BAB V

PENUTUP

5.1. Kesimpulan

Berdasarkan hasil analisis data serta pembahasan mengenai pengaruh kualiatas regulasi, pertumbuhan PDB, dan pendidikan terhadap kinerja lingkungan di negara-negara berpendapatan menengah atas pada tahun 2020 dan 2022, maka dapat disimpulkan sebagai berikut:

1. Variabel kualitas regulasi berpengaruh secara positif dan signifikan terhadap kinerja lingkungan di negara-negara berpendapatan menengah atas pada tahun 2020 dan 2022.
2. Variabel pertumbuhan Produk Domestik Bruto (PDB) berpengaruh secara negatif dan signifikan terhadap kinerja lingkungan di negara-negara berpendapatan menengah atas pada tahun 2020 dan 2022.
3. Variabel pendidikan berpengaruh secara positif dan signifikan terhadap kinerja lingkungan di negara-negara berpendapatan menengah atas pada tahun 2020 dan 2022.

5.2. Saran

5.2.1. Bagi Pemerintah

Berdasarkan hasil penelitian, saran yang dapat diberikan kepada pemerintah sebagai berikut:

1. Meningkatkan kualitas regulasi dan mekanisme penegakan hukum lingkungan melalui penguatan koherensi dan konsistensi kebijakan lintas sektor, serta mendorong transparansi dan akuntabilitas dalam proses

perumusan dan implementasi kebijakan guna mendukung peningkatan kinerja lingkungan.

2. Mendorong peningkatan kualitas pendidikan, terutama yang berkaitan dengan kesadaran dan literasi lingkungan sebagai upaya mendukung perbaikan kinerja lingkungan.

5.2.2. Bagi Penelitian Selanjutnya

Berdasarkan keterbatasan penelitian, saran untuk penelitian selanjutnya sebagai berikut:

1. Menambahkan indikator kelembagaan lain selain *Regulatory Quality Index*, seperti *Control of Corruption, Government Effectiveness, Political Stability and Absence of Violence/Terrorism, Rule of Law,* serta *Voice and Accountability.*
2. Memfokuskan penelitian pada negara atau kawasan tertentu agar memperoleh hasil yang lebih mendalam dan spesifik.
3. Menggunakan data dengan rentang waktu yang lebih panjang untuk menangkap dinamika hubungan antar variabel secara lebih komprehensif.

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LAMPIRAN

Lampiran 1 Data Penelitian

Negara	Tahun	EPI	RQI	GDPG	EDU
Albania	2020	49	45.23809	-3.313716	10.1
Albania	2022	47.1	43.86792	4.826688	10.2
Algeria	2020	44.8	3.809524	-5	7.2
Algeria	2022	29.6	6.132075	3.6	7.4
Argentina	2020	52.2	20	-9.900485	11.1
Argentina	2022	41.1	15.56604	5.26988	11.2
Armenia	2020	52.3	45.23809	-7.2	11.3
Armenia	2022	48.3	36.32076	12.6	11.3
Azerbaijan	2020	46.5	25.71428	-4.3	10.7
Azerbaijan	2022	38.6	32.54717	4.714802	11
Belarus	2020	53	10.47619	-0.672743	12.2
Belarus	2022	48.5	3.773585	-4.658396	12.3
Belize	2020	41.9	13.80952	-13.90291	8.9
Belize	2022	50	19.33962	9.652978	8.8
Bosnia and Herzegovina	2020	45.4	31.42857	-3.015095	10.5
Bosnia and Herzegovina	2022	39.4	31.13208	4.226811	11
Botswana	2020	40.4	57.61905	-8.728753	10.4
Botswana	2022	54	60.84906	5.486028	10.5
Brazil	2020	51.2	36.66667	-3.276759	8.3
Brazil	2022	43.6	29.71698	3.016694	8.4
China	2020	37.3	31.90476	2.238638	7.9
China	2022	28.4	21.22642	2.95067	8
Colombia	2020	52.9	48.09524	-7.185914	8.9
Colombia	2022	42.4	43.86792	7.288884	9
Costa Rica	2020	52.5	57.14286	-4.273354	8.8
Costa Rica	2022	46.3	58.96227	4.551492	8.8
Dominican Republic	2020	46.3	43.80952	-6.720239	9.2
Dominican Republic	2022	42.2	47.64151	4.858324	9.4
Ecuador	2020	51	39.52381	-9.245096	8.8
Ecuador	2022	46.5	40.56604	6.186139	9
El Salvador	2020	43.1	10.47619	-7.893101	7.2
El Salvador	2022	40.8	20.28302	2.799552	7.3

Equatorial Guinea	2020	38.1	36.66667	-4.791081	8.3
Equatorial Guinea	2022	44.8	20.75472	3.223508	8.3
Fiji	2020	34.4	1.428571	-17.03867	10.4
Fiji	2022	31.3	2.35849	19.79273	10.4
Gabon	2020	45.8	29.52381	-1.837761	9.6
Gabon	2022	49.7	29.71698	3.037614	9.7
Georgia	2020	41.3	9.523809	-6.290472	12.8
Georgia	2022	39.1	13.67925	10.95853	12.7
Guatemala	2020	31.8	72.38095	-1.785552	5.7
Guatemala	2022	28	26.41509	4.200156	5.8
Indonesia	2020	37.8	30.47619	-2.065512	8.6
Indonesia	2022	28.2	47.64151	5.307419	8.7
Iran	2020	48	47.14286	3.330288	10.7
Iran	2022	34.5	2.35849	3.776631	10.8
Iraq	2020	39.5	3.809524	-12.03679	6.7
Iraq	2022	27.8	3.773585	7.639811	6.8
Kazakhstan	2020	44.7	42.85714	-2.5	12.4
Kazakhstan	2022	40.9	39.15094	3.2	12.5
Malaysia	2020	47.9	61.90476	-5.456847	10.8
Malaysia	2022	35	61.32076	8.861822	11.1
Maldives	2020	35.6	10.47619	-32.90883	7.3
Maldives	2022	37.4	11.79245	13.82609	7.4
Marshall Islands	2020	30.8	9.047619	-2.772887	11.5
Marshall Islands	2022	36.2	16.50943	-1.118068	11.6
Mauritius	2020	45.1	73.80952	-14.54654	10
Mauritius	2022	44.8	75	8.879885	10.1
Mexico	2020	52.6	38.57143	-8.354035	9.2
Mexico	2022	45.5	32.54717	3.689111	9.3
Moldova	2020	44.4	38.57143	-8.275978	11.8
Moldova	2022	42.7	41.98113	-5.015482	11.8
Mongolia	2020	32.2	36.66667	-4.557752	9.4
Mongolia	2022	29.6	29.71698	5.03271	9.4
Montenegro	2020	46.3	52.85714	-15.30689	12.6
Montenegro	2022	46.9	54.24528	6.40668	10.2
Namibia	2020	40.2	38.57143	-8.101402	7.2
Namibia	2022	50.9	38.20755	5.349664	7.3

North Macedonia	2020	55.4	54.76191	-4.68845	10.2
North Macedonia	2022	54.3	53.30189	2.758884	10.2
Paraguay	2020	46.4	32.38095	-0.819785	8.9
Paraguay	2022	40.9	31.60377	0.176038	10.2
Peru	2020	44	57.14286	-10.93331	10
Peru	2022	39.8	47.64151	2.7255	10.2
Serbia	2020	55.2	41.42857	-0.950024	11.5
Serbia	2022	43.9	43.39622	2.630986	11.6
South Africa	2020	43.1	40.47619	-6.168918	10.6
South Africa	2022	37.2	31.60377	1.91148	11.6
Thailand	2020	45.4	41.42857	-6.050038	8.8
Thailand	2022	38.1	44.33962	2.462769	9
Tonga	2020	45.1	16.66667	1.783395	10.9
Tonga	2022	43.8	20.28302	0.362602	9
Turkey	2020	42.6	38.57143	1.859873	8.8
Turkey	2022	26.3	29.71698	5.533428	9
Ukraine	2020	49.5	30.47619	-3.752818	11.1
Ukraine	2022	49.6	22.64151	-28.75858	11.1

Lampiran 2 Hasil Regresi Data Panel

Hasil Regresi *Common Effect Model* (CEM)

Model 1

```
. reg epi rqi
```

Source	SS	df	MS		
Model	460.170655	1	460.170655	Number of obs	= 86
Residual	3951.88156	84	47.0462091	F(1, 84)	= 9.78
				Prob > F	= 0.0024
Total	4412.05222	85	51.9064967	R-squared	= 0.1043
				Adj R-squared	= 0.0936
				Root MSE	= 6.859

epi	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
rqi	.1301795	.0416241	3.13	0.002	.0474053	.2129537
_cons	38.37806	1.583157	24.24	0.000	35.22978	41.52634

Model 2

```
. reg epi rqi gdpg
```

Source	SS	df	MS		
Model	651.556919	2	325.778459	Number of obs	= 86
Residual	3760.4953	83	45.3071723	F(2, 83)	= 7.19
				Prob > F	= 0.0013
Total	4412.05222	85	51.9064967	R-squared	= 0.1477
				Adj R-squared	= 0.1271
				Root MSE	= 6.7311

epi	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
rqi	.1318606	.0408558	3.23	0.002	.0506001	.2131211
gdpg	-.1813948	.0882578	-2.06	0.043	-.356936	-.0058537
_cons	38.12498	1.558493	24.46	0.000	35.0252	41.22476

Model 3

```
. reg epi rqi gdpg edu
```

Source	SS	df	MS		
Model	953.305601	3	317.768534	Number of obs	= 86
Residual	3458.74661	82	42.1798368	F(3, 82)	= 7.53
				Prob > F	= 0.0002
Total	4412.05222	85	51.9064967	R-squared	= 0.2161
				Adj R-squared	= 0.1874
				Root MSE	= 6.4946

epi	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
rqi	.1239811	.0395305	3.14	0.002	.0453424	.2026198
gdpg	-.1776809	.0851686	-2.09	0.040	-.3471085	-.0082533
edu	1.142439	.4271327	2.67	0.009	.2927361	1.992142
_cons	27.27911	4.324872	6.31	0.000	18.67556	35.88265

Hasil Regresi *Fixed Effect Model* (FEM)

Model 1

```
. xtreg epi rqi, fe

Fixed-effects (within) regression               Number of obs      =        86
Group variable: country                         Number of groups   =        43

R-sq:                                           Obs per group:
     within  = 0.0792                                         min =         2
     between = 0.1173                                         avg =       2.0
     overall = 0.1043                                         max =         2

                                                F(1,42)            =      3.61
corr(u_i, Xb)  = -0.1701                        Prob > F           =    0.0642
```

epi	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
rqi	.1856536	.0976671	1.90	0.064	-.0114465	.3827538
_cons	36.51254	3.332412	10.96	0.000	29.78746	43.23762
sigma_u	5.8637162					
sigma_e	5.2264409					
rho	.55727402	(fraction of variance due to u_i)				

F test that all u_i=0: F(42, 42) = 2.44 Prob > F = 0.0023

Model 2

```
. xtreg epi rqi gdpg, fe

Fixed-effects (within) regression               Number of obs      =        86
Group variable: country                         Number of groups   =        43

R-sq:                                           Obs per group:
     within  = 0.1447                                         min =         2
     between = 0.1393                                         avg =       2.0
     overall = 0.1385                                         max =         2

                                                F(2,41)            =      3.47
corr(u_i, Xb)  = -0.1276                        Prob > F           =    0.0406
```

epi	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
rqi	.1823005	.0952913	1.91	0.063	-.0101441	.3747452
gdpg	-.130308	.0735628	-1.77	0.084	-.278871	.0182551
_cons	36.4841	3.250748	11.22	0.000	29.91909	43.04912
sigma_u	5.7532233					
sigma_e	5.0982993					
rho	.56013415	(fraction of variance due to u_i)				

F test that all u_i=0: F(42, 41) = 2.47 Prob > F = 0.0023

Model 3

```
. xtreg epi rqi gdpg edu, fe

Fixed-effects (within) regression               Number of obs      =        86
Group variable: country                         Number of groups   =        43

R-sq:                                           Obs per group:
     within  = 0.1808                                         min =         2
     between = 0.0111                                         avg =       2.0
     overall = 0.0002                                         max =         2

                                                F(3,40)            =      2.94
corr(u_i, Xb)  = -0.6443                        Prob > F           =    0.0445

------------------------------------------------------------------------------
         epi |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         rqi |   .1682777   .0950061     1.77   0.084    -.0237367    .3602921
        gdpg |  -.1305618   .0728882    -1.79   0.081    -.2778744    .0167508
         edu |  -2.652113   1.997577    -1.33   0.192    -6.689368    1.385141
       _cons |     62.758   20.04995     3.13   0.003     22.23553    103.2805
-------------+----------------------------------------------------------------
     sigma_u |  8.3073099
     sigma_e |  5.0515308
         rho |  .73005252   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0: F(42, 40) = 2.27                     Prob > F = 0.0051
```

Hasil Regresi *Random Effect Model* (REM)

Model 1

```
. xtreg epi rqi, re

Random-effects GLS regression                   Number of obs      =        86
Group variable: country                         Number of groups   =        43

R-sq:                                           Obs per group:
     within  = 0.0792                                         min =         2
     between = 0.1173                                         avg =       2.0
     overall = 0.1043                                         max =         2

                                                Wald chi2(1)       =      8.82
corr(u_i, X)   = 0 (assumed)                    Prob > chi2        =    0.0030

------------------------------------------------------------------------------
         epi |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         rqi |   .1377364   .0463743     2.97   0.003     .0468445    .2286284
       _cons |   38.12393   1.793927    21.25   0.000     34.60789    41.63996
-------------+----------------------------------------------------------------
     sigma_u |  4.5193734
     sigma_e |  5.2264409
         rho |  .42782899   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

Model 2

```
. xtreg epi rqi gdpg, re

Random-effects GLS regression                   Number of obs     =         86
Group variable: country                         Number of groups  =         43

R-sq:                                           Obs per group:
     within  = 0.1383                                         min =          2
     between = 0.1495                                         avg =        2.0
     overall = 0.1464                                         max =          2

                                                Wald chi2(2)      =      13.96
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =     0.0009
```

epi	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
rqi	.138514	.0454295	3.05	0.002	.0494738	.2275543
gdpg	-.1534823	.0704166	-2.18	0.029	-.2914962	-.0154683
_cons	37.93147	1.759912	21.55	0.000	34.48211	41.38084
sigma_u	4.4410286					
sigma_e	5.0982993					
rho	.4314244	(fraction of variance due to u_i)				

Model 3

```
. xtreg epi rqi gdpg edu, re

Random-effects GLS regression                   Number of obs     =         86
Group variable: country                         Number of groups  =         43

R-sq:                                           Obs per group:
     within  = 0.1051                                         min =          2
     between = 0.2586                                         avg =        2.0
     overall = 0.2141                                         max =          2

                                                Wald chi2(3)      =      18.55
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =     0.0003
```

epi	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
rqi	.1321338	.044119	2.99	0.003	.0456621	.2186056
gdpg	-.154071	.0706362	-2.18	0.029	-.2925153	-.0156266
edu	1.004035	.4991532	2.01	0.044	.0257131	1.982358
_cons	28.37706	5.05916	5.61	0.000	18.46129	38.29283
sigma_u	4.0454619					
sigma_e	5.0515308					
rho	.39074274	(fraction of variance due to u_i)				

Lampiran 3 Pemilihan Model Regresi Data Panel

Hasil Uji Chow

Model 1

```
F test that all u_i=0: F(42, 42) = 2.44                     Prob > F = 0.0023
```

Model 2

```
F test that all u_i=0: F(42, 41) = 2.47                     Prob > F = 0.0023
```

Model 3

```
F test that all u_i=0: F(42, 40) = 2.27                     Prob > F = 0.0051
```

Hasil Uji Hausman

Model 1

```
. hausman fe1 re1

                 ---- Coefficients ----
             |      (b)          (B)            (b-B)     sqrt(diag(V_b-V_B))
             |       fe1          re1         Difference          S.E.
-------------+----------------------------------------------------------------
         rqi |    .1856536     .1377364        .0479172        .0859551
------------------------------------------------------------------------------
                           b = consistent under Ho and Ha; obtained from xtreg
            B = inconsistent under Ha, efficient under Ho; obtained from xtreg

    Test:  Ho:  difference in coefficients not systematic

                  chi2(1) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                          =        0.31
                Prob>chi2 =      0.5772
```

Model 2

```
. hausman fe2 re2

                 ---- Coefficients ----
             |      (b)          (B)            (b-B)     sqrt(diag(V_b-V_B))
             |       fe2          re2         Difference          S.E.
-------------+----------------------------------------------------------------
         rqi |    .1823005      .138514        .0437865        .0837651
        gdpg |   -.130308    -.1534823        .0231743        .0212835
------------------------------------------------------------------------------
                           b = consistent under Ho and Ha; obtained from xtreg
            B = inconsistent under Ha, efficient under Ho; obtained from xtreg

    Test:  Ho:  difference in coefficients not systematic

                  chi2(2) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                          =        1.37
                Prob>chi2 =      0.5048
```

Model 3

```
. hausman fe3 re3

                 ---- Coefficients ----
             |      (b)          (B)            (b-B)     sqrt(diag(V_b-V_B))
             |       fe3          re3       Difference          S.E.
-------------+------------------------------------------------------------
         rqi |    .1682777     .1321338       .0361438        .0841407
        gdpg |   -.1305618     -.154071       .0235092        .0179783
         edu |   -2.652113     1.004035      -3.656149        1.934208
------------------------------------------------------------------------------
                           b = consistent under Ho and Ha; obtained from xtreg
            B = inconsistent under Ha, efficient under Ho; obtained from xtreg

    Test:  Ho:  difference in coefficients not systematic

                  chi2(3) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                          =          5.59
                Prob>chi2 =        0.1332
```