Domest Report

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Estimated Domain Totals of y in pj

Unplanned domains defined by C(domain) in sample omaotos and in population pj

Mixed Model 1: Linear mixed model
$y = 9.346 + 0.543x + u(C(domain)) + \varepsilon$
$Var(u(i)) = 0.167$; $Var(\varepsilon) = 2.331$
Random Intercepts (C(domain)): independent
Fitted by REML. Algorithm converged.
Methods
•EBLUP(Y) / Mixed Model 1. This is the EBLUP(Y) estimator.
•√MSE of EBLUP(Y) / Mixed Model 1. Mean crossproduct prediction error

domain	Population Size	Sample Size	EBLUP(Y)	√MSE of EBLUP(Y)	$\sqrt{g_1}$	$\sqrt{g_2}$
1	69	8	1298.997	30.012	19.889	9.305
2	120	13	2515.346	45.989	31.482	11.329
3	94	14	1879.403	34.582	23.112	8.522
4	86	5	1898.527	40.416	28.426	12.767
5	86	7	1749.161	38.347	26.366	11.159
6	204	19	4697.896	70.563	49.222	18.502
7	46	8	843.732	19.628	12.390	5.994
8	47	6	1045.109	21.344	14.023	6.211
9	40	6	927.457	18.496	11.629	6.468
10	174	14	3631.151	66.235	46.225	16.335

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Regression Model 3: Linear fixed effects regression model
$y = 9.302 + 0.545x + \varepsilon$; $\sigma^2 = 24.152$
Fitted by WLS with weights defined as S(T)RSWOR weights.
Methods
•GREG / Regression Model 3. This GREG estimator is assisted by a linear regression model fitted by WLS. Variance was estimated by sums of weighted residuals over the whole sample. Design: SRSWOR

domain	Population Size	Sample Size	GREG	Std. Error of GREG	True values
1	69	8	1292.925	27.489	1299.274
2	120	13	2472.540	43.905	2532.787
3	94	14	1816.110	44.653	1839.141
4	86	5	1913.759	24.899	1864.561
5	86	7	1747.493	42.960	1737.940
6	204	19	4745.433	72.671	4662.571
7	46	8	874.716	50.128	835.202
8	47	6	1026.488	38.207	1022.063
9	40	6	939.517	46.536	884.182
10	174	14	3630.783	39.426	3593.914

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Regression Model 3: Linear fixed effects regression model
$y = 9.302 + 0.545x + \varepsilon;\ \sigma^2 = 24.152$
Fitted by WLS with weights defined as S(T)RSWOR weights.
Methods
•GREG / Regression Model 3. This GREG estimator is assisted by a linear regression model fitted by WLS. Residual term was multiplied by the ratio of known domain population size to the domain sum of design weights. Variance was estimated by sums of weighted residuals over the whole sample. Design: SRSWOR

domain	Population Size	Sample Size	GREG	Std. Error of GREG	True values
1	69	8	1293.974	24.844	1299.274
2	120	13	2476.494	42.226	2532.787
3	94	14	1848.322	32.329	1839.141
4	86	5	1938.820	41.405	1864.561
5	86	7	1746.531	53.445	1737.940
6	204	19	4761.836	78.691	4662.571
7	46	8	857.170	31.952	835.202
8	47	6	1031.735	31.493	1022.063
9	40	6	934.532	32.715	884.182
10	174	14	3629.927	48.289	3593.914

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Regression Model 3: Linear fixed effects regression model
$y = 9.302 + 0.545x + \varepsilon;\ \sigma^2 = 24.152$
Fitted by WLS with weights defined as S(T)RSWOR weights.
Methods
•SYNW / Regression Model 3. Sum of fitted values from the linear regression model.

domain	Population Size	Sample Size	SYNW	√MSE of SYNW	True values
1	69	8	1302.714	13.733	1299.274
2	120	13	2561.534	19.103	2532.787
3	94	14	1921.743	15.174	1839.141
4	86	5	1881.653	14.225	1864.561
5	86	7	1751.031	13.970	1737.940
6	204	19	4598.289	36.709	4662.571
7	46	8	831.367	10.561	835.202
8	47	6	1054.235	8.322	1022.063
9	40	6	923.428	7.861	884.182
10	174	14	3633.769	27.545	3593.914