Accessibility and Housing Needs of Paraplegics in Enugu City, Nigeria

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Abstract
It is apparent that paraplegics who use wheelchairs have peculiar accessibility and housing needs as a result of their physical condition or impairment. These needs are significant to their economic, social, psychological and physiological health. Unfortunately neither houses that accommodate the needs of paraplegics nor useful information on how to create it has been widely available in Enugu city. Worst still, virtually no accessibility provisions were made for them in the design and construction of public buildings like churches, banks, libraries, etc. This study investigated the extent to which the accessibility and housing needs of chair-bound paraplegics in Enugu city have been met. The aim was to provide ideas that will help alleviate the challenges they encounter in accessing public places and also facilitate the integration of their housing needs into a suitable housing strategy in Enugu city. This study revealed that 77.59% of the already constructed public buildings do not consider paraplegics in their construction. Furthermore all the Housing Schemes of the state – Enugu state, over time have not included housing for paraplegics. Many recommendations were proffered which included the need for a State policy that will ensure compulsory construction of mobility assistive facilities in all public buildings; an enactment of law that will allow paraplegics to make measurable structural adjustments in the building they occupy.

Keywords: paraplegics, housing, city

1. Introduction
Disability is a common human condition and people with disabilities are often products of natural existence. They mostly constitute a pitiable sight and have been widely discriminated against. It also appears as if Africa’s disabled population is one of the continent’s most marginalized and poorest inhabitants: unable to enjoy optimal access to city’s facilities, education, work, and because of their disabilities, many of them turn to begging to survive.

Finding good data about disability incidences worldwide is challenging. However, it is obvious that quite a recognizable percentage of global population has one form of disability or the other. The World Health Office (2004) estimated that there are as many as six hundred million people with one form of disability or the other worldwide. The UN, (2005) estimate is six hundred and fifty million globally. In Nigeria, the 1991 population Census puts the figure of people living with disabilities at 429,142. That is, 0.48% of the total national population. Of this number, those crippled are 55, 435. In Enugu State, a total of 16, 641 are living with disabilities; out of which 1,895 are crippled (NPC, 1991). This means that one out of every one hundred and nine persons in Enugu State is disabled. The Nigeria civil war (1967 – 1970), sicknesses, accidents and birth circumstances contribute significantly to the causes of disabilities in Nigeria. Unfortunately, neither houses that accommodate the needs of these paraplegics nor useful information on how to create it has been widely available in Nigeria at large and Enugu city in particular. Besides, the heavy presence of staircases; uneven, unpaved and rough floor surfaces in public places; as well as the marked absence of ramps; lifts in high rise public buildings and side-walk along which paraplegics could pull their wheelchairs are manifestations of the fact of the neglect of their accessibility needs.

There seem to be no facilities for disabled people in public places and buildings in Nigeria. There is apparently no wheelchair access for street crossings or adequate facilities that aid access into public buildings, and no special provisions for convenient public transportation. Affordable and practical mobility aids are still rare; if a person is physically disabled, he or she generally does not leave home. Some government rehabilitation centers do exist, but they are very limited in number.
The thrust of this study is to assess the extent to which the accessibility and housing needs of paraplegics who are chair-bound in Enugu city have been met. Equally, the study is set to provide ideas that will help alleviate the challenges they (paraplegics) encounter in accessing public places; and also facilitate the integration of their housing needs into a suitable housing strategy in Enugu city. The study hypothesized that the number of public places that have mobility assistive facilities for paraplegics in Enugu city do not significantly differ from those that do not have such facilities.

2. Study Area
Enugu city lies approximately on latitude 06° 21' N and 06° 30' and longitude 07° 26' E and 07° 37'E of Nigeria. It has an estimated land area of about 72.8 square kilometers and is the state capital of Enugu State of Nigeria. Residential landuse accounts for the highest land use area and it comprises about 54.3% of total urban area in Enugu. Enugu has about twenty (20) distinct neighborhoods that may be broadly categorize as low, medium and high residential density areas. It is pertinent to note that specific housing types are typical of each residential density area. For example, tenements buildings dominate high-density areas such as Ogui New Layout, Obiagu neighborhoods; block of flats are prevalent in New Heaven and Achara Layouts - a medium density area. In the low-density areas, bungalows and duplexes are common. Due to the influence of spread effects, mixed densities also exist in the study area. Planned and unplanned areas sprang alongside Enugu metropolis as a result of a high demand for residential accommodations. That is to say that the urban residential space in Enugu metropolis is not necessary a continuous zone but an arbitrarily defined circumscribing area with some interspersing open spaces. Many informal business sectors grow alongside with the residential units as noticed in areas like Konyetta-Edozie streets axis, Agbanzi- Ziks Avenue Road, Ogui Road, Obiafra Road, Abakpa Road, Chime Avenue e.t.c. Rapid urbanization has increased the population of the city. By 1953, the cities population stood about 63,000, this later increase to about 138,500 by 1963. The 1991 census figure puts the population at about 482,977. The population figure for Enugu urban in 2006 stands as 722, 664 (NPC, 2006). Currently, in 2011, the population figure is estimated as 845,987.

The Enugu State Government has no well thought–out plan for housing people living with disabilities in Enugu city. This implies that they live wherever they find an accommodation. Given the assumption that many of them may be poor, it is likely they live in low quality housing at least, one that does not have facilities that will enhance their enjoyment of their homes.

However, there are three institutions in Enugu city that carter and provide accommodation for them. These are:

1. Enugu Cheshire Home at no. 4 - 6 Adelabu street, Uwani
2. St Joseph’s Comprehensive secondary School and Centre for Youths and the Physically Challenged at no. 20 - 22 Amaibo lane, Uwani (opposite CIC), Enugu
3. Vocational Rehabilitation Centre, Emene

3. Literature Review
The quality of life is noticeably poor both for the able and those living with disabilities; the settlements themselves are obstructive and are responsible for making even the able-bodied to behave as disabled persons. The technically disabled suffer even more because they have to cope with their particular limitations in addition to those induced by the environment. Psomopoulos (1974) suggested that if this present trend continues to prevail, the future is threatening, with a constant decay in the quality of life for everyone. It is also obvious that housing needs may differ from person to person and possibly from the able-bodied to those living with disabilities; hence Psomopoulos (1974) posits that the understanding of the needs of people living with disabilities and the recognition of their special problems can show the way to a radical and efficient solution of many universal problems of human settlement. Since persons with disabilities may have special accessibility and housing needs due to their impairment, in some cases, simply treating them exactly the same way as others may not ensure that they have equal access and opportunity to use and enjoy a dwelling.
Also, the United States (US) Department of Housing and Urban Development identified people with disabilities as one of the primary population experiencing ‘worst–case’ accessibility and housing needs (HUD, 2006). Many other authorities also share the view that adequate accessibility and suitable housing are of great importance for paraplegics, (Batteles Columbus Laboratories, 1977; Cebrera, 2006; Davies and Beasley, 1989). United Nations (1977) categorized the housing needs of paraplegics into physical, social and economic dimensions. Ranson, (1991) added that unmet housing needs may have some implications on people’s health. On ‘accessibility’, Cebrera, 2006 noted that access to services is not just about installing ramps and widening doorways for wheelchair users - it is about making services easier to use for all disabled people. Hurst, (1986) highlighted that not all buildings are as yet accessible to people living with disabilities. This implies that accessibility needs vary relatively to people’s physical peculiarities and so facilities suitable for general use may not be necessarily suitable for paraplegics.

Barton and Czeczenda (1977), though, argued that majority of disabled people do not necessarily require special dwellings different in structure from “normal” family dwellings; they however, admitted that consideration should be made in the design and construction of buildings in order that paraplegics could use them. They also advocated that houses should be equipped with some mobility assistive devices like railings, lifts, handgrips, ramps, etc for the benefit of potential disabled users. In fact, there is the need for the elimination of the so called ‘architectonic barriers’ not only inside the dwelling but through out the city by means of ramps, wider entrances and special dimensions. A French Government study in 1968 found that two-thirds of disabled persons had considerable difficulties with access to their dwellings and public places. These difficulties are predominantly experienced by paraplegics who are dependent on wheelchairs or suffering from restricted mobility. Goldsmith (1984) noted that majority of buildings around us including those designed by architects are poor examples of efficient planning, safety or common sense. The complaint applies most of all to public housing: unreachable window openers, inaccessible storage shelves, tortuous staircase, un-findable light switches, ill-situated socket outlets, ‘hard-to-grip’ door handles and energy wasting Kitchen – all of these are common place in contemporary houses. For the young and active people, they may be a nuisance but they are manageable. For the disabled people they are causes of frustration and a threat to safety. He further stated that in Britain more people are injured or killed each year by accidents in homes than on roads. This same opinion is held by Psomopoulos (1974) and Penton (1989). According to Penton (1989),

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\text{One major cause of disabling settlement is that they are built for a non-existent population – exclusively for a man (not a woman) in the prime of life and at the peak of his physical fitness. It is part of our culture that architects and developers are trained to build for an elite, which is male, fit and aged 18 – 45 years, the further you are from the stereotype, the more difficulty you have.}
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Bouillion (1977) observed that there are evidences that many disabled people live in unsatisfactory and ill-adapted housing. In Denmark, the typical disabled person’s flat is smaller and are more crowded than those of others and about 6% of disabled people are living in too little a space. Many have difficulty in getting upstairs and managing there homes. A French Government study also found that disabled people are often in low-rented accommodation in which they have difficulty of access, reaching windows, etc. Seventy percent of disabled persons in Belgium have low income. They usually prefer to live the nearest they can to an ordinary un-segregated life in communities with easy access to social facilities and, often, to work. But these are hardly possible because of their economic status and the so many physical impediments in the cityscape that tend to make them handicap. Supporting this view, Psomopoulos (1974) remarked that only in a few public houses do we find facilities designed for paraplegics. Therefore if disabled people are to benefit from urban technological facilities, it is almost certainly by accident. He observed that ramps instituted in most luxurious hotel were not installed for the benefit of disabled clients, but for luggage trolleys. Webb and Tossel (1994) also noted that many professional football grounds in London do not cater for visiting disabled supporters. They observed that ninety five percent of cash point machines are inaccessible to paraplegics; only thirty–eight percent of museums and twenty percent of cinemas are currently adapted to wheelchair use. The trend does seem to be worse in Nigeria, where majority of the houses whether built by the public sector or private initiatives do not consider the paraplegics in its designs.

4. Research Methodology
Primary and secondary data were used for this study. Data used for this work were sourced from: score card; direct observation; personal interview and questionnaire survey. The target population was chair-bound paraplegics in
Enugu city. Efforts were made to determine their actual number and to identify their residences. The researchers identified three places where these chair-bound paraplegics are accommodated in the study area. These include: Enugu Cheshire Home, located at plot number 4 – 6 Adelabu Street, Uwani; St. Joseph’s Comprehensive Secondary School and Centre for Youths and Physically Challenged People, located at plot number 20 – 22 Amaibo Lane, Uwani, Enugu and Vocational Rehabilitation Centre, Emene. This study excluded chair-bound paraplegics that occasionally beg along the roadsides or those in their private residences. The sample population for the study all the thirty chair-bound paraplegics accommodated in the three institutions mentioned. Only 25 copies of the questionnaires were correctly filled and returned. This represented a 78.1% success of questionnaires administered.

Samples of public buildings were drawn from a 2km radius of the Central Business District (CBD) of Enugu city using Ogbete Main Market in the city centre as the nucleus. The reason for this is because of the significant role and position of the CBD in any city. At least it contains most of the public places in any city.

An identification card was used to identify as well as mark the public buildings that have mobility assistive facilities in the study area and those that do not such facilities and therefore cannot be accessed by chair-bound paraplegics. The assessment of a buildings’ accessibility was based on the presence and suitability of mobility assistive devices (like hand grip, ramp, lifter, wide entrances, etc) as well as the absence of mobility restrictive facilities (like staircases especially at the ground floor; curbs; unpaved and rough surfaces; open drainages, etc)

5. Results and Findings

5.1 Educational Background of Respondents

A wide number of literature consulted highlighted the fact that many disabled people are disproportionately discriminated in terms of education. Data on educational background of respondents observed that 60% of the respondents attained up to secondary school level. Those who did not study beyond primary school level are 16% and those undergoing or who have undergone vocational training amounted to 24%. These are illustrated in table 1.

The level of academic attainment of the respondents was considered relatively satisfactory for this research since majority of them have at least had secondary education, and this will strengthened the internal validity of the study. On the other hand, the study revealed that their inability to go further than secondary education was associated to the problem of accessibility to public buildings including schools. The design and construction of structures in the tertiary institutions in Enugu urban does not seem to consider the fact that a wheelchair user could be admitted for further studies. It was found out that major attention in terms of capital development seem to rest on vocational training for these paraplegics. All the institutions studied have at least one vocational training programme.

5.2 Causes of Impairment

So many factors have been attributed to the causes of impairments and disabilities. From the survey, 60% suffered from paraplegia due to sickness, mainly polio; another 24% met the condition as result of road traffic accidents; only 4% and 12% had the condition by reason of old age and conditions of birth respectively. This has been illustrated in table 2.

This showed that anyone could suffer the condition from any of the varied causes. It goes further to make a justification for the creation of adequate accessibility and housing for paraplegics, since anyone could suffer the condition.

5.3 Hypothesis result

As already stated, the hypothesis for this study is that the number of public places that has mobility assistive facilities for paraplegics in Enugu city do not significantly differ from those that do not have such facilities. The statistical tool used for testing this hypothesis was analysis of variance. The result of the test has F-value of 11.224 with its p-significance value of 0.27 at 0.05 significant level. Since the value of F sig. (0.27) is higher than the level of significance (0.05), the null hypothesis was rejected. The implication of this is that there are many public places in the study area that are not accessible to chair-bound paraplegics. See table 3. The study showed that accessibility and housing are serious needs of paraplegics in the study area. In other words, the difference between the number of
public places that are accessible to a wheelchair user and those that are not as shown in table 3 indicates that there are many places paraplegics are not able to access although they have the right and desire to do so.

5.4 Other findings:

a. The study found that paraplegics in Enugu city experience peculiar accessibility and housing needs. It was noticed that the constituents of their housing needs include; the unsuitability of the housing facilities, for example, the presence of ramps too steep for which some of them will always require some assistance to get into the building, toilets that cannot be accessed with wheelchairs; lack for adequate privacy for which 68% of them complained about and 88% of them would wish to live elsewhere than in institution housing. The absence of basic amenities, either as in-house installation or within the premises of their housing also creates a housing need for paraplegics. Examples are lack of portable water in their residence among many others.

With respect to accessibility, the study found that accessibility needs for the paraplegics in the study area was as a result of the following: absence of a wheel-chair accessible pedestrian bridge (that is, one built with ramp); the presence of steps/stairs without a complementary ramp; rough, unpaved and uneven floor surfaces; uncovered drainages or other openings in premises; absence of lift in high rise buildings; absence of side walk; the presence of curbs as well as hilly and undulating terrain. All of these points to the fact that the technology which has been designed and implemented in the study area created accessibility needs for paraplegics.

b. The basic means by which respondents transport themselves within the city include; the use of public buses and taxis, the use of wheelchair, the use of tri-cycle and the use of commercial motor-cycle. There is no special transportation arrangement for them except that they have to compete with the able-bodied against all odd to access available and ill-adapted public transportation means. These three modes of movement are rather dehumanizing and energy wasting. Besides, they expose these poor stricken paraplegics to numerous traffic dangers.

c. The identification card was used to identify the ease of accessibility of public places by these paraplegics in the study area. Variables used that could guarantee access to a wheelchair user used for the assessment were:

1. Presence of a wheelchair accessible pedestrian bridge (that is, one built with ramp)
2. The absence of staircases or where it is has a complementary ramp
3. Coverage over drainages and other openings
4. smooth, paved and even floor surfaces
5. Presence of lift in high rise buildings
6. Presence of side walks
7. Absence of curbs
8. Wide entrances

Buildings and places that met the above requirements were judged to have ease accessibility to paraplegics. The results are as shown in table 3. The summary of the results showed that 77.59% of public places in Enugu city are not accessible to a chair-bound paraplegic. Only 22.41% of public places could be accessed by a paraplegic, although with some relative difficulties. Of the 13 public places that are accessible only 8 can be fully accessed because these areas have mobility assistive facilities for paraplegics. This means that only 13.48% of public places can be fully accessed. It is very likely that this rather low level of access to public places by paraplegics will have some implications on their lives and the economy of the city.

d. Given the wide spread complaints about difficulties in accessing public places by the respondents, the study ascertained the factors that influence this inaccessibility tendencies. The following under listed were the identified factors:

- Absence of a wheelchair accessible pedestrian bridge (that is, one built with ramp)
- The presence of steps/stairs without a complementary ramp
- Very rough, unpaved and uneven floor surfaces
- Uncovered drainages or other openings
- Absence of lift in high rise buildings
6. Recommendations

People living with disabilities deserve the protection of their right to access of public places and suitable housing. Hence, their rights to good living and human existence must be secured by the society to which they rightfully belong. Therefore, every form of discrimination which is reflected in the design made for public buildings must be discouraged. It is in keeping with this particular goal that the following under listed recommendations were made:

As a matter of national importance and urgency, an anti-discrimination legislation in favour of people living with disabilities in Nigeria should be developed and implemented. Hence, the Right of the Physically Challenged Bill now lying at the debate floor of the National Assembly should be passed into law without further delay. The bill seeks, among other things, to ensure the creation of a commission under the office of each State Governor and to be responsible for advancing the welfare of disabled people in Nigeria. It also aimed at promoting automatic employment, free education, accessibility to public places and proper integration with the society in favour of all disabled people.

The Government should ensure that all public buildings comply with building codes, which of course must guarantee access to all potential users. In pursuit of this objective; Engineers, Architects, Town Planners and all who are involved in development projects must carry out wide consultations and give adequate considerations to providing equal access, in keeping with the view that the society contains a mix of less physically able people.

All existing public buildings should as much as possible be adapted to suit the accessibility requirements of paraplegics. This may mean the installation of complementary ramp where a step exists. In addition, owners and contractors of new developments which fail to provide adequate access should be heavily penalized.

Since the major causes of paraplegia in Enugu are sickness (mainly polio) and accidents, there is the need to mount up serious campaign for anti polio vaccination and for a research to discover approaches to curb accidents on Nigeria roads.

Paraplegics can be economically gainful to the society, therefore rehabilitation and vocational training is important. This may be conducted in specially equipped centers. More importantly, they should be given enough support (credit) to establish businesses in location of their preference. Hence, the only reason for which paraplegics may be confined to institution housing is for care giving and training, after which good re-settlement plans should be made for those who may not require serious and constant medi-care for which some may be confined.

The Local Government Councils that constitute Enugu city should fully and immediately assume their roles with respect to housing deformed people in the city as contained in section 7(1)c of the fourth schedule of the 1999 constitution of the country. Hence, social housing should be provided for paraplegics in Enugu city.

There is an urgent need to articulate demographic data about paraplegics in Enugu in order to easily find data with which plans can be made for them. Paraplegics in Enugu city should constitute themselves into cooperative groups in order to pull resources together and to position themselves properly to attract government attention. The already exiting Joint National Association of Disabled People of Nigeria should be properly funded (for instance through steady statutory allocations), to position them to properly coordinate their members.

7. Conclusion

This work has demonstrated that paraplegics in Enugu city have peculiar accessibility and housing needs. Therefore urgent steps need to be taken to address the situation. It has revealed that majority of existing public places do not have facilities that guarantee accessibility for disabled people. It has also been established from the study that there is a deterministic relationship between paraplegics housing needs and the suitability of their housing facilities. Notable as well is that the three Local Government Councils that constitute the Enugu city have not lived up to expectation in providing social housing for paraplegics in the city. Meanwhile the government owes every citizen some form of
social services and responsibility.

The contemporary practice of urban planning ought to advance comprehensive and integrated planning designed to accommodate the needs of everyone using the city space, paraplegics inclusive. The Planners’ duty should therefore be to advocate that all members of the State have equal access to community facilities. The principle of ‘welfarism’ should override in meeting the needs of infirm State members. Besides, it should be noted that paraplegics, when provided with a stimulating environment, can have a good life despite functional impairment. Beside anybody could become a paraplegic at any time, therefore design and construction should be made in such a way to accommodate all life situations.

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Table 1: Educational Backgrounds of Respondents

<table>
<thead>
<tr>
<th>Educational Background</th>
<th>Frequency</th>
<th>Percentage</th>
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</thead>
<tbody>
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<td>Primary</td>
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<td>16</td>
</tr>
<tr>
<td>Secondary</td>
<td>15</td>
<td>60</td>
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<tr>
<td>Vocational</td>
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<td>24</td>
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<tr>
<td>Total</td>
<td>25</td>
<td>100</td>
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Source: Researcher’s Field Work, 2011

Table 2: Causes of Impairment

<table>
<thead>
<tr>
<th>Causative Factors</th>
<th>Frequency</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>Sickness</td>
<td>15</td>
<td>60</td>
</tr>
<tr>
<td>Accident</td>
<td>6</td>
<td>24</td>
</tr>
<tr>
<td>Old Age</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>From Birth</td>
<td>3</td>
<td>12</td>
</tr>
<tr>
<td>Total</td>
<td>25</td>
<td>100</td>
</tr>
</tbody>
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Source: Researcher’s Field Work, 2011
### Table 3: Results from the identification card

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<th>Serial Number</th>
<th>Type Of Public Place</th>
<th>Number Accessible</th>
<th>Number Not Accessible</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>STADIUM</td>
<td>1</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>POLICE STATION</td>
<td>-</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>FAST FOOD AND RESTAURANT</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>HOTEL</td>
<td>1</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>BANK</td>
<td>4</td>
<td>31</td>
<td>35</td>
</tr>
<tr>
<td>6</td>
<td>INSURANCE</td>
<td>-</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>LIBRARY</td>
<td>1</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>CHURCH</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>9</td>
<td>MARKET</td>
<td>-</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>10</td>
<td>ADMIN OFFICE</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>11</td>
<td>LGA H/Q</td>
<td>-</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>12</td>
<td>MOTOR PARK</td>
<td>2</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>13</td>
<td>SCHOOL</td>
<td>-</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td><strong>13</strong></td>
<td><strong>45</strong></td>
<td><strong>58</strong></td>
</tr>
</tbody>
</table>

**Percentage**

| Percentage | 22.41 | 77.59 | 100   |

Source: Researcher’s Field Work, 2011.
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