Social and Ethnic Segregation of Muslim community in Matara District, Sri Lanka

T.M.S.P.K Thennakoon and R N Gamachchige
Department of Geography
University of Sri Jayawardenepura
Sri Lanka
{sunethrapk and ravigamachchi}@sjp.ac.lk

R T Thrimawithana
Zebra Lanka Technologies Pvt. Ltd.
Sri Lanka
raveenthirimawithana111@gmail.com

Abstract— This paper discusses the process and characteristics of social and ethnic segregation in Sri Lankan Muslim community. The research is aimed at analyzing the ethnic segregation of Muslim community in Matara district. A sample survey to investigate the segregation process and its characteristics was conducted in two DS divisions selected based on the index value and Muslim population density. The Study revealed that the causes of segregation were their higher birth rate and weak economic status which led to vertical segregation of Muslim community in Weligama and Welipitiya DS Divisions. The dissimilarity index, which is a primary statistical measurements of segregation provided evidence of a high Muslim segregation in Matara.

Keywords- Social and Ethnic segregation; Muslims; dissimilarity index; Matara

I. INTRODUCTION

Ethnic diversity, segregation, and fractionalization have long been thought to play a critical role in the socioeconomic structure and overall stability of many developing countries. Studies based on cross-country regressions generally point to a detrimental effect of ethnic diversity on economic performance (Easterly and Levine, 1997; Collier, 1998). Many experts believe that ethnic segregation in Sri Lanka has depicted variations over the time (Manawadu, 2006). Among all ethnicities, Muslim segregation has been the most evident and the cause for many sociological changes over the last decade. Segregation process covers both segregation due to immigration and higher number of birth rate in a community. Segregation process consists of four fundamental components known as security function, transformation function, proactive function and attacking function (Boal,1972). Segregation process in urban or sub-urban areas are generally based on fourteen facts including social capital, employment, identity, housing stock, social welfare, education, inclusiveness, economy and trust (Legebv, 2010).

II. METHODOLOGY

Segregation process study methodology has evolved from Chicago school of thought of anthropology and sociology to modern statistical techniques and micro modeling on human behavioral patterns. This study involved parts of all three methodologies. Segregation can be quantified under five different dimensions namely evenness, exposure, concentration, centralization and clustering. This study has used the dimension of evenness to measure the segregation (Duncan &Duncan.1955).

Dissimilarity index is the most commonly used evenness indicator (White,1983). Conceptually, dissimilarity measures the percentage of a group’s population that would have to change residence for each neighborhood to have the same percentage of that group as the overall. The index ranges from 0.0 which is a complete integration to 1.0 a complete segregation and a value over 0.5 indicates that the area is already segregated (Duncan &Cunic,1955; Duncan, & Liebers,1959; Massey & Denton, 1989).

Using general census data of Sri Lanka 2011, Matara district segregation index was calculated.

\[
\text{Dissimilarity Index} = \frac{\sum \left( \frac{1}{T} \left( p_i - P \right) \right)}{2TP(1 - P)}
\]

\( T \) - Total Population
\( P \) - Ratio of Minority to Total Population
\( n_i \) - Total Population of the \( i \)th Track
\( p_i \) - Ratio of Minority to Total Population of the \( i \)th Track

Population map of Muslims (Fig.1) was generated through Geographical Information Systems (GIS) software and highest populated areas were identified. Out of sixteen DS divisions in Matara district, the highest Muslim populated Weligama and Welipitiya DS divisions were selected to investigate segregation process, socio-economic processes and its characteristics.
From above two DS divisions, purposive sampling was carried out and primary data were collected using questionnaire survey and a sample of 220 Muslim families.

Using standard statistical methods such as post stratification, post stratified sampling theory, estimation theory and hypothesis testing, conclusions are inferred with regard to Muslim population living in the segregated area. Based on inferred statistical parameters, population dynamics and socio-economic characteristics of the segregated Muslim community is explained.

III. DATA DESCRIPTION

The sample consisted of 220 household units with 1262 individuals.

Table 1: Composition of the sample according to gender

<table>
<thead>
<tr>
<th>Gender</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>649</td>
<td>51.4</td>
</tr>
<tr>
<td>Female</td>
<td>613</td>
<td>48.57</td>
</tr>
</tbody>
</table>

Source: Field Survey, 2017

Table 2: Composition of the sample according to marital status

<table>
<thead>
<tr>
<th>Marital State</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Married</td>
<td>632</td>
<td>50.08</td>
</tr>
<tr>
<td>Unmarried</td>
<td>630</td>
<td>49.92</td>
</tr>
</tbody>
</table>

Source: Field Survey, 2017

Table 3: Schooling pattern of the study population

<table>
<thead>
<tr>
<th>Age category</th>
<th>International School</th>
<th>Muslim School</th>
<th>Pre School</th>
<th>Sinhala School</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-10</td>
<td>9</td>
<td>82</td>
<td>5</td>
<td>14</td>
</tr>
<tr>
<td>10-15</td>
<td>15</td>
<td>96</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td>15-20</td>
<td>6</td>
<td>57</td>
<td>0</td>
<td>16</td>
</tr>
</tbody>
</table>

Source: Field Survey, 2017

Table 4: Descriptive data of land size

<table>
<thead>
<tr>
<th>House Type</th>
<th>Mean</th>
<th>SD</th>
<th>Var</th>
<th>Q1</th>
<th>median</th>
<th>Q3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permanent</td>
<td>11.38</td>
<td>8.76</td>
<td>76.80</td>
<td>7.00</td>
<td>10.00</td>
<td>12.00</td>
</tr>
<tr>
<td>Temporary</td>
<td>8.90</td>
<td>3.43</td>
<td>10.57</td>
<td>6.62</td>
<td>8.00</td>
<td>11.00</td>
</tr>
</tbody>
</table>

Source: Field Survey, 2017

Table 5: Descriptive data of house acquisition year

<table>
<thead>
<tr>
<th>House Type</th>
<th>Mean</th>
<th>SD</th>
<th>Var</th>
<th>Q1</th>
<th>median</th>
<th>Q3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permanent</td>
<td>1992</td>
<td>16.6</td>
<td>274.5</td>
<td>1985</td>
<td>1996</td>
<td>2004</td>
</tr>
<tr>
<td>Temporary</td>
<td>2013</td>
<td>2.71</td>
<td>7.33</td>
<td>2010.5</td>
<td>2014</td>
<td>2015.5</td>
</tr>
</tbody>
</table>

Source: Field Survey, 2017

IV. DATA ANALYSIS

A. Segregation measurement

Using the census data of year 2011 published by the Department of Census and Statistics the Dissimilarity Index was calculated as follows.

\[
\text{Dissimilarity Index} = 0.937
\]

This implies intense Muslim segregation in Matara District. In other words, 93% of Muslims are bound as groups compared to total ethnic ratio of Matara district.

B. Age Distribution

Figure 2: Age Distribution chart

Figure 3: Age distribution pyramid
Table 6: Estimation of 0-15 age category proportion

<table>
<thead>
<tr>
<th>Age</th>
<th>Count</th>
<th>Total</th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-15</td>
<td>385</td>
<td>1262</td>
<td>0.305071</td>
</tr>
</tbody>
</table>

Source: Field Survey, 2017

Confidence interval of 0-15 age category under 5% significant level (0.279750, 0.331304)

Table 6 demonstrates that around 27%-33% of Muslim population is in the age category of 0-15 which indicates a higher birth rate among this community. Fig 3 shows that 20% of Muslim population is eligible for marriage within 10 years' time, which will guarantee a similar future birth rate as well. Due to the trend of above mentioned high marriage and birth rates, the average marrying age may decrease from 20 years to 18 years for females. Since 15-60 age group accounts for 61-66 percent of the population (Table 7), there will be a boom in labor force in Muslim community within next 10 years according to the pyramid structure (Fig 3) of the population.

Table 7: Estimation of 15-60 Age category proportion

<table>
<thead>
<tr>
<th>Age</th>
<th>Count</th>
<th>Total</th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-60</td>
<td>810</td>
<td>1263</td>
<td>0.641330</td>
</tr>
</tbody>
</table>

Source: Field Survey, 2017

Confidence interval for 15-60 Age category with 5% significant level (0.614179, 0.667822)

High unemployment rate of females supports higher Population Growth since females are mainly contributing only for household activities. Following hypothesis testing (Table 8) further validates the above statement as to the high unemployment rate of females.

Table 8: Hypothesis test for male and female employment difference

<table>
<thead>
<tr>
<th></th>
<th>Employed</th>
<th>Total</th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>357</td>
<td>613</td>
<td>0.582382</td>
</tr>
<tr>
<td>Female</td>
<td>122</td>
<td>649</td>
<td>0.187982</td>
</tr>
</tbody>
</table>

Source: Field Survey, 2017

Difference = Male prop. – Female prop.
H0 : Difference = 0 vs H1 : Difference ≠ 0

H0 : There is no difference between the proportion of employed females and employed males
H1 : There is a difference between the proportion of employed females and employed males

Estimate for Difference: 0.394400
95% CI for difference: (0.345129, 0.443671)
Z = 15.69
P-Value = 0.000

Since p-value < 0.05, test rejects the Null hypothesis which indicates male employed proportion is larger than female employed proportion at the 5% significant level.

Table 9: Estimation of 5-29 age category goes to Muslim School

<table>
<thead>
<tr>
<th>Age</th>
<th>Count</th>
<th>Total</th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-29</td>
<td>229</td>
<td>302</td>
<td>0.758278</td>
</tr>
</tbody>
</table>

Source: Field Survey, 2017

Confidence interval of 5-20 age category goes Muslim school under 5% significant level (0.705935, 0.805475)

This shows that the 70-80 percent of younger generation’s secondary socialization occurs among the Muslims themselves. According to sociological aspects, this may lead to have strong relationships among their own ethnics which in turn would lower their integration and interaction with other ethnics.

Table 10: Hypothesis test of married male and female age difference

<table>
<thead>
<tr>
<th></th>
<th>Count</th>
<th>Mean</th>
<th>StDev</th>
<th>SE Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>303</td>
<td>45.7</td>
<td>14.3</td>
<td>0.82</td>
</tr>
<tr>
<td>Female</td>
<td>329</td>
<td>41.7</td>
<td>14.7</td>
<td>0.81</td>
</tr>
</tbody>
</table>

Source: Field Survey, 2017

Difference = Mean of Male – Mean of Female
H0 : Difference = 0 vs H1 : Difference = 0

Estimate for Difference: 4.03
95% CI for difference: (1.76, 6.30) T-Value = 3.49
P-Value = 0.001 DF = 628

Since p-value < 0.05, test rejects the Null hypothesis which indicates that there is a difference between male and female marrying age. Average age of Males getting married is higher than the average age of females getting married. Fig 4 and table 10 demonstrates that there is 2-6 years difference between male marrying age and female marrying age, which supports the argument that most Muslim marriages are arranged marriages.

C. Land usage
As a result of population dynamics in segregated residential area, a temporal pattern in land fragmentation can be observed as shown in Fig 5.
Fig 6 indicates that there is no direct effect of the no. of rooms in a house on the no. of people which means that irrespective of availability of resources or wealth population growth remains the same.

V. CONCLUSION

The higher unemployment of females, higher population growth and social interaction of young population being limited to one's own ethnicity are key characteristics of Muslim cultural identity. Currently, Muslim community is limited to vertical ethnic segregation. However, due to land fragmentation reaching the maturity and the expected higher number of future marriage candidates, the segregation can be expanded to horizontal segregation as well. Further, it is noted that irrespective of wealth or availability of facilities, the population growth keeps continuing at the same rate.

REFERENCES