

The impact of environmental attitudes of farmers on efficiency in the agricultural sector in the European Union

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Electronic supplementary material

Supplementary Table S1

<https://doi.org/10.17221/46/2024-AGRICECON>

Table S1. Bias corrected efficiency scores for different model for EU NUTS-2 regions under study

NUTS2 code	NUTS name	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12
FRL0	Provence-Alpes-Côte d'Azur	0.835	0.887	0.865	0.822	0.822	0.822	0.837	0.885	0.864	0.841	0.886	0.866
FRF1	Alsace	0.812	0.842	0.857	0.724	0.724	0.724	0.813	0.842	0.856	0.811	0.839	0.851
DK03	Syddanmark	0.782	0.826	0.837	0.759	0.759	0.759	0.780	0.827	0.838	0.778	0.823	0.836
DK04	Midtjylland	0.754	0.796	0.806	0.732	0.732	0.732	0.753	0.797	0.808	0.751	0.793	0.805
AT11	Burgenland (AT)	0.801	0.792	0.786	0.792	0.792	0.792	0.804	0.793	0.785	0.801	0.791	0.786
DK05	Nordjylland	0.682	0.732	0.745	0.595	0.595	0.595	0.685	0.729	0.746	0.679	0.729	0.740
ES53	Illes Balears	0.780	0.699	0.691	0.763	0.763	0.763	0.779	0.694	0.683	0.783	0.693	0.692
DEB	Rheinland-Pfalz	0.782	0.803	0.800	0.776	0.776	0.776	0.782	0.803	0.800	0.784	0.803	0.802
FRC1	Bourgogne	0.750	0.777	0.790	–	–	–	0.749	0.777	0.791	0.752	0.778	0.792
NL42	Limburg (NL)	0.521	0.659	0.693	–	–	–	0.520	0.656	0.687	0.511	0.652	0.687
DE9	Niedersachsen	0.428	0.600	0.671	0.475	0.475	0.475	0.427	0.600	0.662	0.342	0.584	0.642
FRE1	Nord-Pas-de-Calais	0.736	0.766	0.779	0.709	0.709	0.709	0.734	0.769	0.780	0.736	0.766	0.778
NL23	Flevoland	0.492	0.669	0.696	–	–	–	0.495	0.666	0.693	0.481	0.670	0.674
PT15	Algarve	0.668	0.575	0.578	0.674	0.674	0.674	0.676	0.575	0.582	0.668	0.568	0.575
FRF2	Champagne-Ardenne	0.692	0.733	0.753	–	–	–	0.687	0.737	0.754	0.692	0.732	0.751
ITC3	Liguria	0.510	0.709	0.569	–	–	–	0.526	0.713	0.582	0.501	0.711	0.575
ITC4	Lombardia	0.639	0.751	0.747	0.638	0.638	0.638	0.642	0.746	0.741	0.640	0.751	0.746
ITH3	Veneto	0.638	0.751	0.734	0.641	0.641	0.641	0.644	0.751	0.731	0.644	0.754	0.735
NL41	Noord-Brabant	0.556	0.700	0.707	0.509	0.509	0.509	0.553	0.709	0.709	0.553	0.694	0.713
DEA	Nordrhein-Westfalen	0.665	0.735	0.747	0.667	0.667	0.667	0.664	0.732	0.742	0.657	0.735	0.744
AT34	Vorarlberg	0.586	0.530	0.512	0.547	0.547	0.547	0.584	0.526	0.507	0.567	0.517	0.507
RO32	Bucuresti - Ilfov	0.668	0.537	0.522	0.676	0.676	0.676	0.672	0.538	0.521	0.667	0.528	0.517
ITF3	Campania	0.721	0.765	0.733	0.708	0.708	0.708	0.722	0.763	0.732	0.723	0.764	0.733
NL11	Groningen	0.651	0.725	0.737	–	–	–	0.658	0.725	0.737	0.646	0.718	0.728
FRG0	Pays-de-la-Loire	0.642	0.701	0.726	0.633	0.633	0.633	0.638	0.705	0.727	0.631	0.700	0.722
SE32	Mellersta Norrland	0.690	0.597	0.599	–	–	–	0.684	0.597	0.598	0.688	0.591	0.602
SE11	Stockholm	0.533	0.376	0.437	–	–	–	0.535	0.375	0.435	0.536	0.385	0.451
DK01	Hovedstaden	0.633	0.567	0.585	0.533	0.533	0.533	0.633	0.568	0.586	0.631	0.568	0.590
FRH0	Bretagne	0.591	0.676	0.702	0.593	0.593	0.593	0.590	0.676	0.699	0.577	0.674	0.695
ITI1	Toscana	0.693	0.736	0.706	0.686	0.686	0.686	0.695	0.734	0.705	0.696	0.735	0.708
ES24	Aragón	0.692	0.719	0.729	0.677	0.677	0.677	0.691	0.719	0.729	0.694	0.719	0.730
NL33	Zuid-Holland	0.105	0.476	0.493	-0.018	-0.018	-0.018	0.131	0.486	0.505	0.113	0.465	0.482
FRB0	Centre - Val de Loire	0.659	0.694	0.713	0.639	0.639	0.639	0.655	0.696	0.715	0.660	0.694	0.713
FRI1	Aquitaine	0.658	0.701	0.705	0.648	0.648	0.648	0.655	0.701	0.705	0.657	0.702	0.706
ITH2	Provincia Autonoma di Trento	0.280	0.584	0.410	0.041	0.041	0.041	0.291	0.570	0.418	0.297	0.607	0.424
NL32	Noord-Holland	0.578	0.678	0.676	–	–	–	0.573	0.676	0.678	0.577	0.675	0.673

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Table S1 to be continued

NUTS2 code	NUTS name	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12
FR10	Île de France	0.692	0.705	0.714	0.665	0.665	0.665	0.696	0.706	0.713	0.691	0.701	0.711
ITF1	Abruzzo	0.687	0.725	0.701	0.667	0.667	0.667	0.689	0.721	0.701	0.688	0.724	0.701
NL22	Gelderland	0.566	0.666	0.671	0.565	0.565	0.565	0.559	0.668	0.672	0.563	0.657	0.673
UKE1	East Yorkshire and Northern Lincolnshire	0.664	0.697	0.704	–	–	–	0.669	0.697	0.704	0.663	0.692	0.698
NL13	Drenthe	0.574	0.671	0.686	–	–	–	0.578	0.670	0.685	0.567	0.667	0.675
ES52	Comunitat Valenciana	0.663	0.707	0.682	0.647	0.647	0.647	0.663	0.704	0.681	0.667	0.706	0.683
ITH5	Emilia-Romagna	0.600	0.695	0.679	0.604	0.604	0.604	0.604	0.695	0.676	0.606	0.698	0.678
UKH1	East Anglia	0.648	0.668	0.679	0.626	0.626	0.626	0.647	0.671	0.681	0.648	0.669	0.679
ES43	Extremadura	0.663	0.688	0.669	0.660	0.660	0.660	0.663	0.685	0.668	0.664	0.686	0.670
DE2	Bayern	0.538	0.595	0.608	0.551	0.551	0.551	0.546	0.595	0.606	0.521	0.588	0.599
DEE	Sachsen-Anhalt	0.640	0.658	0.673	0.624	0.624	0.624	0.639	0.660	0.673	0.640	0.658	0.672
ES61	Andalucía	0.106	-0.130	-0.643	0.048	0.048	0.048	0.202	-0.130	-0.501	0.121	-0.247	-4.562
FRJ1	Languedoc-Roussillon	0.645	0.662	0.657	0.641	0.641	0.641	0.645	0.661	0.656	0.647	0.662	0.658
ES51	Cataluña	0.595	0.650	0.642	0.589	0.589	0.589	0.595	0.650	0.641	0.599	0.651	0.642
ITF2	Molise	0.629	0.629	0.621	0.617	0.617	0.617	0.630	0.629	0.619	0.629	0.628	0.621
UKM7	Eastern Scotland	0.633	0.640	0.643	–	–	–	0.636	0.641	0.642	0.632	0.637	0.641
SE22	Sydsverige	0.621	0.633	0.644	0.584	0.584	0.584	0.622	0.633	0.643	0.620	0.631	0.640
UKJ1	Berkshire, Buckinghamshire and Oxfordshire	0.594	0.599	0.617	0.588	0.588	0.588	0.596	0.598	0.616	0.596	0.597	0.614
ITC1	Piemonte	0.610	0.653	0.637	–	–	–	0.610	0.652	0.636	0.614	0.653	0.637
BG41	Yugozapaden	0.615	0.510	0.509	0.617	0.617	0.617	0.617	0.507	0.509	0.618	0.504	0.510
DK02	Sjælland	0.575	0.609	0.621	0.592	0.592	0.592	0.579	0.610	0.620	0.574	0.607	0.616
ES62	Región de Murcia	0.593	0.627	0.609	0.562	0.562	0.562	0.593	0.626	0.609	0.594	0.627	0.608
SE33	Övre Norrland	0.615	0.550	0.546	–	–	–	0.612	0.550	0.541	0.615	0.545	0.545
FRJ2	Midi-Pyrénées	0.597	0.616	0.625	0.585	0.585	0.585	0.597	0.617	0.625	0.599	0.617	0.626
ITG1	Sicilia	0.535	0.589	0.547	0.529	0.529	0.529	0.545	0.589	0.544	0.541	0.592	0.548
UKJ3	Hampshire and Isle of Wight	0.600	0.585	0.586	–	–	–	0.601	0.586	0.585	0.600	0.585	0.587
ES41	Castilla y León	0.579	0.610	0.612	0.573	0.573	0.573	0.579	0.610	0.612	0.580	0.611	0.613
DE1	Baden-Württemberg	0.570	0.601	0.599	0.565	0.565	0.565	0.568	0.601	0.598	0.571	0.601	0.600
ITI4	Lazio	0.561	0.601	0.577	0.554	0.554	0.554	0.563	0.597	0.575	0.563	0.598	0.577
NL21	Overijssel	0.489	0.559	0.567	–	–	–	0.488	0.560	0.566	0.491	0.558	0.562
FRD1	Basse-Normandie	0.556	0.577	0.588	0.537	0.537	0.537	0.555	0.580	0.590	0.556	0.577	0.588

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Table S1 to be continued

NUTS2 code	NUTS name	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12
DE7	Hessen	0.578	0.585	0.591	0.561	0.561	0.561	0.579	0.586	0.592	0.578	0.585	0.591
UKC2	Northumber- land and Tyne and Wear	0.547	0.525	0.541	–	–	–	0.548	0.525	0.540	0.549	0.525	0.543
FRI3	Poitou- Charentes	0.555	0.572	0.583	0.543	0.543	0.543	0.554	0.573	0.584	0.556	0.572	0.583
ES11	Galicia	0.541	0.579	0.562	–	–	–	0.541	0.577	0.561	0.545	0.578	0.561
UKG1	Herefordshire, Worcestershire and War- wickshire	0.563	0.574	0.572	–	–	–	0.566	0.574	0.572	0.562	0.572	0.570
DE8	Mecklenburg- Vorpommern	0.566	0.577	0.585	–	–	–	0.565	0.577	0.585	0.566	0.577	0.585
PT18	Alentejo	0.570	0.581	0.580	0.566	0.566	0.566	0.571	0.581	0.580	0.571	0.581	0.581
ITF4	Puglia	0.514	0.562	0.536	0.507	0.507	0.507	0.519	0.561	0.535	0.517	0.564	0.536
UKE2	North Yorkshire	0.547	0.560	0.569	0.504	0.504	0.504	0.549	0.560	0.568	0.547	0.557	0.565
DED	Sachsen	0.562	0.572	0.577	–	–	–	0.561	0.573	0.578	0.562	0.572	0.578
ITF6	Calabria	0.539	0.576	0.541	0.532	0.532	0.532	0.542	0.573	0.539	0.542	0.577	0.540
FRF3	Lorraine	0.540	0.557	0.569	0.522	0.522	0.522	0.541	0.557	0.568	0.540	0.556	0.567
DE4	Brandenburg	0.551	0.561	0.569	0.538	0.538	0.538	0.550	0.562	0.570	0.551	0.561	0.570
DEG	Thüringen	0.547	0.556	0.566	–	–	–	0.548	0.556	0.565	0.546	0.554	0.563
HR03	Jadranska Hrvatska	0.535	0.446	0.445	0.540	0.540	0.540	0.537	0.444	0.445	0.538	0.441	0.445
FRK2	Rhône-Alpes	0.536	0.557	0.554	0.532	0.532	0.532	0.536	0.557	0.553	0.538	0.558	0.555
UKD1	Cumbria	0.530	0.539	0.545	–	–	–	0.534	0.540	0.545	0.531	0.537	0.543
UKF2	Leicestershire, Rutland and Northampton- shire	0.541	0.546	0.542	0.522	0.522	0.522	0.543	0.546	0.541	0.541	0.545	0.541
AT12	Niederösterreich	0.520	0.534	0.527	0.516	0.516	0.516	0.521	0.532	0.526	0.521	0.533	0.527
UKG2	Shropshire and Staffordshire	0.505	0.521	0.517	0.458	0.458	0.458	0.506	0.522	0.517	0.505	0.521	0.516
CZ08	Moravskoslezsko	0.494	0.437	0.432	0.488	0.488	0.488	0.494	0.433	0.429	0.496	0.434	0.433
ES21	País Vasco	0.485	0.484	0.445	–	–	–	0.486	0.482	0.445	0.486	0.483	0.447
ITH4	Friuli-Venezia Giulia	0.456	0.504	0.485	–	–	–	0.456	0.504	0.486	0.457	0.506	0.487
ITI3	Marche	0.482	0.497	0.492	–	–	–	0.485	0.498	0.491	0.482	0.497	0.490
AT32	Salzburg	0.481	0.451	0.427	0.474	0.474	0.474	0.482	0.450	0.426	0.479	0.446	0.426
ITF5	Basilicata	0.454	0.480	0.450	0.449	0.449	0.449	0.455	0.478	0.449	0.457	0.480	0.452
CZ04	Severozápad	0.477	0.444	0.440	0.473	0.473	0.473	0.478	0.442	0.435	0.479	0.442	0.440
AT31	Oberösterreich	0.464	0.491	0.475	0.450	0.450	0.450	0.466	0.488	0.475	0.465	0.490	0.475
PL92	Mazowiecki regionalny	0.431	0.459	0.438	0.425	0.425	0.425	0.434	0.459	0.437	0.434	0.461	0.437

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Table S1 to be continued

NUTS2 code	NUTS name	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12
UKK1	Gloucestershire, Wiltshire and Bristol/Bath area	0.459	0.467	0.463	–	–	–	0.461	0.467	0.462	0.459	0.466	0.462
HU32	Észak-Alföld	0.454	0.465	0.449	0.451	0.451	0.451	0.455	0.463	0.449	0.456	0.464	0.449
PT17	Área Metropolitana de Lisboa	0.349	0.423	0.381	–	–	–	0.353	0.424	0.386	0.344	0.424	0.381
SE23	Västsverige	0.448	0.452	0.453	–	–	–	0.449	0.453	0.452	0.447	0.451	0.452
SE12	Östra Mellansverige	0.446	0.449	0.451	0.425	0.425	0.425	0.448	0.450	0.450	0.446	0.448	0.449
IT12	Umbria	0.438	0.454	0.438	–	–	–	0.440	0.454	0.436	0.439	0.454	0.438
PL41	Wielkopolskie	0.417	0.446	0.428	0.410	0.410	0.410	0.419	0.446	0.426	0.419	0.447	0.427
AT33	Tirol	0.430	0.408	0.383	0.420	0.420	0.420	0.432	0.407	0.383	0.428	0.404	0.383
HU33	Dél-Alföld	0.425	0.438	0.422	0.421	0.421	0.421	0.426	0.436	0.422	0.426	0.436	0.423
HU23	Dél-Dunántúl	0.414	0.419	0.407	0.410	0.410	0.410	0.415	0.417	0.406	0.415	0.419	0.408
RO42	Vest	0.410	0.419	0.405	0.406	0.406	0.406	0.411	0.418	0.405	0.411	0.418	0.405
AT21	Kärnten	0.407	0.393	0.367	0.384	0.384	0.384	0.409	0.392	0.367	0.407	0.390	0.368
UKL2	East Wales	0.402	0.405	0.394	0.397	0.397	0.397	0.404	0.405	0.393	0.403	0.405	0.395
SK02	Západné Slovensko	0.403	0.406	0.401	0.395	0.395	0.395	0.403	0.406	0.401	0.403	0.407	0.403
PT16	Centro (PT)	0.383	0.406	0.390	0.365	0.365	0.365	0.384	0.404	0.390	0.383	0.406	0.389
AT22	Steiermark	0.360	0.392	0.364	0.343	0.343	0.343	0.360	0.389	0.364	0.361	0.393	0.365
UKK4	Devon	0.372	0.391	0.379	0.341	0.341	0.341	0.373	0.391	0.379	0.373	0.392	0.380
CZ02	Střední Čechy	0.382	0.390	0.382	–	–	–	0.383	0.390	0.381	0.383	0.391	0.383
SE31	Norra Mellansverige	0.375	0.356	0.348	0.413	0.413	0.413	0.377	0.355	0.347	0.377	0.355	0.349
PL81	Lubelskie	0.381	0.380	0.360	0.379	0.379	0.379	0.382	0.379	0.359	0.383	0.381	0.360
RO41	Sud-Vest Oltenia	0.389	0.381	0.362	0.387	0.387	0.387	0.390	0.380	0.361	0.392	0.382	0.362
BG31	Severozapaden	0.364	0.361	0.340	0.353	0.353	0.353	0.364	0.359	0.339	0.366	0.363	0.341
CZ06	Jihovýchod	0.378	0.382	0.374	0.373	0.373	0.373	0.379	0.381	0.373	0.379	0.382	0.375
HU21	Közép-Dunántúl	0.372	0.379	0.367	0.362	0.362	0.362	0.373	0.379	0.367	0.373	0.380	0.369
UKL1	West Wales and The Valleys	0.369	0.372	0.364	0.362	0.362	0.362	0.369	0.372	0.363	0.369	0.373	0.366
RO22	Sud-Est	0.359	0.362	0.341	0.358	0.358	0.358	0.361	0.362	0.339	0.361	0.363	0.341
ES12	Principado de Asturias	0.362	0.354	0.334	–	–	–	0.364	0.351	0.333	0.363	0.352	0.336
RO31	Sud - Muntenia	0.354	0.358	0.336	0.353	0.353	0.353	0.356	0.358	0.334	0.357	0.360	0.336
HR04	Kontinentalna Hrvatska (NUTS 2016)	0.358	0.363	0.344	0.355	0.355	0.355	0.358	0.362	0.343	0.359	0.364	0.345
PL84	Podlaskie	0.348	0.356	0.337	0.344	0.344	0.344	0.348	0.354	0.335	0.350	0.356	0.337

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Table S1 to be continued

NUTS2 code	NUTS name	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12
RO21	Nord-Est	0.357	0.353	0.333	0.357	0.357	0.357	0.359	0.352	0.332	0.361	0.353	0.334
RO11	Nord-Vest	0.361	0.354	0.336	0.359	0.359	0.359	0.361	0.353	0.335	0.363	0.355	0.336
HU31	Észak-Magyarország	0.336	0.330	0.313	0.326	0.326	0.326	0.335	0.329	0.312	0.338	0.332	0.314
PL72	Swietokrzyskie	0.328	0.333	0.310	0.317	0.317	0.317	0.329	0.331	0.309	0.331	0.335	0.312
PL43	Lubuskie	0.326	0.307	0.299	0.317	0.317	0.317	0.326	0.305	0.298	0.327	0.308	0.298
HU22	Nyugat-Dunántúl	0.323	0.333	0.318	0.315	0.315	0.315	0.325	0.332	0.318	0.325	0.333	0.320
CZ07	Střední Morava	0.324	0.322	0.307	0.313	0.313	0.313	0.325	0.320	0.306	0.326	0.322	0.309
PL63	Pomorskie	0.331	0.330	0.314	0.324	0.324	0.324	0.331	0.329	0.314	0.333	0.331	0.315
PT11	Norte	0.310	0.335	0.310	0.303	0.303	0.303	0.311	0.332	0.309	0.312	0.336	0.310
RO12	Centru	0.332	0.331	0.315	0.330	0.330	0.330	0.332	0.330	0.314	0.334	0.331	0.315
PL61	Kujawsko-Pomorskie	0.314	0.327	0.308	0.311	0.311	0.311	0.315	0.326	0.307	0.316	0.328	0.308
PL22	Slaskie	0.302	0.309	0.285	–	–	–	0.302	0.307	0.286	0.304	0.312	0.287
BG42	Yuzhen tsentralen	0.323	0.304	0.293	0.314	0.314	0.314	0.322	0.303	0.292	0.324	0.306	0.293
CZ03	Jihozápad	0.306	0.314	0.302	0.299	0.299	0.299	0.306	0.313	0.301	0.307	0.314	0.304
SK03	Stredné Slovensko	0.317	0.298	0.289	0.312	0.312	0.312	0.317	0.297	0.287	0.317	0.296	0.290
SK04	Východné Slovensko	0.311	0.296	0.286	0.305	0.305	0.305	0.312	0.294	0.284	0.311	0.294	0.287
PL51	Dolnoslaskie	0.304	0.302	0.288	0.298	0.298	0.298	0.303	0.301	0.288	0.306	0.304	0.289
CZ05	Severovýchod	0.278	0.289	0.278	0.271	0.271	0.271	0.280	0.289	0.277	0.279	0.290	0.279
PL21	Malopolskie	0.274	0.279	0.258	0.264	0.264	0.264	0.275	0.276	0.257	0.276	0.280	0.259
BG34	Yugoiztochen	0.273	0.267	0.254	0.264	0.264	0.264	0.273	0.266	0.253	0.275	0.269	0.254
PL52	Opolskie	0.256	0.262	0.244	–	–	–	0.256	0.261	0.244	0.258	0.265	0.245
PL62	Warminsko-Mazurskie	0.262	0.267	0.254	0.258	0.258	0.258	0.264	0.267	0.254	0.263	0.267	0.254
BG33	Severoiztochen	0.242	0.250	0.232	0.234	0.234	0.234	0.242	0.248	0.231	0.243	0.251	0.233
BG32	Severen tsentralen	0.233	0.239	0.222	0.226	0.226	0.226	0.234	0.237	0.221	0.236	0.240	0.223
PL42	Zachodniopomorskie	0.227	0.230	0.216	0.220	0.220	0.220	0.228	0.229	0.216	0.229	0.232	0.217
PL82	Podkarpackie	0.227	0.218	0.209	0.220	0.220	0.220	0.228	0.216	0.208	0.228	0.219	0.209
HU12	Pest	0.450	–	–	0.468	0.468	0.468	0.452	–	–	0.450	–	–
UKM9	Southern Scotland	0.528	–	–	0.501	0.501	0.501	0.530	–	–	0.527	–	–

Source: Eurostat (2023) and EVS data (2022); specific Eurostat codes are provided in the text of the article