LAMPIRAN

LAMPIRAN

Lampiran 1

Menunjukkan turunan dari $f(H) = \pi_{ij}$ adalah $f'(H) = \pi_{ij}(1-\pi_{ij})$:

Diketahui :

$$f(H) = \pi_{ij} = \pi(\mathbf{x}_{ij}) = \frac{e^{(\beta_0+\beta_1 x_{1ij}+\ldots+\beta_P x_{Pij})}}{1+e^{(\beta_0+\beta_1 x_{1ij}+\ldots+\beta_P x_{Pij})}}$$

Maka turunan pertama dari *f'(H)* adalah sebagai berikut :

$$f'(H) = \frac{e^{(\beta_0+\beta_1 x_{1ij}+\ldots+\beta_P x_{Pij})}(1+e^{(\beta_0+\beta_1 x_{1ij}+\ldots+\beta_P x_{Pij})}) - e^{(\beta_0+\beta_1 x_{1ij}+\ldots+\beta_P x_{Pij})}\, e^{(\beta_0+\beta_1 x_{1ij}+\ldots+\beta_P x_{Pij})}}{(1+e^{(\beta_0+\beta_1 x_{1ij}+\ldots+\beta_P x_{Pij})})^2}$$

$$= \frac{e^{(\beta_0+\beta_1 x_{1ij}+\ldots+\beta_P x_{Pij})} + (e^{(\beta_0+\beta_1 x_{1ij}+\ldots+\beta_P x_{Pij})})^2 - (e^{(\beta_0+\beta_1 x_{1ij}+\ldots+\beta_P x_{Pij})})^2}{(1+e^{(\beta_0+\beta_1 x_{1ij}+\ldots+\beta_P x_{Pij})})^2}$$

$$= \frac{e^{(\beta_0+\beta_1 x_{1ij}+\ldots+\beta_P x_{Pij})}}{(1+e^{(\beta_0+\beta_1 x_{1ij}+\ldots+\beta_P x_{Pij})})^2}$$

$$= \left(\frac{e^{(\beta_0+\beta_1 x_{1ij}+\ldots+\beta_P x_{Pij})}}{1+e^{(\beta_0+\beta_1 x_{1ij}+\ldots+\beta_P x_{Pij})}}\right)\left(\frac{1}{1+e^{(\beta_0+\beta_1 x_{1ij}+\ldots+\beta_P x_{Pij})}}\right)$$

$$= \pi(\mathbf{x}_{ij})(1-\pi(\mathbf{x}_{ij}))$$

$\pi(\mathbf{x}_{ij})$ dapat dituliskan sebagai π_{ij}, sehingga *f'(H)* pada persamaan di atas dapat ditulis dalam bentuk :

$$f'(H) = \pi_{ij}(1-\pi_{ij})$$

Estimasi Parameter..., Anastia Dewi L., FMIPA UI, 2008

Lampiran 2

Data hasil survey mengenai penggunaan hak pilih dalam pemilu di Eropa.

	ctry_id(3300)	individual_id(330	turnout(3300)	age_at_electi(33	polintr(3300)	partymember(33	mmethnic(3300)	sex(3
1	1	1	1	46	0	0	0	0
2	1	2	1	46	0	0	0	1
3	1	3	1	37	1	0	0	1
4	1	4	0	30	1	0	0	1
5	1	5	1	50	1	0	0	1
6	1	6	1	66	0	0	0	0
7	1	7	1	68	1	0	0	0
8	1	8	1	40	0	0	1	1
9	1	9	1	49	1	0	1	1
10	1	10	1	56	1	0	0	0
11	1	11	1	44	0	0	0	1
12	1	12	0	77	0	0	0	0
13	1	13	1	73	1	0	0	0
14	1	14	0	75	1	0	0	1
15	1	15	1	33	1	0	0	0
16	1	16	1	43	1	0	0	1
17	1	17	1	32	0	0	0	1
18	1	18	1	56	1	1	0	0
19	1	19	1	53	1	0	0	1
20	1	20	1	74	1	0	0	0
21	1	21	1	38	1	0	0	1
22	1	22	1	36	1	0	0	1
23	1	23	1	74	1	1	0	0
24	1	24	1	54	0	0	0	1
25	1	25	0	76	0	0	0	1
26	1	26	1	37	0	0	0	1
27	1	27	1	50	1	0	0	1
28	1	28	1	34	0	0	0	1
29	1	29	1	30	0	1	0	0
30	1	30	1	39	0	0	0	0
31	1	31	1	20	1	1	0	0
32	1	32	0	20	1	1	0	0
33	1	33	1	30	0	0	0	1
34	1	34	0	36	0	0	0	1
35	1	35	0	63	0	0	0	1
36	1	36	0	42	0	0	0	0
37	1	37	1	31	1	0	0	0
38	1	38	1	62	1	1	0	0
39	1	39	1	33	1	0	0	0
40	1	40	0	70	1	0	0	0
41	1	41	1	80	0	0	0	1
42	1	42	1	21	1	0	0	0
43	1	43	0	60	0	0	1	1
44	1	44	0	38	0	0	0	1
45	1	45	1	27	1	1	0	0
46	1	46	1	60	1	0	0	1
47	1	47	1	35	0	0	0	1
48	1	48	0	35	1	0	0	1
49	1	49	1	35	0	0	0	1
50	1	50	1	37	0	1	0	1
51	1	51	1	60	1	1	0	0
52	1	53	1	51	1	1	0	0
53	1	54	1	44	1	0	0	1
54	1	55	0	21	0	0	0	0
55	1	56	1	37	1	1	0	0
56	1	57	1	43	1	0	0	1
57	1	58	1	52	0	1	1	0
58	1	60	1	64	0	0	0	0
59	1	62	1	45	0	0	0	1
60	1	63	1	76	0	0	0	1
61	1	64	1	47	1	1	0	0

	city_id[3300]	individual_id[33	turnout[3300]	age_at_elect[33	polinfo[3300]	partymember[33	minethnic[3300]	sex[33
82	1	85	1	44	1	0	0	1
83	1	86	1	52	1	0	0	0
84	1	87	1	28	0	0	0	1
85	1	88	1	72	1	1	0	0
86	1	70	0	37	1	1	0	0
87	1	71	1	29	0	0	0	1
88	1	72	0	56	1	0	0	0
89	1	73	1	53	1	1	0	0
90	1	74	1	34	1	0	0	0
91	1	76	1	56	1	0	0	0
92	1	77	1	32	0	0	0	1
93	1	78	1	63	1	0	0	1
94	1	79	0	50	1	0	0	1
95	1	80	1	40	1	0	0	0
96	1	81	1	75	1	0	0	0
97	1	82	0	37	0	0	0	0
98	1	83	1	19	1	1	0	1
99	1	85	1	36	1	0	0	0
100	1	86	1	60	0	0	0	0
101	1	87	1	32	1	0	0	0
102	1	88	1	54	1	1	0	0
103	1	89	1	59	1	1	0	0
104	1	90	1	39	0	1	0	1
105	1	91	1	40	0	0	0	1
106	1	92	1	62	0	0	0	0
107	1	93	1	60	1	0	0	1
108	1	94	1	76	1	0	0	0
109	1	95	1	48	1	1	0	0
110	1	96	1	25	1	0	0	1
111	1	97	1	63	1	0	0	0
112	1	98	1	22	0	1	0	0
113	1	99	1	40	1	1	0	0
94	1	100	1	32	1	0	0	0
95	1	101	1	41	0	0	0	1
96	1	102	1	38	1	0	0	0
97	1	103	1	28	1	0	0	1
98	1	104	1	56	1	0	0	1
99	1	105	1	45	0	0	0	1
100	1	106	1	49	0	0	0	1
101	1	107	1	32	0	0	0	0
102	1	108	1	64	1	1	0	1
103	1	109	1	59	0	0	0	1
104	1	110	1	27	1	0	0	1
105	1	111	1	65	1	0	0	1
106	1	112	0	60	0	0	0	1
107	1	113	0	33	0	0	0	0
108	1	114	0	20	0	0	0	0
109	1	115	1	20	1	0	0	1
110	1	116	0	21	0	0	0	1
111	1	117	1	30	1	0	0	1
112	1	118	0	50	1	0	0	1
113	1	119	1	35	1	0	0	1
114	1	120	1	38	0	0	0	1
115	1	122	1	20	0	0	0	1
116	1	123	0	48	0	0	0	0
117	1	125	0	51	0	0	0	0
118	1	126	0	50	0	0	0	0
119	1	127	1	29	1	0	0	0
120	1	128	0	52	0	0	0	0
121	1	129	1	52	1	0	0	0
122	1	130	0	32	0	0	0	1
123	1	131	1	41	1	0	0	0
124	1	132	1	37	1	0	0	1
125	1	133	0	58	1	0	0	1
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮

	ctry_id[3300]	individual_id[330	turnout[3300]	age_at_electi[33	politntr[3300]	partymember[32	minethnic[3300]	sex[33
179	1	188	0	41	1	0	1	0
180	1	189	1	83	0	0	0	1
181	1	190	1	38	1	0	0	0
182	1	191	1	46	1	0	0	1
183	1	192	1	77	0	0	0	1
184	1	193	1	41	1	0	1	0
185	1	194	1	33	1	0	0	1
186	1	195	1	37	1	0	0	1
187	1	196	1	27	1	0	0	1
188	1	197	0	39	0	0	0	1
189	1	198	1	34	1	0	0	1
190	1	199	1	30	0	0	0	1
191	1	200	1	61	1	1	0	0
192	2	201	1	53	1	0	0	1
193	2	202	1	30	0	0	0	1
194	2	203	1	34	1	0	0	0
195	2	204	1	41	0	0	0	1
196	2	205	1	42	1	0	0	1
197	2	206	1	64	1	0	0	0
198	2	207	1	71	1	0	0	0
199	2	208	1	33	0	0	0	0
200	2	209	1	52	1	0	0	0
201	2	210	1	10	0	0	0	0
202	2	211	0	70	0	0	0	0
203	2	212	0	36	0	0	0	1
204	2	213	1	44	1	0	0	0
205	2	214	1	40	1	0	0	0
206	2	215	1	60	0	0	0	1
207	2	217	1	42	0	0	0	1
208	2	218	1	44	1	0	0	0
209	2	219	1	76	1	0	0	0
210	2	221	1	64	0	0	0	1
211	2	222	1	73	1	1	0	1
212	2	223	1	77	1	1	0	1
213	2	224	1	52	1	0	0	1
214	2	225	0	88	0	0	0	1
215	2	226	0	85	0	0	0	0
216	2	227	1	50	0	1	0	0
217	2	228	1	57	1	0	0	1
218	2	229	1	28	1	0	0	0
219	2	230	1	27	0	0	0	1
220	2	231	1	64	0	0	0	1
221	2	232	0	29	0	0	0	1
222	2	233	1	55	0	0	0	0
223	2	234	1	64	1	0	0	1
224	2	235	1	70	1	0	0	0
225	2	236	1	11	0	0	0	0
226	2	237	1	22	0	0	0	1
227	2	238	1	70	0	0	0	1
228	2	239	1	27	1	0	0	0
229	2	240	1	20	0	0	0	0
230	2	241	1	21	0	0	0	1
231	2	242	1	30	0	0	0	0
232	2	243	1	40	1	0	0	0
233	2	244	1	45	1	0	0	0
234	2	245	1	23	0	0	0	1
235	2	246	1	56	1	1	0	0
236	2	247	1	40	1	0	0	0
237	2	248	1	43	0	0	0	0
238	2	249	0	31	0	0	0	1
239	2	250	1	27	1	0	0	0
240	2	251	1	50	1	0	0	0
241	2	252	1	43	1	0	0	1
242	2	253	1	27	1	0	0	0
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮

	city_id(3300)	individual_id(330	turnout(3300)	age_at_elect(33	polinfo(3300)	partymember(33	minethnic(3300)	sex(33
320	2	331	1	48	1	0	0	1
321	2	332	1	55	0	0	0	1
322	2	333	1	26	0	0	0	1
323	2	334	1	30	0	0	0	0
324	2	335	1	74	0	0	0	0
325	2	336	1	51	0	0	0	1
326	2	337	1	30	0	0	0	1
327	2	338	1	46	1	0	0	0
328	2	339	1	51	1	0	0	1
329	2	340	0	19	0	0	0	0
330	4	341	1	20	0	0	0	0
331	4	342	1	43	0	0	0	0
332	4	343	1	43	0	0	0	0
333	4	344	1	67	0	0	0	1
334	4	345	1	61	1	0	0	0
335	4	346	1	54	0	0	0	1
336	4	347	0	57	0	0	0	1
337	4	348	0	61	0	0	0	1
338	4	350	1	68	0	0	0	1
339	4	351	0	36	0	0	0	1
340	4	352	0	35	0	0	0	0
341	4	353	1	36	0	0	0	1
342	4	354	1	69	1	0	0	1
343	4	355	0	31	0	0	0	1
344	4	356	1	60	1	0	0	1
345	4	357	1	82	1	0	0	1
346	4	358	1	82	1	0	0	1
347	4	359	1	49	1	0	0	0
348	4	360	1	72	1	0	0	0
349	4	361	1	60	0	0	0	1
350	4	362	0	54	0	0	0	0
351	4	363	1	45	0	0	1	1
352	4	364	1	23	1	0	0	0
353	4	365	0	32	0	0	0	0
354	4	366	0	85	0	0	0	1
355	4	367	1	31	0	0	0	0
356	4	368	0	56	0	0	0	1
357	4	369	1	74	0	0	0	1
358	4	370	1	21	0	0	0	1
359	4	371	0	73	0	0	0	1
360	4	372	0	80	0	0	0	1
361	4	373	1	77	0	0	0	1
362	4	374	1	56	0	0	0	0
363	4	375	0	58	1	0	0	0
364	4	376	0	31	0	0	0	1
365	4	377	0	71	0	0	0	0
366	4	378	0	75	0	0	0	0
367	4	379	1	58	1	0	0	0
368	4	380	0	59	0	0	0	0
369	4	381	1	19	0	0	0	0
370	4	382	0	50	0	0	0	0
371	4	383	1	61	1	0	0	1
372	4	384	0	45	0	0	1	0
373	4	385	0	40	0	0	0	0
374	4	386	1	80	0	0	0	1
375	4	387	1	85	0	0	0	0
376	4	388	1	42	1	0	0	1
377	4	389	0	21	0	0	0	1
378	4	390	1	65	1	0	0	0
379	4	391	1	64	0	0	0	0
380	4	392	1	39	1	1	0	1
381	4	393	0	45	0	1	0	0
382	4	394	1	30	0	0	0	1
383	4	395	1	78	0	1	0	1
	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮

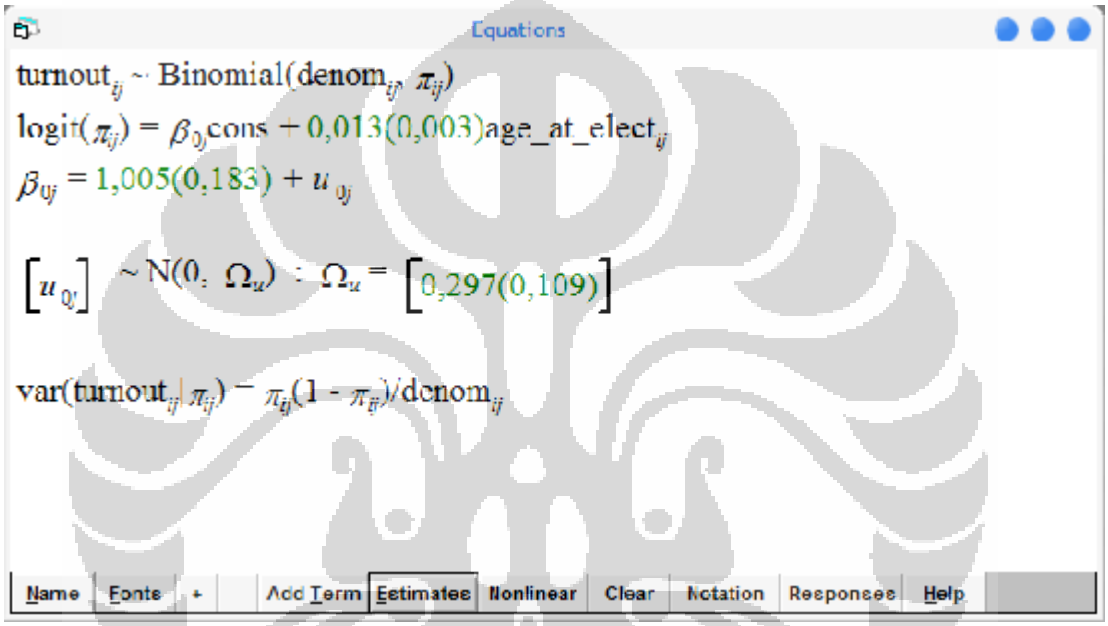
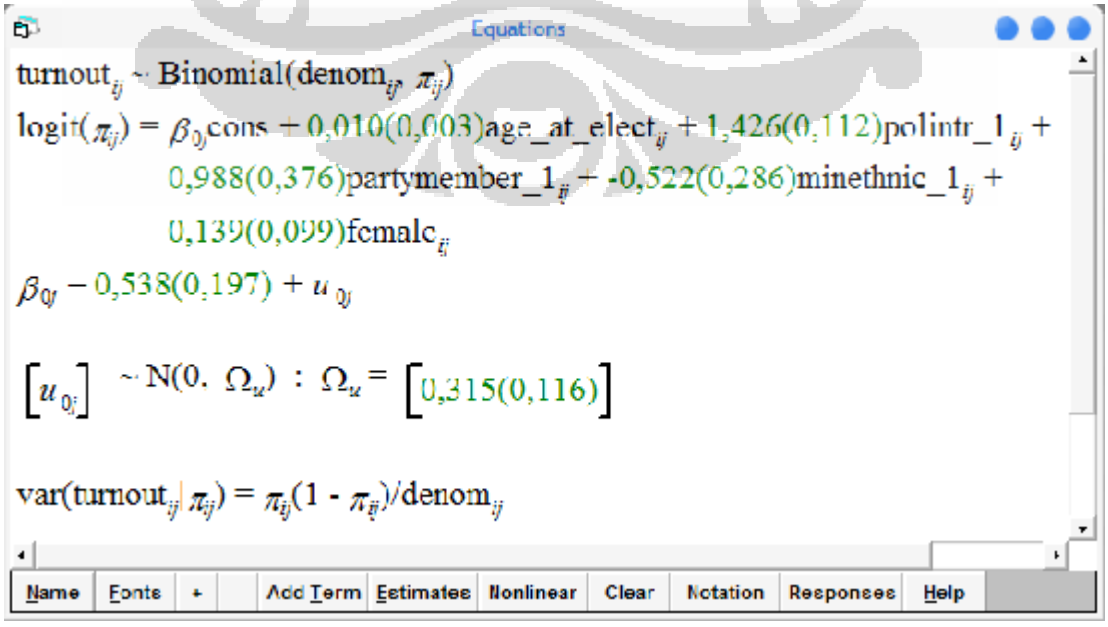
	ctry Id(3300)	Individual Id(330	turnout(3300)	age at elect(33	pollntr(3300)	partymember(32	minethnic(3300)	sex(3:
3153	21	3213	1	45	0	0	0	1
3154	21	3214	1	38	0	0	0	0
3155	21	3215	0	58	1	0	0	0
3156	21	3216	1	63	1	0	0	1
3157	21	3217	0	47	0	0	0	0
3158	21	3218	1	57	1	0	0	1
3159	21	3219	1	43	0	0	0	0
3160	21	3220	1	27	1	0	0	0
3161	21	3222	0	22	1	0	0	1
3162	21	3223	1	32	0	0	0	0
3163	21	3224	1	36	1	0	0	0
3164	22	3225	1	28	0	0	0	0
3165	22	3226	1	43	0	0	0	1
3166	22	3227	1	77	1	0	0	0
3167	22	3228	1	40	1	0	0	1
3168	22	3230	1	30	0	0	0	0
3169	22	3231	1	39	1	0	0	0
3170	22	3232	1	80	0	0	0	1
3171	22	3233	0	25	0	0	0	1
3172	22	3234	0	47	0	0	0	1
3173	22	3235	1	41	1	0	0	0
3174	22	3236	1	75	0	0	0	0
3175	22	3237	1	43	1	0	0	0
3176	22	3238	1	43	0	0	0	1
3177	22	3239	1	21	1	0	0	0
3178	22	3240	0	42	0	0	0	1
3179	22	3241	0	45	0	0	0	1
3180	22	3242	1	79	1	0	0	1
3181	22	3243	1	52	0	0	0	1
3182	22	3244	1	72	1	0	0	1
3183	22	3245	1	54	0	0	0	1
3184	22	3246	0	25	0	0	0	1
3185	22	3247	1	61	1	1	0	0
3186	22	3248	1	35	0	0	0	0
3187	22	3249	0	19	0	0	0	1
3188	22	3250	1	59	1	1	0	0
3189	22	3251	1	44	0	0	0	1
3190	22	3252	1	54	1	1	0	0
3191	22	3253	1	45	0	0	0	1
3192	22	3254	0	70	0	0	0	0
3193	22	3255	1	50	0	0	0	0
3194	22	3256	1	27	0	0	0	1
3195	22	3257	1	68	1	1	0	0
3196	22	3258	1	76	0	0	0	1
3197	22	3259	1	70	0	0	0	1
3198	22	3260	1	65	0	0	0	1
3199	22	3261	1	40	0	0	0	1
3200	22	3262	0	39	0	0	0	1
3201	22	3263	1	75	1	0	0	1
3202	22	3264	1	44	0	0	0	1
3203	22	3265	1	40	1	0	0	0
3204	22	3266	1	38	1	0	0	0
3205	22	3267	0	20	0	0	0	0
3206	22	3268	1	35	1	1	0	0
3207	22	3269	1	73	1	0	0	1
3208	22	3270	1	70	1	0	0	1
3209	22	3271	1	62	1	0	0	1
3210	22	3272	0	70	0	0	0	1
3211	22	3273	1	30	0	0	0	1
3212	22	3274	1	61	0	0	0	1
3213	22	3275	1	42	0	0	0	1
3214	22	3276	1	87	0	0	0	0
3215	22	3277	1	24	0	0	0	0
3216	22	3278	1	73	1	0	0	0
	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮

	ctry_id(3300)	individual_id(33	turnout(3300)	age_at_electi 33	polintr(3300)	partymember 33	minethnic(3300)	sex(3
3269	22	3331	0	20	0	0	1	0
3270	22	3332	1	51	1	0	0	0
3271	22	3333	1	59	1	0	0	1
3272	22	3334	1	53	0	0	0	0
3273	22	3335	1	62	0	0	0	0
3274	22	3336	1	44	1	0	0	1
3275	22	3337	1	27	1	0	0	0
3276	22	3338	0	22	1	0	0	1
3277	22	3339	1	36	0	0	0	1
3278	22	3340	1	55	1	0	0	0
3279	22	3341	1	61	1	0	0	1
3280	22	3342	1	67	1	0	0	0
3281	22	3343	1	37	0	0	0	1
3282	22	3344	0	61	0	0	0	1
3283	22	3345	1	78	1	0	0	1
3284	22	3346	1	61	1	0	0	1
3285	22	3347	1	50	1	0	0	0
3286	22	3348	1	45	1	1	0	0
3287	22	3349	1	30	0	0	0	1
3288	22	3350	1	32	0	0	0	0
3289	22	3351	1	32	0	0	0	0
3290	22	3352	0	19	0	0	0	1
3291	22	3353	1	49	1	0	0	0
3292	22	3354	1	26	0	0	0	1
3293	22	3355	0	24	0	0	0	1
3294	22	3356	0	36	0	0	0	0
3295	22	3357	1	32	0	0	0	0
3296	22	3358	1	48	1	0	0	0
3297	22	3359	1	23	0	0	0	0
3298	22	3360	1	31	1	0	0	0
3299	22	3361	1	26	0	0	0	1
3300	22	3362	0	22	0	0	0	0

Lampiran 3

Output MlwiN untuk analisis data hasil survey mengenai penggunaan hak pilih dalam pemilu di Eropa.

Untuk model regresi logistik 2-Level dengan satu variabel penjelas :



Untuk model regresi logistik 2-Level dengan lima variabel penjelas :