Push and Pull Factors of Urbanization in Nepal: Its impacts on Household Perspectives

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Abstract

Whatever talks on *urban city and design* in advanced countries like *USA, UK, Japan, Russia,* etc. is a day dream in developing countries like in Nepal, where plan development has not been in good practice as required to accelerate economic growth rate and to improve standard of life. It is a fact that urbanization is invisibly and visibly on process in the different parts of the country because of push and pulls factors as drivers of urbanization. However, these drivers are quite different with drivers of advanced countries.

This paper investigates empirically and analytically whether household's perspective is positive on such decision to push up economic growth and urban life, whether there are drivers to push and pull urbanization process, whether new municipality is an alternative city development approach through secondary and primary data sets. The descriptive statistics and correlation tools are employed.

In urbanization process, there are political driver and demographic factor as pull factors and administrative and development objective as push factor, although there are not minimum requirements. In case of design, there is null and direction is still doldrums to future. Its impact on biodiversity and infrastructure are not positive in terms of conservation and development. Therefore, it needs more to be focused for right direction.

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Key Words: *urbanization, city, push and pull factor, biodiversity, infrastructure* etc**.**

1.1. INTRODUCTION

Since 1950, urbanization trend has been emerging development issue all over the world, although archeological and historical research and literatures claim urbanization activities existed in ancient time as city and settlement development of Bhaktapur and Kathmandu (Nepal), Egypt, Rome (Italy), England (UK), Tokyo (Japan) etc. It has been faster than before in the post 1990 all over the World in which Asian countries (India, China, Japan, Singapore, Thailand, etc.) are faster than African countries. Based on such observation of United Nations Population Division, 2014, there are projected 6.4 billion urban populations in which Asian countries will have 37 % growth. It is estimated 3.9 billion populations living in urban areas in 2014. In 2009, it was 3.42 billon urban populations. Just 5 years period, urban population grew with 0.48 billion population. Thus, urbanization is implied as demographic concept as the growth of population share in urban settlements (Poston and Bouvier, 2010). It is supplemented by the literatures and practices of United Nations Population Division, World Bank and Asian Development Bank.

Urbanization is emerging development issue which all countries desire to endorse in national development plan for improving the share of urban population is generally understood a concept of population transition from rural to urban areas. If we review the process of city development, there are heterogeneous policy literatures across different countries focusing only on demographic factors for the criteria of urban areas. In Sweden, urban settlement is defined as only 200 settlements in the area but there is mostly between 1000 and 5000. Differently, Mali has set minimum 40000 populations living in areas to be urban. Such policy literatures and practices are claimed as urban areas having administrative and development purpose.

Despite demographic concept, there are development literatures raising a curiosity in depth its concept, *what is meaning of urbanization, how urban areas are identified and what are these area's boundaries*. Theoretical and empirical contradictions with different arguments have been on table to be discussed for examination.

There is a complication on urbanization concept. In the review, urbanization is widely considered as development approach to develop cities through land use planning of the feasible landscape of the country. The approach existed in ancient periods during which Kings had established cities by using ancient engineering and planning knowledge. In Egypt, there was a beautiful well planned and engineered city. It is followed by Kathmandu City, Lalitpur and Bhaktapur cities of Mall Kings (Bista, 2006, Bista, 2008, Bista, 2011 & Bista, 2016). Similar initiation could be found around the World. Over the time period, its evolution and marvelous expansion could be found at 21st century around the World where Tokyo City (Japan), Mumbai, Delhi and Hyderabad (India), Los Angeles, New York(USA)……Thus, the urbanization has been as an integral approach of National Development in Developed and Developing countries too.

In the review of urbanization literatures, this approach is considered as a process if we observe minutely land use and demographic growth. There are two perspectives of urbanization. Theoretical and empirical literatures of land use concerning urban areas mentions land use planning for city development to it. The selected landscape is planned for heterogeneous uses based on land quality and quantity characteristics. In city development, there are planned and developed–*housing for settlement, road network, clean drinking water and sanitation, academic institutions, business complexes, industrial areas, public places, sports, parks, hospitals, conservation of natural beauty and resources, hotels and restaurants* etc. In addition, there is a fast growth of economic opportunities of nonagricultural sectors to job seekers, investors, entrepreneurs etc.

As supplement, sociological theoretical literatures argues it a process of modernization in which the urbanization creates new society and settlement of heterogeneity in demographic and socio economic characters and peoples through the inflow of internal migration from heterogeneous geography, caste, society, religious, culture, language, socio economic backgrounds etc. The urban society and settlement is index of *pluralism* in which service and technological led nonagricultural activities dominates in household income for materialistic life. Economic literatures argue urbanization as development transformation in the landscapes where nonagricultural activities and opportunities and mobility of capital, labor and land have higher rate having gravity to internal migration from all over the country. In addition, Spence, Annez and Buckley (2009) and Rosenthal and Strange (2008) have argued it as an integral to economic growth. Empirical literatures provide evidences of the correlation between higher level of urbanization and higher per capita incomes. It is argued urbanization to greater scope of industrial and service enterprises for greater specialization and large scale production with lower transport and transaction cost.

Urbanization in the world has heterogeneity rate. Urbanization in Asia is faster than before. Literatures mentions India and China as key drivers of such high speed urbanization process because of their high economic growth rate (approximately 8 percent). It is supported by industrial and service sector's higher growth. However, lower economic growth rate countries like Nepal, Maldives, and Afghanistan have slower urbanization than India and China because of lower industrial and service sector growth. Naturally, its higher rate has adversely affected on biodiversity and greenery. Therefore, there is a critical issue of biodiversity and greenery conservation and management in the course of faster urbanization process in Asia.

Since 1950s, Nepal has been endorsing the concept of urbanization process in national development and policy after the endorsement of such concept in Ancient and Rana Regime period(Bista, 2006, Bista, 2008, Bista, 2011 & Bista, 2016). However, Nepal has adopted demographic and administrative approach in which the criteria of urban areas have been decided. In accordance with such criteria, there were announced cities as Municipalities without land use planning. In this context of non 100 percent urbanization in Nepal, status, growth and characteristics of urbanization and its impacts on biodiversity has been an interesting issue to be known how far the urbanization activities have contributed on economic growth rate and biodiversity. This paper deals on the perspective issue of household stakeholder ship.

This paper is organized into sections. Section 1 introduces the concept of urbanization. Similarly, section 2 explains method of this study containing GIS data and Image analysis method and source of data. Section 3 presents results of push and pull factors of urbanization in Nepal. Section 4 presents results design and direction of urbanization. Section 5 presents the impact of urbanization on biodiversity and infrastructure. Section 6 presents conclusion.

1.2. OBJECTIVES AND METHODS

Broad objective of this paper is to investigate the prospects of municipality as new city towards urbanization process for improving welfare and development of rural villages. Its specific objectives are to estimate household's perspective on city development decision to push up economic growth and urban life, to identify drivers to push and pull urbanization process and to estimate new municipality as an alternative city development approach.

1.2.1. MODELS

Binary Choices of Households about *New City* as New Municipality

Consider there are heterogeneous characters (x_i) of nth household stakeholders in terms of income level, household size, sex, occupation, age, food sufficiency, literacy, landholding, and livestock. These heterogeneous socio economic characters are determinants of nth household stakeholder's responses on dichotomous choices. Different preferences and choices of the household stakeholders are assumed an important role in policy decision making. Such type of issue can be trapped by using Sequential Model (Greene, 2005 and Maddala and Lahiri, 2009) for determining the probability of new city as municipality as alternative city development module for improvement of rural villages in Nepal for dynamic development objective. Probit Regression Model framework will be as follows:

$$\text{Probit}(Y_i) = \beta \, X_i + u_i \text{------------(2)}$$

Where $Y = \int_{0 \, otherwise}^{1 = if \, Y* > 0}$

Where, β = vector of regression coefficient ($0 < \beta < 1$)

x_i = vector of predictor variables (e.g. New city, Municipality etc)

u_i = vector of Random variable(error term)

π = probability of an outcome

From probit and logit models, we will get probability of better alternative of city development, satisfaction and perspective of household stakeholders about new municipality decisions of the government will be dependent variable. The relationship between dependent variable and independent variables (income, land holding, education, household size, occupation, area, etc) will be captured by using multiple regression models.

P (better alternative of city development=1) = $\beta_0 + \beta_1$ wage income+β_2 landholding+$\beta_3$education+β_4 sex+β_5 household size+β_6 livestock holding+β_7 agricultural income +β_8 poverty level+ ε

Where, β_0= intercept ,β_1,β_2 ,β_3,β_4,β_5 ,β_6 ,β_7 ,β_8=regressors, $0<\beta_0$,β_1,β_2 ,β_3,β_4,β_5 ,β_6 ,β_7 ,$\beta_8<1$

ε=error term

1.2.2. DATA

We use data of household survey conducted to household stakeholders of Bajrabarahi Municipality in Bajarabarahi Municipality, Lalitpur in 2016(January-February). At first, we identified representative cases of household stakeholders on the basis of Population Census 2011 and its VDC level household report. The newly announced that municipality had relevancy to city development perspectives, satisfaction and alternatives. There were heterogeneity at household level for socio economic information and they were concerned with municipality decision making and implementation. Similarly, the study area was visited for pre questionnaire test, understanding households and city development interventions. Thus, Bajrabarahi Municipality was finally selected for the conducting household stakeholder survey.

Immediately after initial study area quick survey, the required pre information was collected from Municipality Office and Ward Office to conduct household stakeholder survey. There were 1000 Household stakeholders in total related with Municipality. It was difficult to select large sample representatives because of resources and time constraints. Only 48 sample households from these households were selected through random sample method. It covers nearly 5 percent of household stakeholders of Municipality.

In third phase, the household questionnaire survey was conducted with the help of local enumerators. The survey was conducted by coding household stakeholders during 15 days (January-February). The questionnaire has three sections: section 1: basic information about household socio-economic, section2: household's perspective and satisfaction level and section 3: alternative city development.

Major focus of the survey was to find stakeholder's perspective on city development and municipality prospects. In socio economic heterogeneous characteristics, household perception, satisfaction level and alternative development was observed significant at household level for city development and urbanization. The survey had also focused to find out opinion and expectation of household stakeholders about Municipality.

In final level, the municipality landscape and office were visited several times to observe the function of municipality administration to develop land use planning and city development for urbanization and also their behavior to household stakeholders for improving their understanding and awareness.

1.3. URBANIZATION AND URBAN POPULATION IN NEPAL

1.3.1.Urban population Size, Trend and Growth

It is argued that developing countries like Nepal need higher rate of urbanization with higher economic growth rate for sustainable development and poverty reduction. Since 1950s, Nepal has initiated urban development approach in National Development Plan.

Based on Population Census from 1961 to 2011, the urbanization has been observed by using three indictors, urban population size, trend and growth. The population census 2011 shows 17 percent urban population (4.5 million). In the population census 1951, its size was only 2.9 percent (0.023 million). Thus, urban population size is 14.1 percent incremental. However, still 83 percent population lives in rural areas, despite decreasing rural population.

1.3.2. Urbanization Pattern and Direction

Urbanization has certain theoretical pattern and direction on which urbanization plan and design has been initiated. Let's observe urbanization of Nepal. There is difficult to

identify urbanization pattern and directions because there are not used land use planning, except administrative cum political approach. It looks like geographical pattern and also city centered. Let's see its various variables concerning with urbanization pattern and direction.

Urbanization process has administrative cum political motivation factor behind the announcement of municipality city. In general, the city center of district was made the municipality city. It was only for the development of city then, although city development plan based on land use would be first. In the world, the urbanization pattern and direction is based on land use planning. Thus, municipality city could not develop what the beautiful city needs to maintain the urban life of the people.

Based on population size and policy, the existing city or administrative unit was changed into the municipality. There is found dual objective: *administrative cum tax collection*. Literatures and observations provide facts. There are found negative perspectives of people about poor access to urban services: facility of clean drinking water, electricity, telephone, sewerage and sanitation, road cleanliness, security, night life, economic opportunities, social life etc. Therefore, the practice of urbanization in Nepal is still ad hoc basis. It needs a strong framework.

1.3.3. Level of Urbanization

Literatures are very rare in case of urbanization index in developing country like in Nepal, except demographic parameter i.e. share of urban population across different geography, without content of physical, social, environmental and economic. It is assumed that higher share of urban population is an indicator of higher urban development. From such approach, the measurement of the urbanization level is practiced.

Population census 2011 shows 17 percent urban population in Nepal. The level of urbanization seems to be not as found in developing countries, although the trend of urban population has been inclining since 1950. It has accelerated much more in the process of economic reform. In the urbanization process, valley and plain land are considered feasible in the literatures. In Nepal, Census 1981, 1991, 2001 and 2011 have reported highest urban population in hill, although there are geographical constraints. It is followed by Terai and then Mountain. Therefore, the level of urbanization is very heterogeneous. Such similar reading can be found in district level also. In Kathmandu valley, there are higher urban populations: 65.9 percent in Kathmandu, 53.4 percent in Bhaktpur and 48.3 percent in Lalitpur. In the world, Nepal has ranked at 47th position in urban population share index.

1.3.4. Urban Densities

Population density shows the status of urban area or municipal cities. In general, higher population density refers to smart and developed urban cities. If it is lower, its status is in progress. In Nepal, urban densities distribution is heterogeneous across the geographical areas: rural and urban. Ecologically, there are three regions: mountain and terai having big land hill having small land. Therefore, urban density of mountain (550) and terai (1092) is lower than hill (10265). Similarly, urban density is 985 that is 8 times more than rural density (136).

1.4. CHARACTERISTICS OF STUDY AREA

1.4.1. Characteristics of New Municipality city: Bajrabaharahi Municipality (BM)

Location and Geo-set up: Nepal, a small beautiful landscape that is the study country lying between two giant landscapes, China and India has divergent ecology having three ecological belts: himal, hill and terai with divergent ecological properties, geography and caste system based demography.

Out of 75 district units, Lalitpur is one District Unit Study Area (see Map-1). In case of urbanization process and approach, Bajrabarahi Municipality of this District is the representative case of this study. Its selection is because of its representative characteristics of the new city towards urbanization process and has the process of city development.

Map No-1: Lalitpur District

Lalitpur District Map

Source: Raghu Bir Bista, 2010

Lalitpur district, a small district of 75 districts of Nepal highlighted in the clips of the Map No 1 lies in Kathmandu Valley locating the Central Development Region. In 2016, there were 6 municipalities out of which Bajrabaharahi Muncipality is a one of them.

Bajrabaharahi Muncipality has been just announced by the government of Nepal as new city as new municipality. It includes four VDC blocks: *Chapagaon, Thecho, Lele and Jharawarashi* by making chapagaon as center of the municipality. Each VDC has nine clusters. In the municipality, there are 16 new wards. Thus, merging VDCs has been followed for new municipality of 22000 populations.

1.4.2. Characteristics of New Municipality

Institutional Characters: its basic objective is to develop new city through the announcement of new municipality so that villagers can access all required infrastructure and social services for increasing economic activities and

opportunities, nonagricultural sectors can expand in the city, organized and formal markets will expand, development activities can get higher growth, cleanliness will get momentum, and resources mobilization will have a greater speed. City development towards urbanization is needed to improve living standard and socio economic level of households.

Institutional set up has been done by appointed gazette officer as Boss of the municipality and non-gazette officer were appointed in all ward offices. At VDC level, there was only non-gazette officer with limited human resources. One hand, the municipality has enriched professional human resources and other hand, its service units have been decentralized at Ward level. In addition, the government budget has multi times more than VDC level, along with the prospects of multi times more sources of resources. Besides, the institution must encourage effective community participation and follow democratic norms, values and system.

Structure of Municipality shows two tier systems: General Assembly and Executive Body. In General Assembly, there are involvement of stakeholders of municipality in terms of Parties, Association, NGOs, Government Offices, Private Institution, College, Administration etc. Its function is generally found in annual system in which all over year reports, future plan and program and budget allocation will be presented by secretary, executive body for discussion and approval. Executive Body is its representative body to implement the approval programs and budget of General Assembly. Executive body is governing body having 11 members from the General Assembly. It executes the decision of the General Assembly. Its meeting is held per month. Major work is to protect the forest, proper utilization of forest products and other functional activities.

Household character of the new municipality was heterogeneity in terms of Brahmin, Cheetri, Tamang and Indigenous Newar with sub caste groups in accordance with Population Census 2011(CBS, 2011). Its reflection can be found in socio economic

level along with heterogeneous economic opportunities, despite agricultural dominance. There was core poverty, despite majority households having less than 12 months food sufficiency. There was living with a hope of change.

Governance system is still ad hoc basis in the absence of the elected local government because of political fragileness and transition period (2006-2016). The urgency of local government election has not been considered in the political indecision game. As a short period alternative government, the local bodies are administratively run under the head of Department or the Municipal. In general, Gazette officer that has own administrative duties and rights as civil servant code and conduct has been a head of the municipal. As additional political duties and responsibility, they are given for just running the administrative. Therefore, they have accountability to the government instead of accountability to the people. Therefore, the desire of the grassroots level people is not considered properly. It is not easy to response and provides efficient and effective service delivery without the participation of stakeholders in the ad hoc basis governance. Therefore, there may be curious about good governance level.

Services: New Municipality provides services as defined in the code and conduct of Local Government Act. Like as Central Government**,** the government basically provides administrative services, basic infrastructure, development activities, heritage development and conservation, natural resources conservation and management and safety and clean environment through ward office. It is said that the municipality collects property and land tax from the local households. It is a major source of local revenue. The resources are allocated to construct road, sanitation, clean drinking water and public places, to protect old heritage and clean environment, to expand services and safety. In addition, the municipality implements house code.

1.4.3. Household characteristics of Stakeholders

In the governance system of local government, household stakeholders participatory are an important to achieve good governance and development. Its characteristics are discussed below. There are some characteristics such as household socio economic condition, HH size and composition and household economy discussed.

Household Resource Endowments: Like as VDC and Municipality, household has traditional resources endowments such as land, labor and livestock. Table no 1 presents mainly two household resources endowments: landholding and no of livestock.

Table No-1: Household Resource Endowments

Land Holding	Mean	Standard deviation	Minimum	Maximum
Irrigated land	5.17	2.69	1.0	12.0
Livestock				
Cow/Buffalo	1.91	1.39	0	6

Source: Field Survey, 2016

Land holding and number of livestock are considered as household assets. Mean irrigated land is 5.17 Ropani (0.39hectare). These landholders lie below 0.5 hectare landholdings. In Nepal, less than 0.5 hectare landholdings are explained as small land holders. Thus, households have small land. Gradually, livestock farming has been declining over two decades because of the growth of community forest, encroachment of public grazing land, milk market penetration and linkage with households. It seems to be discouraging household economic activities. Very few households have farmed traditionally livestock, mainly cow and buffalo for mill purpose. There is mean cow/buffalo of 1.91. Household resource endowments indicate characteristics of the poor households.

HH size and Composition: Household size and composition shows socio economic characteristics of Households. Small family indicates higher socio economic welfare of Household. Its reverse indicates poverty. Table No-2 provides 4.36 mean household sizes in the range

Table No-2: Household Composition and Demography

HH	Mean	Standard deviation	Minimum	Maximum
HH size	4.36	1.42	2	9
Sex	0.62	0.49	0	1
Age	43.85	11.69	19	61
literacy level	0.55	0.50	0	1

Source: Field Survey, 2016

between 2 and 9 family members. This mean household size is less than national household size (5.4) (CBS, 2011). It indicates small household size like as rich household. In collectivism in the common property, there are mostly observed, except political exercise of the party.

In household, male and female composition is similar. There is not so much difference. Mean sex composition is 0.62 (see its details in table-2). Life expectancy is expansionary in the nation where Bajrabarahi Municipality has 43 mean years with 61 maximum ages. Similarly, literacy level is found 0.55 in average.

Household economic condition: Poverty is a measurement of household socio economic status. It can be done through well practiced and popular food sufficiency reference line that is 12 months food sufficiency. Table No-3 presents poverty scenario and food sufficiency across income groups, education and sex. In poverty scenario, there are two categorizations: relative poor and absolute poor. In accordance with World Bank poverty measures of per day earning, there is only 27.6 percent household above the poverty line and then 72.4 percent lying below the poverty line, despite higher literacy level. Absolute poor households have very limited resource endowments.

Table No-3: Poverty Scenario

Poverty	Relative poor	Absolute Poor
Population	13	35
%	27.6	72.4

Source: Field Survey, 2016

Table No-4: Household Socio economic condition

HH categories	No of HH	Average Food Sufficiency	
		12 month	less than 12 month
Economic			
Absolute Poor	35	0	73
Rich	13	27	0
Education			
Literate	26	6	22
Illiterate	21	2	19
Sex			
Male	30	5	25
Female	18	3	10

Source: Field Survey, 2016

Table No-4 provides 12 month and less than 12 month food sufficiency measurements. There is dominance of 73.3 percent household under food insufficiency. These evidences motivate households for

participation and dependency on other economic activities.

Household Participation in local government: In democracy, the participation of the people is a key to strengthen democracy at the grass root level. It would be helpful to improve the good governance of local government and also to implement grass root development based on grass root level demand. In addition, it would improve effectiveness and transparency level of development activities and service delivery to the grass root people.

Table No- 5: Household Participation in percentage

Participation	Higher	Medium	Lower	None
Decision Making	5	35	50	10
Development Activities	2	8	10	80
Planning Process	2	2		96
Training			1	99

Source: Field Survey, 2010

Table No-5 shows household participation's local government's decision making, planning, development activities and training activities. Higher and medium participation in percentage can be considered as effective participation but lower and none measures cannot be considered effective participation. Household's participation in decision making is 90 percent, followed by development activities at 20 percent, planning process at 4 percent and training at 1 percent. Except decision making process, the remaining components have very lower effective participation of households.

Household's Access to Physical Infrastructure:

Access to Infrastructure is an important measure to improve standard of life. If household has such accessibility, social cost will be lower than before but positive externality value will be higher. In Nepal, there is status of household's access to physical infrastructure presented in table no-6.

Table No-6 provides status of clean drinking water, access to road, telephone, electricity, health post, school, market and college. Clean drinking water is a basic

Table No-6: Statistical Descriptive summary of Public Services

	No of HH	HH	
Services		Yes	No
Clean drinking water	48	80	20
Private Tap	10	20	80
Public Tap	38	80	20
Road	48	48	
Black Topple	38	80	20
Feather Road	10	80	20
Telephone	48	100	
line	5	10	90
Mobile	33	90	10
Electricity	48	100	
Hydro	33	90	10
Alternative energy	5	10	90
Load shedding	48	100	
Access to Health Post	48	100	
Access to School	48	100	
Access to College	48	100	
Access to Market	48	100	

Source: Field Survey, 2016

utility to household. It is 80 percent facility in which public taps service for the community is 80 percent and private tap is only 20 percent. Road development is prioritized with the approach private and public partnership and user's group. Still, about 100 percent have access in which only 80 percent have access to black topple road and feather road. Similarly, telephone has reached at 100 percent community directly and indirectly. In case of line telephone, it is only 10 percent but in case of mobile, it is found 90 percent. Another energy infrastructure is electricity that is access by 100 percent community. About 90 percent have hydroelectricity having 18 hours per week load shedding issue. About 10 percent has used solar. Concerning social infrastructure and market, there is 100 percent access. Above status of infrastructure have indicated higher prospective for urban development.

1.5. ESTIMATES, RESULTS AND DISCUSSION

1.5.1. Estimation and Analysis of Expectation about New City

Binary Discrete Choice Questionnaire about Municipality as New City was set up into four levels. They are level 1: Perspective about Municipality Announcement to New City, level-2: Perspective Criteria about Municipality Announcement to New City,

level-3: Satisfaction about Municipality Announcement to New City and level-4: if yes, Better Alternative of Municipality Announcement to New City Development and Urbanization. The questionnaire was surveyed 48 household stakeholders of Bajracharahi Municipality. In the household survey, there was a major concern on awareness level, opinion and expectation of stakeholders about new municipality. These stakeholders' character, capacity and decision might show future direction of new city in Nepal at stakeholder level in urban development and urbanization.

1.5.2. Descriptive Statistics of independent variables for Stakeholder Analysis on New city

Table No-7: Descriptive Statistics

Variable	Mean	Std. Dev	Min	Max
HH size	4.36	1.42	1	9
Age	.60	.538	0	2
Wage income	16851.06	18849.8	0	96000
Agriculture income	16580.4	15114.0	0	85800
No of livestock	1.91	1.39	0	6
Landholding	5.17	2.69	1	12
sex	.62	.49	0	1
Literacy	0.55	0.503	0	1
Food sufficiency	0.28	0.45	0	1
Poverty	1.062	0.70	0	2

Source: Field Survey, 2016

Discrete choice of households on New Municipality as New city is assumed to be influenced from heterogeneous socio economic household characters when respondent households responses on these choices. These characters including such as literacy, poverty level, food sufficiency level, sex, land holding, family size, age and income level are assumed independent variables in the selected models. Their statistical characters of Model 1, 2, 3 and4 are presented in table no-7.

In summary, HH size within age group is measured in terms of number unit. Food sufficiency of households is measured into months. Landholding of HH is in local unit that is *Ropani(0.07 hectare).* In earning per day, there is used per person per day in terms of dollar. Earning is considered as exogenous variable. Livestock of HH is in number unit.

1.5.3. Estimation and Result of Probit Model

In the study, probit model was used for the estimation of parameters. The estimation was extended from first level to two levels. There were four levels: level 1: Perspective about Municipality Announcement to New City, level-2: Perspective Criteria about Municipality Announcement to New City, level-3: Satisfaction about Municipality Announcement to New City and level-4: if yes, Better Alternative of Municipality Announcement to New City Development and Urbanization.

Model-1: Perspective about an objective of Municipality Announcement to New City

Table No-8: Model - 1(Perspective about Municipality Announcement to New City)

Variable	Probit	
	Coeff	St.Err
constant	-1.32	.56
HH size	.085	0.068
Age	-0.06	.008
sex	-0.202	.192
literacy	-0.40	.193
landholding	-.071	.036
No of livestock	-.065	.071
Agricultural income	.000	.000
Wage income	.000	.000-
Food sufficiency	-1.31	.186
Poverty	.081	.123
Chi R2	32.72	
LR(x2)	36	
Prob>x2	0.625	
No of observation	48	

Source: based on Field Survey, 2016

In Model-1, the probability of perspective about an objective of Municipality Announcement to new city is estimated by using HHsize, Age, Literacy, food sufficiency, and land holding per households, wage income per HH per annum, agricultural income per HH per annum, sex, livestock, food sufficiency and poverty as independent variables. Perception about an objective of Municipality to New City is the binary dependent variable having two choices: yes and no. In the model, yes is coded as one and no is coded as zero. Positive coefficient of independent variables implies for increase in the probability of Perception about an objective of Municipality to New City. The estimation of probit model for level 1: Perception about an objective of Municipality to New City is presented in table no-8.

The Chi-χ^2 test of perception about an objective of Municipality to New City shows that the model has good explanatory power. The estimated parameters show that age, sex, literacy, landholding, no of livestock and food sufficiency are insignificant and negative at 95 percent confidence level. It implies that the

probability of perception about administrative objective of Municipality to New City decreases, if the households have older age, female, increasing literacy, increasing no of livestock, increasing food sufficiency and greater land holding than 5 ropani. Similarly, the positive parameters show that HH size, Agricultural income, Wage income and poverty level are insignificant and positive at 95 percent confidence level. It implies that larger HH size, increasing wage income, increasing agricultural income, and reducing poverty level will increase the probability of perception about administrative objective of Municipality to New City.

Model-2: Perspective Criteria about Municipality Announcement to New City

In Model-2, the probability of Perspective Criteria about Municipality Announcement to New City is estimated by using HHsize, Age, Literacy, food sufficiency, and land holding per households, wage income per HH per annum, agricultural income per HH per annum, sex, livestock, food sufficiency and poverty as independent variables. Perspective Criteria about Municipality Announcement to New City is the binary dependent variable having two choices: yes and no. In the model, yes is coded as one and no is coded as zero. Positive coefficient of independent variables implies for increase in the probability of Perception about an objective of Municipality to New City. The estimation of probit model for level 2: Perspective Criteria about Municipality Announcement to New City is presented in table no-8.

The higher LRχ² test of Perspective Criteria about Municipality Announcement to New City shows that the

Table No-9: Model -2(Perspective Criteria about Municipality Announcement to New City)

Variable	Probit	
	Coeff	St.Err
constant	-2.57	.56

Table No-10: Model -3(Satisfaction about Municipality Announcement to New City)

Variable	Probit	
	Coeff	St.Err
constant	-2.42	1.75
HH size	.074	0.19
Age	-.028	.024
sex	0.089	.626
literacy	.403	.65
landholding	-.044	.105
No of livestock	.117	.180
Agricultural income	.000	.000
Wage income	.000	.000-
Food sufficiency	-.055	.427
Poverty	-.19	.358
Psedo R2	93.11	
LR(x2) (16)	36	
Prob>x2	0.000	
No of observation	48	

Source: based on Field Survey, 2016

model has good explanatory power in table no-9. The estimated parameters show that sex, land holding, no of livestock and food sufficiency is insignificant determinant with negative sign in 95 percent confidence level. It implies that the probability of Perspective Criteria about Municipality Announcement to New City decreases, if households have large size of land holding and of livestock, female participation and increasing food sufficiency. Similarly, positive value of parameters shows that HH size, Age, literacy, agricultural income, wage income and poverty are insignificant determinant with positive sign in 95 percent confidence level. It implies that the probability of Perspective Criteria about Municipality Announcement to New City increases if households have larger HH size, higher literacy, higher age, per annum agricultural and wage income earning and reducing poverty level.

Model-3: Satisfaction about Municipality Announcement to New City

In Model-3, the probability of Satisfaction about Municipality Announcement to New City is estimated by using HHsize, Age, Literacy, food sufficiency, and land holding per households, wage income per HH per annum, agricultural income per HH per annum, sex, livestock, food sufficiency and poverty as independent variables. Satisfaction about Municipality Announcement to New City is the binary dependent variable having two choices: yes and no. In the model, yes is coded as one and no is coded as zero. Positive coefficient of independent variables implies for increase in the probability of Satisfaction about Municipality Announcement to New City. The estimation of probit model for level 3: Satisfaction about Municipality Announcement to New City is presented in table no-10.

The higher LRχ² test of Satisfaction about Municipality Announcement to New City shows that the model has good explanatory power in table no-10. The estimated parameters show that sex, land holding, no of livestock and food sufficiency is insignificant determinant with negative sign in 95 percent confidence level. It implies that the probability of Perspective Criteria about Municipality Announcement to New City decreases, if households have large size of land holding and of livestock, female participation and increasing food sufficiency. Similarly, positive value of parameters shows that HH size, Age, literacy, agricultural income, wage income and poverty are insignificant determinant with positive sign in 95 percent confidence level. It implies that the probability of Perspective Criteria about Municipality Announcement to New City increases if households have larger HH size, higher literacy, higher age, per annum agricultural and wage income earning and reducing poverty level.

Table No-11: Model - 4(Better Alternative of Municipality Announcement to New City Development and Urbanization)

Variable	Probit	
	Coeff	St.Err
constant	-2.71	.84
HH size	-.021	0.104
Age	.004	.007
sex	0.059	.295
literacy	.316	.251
landholding	0.030	.049
No of livestock	-.099	.108
Agricultural income	.000	.000
Wage income	.000	.000
Food sufficiency	-.364	.286
Poverty	.003	.160
Psedo R2	127.2	
LR(x2) (16)	36	
Prob>x2	000	
No of observation	48	

Source: based on Field Survey, 2016

Model-4: Better Alternative of Municipality Announcement to New City Development and Urbanization

In Model-4, the probability of Better Alternative of Municipality Announcement to New City Development and Urbanization is estimated by using HHsize, Age, Literacy, food sufficiency, and land holding per households, wage income per HH per annum, agricultural income per HH per annum, sex, livestock, food sufficiency and poverty as independent variables. Better Alternative of Municipality Announcement to New City Development and Urbanization is the binary dependent variable having two choices: yes and no. In the model, yes is coded as one and no is coded as zero. Positive

coefficient of independent variables implies for increase in the probability of Perception about an objective of Municipality to New City. The estimation of probit model for level 4: Better Alternative of Municipality Announcement to New City Development and Urbanization is presented in table no-11.

The LRχ^2 test of Better Alternative of Municipality Announcement to New City Development and Urbanization shows that the model has good explanatory power in table no-11. The estimated parameters show that HHsize, no of livestock and food sufficiency is insignificant determinant with negative sign in 95 percent confidence level. It implies that the probability of Better Alternative of Municipality Announcement to New City Development and Urbanization decreases, if households have large size of land holding and of livestock, and increasing food sufficiency. Similarly, positive value of parameters shows that age, literacy, agricultural income, wage income, landholding and poverty are insignificant determinant with positive sign in 95 percent confidence level. It implies that the probability of Better Alternative of Municipality Announcement to New City Development and Urbanization increases if households have older age, higher literacy, per annum agricultural and wage income earning and reducing poverty level.

1.6. CONCLUSION

New Municipality is perceived as a base of new city development for urban development and urbanization process. Its practice is based on demographic and administrative push factor announced by the government. In developing countries like in Nepal, it is practiced but household perceived such type of announcement should be after the construction of infrastructure and development because they have expectations to access all required facilities of urban life for getting higher standard of life.

The study estimates expectation of households reflected Perspective about Municipality Announcement to New City, Perspective Criteria about Municipality Announcement to New City, Satisfaction about Municipality Announcement to New City and if yes, Better Alternative of Municipality Announcement to New City Development and Urbanization. There are found 32.52 percent household stakeholders having Perspective about administrative objective of Municipality Announcement to New City, 34.9 percent household having perspective Demographic Criteria about Municipality Announcement to New City, 93.1 percent stakeholders having satisfaction about Municipality Announcement to New City and 127.2 percent household having perceptive of Better Alternative of Municipality Announcement to New City Development and Urbanization.

In conclusion, household stakeholders who have thought new municipality based on demographic criteria have satisfaction about such decision. In addition, households have strong thought it will be a better alternative of Municipality Announcement to New City Development and Urbanization.

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