

APPENDIX A

Information about nuclear power plants

Nuclear Power Plants

A "Nuclear Power Plant" is a power plant that produces electricity from a nuclear fission reaction by splitting atom to heating it in steam from boiling water.

The cost of electricity

Nuclear power plants produce electricity at the cheapest cost compared with other types of power plants. And nuclear power plants use less fuel but can give off lots of energy.

Global Warming

Nuclear energy is clean energy, which has been recognized by Green Peace. The white smoke emitted from nuclear power plants is only steam and carbon dioxide, and is pollution-free. Nuclear fuel is safe from the greenhouse effect and acid rain. It does not cause temperatures to rise globally like other power plants. In addition, construction of a nuclear power plant use little area compared to the construction of dam, for example. This mean the construction of a nuclear power plant is less likely to destroy forest areas.

The Radioactive Estimates

Radioactive Estimates	
Coal	4%
Nuclear	2.5%
Geothermal Energy	2%
Oil	0.5%
Natural Gas	0.03%

Source: Energy Policy and Planning Office, Ministry of Energy

The table shows radioactive estimates from sources of electrical production. Nuclear power plants have less radioactive emissions than coal energy. The study found that people living near coal power plants received 100 times more radiation than people living near nuclear power

plants. In addition, a chest X-ray has more than 80 times radiation compared with people who lived next to a nuclear power plant for one year.

Nuclear Power Plant Safety

Nuclear power plants have been certified for safe construction from the IAEA, which has a standard and control security of nuclear power plants. The Chernobyl Nuclear Power Plant in Ukraine melt-down was not in the standards of the IAEA. So, we assure that the technology and safety standards of nuclear power plants are international.



Nuclear Fuel

Presently, nuclear fuel can be recycled to produce nuclear energy again, which is very popular because it reduces the amount of nuclear fuel having been used. It can reduce the cost of electricity from nuclear power plant.

Accident from Nuclear Power Plants

Nuclear power plant accidents happen mostly from operation of the reactor, which only happened in the nuclear power plant. In an emergency case, the nuclear reactor can stop working without the system administrator. And it is a great misunderstanding about nuclear power plant accidents being equal to the devastating power of an atomic bomb. The atomic bomb required more than 90% of pure uranium. But nuclear power plants used only about 3% to 10% concentration of uranium to produce electricity.

Advantages and Disadvantages of other Power Plants

Using natural gas in electrical production

Advantages

- ▶ Natural gas is a high effective petroleum and has perfect burn.
- ▶ Natural gas can be found in Thailand that helps reduce the import of energy and other fuels.

Disadvantages

- ▶ The amount of natural gas in Thailand is limited.
- ▶ The price of natural gas is flexible, depending on oil price.



Using coal in electrical production

Advantages

- ▶ The cost of coal in electric production is lower.
- ▶ There is a lot of reserved coal.

Disadvantages

- ▶ The coal is imported.
- ▶ The burning of coal causes air pollution, so it is necessary to use highly expensive technology to control air pollution.



Using biomass as fuel in electrical production

Advantages

- ▶ Waste from the agricultural process is used as a renewable energy to produce electricity.
- ▶ Electrical production from biomass is environmentally friendly.

Disadvantages

- ▶ The amount of biomass is not certain because it is from the agricultural process.
- ▶ The price of biomass is flexible and its tendency is higher.

Using solar energy in electrical production

Advantages

- ▶ Solar energy is a huge resource that can be used endlessly.
- ▶ It is a clean resource that does not cause any pollution
- ▶ It can be used in faraway lands.
- ▶ There are no expenses of fuel.

Disadvantages

- ▶ The intensity of sunlight is not stable, depending on the weather.
- ▶ Solar modules and equipment are expensive.
- ▶ The period of collecting energy in the battery is too short.

Using hydro power in electrical production

Advantages

- ▶ It is a clean resource that does not cause any pollution.
- ▶ It is a huge resource of electrical production.
- ▶ There are no expenses of fuel.

Disadvantages

- ▶ It has a huge construction requirement.
- ▶ The expense of dam construction is very high.

Using wind power in electrical production

Advantages

- ▶ There are no expenses of fuel.
- ▶ It is a clean resource that does not cause any pollution.
- ▶ The first expense is construction of electrical production resource.



Disadvantages

- ▶ It depends on the weather.
- ▶ The battery is expensive.
- ▶ The speed of wind in Thailand is quite low and insufficient for electrical production.



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APPENDIX B

Questionnaire

The study: Public Decision Making on Nuclear Power Plant Policy in Thailand under Asymmetric Information.

Part 1: Overview of the respondents.

1) Name account of Facebook :

2) Gender: 1.Male ☐ 2.Female ☐

3) E-mail:

4)Age:

☐ 1) Less than or equal to 20 years

☐ 2) 21-30 years

☐ 3) 31-40 years

☐ 4) 41-50 years

☐ 5) 51-60 years

☐ 6) More than 60 years

5) Education:

☐ 1) Lower than bachelor degree

☐ 2) Bachelor degree

☐ 3) Master degree or a above

Part 2: Knowledge and understanding about nuclear power plant.

1) Nuclear power plant has the slightest emissions pollution.

☐ Yes

☐ No

☐ Uncertain

2) Nuclear power plant does not resulted with acid rain.

☐ Yes ☐ No ☐ Uncertain

3) Nuclear power plant use a chain reaction to produce electricity by splitting atom to heating it in steam from boiling water.

☐ Yes ☐ No ☐ Uncertain

4) The accident from nuclear power plant does not cause an atomic bomb.

☐ Yes ☐ No ☐ Uncertain

5) The white smoke that coming out from nuclear power plant is not dangerous to smell.

☐ Yes ☐ No ☐ Uncertain

6) The nuclear power plant as a solution to solve the problems of global warming.

☐ Yes ☐ No ☐ Uncertain

7) Nuclear power plant has beneficial more than disadvantage effect.

☐ Yes ☐ No ☐ Uncertain

8) People who living near nuclear power plant during 1 year will get radiation less than who receiving X-ray 80 times per each time.

☐ Yes ☐ No ☐ Uncertain

9) Nuclear power plants have been certified to construct and safety from IAEA.

☐ Yes ☐ No ☐ Uncertain

10) The nuclear fuel can be recycled to produce nuclear energy.

☐ Yes ☐ No ☐ Uncertain

11) Nuclear power plant can produce the cheapest price of electricity than other power plants.

☐ Yes ☐ No ☐ Uncertain

12) Nowadays, generally nuclear power plants has a safety standards are better than the Chernobyl power plant.

☐ Yes ☐ No ☐ Uncertain

13) The accident does not come from nuclear reactor, causing minor impact.

☐ Yes ☐ No ☐ Uncertain

14) The amount of radiation from nuclear power plant is not harmful to the health of people living near nuclear power plant

☐ Yes ☐ No ☐ Uncertain

15) In emergency case, nuclear reactor can stop to work without system administrator.

☐ Yes ☐ No ☐ Uncertain

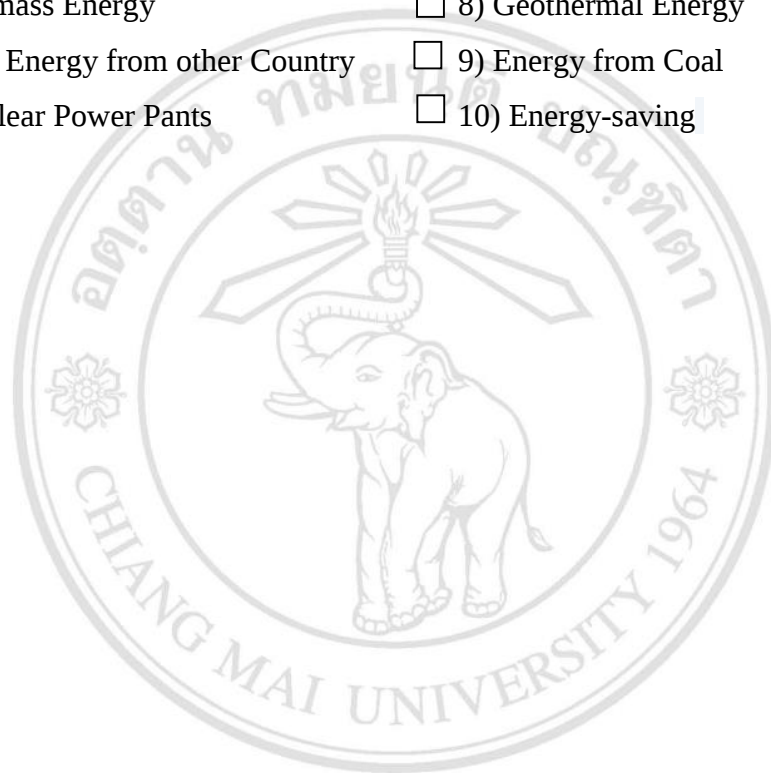
Part 3: The opinions and attitudes about nuclear power plant.

Question	Level of Scores										
	Disagree			Neutral			Agree			Strongly Agree	
	0	1	2	3	4	5	6	7	8	9	10
16) Do you think Thailand has sufficient sources to produce of electricity over the next 30 years?											
17) Do you willing to construction of nuclear power plants near your community?											
18) Do you think that nuclear power plants to make more employment?											
19) Do you think Thailand ready to construct nuclear power plants?											
20) Do you agree to construct nuclear power plants in Thailand?											

Part 4: Review of sources to produce of electricity over the next 30 years.

21) Which approach do you think will produce enough electricity in the country in the next 30 years?

- | | |
|---|--|
| ☐ 1) Wind Power | ☐ 6) Water Energy |
| ☐ 2) Solar Energy | ☐ 7) Natural Gas Energy |
| ☐ 3) Biomass Energy | ☐ 8) Geothermal Energy |
| ☐ 4) Buy Energy from other Country | ☐ 9) Energy from Coal |
| ☐ 5) Nuclear Power Plants | ☐ 10) Energy-saving |



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APPENDIX C

The Results of Original Data

Appendix C-1: The respondents choose nuclear power plant as a way to help generate electricity in the next 30 years(Y).

Variables OLS
 Number of obs 400
 LR chi2(29) 80.45
 Prob> chi2 0.0000
 Log likelihood -184.70948
 Pseudo R2 0.1788

Variables	Maximum Likelihood Estimate			
	Coefficient	Standard Error	T-stat	Prob
_cons	-0.43678	0.258631	-1.69	0.091
P1	0.229267	0.291403	0.79	0.431
P2	0.518328	0.302831	1.71	0.087
P3	-0.21062	0.297613	-0.71	0.479
P4	0.589093	0.372114	1.58	0.113
P5	-0.05297	0.464525	-0.11	0.909
P6	-0.19822	0.577014	-0.34	0.731
P7	-0.16176	0.286933	-0.56	0.573
P8	0.39066	0.29136	1.34	0.18
P9	-0.09913	0.316016	-0.31	0.754
P10	1.022858	0.298473	3.43	0.001
P11	0.730429	0.330705	2.21	0.027
P12	0.403224	0.31863	1.27	0.206
P13	0.906792	0.344353	2.63	0.008
P14	0.75829	0.303587	2.5	0.012
P15	-0.04071	0.292266	-0.14	0.889

Sources: Calculating by StataSE13

Appendix C-2: The respondents choose nuclear power plant as a way to help generate electricity in the next 30 years(Y).

Variables OLS
 Number of obs 400
 LR chi2(29) 25.14
 Prob> chi2 0.0332
 Log likelihood -212.36549
 Pseudo R2 0.0559

Variables	Maximum Likelihood Estimate			
	Coefficient	Standard Error	T-stat	Prob
Constant	0.586974	0.18395	3.19	0.001
A1	0.122591	0.28595	0.43	0.668
A2	0.264416	0.346556	0.76	0.445
A3	0.541428	0.311458	1.74	0.082
A4	-0.14193	0.460621	-0.31	0.758
A5	0.236138	0.421693	0.56	0.575
A6	0.378779	0.390553	0.97	0.332
A7	0.040259	0.306509	0.13	0.896
A8	-0.37276	0.42934	-0.87	0.385
A9	0.099347	0.26482	0.38	0.708
A10	0.255358	0.400577	0.64	0.524
A11	0.623156	0.307746	2.02	0.043
A12	0.655676	0.450013	1.46	0.145
A13	-0.33041	0.275304	-1.2	0.23
A14	0.306896	0.40198	0.76	0.445
A15	0	(omitted)		

Sources: Calculating by StataSE13

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Appendix C-3: The respondents choose solar energy as a way to help generate electricity in the next 30 years(S).

Variables OLS
 Number of obs 400
 LR chi2(29) 49.59
 Prob> chi2 0.0000
 Log likelihood -155.96398
 Pseudo R2 0.1372

Variables	Maximum Likelihood Estimate			
	Coefficient	Standard Error	T-stat	Prob
_cons	-0.26619	0.273612	-0.97	0.331
P1	-0.03162	0.326956	-0.1	0.923
P2	-0.5465	0.348333	-1.57	0.117
P3	0.357181	0.332375	1.07	0.283
P4	-0.97033	0.46596	-2.08	0.037
P5	0.897049	0.550985	1.63	0.104
P6	-0.85216	0.669402	-1.27	0.203
P7	-0.13854	0.323142	-0.43	0.668
P8	-0.47002	0.335356	-1.4	0.161
P9	0.195186	0.35552	0.55	0.583
P10	-0.93221	0.343637	-2.71	0.007
P11	-0.5454	0.371964	-1.47	0.143
P12	-0.59392	0.379025	-1.57	0.117
P13	-0.7313	0.388597	-1.88	0.06
P14	-0.59112	0.342987	-1.72	0.085
P15	0.047946	0.32646	0.15	0.883

Sources: Calculating by StataSE13

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Appendix C-4: The respondents choose solar energy as a way to help generate electricity in the next 30 years(S).

Variables OLS
 Number of obs 400
 LR chi2(29) 27.19
 Prob> chi2 0.0182
 Log likelihood -167.16309
 Pseudo R2 0.0752

Variables	Maximum Likelihood Estimate			
	Coefficient	Standard Error	T-stat	Prob
_cons	-1.09069	0.213034	-5.12	0
A1	0.368035	0.321882	1.14	0.253
A2	0.047868	0.398519	0.12	0.904
A3	-0.59061	0.373652	-1.58	0.114
A4	-0.47948	0.655688	-0.73	0.465
A5	-0.29023	0.519094	-0.56	0.576
A6	-0.61315	0.499433	-1.23	0.22
A7	0.023246	0.358575	0.06	0.948
A8	0.310271	0.514664	0.6	0.547
A9	-0.09574	0.308645	-0.31	0.756
A10	0.096098	0.443263	0.22	0.828
A11	-0.71184	0.378384	-1.88	0.06
A12	-0.79348	0.576887	-1.38	0.169
A13	0.056205	0.328925	0.17	0.864
A14	-1.25151	0.634711	-1.97	0.049
A15	0	(omitted)		

Sources: Calculating by StataSE13

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Appendix C-5: The respondents to choose other alternatives as a way to help generate electricity in the next 30 years (Z).

Variables OLS
 Number of obs 400
 LR chi2(29) 70.40
 Prob> chi2 0.0000
 Log likelihood -241.87927
 Pseudo R2 0.1270

Variables	Maximum Likelihood Estimate			
	Coefficient	Standard Error	T-stat	Prob
_cons	-1.48308	0.279333	-5.31	0
P1	0.433943	0.238431	1.82	0.069
P2	0.202114	0.24161	0.84	0.403
P3	0.194103	0.243875	0.8	0.426
P4	0.18197	0.319609	0.57	0.569
P5	-0.04578	0.346944	-0.13	0.895
P6	0.212499	0.466102	0.46	0.648
P7	0.665799	0.238908	2.79	0.005
P8	0.043572	0.234304	0.19	0.852
P9	-0.07079	0.260201	-0.27	0.786
P10	0.539696	0.235115	2.3	0.022
P11	0.46384	0.253174	1.83	0.067
P12	0.134707	0.250742	0.54	0.591
P13	0.263705	0.252814	1.04	0.297
P14	0.545424	0.248112	2.2	0.028
P15	0.335225	0.289802	1.16	0.247
A1	-0.01434	0.293359	-0.05	0.961

Sources: Calculating by StataSE13

Appendix C-6: The respondents to choose other alternatives as a way to help generate electricity in the next 30 years (Z).

Variables OLS
 Number of obs 400
 LR chi2(29) 22.43
 Prob> chi2 0.0701
 Log likelihood -265.86217
 Pseudo R2 0.0405

Variables	Maximum Likelihood Estimate			
	Coefficient	Standard Error	T-stat	Prob
_cons	0.162903	0.16432	0.99	0.322
A1	-0.2175	0.23926	-0.91	0.363
A2	-0.18889	0.280189	-0.67	0.5
A3	0.013667	0.248893	0.05	0.956
A4	-0.16703	0.366965	-0.46	0.649
A5	0.282741	0.336003	0.84	0.4
A6	-0.62068	0.308317	-2.01	0.044
A7	-0.72404	0.258392	-2.8	0.005
A8	0.217818	0.350082	0.62	0.534
A9	0.078074	0.228394	0.34	0.732
A10	0.109153	0.319483	0.34	0.733
A11	0.492116	0.251594	1.96	0.05
A12	0.321136	0.324285	0.99	0.322
A13	0.148251	0.237725	0.62	0.533
A14	-0.08084	0.314488	-0.26	0.797
A15	0	(omitted)		

Sources: Calculating by StataSE13

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Appendix C-7: The difference scores of opinion in topic Thailand has sufficient sources to produce electricity over the next 30 years (DeltaX₁₆).

Variables OLS
 Number of obs 400
 LR chi2(29) 30.78
 Prob> chi2 0.0094
 Log likelihood -177.64277
 Pseudo R2 0.0797

Variables	Maximum Likelihood Estimate			
	Coefficient	Standard Error	T-stat	Prob
_cons	0.446558	0.257664	1.73	0.083
P1	0.287919	0.302145	0.95	0.341
P2	0.202895	0.312469	0.65	0.516
P3	0.234508	0.315219	0.74	0.457
P4	1.097891	0.427739	2.57	0.01
P5	-0.17484	0.495431	-0.35	0.724
P6	0.814531	0.623663	1.31	0.192
P7	0.025988	0.30243	0.09	0.932
P8	-0.07451	0.294972	-0.25	0.801
P9	0.199688	0.338581	0.59	0.555
P10	-0.04796	0.294285	-0.16	0.871
P11	-0.19469	0.320096	-0.61	0.543
P12	0.801121	0.353834	2.26	0.024
P13	0.025511	0.318088	0.08	0.936
P14	-0.00567	0.301678	-0.02	0.985
P15	0.265631	0.307135	0.86	0.387

Sources: Calculating by StataSE13

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Appendix C-8: The difference scores of opinion in topic Thailand has sufficient sources to produce electricity over the next 30 years (DeltaX₁₆).

Variables OLS
 Number of obs 400
 LR chi2(29) 8.49
 Prob> chi2 0.8625
 Log likelihood -188.78767
 Pseudo R2 0.0220

Variables	Maximum Likelihood Estimate			
	Coefficient	Standard Error	T-stat	Prob
_cons	1.527229	0.208425	7.33	0
A1	-0.06211	0.301162	-0.21	0.837
A2	0.047978	0.346623	0.14	0.89
A3	-0.3517	0.304125	-1.16	0.248
A4	-0.78413	0.409782	-1.91	0.056
A5	-0.18889	0.400519	-0.47	0.637
A6	0.123825	0.385715	0.32	0.748
A7	-0.23015	0.314973	-0.73	0.465
A8	-0.02402	0.431575	-0.06	0.956
A9	0.057474	0.290638	0.2	0.843
A10	0.197378	0.412635	0.48	0.632
A11	0.493463	0.331866	1.49	0.137
A12	-0.13283	0.388252	-0.34	0.732
A13	0.087088	0.30452	0.29	0.775
A14	0.217413	0.406978	0.53	0.593
A15	0	(omitted)		

Sources: Calculating by StataSE13

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Appendix C-9: The difference scores of opinion in topic the respondents willing to accept construction of a nuclear power plants near their community (DeltaX₁₇).

Variables OLS
 Number of obs 400
 LR chi2(29) 29.66
 Prob> chi2 0.0132
 Log likelihood -148.95965
 Pseudo R2 0.0905

Variables	Maximum Likelihood Estimate			
	Coefficient	Standard Error	T-stat	Prob
_cons	0.821358	0.286247	2.87	0.004
P1	0.322347	0.343645	0.94	0.348
P2	-0.5155	0.348953	-1.48	0.14
P3	0.730798	0.376713	1.94	0.052
P4	0.77042	0.45684	1.69	0.092
P5	-0.27638	0.520828	-0.53	0.596
P6	0.827767	0.682132	1.21	0.225
P7	0.566816	0.362011	1.57	0.117
P8	0.33099	0.341081	0.97	0.332
P9	0.088032	0.390473	0.23	0.822
P10	-0.10269	0.326046	-0.31	0.753
P11	0.727063	0.40472	1.8	0.072
P12	-0.26314	0.351712	-0.75	0.454
P13	0.565388	0.388852	1.45	0.146
P14	-0.23411	0.334434	-0.7	0.484
P15	0.220458	0.345679	0.64	0.524

Sources: Calculating by StataSE13

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Appendix C-10: The difference scores of opinion in topic the respondents willing to accept construction of a nuclear power plants near their community (DeltaX₁₇).

Variables OLS
 Number of obs 400
 LR chi2(29) 11.70
 Prob> chi2 0.6306
 Log likelihood -157.94153
 Pseudo R2 0.0357

Variables	Maximum Likelihood Estimate			
	Coefficient	Standard Error	T-stat	Prob
_cons	1.929184	0.240168	8.03	0
A1	0.087571	0.337956	0.26	0.796
A2	0.047205	0.39627	0.12	0.905
A3	0.038466	0.351393	0.11	0.913
A4	-0.28245	0.484738	-0.58	0.56
A5	-0.37629	0.440358	-0.85	0.393
A6	-0.45859	0.408606	-1.12	0.262
A7	0.166484	0.368128	0.45	0.651
A8	-0.15921	0.472747	-0.34	0.736
A9	-0.3174	0.320102	-0.99	0.321
A10	0.036878	0.439749	0.08	0.933
A11	0.398249	0.363247	1.1	0.273
A12	-0.15097	0.430385	-0.35	0.726
A13	-0.36206	0.322766	-1.12	0.262
A14	1.310678	0.593994	2.21	0.027
A15	0	(omitted)		

Sources: Calculating by StataSE13

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Appendix C-11: The difference scores of opinion in topic the respondents think that nuclear power plants make more employment (DeltaX₁₈).

Variables OLS
 Number of obs 400
 LR chi2(29) 21.65
 Prob> chi2 0.1174
 Log likelihood -165.04522
 Pseudo R2 0.0615

Variables	Maximum Likelihood Estimate			
	Coefficient	Standard Error	T-stat	Prob
_cons	0.776916	0.273121	2.84	0.004
P1	0.299322	0.318263	0.94	0.347
P2	0.103689	0.326957	0.32	0.751
P3	0.411753	0.333632	1.23	0.217
P4	0.308347	0.39809	0.77	0.439
P5	0.521122	0.4994	1.04	0.297
P6	-0.42368	0.627311	-0.68	0.499
P7	0.427276	0.330809	1.29	0.196
P8	0.227754	0.315555	0.72	0.47
P9	-0.02525	0.352763	-0.07	0.943
P10	-0.0081	0.307634	-0.03	0.979
P11	-0.01818	0.345988	-0.05	0.958
P12	-0.13785	0.330289	-0.42	0.676
P13	-0.03907	0.332103	-0.12	0.906
P14	0.044841	0.320348	0.14	0.889
P15	0.513949	0.337264	1.52	0.128

Sources: Calculating by StataSE13

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Appendix C-12: The difference scores of opinion in topic the respondents think that nuclear power plants make more employment (DeltaX₁₈).

Variables OLS
 Number of obs 400
 LR chi2(29) 24.38
 Prob> chi2 0.0413
 Log likelihood -163.68032
 Pseudo R2 0.0693

Variables	Maximum Likelihood Estimate			
	Coefficient	Standard Error	T-stat	Prob
_cons	1.966451	0.239561	8.21	0
A1	-0.09758	0.321385	-0.3	0.761
A2	-0.10075	0.376415	-0.27	0.789
A3	0.447193	0.353798	1.26	0.206
A4	1.145934	0.56824	2.02	0.044
A5	0.349052	0.48008	0.73	0.467
A6	-1.16792	0.365992	-3.19	0.001
A7	-0.26256	0.33284	-0.79	0.43
A8	-0.60374	0.419089	-1.44	0.15
A9	-0.16469	0.308145	-0.53	0.593
A10	-0.47202	0.391124	-1.21	0.228
A11	-0.13237	0.328289	-0.4	0.687
A12	0.716322	0.478107	1.5	0.134
A13	0.147187	0.328958	0.45	0.655
A14	-0.03311	0.421327	-0.08	0.937
A15	0	(omitted)		

Sources: Calculating by StataSE13

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Appendix C-13: The difference scores of opinion in topic Thailand is ready to construct nuclear power plants (DeltaX₁₉).

Variables OLS
 Number of obs 400
 LR chi2(29) 24.90
 Prob> chi2 0.0514
 Log likelihood -153.1272
 Pseudo R2 0.0752

Variables	Maximum Likelihood Estimate			
	Coefficient	Standard Error	T-stat	Prob
_cons	0.707458	0.27946	2.53	0.011
P1	0.317277	0.341559	0.93	0.353
P2	0.35931	0.352739	1.02	0.308
P3	-0.10149	0.339566	-0.3	0.765
P4	0.275071	0.41387	0.66	0.506
P5	-0.1844	0.492481	-0.37	0.708
P6	0.938434	0.689428	1.36	0.173
P7	0.714752	0.357517	2	0.046
P8	0.075766	0.32691	0.23	0.817
P9	0.112058	0.369039	0.3	0.761
P10	0.387285	0.333151	1.16	0.245
P11	-0.00634	0.36246	-0.02	0.986
P12	-0.09431	0.354326	-0.27	0.79
P13	0.23604	0.365212	0.65	0.518
P14	0.605495	0.355922	1.7	0.089
P15	0.008811	0.337294	0.03	0.979

Sources: Calculating by StataSE13

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Appendix C-14: The difference scores of opinion in topic Thailand is ready to construct nuclear power plants (DeltaX₁₉).

Variables OLS
 Number of obs 400
 LR chi2(29) 19.60
 Prob> chi2 0.1433
 Log likelihood -155.77592
 Pseudo R2 0.0592

Variables	Maximum Likelihood Estimate			
	Coefficient	Standard Error	T-stat	Prob
_cons	1.875835	0.235847	7.95	0
A1	0.562379	0.357948	1.57	0.116
A2	-0.1295	0.385758	-0.34	0.737
A3	0.513568	0.376945	1.36	0.173
A4	0.259779	0.50848	0.51	0.609
A5	0.194527	0.486002	0.4	0.689
A6	-0.84613	0.392965	-2.15	0.031
A7	-0.43321	0.346371	-1.25	0.211
A8	-0.21713	0.456322	-0.48	0.634
A9	-0.13936	0.324156	-0.43	0.667
A10	-0.67563	0.39516	-1.71	0.087
A11	0.366463	0.363531	1.01	0.313
A12	-0.37984	0.425785	-0.89	0.372
A13	0.040655	0.340907	0.12	0.905
A14	0.501731	0.501449	1	0.317
A15	0	(omitted)		

Sources: Calculating by StataSE13

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Appendix C-15: The difference scores of opinion in topic the respondents agree to construct nuclear power plants in Thailand (DeltaX₂₀).

Variables OLS
 Number of obs 400
 LR chi2(29) 41.69
 Prob> chi2 0.0003
 Log likelihood -127.90628
 Pseudo R2 0.1401

Variables	Maximum Likelihood Estimate			
	Coefficient	Standard Error	T-stat	Prob
_cons	0.897192	0.305773	2.93	0.003
P1	0.605724	0.38247	1.58	0.113
P2	-0.06604	0.391328	-0.17	0.866
P3	0.050939	0.378923	0.13	0.893
P4	1.218992	0.585339	2.08	0.037
P5	-0.96637	0.661846	-1.46	0.144
P6	0.640326	0.777373	0.82	0.41
P7	1.401671	0.471826	2.97	0.003
P8	-0.3787	0.360673	-1.05	0.294
P9	0.466168	0.443816	1.05	0.294
P10	0.146323	0.356742	0.41	0.682
P11	0.628157	0.435804	1.44	0.149
P12	-0.55315	0.381971	-1.45	0.148
P13	0.999601	0.45227	2.21	0.027
P14	0.18213	0.370623	0.49	0.623
P15	0.203341	0.374186	0.54	0.587

Sources: Calculating by StataSE13

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Appendix C-16: The difference scores of opinion in topic the respondents agree to construct nuclear power plants in Thailand (DeltaX₂₀).

Variables OLS
 Number of obs 400
 LR chi2(29) 15.83
 Prob> chi2 0.3238
 Log likelihood -140.8348
 Pseudo R2 0.0532

Variables	Maximum Likelihood Estimate			
	Coefficient	Standard Error	T-stat	Prob
_cons	2.363992	0.268052	8.82	0
A1	0.386438	0.371432	1.04	0.298
A2	0.208134	0.424087	0.49	0.624
A3	-0.29755	0.362979	-0.82	0.412
A4	-0.31588	0.481853	-0.66	0.512
A5	-0.08352	0.482727	-0.17	0.863
A6	-0.85235	0.408856	-2.08	0.037
A7	-0.28598	0.370991	-0.77	0.441
A8	0.064932	0.489533	0.13	0.894
A9	-0.4165	0.347443	-1.2	0.231
A10	-0.03803	0.457617	-0.08	0.934
A11	0.159232	0.37936	0.42	0.675
A12	-0.43044	0.432901	-0.99	0.32
A13	0.13595	0.362155	0.38	0.707
A14	0.609348	0.521144	1.17	0.242
A15	0	(omitted)		

Sources: Calculating by StataSE13

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Appendix C-17: The respondents to choose nuclear power plant as a way to help generate electricity in the next 30 years(Y).

Variables OLS
Number of obs 400
LR chi2(29) 118.18
Prob> chi2 0.0000
Log likelihood -165.84488
Pseudo R2 0.2627

Variables	Maximum Likelihood Estimate			
	Coefficient	Standard Error	T-stat	Prob
_cons	-1.5052	0.383431	-3.93	0
P1	0.395633	0.317966	1.24	0.213
P2	0.699196	0.337328	2.07	0.038
P3	-0.11439	0.347286	-0.33	0.742
P4	0.317264	0.421309	0.75	0.451
P5	-0.0186	0.517894	-0.04	0.971
P6	-0.21943	0.62635	-0.35	0.726
P7	-0.07826	0.345676	-0.23	0.821
P8	0.294545	0.332514	0.89	0.376
P9	0.045403	0.377761	0.12	0.904
P10	1.160532	0.345621	3.36	0.001
P11	1.173175	0.378237	3.1	0.002
P12	0.336107	0.348815	0.96	0.335
P13	1.064937	0.396103	2.69	0.007
P14	0.618089	0.349397	1.77	0.077
P15	0.088646	0.359904	0.25	0.805
A1	0.162227	0.379773	0.43	0.669
A2	0.706797	0.42721	1.65	0.098
A3	0.446262	0.389417	1.15	0.252
A4	-0.30184	0.532789	-0.57	0.571
A5	0.445553	0.522473	0.85	0.394
A6	0.486838	0.438489	1.11	0.267
A7	-0.02118	0.395696	-0.05	0.957
A8	-0.28076	0.521722	-0.54	0.59
A9	0.013308	0.350453	0.04	0.97
A10	0.780313	0.484194	1.61	0.107
A11	0.742585	0.38444	1.93	0.053

Sources: Calculating by StataSE13

Variables	Maximum Likelihood Estimate			
	Coefficient	Standard Error	T-stat	Prob
A12	0.689369	0.520877	1.32	0.186
A13	-0.20433	0.341693	-0.6	0.55
A14	0.489743	0.482849	1.01	0.31
A15	0	(omitted)		

Sources: Calculating by StataSE13

Appendix C-18: The respondents to choose solar energy as a way to help generate electricity in the next 30 years(S).

Variables OLS
 Number of obs 400
 LR chi2(29) 90.17
 Prob> chi2 0.0000
 Log likelihood -231.99481
 Pseudo R2 0.1627

Variables	Maximum Likelihood Estimate			
	Coefficient	Standard Error	T-stat	Prob
_cons	-1.59898	0.333773	-4.79	0
P1	0.390683	0.247643	1.58	0.115
P2	0.007797	0.2871	0.03	0.978
P3	0.09084	0.289974	0.31	0.754
P4	-0.01038	0.361769	-0.03	0.977
P5	0.227498	0.400454	0.57	0.57
P6	0.171108	0.491985	0.35	0.728
P7	0.360348	0.291066	1.24	0.216
P8	0.17814	0.264166	0.67	0.5
P9	-0.07908	0.330808	-0.24	0.811
P10	0.661131	0.2774	2.38	0.017
P11	0.866327	0.307704	2.82	0.005
P12	0.056299	0.276194	0.2	0.838
P13	0.416375	0.30156	1.38	0.167
P14	0.596526	0.293289	2.03	0.042
P15	0.268353	0.308119	0.87	0.384
A1	-0.14259	0.329256	-0.43	0.665
A2	-0.21019	0.350873	-0.6	0.549

Sources: Calculating by StataSE13

Variables	Maximum Likelihood Estimate			
	Coefficient	Standard Error	T-stat	Prob
A3	-0.09616	0.316149	-0.3	0.761
A4	-0.35801	0.426779	-0.84	0.402
A5	0.75885	0.417061	1.82	0.069
A6	-0.57446	0.334067	-1.72	0.086
A7	-0.64772	0.32785	-1.98	0.048
A8	0.259471	0.407114	0.64	0.524
A9	-0.06877	0.308424	-0.22	0.824
A10	0.617046	0.385364	1.6	0.109
A11	0.684335	0.32397	2.11	0.035
A12	0.404463	0.381215	1.06	0.289
A13	0.219331	0.298351	0.74	0.462
A14	0.019158	0.389797	0.05	0.961
A15	0	(omitted)		

Sources: Calculating by StataSE13

Appendix C-19: The respondents to choose other alternatives as a way to help generate electricity in the next 30 years (Z).

Variables OLS
Number of obs 400
LR chi2(29) 83.25
Prob> chi2 0.0000
Log likelihood -139.13668
Pseudo R2 0.2303

Variables	Maximum Likelihood Estimate			
	Coefficient	Standard Error	T-stat	Prob
_cons	0.529916	0.40573	1.31	0.192
P1	-0.21668	0.350755	-0.62	0.537
P2	-0.63065	0.383225	-1.65	0.1
P3	0.271831	0.385324	0.71	0.481
P4	-0.80975	0.508327	-1.59	0.111
P5	0.882051	0.609587	1.45	0.148
P6	-0.67282	0.71622	-0.94	0.348
P7	-0.19054	0.37782	-0.5	0.614
P8	-0.48583	0.377476	-1.29	0.198

Sources: Calculating by StataSE13

Variables	Maximum Likelihood Estimate			
	Coefficient	Standard Error	T-stat	Prob
P9	0.185329	0.420426	0.44	0.659
P10	-0.78448	0.390921	-2.01	0.045
P11	-0.91205	0.419813	-2.17	0.03
P12	-0.69223	0.410043	-1.69	0.091
P13	-0.98268	0.440661	-2.23	0.026
P14	-0.7042	0.387407	-1.82	0.069
P15	0.323296	0.404378	0.8	0.424
A1	0.536621	0.418596	1.28	0.2
A2	-0.20698	0.471174	-0.44	0.66
A3	-0.43051	0.443844	-0.97	0.332
A4	-0.47744	0.715496	-0.67	0.505
A5	-0.21528	0.623801	-0.35	0.73
A6	-0.68926	0.536186	-1.29	0.199
A7	-0.08082	0.442411	-0.18	0.855
A8	-0.01664	0.606515	-0.03	0.978
A9	-0.02848	0.390411	-0.07	0.942
A10	0.060286	0.537997	0.11	0.911
A11	-0.63604	0.452727	-1.4	0.16
A12	-0.89744	0.645298	-1.39	0.164
A13	-0.24695	0.384387	-0.64	0.521
A14	-1.5276	0.680503	-2.24	0.025
A15	0	(omitted)		

Sources: Calculating by StataSE13

Appendix C-20: The difference scores of opinion in topic Thailand has sufficient sources to produce electricity over the next 30 years (DeltaX₁₆).

Variables OLS
Number of obs 400
LR chi2(29) 34.93
Prob> chi2 0.2070
Log likelihood -175.56828
Pseudo R2 0.0905

Variables	Maximum Likelihood Estimate			
	Coefficient	Standard Error	T-stat	Prob
constant	0.440872	0.354298	1.24	0.213
P1	0.272358	0.307582	0.89	0.376
P2	0.267832	0.348611	0.77	0.442
P3	0.042692	0.36586	0.12	0.907
P4	1.068375	0.465224	2.3	0.022
P5	-0.35533	0.545151	-0.65	0.515
P6	0.982119	0.642751	1.53	0.127
P7	-0.14281	0.358039	-0.4	0.69
P8	-0.05391	0.326668	-0.17	0.869
P9	0.250228	0.399117	0.63	0.531
P10	-0.02449	0.335546	-0.07	0.942
P11	-0.01907	0.369958	-0.05	0.959
P12	0.759279	0.373536	2.03	0.042
P13	0.108178	0.365814	0.3	0.767
P14	0.054242	0.358621	0.15	0.88
P15	0.361807	0.378794	0.96	0.339
A1	0.129344	0.37692	0.34	0.731
A2	0.188221	0.409217	0.46	0.646
A3	-0.45702	0.367916	-1.24	0.214
A4	-0.40551	0.47091	-0.86	0.389
A5	-0.27493	0.477991	-0.58	0.565
A6	0.162794	0.405194	0.4	0.688
A7	-0.28297	0.376653	-0.75	0.452
A8	0.096477	0.487056	0.2	0.843
A9	0.110122	0.355862	0.31	0.757
A10	0.270181	0.483096	0.56	0.576
A11	0.301523	0.393967	0.77	0.444
A12	0.041191	0.434591	0.09	0.924
A13	-0.0214	0.356923	-0.06	0.952
A14	0.181887	0.465037	0.39	0.696
A15	0	(omitted)		

Sources: Calculating by StataSE13

Appendix C-21: The difference scores of opinion in topic the respondents accept construction of a nuclear power plants near their community (DeltaX₁₇).

Variables OLS
Number of obs 400
LR chi2(29) 41.34
Prob> chi2 0.0642
Log likelihood -143.11819
Pseudo R2 0.1262

Variables	Maximum Likelihood Estimate			
	Coefficient	Standard Error	T-stat	Prob
constant	0.583563	0.401923	1.45	0.147
P1	0.332347	0.35223	0.94	0.345
P2	-0.49881	0.403244	-1.24	0.216
P3	0.890968	0.423034	2.11	0.035
P4	0.552807	0.511352	1.08	0.28
P5	-0.23994	0.588498	-0.41	0.683
P6	0.740342	0.708758	1.04	0.296
P7	0.607435	0.401302	1.51	0.13
P8	0.3878	0.378331	1.03	0.305
P9	0.031203	0.464534	0.07	0.946
P10	-0.18818	0.382957	-0.49	0.623
P11	0.886949	0.452381	1.96	0.05
P12	-0.34186	0.390373	-0.88	0.381
P13	0.431648	0.442942	0.97	0.33
P14	-0.18779	0.393244	-0.48	0.633
P15	0.389059	0.423542	0.92	0.358
A1	0.287482	0.422107	0.68	0.496
A2	-0.07421	0.479555	-0.15	0.877
A3	0.381114	0.412316	0.92	0.355
A4	-0.38203	0.556277	-0.69	0.492
A5	-0.02697	0.533176	-0.05	0.96
A6	-0.36083	0.437157	-0.83	0.409
A7	0.452453	0.420288	1.08	0.282
A8	0.054018	0.540082	0.1	0.92
A9	-0.189	0.397274	-0.48	0.634
A10	0.018694	0.523706	0.04	0.972
A11	0.531876	0.43133	1.23	0.218
A12	-0.39292	0.494318	-0.79	0.427

Sources: Calculating by StataSE13

Variables	Maximum Likelihood Estimate			
	Coefficient	Standard Error	T-stat	Prob
A13	-0.30783	0.387485	-0.79	0.427
A14	1.041067	0.661627	1.57	0.116
A15	0	(omitted)		

Sources: Calculating by StataSE13

Appendix C-22: The difference scores of opinion in topic nuclear power plants make more employment (DeltaX₁₈).

Variables OLS
Number of obs 400
LR chi2(29) 51.21
Prob> chi2 0.0067
Log likelihood -150.26527
Pseudo R2 0.1456

Variables	Maximum Likelihood Estimate			
	Coefficient	Standard Error	T-stat	Prob
constant	1.046331	0.397234	2.63	0.008
P1	0.339537	0.346467	0.98	0.327
P2	-0.1352	0.387163	-0.35	0.727
P3	0.906479	0.396368	2.29	0.022
P4	0.670413	0.458511	1.46	0.144
P5	0.844511	0.57299	1.47	0.141
P6	-0.61934	0.677215	-0.91	0.36
P7	0.430065	0.402508	1.07	0.285
P8	0.263377	0.366958	0.72	0.473
P9	-0.00803	0.456244	-0.02	0.986
P10	-0.17335	0.379472	-0.46	0.648
P11	-0.46425	0.430162	-1.08	0.28
P12	0.174553	0.38424	0.45	0.65
P13	-0.54665	0.411473	-1.33	0.184
P14	-0.13673	0.397428	-0.34	0.731
P15	0.537572	0.416855	1.29	0.197
A1	0.132429	0.402839	0.33	0.742
A2	-0.27292	0.443065	-0.62	0.538
A3	0.968808	0.436	2.22	0.026

Sources: Calculating by StataSE13

Variables	Maximum Likelihood Estimate			
	Coefficient	Standard Error	T-stat	Prob
A4	1.867905	0.643146	2.9	0.004
A5	0.652306	0.555554	1.17	0.24
A6	-1.17816	0.400141	-2.94	0.003
A7	-0.09339	0.395849	-0.24	0.813
A8	-0.34305	0.481069	-0.71	0.476
A9	-0.1908	0.389934	-0.49	0.625
A10	-0.79728	0.47966	-1.66	0.096
A11	-0.56449	0.412239	-1.37	0.171
A12	0.711033	0.535385	1.33	0.184
A13	-0.22619	0.399716	-0.57	0.571
A14	-0.28222	0.496843	-0.57	0.57
A15	0	(omitted)		

Sources: Calculating by StataSE13

Appendix C-23: The difference scores of opinion in topic Thailand is ready to construct nuclear power plants (DeltaX₁₉).

Variables OLS
 Number of obs 400
 LR chi2(29) 40.89
 Prob> chi2 0.0704
 Log likelihood -145.12847
 Pseudo R2 0.1235

Variables	Maximum Likelihood Estimate			
	Coefficient	Standard Error	T-stat	Prob
constant	0.707998	0.397265	1.78	0.075
P1	0.245592	0.360808	0.68	0.496
P2	0.374226	0.4021	0.93	0.352
P3	0.159264	0.388394	0.41	0.682
P4	0.232843	0.463896	0.5	0.616
P5	-0.16557	0.548487	-0.3	0.763
P6	0.86351	0.722018	1.2	0.232
P7	0.566359	0.414406	1.37	0.172
P8	0.220774	0.36963	0.6	0.55
P9	0.068257	0.456336	0.15	0.881
P10	0.177877	0.395059	0.45	0.653

Sources: Calculating by StataSE13

Variables	Maximum Likelihood Estimate	Variables	Maximum Likelihood Estimate	Variables
P11	-0.12528	0.424913	-0.29	0.768
P12	-0.16431	0.398548	-0.41	0.68
P13	0.078366	0.422565	0.19	0.853
P14	0.779689	0.422071	1.85	0.065
P15	0.233817	0.404826	0.58	0.564
A1	0.643069	0.430772	1.49	0.135
A2	0.076591	0.457409	0.17	0.867
A3	0.499732	0.444459	1.12	0.261
A4	0.204111	0.578518	0.35	0.724
A5	0.307565	0.549989	0.56	0.576
A6	-0.79095	0.420484	-1.88	0.06
A7	-0.18713	0.407089	-0.46	0.646
A8	0.008586	0.524288	0.02	0.987
A9	-0.13384	0.402621	-0.33	0.74
A10	-0.60411	0.480582	-1.26	0.209
A11	0.000671	0.435278	0	0.999
A12	-0.57725	0.497091	-1.16	0.246
A13	-0.03034	0.395948	-0.08	0.939
A14	0.842212	0.572672	1.47	0.141
A15	0	(omitted)		

Sources: Calculating by StataSE13

Appendix C-24: The difference scores of opinion in topic the respondents agree to construct nuclear power plants in Thailand (DeltaX₂₀).

Variables OLS
Number of obs 400
LR chi2(29) 59.64
Prob> chi2 0.0007
Log likelihood -118.93011
Pseudo R2 0.2005

Variables	Maximum Likelihood Estimate			
	Coefficient	Standard Error	T-stat	Prob
constant	1.130154	0.461209	2.45	0.014
P1	0.511979	0.405743	1.26	0.207
P2	0.310251	0.463235	0.67	0.503
P3	-0.28407	0.464629	-0.61	0.541
P4	1.265847	0.664578	1.9	0.057
P5	-1.4048	0.752877	-1.87	0.062
P6	0.790819	0.827005	0.96	0.339
P7	1.420757	0.525838	2.7	0.007
P8	-0.49621	0.424034	-1.17	0.242
P9	0.140605	0.54366	0.26	0.796
P10	0.153199	0.433765	0.35	0.724
P11	0.682605	0.511236	1.34	0.182
P12	-1.00284	0.44526	-2.25	0.024
P13	1.510222	0.530591	2.85	0.004
P14	0.560657	0.445759	1.26	0.208
P15	0.546969	0.462513	1.18	0.237
A1	0.676395	0.468972	1.44	0.149
A2	0.685929	0.529606	1.3	0.195
A3	-0.69167	0.470318	-1.47	0.141
A4	-0.23242	0.599199	-0.39	0.698
A5	-0.54174	0.610929	-0.89	0.375
A6	-0.6508	0.456922	-1.42	0.154
A7	0.241014	0.445687	0.54	0.589
A8	0.113478	0.604414	0.19	0.851
A9	-0.51344	0.459022	-1.12	0.263
A10	0.02277	0.571737	0.04	0.968
A11	-0.02387	0.490075	-0.05	0.961
A12	-1.20079	0.549649	-2.18	0.029
A13	0.699635	0.4443	1.57	0.115
A14	0.88369	0.633924	1.39	0.163
A15	0	(omitted)		

Sources: Calculating by StataSE13

CURRICULUM VITAE

Author's Name Miss Nutphimol Autthajaron

Date/Year of Birth 17th November 1991

Place of Birth Bangkok, Thailand

Education 2013 Bachelor of Economics, Chiang Mai University,
Chiang Mai, Thailand



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