

**IMPACT OF ACCESSIBILITY TO  
SCHOOLS AND ECONOMIC CENTERS  
ON POVERTY AND GENDER EQUITY  
IN THE PHILIPPINES**

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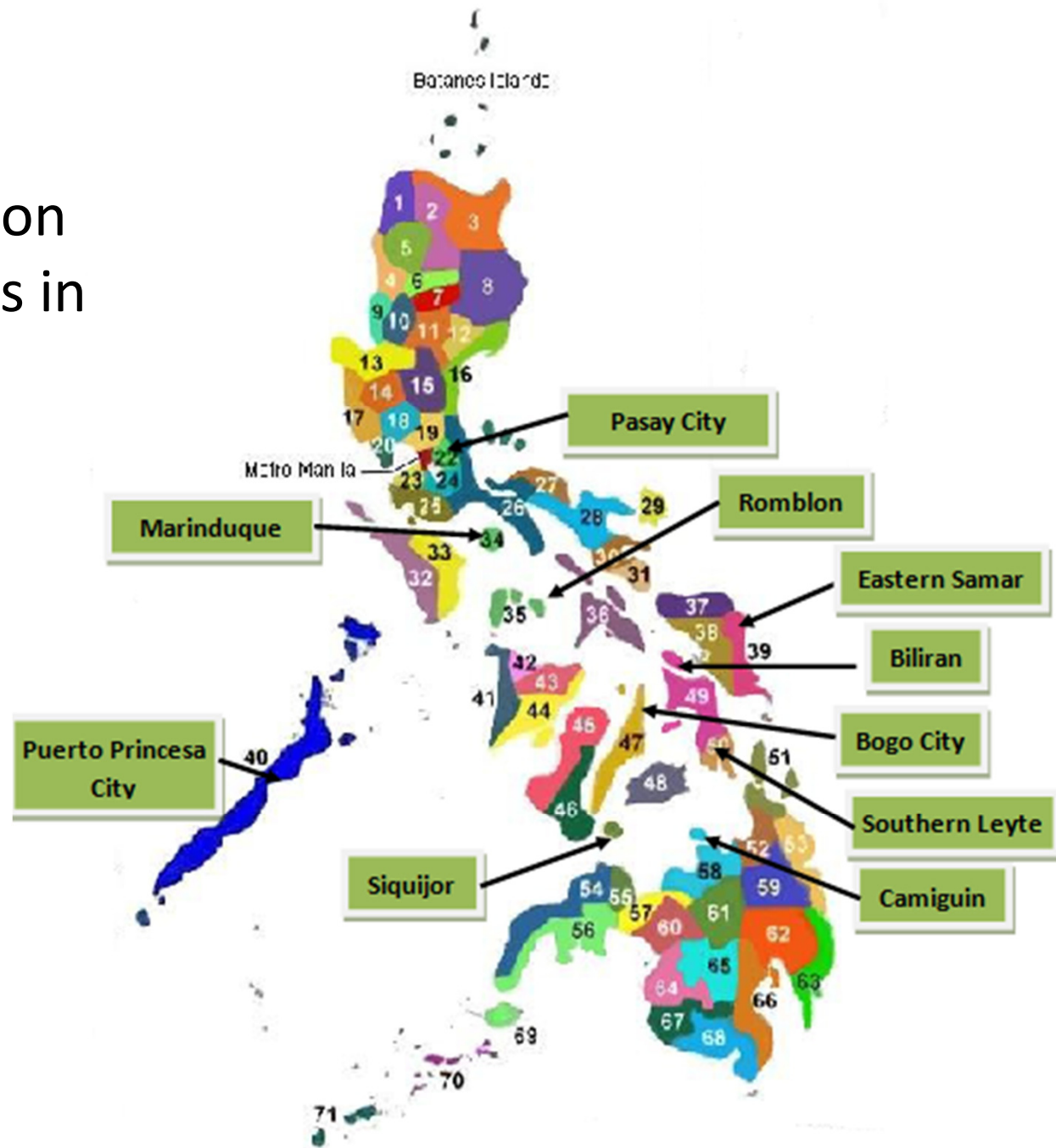
## **BACKGROUND AND RATIONALE OF THE PROJECT**

**Accessibility** is defined in this study as the ease with which the individual could avail of the social services and economic opportunities laid in geographic space (Fillone, etal., 2011)

## BACKGROUND AND RATIONALE OF THE PROJECT

- In the previous study by Fillone, et al., (2011), it was found that for the provinces of Eastern Samar and Siquijor, more proportion of boys are **employed** than girls when both are of working age but are still expected to be **studying** while more proportion of girls are in **school** than boys in almost all age group
- Focusing on accessibility to schools and economic centers effect on poverty and gender equity, an additional of eight more sample provinces/cities were analyzed for a total of 10

Figure 3.1 The geographic location of the study areas in the country



Source: Philippine Travel Destination Guides

# Objectives of the Study

- To determine the impact of accessibility to schools and economic centers on poverty and gender equality
- To use a generalized cost model to measure accessibility
- To develop regression models relating poverty and accessibility to schools and economic centers
- To recommend policy measures to address gender bias in terms of employment opportunities and access to education

# Flow of the Study

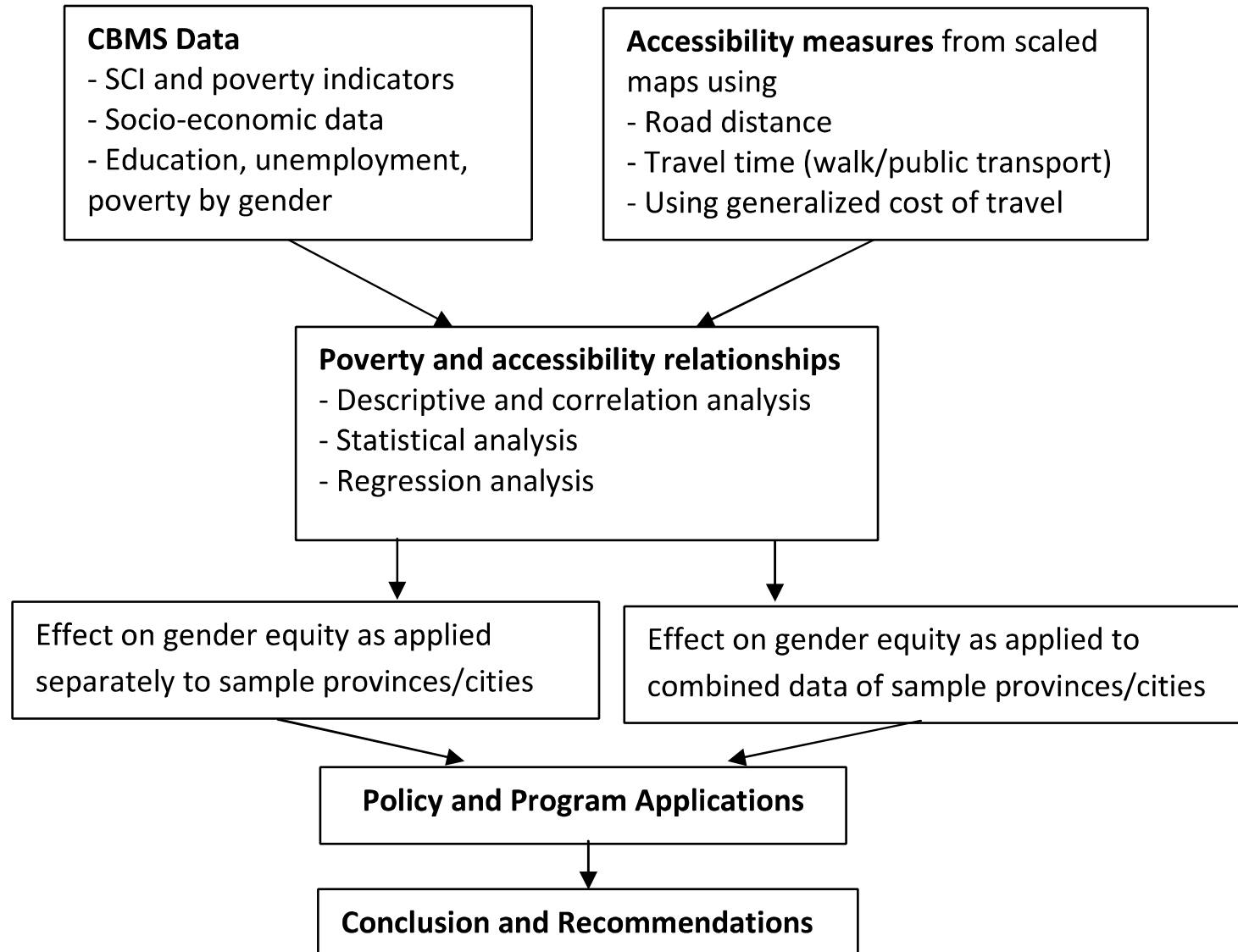


Table 3.1 Number of Primary, Elementary and High Schools in the Study Areas

| Province/City            | No. of Elementary Schools | No. of High Schools |
|--------------------------|---------------------------|---------------------|
| Biliran ✓                | 125                       | 16                  |
| Bogo City, Cebu Province | 22                        | 9                   |
| Camiguin ✓               | 54                        | 10                  |
| Eastern Samar ✓          | 462                       | 49                  |
| Southern Leyte ✓         | 92                        | 39                  |
| Marinduque               | 181                       | 44                  |
| Pasay City ✓             | 19                        | 9                   |
| Puerto Princesa City ✓   | 75                        | 20                  |
| Romblon                  | 215                       | 37                  |
| Siquijor ✓               | 60                        | 13                  |
| <b>Total</b>             | <b>1305</b>               | <b>246</b>          |

✓ Visited



Table 3.2 The Number of Major Economic Centers in the Study Areas

| Province/City            | No. of Major Economic Centers | Location  |
|--------------------------|-------------------------------|---|
| Biliran                  | 3                             | Caibiran, Naval <sup>1,2</sup> , Biliran <sup>2</sup>   |
| Bogo City, Cebu Province | 1                             | Bogo City <sup>2</sup>  |
| Camiguin                 | 3                             | Mambajao <sup>1,2</sup> , Mahinog <sup>2</sup> , Guinsiliban <sup>2</sup>   |
| Eastern Samar            | 3                             | Guiuan <sup>1,2</sup> , Oras, Borongan <sup>1</sup>   |
| Marinduque               | 3                             | Boac <sup>2</sup> , Buenavista, Gasan <sup>1</sup>  |
| Pasay City               | ∞                             | The whole city is a major economic center   |
| Puerto Princesa City     | 1                             | Puerto Princesa City <sup>1,2</sup>   |
| Romblon                  | 5                             | Romblon <sup>2</sup> , Magdiwang <sup>1</sup> , Odiongan <sup>2</sup> , Alcantara <sup>1</sup> , San Agustin <sup>2</sup> |
| Southern Leyte           | 4                             | Maasin <sup>1,2</sup> , Sogod <sup>2</sup> , Hinunangan, Liloan <sup>2</sup>  |
| Siquijor                 | 3                             | Siquijor <sup>1</sup> , Lazi <sup>2</sup> , Larena <sup>2</sup>   |

<sup>1</sup> with Airport, <sup>2</sup> with Port





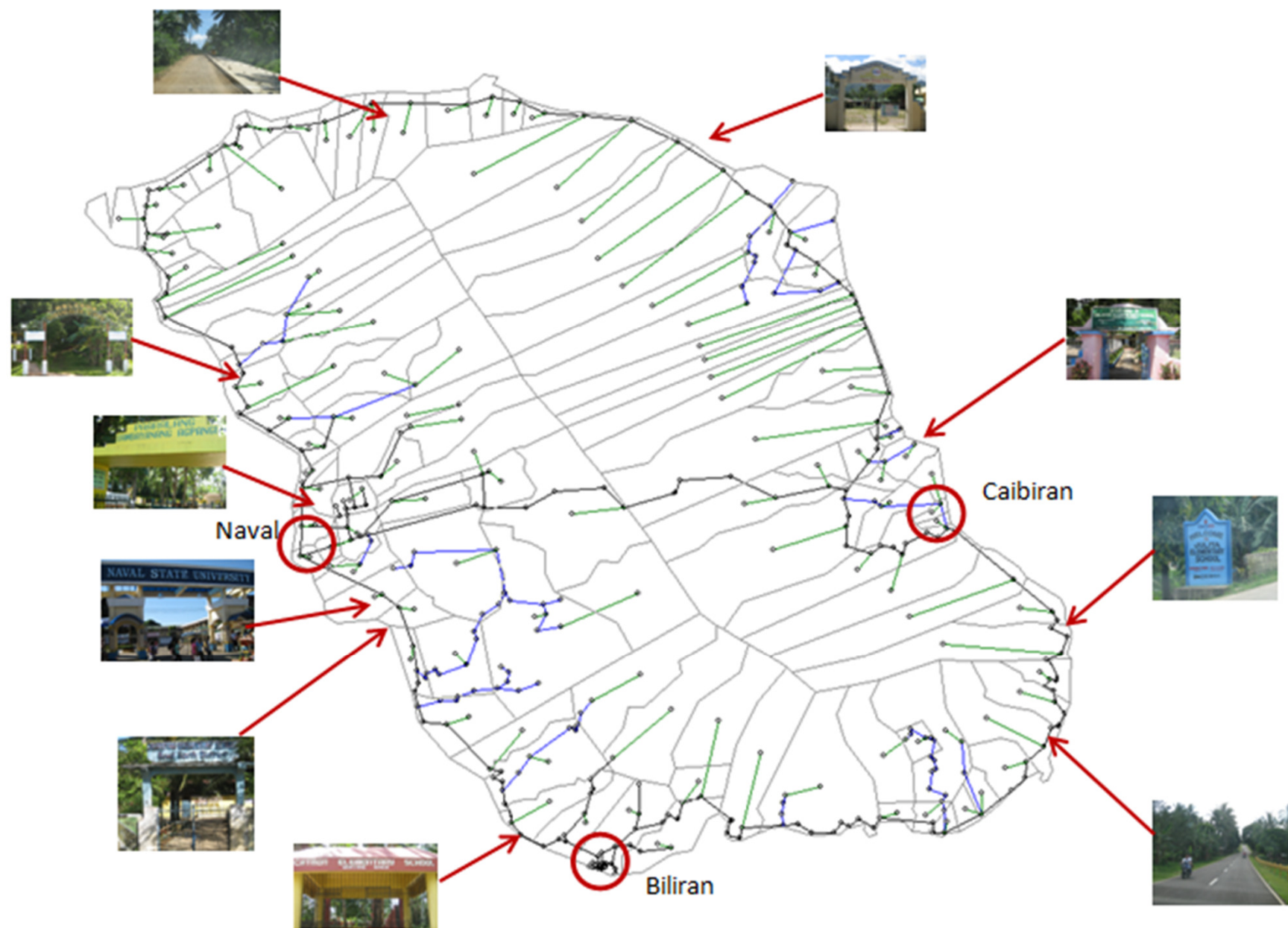


Figure 3.2 Map of Biliran province and location of some schools and economic enters

Table 3.4 Travel time equations for the study areas

| Purpose/destination of travel | Prevalent Transport Mode<br>Land | Travel time equation (min) |                 |               |                 |              |
|-------------------------------|----------------------------------|----------------------------|-----------------|---------------|-----------------|--------------|
|                               |                                  | National Road              | Provincial Road | Barangay Road | Water transport |              |
|                               |                                  |                            |                 |               | Inland water    | Ocean Water  |
| Elementary School             | Tricycle                         | 2.4 <i>S</i>               | 3.0 <i>S</i>    | 4.0 <i>S</i>  | 7.5 <i>S</i>    | 5.0 <i>S</i> |
| High School                   | Tricycle, Jeepney                | 2.4 <i>S</i>               | 3.0 <i>S</i>    | 4.0 <i>S</i>  |                 |              |
| Market/Economic Centers       | Jeepney, Multicab, Minibus       | 2.0 <i>S</i>               | 2.4 <i>S</i>    | 3.0 <i>S</i>  |                 |              |
|                               | Walking                          | 20.0 <i>S</i>              |                 |               |                 |              |

$$t = 60S/v$$

where  $t$  = travel time in minutes,

$v$  = average travel/sailing speed, in kph,

$S$  = road segments/river links/sea lanes, in kilometers, and

60 = conversion factor of hours to minutes.

# Generalized Cost of Travel

$$GC = C_t + T_t \times C \quad \text{Eq. (2)}$$

where  $C_t$  = cost of travel (in pesos) from household to destination by public (i.e. fare) or private (i.e. fuel cost) mode, in pesos

$T_t$  = estimated travel time from household to destination, in minutes

$C$  = cost of time of the individual (may be different for those going to school and those going to economic centers) in peso/unit of time

= the hourly wage rate of the individual was used as cost of time

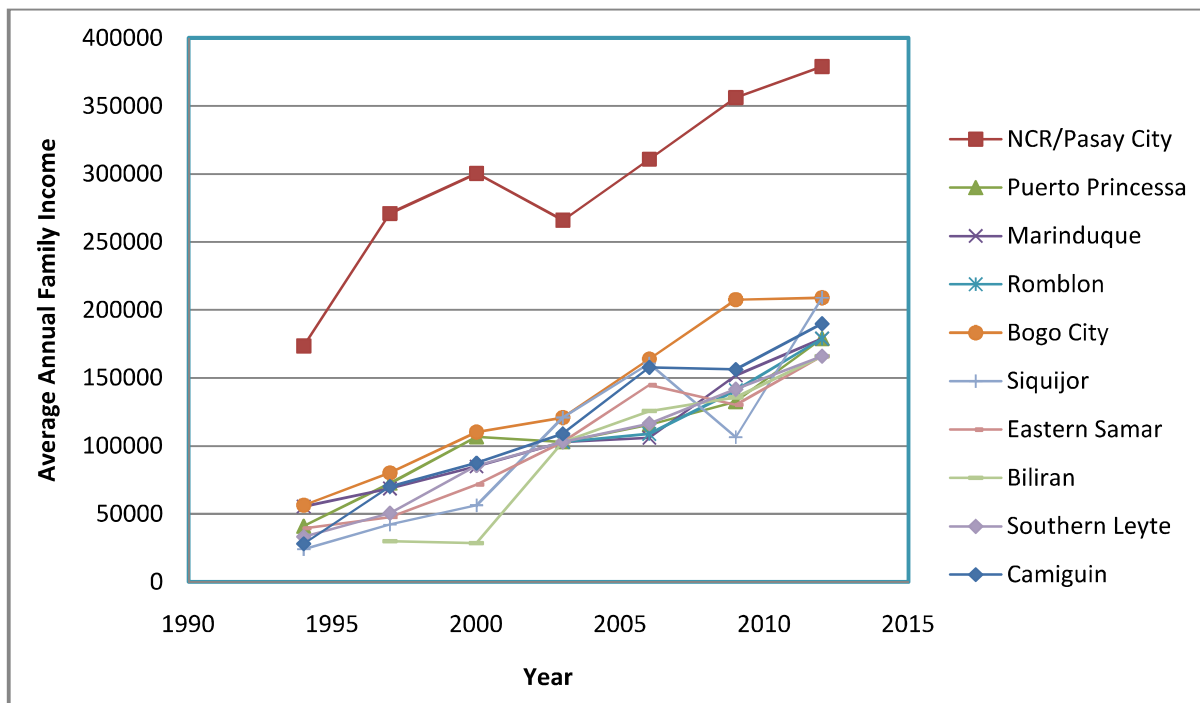


Figure 3.16 Average annual family income in the study areas

Table 3.5 Wage rates in the study areas for years 2006-2011 (NSCB)

| Region | Province/City  | Year | Average Annual income (Php) | Ave. Monthly Income (Php) | Ave. daily Wage (Php) | Ave. Hourly Rate (Php) |
|--------|----------------|------|-----------------------------|---------------------------|-----------------------|------------------------|
| NCR    | Pasay City     | 2011 | 371,333                     | 30,944                    | 944                   | 118                    |
| IVB    | Puerto         | 2009 | 132,640                     | 11,053                    | 337                   | 42                     |
|        | Marinduque     | 2008 | 136,496                     | 11,375                    | 347                   | 43                     |
|        | Romblon        | 2007 | 119,631                     | 9,969                     | 304                   | 38                     |
| VII    | Bogo City      | 2009 | 207,478                     | 17,290                    | 527                   | 66                     |
|        | Siquijor       | 2006 | 160,616                     | 13,385                    | 408                   | 51                     |
| VIII   | Eastern Samar  | 2006 | 144,649                     | 12,054                    | 368                   | 46                     |
|        | Biliran        | 2006 | 125,731                     | 10,478                    | 320                   | 40                     |
|        | Southern Leyte | 2008 | 133,218                     | 11,102                    | 339                   | 42                     |
| X      | Camiguin       | 2010 | 167,507                     | 13,959                    | 426                   | 53                     |

Table 4.1 Average barangay SCI of the study areas

| Province/City        | No. of Barangays | SCI              |          |
|----------------------|------------------|------------------|----------|
|                      |                  | Average Brgy SCI | SCI S.D. |
| Eastern Samar        | 596              | 2.72             | 1.03     |
| Biliran              | 132              | 2.53             | 0.644    |
| Romblon              | 218              | 2.16             | 0.631    |
| Bogo City            | 27               | 2.12             | 0.737    |
| Southern Leyte       | 484              | 2.01             | 0.638    |
| Camiguin             | 58               | 1.49             | 0.449    |
| Siquijor             | 134              | 1.49             | 0.511    |
| Marinduque           | 218              | 1.42             | 0.665    |
| Puerto Princesa City | 66               | 1.32             | 0.862    |
| Pasay City           | 201              | 0.52             | 0.456    |
| Total                | 2134             |                  |          |

$$SCI = \sum_{i=1}^{14} \left( \frac{\text{Number of HH with unmet needs } i \text{ in the Barangay}}{\text{Total number of HH in the Barangay}} \right) i$$

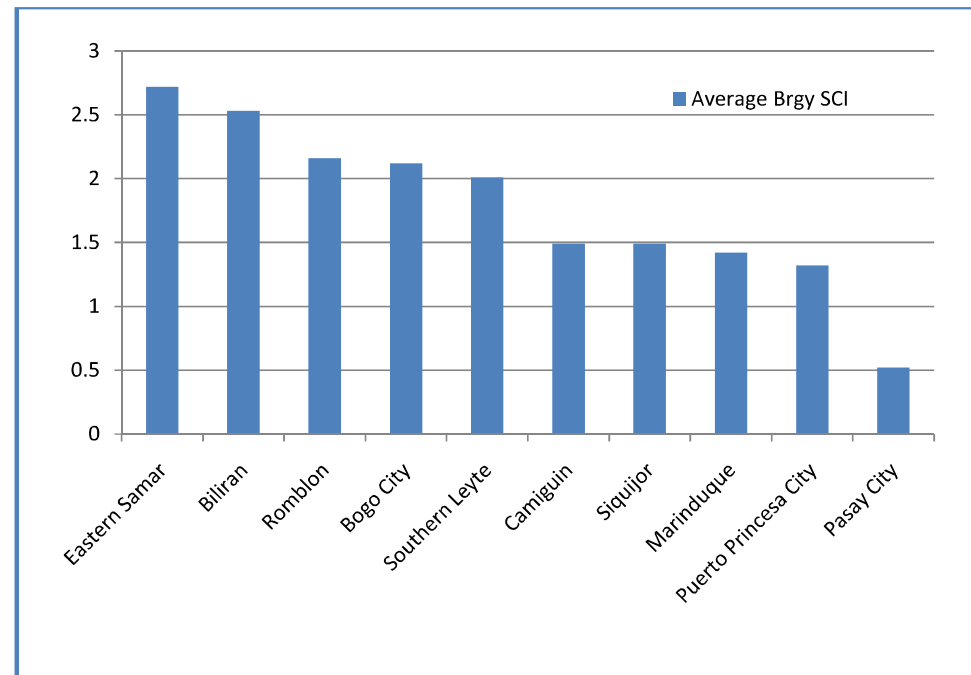


Figure 4.1 Average barangay SCI of the provinces and cities

Table 4.2 Population by gender of elementary and high school ages in the study areas

| Province/City        | Elementary School ages 6-12 yrs old |         |            | High School ages 13-16 yrs old |        |            |
|----------------------|-------------------------------------|---------|------------|--------------------------------|--------|------------|
|                      | Male                                | Female  | Difference | Male                           | Female | Difference |
| Biliran              | 14,331                              | 13,714  | 617        | 7,846                          | 7,050  | 796        |
| Bogo City            | 3,670                               | 3,364   | 306        | 2,364                          | 2,096  | 268        |
| Camiguin             | 6,121                               | 5,882   | 239        | 3,485                          | 3,176  | 309        |
| Eastern Samar        | 38,923                              | 36,501  | 2,422      | 19,877                         | 18,864 | 1,103      |
| Marinduque           | 20,207                              | 19,083  | 1,124      | 11,332                         | 10,352 | 980        |
| Romblon              | 26,278                              | 24,178  | 2,100      | 14,076                         | 12,843 | 1,233      |
| Pasay City           | 18,206                              | 17,510  | 696        | 9,977                          | 9,605  | 372        |
| Puerto Princesa City | 15,064                              | 14,175  | 889        | 7,911                          | 7,905  | 6          |
| Siquijor             | 5,837                               | 5,683   | 154        | 3,620                          | 3,546  | 74         |
| Southern Leyte       | 29,396                              | 27,377  | 2,019      | 17,033                         | 15,234 | 1,799      |
| Grand Total          | 178,033                             | 167,467 | 10,566     | 97,521                         | 90,671 | 6,850      |

- There are more males of elementary and high school ages than females in all of the provinces/cities studied

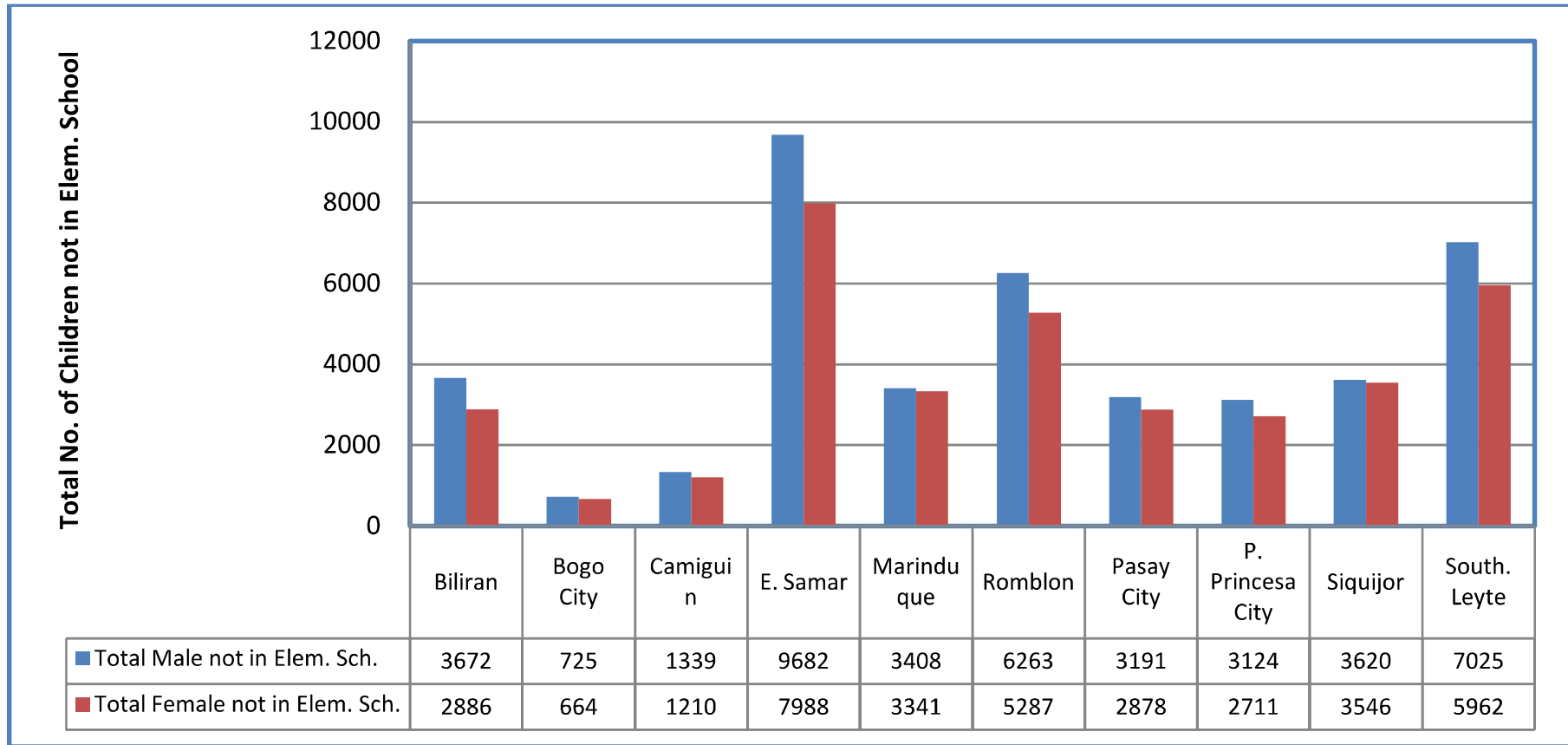


Figure 4.5 The total no. of male and female of ages 6-12 yrs old not in elementary school

- In terms of the actual number of 6-12 yrs old not in elementary school, there are more males than females in all the areas studied

Table 4.3 Mean proportions of male and female 6-12 years old not in elementary school at the barangay level

| Province/City        | Mean Proportions of 6-12 years old not in Elementary School, Barangay level |       |              |       | Difference in Means |
|----------------------|---|-------|--------------|-------|---------------------|
|                      | Male  |       | Female       |       |                     |
|                      | Mean  | S.D.  | Mean         | S.D.  |                     |
| Biliran              | 24.70   | 7.02  | 20.94        | 6.72  | 3.76                |
| Bogo City            | 18.99   | 6.28  | 20.97        | 5.71  | -1.98               |
| Camiguin             | 21.76   | 7.09  | 21.18        | 7.49  | 0.58                |
| Eastern Samar        | 25.36   | 12.23 | 22.26        | 11.08 | 3.10                |
| Marinduque           | 17.32   | 6.42  | 17.47        | 6.23  | -0.15               |
| Romblon              | 23.12   | 7.57  | 21.69        | 6.95  | 1.43                |
| Pasay City           | 18.35   | 7.86  | 17.09        | 7.54  | 1.26                |
| Puerto Princesa City | 22.01   | 8.87  | 20.01        | 6.02  | 2.00                |
| Siquijor             | 18.57   | 10.05 | 18.64        | 10.13 | -0.07               |
| Southern Leyte       | 23.69   | 10.75 | 21.35        | 9.72  | 2.34                |
| <b>Mean</b>          | <b>21.39</b>  |       | <b>20.16</b> |       | <b>1.23</b>         |



- The mean proportion of males 6-12 years old not in elementary school are higher than females in 7 out of 10 locations except in Bogo City, Marinduque, and Siquijor

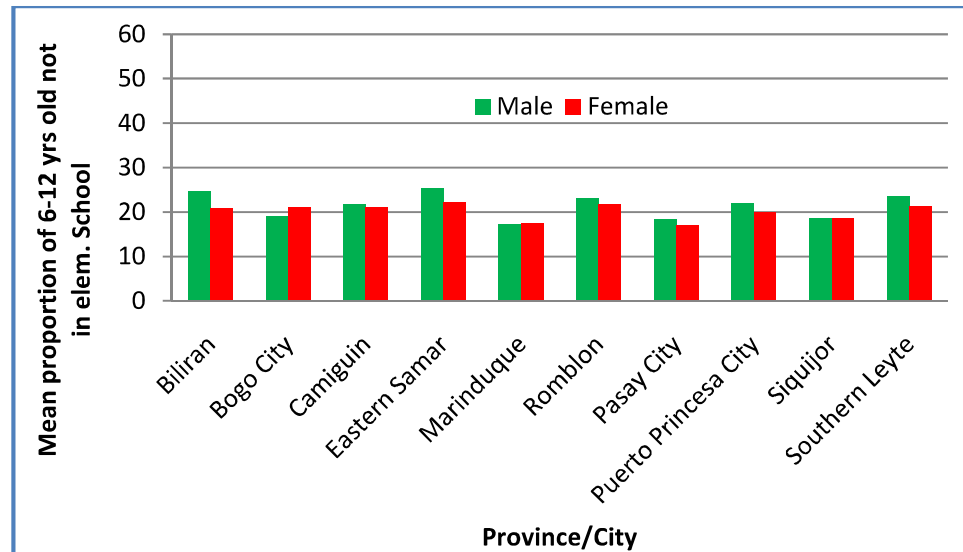


Figure 4.3 Mean proportion of male and female 6-12 years old not in elementary school at the barangay level



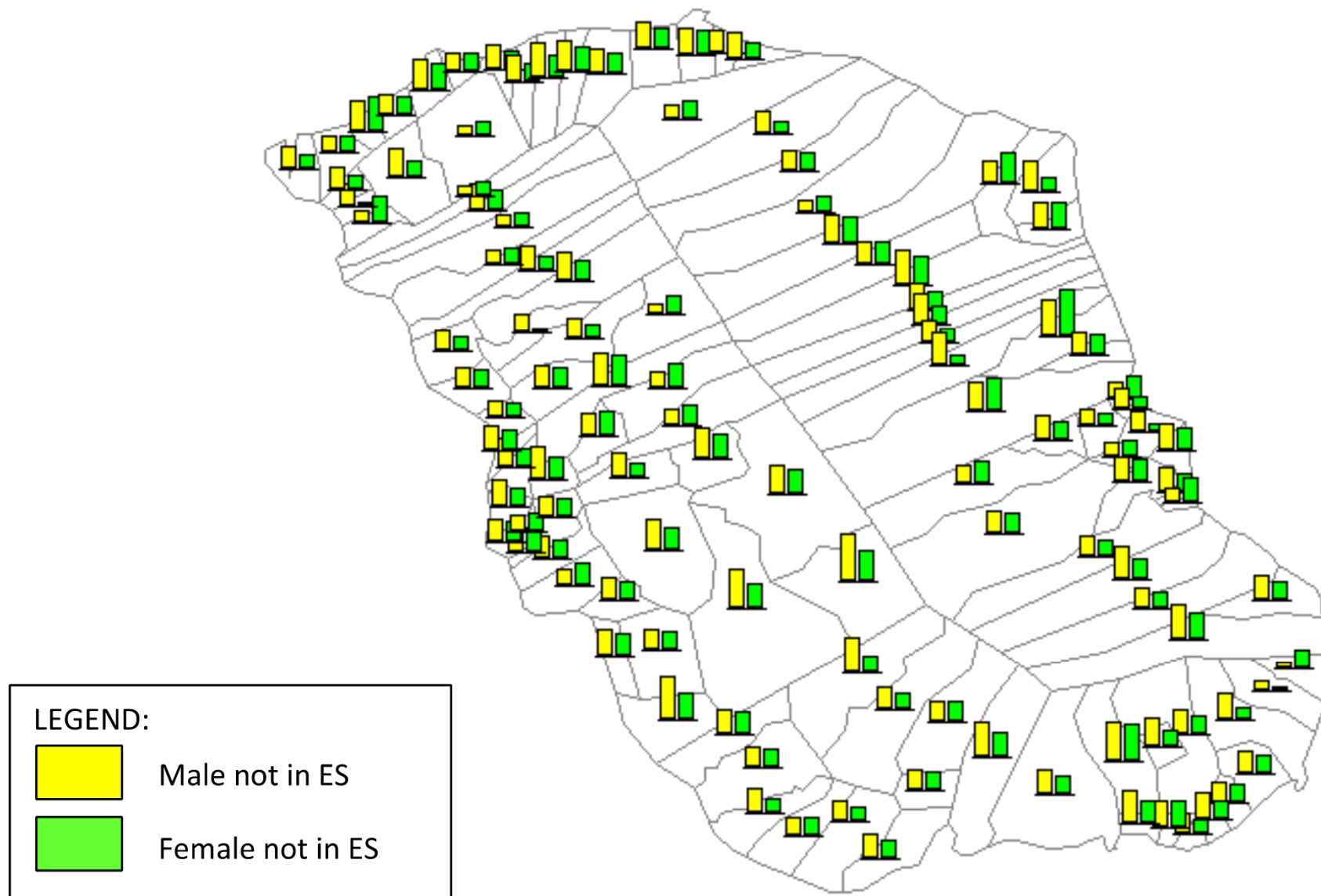


Figure 4.2 Mean proportions of male and female 6-12 yrs old not in elementary school in Biliran province

Table 4.4 Mean proportions of male and female 13-16 years old not in high school at the barangay level

| Province/City        | Mean proportions of 13-16 years old not in High School |       |              |       | Difference in Means |
|----------------------|--|-------|--------------|-------|---------------------|
|                      | Male   |       | Female       |       |                     |
|                      | Mean   | S.D.  | Mean         | S.D.  |                     |
| Biliran              | 52.48  | 14.18 | 34.93        | 13.32 | 17.55               |
| Bogo City            | 38.54  | 9.38  | 37.59        | 8.46  | 0.95                |
| Camiguin             | 39.08  | 11.9  | 30.37        | 10.06 | 8.71                |
| Eastern Samar        | 53.83  | 22.72 | 38.4         | 22.19 | 15.43               |
| Marinduque           | 35.83  | 15.07 | 26.01        | 13.23 | 9.82                |
| Romblon              | 42.52  | 16.28 | 29.86        | 12.28 | 12.66               |
| Pasay City           | 31.7   | 11.81 | 30.84        | 12.41 | 0.86                |
| Puerto Princesa City | 42.18  | 14.11 | 33.76        | 11.28 | 8.42                |
| Siquijor             | 33.54  | 15.2  | 26.12        | 12.97 | 7.42                |
| Southern Leyte       | 45.23  | 17.43 | 32.02        | 15.86 | 13.21               |
| <b>Mean</b>          | <b>41.49</b>   |       | <b>31.99</b> |       | <b>9.50</b>         |



- The mean proportion of males 13-16 years old not in high school in the barangay level are higher than females in all the 10 locations studied

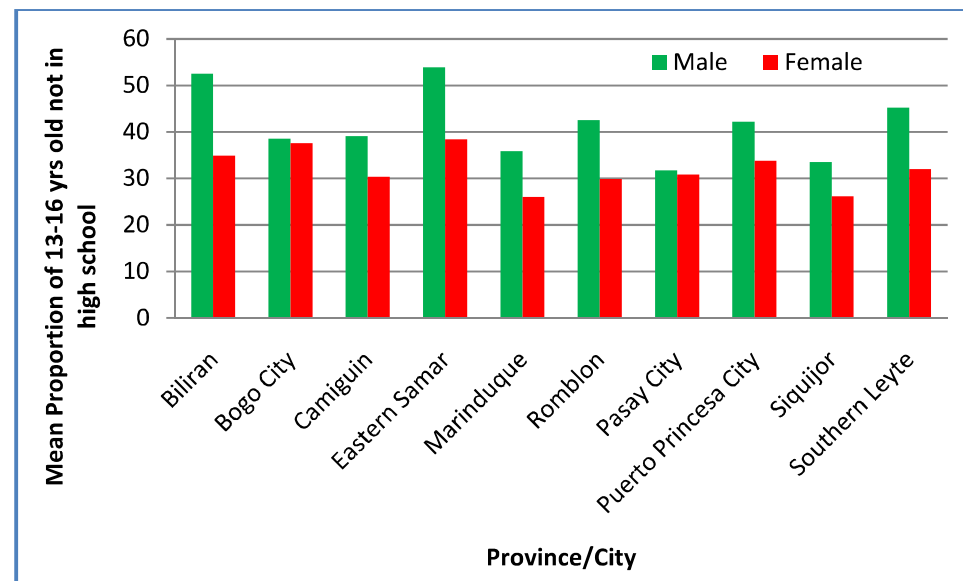


Figure 4.6 Mean proportion of 13-16 years old not in high school at the barangay level

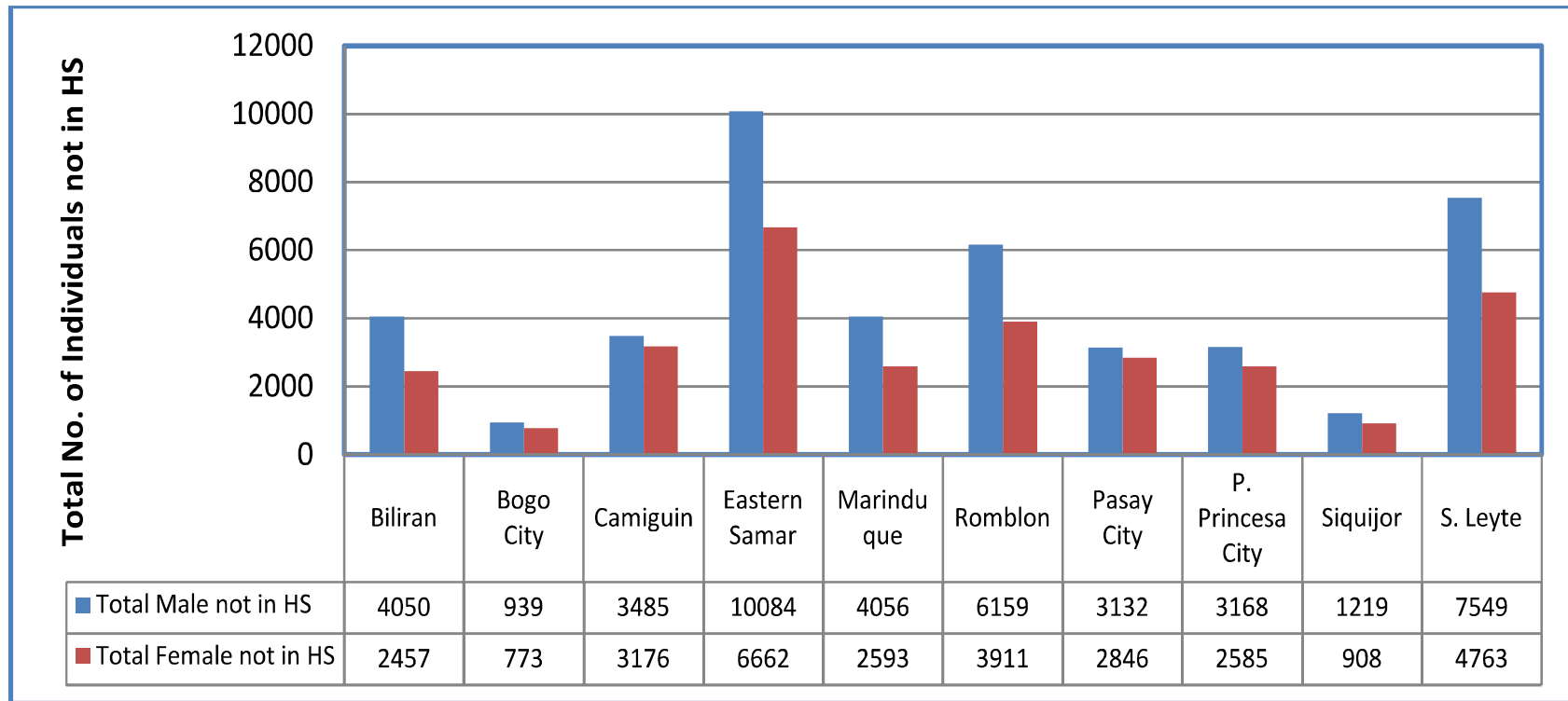


Figure 4.7 The total no. of male and female of ages 13-16 yrs old not in high school

- The actual number of males 13-16 yrs old not in high school at the barangay level is higher than females in all the study areas

Table 4.6 Population of employment age and unemployed by gender in the study areas

| Province/City   | Population of Employment Age |         |            | Population of Unemployed |        |            |
|-----------------|------------------------------|---------|------------|--------------------------|--------|------------|
|                 | Male                         | Female  | Difference | Male                     | Female | Difference |
| Biliran         | 34,206                       | 16,921  | 17,285     | 5,339                    | 6,069  | - 730      |
| Bogo City       | 10,493                       | 5,099   | 5,394      | 150                      | 104    | 46         |
| Camiguin        | 15,869                       | 6,979   | 8,890      | 314                      | 205    | 109        |
| Eastern Samar   | 93,274                       | 46,190  | 47,084     | 12,963                   | 15,027 | - 2,064    |
| Marinduque      | 41,822                       | 21,812  | 20,010     | 801                      | 443    | 358        |
| Romblon         | 46,112                       | 22,972  | 23,140     | 956                      | 611    | 345        |
| Pasay City      | 59,134                       | 38,864  | 20,270     | 891                      | 593    | 298        |
| Puerto Princesa | 39,391                       | 20,098  | 19,293     | 2,933                    | 3,098  | - 165      |
| Siquijor        | 21,827                       | 10,235  | 11,592     | 2,961                    | 2,243  | 718        |
| Southern Leyte  | 81,736                       | 38,229  | 43,507     | 11,516                   | 9,852  | 1,664      |
| Grand Total     | 443,864                      | 227,399 | 216,465    | 38,824                   | 38,245 | 579        |

- There are more males than females of employment age in all the locations studied  
 - In totality, more males are unemployed than females, but the difference is quite small.

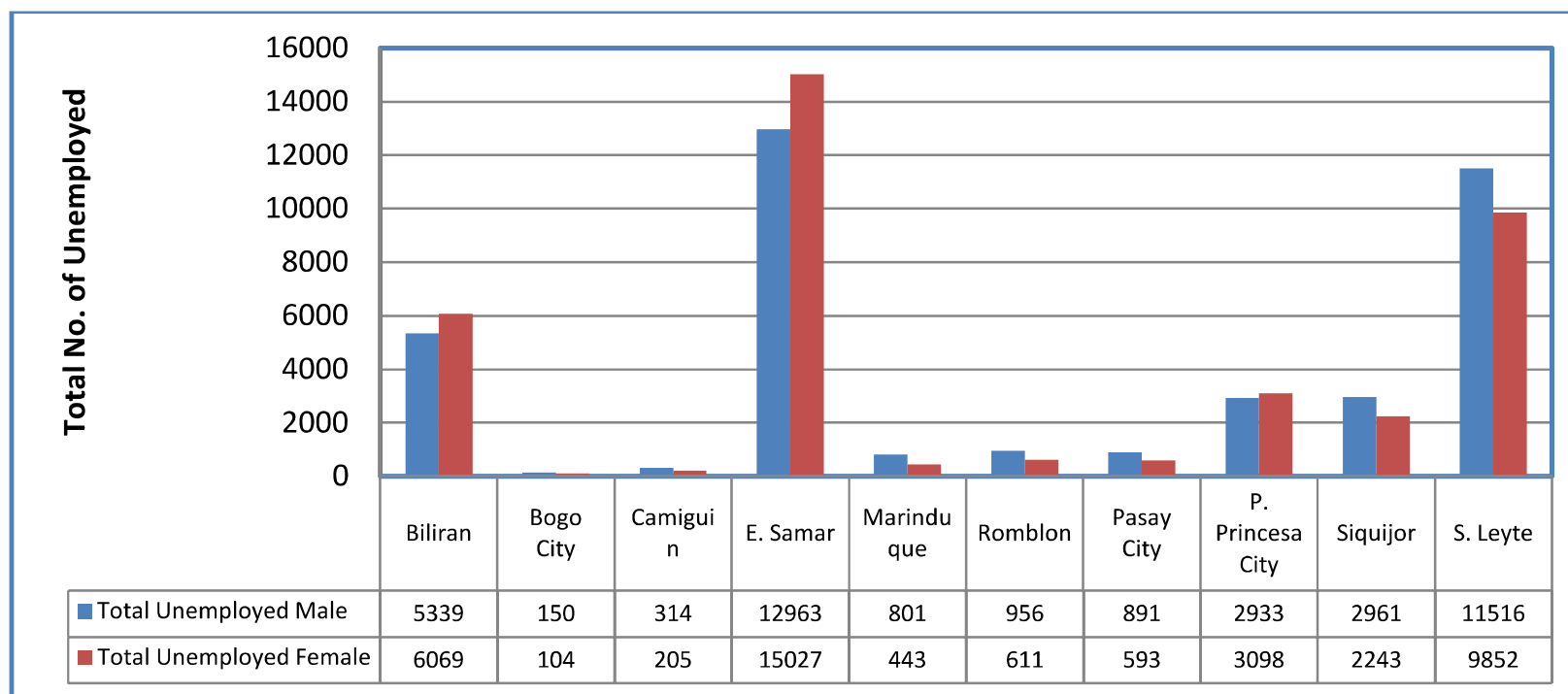


Table 4.7 Mean barangay population of unemployed by gender

| Province/City        | Mean Brgy Population of unemployed by gender |        |            |
|----------------------|--|--------|------------|
|                      | Male   | Female | Difference |
| Biliran              | 40.45  | 45.98  | -5.53      |
| Bogo City            | 5.56   | 3.85   | 1.71       |
| Camiguin             | 5.41   | 3.53   | 1.88       |
| Eastern Samar        | 21.75  | 25.21  | -3.46      |
| Marinduque           | 3.67   | 2.03   | 1.64       |
| Romblon              | 4.39   | 2.80   | 1.59       |
| Pasay City           | 4.43   | 2.95   | 1.48       |
| Puerto Princesa City | 44.44  | 46.94  | -2.50      |
| Siquijor             | 22.10  | 16.74  | 5.36       |
| Southern Leyte       | 23.74  | 20.31  | 3.43       |
| Grand Mean           | 17.59  | 17.03  | 0.56       |



- In terms of the mean barangay population of unemployed, only in three locations (namely, Biliran, Eastern Samar and Puerto Princesa City) where we have higher unemployment for females

Table 4.8 Mean proportions of unemployed by gender in the barangay level

|                      | Unemployed  |       |              |       | Mean Difference |
|----------------------|-------------|-------|--------------|-------|-----------------|
|                      | Male        |       | Female       |       |                 |
|                      | Mean        | S.D.  | Mean         | S.D.  |                 |
| Biliran              | 15.72       | 8.97  | 36.97        | 20.37 | -21.25          |
| Bogo City            | 1.54        | 2.41  | 2.29         | 3.06  | -0.75           |
| Camiguin             | 2.51        | 4.39  | 3.88         | 5.52  | -1.37           |
| Eastern Samar        | 13.74       | 10.13 | 30.88        | 19.33 | -17.14          |
| Marinduque           | 1.96        | 1.74  | 2.1          | 2.28  | -0.14           |
| Romblon              | 2.19        | 3.48  | 3.61         | 7.54  | -1.42           |
| Pasay City           | 1.36        | 1.96  | 1.41         | 2.1   | -0.05           |
| Puerto Princesa City | 1.24        | 1.1   | 1.86         | 1.9   | -0.62           |
| Siquijor             | 13.3        | 7.31  | 22.29        | 12.5  | -8.99           |
| Southern Leyte       | 13.43       | 10.11 | 24.78        | 16.71 | -11.35          |
| <b>Mean</b>          | <b>6.70</b> |       | <b>13.01</b> |       | <b>-6.31</b>    |

- In terms of the mean proportions of unemployed in the barangay level, the mean proportion of unemployed females is higher than males in all the study locations.

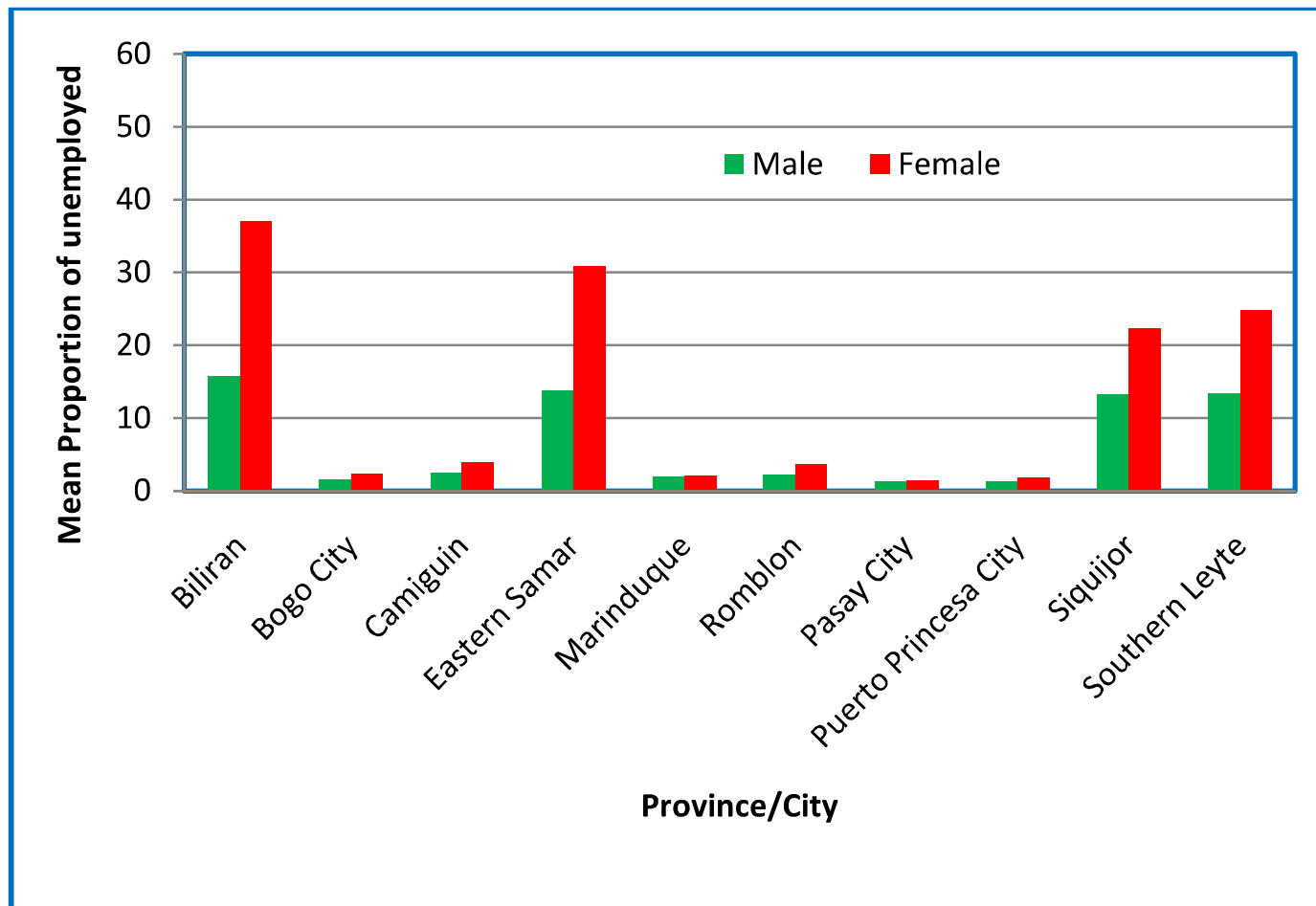


Figure 4.11 Mean proportions of unemployed in the study areas between male and female

Top three proportion of unemployed females – Biliran, Eastern Samar and Southern Leyte

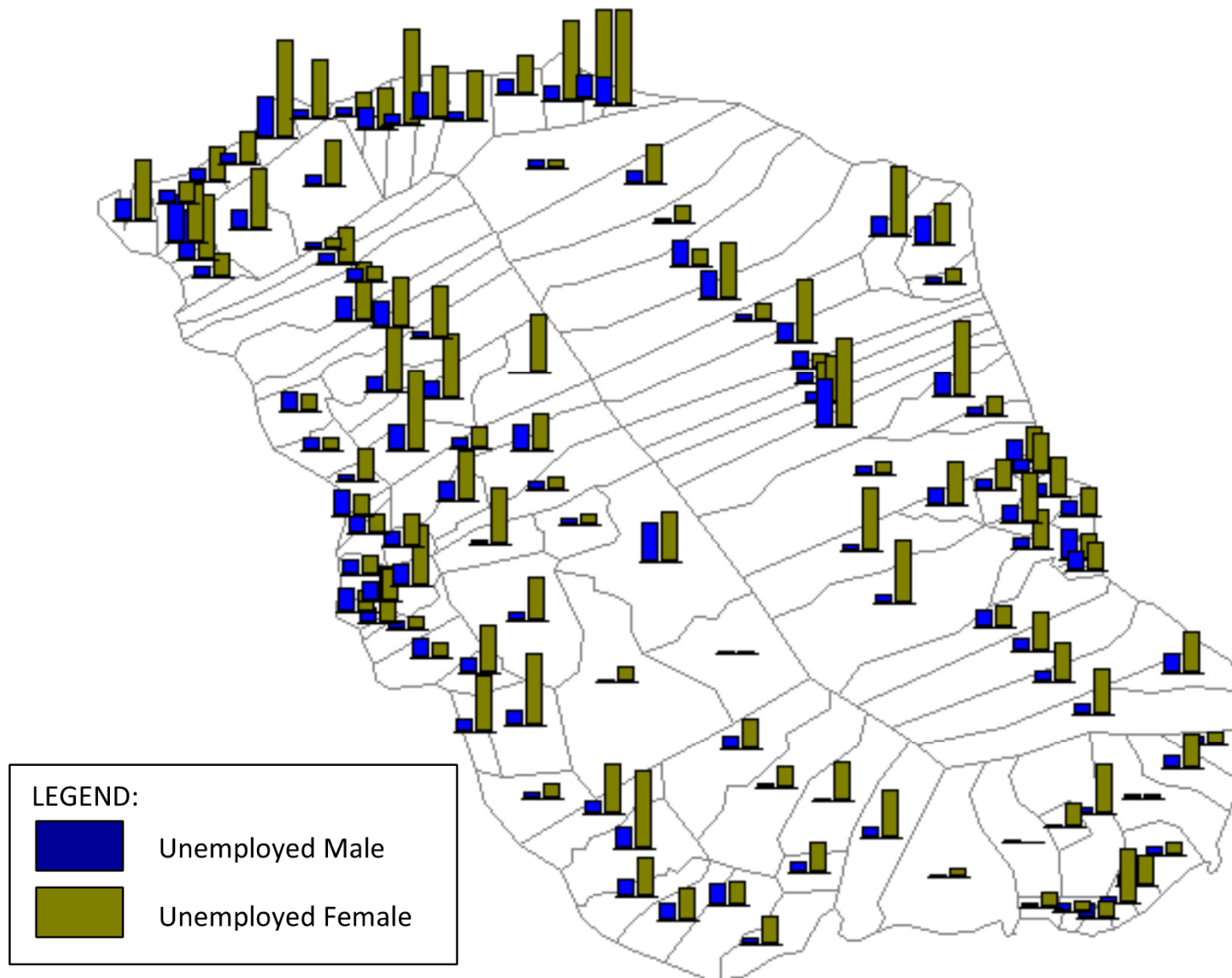


Figure 4.12 Graphical presentation of the proportion of unemployed between genders at the barangay level in Biliran province



Table 4.9 Population whose income falls below the poverty threshold by gender

| Province/City        | Total Population in poverty by gender |         |            | Mean Brgy Population in poverty by gender |         |            |
|----------------------|---------------------------------------|---------|------------|---|---------|------------|
|                      | Male                                  | Female  | Difference | Male                                      | Female  | Difference |
| Biliran              | 52,476                                | 49,113  | 3,363      | 397.55                                    | 372.07  | 25.48      |
| Bogo City            | 17,224                                | 16,702  | 522        | 637.93                                    | 618.59  | 19.34      |
| Camiguin             | 25,787                                | 24,078  | 1,709      | 444.50                                    | 415.14  | 29.36      |
| Eastern Samar        | 139,847                               | 128,128 | 11,719     | 234.64                                    | 214.98  | 19.66      |
| Marinduque           | 59,828                                | 56,602  | 3,226      | 274.44                                    | 259.64  | 14.8       |
| Romblon              | 89,732                                | 85,436  | 4,296      | 411.61                                    | 391.91  | 19.7       |
| Pasay City           | 24,422                                | 24,618  | -196       | 121.50                                    | 122.48  | -0.98      |
| Puerto Princesa City | 24,967                                | 23,360  | 1,607      | 378.29                                    | 353.94  | 24.35      |
| Siquijor             | 17,822                                | 17,330  | 492        | 133.00                                    | 129.33  | 3.67       |
| Southern Leyte       | 116,942                               | 107,333 | 9,609      | 241.12                                    | 221.31  | 19.81      |
| Grand Total          | 569,047                               | 532,700 | 36,347     | 3274.58                                   | 3099.39 | 175.19     |

- Only in Pasay City where the population of females felt poorer than males
- Overall, the population of males felt poorer than females

Table 4.10 Mean proportion of poverty between genders in the study areas

| Province/City        | Proportion In Poverty |       |              |       | Difference in the Mean |
|----------------------|-----------------------|-------|--------------|-------|------------------------|
|                      | Male                  |       | Female       |       |                        |
|                      | Mean                  | S.D.  | Mean         | S.D.  |                        |
| Biliran              | 75.41                 | 14.3  | 73.6         | 15.05 | 1.81                   |
| Bogo City            | 71.83                 | 20.82 | 70.57        | 21.59 | 1.26                   |
| Camiguin             | 69.71                 | 17.47 | 68.42        | 17.74 | 1.29                   |
| Eastern Samar        | 72.25                 | 21.22 | 71.57        | 21.87 | 0.68                   |
| Marinduque           | 56.67                 | 18.24 | 54.99        | 18.81 | 1.68                   |
| Romblon              | 71.03                 | 14.44 | 69.66        | 14.88 | 1.37                   |
| Pasay City           | 18.98                 | 13.48 | 18.72        | 13.8  | 0.26                   |
| Puerto Princesa City | 34.92                 | 23.91 | 35.02        | 24.2  | -0.1                   |
| Siquijor             | 49.02                 | 23.87 | 47.99        | 23.66 | 1.03                   |
| Southern Leyte       | 71.59                 | 16.39 | 70.34        | 17.04 | 1.25                   |
| <b>Mean</b>          | <b>59.14</b>          |       | <b>58.09</b> |       | <b>1.05</b>            |

Except for Puerto Princesa City, higher proportion of males felt they are poor compared to females

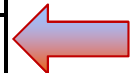
Table 4.11 Population whose income is below the food threshold by gender

| Province/City   | Income under food threshold by gender |        |            | Mean Brgy Population by gender with income below the food threshold |        |            |
|-----------------|---------------------------------------|--------|------------|---|--------|------------|
|                 | Male                                  | Female | Difference | Male  | Female | Difference |
| Biliran         | 43901                                 | 40884  | 3017       | 332.58  | 309.73 | 22.85      |
| Bogo City       | 15128                                 | 14662  | 466        | 560.30  | 543.04 | 17.26      |
| Camiguin        | 20672                                 | 19212  | 1460       | 356.41  | 331.24 | 25.17      |
| Eastern Samar   | 119667                                | 109543 | 10124      | 200.78  | 183.80 | 16.98      |
| Marinduque      | 43965                                 | 41247  | 2718       | 201.67  | 189.21 | 12.46      |
| Romblon         | 74080                                 | 70137  | 3943       | 339.82  | 321.73 | 18.09      |
| Pasay City      | 13325                                 | 13246  | 79         | 66.29   | 65.90  | 0.39       |
| P.Princesa City | 14393                                 | 13342  | 1051       | 218.08  | 202.15 | 15.93      |
| Siquijor        | 13381                                 | 12979  | 402        | 99.86   | 96.86  | 3.00       |
| Southern Leyte  | 96505                                 | 88240  | 8265       | 198.98  | 181.94 | 17.04      |
| Grand Total     | 455017                                | 423492 | 31525      |   |        |            |

- More males than females felt that their income fall below the food threshold

Table 4.12 Mean proportion of income below the food threshold between gender in the barangay

|                      | Proportion with income below the food threshold |       |        |       | Difference in the Mean |
|----------------------|---|-------|--------|-------|------------------------|
|                      | Male  |       | Female |       |                        |
|                      | Mean  | S.D.  | Mean   | S.D.  |                        |
| Biliran              | 65.04   | 18.17 | 63.27  | 18.49 | 1.77                   |
| Bogo City            | 63.47   | 24.97 | 62.53  | 25.20 | 0.94                   |
| Camiguin             | 56.97   | 19.88 | 55.63  | 20.24 | 1.34                   |
| Eastern Samar        | 62.42   | 23.27 | 61.88  | 23.72 | 0.54                   |
| Marinduque           | 41.61   | 18.38 | 40.14  | 18.58 | 1.47                   |
| Romblon              | 58.99   | 16.87 | 57.69  | 16.95 | 1.3                    |
| Pasay City           | 8.55  | 5.94  | 7.53   | 5.69  | 1.02                   |
| Puerto Princesa City | 22.00   | 19.69 | 22.43  | 20.07 | -0.43                  |
| Siquijor             | 36.58   | 21.49 | 35.83  | 21.63 | 0.75                   |
| Southern Leyte       | 59.81   | 19.39 | 58.75  | 19.83 | 1.06                   |



- Except for Puerto Princesa City, higher proportion of males felt that their income fall below the food threshold

Table 4.13 Population experiencing food shortage by gender

| Province/City        | Population in food shortage by gender |        |            | Mean Brgy Population with food shortage by gender |        |            |
|----------------------|---------------------------------------|--------|------------|---|--------|------------|
|                      | Male                                  | Female | Difference | Male  | Female | Difference |
| Biliran              | 10663                                 | 9908   | 755        | 80.78   | 75.06  | 5.72       |
| Bogo City            | 291                                   | 260    | 31         | 10.78   | 9.63   | 1.15       |
| Camiguin             | 155                                   | 123    | 32         | 2.67  | 2.12   | 0.55       |
| Eastern Samar        | 29107                                 | 26295  | 2812       | 48.84   | 44.12  | 4.72       |
| Marinduque           | 6338                                  | 5560   | 778        | 29.07   | 25.50  | 3.57       |
| Romblon              | 4020                                  | 3616   | 404        | 18.44   | 16.59  | 1.85       |
| Pasay City           | 2154                                  | 2101   | 53         | 10.72   | 10.45  | 0.27       |
| Puerto Princesa City | 3035                                  | 2814   | 221        | 45.98   | 42.64  | 3.34       |
| Siquijor             | 1495                                  | 1417   | 78         | 11.16   | 10.57  | 0.59       |
| Southern Leyte       | 16346                                 | 14519  | 1827       | 33.70   | 29.94  | 3.76       |
| Grand Total          | 73604                                 | 66613  | 6991       |   |        |            |

- In both population and mean barangay population, the males felt that they experienced more food shortage than females

Table 4.14 Mean proportion who experienced food shortage between gender in the barangay

|                      | Proportion who experienced food shortage |       |        |       | Difference in the Mean |
|----------------------|--|-------|--------|-------|------------------------|
|                      | Male                                     |       | Female |       |                        |
|                      | Mean                                     | S.D.  | Mean   | S.D.  |                        |
| Biliran              | 14.05                                    | 19.17 | 13.59  | 18.93 | 0.46                   |
| Bogo City            | 1.03                                     | 2.09  | 0.96   | 2.03  | 0.07                   |
| Camiguin             | 0.41                                     | 0.88  | 0.35   | 0.71  | 0.06                   |
| Eastern Samar        | 15.47                                    | 22.34 | 15.27  | 22.21 | 0.2                    |
| Marinduque           | 5.60                                     | 10.07 | 5.03   | 9.08  | 0.57                   |
| Romblon              | 2.80                                     | 6.84  | 2.63   | 6.52  | 0.17                   |
| Pasay City           | 1.48                                     | 3.92  | 1.37   | 3.49  | 0.11                   |
| Puerto Princesa City | 4.96                                     | 6.89  | 4.99   | 6.93  | -0.03                  |
| Siquijor             | 4.22                                     | 9.04  | 4.01   | 8.67  | 0.21                   |
| Southern Leyte       | 9.97                                     | 17.03 | 9.58   | 16.72 | 0.39                   |



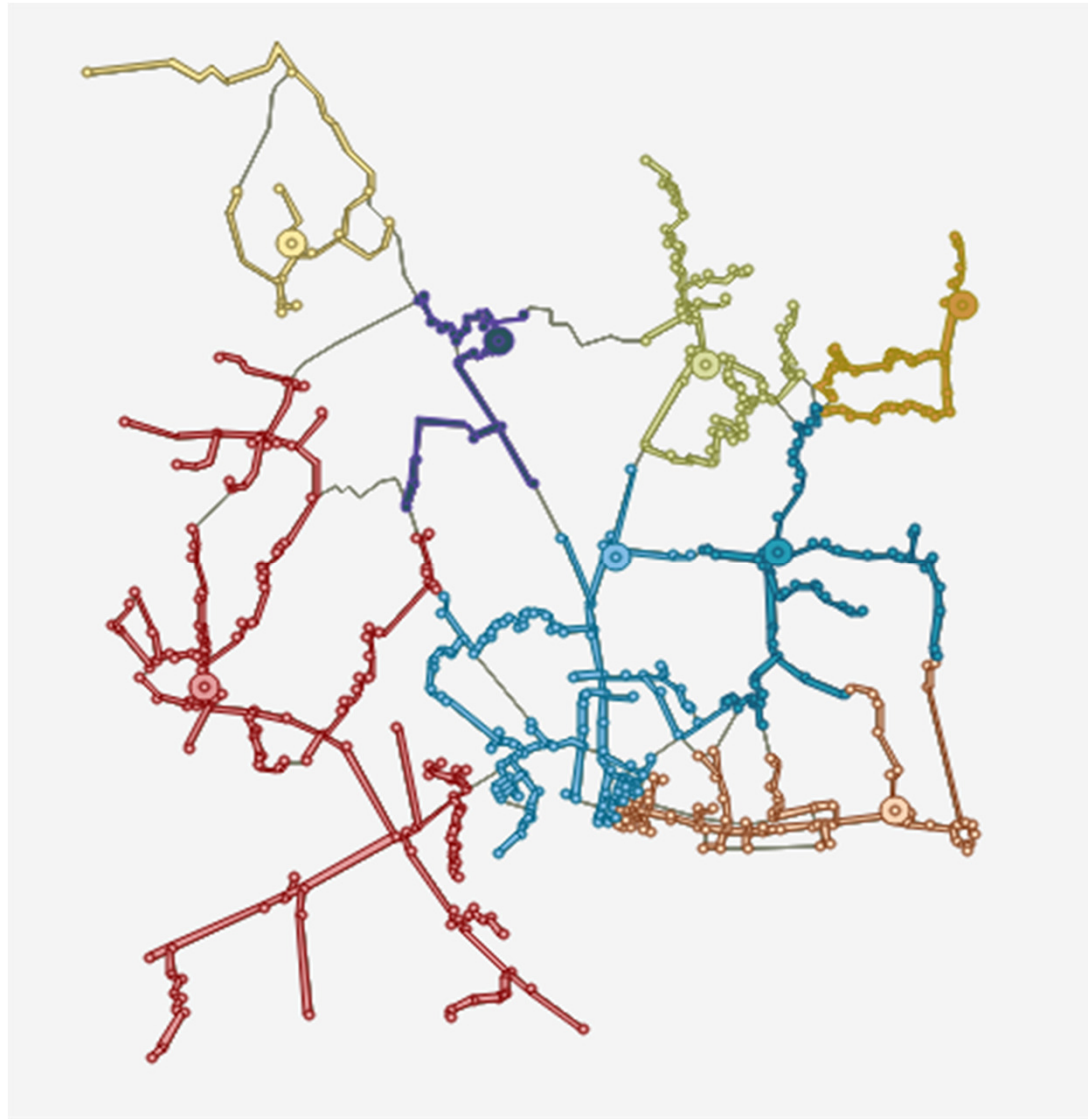
- Except for Puerto Princesa City, a bigger proportion of males felt that they experience food shortage than females

# Correlation of Poverty Measures and Accessibility by Gender



**Accessibility to High Schools (Province of Camiguin)**

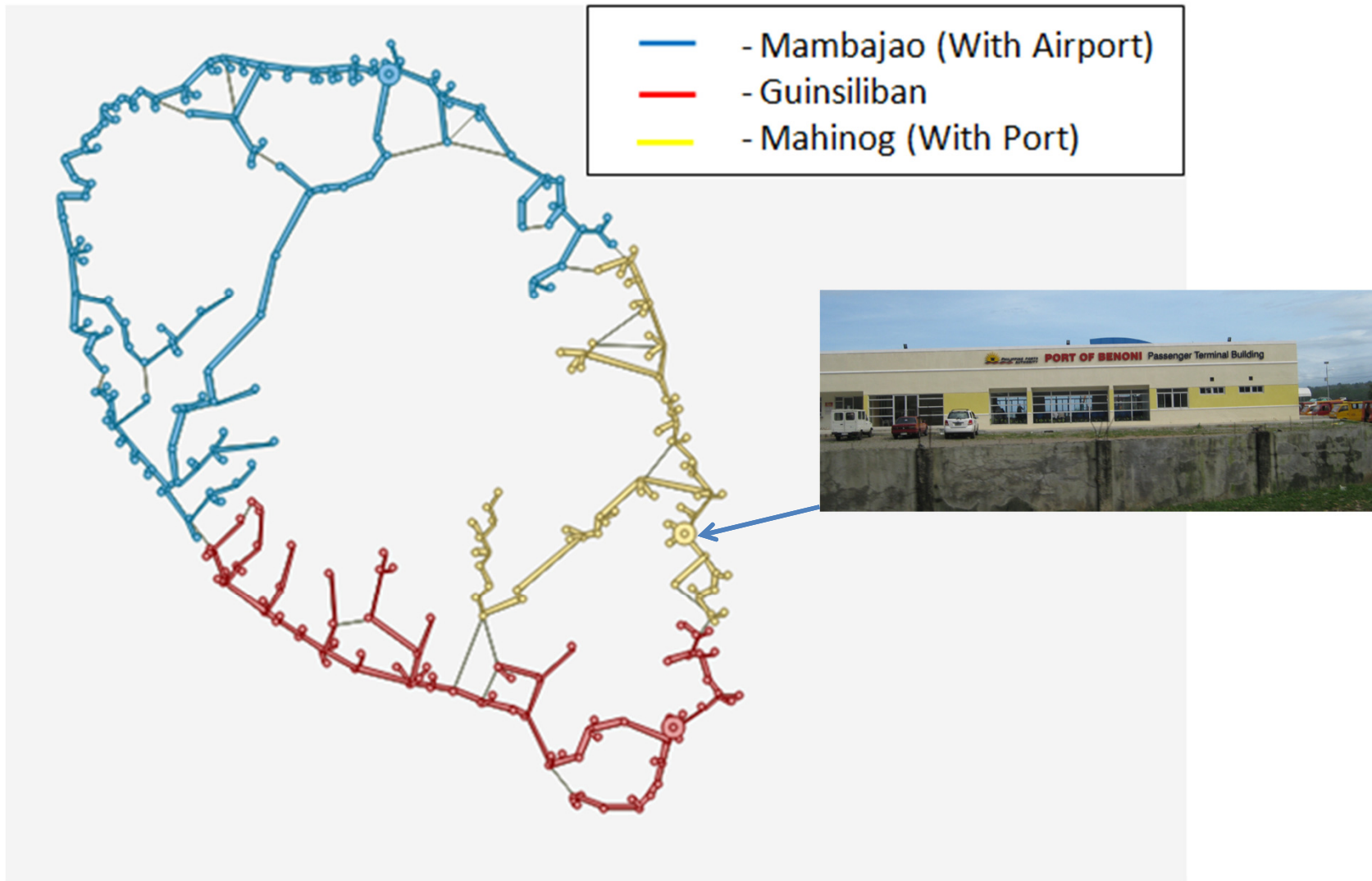
# Correlation of Poverty Measures and Accessibility by Gender



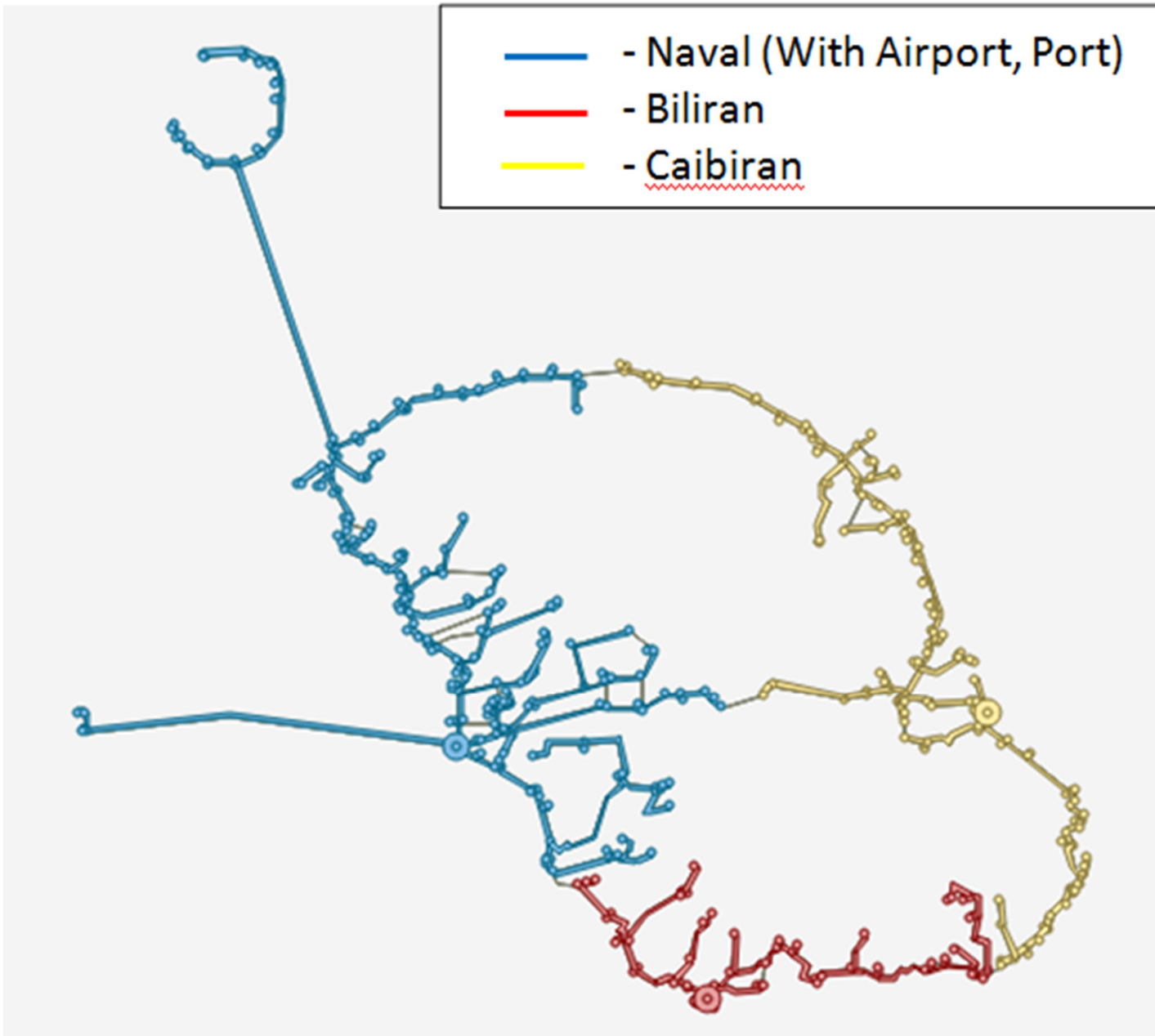
**Accessibility to High Schools (Bogo City)**



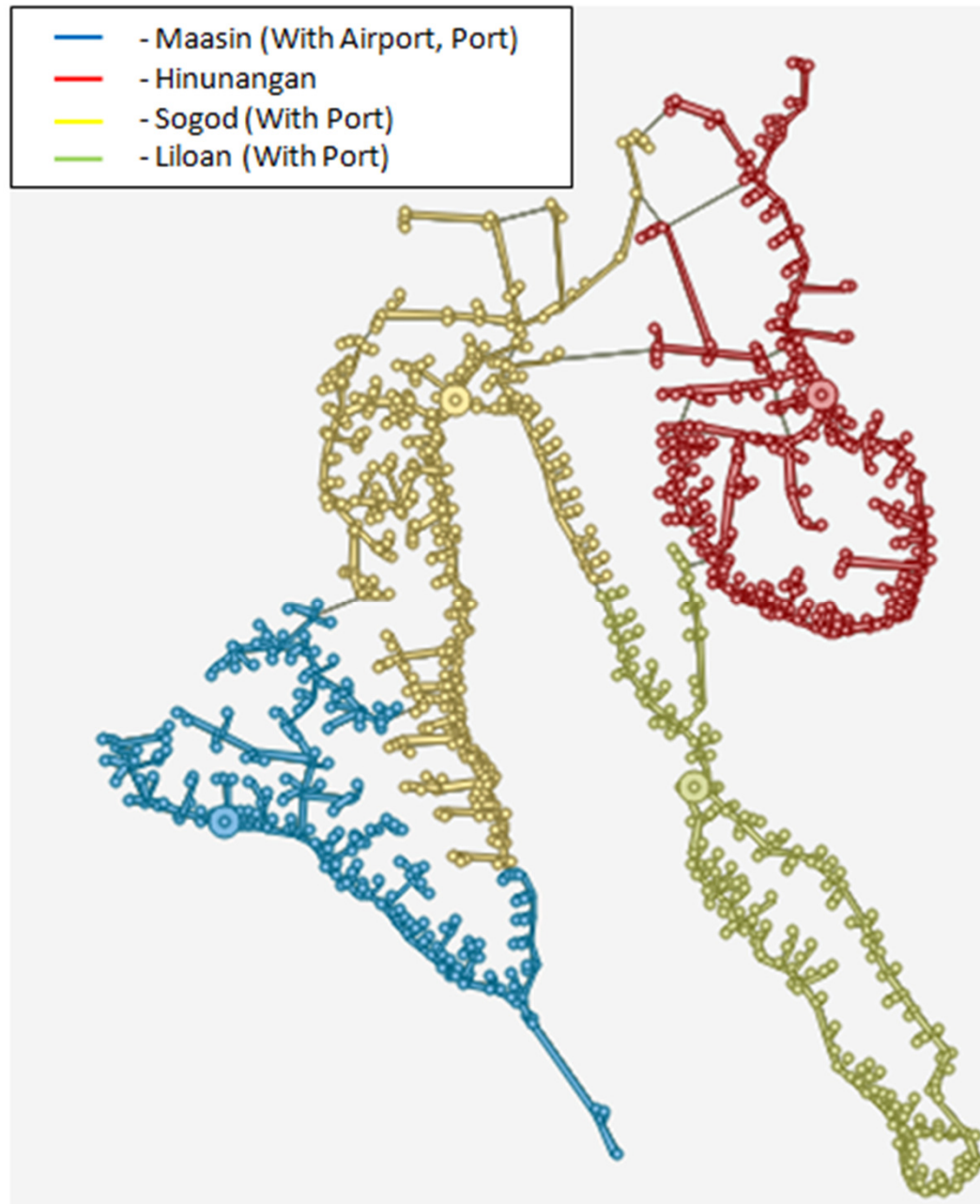
# Correlation of Poverty Measures and Accessibility by Gender



**Example of Measuring Accessibility Economic Centers (Camiguin Province)**



**Example of Measuring Accessibility Economic Centers (Biliran Province)**

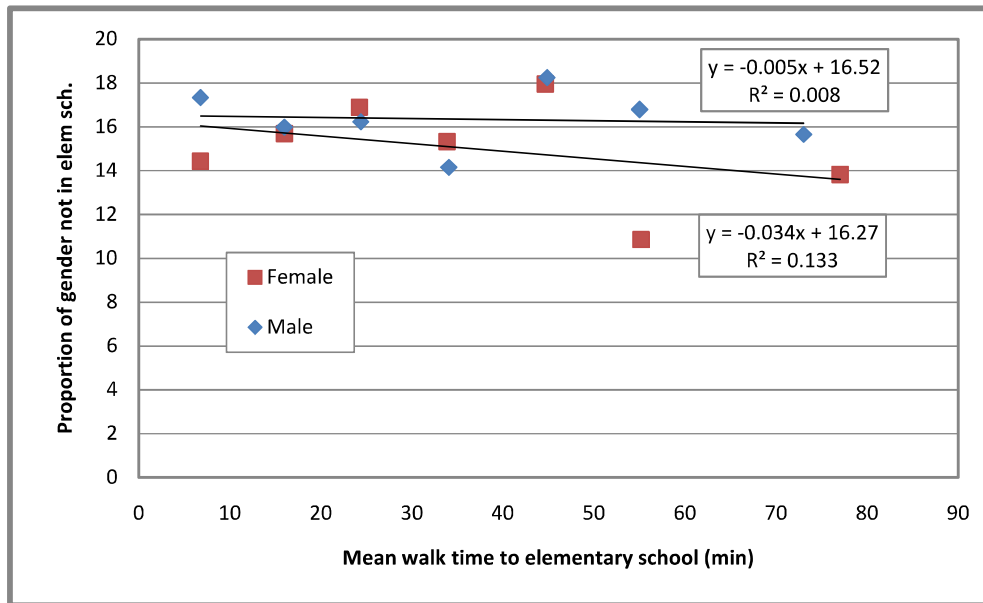


**Example of Measuring Accessibility to Economic Centers (Southern Leyte Province)**

Table 5.9 Correlation between school and economic variables in the barangay level with accessibility by gender (Aggregated data)

| Gender Characteristics                             | Accessibility to Elementary School |                                 |  |
|--|------------------------------------|---------------------------------|--|
|  | Road distance to elementary school | Walk time to Elementary school  | Travel time by public transport to Elementary school |
| Proportion of male 6-12yrs old not in elem. sch.   | 0.065                              | -0.006                          | -0.007   |
| Proportion of female 6-12yrs old not in elem. sch. | 0.067                              | 0.002                           | 0.001  |
|  | Access to High School              |                                 |  |
|  | Walk time to high school           | Travel time to high school      | Generalized cost to high school                      |
| Proportion of male 13-16yrs old not in high sch.   | 0.402                              | 0.398                           | 0.396  |
| Proportion of female 13-16yrs old not in high sch. | 0.387                              | 0.386                           | 0.389  |
|  | Access to Market/Economic Centers  |                                 |  |
|  | Walk time to economic centers      | Travel time to economic centers | Generalized cost to economic centers                 |
| Male (poverty)                                     | 0.340                              | 0.334                           | 0.332  |
| Female (poverty)                                   | 0.351                              | 0.345                           | 0.342  |
| Male (unemployed 15yrs old and above)              | -0.026                             | -0.010                          | -0.048   |
| Female (unemployed 15yrs old and above)            | 0.078                              | 0.101                           | 0.044  |

- Proportion of male or female not in high school is greatly affected by accessibility
- Poverty, not unemployment, is more affected by accessibility



- The relationship between the proportion of 6-12 yrs old not in elementary school and walking time to school is not well established.

Figure 5.4 Regression models of proportion of children not in school by gender against walk time to elementary school

- There is a good fit between the proportion of 13-16 yrs old not in high school and generalized cost of travel to these schools.

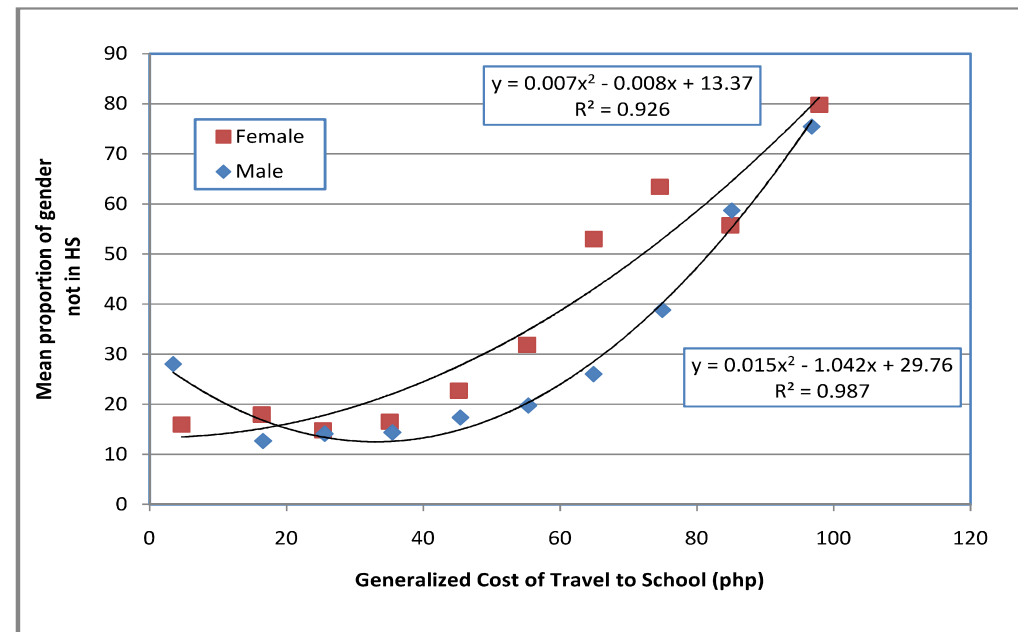


Figure 5.5 Polynomial regression models of the proportion of children 13-16yrs old not in high school by gender against general cost of travel (in php) to high school

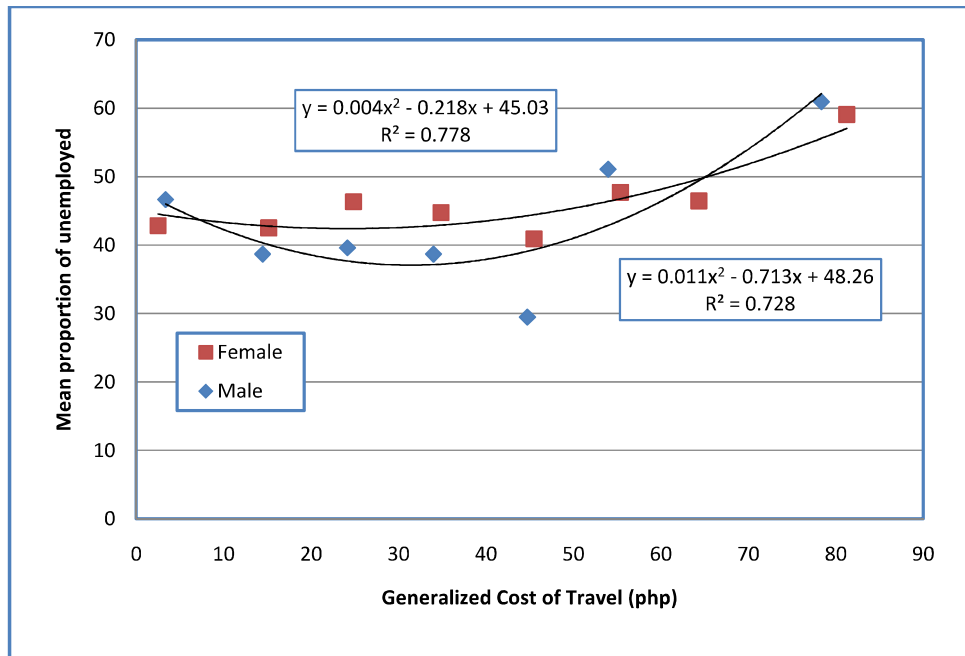


Figure 5.6 Polynomial regression models of the mean proportion of individuals ages 15 and above who are unemployed by gender against general cost of travel (in php) to economic centers

- there is a better relationship between the mean proportion of those who experience poverty at the barangay level and accessibility to economic centers (Figure 5.7) than the mean proportion of unemployed and accessibility to economic centers (Figure 5.6)

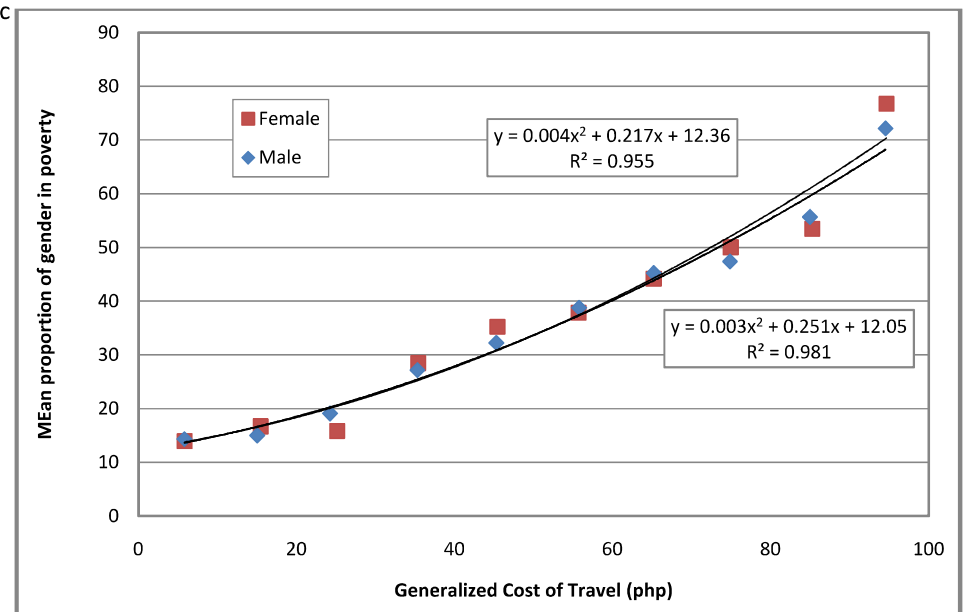


Figure 5.7 Polynomial regression models of the mean proportion of individuals whose income is below the poverty threshold by gender against the generalized cost of travel (in php) to economic centers

# **SUMMARY OF FINDINGS AND CONCLUSION**

It is true that in all the 10 provinces/cities studied at the barangay level,

- the mean proportion of males 13-16 years old not in high school are higher than females, and
- the mean proportion of unemployed females are higher than males

# **SUMMARY OF FINDINGS AND CONCLUSION**

- **There is no significant relationship between accessibility to the nearest elementary school and the proportion of children aged 6-12 years old (regardless of gender) who are not in elementary school.**
- **However, there is a significant relationship between accessibility to the nearest high school and the proportion of males and females aged 13-16 years old who are not in high school.** This suggests that at the barangay level, accessibility to the nearest high school affects the proportion of males and females who are not studying.



# SUMMARY OF FINDINGS AND CONCLUSION

- The mean proportion in both genders at the barangay level among **those who are not in school increases as the expected school-age population move up from elementary to high school, with more males than females dropping out of school**



# SUMMARY OF FINDINGS AND CONCLUSION

- The **availability of a good road** (i.e. a national road) passing through the barangay has **limited effect on unemployment**, but there is **less poverty experienced** (regardless of gender) when a good road is passing through the barangay



# **SUMMARY OF FINDINGS AND CONCLUSION**

- In terms of population, **there are more males than females who are unemployed**; however, **at the barangay level, the mean proportion of males who are unemployed is consistently lower than that of females**. The reason is that the population of females of employment age is lower than that of males at the barangay level resulting to higher proportion of unemployed females.

# SUMMARY OF FINDINGS AND CONCLUSION

- The poverty variable *gender experience on food shortage* is not a good indicator of poverty compared to the other poverty variables. This may mean that regardless of gender, **experiencing poverty does not necessarily mean that there is food shortage**



# RECOMMENDATIONS

- The government policy of putting up elementary schools in every barangay has had a very significant impact on addressing the accessibility concerns of children going to these elementary schools; in fact, the study showed that it is no longer a significant concern.
- However, **in the case of students going to the nearest high school, the accessibility problem is still a persistent concern.** The optimal location of new high schools should be studied carefully with regards to its catchment area relative to existing high schools in the area.

# RECOMMENDATIONS

- Four variables (or measures) on poverty were used in the study, namely: (1) Barangay-level Social Composite Index (SCI), (2) Households with income below the poverty threshold, (3) Households with income below the food threshold, and (4) Households experiencing food shortage.
- Among these four variables, **the experience of households on food shortage is least indicative of poverty.** This suggests that in measuring poverty at the barangay level, the incidence of food shortage among households should not be used. **Data revealed that even if a household is poor, the members may not necessarily suffer from food shortage.**

# RECOMMENDATIONS

- Aggregated data of CBMS at the barangay level show that, regardless of gender, **accessibility concerns when going to a high school and to economic centers greatly affect the poverty situation.** To improve the relationships between these variables, more data disaggregation on accessibility can be obtained by conducting a sampling of the daily transport modes by household members as well as the corresponding mode of transport they use to go to school or to economic/market centers.

# RECOMMENDATIONS

Since not all provinces/cities were visited, the definition of the major economic centers in some cases were based on the following attributes as seen from online maps:

- intensity of development/urbanization, and
- presence of major port or airport infrastructures

There may be a need to provide a better definition/characterization of a major economic center in the sample province or city.



# ACKNOWLEDGEMENT

- The author greatly appreciate the funding support provided by DLSU-AKI through the leadership of Dr. Tereso Tullao Jr., AKI Director, as well as to Miss Tina Sevilla, AKI Secretary
- The author also acknowledges the facilitation of CBMS data by Miss Badette Mandap and Miss Alellie Sobrevinas.
- The author also acknowledges the help of the ff. civil engineering students, Krister, Katrina and Raymund in the road network development of most of the study areas as well as in the processing of the CBMS data
- Initial work done on maps by Dr. Maria Cecilia Paringit in relation to the research project is also appreciated.

**The END**

**Thank you for listening!**