

HOUSING NEEDS FULFILMENT FOR LOW-INCOME GROUP

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ABSTRACT

There is the requirement of large number of housing units to meet the housing needs of low-income groups in Kathmandu Valley. The overall objective of this study was to find out the appropriate ways to address these needs. The questionnaire survey and interview were carried out with low-income groups, housing experts, planners, implementers, and concerned organizations. Relative Importance Index (RII) has been calculated to find out the hierarchy of important factors and appropriate approaches for addressing the housing needs for low-income groups in Kathmandu Valley. This number is very large and the location and nature of squatter settlements are different causing it is impossible that only one approach will be suitable to meet the housing needs of the entire low-income groups. Hence, different suitable approaches have been considered to address housing needs. In a city like Kathmandu where the price of land is skyrocketing, purchasing the land parcel is beyond the capacity of the low-income groups. In this approach, the rental housing at the fringe area is more suitable to fulfill the housing needs of the low-income groups, in order to provide an adequate housing facility at a reasonable cost. The monthly rent of the housing allocated for different categories of low-income groups should be positively classified based on their affordability.

Keywords: Perception, Approaches, Cost Recovery, Affordability, Accessibility

INTRODUCTION

It is estimated that by 2020, the number of population and households of the low-income groups in Kathmandu Valley will

have been reached to 25,726 and 5,301 respectively (Mishra.A.K and Shah, 2018). Around 5,301 numbers of housing units will be required for the low-income groups until 2020. Among them, the needs of 781 housing units will be fulfilled by the different ongoing housing projects, and 4,520 housing units will still be needed. Among different factors, the most important factors influencing the housing needs can be expressed as 4E; they are Employment opportunity, Easy access to the market area and urban infrastructures, Economy in the price of land and construction materials and Education. Many low-income groups of people do not want to move to the fringe area due to the uneasy access to their employment opportunities.

The respondents reside in these squatter settlements because their workplaces are easily accessible from their settlement area. Thus, the employment opportunity is one of the most important factors which affect the housing needs for low-income groups. Along with the employment opportunities, easy access to the market area and the urban infrastructures and services is the other influencing factor for meeting the housing needs of the low-income groups since it contributes towards the employment opportunities which eventually will uplift the economic status of the low-income groups. Therefore, the main objective of the study is to find out the appropriate way to address the housing needs for the low-income group of people at the reasonable cost in Kathmandu Valley (Shah and Mishra.A.K, 2018).

METHODS

Research Process

In order to meet the objective of the study, different literatures related to the pattern of the urbanization growth, housing situation and its demand, as well as plans, policies, rules and regulations related to the housing needs in the context of Nepal have been collected and studied (UN-Habitat, 2010; UN-Habitat, 2013; NURHP, 2015; NUDS, 2015; NSP, 2012; NPC, 2013; Central Bureau of Statistic, 2011) which provided secondary data relevant to this study. The data is published by Mishra.A.K and Shah (2018) with the title Review on Global Practice of Housing Demand Fulfilment for Low-Income Group People. Thus, the literature review is not covered here.

After the collection of information and data required for the case study, they were analyzed, synthesized, interpreted and assimilated to solve the needs of the housing facilities for the low-income group of people in Kathmandu Valley. After data analysis from different dimensions, different alternative ways for the solutions have been identified among which the best alternative solution has been recognized. In this study, the group of people with annual income less than 40,933.00 living in slums and squatters are considered as the low-income groups because this study is focusing on the fulfillment of housing needs for the low-income groups who are living in poor and unorganized shelter.

Study Area

The two squatter settlement areas along the Bagmati River: one at Thapathali Squatter Settlement and the other at Jagritinagar, Sinamanagal Squatter Settlement which have been taken as the study area the area that has also been selected by (Mishra.A.K and Shah, 2018) for their estimating housing needs.

Data Collection

After studying the previous research, this study was conducted by adapting sampling and population-based on (Mishra.A.K and Shah, 2018) To fulfill the

objective of the study, the primary data were obtained from the questionnaire survey and interview with the experts and the local poor groups. The questionnaire survey and interview were developed to gather information regarding the perception of the local low-income groups for the fulfillment of their housing needs. Following the questionnaire survey, the consultation with the concerned experts and with the local people has been carried out which provides the primary data for the study. Similarly, the interview with the concerned government agencies (DUDBC, National Housing Company, Ministry of Urban Development, etc.), policymakers, implementers and NGOs have also been conducted which yield the primary data required for finding out the appropriate approach to fulfill the housing needs for the low-income groups, at the reasonable cost.

Apart from the primary data, the secondary data have been also obtained to fulfill the objective of the study. For this purpose, the study of different factors affecting the appropriate methods for the fulfillment of the housing needs for the urban poor has been also carried out.

$$RII = \sum_{i=1}^5 \frac{W_i X_i}{A \times n} \text{ Or } \frac{\text{Average Importance}}{5} \times 100\% \dots\dots \text{Equation (1)}$$

Where,
Wi =the weight given to the ith response: i=1, 2, 3, 4,5,
Xi = frequency of the ith response,
A= the highest weight (5 in this study), and
n= the number of respondents.

Data Analysis

The reasonable cost also includes the different aspects of affordability and acceptability. The rent allocated for the proposed housing project should be affordable to all levels of the low-income groups. For this, the affordability test of the low-income groups has also been carried out. The research is summarized in Table 1.

Table 1. Summary of Research process

| S.N | Objectives | Information required | Data Collection | Data Analysis |
|-----|--|---|---|--|
| 1 | To find out the perception of the low-income group of people regarding the fulfilment of their housing needs. | Factors affecting different approaches of the housing needs. | Low-income groups living in slums and squatters, Government Bodies, NGOs, INGOs. | Relative Importance Index (RII). |
| 2 | To find out the appropriate way to address the housing needs for the low-income group of people at the minimum cost in Kathmandu Valley. | Different approaches for the fulfilment of the housing needs. | Low-income groups living in slums and squatters, experts, planners, Government Bodies, NGOs, INGOs. | Relative Importance Index (RII) Affordability Test |

RESULT AND DISCUSSION

Perception of the Low-income Group about their Housing Need

There are many factors influencing the housing needs for the low-income groups in the urban areas. However, the factors that influence the housing needs of low-income groups in this study such as family's income, access to the occupation, access to the market area, neighbourhood and community attachment, geographical location, place of current living, composition of new settlement, land price and cost of building construction. The RII has also been applied to find the most important factors that influence the housing needs for the low-income group in the Kathmandu Valley. The RII of the Thapathali Squatter Settlement, Jagritinagar Settlement and the expert and planner views is shown in the Table 2.

Table 2 shows that the family's income (employment) is the most important factor that influences the housing needs for the low-income groups. The easy access to the occupation and market areas are also the important factor that influence the housing needs. The price of land and the construction cost of the building also influence the housing needs for the low-income groups in Kathmandu Valley.

Suitable Approaches

There are many approaches identified to address the housing needs for the low-income groups in the urban areas. However, the important approaches to meet the housing needs of low-income groups in Kathmandu Valley have been considered in this study such as Improvement of the physical infrastructure of the existing housing (On-site upgrading), Construction of own new house at another place (Resettlement),

Table 2. Ranking of important factors influencing the housing needs

| S.N. | Factors | TSS | | JSS | | Expert/Planners | |
|------|---|-------|-----------------|-------|-----------------|-----------------|-----------------|
| | | RII | Rank | RII | Rank | RII | Rank |
| a | Family's income | 90.00 | 1 st | 92.62 | 1 st | 79.17 | 2 nd |
| b | Easy access to the family's occupation | 89.20 | 2 nd | 87.38 | 2 nd | 78.33 | 3 rd |
| c | Easy access to the market area | 74.40 | 3 rd | 74.15 | 3 rd | 69.17 | 4 th |
| d | Neighborhood and community attachment | 60.80 | 5 th | 62.77 | 5 th | 55.83 | 5 th |
| e | Geographical location | 39.60 | 7 th | 36.31 | 8 th | 55.00 | 6 th |
| f | Place of living currently | 40.00 | 6 th | 39.69 | 6 th | 45.00 | 8 th |
| g | Composition of new settlement | 39.20 | 8 th | 37.85 | 7 th | 50.00 | 7 th |
| h | Land price and Construction cost of housing | 62.80 | 4 th | 64.92 | 4 th | 85.00 | 1 st |

Construction of new public housing by the government, Providing land at subsidized rate with planned basic infrastructure services (site and services), Collaboration with NGOs for the subsidized loan for constructing new house, Rental Housing, Private Sector Housing and Land Sharing. The RII has also been applied to find the most suitable approaches to meet the housing needs for the low-income group in the Kathmandu Valley. The RII of the Thapathali Squatter Settlement, Jagritinagar Settlement and the experts and planners view is shown in Table 3.

The table shows that the rental housing is the most appropriate approach for addressing the housing needs for the low-income groups according to the low income groups and the experts, planners, implementers and NGOs. The table above also shows that the improvement in physical infrastructures and housing condition of the existing housing (on-site upgrading) is also are mostly preferred by the low-income groups. The low-income groups expect that the government or the donor agencies should help them financially to improve their existing housing conditions. According to the experts and planners, rental housing would be the appropriate approach and it should be initiated by the Government of Nepal with the support of NGOs and private housing companies. Similarly, the On-site upgrading approach would also be

suitable at some places and settlement as per the location, nature and needs of the squatter settlement according to the experts and the planners.

Cost Comparison of Different Housing Projects

In order to find out the suitable approaches to meet the housing needs of the low-income groups at the minimum cost in Kathmandu valley, the cost comparison of the different housing projects which have already been launched by the Government of Nepal, NGO, INGO's and other related agencies have been thoroughly studied. The cost comparison of the housing projects for low-income groups in Kathmandu Valley is shown in the Table 4.

Table 4 shows that the cost of per unit housing of Kirtipur Housing Projects are minimum although there is individual type of housing in Kirtipur Housing Project. The cost housing unit of Kirtipur Housing Project is minimum because the land cost has not been considered; the project has been completed a few years ago compared to other projects and the low-cost technologies have been applied in the construction of the building. Except at the Kirtipur Housing Project, and at all other housing projects mentioned above have the apartment type housing units because the apartment type housing is the

Table 3. Ranking of the Approaches for Fulfilling the Housing Needs

| S.N. | Approaches | TSS | | JSS | | Expert/Planners | |
|------|--|-------|-----------------|-------|-----------------|-----------------|-----------------|
| | | RII | Rank | RII | Rank | RII | Rank |
| a | Improvement of the physical infrastructure of the existing housing (On-site upgrading). | 81.20 | 2 nd | 82.46 | 1 st | 59.17 | 5 th |
| b | Construction of own new house at another place (Resettlement) | 52.00 | 6 th | 49.23 | 6 th | 52.50 | 6 th |
| c | Construction of new public housing by the government | 64.00 | 3 rd | 64.62 | 3 rd | 63.33 | 3 rd |
| d | Providing land at subsidized rate with planned basic infrastructure services (site and services) | 60.00 | 4 th | 63.69 | 4 th | 60.83 | 4 th |
| e | Collaboration with NGOs for the subsidized loan for constructing new house. | 58.00 | 5 th | 61.23 | 5 th | 70.83 | 2 nd |
| f | Rental Housing | 82.00 | 1 st | 81.23 | 2 nd | 85.83 | 1 st |
| g | Private Sector Housing | 41.20 | 8 th | 35.38 | 8 th | 34.17 | 8 th |
| h | Land Sharing | 42.40 | 7 th | 37.85 | 7 th | 45.00 | 7 th |

Table 4. Cost comparison of the housing projects

| S.N. | Description | Housing type | Total Floor area (m ²) | Total Cost (Rs.) | Cost of per unit housing. | Cost per m ² | Year | Remarks |
|------|--------------------------------------|---------------------------------|------------------------------------|------------------|---------------------------|-------------------------|------|--|
| 1 | Kirtipur Housing, Type 1 | Individual (2 storey) | 50.00 | 3,50,000 | 3,50,000 | 7,000 | 2005 | Excluding land cost. |
| 2 | Kirtipur Housing, Type 2 | Individual (2 storey) | 51.13 | 3,30,000 | 3,30,000 | 6,454 | 2005 | Excluding land cost. |
| 3 | Lumanti Housing, Dhobighat, Lalitpur | Apartment (4 storey, 24 units) | 16.72 | 2,25,00,000 | 9,37,500 | 39,062 | 2012 | Including land cost. |
| 4 | Ichangu Housing, Phase-I, Ichangu | Apartment (5 storey, 130 units) | 27.60 | 13,74,14,658 | 10,57,035 | 23,262 | 2014 | Land cost= 5,39,50,000 Building cost= 8,34,64,658 |
| 5 | Ichangu Housing, Phase-II, Ichangu | Apartment (5 storey, 103 units) | 27.60 | 11,01,76,510 | 10,69,674 | 21,196 | 2016 | Land cost= 4,99,20,000 Building cost= 6,02,56,510 |

most cost effective type of housing since it needs minimum land and the construction cost of the building is also minimum. Ichangu Housing Phase I and Phase II are the most recent housing projects and the construction cost of the buildings per square meter are 23,262.00 and 21,196.00 respectively.

Comprehensive Plan in Addressing the Housing Needs

The on-site upgrading approach is possible and suitable at the river side of Manohara River and Shantinagar Squatter Settlement areas. The number of low-income families in Manohara River area is 589 and that of Shantinagar area is 360, with the totals of 949 housing units. So, the government along with the support of NGOs and active participation of the targeted low-income groups should upgrade the housing condition of 949 units of housing to fulfill the housing needs of the low-income groups in Manohara river and Shantinagar squatter settlement areas.

There will still be needed of 3571 (i.e. 4520-949) housing units. The availability of the land for the construction of buildings for 3384 number of low-income groups is the most challenging job. In such a

situation, apartment type rental housing would be more appropriate. The availability of land for such a huge number of housing units is almost impossible in the core city area of Kathmandu Valley. So, it would be feasible to look for the suitable land at the fringe area in Kathmandu Valley.

National Housing Company has purchased the land of area 54-7-3-0 at NRs. 2,27,65,852.00, at Srikhandapur of Dhulikhel Municipality in order to develop the land for the residential purpose of the low-income groups in Kathmandu Valley. The project is under the planning process and its site development work is now ongoing. The project is planning to develop 126 numbers of residential plots and sale them to the low-income groups which would meet the housing needs of only 126 low-income families. In order to make this land more effective, this study has proposed to develop the apartment type of housing on this site.

The National Housing Company, in the collaboration with the Nepal Government, housing companies and NGOs should construct the apartment housing at this site. The proposed apartment housing complex has been divided into four blocks each of 18-story. The master

plan and typical floor plans of the housing complex is included in the annex. From the cost comparison of different housing projects for low-income groups in Kathmandu Valley, we can find that Ichangu Housing Phase-I and Phase-II are the most recent housing projects and their construction costs are Rs. 23,262.00 per square meter and Rs. 21,196.00 per square meter respectively. Based on this condition, the rate for the construction cost of the proposed housing complex has been considered to be Rs. 22,000.00 per square meter. The tentative construction cost of the low cost apartment housing is shown in Table 5. The total cost of the housing project for the low-income groups will be of 2.67 billion Rupees. The National Housing Company, in the collaboration with the Nepal Government, housing companies and NGOs can develop a financial investment to complete the project.

Cost Recovery of the Proposed Project

The construction cost of the housing can be recovered from the rent of the low-income groups living in the housing

complex. The rent will be collected on the basis of their monthly income. The number of monthly incomes based on the different low-income groups. However, from the study area, low-income groups are classified into four categories. The categories, percentage, and number of households of the low-income groups are shown in Table 6.

Among the low-income groups of category I, some of them are very poor and some are old-aged people who cannot afford for rent even a small amount. The number of such ultra-poor and old-aged groups is 5%, for whom there will be provision to provide the housing units free of charge. So, for the rental purpose, the total low-income groups can be divided into five categories considering 5% housing units for ultra-poor and old-aged people and 5% for the low-income groups with monthly income from Rs. 3,000.00 to Rs. 4,999.00.

Table 5. Tentative construction cost of the low cost apartment housing

| S.N. | Description | Floor Area | No. of Storey | Total floor area | Unit | Rate (Rs.) | Amount (Rs.) | Total Housing Units |
|--------------------------|----------------------------|------------|---------------|-------------------|------|-------------------|-------------------------|---------------------|
| 1 | Block B1 | 1,543.00 | 18 | 27,474.00 | m2 | 22000.00 | 604,428,000.00 | 885 |
| 2 | Block B2 | 1,543.00 | 18 | 27,774.00 | m2 | 22000.00 | 611,028,000.00 | 900 |
| 3 | Block B3 | 1,543.00 | 18 | 27,774.00 | m2 | 22000.00 | 611,028,000.00 | 900 |
| 4 | Block B4 | 1,543.00 | 18 | 27,494.00 | m2 | 22000.00 | 604,868,000.00 | 886 |
| 5 | Total of B1, B2, B3 and B4 | | | | | | 2,431,352,000.00 | |
| 6 | Land development works | | | | | (@ 10% of S.N. 5) | 243,135,200.00 | |
| Grand Total (5+6) | | | | 104,604.00 | | | 2,674,487,200.00 | 3571 |

Table 6. Percentage and number of households based on their income

| S.N. | Category | Monthly Income | Average percentage of households | No. of households |
|------|----------|------------------|----------------------------------|-------------------|
| 1 | I | Below 5,000 | 10% | 357 |
| 2 | II | 5,000 to 9,999 | 35% | 1,250 |
| 3 | III | 10,000 to 15,000 | 50% | 1,786 |
| 4 | IV | Above 15,000 | 5% | 179 |

Although there is more social benefit than economic benefit in this project, the investment of the project can be recovered in 25 years with the free of cost for category I; rent of Rs. 1,000.00 for category II; Rs. 1,800 for category III; Rs. 3,150.00 for category IV and Rs. 5,000.00 for category V of the low-income groups. After 25 years, the profit will be distributed to the investment partners. The cost recovery of the project is shown in Table 7.

Affordability Test of the Proposed Project

The affordability of the different categories of low-income groups is shown in Table 8. For the repair and maintenance of the proposed housing complex, a committee should be formed among the residents to be responsible for overall repair and maintenance matters in the housing complex.

CONCLUSION

Over 70% of the people of the low-income groups who are aware of housing facilities and encourage them to look for better housing opportunities are found uneducated. So, education is also one of the major factors. The nature of different squatter settlements is different from one another which makes it inappropriate to offer that there is only one approach will be suitable to meet the housing needs of the entire low-income groups. Hence, different suitable approaches have been considered to solve suitable housing needs. However, rental housing has been encouraged for this purpose. The reasonable cost of the housing also includes the affordability and acceptability of the targeted groups. The economic level of different low-income groups of people living in the study area is different. The people may not afford the rent if it is higher than their economic level. The monthly rent of the housing allocated for different categories of low-income groups may vary. So, the rent should be based on their monthly income so as to say it is according to their affordability.

Table 7. The cost recovery of the project

| Category | Total No. of housing units | Rent per month of each unit | Rent per annum of each unit | Total Rent per annum | Total Rent in 25 years |
|----------|----------------------------|-----------------------------|-----------------------------|----------------------|------------------------|
| I | 179 | - | - | - | - |
| II | 179 | 1,000.00 | 12,000.00 | 2,142,600.00 | 53,565,000.00 |
| III | 1,250 | 1,850.00 | 22,200.00 | 27,746,670.00 | 693,666,750.00 |
| IV | 1,786 | 3,100.00 | 37,200.00 | 66,420,600.00 | 1,660,515,000.00 |
| V | 179 | 5,000.00 | 60,000.00 | 10,713,000.00 | 267,825,000.00 |
| Total | 3,571 | 10,950.00 | 131,400.00 | 107,022,870.00 | 2,675,571,750.00 |

Table 8. Affordability of the households

| S.N. | Category | Monthly Income (Rs.) | Average Monthly Income (Rs.) | Affordability to pay rent (i.e. 25% of Income). (A) | Proposed Monthly Rent (R) | Remarks |
|------|----------|------------------------|------------------------------|---|-----------------------------|---------|
| 1 | I | Less than 3,000.00 | 1500.00 | 375.00 | 0.00 | A > R |
| 2 | II | 3,000.00 to 4,999.00 | 4,000.00 | 1,000.00 | 1,000.00 | A = R |
| 3 | III | 5,000.00 to 9,999.00 | 7,500.00 | 1,875.00 | 1,850.00 | A > R |
| 4 | IV | 10,000.00 to 15,000.00 | 12,500.00 | 3,125.00 | 3,100.00 | A > R |
| 5 | V | 15,000.00 to | 20,000.00 | 5,000.00 | 5,000.00 | A = R |

RECOMMENDATIONS

Although housing has been stated as the fundamental right for every citizen in the constitution of Nepal 2015 and the Government has a responsibility to provide affordable housing to all, housing for the low-income groups in Kathmandu Valley is a major problem that cannot be addressed by the Government alone. So, collective intense efforts of the NGOs, private housing companies, the targeted low-income groups, and other related agencies along with the Government of Nepal is needed to address this problem. In a city like Kathmandu where the price of land is skyrocketing, purchasing the land parcel is beyond the capacity of the low-income groups. Therefore, rental housing at the fringe area is more suitable approach to fulfill the housing needs in order to provide an adequate housing facility at a reasonable cost for the low-income groups.

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