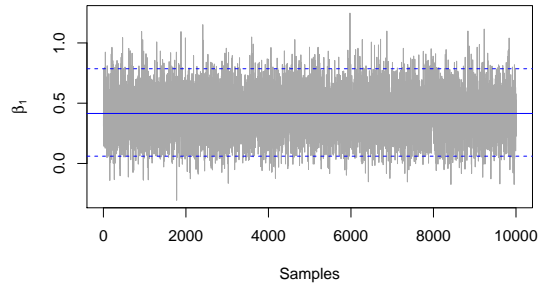
(f) 10 training sites — ϕ

Figure 42: MCMC Trace plots of σ, τ and ϕ from simulation 2 (stratified sampling), with their corresponding mean, 2.5%, and 97.5% quantiles.

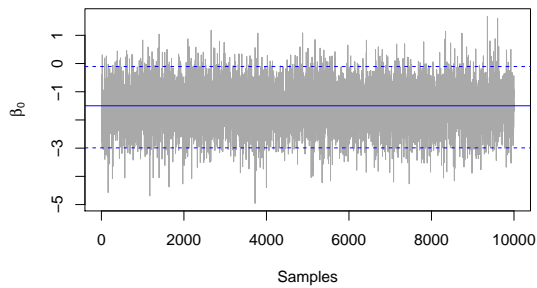
1.4.5 Simulation 3 - Random sampling



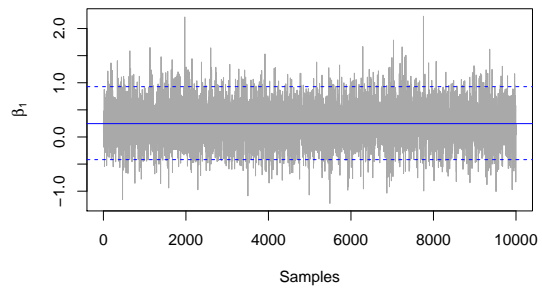
(a) 100 training sites — Intercept



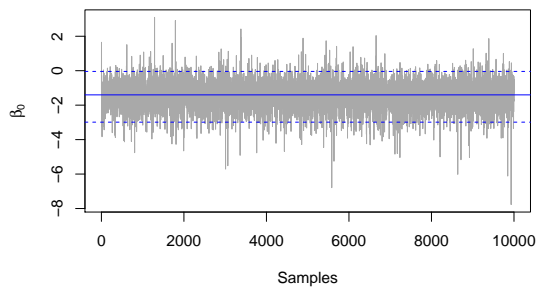
(b) 100 training sites — β_1



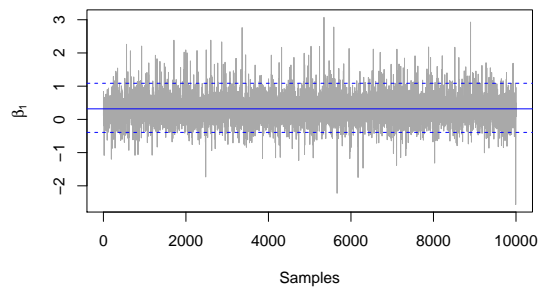
(c) 25 training sites — Intercept



(d) 25 training sites — β_1

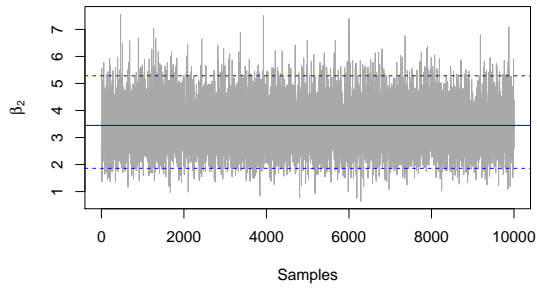


(e) 10 training sites — Intercept

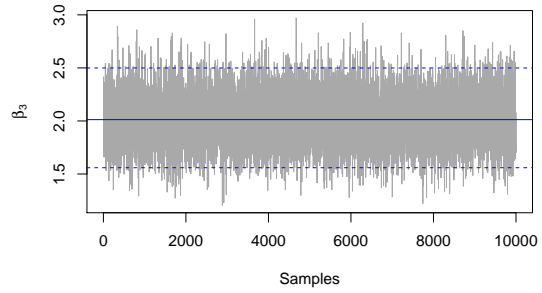


(f) 10 training sites — β_1

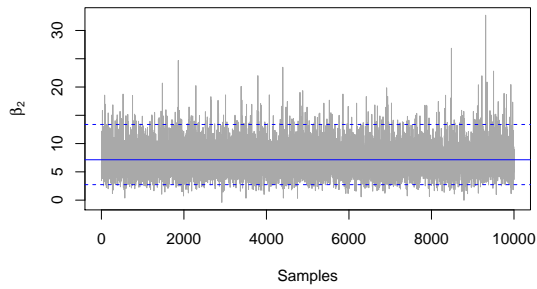
Figure 43: MCMC Trace plots of β_0 and β_1 from simulation 3 (random sampling), with their corresponding mean, 2.5%, and 97.5% quantiles.



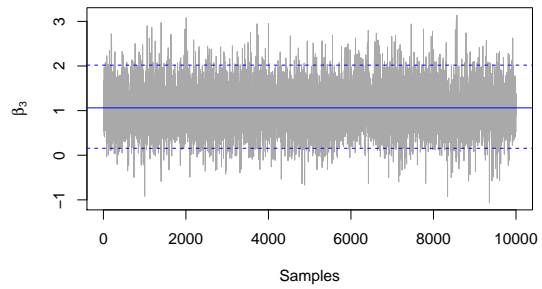
(a) 100 training sites — β_2



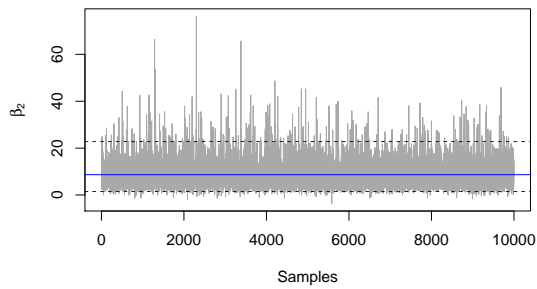
(b) 100 training sites — β_3



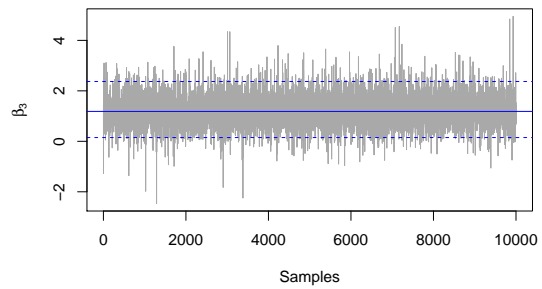
(c) 25 training sites — β_2



(d) 25 training sites — β_3

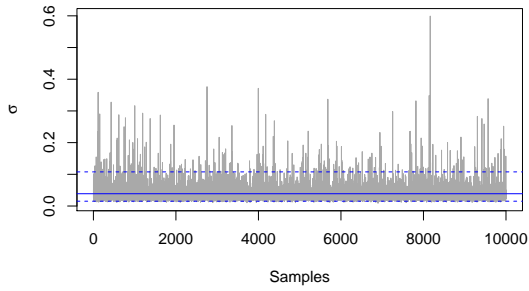


(e) 10 training sites — β_2

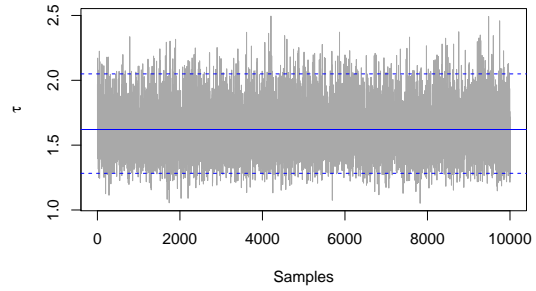


(f) 10 training sites — β_3

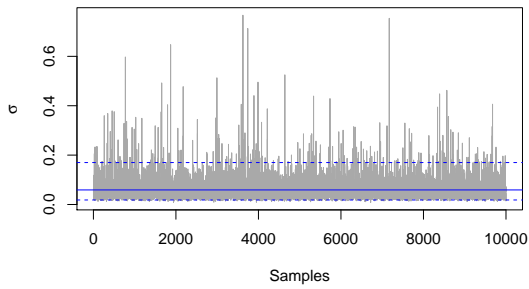
Figure 44: MCMC Trace plots of β_2 and β_3 from simulation 3 (random sampling), with their corresponding mean, 2.5%, and 97.5% quantiles.



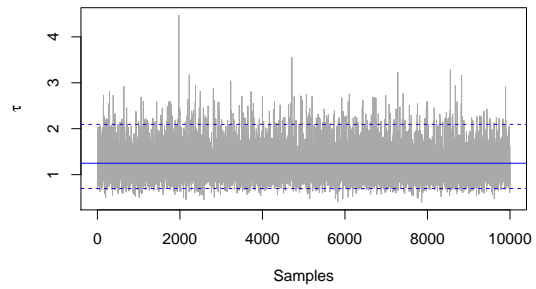
(a) 100 training sites — σ



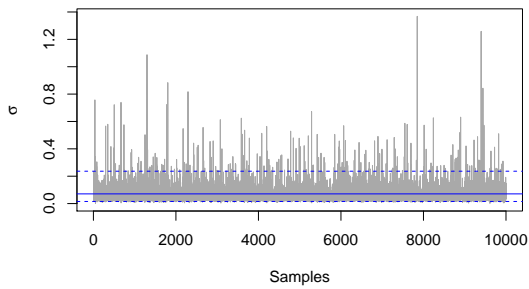
(b) 100 training sites — τ



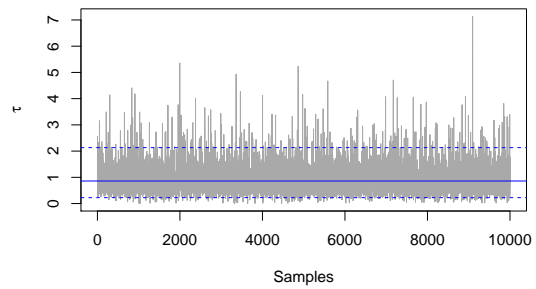
(c) 25 training sites — σ



(d) 25 training sites — τ

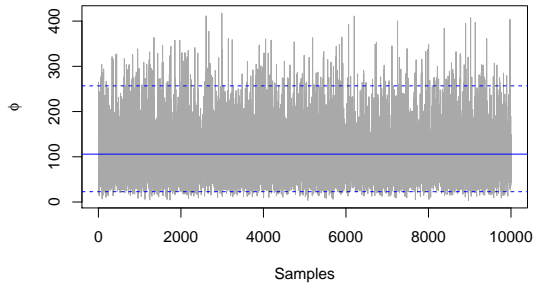


(e) 10 training sites — σ

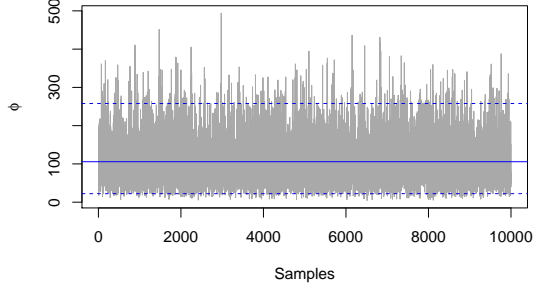


(f) 10 training sites — τ

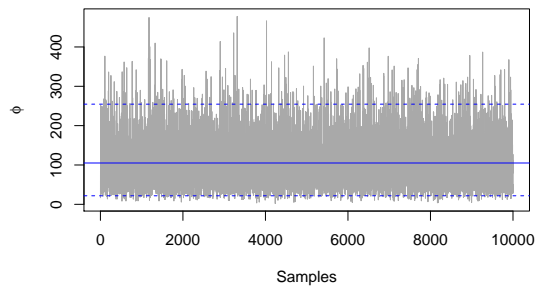
Figure 45: MCMC Trace plots of σ and τ from simulation 3 (random sampling), with their corresponding mean, 2.5%, and 97.5% quantiles.



(a) 100 training sites — ϕ



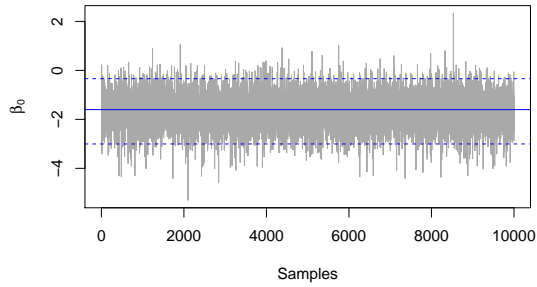
(b) 25 training sites — ϕ



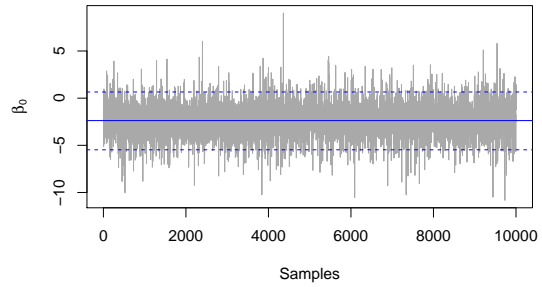
(c) 10 training sites — ϕ

Figure 46: MCMC Trace plots of ϕ from simulation 3 (random sampling), with their corresponding mean, 2.5%, and 97.5% quantiles.

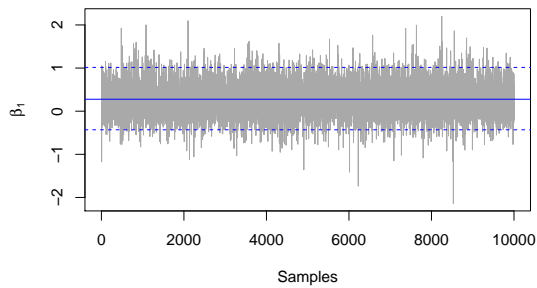
1.4.6 Simulation 3 - Stratified sampling



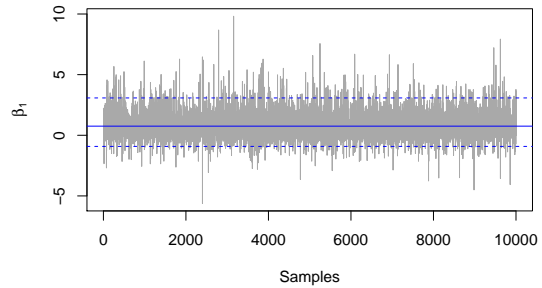
(a) 25 training sites — Intercept



(b) 10 training sites — Intercept

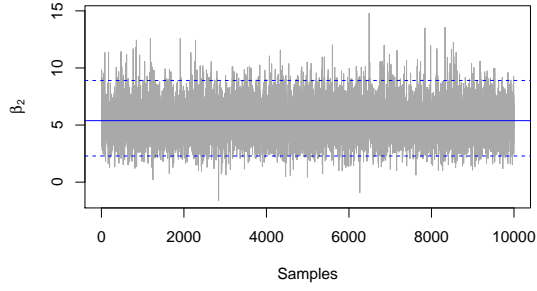


(c) 25 training sites — β_1

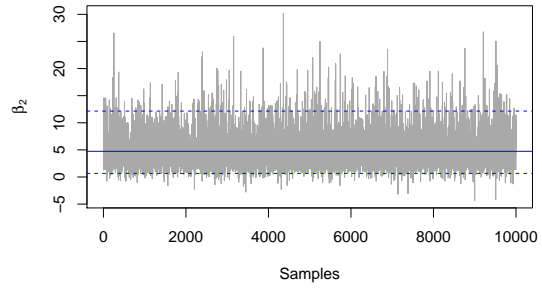


(d) 10 training sites — β_1

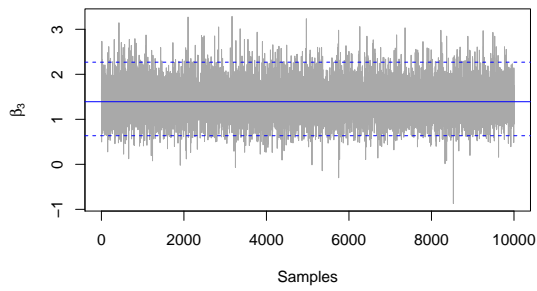
Figure 47: MCMC Trace plots of β_0 and β_1 from simulation 3 (stratified sampling), with their corresponding mean, 2.5%, and 97.5% quantiles.



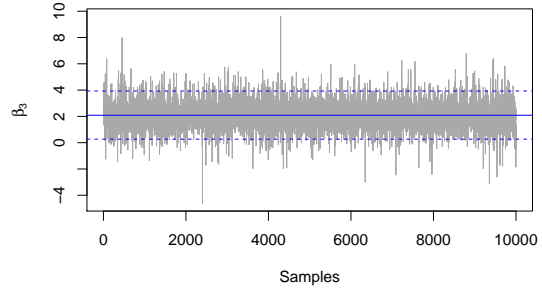
(a) 25 training sites — β_2



(b) 10 training sites — β_2

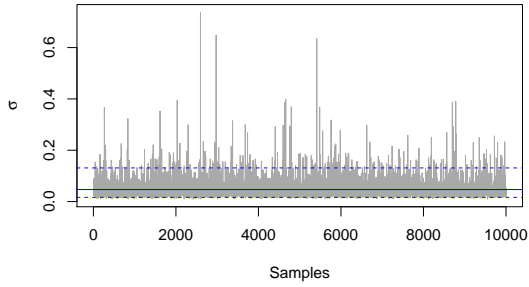


(c) 25 training sites — β_3

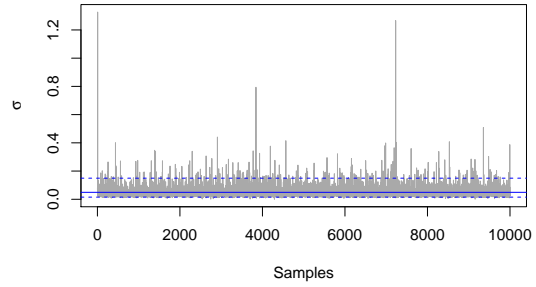


(d) 10 training sites — β_3

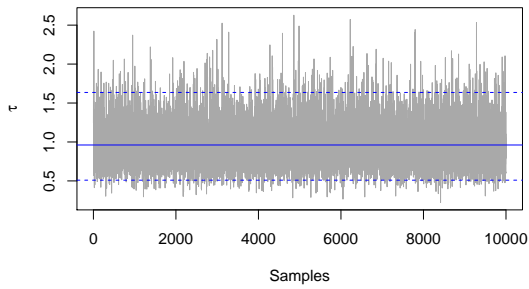
Figure 48: MCMC Trace plots of β_2 and β_3 from simulation 3 (stratified sampling), with their corresponding mean, 2.5%, and 97.5% quantiles.



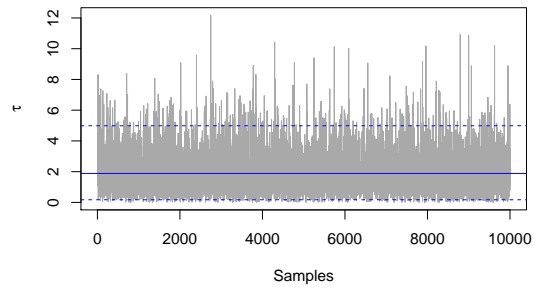
(a) 25 training sites — σ



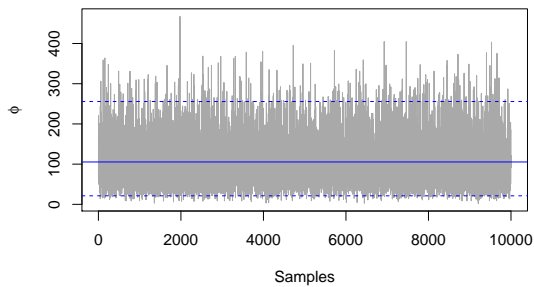
(b) 10 training sites — σ



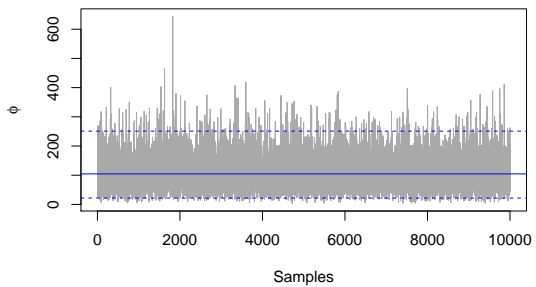
(c) 25 training sites — τ



(d) 10 training sites — τ



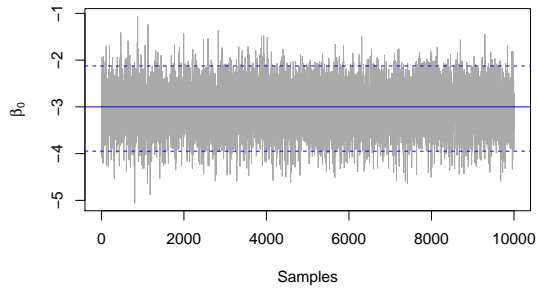
(e) 25 training sites — ϕ



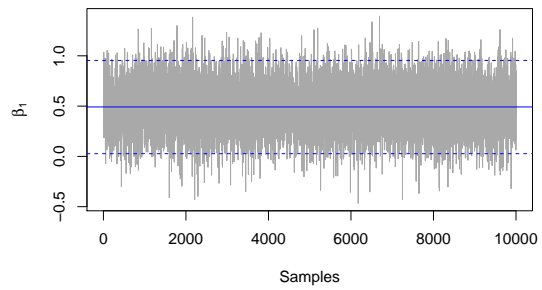
(f) 10 training sites — ϕ

Figure 49: MCMC Trace plots of σ , τ and ϕ from simulation 3 (stratified sampling), with their corresponding mean, 2.5%, and 97.5% quantiles.

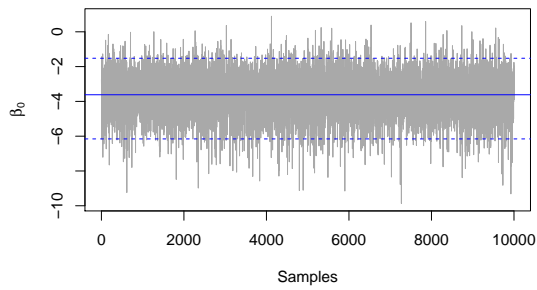
1.4.7 Simulation 4 - Random sampling



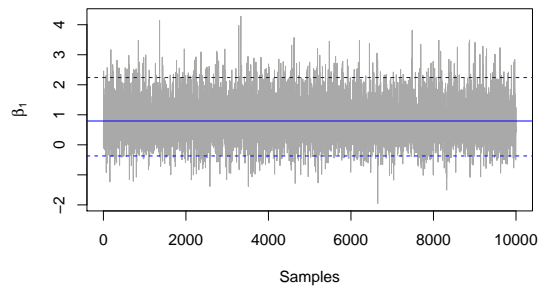
(a) 100 training sites — Intercept



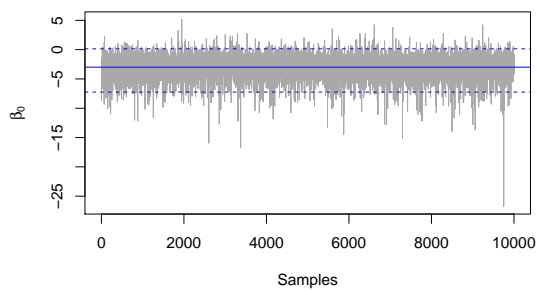
(b) 100 training sites — β_1



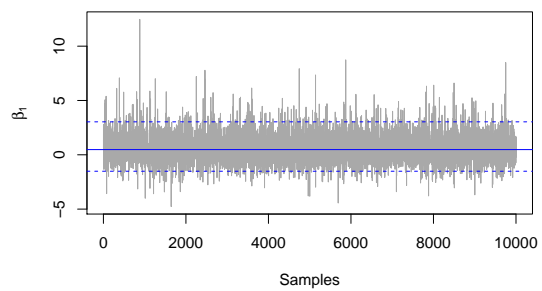
(c) 25 training sites — Intercept



(d) 25 training sites — β_1

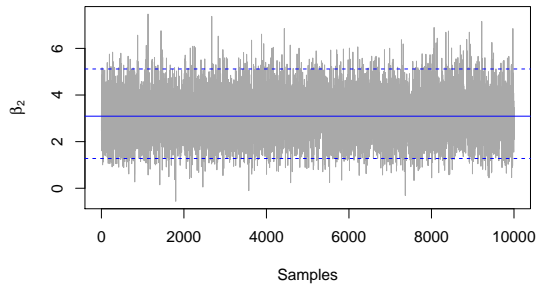


(e) 10 training sites — Intercept

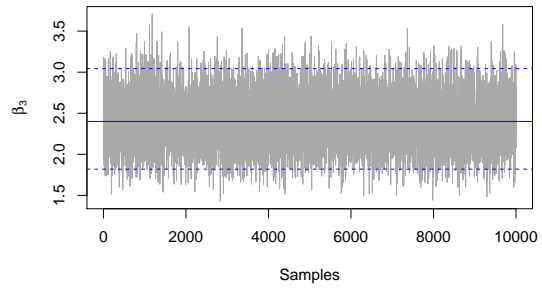


(f) 10 training sites — β_1

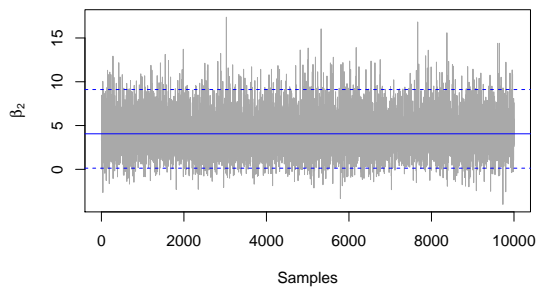
Figure 50: MCMC Trace plots of β_0 and β_1 from simulation 4 (random sampling), with their corresponding mean, 2.5%, and 97.5% quantiles.



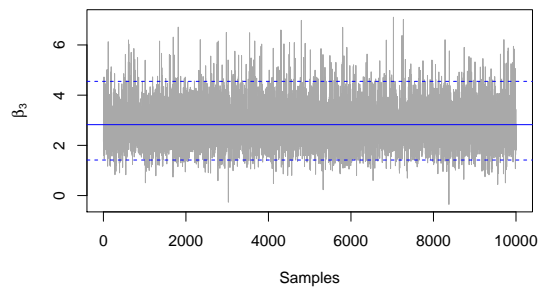
(a) 100 training sites — β_2



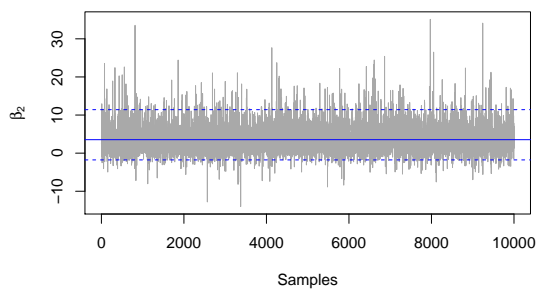
(b) 100 training sites — β_3



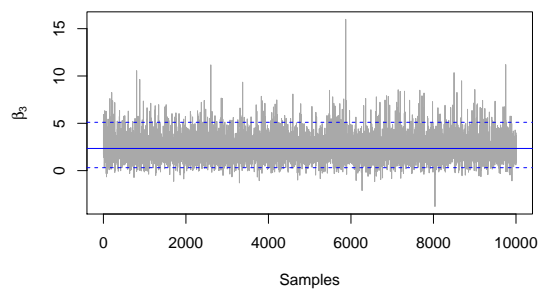
(c) 25 training sites — β_2



(d) 25 training sites — β_3

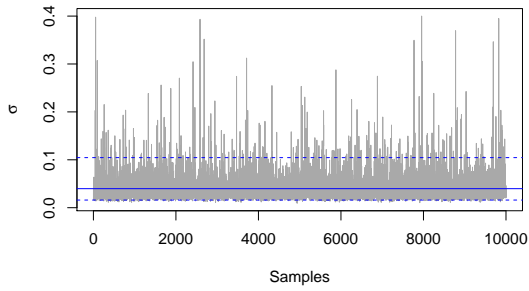


(e) 10 training sites — β_2

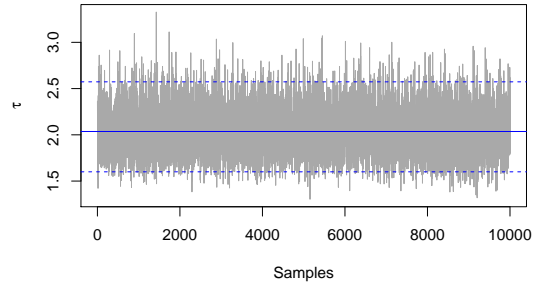


(f) 10 training sites — β_3

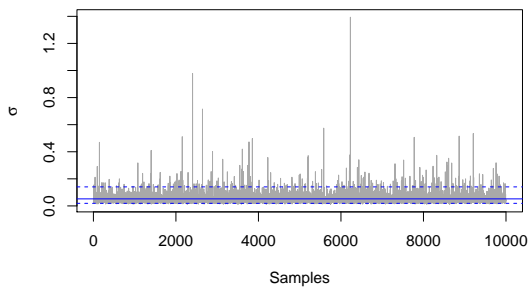
Figure 51: MCMC Trace plots of β_2 and β_3 from simulation 4 (random sampling), with their corresponding mean, 2.5%, and 97.5% quantiles.



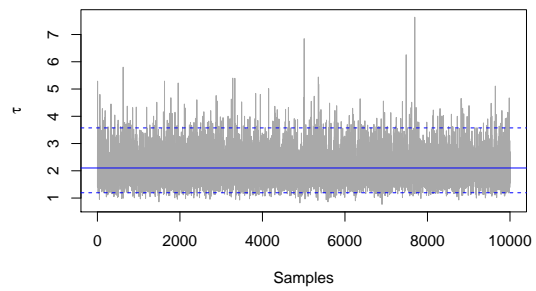
(a) 100 training sites — σ



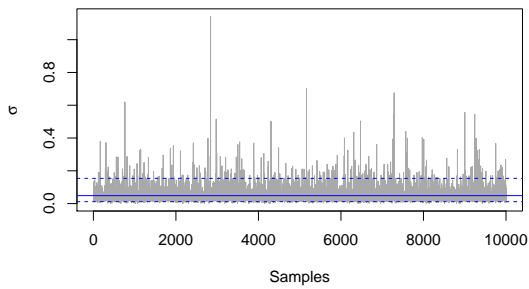
(b) 100 training sites — τ



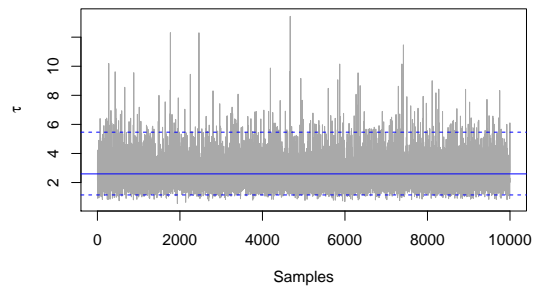
(c) 25 training sites — σ



(d) 25 training sites — τ

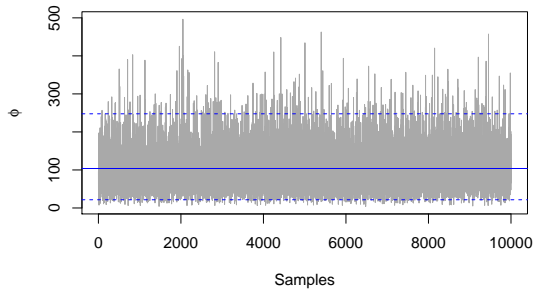


(e) 10 training sites — σ

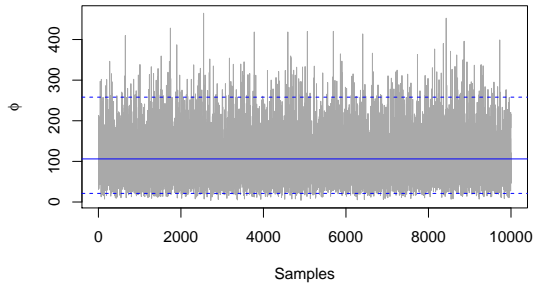


(f) 10 training sites — τ

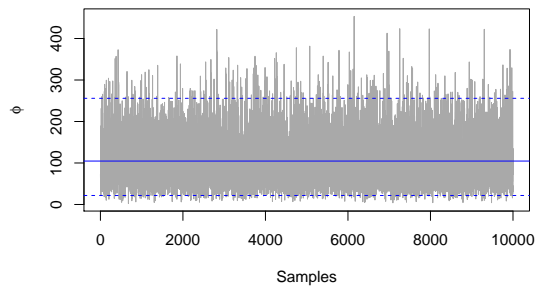
Figure 52: MCMC Trace plots of σ and τ from simulation 4 (random sampling), with their corresponding mean, 2.5%, and 97.5% quantiles.



(a) 100 training sites — ϕ



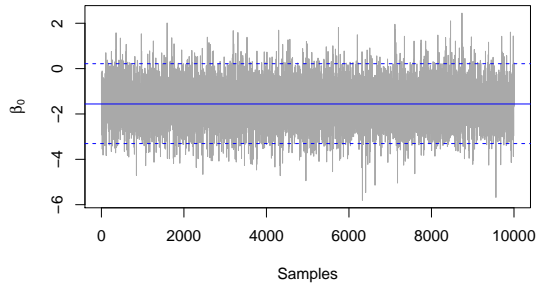
(b) 25 training sites — ϕ



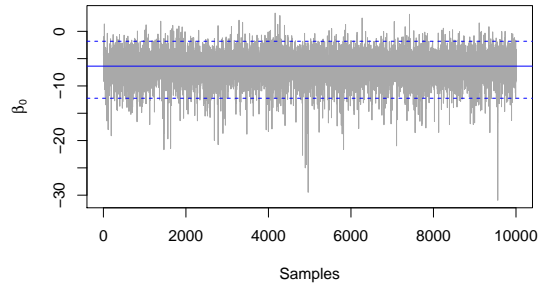
(c) 10 training sites — ϕ

Figure 53: MCMC Trace plots of ϕ from simulation 4 (random sampling), with their corresponding mean, 2.5%, and 97.5% quantiles.

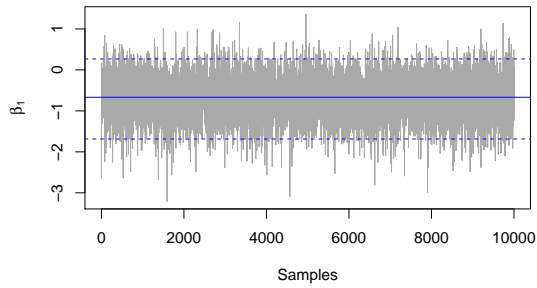
1.4.8 Simulation 4 - Stratified sampling



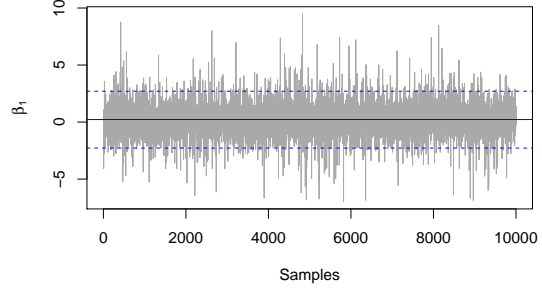
(a) 25 training sites — Intercept



(b) 10 training sites — Intercept

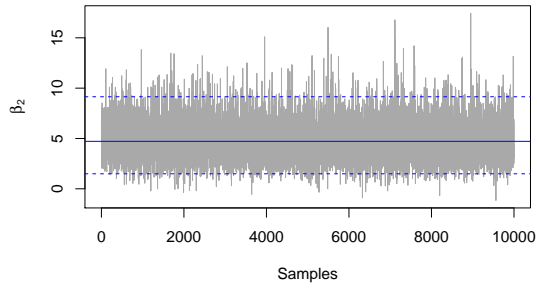


(c) 25 training sites — β_1

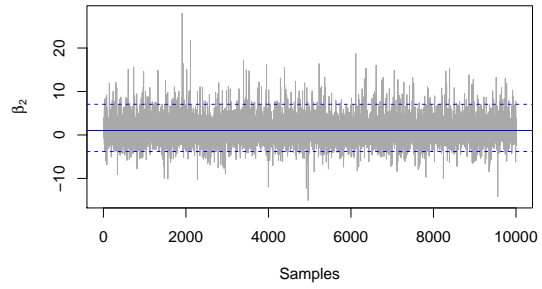


(d) 10 training sites — β_1

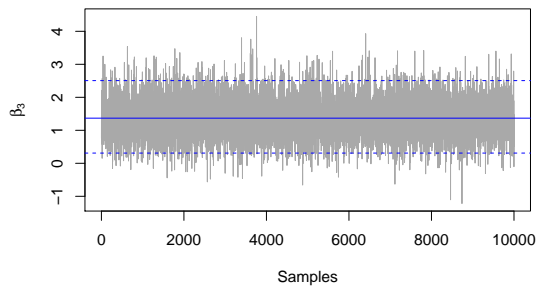
Figure 54: MCMC Trace plots of β_0 and β_1 from simulation 4 (stratified sampling), with their corresponding mean, 2.5%, and 97.5% quantiles.



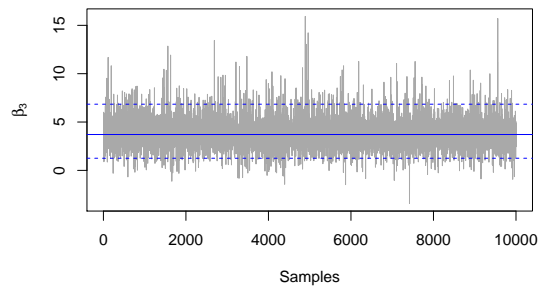
(a) 25 training sites — β_2



(b) 10 training sites — β_2

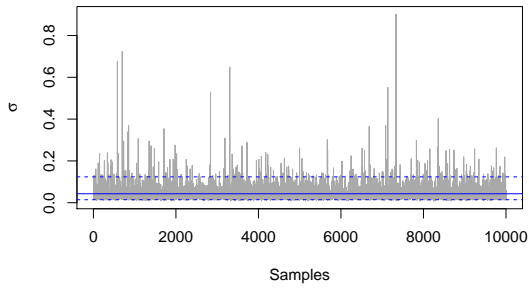


(c) 25 training sites — β_3

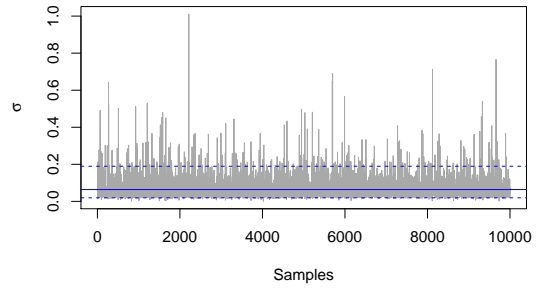


(d) 10 training sites — β_3

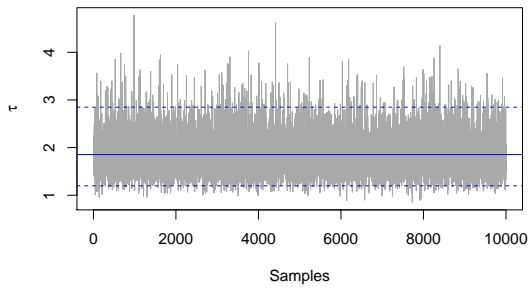
Figure 55: MCMC Trace plots of β_2 and β_3 from simulation 4 (stratified sampling), with their corresponding mean, 2.5%, and 97.5% quantiles.



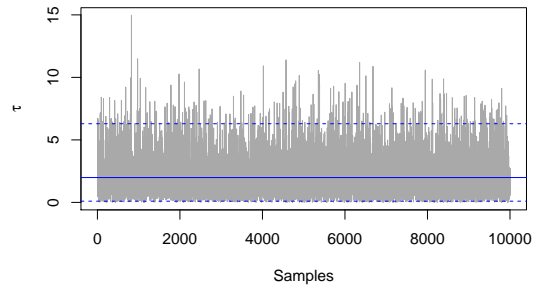
(a) 25 training sites — σ



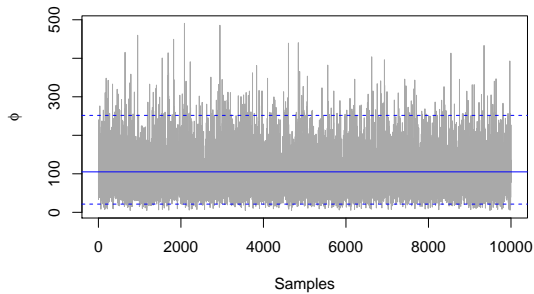
(b) 10 training sites — σ



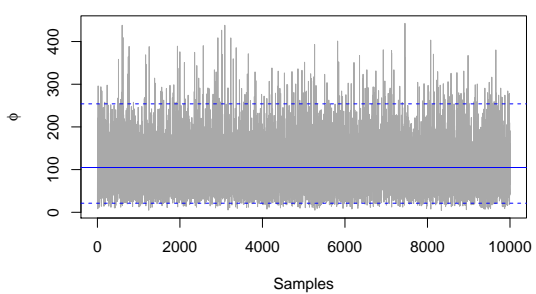
(c) 25 training sites — τ



(d) 10 training sites — τ



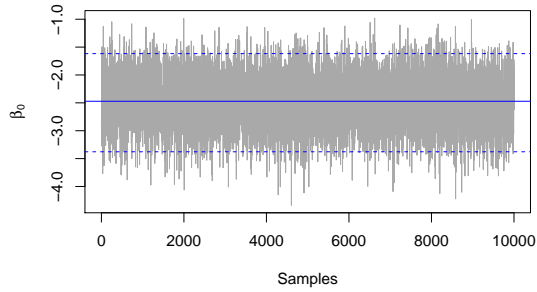
(e) 25 training sites — ϕ



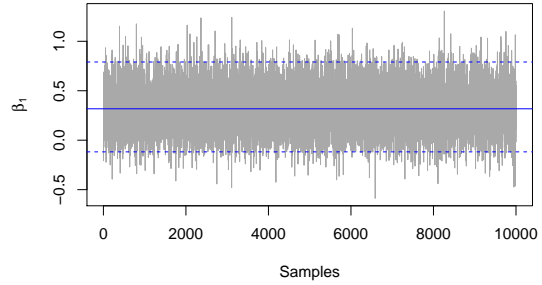
(f) 10 training sites — ϕ

Figure 56: MCMC Trace plots of σ , τ and ϕ from simulation 4 (stratified sampling), with their corresponding mean, 2.5%, and 97.5% quantiles.

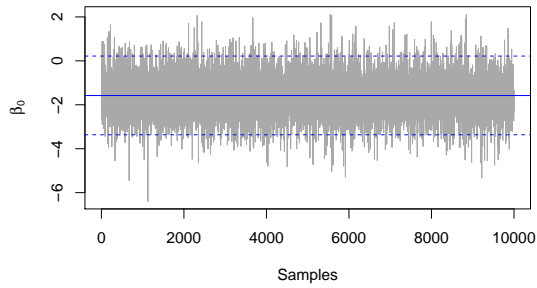
1.4.9 Simulation 5 - Random sampling



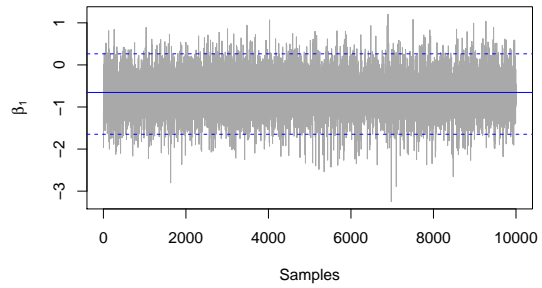
(a) 100 training sites — Intercept



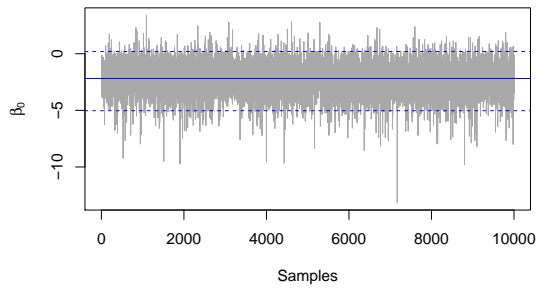
(b) 100 training sites — β_1



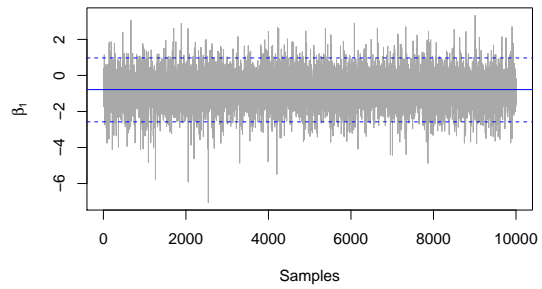
(c) 25 training sites — Intercept



(d) 25 training sites — β_1

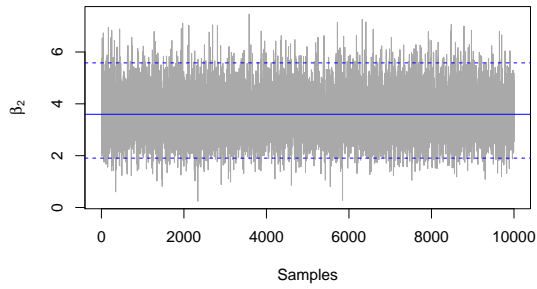


(e) 10 training sites — Intercept

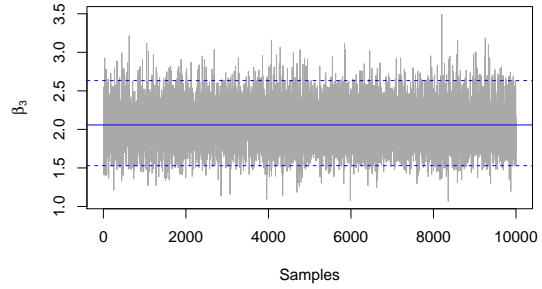


(f) 10 training sites — β_1

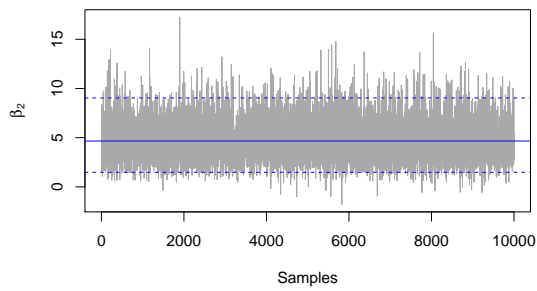
Figure 57: MCMC Trace plots of β_0 and β_1 from simulation 5 (random sampling), with their corresponding mean, 2.5%, and 97.5% quantiles.



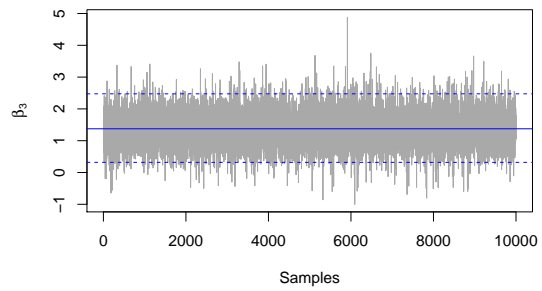
(a) 100 training sites — β_2



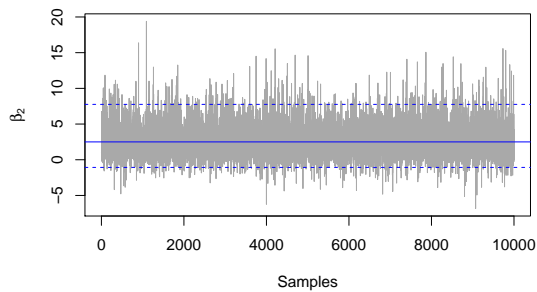
(b) 100 training sites — β_3



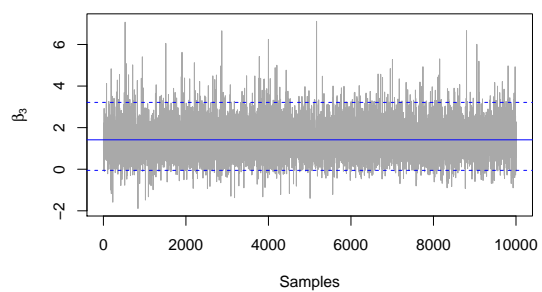
(c) 25 training sites — β_2



(d) 25 training sites — β_3

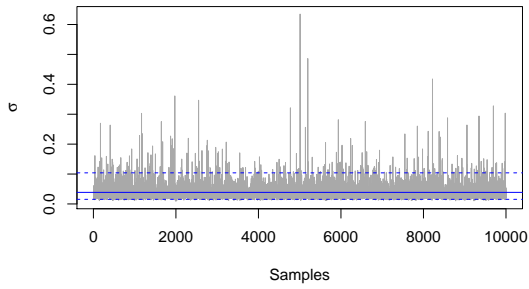


(e) 10 training sites — β_2

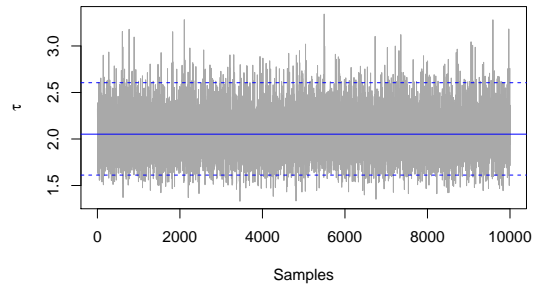


(f) 10 training sites — β_3

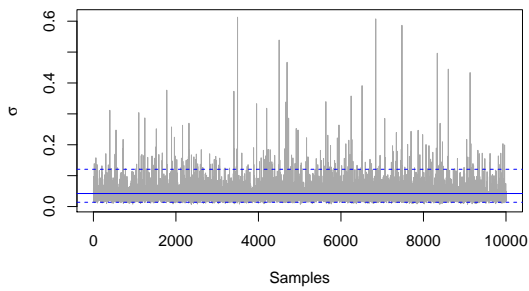
Figure 58: MCMC Trace plots of β_2 and β_3 from simulation 5 (random sampling), with their corresponding mean, 2.5%, and 97.5% quantiles.



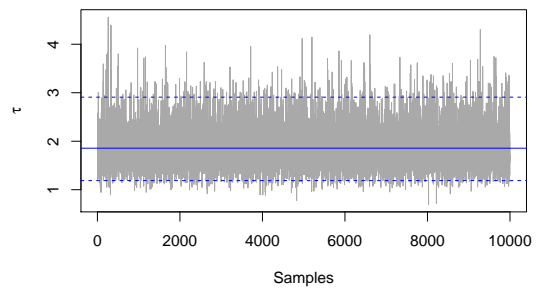
(a) 100 training sites — σ



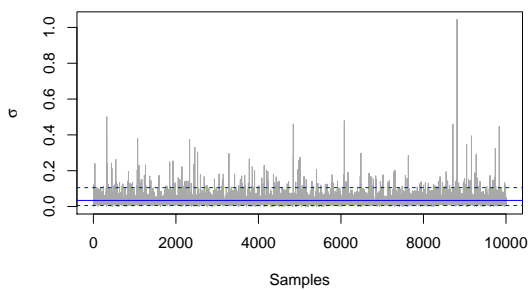
(b) 100 training sites — τ



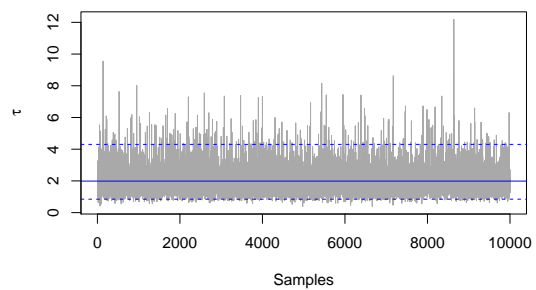
(c) 25 training sites — σ



(d) 25 training sites — τ

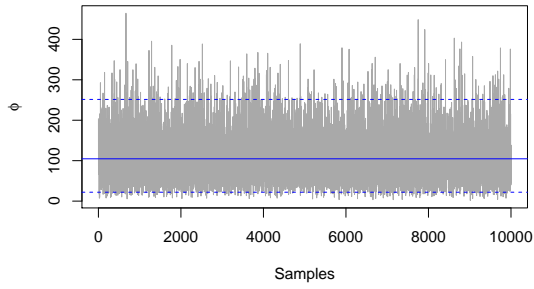


(e) 10 training sites — σ

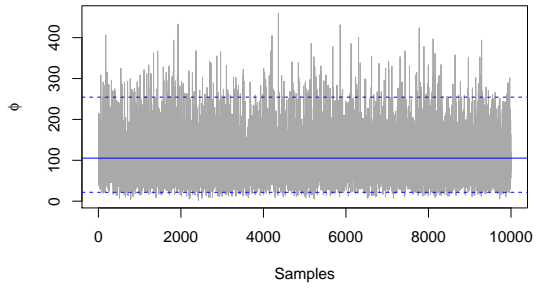


(f) 10 training sites — τ

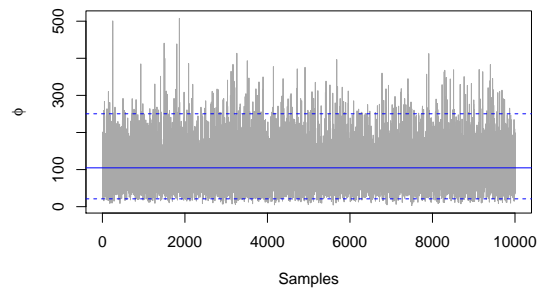
Figure 59: MCMC Trace plots of σ and τ from simulation 5 (random sampling), with their corresponding mean, 2.5%, and 97.5% quantiles.



(a) 100 training sites — ϕ



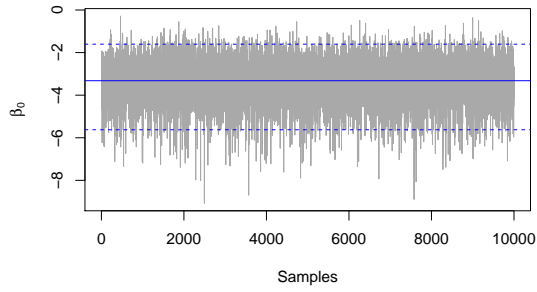
(b) 25 training sites — ϕ



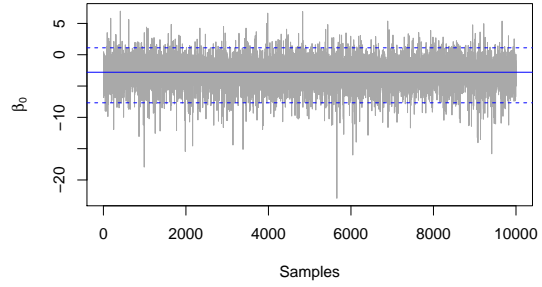
(c) 10 training sites — ϕ

Figure 60: MCMC Trace plots of ϕ from simulation 5 (random sampling), with their corresponding mean, 2.5%, and 97.5% quantiles.

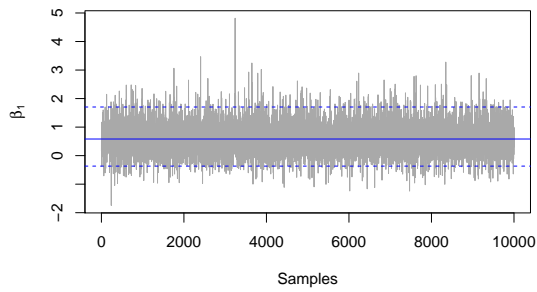
1.4.10 Simulation 5 - Stratified sampling



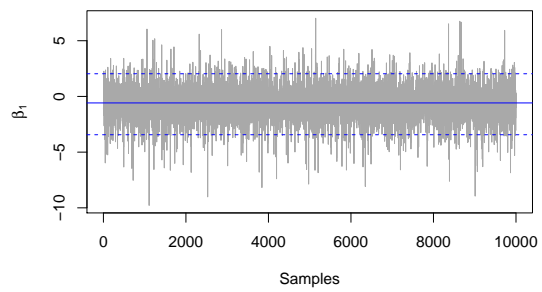
(a) 25 training sites — Intercept



(b) 10 training sites — Intercept

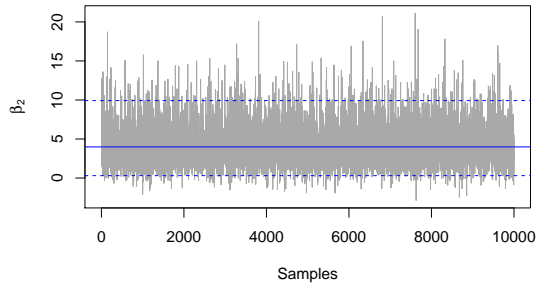


(c) 25 training sites — β_1

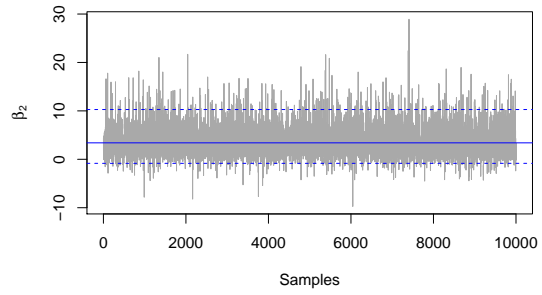


(d) 10 training sites — β_1

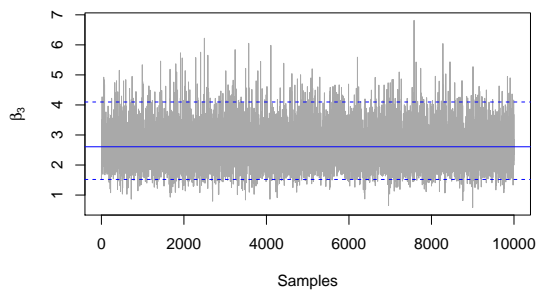
Figure 61: MCMC Trace plots of β_0 and β_1 from simulation 5 (stratified sampling), with their corresponding mean, 2.5%, and 97.5% quantiles.



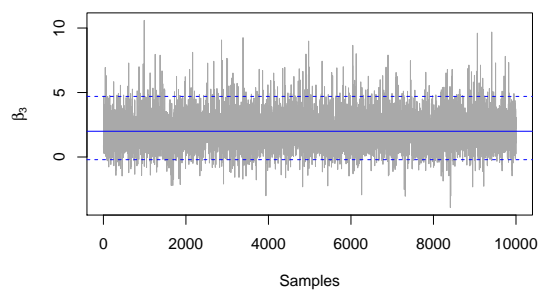
(a) 25 training sites — β_2



(b) 10 training sites — β_2

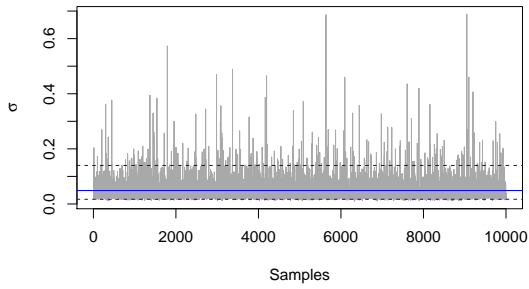


(c) 25 training sites — β_3

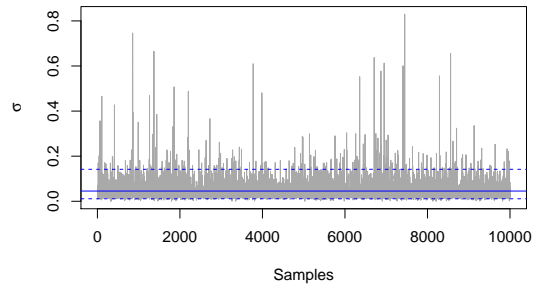


(d) 10 training sites — β_3

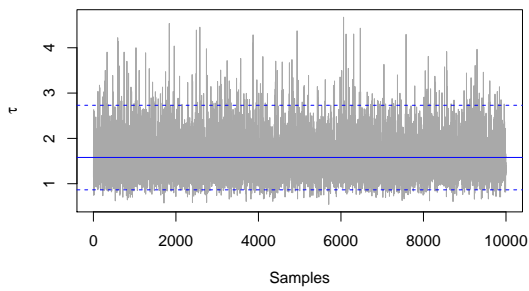
Figure 62: MCMC Trace plots of β_2 and β_3 from simulation 5 (stratified sampling), with their corresponding mean, 2.5%, and 97.5% quantiles.



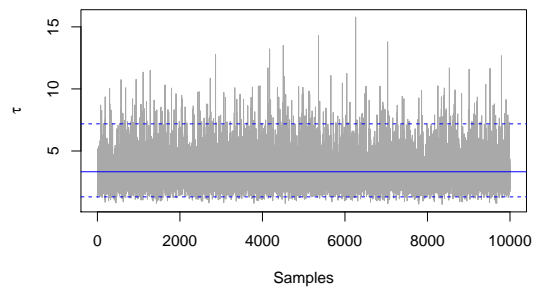
(a) 25 training sites — σ



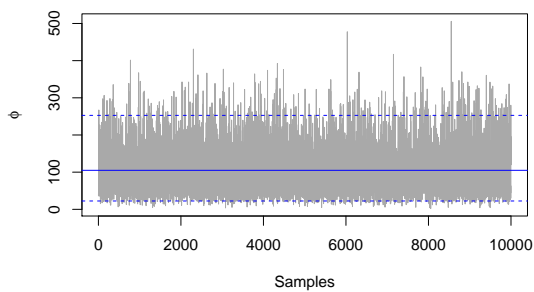
(b) 10 training sites — σ



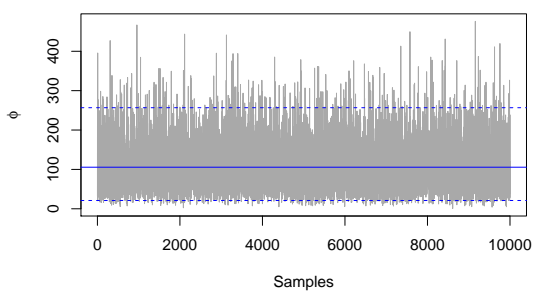
(c) 25 training sites — τ



(d) 10 training sites — τ



(e) 25 training sites — ϕ



(f) 10 training sites — ϕ

Figure 63: MCMC Trace plots of σ, τ and ϕ from simulation 5 (stratified sampling), with their corresponding mean, 2.5%, and 97.5% quantiles.