Urbanisation, Migration and Expenditure Pattern of the Urban Poor: A Study of Inner & Peripheral City Squatter Settlements in Siliguri Municipal Corporation Area (SMCA) of West Bengal in India

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Abstract

The primary objective of the study is to investigate the causes of migration, incidence of squatter settlements and expenditure pattern of the squatter households in the inner and peripheral city of Siliguri Municipal Corporation Area (SMCA) in West Bengal, India, assuming that the residents in the inner city squatter settlements are relatively older migrants compared to the peripheral city. A significant consequence of industrialization, commercialization, modernisation and marketisation process is the creation of urban centers as pools of livelihood opportunities and thereby pulling migrants to these centers in search of jobs. Rural-urban wage differentials, unlimited supplies of labour and the resulting employment opportunities in the urban areas as amply explained by Harris-Todaro and Lewis, all point to the migration process and the outcomes. The migrants from rural areas and smaller towns usually settle in informal settlements either in the heart of the city or in the periphery like SMCA. The people in these settlements due to lack of skill and education tend to be absorbed in the informal sector employment. Thus their integration into the market economy is through the low paid, unsecured informal sector in most cases. The informal sector is thus an indispensable source of economic livelihood opportunities while providing the basic means of survival to the slum dwellers in SMCA. The greater integration of these migrants in the market economy implies a higher monetization of food and non-food consumption. The consumption expenditure is thus more sensitive to income and change in price. Consumption habits are also determined by a set of socio-economic, cultural, religious and ecological factors. For many of the squatters in SMCA, the level of income is below the subsistence level with higher average family size and thus their consumption patterns is of great importance to observe the quality of life of the slum dwellers. Using Engel’s Law, the study examines the Marginal Propensity to Consume (MPC) and expenditure elasticity on food and non-food items with respect to total expenditure and family size. The analysis revealed that the expenditure elasticity for most of the food items was found to be less than unity supporting the Engel’s Law and implies that the food items is an essential or necessity for all times. Therefore, the study suggests ways of reducing regional socio-economic imbalances by decentralizing development policies to tackle the rural-urban migration and consequently the incidence of poverty.

Keywords: Urbanisation, Migration, Squatter Settlements, Validation of Engel’s Law
1. Introduction

Urbanization process and its relation with the rural-urban migration, growth of informal settlements and survival strategies of the urban poor are emerging issues for researchers, scholars, economists and social scientists in the recent time. Most of the cities like Siliguri Municipal Corporation are changing typically in terms of demographic, economic and social relationship due to rapid pace of urbanization and as a result the squatter settlements or slums are growing as a dominant and distinct type of settlements. The people in these settlements are mostly from rural origin. In most cases, these migrants with their low human capital and resource base get absorbed in the low paid, unskilled informal sector activities. For many of them, the level of income is below the subsistence level with higher average family size and thus their consumption patterns is of great importance to examine the quality of life. The main thrust of this study is to identify and analyze the causes of migration, employment and the expenditure pattern among the squatters or slum dwellers in the inner-city (older) settlements where the residents are older migrants and in the peripheral city (later) squatter settlements where the residents are relatively new migrants.

2. Objective of the study:

The primary objective of the study is to investigate the following:

a. To identify and analyse the major contributing factors of migration among urban poor living in the inner-city and peripheral city squatter settlements.

b. To compare and analyze the consumption expenditure pattern of the slum dwellers in the inner and peripheral city squatter settlements: An empirical test of the validity of Engel’s law.

3. What are Slums and Squatter Settlements?

In recent past, according to UN-Habitat (2003) both slums and squatter areas are often referred to as informal settlements. Informal settlements have more or less characteristics of both slums and squatter settlements and these informal settlements are commonly known as slums. Payne (1977) defined squatter settlement more or less with same character “as a residential area which has developed without legal claims to the land and/or permission from the concerned authorities and as a result of their illegal status of land”. UN-HABITAT (2010/11) defined slums as a settlement either lacking one or more of the following five amenities: (1) Durable housing (a permanent structure providing protection from extreme climatic conditions) (2) Sufficient living area (not more than three people sharing a room) (3) Access to improved water (water that is sufficient, affordable and can be obtained without extreme effort) (4) Access to improved sanitation facilities (a private toilet, or a public one shared with a reasonable number of people) and (5) Secure tenure (protection against forced eviction (1) Durable housing (a permanent structure providing protection from extreme climatic conditions)

Register General of India (RGI) has adopted the following definition of slums for the purpose of Census of India 2001 - “A compact area of at least 300 populations or about 60-70 households of poorly built congested tenements, in unhygienic environment usually with inadequate infrastructure and lacking in proper sanitary and drinking water facilities”. Throughout the world
these types of settlements or areas are identified by some of the local names like Favelas in Brazil, Villas Misarias in Argentina, Gecekondu in Turkey, Bastee, Juggi-johmpri in India.

4. Limitation of the Study:

In recent past, both slums and squatter areas are often referred to as informal settlements. Alternatively, informal settlements are also commonly known as slums (UN-Habitat 2003). In Siliguri Municipal Corporation, no distinction has been made regarding informal settlements and slums. All the informal settlements have been termed as slums. Hence the study used the term informal settlements as synonymous to slums and squatter settlements and the terms have been used interchangeably.

5. A Brief Review of Related Literature

Migration is all types of residential change from one place to another (Goldscheider, 1971). Migration is essential for survival (Islam, 1999). Keynes viewed migration as a process of divergence when regional imbalances increase over time. On the contrary, the neo-classical theories stated that migration is subject to push and pull factors in response to the rural-urban differentials in employment opportunities and wages which result in regional convergence (Lewis, 1954; Todaro, 1969). Major reasons for voluntary migration were economic and the most prominent economic determinants of rural urban migration were land scarcity and population pressure on land (Stiglitz, 1973). A study of several countries in Asia (ILO, 1977) revealed that increasing unemployment and underemployment in rural areas are the major push factors. Migration is normally viewed as an economic phenomenon along with some non-economic factors (Mitchell, 1959).

Informal sector for the new entrants in the cities is the means of survival (ILO, 1977) and holding sector for rural migrants (Aziz, 1984). This sector has been termed as “struggling for living and living in the present, investing in the future” that indicates livelihood sustainability for the future generation (Timalsina, 2007). There is a close correspondence among the informal sector employment, urban poverty and slum inhabitation (Bryant, 1992).

A number of studies have explored the empirical analysis of the Engel's law by using household budget on food and non-food items in both developed and developing economies. A study by Rao and Raddy (1995) on household consumption pattern revealed that food and non-food articles are treated as necessities and luxuries in rural Andra Pradesh and food articles like milk and milk products, pulses, egg, fish, & meat, and sugar are found to be more elastic than others. Gupta (1986) in his study found that the MPC's are found to be very high for food items compared to those of non-food items and the food items were necessities while most non-food items are luxuries and semi-luxuries. In Bangladesh, Ghosh (2010) evidenced that in both rural and urban areas, cereals, vegetables, edible oil and clothing are treated as necessities but pulses and beverages are necessities in urban areas. On the other hand, egg, fish, meat and sugar are found to be luxuries in both urban and rural areas. Other important studies of Engel’s law on consumption budget of the family are by Joher et.al (1982), Ndanshau (1998-2001), Dissanayake et.al (1988), Ahmad et al (2012), Amir H (2012).
6. The Region of Study

6.1 Demographic Change in Siliguri Municipal Corporation (SMC)

Siliguri is situated in the plains of Himalayas and on the banks of the river Mahananda. The city is popularly known as the gateway or the chicken neck of north east India because its corridor establishes a connection of rest of India with the North-Eastern states. Siliguri was a tiny village of less than 800 populations in 1901 and received its recognition as a municipal town with a population of 32480 with the area of 15.54 Sq.km in 1951. The town showed its vital potentiality as it grew as a centre port for the trade between India, Sikkim, Bhutan, Nepal and Tibet. Assam rail link in 1950’s made this town a gateway to North-East India. The NH-31 and other road networks ushered a new era in the transport horizon in the entire North-East India. The growth of the town received momentum just after independence of India. In 1947, thousands of refugees poured in from East Pakistan when the country was divided and from Assam who lost their home to anti Bengali riots in 1960. The 1962 war with China, 1965 war with Pakistan and ultimately 1971 with West Pakistan and creation of Bangladesh, each of these events contributed to the major inflow of refugees to the town. There was also major influx of business communities from other parts of the country. After 1981, some important State Government offices have been established in Siliguri. Moreover, as a gateway to the wonderful sights of the Himalayan peaks and ranges in Darjeeling, Siliguri offers important tourist activities stimulating the economy of the town. In 1994, the town substantially increased to 41.90 sq. km, when it was upgraded to Siliguri Municipal Corporation (SMC) with the population of 4,27,374 in 2001. It has also been estimated that the projected population will be around 8 lakhs in 2011. The SMC is partly covered by Darjeeling district with an area of 20.10 sq. km inhabited by 284602 persons and partly covered by Jalpaiguri district with an area of 20.81 sq. km, inhabited by 187772 persons. As a whole, Siliguri Municipal corporation area is covered with 47 Municipal wards, having 154 notified slum/squatter settlements with a population of 175012, spread over 33 Municipal wards (Census 2001). Siliguri town is bounded by the border areas of Bangladesh, Bhutan, Tibet and Nepal. It is also linked with the traditional trade route of Sikkim, Nepal, Bhutan and Tibet. During the initial period of growth, people also flowed in from its hinterland states of Bihar, Uttar Pradesh and Assam and with the passing of time Siliguri town acquired a cosmopolitan character.
7. Methodology of Present Study

Following the objective of the study, the purposive reference technique has been adopted to collect the information regarding old and new settlements from the existing and retired officials of the Urban Poverty Alleviation Cell (U.P.A), Counselors and Community Organizers of Siliguri Municipal Corporation, officials of the Refugee Relief and Rehabilitation Department, Siliguri, Government of West Bengal. In case of selection of the sample households from the inner city squatter settlements, initially, an older migrant has been identified as the first sample respondent with the help of Resident Community Volunteers (RCVs). Assistance was sought from the first sample household to identify other older migrants. The new identified older migrant was further asked to identify another migrant possessing similar characteristic. This process was continued until the desired number of sample households had been identified. The same technique was also adopted in case of selecting the sample households for the relatively new migrants in the peripheral city. The technique through which such types of hidden population has been identified is popularly known as “Snowball Sampling” or “Chain Referral Sampling” or “Network Sampling” etc. For the present study both linear and exponential non-discriminative snowball techniques of sampling have been applied.
Out of 154 notified slums in SMC, four slums or squatter settlements of the two categories (inner-city settlements and peripheral settlements) have been selected from the universe. In the inner city squatter settlements, there were 723 households with the inhabitants comprising 3491 slum dwellers. On the other hand, in the peripheral city squatter settlements, there were 974 households with the resident of 4710 squatters or slum dwellers. From each of the inner and peripheral city squatter settlements a fixed number of 120 households have been taken using the snowball technique. Thus, 240 sample households have been surveyed in the aggregate using a structured questionnaire.

### 7.1 Demographic Characteristics of the Sample Squatter Settlements

<table>
<thead>
<tr>
<th>Squatter Settlements/</th>
<th>Total Sample Households</th>
<th>Total Population</th>
<th>Avg. of Duration Residence</th>
<th>Average Family Size</th>
<th>Sex Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>M</td>
<td>F</td>
<td>P</td>
</tr>
<tr>
<td>Inner City</td>
<td>120</td>
<td>354 (52.21)</td>
<td>324 (47.79)</td>
<td>678 (100.00)</td>
<td>38.83</td>
</tr>
<tr>
<td>Peripheral City</td>
<td>120</td>
<td>260 (48.51)</td>
<td>276 (51.49)</td>
<td>536 (100.00)</td>
<td>10.12</td>
</tr>
</tbody>
</table>

**Source:** Field Survey (Oct. 2010 – March 2011).

**Note:** Figures in the parentheses represent the percentage of total population.

The sample inner city squatter settlement of SMCA was bigger in size with 678 squatters as against 536 squatters in the peripheral city. The average family size of the former was higher with about 6 members compared to 4 members in the latter. The sex ratio in the inner city was significantly lower than that of the sex ratio in the peripheral city. The average family size of the household was significantly higher in the inner city than that of the average family size of the million plus cities like Delhi, Kolkata, Mumbai (about 5) and Chennai (about 4) (NFHS-3, 2005-06). The sex ratio of the squatters in both squatter settlements of SMCA was not only significantly higher than that of the sex ratios of the million plus cities like greater Mumbai (770), Delhi (780), Kolkata (805), but also higher than the sex ratio of the state (854) and the country as a whole (876) (NIUA, 2008). The higher sex ratio in the peripheral city was due to higher in migration of more females.

The study observed that the average family size was much higher in Muslim households. The high average family size in terms of religion and caste indicates high birth rate among those communities. In terms of literacy rate in slums and non-slums population, the picture of Siliguri was below the state average. According to census 2001, the literacy rate in the slums of SMCA was 68.18 percent, much lower than the state and national average of 74.40 and 73.10 percent respectively. Male and female slum literacy rate in SMCA was also lower than that of the literacy rate in the state and the nation. As per the information generated from sample study, the literacy rate among the squatters who are normally the older migrants living in the heart of the city was far lower (around 66 percent ) than that of the literacy rate of the squatters who are relatively the new migrants living in the peripheral city (around 74 percent). The female literacy rate in the inner city squatter settlements (older settlements) was also lower than that of the literacy rate in peripheral city. So far as the level of education is concerned, the squatters in the both the inner
and peripheral city of SMCA shows a clear preference for primary education. Therefore the study revealed that in terms of educational achievements, the squatters and slum dwellers in SMCA are particularly deprived compared to the state and metropolitan cities and this further raise the question of proper implementation and monitoring of the schemes and programmes, addressed to improve the quality of life of slum dwellers along with human development of the region.

8. Reasons behind Migration of the Squatter Households in SMCA

In terms of migration and related push and pull factors, the present study found that migration due to economic reasons was overwhelmingly higher among the first generation squatter households in both the cities (Table 2). It was around 78 percent in the inner city as against 85 percent in the peripheral city. Instead of having wide differences in the push factors of migration in both the cities, majority of the squatter households had migrated due to non-availability of work/unemployment, followed by income differential and poverty. Economic push and pull factors are often complementary to each other and thus the migration due to greater employment opportunity was supported by non-availability of work at the origin. Differential wage rate was another crucial reason for migration.

Among the non-economic push factors, majority of the migration into the inner city was due to Bangladesh war of independence in 1971, followed by migration owing to partition of India 1947, ecological displacement due to floods, soil erosion, droughts, family conflict and ethnic violence due to anti Bengali riots in Assam. On the other hand, in the peripheral city, a greater number migrated due to family conflict, followed by ecological displacement, war of Bangladesh in 1971 and ethnic violence. The non-economic pull factors are also complementary to non-economic push factors and hence it is observed that more than 72 percent of migration was to ensure social security/safety, as against 28 percent for better future prospects in the inner city. The picture was quite different in the peripheral city, where more than 83 percent of the migrants aspired for better future prospects. In terms of migration due to non-economic push and pull factors, significant difference is observed between the cities ($\chi^2 = 216.22, P < .01$ for non-economic push factors and $\chi^2 = 12.48, P < .001$ for non-economic push factors). Similar findings have been found in the studies of Lewis (1954), ILO (1966), Lee (1966), Todaro (1969, 1976), Beier et al (1976), Papola (1981), Sundari (2003) where unemployment or unavailability of employment, income differential and poverty are the major contributing economic push factors of migration and high employment opportunities and higher wage rate in the city areas are the crucial pull factors of migration. On the other hand, the non-economic push and pull factors like Bangladesh war in 1971, partition of India in 1947, ecological displacement due to floods, soil erosion, droughts, family conflict and ethnic violence due to anti Bengali riots in Assam, social insecurity/safety, better future prospects are also responsible for migration among the squatter households in SMCA. The present study did not conform to the findings of Walsh and Trlin (1973) and Shaw (1974) that there is a positive relationship between high man/land ratios and a propensity to migrate. On the other hand, the present study reinforces the findings of McDowell & De Haan (1997) and Stark (1991) that migration can be interpreted more as a household livelihood strategy than as a completely individual choice.

In recent past, the greatest challenge to urban planning in the cities of developing countries is the difficulty to track the burgeoning population growth together with the requirements of basic infrastructure for the growing community. Migration is a socio-economic process, where everyone has the right to move elsewhere and it cannot be restrained by force. Thus, in order to solve the problems especially to ensure quality of environment and to maintain the level of
economic development, the local bodies and urban planners resort to regional planning approach which needs to integrate the city planning with its surrounding rural/semi-urban areas.

Table (2): Push and Pull Factors of Migrant Households

<table>
<thead>
<tr>
<th>Purpose and Factors for Migration in First Generation</th>
<th>Inner City</th>
<th>Peripheral City</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Households &amp; Purpose of Migration</strong></td>
<td>120</td>
<td>120</td>
</tr>
<tr>
<td>Households belonging to First Generation</td>
<td>101 (84.17)</td>
<td>120 (100.00)</td>
</tr>
<tr>
<td>Economic Factors</td>
<td>79 (65.83)</td>
<td>102 (85.00)</td>
</tr>
<tr>
<td>Non-Economic Factors</td>
<td>22 (17.86)</td>
<td>18 (15.00)</td>
</tr>
<tr>
<td><strong>Economic Push Factors</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unemployment/ Non-Availability of Work</td>
<td>40 (50.00)</td>
<td>68 (66.67)</td>
</tr>
<tr>
<td>High Poverty</td>
<td>10 (12.50)</td>
<td>7 (6.67)</td>
</tr>
<tr>
<td>Income Differential</td>
<td>29 (37.50)</td>
<td>27 (26.67)</td>
</tr>
<tr>
<td><strong>Economic Pull Factors</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Greater Employment Opportunity</td>
<td>50 (62.50)</td>
<td>75 (79.17)</td>
</tr>
<tr>
<td>High Wage Rate</td>
<td>2 (2.50)</td>
<td>27 (26.67)</td>
</tr>
<tr>
<td><strong>Non-Economic Push Factors</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Partition of India 1947</td>
<td>4 (18.18)</td>
<td>0 (0.00)</td>
</tr>
<tr>
<td>Partition of Bangladesh, 1971</td>
<td>11 (50.00)</td>
<td>2 (11.11)</td>
</tr>
<tr>
<td>Ethnic Violence</td>
<td>1 (4.55)</td>
<td>1 (5.56)</td>
</tr>
<tr>
<td>Family Conflict</td>
<td>2 (9.09)</td>
<td>11 (61.11)</td>
</tr>
<tr>
<td>Ecological displacement</td>
<td>4 (18.18)</td>
<td>4 (22.22)</td>
</tr>
<tr>
<td><strong>Non-Economic Pull Factors</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Safety/Security</td>
<td>16 (72.73)</td>
<td>3 (16.67)</td>
</tr>
<tr>
<td>Better Future prospects</td>
<td>6 (27.27)</td>
<td>15 (83.33)</td>
</tr>
</tbody>
</table>

Source: Field Survey (Oct. 2010 – March 2011). Note: Figures in the parentheses indicate the percentage of total households, * Note: Hhs with high poverty are those who were not able to meet the subsistence level of living (i.e. two meals per day regularly).

9. Economic Livelihood of the Squatters

In much of Asia, the urban poor households are not only strongly integrated into the economy, but also seek to diversify their income and pooling activities by having multiple family members engaged in different types of activities in the economy (Douglass, 1998). In the urban area, the growth rate of labour force absorption in the organized sector is generally much lower than the population growth rate, which leads to inevitable growth of informal sector. The urban informal sector emerges by absorbing the rural migrants and serve as a ‘holding’ sector for these migrants Aziz (1984). A sample study by Ghosh et al (1995) evidenced that about 30 percent of the slum dwellers in SMCA were engaged in workforce constituting 49.14 percent male and 9.22 percent female (Table 3). But the present sample study found that the WPR was slightly higher in the inner city squatter settlements (around 35 percent) compared to peripheral city (around 34 percent). In terms of gender, the female WPR was almost equal at around 15 percent in both the cities. It has already been mentioned that the slum dwellers are very poor in terms of human capital and these poor rural migrants integrate themselves in the urban labour market especially in the informal sector through social capital formation. The people in these settlements due to
lack of skill and education tend to be absorbed in the informal sector employment. Thus their integration into the market economy is through the low paid, unsecured informal sector in most cases. The informal sector is thus an indispensable source of economic livelihood opportunities while providing the basic means of survival to the slum dwellers in SMCA. It is also observed that human capital generated through education, knowledge and skills are of lesser importance in engaging in such types of activities where the slum dwellers usually find engagement. This observation was supported by the significant negative correlation between WPR and literacy rate ($r^2 = -0.276$) in the inner city. Similar significant inverse relationship between WPR and literacy rate is also found in the peripheral city ($r^2 = -0.272$). It is also observed that length of residence has positive impact on employment of the migrant squatters in the inner and peripheral city squatter settlements as is expected. The longer the period of stay, the greater are the chances of availing wider and probably better work options. The WPR in both the inner and peripheral city squatter settlements of SMCA was lower than that of the WPR in the million plus cities like greater Mumbai (36.8 percent), Delhi (35.1 percent), and Kolkata (36.5 percent), but higher than the WPR of the state (34.2 percent) and the country as a whole (32.9 percent). Interestingly, the female WPR was significantly high in both the cities of SMCA compared to the female WPR in the metropolitan cities, the state as well as the country as a whole.

Table (3): Work Participation Rate (WPR)

<table>
<thead>
<tr>
<th>Squatter Settlements/WPR</th>
<th>M</th>
<th>F</th>
<th>T</th>
<th>Gender Gap</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inner City</td>
<td>186 (52.54)</td>
<td>49 (15.12)</td>
<td>235 (34.66)</td>
<td>37.42</td>
</tr>
<tr>
<td>Peripheral City</td>
<td>143 (55.00)</td>
<td>41 (14.86)</td>
<td>184 (34.33)</td>
<td>40.14</td>
</tr>
</tbody>
</table>

Source: Field Survey (Oct. 2010 – March 2011), Note: Figures in parentheses indicate the percentage of workers to total population (WPR)

10. Proportion of Expenditure and Savings of the Squatter Households to Total Income

Regarding the proportion of expenditure and savings to total income, it was almost equal in both the inner and peripheral city squatter settlements (around 96 and 4 percent respectively). Total consumption expenditure has been classified into food and non-food items, with the households spending more than 50 percent of their income on food items in both the inner and peripheral city settlements (about 59 and 51 percent respectively (Figure 1). This finding is supported by Bihon (2006) in Addis Ababa, a capital city of Ethiopia, where it is seen that most of the poor households spent more than 50 percent of their income on food items. The proportion of expenditure on food items was significantly higher in the inner city of SMCA due to larger family size compared to the peripheral city in particular. In contrast, the proportion of expenditure on non-food items was much higher in the peripheral city at 44.53 percent compared to 36.91 percent in the inner city primarily due to high indebtedness among the dwellers which is evident from the correlation between expenditure on non-food items and indebtedness that is significant ($r^2 = 0.332$) at 10 percent level.
11. Monthly Per Capita Income, Expenditure and Savings relationship among the households under SMCA

The slum dwellers and squatters are the source of cheap labour force in the cities like SMCA. They are largely dependent on cash income to meet the basic needs and it directly comes from the informal sector activities. In these settlements, poverty is characterized by inadequate income for many of the squatters. Due to inadequate earnings they are often unable to meet the basic needs. An extension of their earnings leads to a better nutrition plan, improved health, better education and savings, i.e., well being or standard of living of the slums is ultimately determined by the level of income and the corresponding consumption and savings. The sample study observed that the income disparity of the households in the inner city was very high that ranges from Rs.400 to Rs 25500, as against the disparity in income of the households in the peripheral city where income ranges from Rs, Rs.0.00 to Rs.15000. The average monthly income of the households was almost equal in both the cities (around Rs. 4682 and Rs. 4684 respectively). Whereas, the income differential was significantly high in the inner city (with SD of 3346.39) than that of the income differential in the peripheral city (with SD of 2065.78). Such income differential between the cities primarily due to the nature of jobs, differences in wage rate, regular and irregular type of work, duration of residence etc. It has already been discussed that the level of income among the lower income groups particularly the squatter households depends not only on the wage rate, nature of job etc., but it is also true that the level of income is positively correlated with the family size ($r^2 =0.471$ and $r^2 =0.335$ respectively for both the inner and peripheral city squatter settlements).

So far as per capita income, expenditure and savings are concerned, the present study found that monthly per capita income of the households living in the peripheral city squatter settlements was significantly higher at around Rs. 1049 as compared to Rs 828.75 in the inner city (Figure 2). The lower per capita income was primarily owing to large number of family members in the latter. Similarly, corresponding monthly per capita total expenditure (around Rs. 791), per capita expenditure on food and non-food items (around Rs.485 and 306 respectively) and savings (around Rs.37) were significantly high in the peripheral city than that of the monthly per capita total expenditure (around Rs. 1005), per capita expenditure on food and non-food items (around
Rs.538 and 467 respectively) and savings (around Rs.44) of the households in the inner city. If the poverty line recommended by the Indian Planning Commission for 2009-10 in terms of per capita consumption expenditure of Rs.859.50 in urban areas is considered, it is to be found from the present sample study that all the squatters in the inner city squatter settlements were living below poverty line. On the other hand, the squatters in the peripheral city were comparatively better off living above the poverty line.

Figure (2) Per Capita Income, Expenditure and Savings of the Households in the Inner & Peripheral City Squatter Settlements under SMCA

Source: Field Survey (Oct. 2010 – March 2011)

12. **Expenditure on Food and Non-Food Items**

Statistical analysis with regard to the expenditure on food and non-food items shows that the mean expenditure on food items as a whole was around Rs. 2743 in the inner city, as against around Rs. 2403 in the peripheral city. Among all the food items, significant difference is observed in the mean values of other food items that include fish, meat, fruits, fast food, drinks etc., between the cities (P< 0.05). The expenditure differential on different food items was very high particularly for other food items that include fish, meat, fruits, fast food, cold drinks, etc., in the inner city than that of the expenditure differential in the peripheral city because some of the households having relatively better economic status in the inner city are spending more on fish, meat, fruits, fast food, cold drinks etc. On the other hand, the mean expenditure on total non-food items was much lower in the inner city (around Rs. 1728) than that of the peripheral city (about Rs. 2086). Within cities, significant difference is seen in the mean expenditure of total non-food items (P<0.5). Similarly, based on the mean expenditure for the various non-food items, it is observed that the squatter households in the inner city are spending more for medical purposes (Rs. 159) and less on other non-food items (about Rs. 253) as compared to the peripheral city (about Rs. 76 and 328 respectively) and thus the difference in the mean expenditure on medical and other non-food items was highly significant between the cities (P<.01 for each). As a whole, among all the food and non-food items, the expenditure differentials were significantly high for rent & loan installments, education and other non-food items that include clothing, house
rebuilding, transportation, rituals, etc., in both the inner and peripheral city. Betting and gambling unfortunately was also found to cut into this expenditure.

Table (5): Descriptive Statistics of the Expenditure on Food and Non-Food items of Households in the Slums under Study

<table>
<thead>
<tr>
<th>Food and Non-Food Items</th>
<th>Inner City</th>
<th>Peripherial City</th>
<th>ANOVA (Mean Difference)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
</tr>
<tr>
<td>Food Grains</td>
<td>782.42</td>
<td>452.44</td>
<td>696.67</td>
</tr>
<tr>
<td>Grocery (other than food grains)</td>
<td>556.25</td>
<td>285.84</td>
<td>529.17</td>
</tr>
<tr>
<td>Milk &amp; Milk Product</td>
<td>131.99</td>
<td>144.61</td>
<td>142.86</td>
</tr>
<tr>
<td>Vegetables</td>
<td>284.92</td>
<td>120.5</td>
<td>310.83</td>
</tr>
<tr>
<td>Other Food Items</td>
<td>987.34</td>
<td>1161.4</td>
<td>722.98</td>
</tr>
<tr>
<td><strong>Expenditure on Total Food Items</strong></td>
<td>2742.9</td>
<td>1890.7</td>
<td>2403</td>
</tr>
<tr>
<td>Medical</td>
<td>159.34</td>
<td>264.72</td>
<td>75.54</td>
</tr>
<tr>
<td>Education</td>
<td>239.61</td>
<td>410.32</td>
<td>263.18</td>
</tr>
<tr>
<td>Fuel items</td>
<td>379.17</td>
<td>231.28</td>
<td>404.73</td>
</tr>
<tr>
<td>Electricity</td>
<td>141.15</td>
<td>101.75</td>
<td>133.95</td>
</tr>
<tr>
<td>Mobile</td>
<td>82.23</td>
<td>116.75</td>
<td>79.38</td>
</tr>
<tr>
<td>Entertainment</td>
<td>185.32</td>
<td>207.79</td>
<td>162.88</td>
</tr>
<tr>
<td>Rent &amp; Loan Install.</td>
<td>289.46</td>
<td>690.91</td>
<td>638.53</td>
</tr>
<tr>
<td>Other Non-Food Items</td>
<td>252.51</td>
<td>304.31</td>
<td>327.75</td>
</tr>
<tr>
<td><strong>Expenditure on Total Non-Food Items</strong></td>
<td>1728.5</td>
<td>1424.5</td>
<td>2086</td>
</tr>
</tbody>
</table>

**Source**: Field Survey (Oct. 2010 – March 2011)

**Note**: Other food items that includes fish, meat, fruits, fast food, cold drinks etc. and other non-food items that includes clothes, house repairing, transportation, rituals, gambling etc.


To examine the expenditure pattern on different food and non-food items of the squatter households in the inner and peripheral city of SMC, the approach which has been adopted is to test the empirical validity of the Engel’s Law. The Engel’s law fundamentally proposes that after the subsistence level is overcome, the expenditure on food articles declines with the increase in total income or expenditure implying less than unit elasticity for food items. An extended version of the Engel’s law also suggests that some of the non-food items have near unit elasticity, whereas, some luxury items have more than unit elasticity.

Total expenditure has been regarded as one of the important variables in the expenditure on different food and non-food items. Explanation regarding share of expenditure can be made parametrically by estimating a functional equation relating to the expenditure on food and non-food items with respect to total expenditure and other demographic characteristics like family size. Some of the studies in this line are Engel (1857), Houthakker (1957), Ndanshau (1998-2001), Parpiev and Yusupov (2011), Safder et al (2012). There are some equally important
determinants in the expenditure pattern of the households like age, education and family size. So far as consumption pattern of the squatters is concerned, family size is one of the most important determinants in the Engel equation.

In the present sample study, the expenditure on different food and non-food items has been considered as a function of total expenditure and family size in the Engel’s equation. Total expenditure is a better classifying explanatory variable in Engel’s function because it is more closely related to the permanent economic status than income. In other words, larger family size of the poor reduces the per capita expenditure of the family budget and thereby aggravates poverty in that household. In this context, Deaton and Paxson (1998) show that with an increase in family size with total expenditure remaining constant, expenditure on food of the household falls. With regard to empirical validation of the Engel’s law, data of expenditure on different food and non-food items of the squatter households during the survey period (October 2010 to March 2011) has been used. Let us assume that the Engel’s function is homogeneous of degree one in the following form,

\[ Y_i = (X_{i1}, X_{i2}) \] ..........................(1)

\[ Y_i = \text{Households Expenditure on } i^{th} \text{ item} \]

\[ X_i = \text{Total Expenditure of the Household} \]

\[ X_2 = \text{Family Size of the Household} \]

Using Euler’s theorem, we get

\[ X_1 \frac{\partial Y_i}{\partial X_1} + X_2 \frac{\partial Y_i}{\partial X_2} = Y_i \]

\[ \frac{X_1}{Y_i} \frac{\partial Y_i}{\partial X_1} + \frac{X_2}{Y_i} \frac{\partial Y_i}{\partial X_2} = 1 \]

\[ \frac{\varepsilon}{X_1} + \frac{\varepsilon}{X_2} = 1 \] ............ (2)

This equality holds good only for the Engel’s function which is homogeneous of degree one and the homogeneity hypothesis reveals that there are no economies /diseconomies of scale (Prais and Houthakker, 1955). The presence of inequality in equation (2) is an indication of the presence of economies/diseconomies of scale. When it is found that the proportional increase in expenditure on a specific item decreases with respect to proportional increase in household size for a fixed level of total expenditure, it is known as economies of scale in household’s consumption expenditure. The opposite is true for diseconomies of scale.

The linear form of the Engel’s curve equation has been fitted as

\[ Y_i = \alpha + \beta_1 X_1 + \beta_2 X_2 + \varepsilon_i \]

Where, \( Y_i = \text{Household Expenditure on } i^{th} \text{ item} \),

\( X_i = \text{Total expenditure of the household} \), the parameter \( \beta_1 \) measures the Marginal Propensity to Consume (MPC)
$X_2 =$ Size of the household, the parameter $\beta_2$ measures the marginal increase in the expenditure on $i^{th}$ item due to an addition of the family size

$\varepsilon_1 =$ Error term

Engel’s equation in the log linear form fitted as,

$$\log Y_i = \alpha + \beta_1 \log X_1 + \beta_2 \log X_2 + \varepsilon_1$$

$$\frac{\partial Y_i}{\partial X_1} \left( \frac{X_1}{Y_i} \right) = \beta_1, \quad \frac{\partial Y_i}{\partial X_2} \left( \frac{X_2}{Y_i} \right) = \beta_2$$

Where, $\beta_1$ & $\beta_2$ are the estimates of elasticity of expenditure and family size.

In the model of multivariate regression, the inclusion of household family size along with total expenditure as independent variable in Engel curve equation is the threat of multicollinearity problem. The correlation coefficient of the explanatory variables in both the inner and peripheral city squatter settlements ranges from 0.386 to 0.570 for all the cases. The problem of multicollinearity has also been checked by Variance Inflated Factor (VIF) and Condition Index (CI). As a rule of thumb, the VIF of 5 or 10 and above indicates the multicollinearity problem (O'Brien, 2007). Similarly, the condition index over 15 also indicates a possible multicollinearity problem, but CI over 30 suggests a serious multicollinearity problem (Gujarati, 1995). The VIF and CI values for total expenditure in this empirical study ranges from 1.30 to 1.48 and 3.53 to 5.64 respectively and for family size VIF and CI values ranges from 1.30 to 1.48 and 4.58 to 6.38 respectively in both the inner and peripheral city squatter settlements suggesting that the VIF and CI level is good and there is no problem of multicollinearity.

So far as the validation of Engel’s law is concerned for food and non-food items, the marginal propensity to consume (MPC) is the extra unit that people consume with an additional unit of expenditure. The MPC in general ranges from 0 to 1, but it also varies with respect to the economic condition of the people, locality, taste and preferences, etc. For example, the MPC and expenditure elasticity for food items may be greater than one for those households who are struggling to cope under poverty because with the increase in total expenditure they spend more on food items even by borrowing money to meet the necessary consumption needs.

13.1 Estimate of Marginal Propensity to Consume (MPC)

The empirical study based on the validation of Engel’s law, it is found from Table 6 that among all the food items, the MPC was highest on other food items like fish, meat, fruits, fast food, cold drinks etc., (0.38) in the inner city, followed by, grocery items (0.07), food grains (0.06), milk and milk products (0.03), vegetables (0.02) and as a whole the MPC on food items stood at 0.56. Therefore, out of the given increase in consumption expenditure, 38 percent is spent on other food items, 7 percent on grocery and 6 percent on food grains, 3 percent on milk and milk products, 2 percent on vegetable and as a whole 56 percent is spent on food items.

In the peripheral city, the MPC on different food items was significantly high on other food items like clothes, house repairing, transportation, rituals, gambling etc. (0.23), followed by food grains, grocery items (0.07 each), vegetables (0.03) and milk and milk products (0.02) and in the aggregate, the MPC on food items is 0.42 i.e., with the given increase in consumption expenditure, 23 percent is spent on other food items, 7 percent each on food grains and grocery items (other than food grains), 3 percent on vegetables, 2 percent on milk and milk products and
thus 42 percent of total expenditure was spent on food items. Therefore, it is found that the inner city squatter households are spending more on food items to meet the necessary consumption needs as compared to the peripheral city. In both the cities, the MPC is significantly higher on other food items like fish, meat, fruits, fast food, drinks etc., indicating that the share of expenditure increases for such food items with an increase in expenditure. The finding is significantly consistent with the study of Lahiri (1990) for Egypt where the expenditure on the protein rich products like meat, fish, poultry, and dairy products increased with an increase in income or expenditure.

Among the non-food items, the MPC was far higher for rent & loan installments (0.12), followed by education (0.09), for each entertainment and other non-food items including clothes, house repairing, transportation, rituals, gambling etc., (0.05), for medical expenses and fuel items (0.04), mobile for communication (0.03) and electricity (0.02) and as a whole the MPC on non-food item was 0.44. With the given increase in expenditure, 12 percent is spent on rent & loan installment, 9 percent on education, 5 percent for entertainment and non-food items, 4 percent for medical and fuel items each, 3 percent on mobile and 2 percent on electricity and as a whole 44 percent is spent on total non-food items by the households in the inner city.

In the peripheral city, the MPC was also high for expenditure on rent & loan installment (0.27), followed by other non-food items that included clothes, house repairing, transportation rituals, gambling etc (0.12), education (0.06), entertainment (0.04), electricity (0.03), for medical and fuel items (0.02 each) and as a whole the MPC on non-food item was 0.58. The study observed that with the given increase in expenditure, 27 percent is spent on rent & loan installment, 12 percent on other non-food items, 6 percent on education, 4 percent on entertainment, 3 percent on electricity, 2 percent for each medical and fuel items and as a whole 58 percent on total non-food item in the peripheral city. It is thus evident from the sample under study that the squatter households in the peripheral city are spending more on non-food items owing to high indebtedness.

So far as family size and expenditure is concerned, it is found that in both the inner and peripheral city, an increase in family size led to an increase in expenditure on food items as a whole, but the increase in expenditure on total food items was significant at 5 percent level only in the inner city. Again, within food items, an increase in family size increased the expenditure on food grains, grocery, milk and milk products and vegetables in the inner city squatter settlements, but the increase was highly significant for food grains and vegetables only. The exception is found for other food items in the inner city where, an increase in family size decreased the expenditure on other food items significantly and thus MPC has been found to be negative.

Similarly, in the peripheral city, an increase in family size led to increase in expenditure significantly only for food grains and milk and milk products. In contrast, due to increase in family size decreases in the expenditure on grocery, vegetables and other food items have been observed and hence MPC for those items are found to be highly negative. The sample study shows that an increase in family size curtailed the expenditure on non-food items in both the inner and peripheral city. Within non-food items, an increase in family size curtailed the expenditure on medical expenses, education, mobile, entertainment and rent & loan installment and the MPC for those items are found to be negative in the inner city. The only exception was fuel, electricity and other non-food items, where an increase in family size increased the expenditure on these utilities, but the increase in expenditure was significant only for fuel items in the inner city. On the other hand, in the peripheral city among the non food items an increase in family size increased the expenditure on education and fuel items only, as against the curtailment of expenditure on medical expenses, electricity, mobile, entertainment, rent and loan.
installment and other non-food items and the MPC for these items has been found to be negative. To sum up, it is observed that an increase in family size increased the consumption expenditure for food items, as against the curtailment of expenditure on certain non-food items in both the inner and peripheral city. On the other hand, an increase in family size increased the consumption expenditure of the squatter for almost all the food items in both the inner and peripheral city except other food items like fish, meat, fruits, fast food, drinks in the inner city and grocery, vegetables and other food items in the peripheral city. A close examination of MPC show that an increase in family size curtailed the expenditure on medical expenses, education, mobile, entertainment and rent and loan installment, as against the increase in expenditure on fuel items, electricity and other non-food items that include clothes, house repairing, transportation, rituals, gambling etc., in the inner city. Again, increase in family size curtailed the expenditure for almost all the items excluding education and fuel items for which expenditure and thus the MPC increased in the peripheral city. Finally, the study observed that the MPC is very high for total food items as against the non-food items in the inner city and in contrast, the MPC is significantly high for total non-food items than that of the MPC on food items in the peripheral city. The finding in the inner city did not support the study of Gupta (1986), Tiwari and Goel (2002), but was consistent with the finding of the peripheral city where the MPC for food items is lower than that of the MPC on non-food items. However, the increase in expenditure on different food and non-food items with respect to family size may be due to diseconomies of scale and curtailment of expenditure may be due to economies of scale.

Table (6) Estimation of Marginal Propensities to Consume (MPC) on Food and Non-Food Items in the Inner & Peripheral City Squatter Settlement under SMCA

<table>
<thead>
<tr>
<th>Settlements/ Food &amp; non-food Items</th>
<th>Inner City</th>
<th>Peripheral City</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\alpha$</td>
<td>$\beta_1$</td>
</tr>
<tr>
<td><strong>Total Food Items</strong></td>
<td>29.13</td>
<td>0.56***</td>
</tr>
<tr>
<td>Food Commodities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Food Grains</td>
<td>58.22</td>
<td>0.06***</td>
</tr>
<tr>
<td>Grocery (other than food grains)</td>
<td>194.77</td>
<td>0.07***</td>
</tr>
<tr>
<td>Milk &amp; Milk Product</td>
<td>-59.33</td>
<td>0.03***</td>
</tr>
<tr>
<td>Vegetables</td>
<td>121.83</td>
<td>0.02***</td>
</tr>
<tr>
<td>Other Food Items</td>
<td>-288.01</td>
<td>0.38***</td>
</tr>
<tr>
<td><strong>Non-Food Items</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medical</td>
<td>-1.78</td>
<td>0.04***</td>
</tr>
<tr>
<td>Education</td>
<td>-137</td>
<td>0.09***</td>
</tr>
<tr>
<td>Fuel Items</td>
<td>93.66</td>
<td>0.04***</td>
</tr>
<tr>
<td>Electricity</td>
<td>50.4</td>
<td>0.02***</td>
</tr>
<tr>
<td>Mobile</td>
<td>-5.08</td>
<td>0.03***</td>
</tr>
<tr>
<td>Entertainment</td>
<td>23.43</td>
<td>0.05***</td>
</tr>
<tr>
<td>Rent &amp; Loan Install.</td>
<td>-59.71</td>
<td>0.12***</td>
</tr>
<tr>
<td>Other Non-Food Items</td>
<td>-14.72</td>
<td>0.05***</td>
</tr>
</tbody>
</table>

Notes: *** represents p < 0.001, ** represents p < 0.01 and * represents p < 0.05
13.2 Estimates of Expenditure Elasticity

The estimates of elasticity of expenditure on different food and non-food items depicted in Table 7 reveals that the demand for food items with elasticity less than unity (essential goods) conforms to the well-known Engel's law. The results of the log linear model on expenditure-consumption relationship represent the elasticity of different food and non-food items by its nature. The study found that in both the inner and peripheral city squatter settlements, the expenditure elasticity of total food items was less than unity (0.81 and 0.10 respectively), as against the greater than one expenditure elasticity of non-food items (1.29 and 1.01 respectively) indicating that the total food items fell under necessary commodity group and total non-food items fell under luxury group. Thus, for the essential items, the quantity demanded increased by a smaller percentage than total expenditure implying that squatter households do not spend much of any increase in total expenditure on this particular commodity and for the non-essential items, the quantity demanded increased by larger percentage than total expenditure implying that quantity demanded is quite responsive to changes in total expenditure.

Among all the food items, food grains, grocery, milk and milk products, vegetables, excluding other food items like fish, meat, fast food, fruits, drinks, etc., are falling under essential commodity items with the expenditure elasticity of less than unity in the inner city. In the peripheral city, almost all the food items like food grains, grocery, milk and milk products and vegetables fall under essential commodity group. The other food items including fish, meat, fast food, fruits, drinks, etc fell under the category of relatively luxurious items with the expenditure elasticity of greater than unity. A similar study by Ghosh (2010) in Bangladesh evidenced that in both rural and urban areas, cereals, vegetables, edible oil and clothing are treated as necessities and some other high nutritional food items e.g., egg, fish, meat and sugar are found to be luxuries in both urban and rural areas.

On the other hand, almost all the non-food items such as medical expenses, electricity, mobile, entertainment, rent & loan installment and other non-food items that include clothes, house repairing, transportation, rituals, etc. are falling under relative luxury items excluding education and fuel that fall under essential items in the inner city. In the peripheral city, almost all the non-food items are falling under essential items excluding non-food items that include rent and loan installment while the rest of the non-food items are falling under luxury goods category.

So far as expenditure elasticity with respect to family size in the inner city squatter settlements is concerned, it is observed that elasticity co-efficient of family size for most of the food and non-food items that include food grains, grocery, milk and milk products, vegetables, educational expenses, fuel items, electricity, mobile and total food items, is less than unity while having positive impact on the expenditure pattern of the inner city squatters, indicating that these items are significant in their lives. On the other hand, the elasticity co-efficient of family size is inversely related with other food items that include fish, meat, fruits, fast food, drinks etc., and non-food items like medical expenses, entertainment, rent and loan installment, clothing, house repairing, transportation, rituals, gambling etc.. This imply that an increase in the family size, holding total expenditure constant, makes the family poorer i.e., after increasing its expenditure on the necessary items to satisfy the required level of living, the households are unable to spend or are having to spend less on items that are less significant to them in terms of basic needs. This observation is similar to findings of the studies by Ali (1981), Siddiqui (1982).
The above analysis reveals that the expenditure elasticity for most of the food items are found to be less than unity supporting the Engel’s law that food items is an essential or necessity under all situations. The expenditure elasticity for most of the non-food items is found to be greater than unity indicating that these items are a luxury for the households who struggle to make ends meet. The proportion of expenditure incurred on all such commodity groups increased as total expenditure increased and thus is in alignment with Engel’s law. Such consumption pattern of the households living in squatter settlements indicates that as they come from below the subsistence level of living, hence they allocate their increase in expenditure between food and the non-food items. This finding is also consistent with the observation of studies by Gupta (1986), Rao and Reddy (1995), where they found that food articles are necessities and non-food items are luxuries for the urban poor. The food articles like milk and milk products, pulses, egg, fish, & meat, and sugar are necessities and are found to be more elastic than others.

133
14. Conclusion

The present study is a pointer to the mushrooming growth of slums or squatter settlements in SMCA which is a result of inter and intra-regional socio-economic disparities and unbalanced growth process. Therefore, the study suggests ways of reducing regional socio-economic imbalances by decentralizing development policies to tackle the rural-urban migration and consequently the incidence of poverty. The overall sample expenditure elasticity with respect to food implies that the poor quality of living is prevailing in the sample areas. The study also suggests that the government should be directly involved in employment generation programmes for increasing incomes and fostering food security for the urban poor squatters in SMCA. Special schemes may be introduced to provide the basic food and non-food items at cheap or subsidized rates through the rationing system. On the other hand, anti-inflationary measures should be pursued immediately for increasing better access to food. Implementation of family planning is also suggested to overcome the negative impact of large family sizes upon household consumption.

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