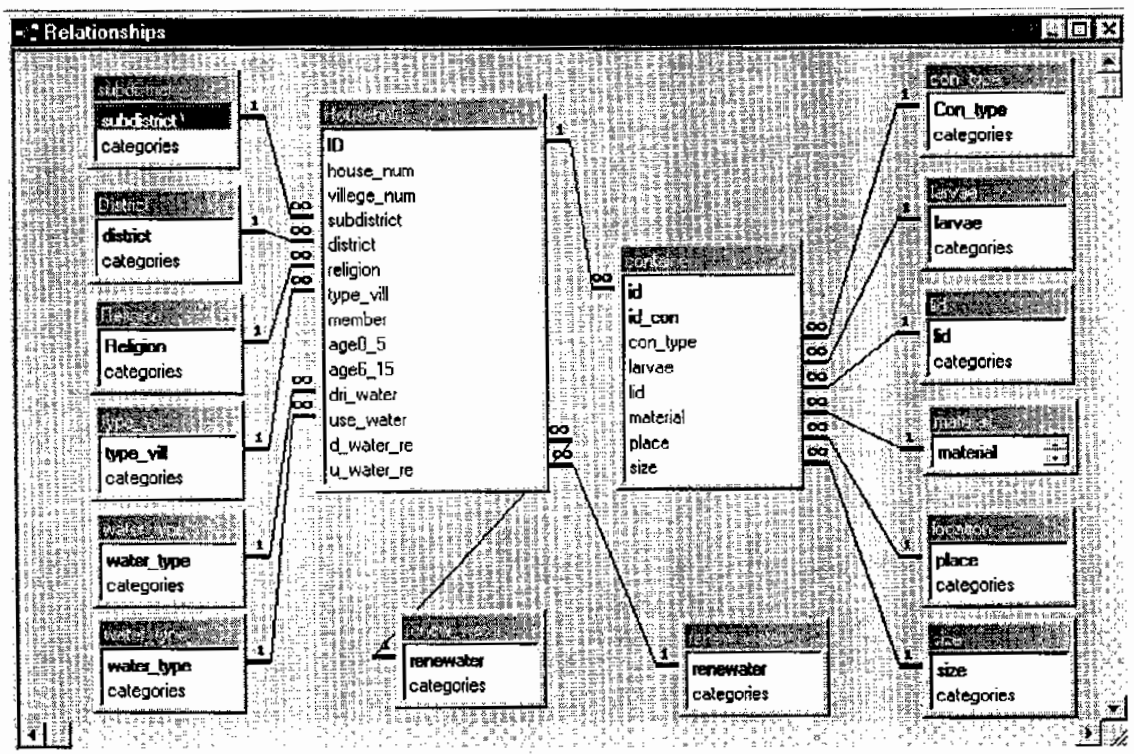
APPENDIX

APPENDIX

A. Data structure

The data were gathered and entered into Microsoft Access database file called *dengue.mdb*. There were created two main tables with household and container. Otherwise there were attribute tables. The relationships between tables were as follows.



The data in the household table consisted of identification of survey form, house number, village number, subdistrict areas, district areas, religion, type of village (transmission/non-transmission), member in house, member age 0-5 years, member age 6-15 years, drinking water source, washing water source, drinking water renewal, and washing water renewal. The data records were as follows.

ID	House_num	Villege_num	Subdistrict	District	Religion	Type_vill	Member	Age0_5	Age6_15	dri_water	wash_water	d_water_re	w_water_re
1	46/3	2	1	1	1	0	3	0	1	1	1	2	1
2	46/1	2	1	1	1	0	5	0	2	1	1	2	2
3	27/1	2	1	1	1	0	5	1	2	1	1	1	1
4	26/1	2	1	1	1	0	2	0	0	1	1	3	2
5	18/2	2	1	1	1	0	8	2	3	1	1	2	2
6	18/1	2	1	1	1	0	7	1	3	1	1	2	2
7	40	2	1	1	1	0	3	0	1	1	1	1	1

The data in container table consisted of identification of survey form, identification of container, container type, larvae in container, lid, container material, place, size of container. The data records were as follows.

Id	id_con	Con_type	Larvae	Lid	material	place	size
1	1	1	0	1	1	1	1
1	2	1	0	1	1	1	1
1	3	2	0	0	3	1	1
1	4	6	1	0	5	3	1
1	5	6	1	0	5	3	1
1	6	7	1	0	5	3	1
2	1	1	0	1	1	1	1
2	2	1	0	1	1	1	1
2	3	1	0	1	1	1	1
2	4	1	0	1	3	1	1

A query was used to created the data of the household can be obtained by this SQL command, as follows.

SELECT Household.ID, Household.district, Household.religion, Household.type_vill, Household.member, Household.age0_5, Household.age6_15, Household.dri_water, Household.wash_water, Household.d_water_re, Household.w_water_re
FROM Household;

After that these data were transferred to the datafile *dhfdata.num* in the Notepad Editer for analysis of time of occurrence.

A query was used to create the data of the container, obtained by a SQL command, as follows.

SELECT Household.ID, Household.district, Household.religion, Household.type_vill, container.id_con, container.con_type, container.larvae, container.lid, container.material, container.place, container.size

FROM Household INNER JOIN container ON Household.ID = container.id;

After that these data were transferred to the datafile *data1.num* in Notepad for the analysis of time of occurrence.

B. Programming preliminary result and statistical modeling

Matlab version 5 and Asp (McNeil, 1998) were used for graphical presentation and statistical analysis. The programs were as follows.

Program house.m to create figures in chapter 3

```
% Program created the Figure 3.1
getfile dhfdata
y=getnum;
describe his=1
```

Stratify by variable for calculated percentage distribution of determinant variables over households that were shown in Table 3.1

```
% drinking source
setvar y=8 x=8
stratify
getnum res=1

% washing source
setvar y=9 x=9
stratify
getnum res=1

% drinking water renewal
setvar y=10 x=10
stratify
getnum res=1
```

```
% washing water renewal
setvar y=11 x=11
getnum res=1

% Program created the Figure 3.2
getfile data1
y=getnum;
describe his=1
```

Stratify by variable for calculated percentage distribution of determinant variables over containers that were shown in Table 3.2

```
% container type
setvar y=6 x=6;
stratify ;
getnum res=1

% laevae
setvar y=7 x=7;
stratify ;
getnum res=1

% lid
setvar y=8 x=8;
stratify ;
getnum res=1

% material
setvar y=9 x=9;
stratify ;
getnum res=1

% place
setvar y=10 x=10;
stratify ;
getnum res=1

% container size
setvar y=11 x=11;
stratify ;
getnum res=1
```

Program plot odds ratio compare water consumption between transmission and non-transmission areas, Buddhist and Muslim.

Association between household determinants and stratification variable in Table 3.6 and Table 3.8

```
getfile dhfdata
y=getnum;

% goup data for some categories had very few number
other=y(:,8)==3 | y(:,8)==4 |y(:,8)==5;
y(other,8)=3+0*y(other,8);
ot=y(:,9)==3 | y(:,9)==4 | y(:,9)==5;
y(ot,9)=2+0*y(ot,9);
oth=y(:,10)==4| y(:,10)==5;
y(oth,10)=4+0*y(oth,10);
th=y(:,11)==4| y(:,11)==5;
y(th,11)=4+0*y(th,11);
putnum(y);

lab=getlab;
lab{8} = {'1 Well' '2 Tap water' '3 others'};
lab{9} = {'1 Well' '2 Tap water' '3 Others'};
lab{10} = {'1 Every day' '2 2-3 days' '3 4-6 days' '4 Others'};
lab{11} = {'1 Every day' '2 2-3 days' '3 4-6 days' '4 Others'};
putlab(lab);
```

Compare houschold determinants between transmission and non-transmission that were shown in Table 3.6

```
% drinking source
setvar y=8 'x=4 8';
stratify ;
getnum res=1
setvar y=1 z=4 x=2 res=1
orplot res=1 log=1 font=8

% washing source
setvar y=9 'x=4 9';
stratify ;
getnum res=1
setvar y=1 z=4 x=2 res=1
orplot res=1 log=1 font=8 trim=0

% drinking water renewal
setvar y=10 'x=4 10';
stratify ;
getnum res=1
setvar y=1 z=4 x=2 res=1
orplot res=1 log=1 font=8
```

```
% washing water renewal
setvar y=11 'x=4 11';
stratify ;
getnum res=1
setvar y=1 z=4 x=2 res=1
orplot res=1 log=1 font=8
```

Compare household determinants between Buddhist and Muslim that were shown in Table 3.8

```
% drinking source
setvar y=8 'x=3 8';
stratify ;
getnum res=1
setvar y=1 z=4 x=2 res=1
orplot res=1 log=1 font=8

% washing source
setvar y=9 'x=3 9';
stratify ;
getnum res=1
setvar y=1 z=4 x=2 res=1
orplot res=1 log=1 font=8

% drinking water renewal
setvar y=10 'x=3 10';
stratify ;
getnum res=1
setvar y=1 z=4 x=2 res=1
orplot res=1 log=1 font=8

% washing water renewal
setvar y=11 'x=3 11';
stratify ;
getnum res=1
setvar y=1 z=4 x=2 res=1
orplot res=1 log=1 font=8
```

Program association between container determinants and stratification variable in Table 3.7 and Table 3.9

```
getfile data1;
y=getnum;
% goup data for some categories had very few number
```

```
plant=y(:,6)==3 | y(:,6)==4 | y(:,6)==5 | y(:,6)==6;
y(plant,6)=3+0*y(plant,6);
un=y(:,6)==7;
y(un,6)=4+0*y(un,6);
alumi=y(:,9)==4 | y(:,9)==5 ;
y(alumi,9)=4+0*y(alumi,9);
putnum(y);
```

```
lab=getlab;
lab{6} = {'1 drink' '2 wash' '3 others' '4 unused'};
lab{9} = {'1 Clay' '2 Cement' '3 Plastic' '4 Others'};
putlab(lab);
```

Compare container determinants between transmission and non-transmission that were shown in Table 3.7

```
% container type
setvar y=6 'x=4 6';
stratify ;
getnum res=1
setvar y=1 z=4 x=2 res=1
orplot res=1 log=1 font=9

% lacvae
setvar y=7 'x=4 7';
stratify ;
getnum res=1
setvar y=2 z=4 x=1 res=1
orplot res=1 log=1 font=9

% lid
setvar y=8 'x=4 8';
stratify ;
getnum res=1
setvar y=2 z=4 x=1 res=1
orplot res=1 log=1 font=9

% material
setvar y=9 'x=4 9';
stratify ;
getnum res=1
setvar y=1 z=4 x=2 res=1
orplot res=1 log=1 font=9

% place
setvar y=10 'x=4 10';
stratify ;
getnum res=1
```

```
setvar y=1 z=4 x=2 res=1
orplot res=1 log=1 font=9

% container size
setvar y=11 'x=8 11';
stratify ;
getnum res=1
setvar y=1 z=4 x=2 res=1
orplot res=1 log=1 font=9
```

Compare container determinants between Buddhist and Muslim that were shown in Table 3.9

```
% container type
setvar y=6 'x=3 6';
stratify ;
getnum res=1
setvar y=1 z=4 x=2 res=1
orplot res=1 log=1 font=8

% larvae
setvar y=7 'x=3 7';
stratify ;
getnum res=1
setvar y=1 z=4 x=2 res=1
orplot res=1 log=1 font=8 trim=0

% lid
setvar y=8 'x=3 8';
stratify ;
getnum res=1
setvar y=1 z=4 x=2 res=1
orplot res=1 log=1 font=8 trim=0

% material
setvar y=9 'x=3 9';
stratify ;
getnum res=1
setvar y=1 z=4 x=2 res=1
orplot res=1 log=1 font=8

% place
setvar y=10 'x=3 10';
stratify ;
getnum res=1
setvar y=1 z=4 x=2 res=1
orplot res=1 log=1 font=8
```

```
% container size
setvar y=11 'x=3 11';
stratify ;
getnum res=1
setvar y=1 z=4 x=2 res=1
orplot res=1 log=1 font=8
```

Program ch4a.m to create Figures 4.1-4.6

```
getfile data1;
y=getnum;

% goup data for some categories had very few number
plant=y(:,6)==3 | y(:,6)==4 | y(:,6)==5 | y(:,6)==6;
y(plant,6)=3+0*y(plant,6);
un=y(:,6)==7;
y(un,6)=4+0*y(un,6);
alumi=y(:,9)==4 | y(:,9)==5 ;
y(alumi,9)=4+0*y(alumi,9);
putnum(y);

lab=getlab;
lab{6} = {'1 drink' '2 wash' '3 others' '4 unused'};
lab{9} = {'1 Clay' '2 Cement' '3 Plastic' '4 Others'};
putlab(lab);

y1=y;
setvar y=7 x='2 3 4 6 8 9 10 11 7';
stratify;
getnum res=1


% Figure 4.1, odds ratio larval? & Container type Adjust lid
setvar y=4 z=11 'x=9 5' res=1
orplot strat=1 res=1 log=1 font=9 xmin=-3;
title('DHF risk factors: adjusted for lid')


% Figure 4.2, odds ratio larval? & Material between lid
setvar y=6 z=11 'x=9 5' res=1
orplot strat=1 res=1 log=1 font=9
title('DHF risk factors: adjusted for lid')

% Figure 4.3, odds ratio larval? & place between container
setvar y=7 z=11 'x=9 5' res=1
orplot strat=1 res=1 log=1 font=9
title('DHF risk factors: adjusted for lid')
```

```
%figure 4.4, odds ratio larval? & container size and container
setvar y=8 z=11 'x=9 5' res=1
orplot strat=1 res=1 log=1 font=9
title('DHF risk factors: adjusted for lid')
```

Program ch4c.m to create Figures 4.6-4.7

```
getfile data1;
y = getnum;
% recode use
% combine plant, flowerpot, ant trap, and other use
plant = y(:,6)>3 & y(:,6)<7;
y(plant,6) = 3+0*y(plant,6);
unused = y(:,6)==7;
y(unused,6) = 4+0*y(unused,6);

% recode material and lid into 5 categories
lid = y(:,8)==1;
claycement = y(:,9)==1 | y(:,9)==2;
plastic = y(:,9)==3;
other = y(:,9)>3;
cclid = claycement & lid;
ccnolid = claycement & ~lid;
plid = plastic & lid;
pnolid = plastic & ~lid;
y(plid,9) = 0*y(plid,9)+1;
y(pnolid,9) = 0*y(pnolid,9)+2;
y(cclid,9) = 0*y(cclid,9)+3;
y(ccnolid,9) = 0*y(ccnolid,9)+4;
y(other,9) = 0*y(other,9)+5;
putnum(y);
fn = getfn;
fn{9} = 'material and lid';
putfn(fn)
lab = getlab;
lab{6} = {'1 drink' '2 wash' '3 others' '4 unused'};
lab{9} = {'1 plastic lid' '2 plastic non-lid' '2 clay/cem lid' '4 clay/cem non-lid' '5
others'};
putlab(lab);

% Figure 4.5
setvar y=7 x=[9 10 6 4 3 2]
lreg ref=[1 1 1 1 1 2]

% Figure 4.6
setvar y=7 x=[9 6 4 3 2];
```

```
lreg ref=[1 1 1 1 2]

% Figure 4.7
setvar y=7 x=[9 6 4 2];
lreg ref=[1 1 1 2]
```

Program ch4c.m to create Figures 4.8

```
getfile data1;
y = getnum;
% recode use
% combine plant, flowerpot, ant trap, and other use
plant = y(:,6)>3 & y(:,6)<7;
y(plant,6) = 3+0*y(plant,6);
unused = y(:,6)==7;
y(unused,6) = 4+0*y(unused,6);
putnum(y);

% recode material and lid into 5 categories
lid = y(:,8)==1;
claycement = y(:,9)==1 | y(:,9)==2;
plastic = y(:,9)==3;
other = y(:,9)>3;
cclid = claycement & lid;
ccnolid = claycement & ~lid;
plid = plastic & lid;
pnolid = plastic & ~lid;
y(plid,9) = 0*y(plid,9)+1;
y(pnolid,9) = 0*y(pnolid,9)+2;
y(cclid,9) = 0*y(cclid,9)+3;
y(ccnolid,9) = 0*y(ccnolid,9)+4;
y(other,9) = 0*y(other,9)+5;

% recode container type and place into 12 categories
inside = y(:,10)==1;
cover = y(:,10)==2;
outdoor = y(:,10)==3;
drink = y(:,6)==1;
wash = y(:,6)==2;
other = y(:,6)==3;
unused = y(:,6)==4;
drinkin = drink & inside;
drinkco = drink & cover;
drinkou = drink & outdoor;
washin = wash & inside;
washco = wash & cover;
washou = wash & outdoor;
```

```
otherin = other & inside;
otherco = other & cover;
otherou = other & outdoor;
unusedin = unused & inside;
unusedco = unused & cover;
unusedou = unused & outdoor;
y(drinkin,6) = 0*y(drinkin,6)+1;
y(drinkco,6) = 0*y(drinkco,6)+2;
y(drinkou,6) = 0*y(drinkou,6)+3;
y(washin,6) = 0*y(washin,6)+4;
y(washco,6) = 0*y(washco,6)+5;
y(washou,6) = 0*y(washou,6)+5;
y(otherin,6) = 0*y(otherin,6)+6;
y(otherco,6) = 0*y(otherco,6)+6;
y(otherou,6) = 0*y(otherou,6)+6;
y(unusedin,6) = 0*y(unusedin,6)+7;
y(unusedco,6) = 0*y(unusedco,6)+7;
y(unusedou,6) = 0*y(unusedou,6)+7;

putnum(y);
fn = getfn;
fn{9} = 'material and lid';
fn{6} = 'cont type and place';

putfn(fn)
lab = getlab;
lab{6} = {'1 drink inside' '2 drink eaves' '3 drink outdoors' '4 wash inside' '5 wash
eaves&outdoors' '6 others' '7 unused'};
lab{9} = {'1 plastic lid' '2 plastic non-lid' '3 clay/cem lid' '4 clay/cem non-lid' '5
others'};
putlab(lab);

% Figure 4.8
setvar y=7 x=[6 9 4 2]
lreg ncat=12  'ref=1 1 1 2'
```

ID. No.....

Aedes Survey Form

Date..... Name of surveyor.....

House Number..... Village No... Subdistrict ..... District..... Pattani Province

Authority area; (1) Municipality (2) Semi Municipality (3) Rural

Member in house ..... Age 0-5 years ..... Age 6-15 years .....

Drinking water source; (1) well (2) tap water (3) rain (4) carefe water (5) others.....

Washing water source; (1) well (2) tap water (3) rain (4) carefe water (5) others.....

Period of drinking water renewal;

(1) every day (2) 2-3 days (3) 4-6 days (4) every week (5) other.....

Period of washing water renewal;

(1) every day (2) 2-3 days (3) 4-6 days (4) every week (5) other.....

Cont. No	Lid Yes/No	Place			Containers type													
					Drinking		Washing		Ant Trap		Plant		Flower Pot		Other Used		Un used	
		In Side	Eaves	Out doors	Larvae		Larvae		Larvae		Larvae		Larvae		Larvae		Larvae	
					Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
1																		
2																		
3																		

During 1 October 1997 - 30 September 1998 Period, No. of DHF patient .....,

age 0-5 years ....., age 6-15 years....., more than 15 years .....

Remarks.....

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