APPENDIX

Table7 *Feeddif.num, show the electricity usage in kw.hr per days for each feeder and the total for Pattani Province.*

day	feeder1	feeder2	feeder3	feeder6	feeder7	feeder8	feedertotal
1	84900	166050	72900	65750	78500	60650	528750
2	88500	180300	70050	77850	116600	63600	596900
3	94350	184050	74250	98850	115050	76800	643350
4	93150	183150	72150	103050	114900	88650	655050
5	91200	183450	75900	90300	114000	85050	639900
6	94050	183300	86850	86550	109800	87000	647550
7	91350	180450	58650	98400	105900	90750	625500
8	94150	186000	73500	113250	123000	94500	684400
9	92900	187500	76950	104400	128250	98850	688850
10	94500	174750	75300	90600	126000	93150	654300
11	93150	183750	79200	92550	126900	89850	665400
12	94050	186450	77850	99450	129600	100500	687900
13	94500	178800	71850	97200	115650	98700	656700
14	91350	168450	77250	94050	108750	88050	627900
15	91650	181800	74100	93750	125850	102900	670050
16	92100	183450	75750	91500	123000	102750	668550
17	108000	184950	57900	91950	123150	92700	658650
18	91800	170700	74850	95850	123150	92400	648750
19	91350	182850	74400	103650	121950	106050	680250
20	93150	177300	80100	101550	116550	103350	672000
21	89550	178950	79500	107250	109500	97800	662550
22	90600	188850	82950	108450	120650	103200	694700
23	95700	135450	84300	112050	161050	109500	698050
24	102000	141750	78000	113250	159000	109500	703500
25	95400	193800	83700	115500	133650	116250	738300
26	96150	193650	79800	118500	124950	103950	717000
27	96150	194400	82500	115050	118200	96300	702600
28	93300	182400	77850	106950	109950	88650	659100
29	94950	130200	82200	107250	155550	101850	672000
30	97200	138300	78750	112650	153300	111300	691500
31	92100	193500	82950	107100	130350	101700	707700
32	92250	189450	78450	114000	125550	78000	677700
33	94200	193050	79800	126600	124500	68100	686250
34	92850	189150	77400	102450	114450	108000	684300
35	90150	186600	81600	104700	109800	91650	664500
36	88950	184350	79950	108300	136050	101550	699150
37	89700	183450	83100	105150	135750	93600	690750
38	88650	191850	84000	101550	136350	98550	700950
39	91500	191850	84450	89250	134100	96300	687450
40	90750	191250	80250	81000	132000	99000	674250
41	90450	193950	82800	88950	119250	66000	641400
42	90300	194400	81750	88650	113250	75150	643500
43	94500	183150	84750	87900	131250	81600	663150
44	97500	201750	86700	82350	138750	95720	702770
45	95550	204600	84300	101100	140550	106930	733030
46	95850	214350	90450	111750	142650	118500	773550
47	95100	208800	90750	126300	125550	121350	767850
48	97500	212250	92550	117750	133500	118500	772050
49	98400	203250	94650	95700	120450	88050	700500
50	85500	194250	84450	98350	116700	88750	668000
51	82650	194700	78450	91150	134550	81150	662650
52	67950	195000	92550	88650	136500	88950	669600
53	68850	212250	99150	107400	140850	104100	732600
54	90900	211200	82200	106500	139200	107250	737250
55	91500	213600	87750	115500	131250	112500	752100
56	91350	210000	87450	110250	120300	99450	718800
57	88350	210750	79500	103950	139200	106650	728400

58	90600	184800	82800	101250	141000	103350	703800
59	91500	213450	84750	100800	140250	82350	713100
60	94950	218250	83700	100200	126600	95400	719100
61	90300	204450	77850	93600	120600	96450	683250
62	91500	203100	83100	102450	118650	109200	708000
63	89700	205200	83850	114000	118650	109650	721050
64	89250	209250	84750	120750	138000	120000	762000
65	90600	213750	84750	117600	135450	116550	758700
66	92850	220050	85500	117900	132300	117450	766050
67	93300	221850	83250	117000	130500	119250	765150
68	92250	210900	85950	118200	132750	118800	758850
69	92550	216000	85650	116400	124200	105300	740100
70	88650	210000	86100	117450	115800	112800	730800
71	91800	212700	86550	112950	140250	121650	765900
72	96000	211500	87000	117750	143250	127950	783450
73	91500	203700	84150	129900	144150	127650	781050
74	93000	215700	87750	130800	136050	119550	782850
75	96000	220650	90000	127050	149250	121050	804000
76	93000	212700	89850	119550	131850	113250	760200
77	96600	220500	91050	115800	128250	102600	754800
78	97200	217200	90450	120900	147750	115950	789450
79	99450	228300	90450	127050	147450	113700	806400
80	98250	227250	90300	129450	146250	122250	813750
81	97650	226650	90450	131700	149700	139050	835200
82	99000	213450	90750	131400	139950	134850	809400
83	101400	220650	90450	131850	138300	133350	816000
84	95250	207900	88350	126000	127800	131250	776550
85	99900	212550	89550	136050	151350	145950	835350
86	100500	212250	88950	134700	150000	126300	812700
87	102300	227550	88500	141300	139650	141000	840300
88	102450	229050	91050	132000	148500	131250	834300
89	101550	221700	87450	126450	144300	120150	801600
90	101550	224400	87450	124800	138750	125850	802800
91	99900	228600	88950	117750	127650	102000	764850
92	102000	235050	92850	117300	151500	110250	808950
93	104550	237750	91800	104250	155250	117000	810600
94	106800	246900	93300	114450	156000	114150	831600
95	102150	227550	91950	110250	150300	113550	795750
96	103800	226950	85950	114150	147750	115050	793650
97	103200	226950	91500	118050	133500	126300	799500
98	100650	231600	91050	119250	130050	126000	798600
99	100000	222900	88950	124050	137100	133650	806650
100	107150	240600	93300	126750	152400	139350	859550
101	103950	179700	93750	130200	153750	141950	803300
102	103200	187350	92700	128550	152700	131350	795850
103	103350	232200	90750	116250	129750	110500	782800
104	99750	213000	90750	113500	120000	121750	764200
105	102900	217950	91800	118950	123750	120950	776300
106	107400	232050	91950	121800	136500	119700	809400
107	111000	226500	94950	135000	153750	144600	865800
108	109500	242550	94200	131700	153450	131700	863100
109	108900	237750	94350	134100	144300	140250	859650
110	109050	238500	91800	133950	154500	136200	864000
111	108750	223950	92700	129000	144000	128100	826500
112	109500	228000	91500	117000	130575	114000	790575
113	106200	168750	84750	123000	175425	130800	788925
114	107550	169050	91500	124500	184050	142200	818850
115	118700	174150	88050	130500	168000	95250	774650
116	108450	159450	88650	129450	184950	81150	752100
117	115150	136500	89250	128100	187950	70800	727710
118	110100	237600	94050	123900	131550	113700	810900
119	101100	225000	86550	88050	123000	77100	700800

120	126750	159750	85950	100500	169500	97250	739700
121	106950	202200	84000	90900	135000	82950	702000
122	103050	211200	84150	102000	126000	98550	724950
123	108300	239850	80100	108600	139500	122700	799050
124	104100	239250	97950	121500	143550	134550	840900
125	109650	238500	87300	119550	126900	130050	811950
126	107250	235200	87450	120450	125100	126000	801450
127	109200	223800	79800	114750	127200	118200	772950
128	115500	143250	87000	123000	169500	115000	753250
129	110500	151200	77700	121500	190650	112000	763550
130	109400	161250	88050	119100	188700	127550	794050
131	112900	164850	86550	108900	190650	120500	784350
132	112200	225000	85950	111750	136500	115000	786400
133	109800	223950	87750	97500	122250	102000	743250
134	112500	154950	88200	113550	189450	102500	761150
135	111700	159300	66300	113700	175800	112500	739300
136	118250	158000	61500	124550	105500	125000	692800
137	109800	216750	84750	124950	109150	128250	773650
138	109650	222900	86400	124500	142800	131700	817950
139	110700	222300	92850	114000	128550	127800	796200
140	112350	223050	84450	116550	127500	118200	782100
141	105000	236850	90000	120000	144900	116250	813000
142	115050	223650	86550	115050	154200	115500	810000
143	113700	262000	89250	104700	193650	70050	833350
144	114750	236250	88500	111000	153000	123000	826500
145	115950	163500	91800	110550	194400	127200	803400
146	114900	234450	92550	111750	140550	127650	821850
147	114900	225300	91950	120450	129600	125100	807300
148	114150	230500	94200	120600	142150	133350	834950
149	118800	230550	93450	122850	158100	138150	861900
150	119250	225150	95850	128850	158550	143400	871050
151	120300	237300	93000	130200	156450	140400	877650
152	120750	223450	91950	132750	139950	136500	845350
153	121200	218300	93450	131700	142800	138150	845600
154	113100	209000	91200	130200	133950	127050	804500
155	115950	230200	89400	132600	155250	135300	858700
156	117450	222300	92700	132000	157500	138750	860700
157	121050	236250	90750	130500	158250	135750	872550
158	116100	163200	91500	128850	198450	91200	789300
159	117150	162300	90450	127650	200550	82800	780900
160	120300	231000	90375	124800	143250	127500	837225
161	117750	213150	85425	109650	126600	106650	759225
162	118650	215100	83700	109200	128550	121050	776250
163	120750	166050	82800	119850	190350	76050	755850
164	121200	153000	89250	131250	198750	93450	786900
165	121800	156600	88500	127800	205500	88200	788400
166	121200	149400	83850	125400	194550	83100	757500
167	119100	214200	87900	123300	133200	130500	808200
168	117450	216000	90000	121500	133500	120000	798450
169	121650	191400	58950	118950	145200	128550	764700
170	123900	209550	90750	118650	153300	125100	821250
171	120150	228000	99000	118650	156450	124500	846750
172	121500	227850	99900	125550	160650	121500	856950
173	122570	219300	89700	114750	156300	114600	817220
174	122230	227700	91950	115350	142800	113850	813880
175	118050	222450	90450	123600	136800	125400	816750
176	119250	221250	89550	118500	151500	125250	825300
177	121500	146850	87000	124950	202200	79950	762450
178	121575	141450	93450	131850	204450	80250	773025
179	121125	148950	91200	128100	202350	74550	766275
180	119850	144750	88500	125550	201450	84750	764850
181	120450	216450	88950	128550	148350	127950	830700

182	115950	202650	89100	158700	140400	95700	802500
183	120300	216900	89850	166800	160050	95100	849000
184	123750	219000	91950	166500	165000	100500	866700
185	94500	218250	114000	154950	162000	102450	846150
186	102000	211200	96450	129000	160950	128400	828000
187	121200	147450	91050	118050	195750	66900	740400
188	121050	192000	87150	127500	139050	125850	792600
189	114300	199650	84900	110100	130200	117000	756150
190	117000	136500	88200	119400	192600	68850	722550
191	115200	205200	85650	176500	99450	125550	806550
192	117000	222000	85350	184500	95250	129000	833100
193	118000	205000	85400	184500	138500	126750	858150
194	117500	210500	80100	181220	145000	112500	846820
195	121200	216000	80420	122230	139500	126750	806100
196	118050	205800	77250	119100	136500	111300	768000
197	116550	205200	90300	181500	92100	117300	802950
198	117150	209100	91650	164400	94950	117150	794400
199	115050	210900	90300	112050	156450	120000	804750
200	133500	214950	61800	137250	158250	79500	785250
201	175950	216750	23700	142950	156450	115950	831750
202	149650	219000	24450	128250	144150	128700	794200
203	150150	210900	25050	125550	143100	131100	785850
204	150200	224400	24450	127500	165300	133950	825800
205	165000	216000	66300	141450	158250	84750	831750
206	170500	219150	39900	145200	164700	120450	859750
207	170850	221100	38550	126750	165000	133500	855750
208	169500	216000	38550	116100	162300	128100	830550
209	165750	217500	38550	102750	145500	120300	790350
210	162000	205500	29100	117000	133500	110700	757800
211	176250	221250	24650	120900	138750	116250	798050
212	181500	217500	27250	152600	130500	120000	829350
213	179100	226200	24900	95350	176550	119250	821350
214	174900	225300	24750	134400	166950	120450	846750
215	140550	221250	52050	133500	162750	113550	823650
216	106950	219750	88950	124500	144000	116250	800400
217	102150	208650	88800	116400	134700	115350	766050
218	101550	215100	88500	117900	157050	119400	799500
219	103800	224250	86550	134700	161700	95700	806700
220	106500	223500	97200	121500	162000	112500	823200
221	98550	211200	86550	111000	153150	112350	772800
222	102600	213900	81150	113250	152100	120600	783600
223	98850	206400	81300	117750	133800	123600	761700
224	100500	198750	90000	120000	130500	118500	758250
225	99000	196450	91950	123150	133050	104700	748300
226	97800	215450	90300	118800	152700	130350	805400
227	70200	212250	118650	124350	153000	123450	801900
228	99450	212100	76350	125250	156750	129450	799350
229	97650	217050	97500	124650	155250	131250	823350
230	99750	211950	87000	129000	144000	139500	811200
231	97650	184000	90450	121800	132750	125550	752200
232	97950	221000	86550	118500	151500	129000	804500
233	117600	202650	69600	125850	154800	125550	796050
234	100050	211350	85350	181650	93750	128100	800250
235	95700	198000	87300	117450	151950	126900	777300
236	93600	209100	89250	124800	150450	121200	788400
237	93300	205500	87450	115050	134550	89700	725550
238	93000	203250	86400	114450	126000	147300	770400
239	94800	207900	85950	116250	148500	128250	781650
240	98250	208500	84450	110250	158250	126000	785700
241	96450	206850	80250	110400	152400	112200	758550
242	89850	205050	71100	113400	150750	98400	728550
243	67050	172800	86100	113250	153600	122400	715200

244	94645	202800	104250	119700	138000	114000	773395
245	93755	195150	101700	120750	131700	102450	745505
246	96300	204300	89100	119700	152700	108300	770400
247	97200	199800	100500	98550	149850	108000	753900
248	98250	197250	102000	103500	149250	118500	768750
249	97950	202350	93750	113400	141000	121350	769800
250	94050	203400	88650	115650	155100	131850	788700
251	99750	203250	113100	111450	139200	126750	793500
252	100500	198000	112950	110250	132450	130800	784950
253	102900	197550	82800	121650	151500	141300	797700
254	98550	199500	91200	123600	157650	144750	815250
255	100050	205200	90300	127500	161100	143700	827850
256	99000	203250	94500	130500	165750	144000	837000
257	102000	168750	97500	136650	166650	144150	815700
258	102450	210750	97950	132600	155850	142350	841950
259	100500	211350	98250	133500	150000	142650	836250
260	107850	209650	82050	167250	140700	149400	856900
261	108900	220550	87300	134700	169950	142650	864050
262	99300	212250	93600	134100	166200	134700	840150
263	98550	221700	92850	130200	162150	132600	838050
264	100950	220500	94500	121500	164250	129750	831450
265	100500	219450	96750	123900	151200	131700	823500
266	97650	211950	96150	108750	142350	117900	774750
267	96900	212850	91350	118350	161700	120900	802050
268	97350	212550	80700	120000	162000	133950	806550
269	97650	216750	94500	119550	164700	142050	835200
270	94650	207600	91800	122250	155550	143700	815550
271	93300	196350	82500	125700	147750	136050	781650
272	97500	207750	66750	131250	141750	141000	786000
273	91200	198750	87000	129000	131400	132300	769650
274	92550	205800	93450	127950	157650	131400	808800
275	92250	208950	87300	128850	163950	126750	808050
276	105000	205500	66000	127650	155250	115050	774450
277	125400	194700	67350	115650	154050	124050	781200
278	97800	197850	92250	107250	160950	118950	775050
279	94800	203700	91650	102900	141750	109500	744300
280	93750	207000	94500	111000	132750	111000	750000
281	96750	202500	93150	114150	151500	130950	789000
282	82350	227150	105600	154650	153750	88350	811850
283	102450	185050	91500	155100	153750	121200	809050
284	99000	210300	80250	127050	151050	137550	805200
285	90150	195150	93000	108000	140250	100800	727350
286	94050	206550	75750	101550	127200	112650	717750
287	96750	197550	94950	112500	129000	123750	754500
288	98250	210000	96300	126000	150750	137250	818550
289	99300	198150	96450	128100	152100	141900	816000
290	103950	213150	93300	132900	154950	154050	852300
291	99000	206850	105000	129150	150450	148200	838650
292	99150	204600	112800	126900	146250	140100	829800
293	106350	199050	102450	125850	135750	135450	804900
294	96750	196200	109800	120600	130050	131250	784650
295	94500	203250	108450	117000	145950	128550	797700
296	97500	209250	96750	121500	148500	130500	804000
297	100950	199950	92850	122700	134850	124050	775350
298	101400	212400	91950	118350	154800	133200	812100
299	100950	204900	75450	167250	96150	117900	762600
300	100200	198750	89250	118650	130950	115500	753300
301	97800	189900	87300	114900	121950	112350	724200
302	93450	207150	86850	155400	89550	111150	743550
303	71250	205950	102150	142500	137250	88350	747450
304	88500	206250	95250	104250	144000	79500	717750
305	97950	200100	91950	109200	147150	112200	758550

306	96450	208800	91200	109650	150300	112350	768750
307	95100	199350	91050	97500	133650	96450	713100
308	91050	199050	93900	92550	131850	91500	699900
309	100050	202200	91650	103200	154800	100800	752700
310	99600	209100	93450	104700	153000	93750	753600
311	101250	210200	95250	108430	150000	99000	764130
312	100050	209200	94500	97520	135750	106200	743220
313	98400	202650	95100	106500	144600	113100	760350
314	100350	199350	96450	108000	139650	121350	765150
315	97500	194250	93000	100650	129750	111600	726750
316	71250	198000	113100	161250	150150	75600	769350
317	100800	201000	95850	116100	154200	111900	779850
318	101250	203400	96450	114450	151950	120450	787950
319	100200	175050	94050	107550	149700	122250	748800
320	100500	205050	94500	101250	147000	119250	767550
321	105300	202050	97950	102150	133950	122100	763500
322	98100	194700	95550	101100	109800	95400	694650
323	115350	211200	83250	101250	143700	125400	780150
324	100800	208950	94500	99900	135000	106350	745500
325	94650	208500	95100	93000	132450	99000	722700
326	109800	199350	78900	77850	128100	100500	694500
327	98250	209250	93300	84750	127500	98250	711300
328	97950	200250	90450	79500	124500	96000	688650
329	91200	190200	89550	86250	119850	82650	659700
330	97500	200700	87900	85350	138000	91800	701250
331	96900	207900	90450	91050	134100	101400	721800
332	91950	184950	77100	86850	145050	91650	677550
333	99000	205950	89700	102000	146550	109800	753000
334	98400	205800	90000	95250	150300	101250	741000
335	97350	192000	88050	87750	125400	97950	688500
336	91200	187500	90750	97500	119250	93750	679950
337	92250	198000	87300	92400	145950	106200	722100
338	82350	202500	101400	168600	152250	0	707100
339	97200	202500	88800	219450	154450	0	762400
340	89550	186750	89250	181950	91950	0	639450
341	89250	202650	84900	180450	109200	0	666450
342	94650	200100	89700	196050	173150	0	753650
343	94800	184200	93150	180600	107550	0	660300
344	95250	195300	89250	174000	129750	0	683550
345	95250	186300	91200	185400	113550	0	671700
346	75750	204300	110250	152100	128700	0	671100
347	87450	194100	91950	150300	123300	0	647100
348	90150	192900	87750	174750	108750	0	654300
349	87750	180150	90150	152250	101700	0	612000
350	90150	187800	87150	168450	131550	0	665100
351	76500	182250	98250	167250	131250	0	655500
352	91800	189450	87450	160800	131700	0	661200
353	89850	189900	89100	177600	130950	0	677400
354	93150	195900	86850	196500	126750	0	699150
355	93000	192000	90900	202800	106100	0	684800
356	87000	170700	88650	190050	122500	0	658900
357	85200	178050	88500	228600	135600	0	715950
358	88500	173700	85800	210900	138900	0	697800
359	91500	174300	88950	201000	143250	0	699000
360	90300	183300	85350	206700	138600	0	704250
361	90750	187950	85350	208600	136050	0	708700
362	90750	186150	83400	200200	124350	0	684850
363	88650	184350	86700	197250	130500	0	687450
364	83850	180000	88200	183450	138550	0	674050
365	84540	182500	87500	183500	132500	0	670540
366	83500	181500	86500	182550	132450	0	666500

Note After the 338th days, the meter for feeder 8 was out of order. Therefore the substation used the meter for feeder 6 to record usage for feeder 8 as well, causing a large increase in the reading for feeder 6 after 338 days.

Commands analysis

Commands analysis are presented in the following steps.

1Graphs of daily consumption for each feeder and feeder combined.

MATLAB commands for showed graphs of daily comsumption for each and feeder combined.

Figure 3

```
getfile feeddif.num
y=getnum;
y1=y(1:366,2);
t=(1:366)';
ty1=[t y1];
putdn('Electricity usage per day in feeder1');
putfn(str2mat('day','kw.hr'));
putnum(ty1);
setvar x=1 y=2
system_dependent(14,'on')
tsplot
```

Figure 4

```
getfile feeddif.num
y=getnum;
y2=y(1:366,3);
t=(1:366)';
ty2=[t y2];
putdn('Electricity usage per day in feeder2');
putfn(str2mat('day','kw.hr')),
putnum(ty2);
setvar x=1 y=2
system_dependent(14,'on')
tsplot
```

Figure 5

```
getfile feeddif.num
y=getnum;
y3=y(1:366,4);
t=(1:366)';
ty3=[t y3];
putdn('Electricity usage per day in feeder3');
putfn(str2mat('day','kw.hr'));
putnum(ty3);
setvar x=1 y=2
system_dependent(14,'on')
tsplot
```

Figure 6

```
getfile feeddif.num
y=getnum;
y6=y(1:366,5);
t=(1:366)';
ty6=[t y6];
putdn('Electricity usage per day in feeder6');
putfn(str2mat('day','kw.hr'));
putnum(ty6);
setvar x=1 y=2
system_dependent(14,'on')
tsplot
```

Figure 7

```
getfile feeddif.num
y=getnum;
y7=y(1:366,6);
t=(1:366)';
ty7=[t y7];
```

```
putdn('Electricity usage per day in feeder7');
putfn(str2mat('day','kw.hr'));
putnum(ty7);
setvar x=1 y=2
system_dependent(14,'on')
tsplot
```

Figure 8

```
getfile feeddif.num
y=getnum;
y8=y(1:366,7);
t=(1:366)';
ty8=[t y8];
putdn('Electricity usage per day in feeder8');
putfn(str2mat('day','kw.hr'));
putnum(ty8);
setvar x=1 y=2
system_dependent(14,'on')
tsplot
```

Figure 9

```
getfile feeddif.num
y=getnum;
yy=y(1:366,2)+y(1:366,4);
t=(1:366)';
x=[t yy];
putdn('Electricity usage per day in feeder(1+3)');
putfn(str2mat('day','kw.hr'));
putnum(x);
setvar x=1 y=2
system_dependent(14,'on')
tsplot
```

Figure 10

```
getfile feeddif.num
y=getnum;
yy=y(1:366,3)+y(1:366,6);
t=(1:366)';
x=[t yy];
putdn('Electricity usage per day in feeder(2+7)');
putfn(str2mat('day','kw.hr'));
putnum(x);
setvar x=1 y=2
system_dependent(14,'on')
tsplot
```

Figure 11

```
getfile feeddif.num
y=getnum;
yy=y(1:366,5)+y(1:366,7);
t=(1:366)';
x=[t yy];
putdn('Electricity usage per day in feeder(6+8)');
putfn(str2mat('day','kw.hr'));
putnum(x);
setvar x=1 y=2
system_dependent(14,'on')
tsplot
```

Figure 12

```
getfile feeddif.num
y=getnum;
yt=y(1:366,8);
t=(1:366)';
tyt=[t yt];
```

```
putdn('Electricity usage per day in Pattani');
putfn(str2mat('day','kw.hr'));
putnum(tyt);
setvar x=1 y=2
system_dependent(14,'on')
tsplot
```

2. Summary of the numerical analysis of the daily consumption.

MATLAB commands for summary of the numerical analysis of the daily consumption.

Figure 13

```
getfile feeddif.num
y=getnum;
y1=y(1:366,2);
y2=y(1:366,3);
y3=y(1:366,4);
y6=y(1:366,5);
y7=y(1:366,6);
y8=y(1:366,7);
yt=y(1:366,8);
y13=y1+y3;
y27=y2+y7;
y68=y6+y8;
yy=[y13 y27 y68 yt]/100;
putnum(yy);
putfn(str2mat('feeder 1+3','feeder 2+7','feeder 6+8','total'));
putdn('Histograms and statistics of the daily consumption');
system_dependent(14,'on')
describe hist=1 col=1:4 typ=3 font=10
```

3. Comparison of the means of electricity usage between feeders and between days.

SPIDA commands for comparison of the means of electricity usage between feeders and between days and correlation analysis between feeders.

```
$x1:=feeddif.num[;2]
$x3:=feeddif.num[;4]
$x13:=$x1[1,,366]+$x3[1,,366]
$xx:=$x13
$x2:=feeddif.num[;3]
$x7:=feeddif.num[;6]
$x27:=$x2[1,,366]+$x7[1,,366]
$xx:=$xx,$x27
$x6:=feeddif.num[;5]
$x8:=feeddif.num[;7]
$x68:-$x6[1,,366]+$x8[1,,366]
$xx:=$xx,$x68
desc($xx)
twoway($xx)
corr($xx)
```

4. Correlation analysis between feeders.

Figure14.

```
getfile feeddif.num
y=getnum;
y1=y(1:366,2);
y3=y(1:366,4);
y13=y1+y3;
y2=y(1:366,3);
y7=y(1:366,6);
y27=y2+y7;
```

```
y6=y(1:366,5);
y8=y(1:366,7);
y68=y6+y8;
yy=[y13 y27 y68]/100;
putnum(yy);
putfn(str2mat('feeder (1+3)','feeder (2+7)','feeder (6+8)'));
putdn('relation between feeder');
system_dependent(14,'on')
relate plot=1 lin=2
```

5. Trend analysis of daily consumption.

Figure 15

```
getfile feeddif.num
y=getnum;
yy=y(1:366,2)+y(1:366,4);
t=(1:366)';
x=[t yy];
putdn('Electricity usage per day in feeder(1+3)');
putfn(str2mat('day','kw.hr'));
putnum(x);
system_dependent(14,'on')
tsplot  line=2
```

Figure 16

```
getfile feeddif.num
y=getnum;
yy=y(1:366,3)+y(1:366,6);
t=(1:366)';
x=[t yy];
putdn('Electricity usage per day in feeder(2+7)');
putfn(str2mat('day','kw.hr'));
```

```
putnum(x);
setvar x=1 y=2
system_dependent(14,'on')
tsplot line=2
```

Figure 17

```
getfile feeddif.num
y=getnum;
yy=y(1:366,5)+y(1:366,7);
t=(1:366)';
x=[t yy];
putdn('Electricity usage per day in feeder(6+8)');
putfn(str2mat('day','kw.hr'));
putnum(x);
setvar x=1 y=2
system_dependent(14,'on')
tsplot line=2
```

Figure 18

```
getfile feeddif.num
y=getnum;
y=y(1:366,8);
t=(1:366)';
x=[t y];
putdn('Electricity usage per day in Pattani');
putfn(str2mat('day','kw.hr'));
putnum(x);
setvar x=1 y=2
system_dependent(14,'on')
tsplot line=2
```

6. Comparison of the electricity usage between days.

MATLAB commands for comparison of the electricity usage between days.

Figure 19-21

```
system_dependent(14,'on')
getfile feeddif.num
y = getnum;
y1=y(1:364,2);
y3=y(1:364,4);
dy=y1+y3;
tdy  = [(1:364)' rem((1:364)'-1,7)+1 dy/100];
t2=tdy(1:364,1).^2;
tdyt2=[tdy t2];
putnum(tdyt2)
putfn(str2mat('day of year','day of week','feeder (1+3)','day^2'))
setvar 'x=1 4 2' y=3
adjust show=3 out=1
compare res=1
z=getnum('res=1');
ok=z(:,1)>1700 & z(:,1)<2100;
tdyt2=tdyt2(ok,:);
putnum(tdyt2)
adjust show=3  out=1
```

Figure 22-24

```
system_dependent(14,'on')
getfile feeddif.num
y = getnum;
y2=y(1:364,3);
y7=y(1:364,6);
dy=y2+y7;
tdy  = [(1:364)' rem((1:364)'-1,7)+1 dy/100];
```

```
t2=tdy(1:364,1).^2;
tdyt2=[tdy t2];
putnum(tdyt2)
putfn(str2mat('day of year','day of week','feeder (2+7)','day^2'))
setvar 'x=1 4 2' y=3
adjust show=3 out=1
compare res=1
z=getnum('res=1');
ok =z(:,1)>3200 & z(:,1)<3700;
tdyt2=tdyt2(ok,:);
putnum(tdyt2)
adjust show=3
```

Figure 25

```
system dependent(14,'on')
getfile feeddif.num
y = getnum;
y6=y(1:364,5);
y8=y(1:364,7);
dy=y6+y8;
tdy  = [(1:364)' rem((1:364)'-1,7)+1 dy/100];
t2=tdy(1:364,1).^2;
tdyt2=[tdy t2];
putnum(tdyt2)
putfn(str2mat('day of year','day of week','feeder (6+8)','day^2'))
setvar 'x=1 4 2' y=3
adjust show=3 out=1
compare res=1  font=10
z=getnum('res=1');
ok=z(:,1)>1700 & z(:,1)<2800;
tdyt2=tdyt2(ok,:);
```

```
putnum(tdyt2)
adjust show=3
```

Figure 26

```
system_dependent(14,'on')
getfile feeddif.num
y = getnum;
dy=y(1:364,8);
tdy  = [(1:364)' rem((1:364)'-1,7)+1 dy/100];
t2=tdy(1:364,1).^2;
tdyt2=[tdy t2];
putnum(tdyt2)
putfn(str2mat('day of year','day of week','Pattani','day^2'))
setvar 'x=1 4 2' y=3
adjust show=3 out=1
compare res=1
z=getnum('res=1');
ok=z(:,1)>6800 & z(:,1)<8350;
tdyt2=tdyt2(ok,:);
putnum(tdyt2)
adjust show=3
```

7. Development of the model electricity usage by time series.

MATLAB commands for development of the model electricity usage by time series.

Figure 27

```
system_dependent(14,'on')
getfile feeddif.num
y=getnum;
y13=y(1:364,2)+y(1:364,4);
ty13=[(1:364)' rem((1:364)'-1,7)+1 y13/100];
```

```
t2=(ty13(1:364,1)./100).^2;
ty13t2=[ty13 t2];
putnum(ty13t2)
putfn(str2mat('day of year','day of week','feeder (1+3)','day^2'))
describe
setvar 'x=1 2' y=3
adjust show=3 out=1 font=8
describe res=1
setvar res=1 y=1 x=2
tsplot res=1 pg=3 cf=-1  line=2  ar=1:4  font=9
```

Figure 28

```
system_dependent(14,'on')
getfile feeddif.num
y=getnum;
y13=y(1:364,2)+y(1:364,4);
ty13=[(1:364)' rem((1:364)'-1,7)+1 y13/100];
t2=(ty13(1:364,1)./100).^2;
ty13t2=[ty13 t2];
putnum(ty13t2)
putfn(str2mat('day of year','day of week','feeder (1+3)','day^2'))
describe
setvar 'x=1 2' y=3
adjust show=3 out=1 font=8
describe res=1
setvar res=1 y=1 x=2
tsplot res=1 pg=3 cf=-1 'har=1 2 52' ar=1:4  font=9
```

Figure 29

```
system_dependent(14,'on')
getfile feeddif.num
y=getnum;
```

```
y27=y(1:364,3)+y(1:364,6);
ty27=[(1:364)' rem((1:364)'-1,7)+1 y27/100];
t2=(ty27(1:364,1)./100).^2;
ty27t2=[ty27 t2];
putnum(ty27t2)
putfn(str2mat('day of year','day of week','feeder (2+7)','day^2'))
describe
setvar 'x=1 2' y=3
adjust show=3 out=1 font=8
describe res=1
setvar res=1 y=1 x=2
tsplot res=1 pg=3 cf=-1  line=2  ar=1:4  font=9
```

Figure 30

```
system_dependent(14,'on')
getfile feeddif.num
y=getnum;
y27=y(1:364,3)+y(1:364,6);
ty27=[(1:364)' rem((1:364)'-1,7)+1 y27/100];
t2=(ty27(1:364,1)./100).^2;
ty27t2=[ty27 t2];
putnum(ty27t2)
putfn(str2mat('day of year','day of week','feeder (2+7)','day^2'))
describe
setvar 'x=1 2' y=3
adjust show=3 out=1 font=8
describe res=1
setvar res=1 y=1 x=2
tsplot res=1 pg=3 cf=-1 'har=1 2 52' ar=1:4  font=9
```

Figure 31

```
system_dependent(14,'on')
```

```
getfile feeddif.num
y=getnum;
y68=y(1:364,5)+y(1:364,7);
ty68=[(1:364)' rem((1:364)'-1,7)+1 y68/100];
t2=(ty68(1:364,1)./100).^2;
ty68t2=[ty68 t2];
putnum(ty68t2)
putfn(str2mat('day of year','day of week','feeder (6+8)','day^2'))
describe
setvar 'x=1 2' y=3
adjust show=3 out=1 font=8
describe res=1
setvar res=1 y=1 x=2
tsplot res=1 pg=3 cf=-1 line=2 ar=1:4  font=9
```

Figure 32

```
system_dependent(14,'on')
getfile feeddif.num
y=getnum;
y68=y(1:364,5)+y(1:364,7);
ty68=[(1:364)' rem((1:364)'-1,7)+1 y68/100];
t2=(ty68(1:364,1)./100).^2;
ty68t2=[ty68 t2];
putnum(ty68t2)
putfn(str2mat('day of year','day of week','feeder (6+8)','day^2'))
describe
setvar 'x=1 2' y=3
adjust show=3 out=1 font=8
describe res=1
setvar res=1 y=1 x=2
tsplot res=1 pg=3 cf=-1 'har=1 2 52' ar=1:4  font=9
```

Figure 33

```
system dependent(14,'on')
getfile feeddif.num
y = getnum;
yt=y(1:364,8);
tyt=[(1:364)' rem((1:364)'-1,7)+1 yt/100];
t2=(tyt(1:364,1)./100).^2;
tytt2=[tyt t2];
putnum(tytt2)
putfn(str2mat('day of year','day of week','Pattani','day^2'))
describe
setvar 'x=1 2' y=3
adjust show=3 out=1 font=8
describe res=1
setvar res=1 y=1 x=2
tsplot res=1 pg=3 cf=-1 line=2 ar=1:4 font=9
```

Figure 34

```
system_dependent(14,'on')
getfile feeddif.num
y = getnum;
yt=y(1:364,8);
tyt=[(1:364)' rem((1:364)'-1,7)+1 yt/100];
t2=(tyt(1:364,1)./100).^2;
tytt2=[tyt t2];
putnum(tytt2)
putfn(str2mat('day of year','day of week','Pattani','day^2'))
describe
setvar 'x=1 2' y=3
adjust show=3 out=1 font=8
describe res=1
```

```
setvar res=1 y=1 x=2
tsplot res=1 pg=3 cf=-1 'har=1 2 52' ar=1:4  font=9
```