

## **1. 0: An Overview**

Fertility, mortality and migration are three basic pillars of demography. Migration is one among them. It has been as an integral part in the process of economic development and overall development discourses. It cannot separate from wider discourses of international system of economics and politics, because it designs and shapes the lives of poor and deprived. There are substantial evidences in literature, that migration (both internal and international) reduces the socio-economic-political inequalities between the origin and destination. If people felt that their current place of residence provided them with adequate chances for secure lives, free of poverty, and with the prospect of improvement, then they would not feel or forced to move as migrants. Many researchers argue poverty attributed to migration. Small size of land holdings, low productivity of land, frequent occurrence of drought, flood and famine, lack of supplementary sources of income, and heavy financial burden are major causes for push the rural people to urban area to search for alternative livelihood sources. Nonetheless, the theories of migration have been understood by different discipline in different nature linking to the subjectivity and their requirements. For instance, sociologists emphasized social, cultural and distance factors as causes of migration. They also concern in examining the factors that influence the individual and household level decision for migration. Spatial distribution and movement of people in space is largely concern by the Geographers. Economists have focused their attention on the cause and consequences of migration relating to wage rate, level of income, level of employment and issues relating to labour productivity. They also concern about economic development considering labour migration as an instrumental. Realizing the importance of the dynamics of migration, it has been treating as part of poor people's livelihood options and economic incentives. Hence, migration has important role in designing socio-economic policies at different levels of governance.

Present era of economic globalization and trade liberalization, competitive nature of market forces, and unequal distribution of opportunities across globe created a situation, where people forced to leave their homes and moving beyond their original habitations in

order to find jobs (UN, 2004). There is a growing consensus in the development field that rural to urban migration represents an important livelihood diversification strategy for many in the third world countries, as is the case like ours (World Bank, 2006). Migration not only attracts people towards higher wages and earn more income, but also perceived as gains in social status and opportunity of engaging themselves in the desire of modern urban culture. Mostly, migrants are getting employment opportunities through social networks such as friends and relatives, who are already in the mainstream of workforce at destination. Sometime migrants are often engaged in unorganized sector such as construction work, transport or manufacturing sectors etc, where they are offering their services even for a low wages in contrast to urban counterparts. Despite, they are living in unhygienic, congested and exclusion of all benefits and facing all kinds of social and economic problems, they are still getting a chance to remit certain portion of their income to the place of origin as form of remittance.

Migration has multifarious effects on source communities. For instance, migration directly increases the income of the recipient and help smooth household consumption, especially in response to adverse events such as crop failure or health crisis. Although it brings the direct benefit in helping, the households to diversify their sources of income (and thus reduce their vulnerability to risks) while providing a much needed source of savings and capital for investment. It also has many economic implications such as reducing the incidence and severity of poverty, which supports to overall economic growth. In most circumstances, migrants' remittances increased household investments in health, education and entrepreneurship at origin (World Bank, 2006).

Enjoyment of good health through increased standard of living is a quintessential element of measuring human development. Increased standard of living is a critical factor to improve health, well-being, and human capital formation. There exists a strong relationship between migration and health and well-being. It seems that, migration improve health status simply because it increases income to spend on health care among migrant households. However, the relationship between migration and health is not uni-directional rather it is a bi-directional process. Migration affects health status of migrant

households. Sound health motivates a person to stay longer period in workforce even through migration if opportunities are not available around them. More details a positive relationship between migration and health care shows that, migration increases income of the sending household through remitting and migrant's income provides an opportunity for spending more on health care, on the other hand more health care spending is expected better health outcomes that may probable motivate for migration. Many past studies suggest that, there was an existence of a causal relationship between income and health outcome both at micro and macro levels.

Good health is considered as an important determinant of sound income. In other words, sound health means longer days in labour force which increases the level of income and hence consumption expenditure. Increasing consumption expenditure somehow leads to consumption of nutritious food, which in turn improves the health status. It is viewed that child health that is an important aspect and key determinant of sound health in adulthood. This ultimately leads to increased capacity in future productivity. Moreover, negligence of the importance of the child health and child well-being might have a long lasting negative impact on adulthood. Hence, child's stature is the long-term measure of good health. It is important to prevent childhood illness and diseases by providing better nutrition and good health care services during first few years of life. Therefore, growth and well-being of first few years of life is critical and important to attain good health in adulthood.

Researcher rarely measured the impact of migration outcomes on health. Present study seeks to understand the impact of migration on health status of rural Odisha in general and on child health in particular. Present chapter is organised broadly in two parts. Part-I focus on meaning, forms, and reasons of migration. The rationale for undertaking a field study is also discussed in same part. The methodology adopted in the study is discussed in part-II. Further, the methodology part is divided in following sections. Section I deals with methods and materials. Section II explains background profile of the study area. Section III elaborates an overview of the sample population. Research questions are framed in section IV. Objectives and hypothesis of the study are given in section V and

section VI respectively. Section VII portrays a conceptual framework of the study while section VIII summarizes a detail plan of chapters of the study.

## **1.1: Definition, Meaning, Form, Type, Stream and reason of migration**

### **1.1.1: Definition**

In a wider sense migration refers to a process, where movement of people occurs from one place to other, usually one crossing the administrative boundaries in a given time interval. According to United Nations (UN) multilingual dictionary, "migration" defined as a form of spatial mobility between one geographical unit and another, involving a permanent change of residence (U.N., 1993). Thus, migration involves the aspects like, change of residence and crossing a pre-defined administrative boundary. The change in residence can take place either permanent or semi-permanent or of temporary in nature (Premi, 1990). Internal migration involves a change of residence within national borders whereas international migration is the change of residence crossing the national boundaries (Dang, 2005).

### **1.1.2: Meaning**

**From** above definition, we can apparently distinguish between migrant and migration. Migrant refers to a person whereas migration is a place or geographical area. Moreover, migration forever establishes two places of movement of person, i.e., one is origin and another is destination. The origin called starting place and destination called ending place.

### **1.1.3: Forms of migration**

There are numerous forms of migration. These are:

a) International Migrant- A person who moved outside their country of birth and crossed an international boundary is known as international migrant.

b) Internal Migration- A migrant, who has moved within his or her country of birth, crossing a boundary between provinces, districts, municipalities or other political or administrative units is considered as Internal Migrant.

- c). Seasonal Migrant-A migrant who in an exception to the one year or longer criterion for a “migrant”– moves to and fro between home and another place on a seasonal basis.
- d). Refugee is one form of migrants where, an international migrant who has fled his or her home country because of a well–founded fear of persecution for reasons of race, religion, nationality, membership of a particular social group or political opinion, and who has been granted refugee status by a receiving state. According to the United Nations 1951 Geneva Convention on Refugees, asylum–seeker is an international migrants whose claim as refugee status is yet to be determined.
- e).Economic migrant -A migrant who moves for economic reasons and who has no legitimate claims to a refugee status. Basically, these migrants respond to push factors in leaving places where life is struggle, escape persecution, and pull factor in destination such as net gain access to resources or to improve their employment opportunities.
- f).Non economic Migrant: A person who moves without any economic reason is called a non economic migrant.
- g). Short distance- Migration within the district is called "short-distance" migration.
- h). Medium distance- Migration within the state across the district is called "medium-distance" migration.
- i).Long distance- Migration across state boundary is called "long-distance" migration.
- j).Voluntary and forced migration: Some migrants are migrating voluntarily and some are being forced to migrate because of a number of reasons.

Broadly, there are two types of migration: one is international and other one is internal migration. Further, internal migration is classified into following types.

#### **1.1.4: Types of Migration**

- I. Rural to rural- A person moves from one administrative/revenue village to another administrative/revenue village.
- II. Rural to urban- A person moves from rural to urban areas.
- III. Urban to urban- A person moves from one town/city/ urban location to another town/city/ urban.
- IV. Urban to rural- A person moves form one town/city/ urban locality to village

### **1.1.5: Stream of Migration**

Migration stream is the total number of moves made during a given migration interval that have a common area of origin and of destination

1. Intra district migration- A person is migrated within the administrative district.
2. Inter district migration- A person is migrated between the districts but within the state.
3. Inter-state migration- A person is migrated between the states but within the country.
4. International Migration- A person is migrating crossing the national boundary.

### **1.1.6: Reasons of migration**

Many past studies probed that poor landless households migrate to urban areas or large towns with an aspiration of securing means of livelihood. The prime issue is still contentious as why these poor people are forced to migrate leaving their near and dear ones behind. What kind of situation they faced, what are the factors force them to take such hard decisions? How do they adjust themselves to such a changing environment at the destination? How do they cope with the hard realities of migrating to distant place? Whether outcome of migration enhance their social position augment their wellbeing or not etc. The answer to these questions is simple. In general, absence of relevant support mechanism at origin, especially, offering financial assistance to the poor and landless people by the government probably enforce these people to migrate to urban or cities or nearer towns in search of alternative means of livelihood.

Despite all, other factors are also playing vital role for human migration. These are low agricultural productivity, low level of industrial development, harsh geographical conditions and terrain of nature (either any form of natural calamities such as; flood, famine or drought etc.) have led to a high migration from the affected region. In this connection, ‘Economists’ have tried to understand, migration as part of household strategies which seeks to mitigate income risk and facilitate, what Rozenzweig calls “consumption smoothing in an environment characterized by information costs and spatially covariant risks” (Rosenzweig and Steak, 1989). Migration is necessarily a pre-emptive move and a survival instinct that drives humans to seek better opportunities. Regional inequality in economic development, poor investment and industrial

development, inadequate infrastructure, and limited market account at origin has enhanced influx of migrants from rural to urban areas (Sinthapparaj, 1998).

Globalization has accelerated migration trend because less restriction on movement with development of transport and communication particularly rural to urban areas for search of survival fulfillment with expectation of better life and livelihoods. This liberalized economy in the form of privatization and globalization wipe out small-scale industries as a result increased unemployment rate in rural areas thus massive rural labour migration to urban areas for alternative livelihoods. Other argues that globalization has increased demand of industrial labour as a result substantial rural urban labour migration takes place.

Broadly, there are two schools of thought on migration movement. First school argues victimization migration, whose only motive is survival; the latter advocate voluntary migration, whose motive is better opportunities. Various empirical evidences shows that (Greenwood, 1975; Oberai and Singh, 1983; Strak, 1988; Williamson, 1988; Rempel, 1996; and Yap, 1997) migration does occur from low to high income regions but relative importance of the characteristics of origin and destination in explaining migration continues to be a debatable issues. Studies also reveals that migration is influenced level of education (Strak 1982; Todar, 1997) personal contacts and geographical distance (Strak 1982; Oberai and Singh, 1983) risk and avoidance (Stark, 1982) urban rural income differences (Greenwood, 1975; Papola, 1981; Rempel, 1996; Strak, 1988; Williamson, 1988 and Yap, 1997) agricultural unemployment and underemployments (Oberai and Singh, 1983) and others. The relationship between migration and labour force participation in the towns and cities is indeterminate as found in both theoretical and empirical literature (Oberai and Singh, 1983).

Researchers also argue that the creation of cheap labour economies in the third world results in the creation of cheap labour economies in the first world. Thus, wage rates are declined all over the world and it makes greater profits for the capitalists. An essential precondition to the decline of wage rates resulted labour migration both interstate and

international level (Chaganti, 2004). Similarly, poverty is another cause of migration and it can be alleviated as well exacerbate by population movement. The relative impact of migration on poverty varies by the level of development of the area under consideration (Skeldon, 2002).

Nevertheless, some also differ, occurrence of rural to urban migration phenomenal under the new economic policies that had little to contribute towards the betterment of the living standards of all sections of society and could not absorb the vast surplus of the unemployed labour force. Liberalization of agriculture connotes the promotion of agro-product exports, reduction of fertilizer and power subsidies to the agriculture sector, rolling back of state intervention in the food grains market such as price support and procurement policies, pricing of irrigation services, liberalized imports of agricultural products and increased penetration of agriculture by multinational seed and biotechnology firms. Thus, resultant imports of competitively priced agricultural products forcibly reduced prices and decreased demand for local products. Emphasis on non-traditional agro exports led to the reduction of acreage under coarse grain, thereby adversely affecting food security and nutrition standards for the poorer classes. The inherent risks in shifting to commercial agriculture impoverished farmers. The impact of liberalization in the small-scale and handicapped industries sector, including textiles and electronics, has also been that of reduced prices and demand (Chaganti, 2004).

Recent study by the World Bank observed that most of the highly skilled migrant labourer opined that salaries would be higher for them in overseas, which is most motivational factor to decision on migration. Despite the higher overseas income, the decision to migrate is strongly associated with preference variables, such as risk aversion, patience, and subjects migrants education, and not strongly linked with economic variables such as liquidity constraints, the extent of the gain in income to be had from migration or macroeconomic factors. Decision to return amongst ever migrants is most strongly associated with preferences, with family and lifestyle, educational bonding reasons are being stronger predictors than extent of income gains from migration reveals



the study. The data support a limited role for income maximization in determining the migration decisions of the highly skilled migrants (Gibson and McKenzie, 2009).

Among the number of factors that determined the selectivity bias and choices of migration cited in literature. Paul found that, some household factors like; brothers educational level, migrants' spouse and migrants self to determine the migration choice (Paul, 1998). The difference between average income opportunities in the urban and rural areas generally attributed to most important pull factors to rural urban migration (Narasimhan and Chandra, 1998, D'Souza, 1998) .

Only simple looking at the rural-urban wage differentials cannot conclude labour migration of rural to new urban towns. A more comprehensive understanding of the linking between conditions in the rural areas with the quality of employment opportunities in the new organized, manufacturing industries and the quality of life in the living environment; quality included in terms of social and cultural parameters. Indeed, migration could suggest vulnerability as seen in the inter linkages rather than an indicator of development. The International Labour Organization (ILO) has done considerable research on discrimination against international migrants at origin and destination and concluded that how the migrants are vulnerability in terms of social indicators. There is similar discrimination in the cases of internal migrants vis-à-vis locals and migrants from backward regions vis-à-vis those from developed regions. The fact that most very short distance migrants end up in the worst forms of employment despite having higher levels of literacy than local workers. One may stop eulogizing migration as social mobility, recognize the substantive compulsions for migration, and initiate effective measures of employment generation in rural areas to put an end to a fast deteriorating quality of work and life in industrial labour markets especially in the newly industrializing towns.

From demographic point of view migration influences size, composition and distribution of population both in sending and receiving regions. Migration also influences the social, political and economic life of the people from where migration occurs as well as migration happens. Indian constitution provides the freedom of rights to their citizen to

move to any part of the country, right to reside and earn livelihood of their choices. Thus, migrants are not required to register either at the place of origin or at the place of destination. A number of economic, social, cultural and political factors play an important role in the decision of a migrant to move. The effects of these factors vary over time and place. Analysis of migration pattern is important to understand the changes taking place in the people's movement within the country. It is most volatile component of population growth and most sensitive to economic, political and cultural factors (Singh,1998). Proper understanding about the pattern of migration would help one in the estimation of future population redistribution. The reliability of these estimates depends much on the consideration of all the temporal factors of birth, death and internal migration in which population growth is the finest precision (Chakravorty,1997).

In a developing economy like ours, where large rural areas have been caught up in the quagmire of non-development, uneven regional development, and predominance of agriculture sector resulting excess labour supply (Prasad, 1986 &1987). The loss of land and decline in availability of work in agricultural sector have made difficult for the rural poor to find out employment opportunities in and around rural areas. In such a situation there are just two ways to survive either stay back and struggle or migrate to where, there is likelihood of getting employment (Sharma, 2005). It also documents that productive asset in the form of a patch of land may still force to migrate as cultivator to migrate, as cultivator may no longer be economically viable due to commercialization of agriculture. In the former case, the surplus labour situation in rural areas is sufficient to encourage out migration of the unemployed and underemployed (Joshi and Joshi, 1976) even if urban areas back home do not offer sufficient employment opportunities. Theoretically, in this case there is a greater probability that the entire family will out migrate, possibly after a time lag even those who are employed may out migrate it cost of moving (Oberai, et al., 1989). The first situation where there is no surplus labour in the region but higher wages paid outside the region attracts out migrants. Secondly, out migration may occur during certain periods when the regional labour demand falls, and third out migration is happen when the labour is surplus to the region as well as the imbalance land holding (Gill, 1984). Productive asset in the form of a patch land may force to migrate cultivator

because they may no longer be economically viable due to commercialization of agriculture.

A destination-based migration study in Punjab reveals indebtedness is so widespread among rural farmer cause migration. Besides these, they live in large and joint families, made it difficult for them to fulfill their basic needs add to it low level of development in subsistence level of agriculture and severe unemployment as a result labour from these areas forced to seek employment elsewhere. The aspirations dominant in the minds of most of the respondents were the prospect of getting regular work and higher income, which would help them to ameliorate from poverty. Besides, raising the economic status in the sending community, migration also enables them to escape social and economic exploitation (Gill, 1984).

Past studies on reason for migration suggests that, lack of favorable employment opportunities for their livelihood, lack of opportunity and lack of absorb capacity in agricultural sector at origin is the prime cause of migration (Sharma, 2005). Lack of labour absorbs capacity in agricultural sector fails to generate adequate employment opportunities for rural poor. Labour absorption capacity in agriculture has declined owing to mechanization insufficient irrigation and drought in several parts of the state force to poor farmers to urban areas for livelihood option. Economic explanations cater on the search for better opportunities of income and employment socio cultural explanations center on the desire of migration to break away from traditional constraints and inequalities. Environmental explanations centre on the lure of the cities and migration induced by disaster, displacement and demographic pressures or imbalances.

Researchers often hypothesize; lack of peasant movement has pushed the poor farmer from agriculture to other sector to search alternative livelihood sources. But this may not true in north Bihar. For labourers and poor peasants migration has long been a coping mechanism of their desire of migration due to caste prejudice. However, many people now prefer to work outside as this enables them to break loose from the exiting caste taboos which exists in the villages. While the upper caste people do not desire to involve

any manual wage work in their village because of caste taboo, they undertake all kinds of work wage work or low paid self employed work in their place of migration. In fact, this is an important reason why upper castes youth migrate in this case of lower castes also many people migrate to escape from the hardships caused by the prevailing caste discrimination in the village (Sharma, 2005). It is significant that even the upper castes in the wake of stagnation in agriculture have migrated in large numbers in the search of employment. These two developments mobilization of the poor peasants and increased migration appear to be most important agents of change in rural Bihar during the last three decades or so. Although this increases, the work burden of the females left behind in the villages through it does not necessarily lead to a higher participation rate among females the probable reason being the disincentive to work received. The increased migration of labour from the state has contributed its own share to changing the rural labour markets and social structure. It has not only helped the migration and their families in meeting a part of their consumption needs but also has helped to raise the agricultural wages because of the withdrawal of surplus labour by way of migration. Remittance from migration contributes significantly to the household income. Parents are increasingly viewing schooling as an opportunity for upward mobility. The demand for basic amenities forms part of the rising aspirations of the poor for a better tomorrow. They dare to challenge traditional practices that underpin the social and economic authority of both the older and the newly emerging dominated classes. It was noteworthy that, Rodgers and Rodgers (2,000) observed that profound changes were taking place mainly due to migration from rural Bihar. An important aspect of this change has been the struggle of the rural poor to exercise their franchise. Thus, they aspire to achieve not just economic empowerment but to acquire wider political social and human rights objectives, which they have succeeded in realizing to some extent (Sharma, 2005). The rural urban migration in a surplus labour situation is likely to improve the level of employment and income of out migrant households. There is also likely to be an improvement in household income distribution in the rural areas. Further, the inflow of resources and information may result in technological development and increased production, provided public policies have created the infrastructural conditions necessary for development.

Another factor of mobility of people from rural to urban areas is to get education facilities that are uncommon among young people in India. An interesting aspect in this context is that young people with some education may be facing unemployment in the rural areas (because of the lack of sufficient jobs for the educated), migration to urban areas to acquire further education and skills but end up as wage earners. Although migrants from rural areas tend to be better educated than those who stay behind, they often have less education than those already living in the urban areas. Paradoxically, then, rural-urban migration may lower the average level of education both in the rural area of origin and in the urban destination.

Studies reveal that migration is a survival strategy, which perpetuates debt and dependency. In India, majority of households having small size of landholdings forced to send some members of the family (especially younger sons) to move into full-time wage earner. More on it, with continuing land partition and lack of scope at origin compelled them for urban connection a source of income. Sometime migration is treating as symbol of status at origin. With this the migration from rural to urban area is surely an upward trend which clearly had a variety of short-term practical needs relating to shelter, health care, information (about jobs) above all, many needs were gender-specific. The inquiry into these causes revealed the gravity of rural poverty and lack of employment opportunities as the major push factors forcing out migration. This system provides greater certainty of employment than the casual migration system (Krishnaiah, 1998) higher levels of education and skill which were assumed to be variables influencing upward social mobility but do not hold true with trends favoring the less educated and less skilled workers as well.

The internal migration process is more dynamic and it varies in location specific so it is too difficult to control and regulate the internal migration through specific policy context. Another constraint is lack of update data as well as accuracy with reliable information followed by suitable methods deter to comprehend the process and dynamic of internal migration. In view of this several studies have been initiated, but lack of comprehensive

solution to the problem remained as it is. To investigate it with empirical data the earlier study concluded that young person in rural areas move from rural subsistence sector to the urban sector in an expectation to earn more and thereby improve their standard of living (Shan and Patel,1979; Yousuf,1983; Oberai and Singh, 1983; Rathnasamy, 1984; Khan, 1986; Joshi,1989; Paul,1989; Tiwari,1991).

Migration is also treated as an integral part of modern/capitalist development but the rural society is largely assumed pre-capitalist in nature. Before migration of labour takes place from the rural areas, there is periodic pauperization of the rural population, due to the introduction of modern machinery into cultivation and the abolition of patriarchal relations. Marx (1857) has argued that pauperization as one of the conditions for migration of labour from the rural areas, and it is a necessary condition for migration subject to availability of means of survival at destination. Often discussion takes place migrants are from backward areas to the advanced areas but it is not always true. In recent year, the pattern of migration has changed. It has been observed that son and less extent daughters of the rich farmers have moved to secure jobs in the urban areas while the children of laborers have moved to urban areas to take advantage of the shift in employment opportunities (Connel et.al, 1976).

Migrant's decision to migrate in China shows that, many communities migration of one member of a family is often a family decision. Recent field study on migration strongly suggest that interdependencies between family members and the existence of ties with the place of origin are of great importance to reach a better understanding of the decision-making process generating migration and transfers in the context of socioeconomic development (Xu ,1992). The study also establishes that positive migration can occur where the mean of the prevailing wages is less than the rural wages. Due to inter temporal trade-off that exists in the pre-migration evaluation: a lower current income from moving may be preferred in the expectation of contracting better jobs in future. Thus, it is not merely the mean wage offer but the entire distribution of prevailing offers that influence the migration decision. This analysis pertains to the decision between moving to the urban unemployment state and not moving. In the case where rural-based

search is profitable, positive migration can also occur in terms of moving to the urban unemployment state even if the mean wage is less than the rural wage. In the same framework, the probability of urban employment is assumed independent of time. However, potential migrants may not think of the possibility of employment in terms of a given probability of getting a job that is independent of time, but in terms of an uncertain period of waiting after which they can expect to obtain job offers.

Sjaastad (1962) attempted to explain migration in terms of cost and returns. The individual's decision to migrate as an investment decision in terms of expected costs and returns over time. The magnitude of migration depends on the difference between the expected returns and costs of sending and receiving region (D' Souza,1998). More extensively, researchers like Stark and Lucas (1988) Rhoda (1980) have evoked considerable discussion on the rural out migration, is attributed to a number of push and pull factors. Hence, migration is outcome of the relative strength of the 'Push' and 'Pull' factors. As we have discussed, people migrate because of two reasons. One is push factor and other one is pull factor. Push factor plays role in origin of migrate and pull factor in the destination. The factors such as unemployment, underemployment, lack of adequate cultivable land, or lack of job opportunities and basic amenities of life (like school, college, or hospital), or socio-economic-political stresses or natural hazards (like flood, drought, etc) at origin often tend to push people to out-migrate from their places. The pull factors such as better job opportunities, better prospects, higher wages, higher education facilities, better amenities, better access to health services, etc attract people towards a particular destination.

Bhagat (2002) explained, the differentiation of settlement into rural and urban areas has started in the wake of industrial development process and related growth of infrastructure such as transport, communication and power supply, etc, in the certain segments of space. More on it the concentration of population, predominance of non-agricultural activities and better provision of social amenities including health and education infrastructure are important characteristics of urban areas (Bhagat, 2002). Besides the relative strength of

the push and pull factors of economic factors, these above factors also playing very important role to decision on migration from rural to urban areas.

#### **1.1.6.1: Migrants and their migration networks**

Migrants follow different kind of networks to arrive in the destinations. The arrival of migrants is often by way of chain-migration realized with social networks. Therefore, workers belonging to similar chains are employed in similar employment patterns and in specific industries. Some chains are linked to contractors while others are linked only to civil society based networks, which make same villages, schooling, and caste or blood relations or extended families very important categories in developing networks. It is also expected that the information from networking system between the city and village be especially in shaping rural urban migration streams. The information regarding the labour market passes through these networks and functions to encourage or discourage potential migrants during their visit to the native places. Social networks perform an important adaptive function for the migrants. They reside mostly within enclaves populated by people from their home village or live with relatives who have developed strong ties within a more diverse community. It is also observed poor migrants often who live in squatter settlements retain a strong sense of community support with keeping up the social networks. The networks of migrants observed that the process of migration movement occur initially from villages to towns, from small towns to large towns, from one state to another state and beyond. Although the economic reasons are strongly behind the migration motive, it has many social, demographic and political implications.

The first migrant move in search of better livelihood options, wages, and amenities in destination while moving taking certain amount of uncertainty and risk, the later migrants come due to their personal ties with former migrants. The first migrants also establish live channels of contact and communication with natives they left behind and transmit knowledge of the attractive features and potential of the place of migration (Mishra, 1959; Hussain, 1965; Malhotra, 1964) male migrant first followed by female (Mukhrjee and Singh, 1960) migration due to marriage to follow the Indian customary (Zachariah, 1964).



The nature of the Indian rural-urban out-migrations are very lucrative attracted to cosmopolitan city beyond the economic reasons. Hence, the main factors that induced the out-migration from rural to the metropolitan and industrial cities are migrants networking (Either in family net working or in social networking) and assurance of a place to stay at destination by the relatives or friends. The strong network and social capital of local people is so strong which would be assured of accommodation and job in the place of destination before they leave their villages (Banerjee and Bucci, 1994). The studies of Bhattacharya and Chatterjee (1973), Haan (1995), Dubey et al. (1995), Sachdev (1979), National Commission of Labour in India (1969) and Chand et.al (1998) have also revealed that a network of relatives have helped the villagers to migrate to places where they have their relatives and friends. Other also (Papola and Subrahmaniam, 1973) argues predominance of informal channels and the virtual insignificance of formalized channels such as employment exchange plays a distinctive role to migration decision of migrants. The consensus is that people migrates those areas or places where they have their established contacts, relatives, friends, co-villagers etc. Moreover, the economic factor plays a crucial role particularly net economic gain in terms of wage rate difference is generally higher in the destination in comparison to origin.

Despite economic benefit from migration, it also acts as an informant in knowledge about jobs in urban based through different mode of communication channels such as friends and contacts, previous migrants from the same rural location. This urban-to-rural information flow, for an individual, influenced by several factors such as the number of contacts he has, the level of search effort he chooses, and the urban labor demand conditions. The work of Banerjee and Bucci (1994), based on the labour market in Delhi, proved that, half of the rural migrants moved after pre-arranging a jobs or after receiving assurances of employment from an urban-based contact. However, this proportion was almost the same for both formal and informal sector entrants. It indicating that informal sector jobs also act as pull factors for migration, rather than offering only a stopgap arrangement. To sum the contact factor plays a crucial role in obtaining the desired employment within a short time span.

### **1.1.7: Rationale of the Study Selecting Ganjam district of Odisha**

Odisha is poor State among the States in India both in terms of socio-economic and demographic features. Provisional Census, 2011 reveals around 85 percent of its total population lives in the rural area, and agricultural is the major source of their livelihood. Being agriculture a seasonal business after seedling or harvesting crops, majority of these rural people migrate (both in interstate and intrastate form of migration) in search of an alternative source of livelihood during the lean season. High poverty concentration (47.31 percent against 25.87 percent in India for the year of 1999-2,000), particularly in rural area (48.04 percent) compared to (43 percent) in urban that is common phenomenon as a result people are forced to migrate to other places for searching alternative livelihood sources. Therefore, in rural Odisha, internal migration (Intra and Inter states) plays a most crucial role to influences its socio economic and health status of the people. Moreover, the peculiar characteristics of the state such as low social-economic status with successful intervention of public health programme along with low health outcome as compared to national figure (refer Table 1.7.1). In view of this attempt has made to comprehend the impact of improvement of child health through health interventions (migrants remittances, health knowledge and health information) that increase children's access to curative and preventive healthcare and mothers' access to information about child health care such as; nutrition and feeding practices to children. As we mentioned above, past study suggests that interventions at early stage (0-4 age group) has significant effect on child health and that will be the greatest benefit in adult growth in later stage of life.

Latest Sample Registration System (SRS) data reveals that Odisha's Infant Mortality Rate (IMR) is as high as 61 per thousand live birth. In other words, 61 infant out of 1000 live births are dying before completing their first year birth anniversary against 47 at national (India) average for year of 2010. Although, the infant and child mortality of Odisha has declined over the period; however, still it is the highest among the major states in India. The decreasing trend of IMR shows, it was 112 for year 1992-93 to 81 for the year 1998-99 and come down to 66 in 2005-06 further to 61 in 2010 (corresponding source NFHS-I, II & III survey year). Further looking at the rural and urban scenario, the survey result shows that IMR is the highest in rural area as compared to urban areas over

the three periods i.e., 117, 81 & 69 in comparison 85, 81 & 40 respectively. Similarly, the other child health indicator shows that percent of children under age '3' who are underweight (46 % in rural Odisha) and children age 6-35 months who are anemic (76% in rural Odisha) from NFHS-III survey (NFHS-III, 2005-06). Similar observation has made across the districts of the state of Odisha. On the other hand, the child immunization coverage (full immunization) of the state is better off (54 percent) against national average 45 % and percentage children received at least one dose of Vitamin 'A' in Odisha is 53% against national average 31% . Therefore, the figure and facts are depicted below Table 1.7.1, about low health status of children of Odisha, even though better coverage in public health programmes in government level. It is noteworthy to mentioned that, out of pocket health expenditure has crucial role to underpin the health status of the population pervasive with government programmes. In this connection, the remittances accrued from migrant may append household health expenditure to move upward in out of pocket health expenditure. The increasing household's out of pocket health expenditure would be determined the level of health status of household members.

**Table 1.7.1: Selected socio economic and health indicators of Odisha vis-à-vis India**

Indicators	Years	Odisha	India
Percent of people living in Rural Area	2001*	86	72
Percent of people depends on agriculture	2007-08*	76	53
Percent of people living below poverty line	1999-2,000*	48	26
Infant Mortality Rate	2010 <sup>##</sup>	61	47
Child Mortality Rate	2005-06 <sup>#</sup>	28	18
Under five Mortality Rate	2005-06 <sup>#</sup>	91	74
Percentage of children age 12-23 months who received all basic vaccinations	2005-06@	52	43
Children under three years fully immunized	2002-04@	54	44
Children under three years received at least one dose of vitamins A	2002-04@	53	31

Sources: \*Economic Survey, <sup>#</sup> NFHS-III and @ DLHS-RCH-II <sup>##</sup> Sample Registration System-2010

During 1991-2001 there are increasing migration rate has been observed in India and Odisha particularly internal migration. It has increased from 299 million to 307 million (excluding Jammu & Kashmir) for India and 3.5 million to 4.4 million for Odisha. This increasing trend is a matter of concern. The policy makers should make a concentrated effort to devise suitable policy on improvement of health and economic scenario of Odisha in view of internal migrants' remittances.

Historically, Ganjam district is recorded as the highest concentration of out-migrant district of Odisha where large number of migrants are migrate to the then Java and Sumetra Island for trade and merchant with aspirations of acquiring bullion and gold and Rengunu as labourer (at present all in Burma province). Of course, there are several push and pull factor is operating systematically to compel and attract the migrant labourer from this district except the gold procurements. Poverty, backwardness, small size of land holding, low land-man ratio, low labour absorbs capacity in agricultural sector is the indigenous causes for migration in Ganjam. However, earning better income particularly Bullion (gold) is the main pull factor, which attracts migrant labourers from Ganjam district. Thus, migrant of overseas within the boundary and beyond the boundary is historically experienced with these habitats. It also recorded that the migrant labourer of this district are hard labourer and very able bodied that is suitable to hard work such as; work like dig the soil and make beautiful architecture in the destinations that attracts employer at destinations. Along with hard working Ganjam people are also known everywhere as good enterprising. They are amenable to any forward-looking ideas. This makes employer a valuable asset for hire this district labourer at destination place hence it acts as a pull factor for migration. Besides these, another pull factor is to get immediate work at destination plays an important role for migration.

Besides all, lack of industrialization especially in small-scale and cottage industry, pushes the local labour beyond the boundary to search employment opportunities and free from livelihood insecurities. Even if there are few numbers of the small scale and medium industry, this industry has minimal capacity to absorbing the amount of labour generated

in the district. Besides the industrial sector, the trade and commerce sector is lagging behind expectations. The unbalanced trade i.e., import exceeded export thereby restricting the growth of labour employment has aggravated the problem of migration from the district. Lack of labour absorbs capacity in trade, commerce and industrial sectors coupled with malfunctioning of the number of industries is a major constraint to solve the local unemployment problem. As a result, people of this district are unable to find employment adequately neither in primary (agriculture) sector nor in secondary (industry, trade and commerce) sector resulting increasing shape of migration over the period.

Further, the district has been experiencing continual failure of monsoon led to famine, drought, unemployment, disguised unemployment, and over-crowding in the agriculture sector is the main causes for out migration. Being a costal district, the district also experienced a number of natural calamities in every year either in form of drought or in flood or cyclone. This continues and prolonged natural disaster push the people to migrate and to search for alternative livelihood sources. Besides these Ganjam is one of the most populous and under developed district among the districts of Odisha, which is compel them to migrate to any other part of India. Study also observed that well transport and communication facilities, hereditary influence and family contacts are some of the factors influencing to people to migrate in inland districts (Mishra, 1998; Nayak, 1993).

Ganjam is one of the largest and most populous districts of Odisha around 3.5 million of population according to Census of India 2011. Out of total population, approximately 0.7 million people migrate from this district in last residence method. Out of 31.61 lakh of population as per 2001 census, 5.04 lakh are Agricultural labourers, 4.84 lakh are marginal labourers. Migration in search of work is very high; unemployment rate among the educated youth is also very high. More on it, the problem of un-employment among educated persons in the district is also precarious. As per employment register, the figure of educated job seekers approximately 46,415 in Ganjam district. There are certain tribal blocks in the district namely; Surada, Dharakote, Bhanjanagar, Khallikote, Polosara, Patrapur, Beguniapada, Jaganathprasad, Buguda, Sanakhemundi, Digapahandi and

Seragada which are inaccessible. Moreover, poverty is the result of economic, social and political phenomenon that interact with each other in way that exacerbate the deprivation in which poor people live. Further, meager assets, inaccessible markets and scarce job opportunities lock people in abject poverty loop (Ganjam District Plan, 2007-08). To free from all insecurities (social, economic and health) migration is hope of lighting of the people of the district.

Besides the high migration rate, the district also having experiences of high incidence of infant, child and maternal mortality rate with poor sanitation and health status. The latest District Level Household and Reproductive and Child Health Survey (DLHS-RCH) –III reveals that around 55.4% of the deliveries are taking place at institution. Untrained personnel do 3% of deliveries. Total immunization coverage in the district is as low as 57%. The infant mortality rate of district is 86 and rural area it is 89 (Census, 2001), and Annual Parasite Index (API) is 6.5%. The biggest health problem of the district is Acquired Immune Deficiency Syndrome (AIDS). As on September, 2010, 7,346 officially reported cases of AIDS in the district, which is 46% of the State's share. Ganjam district has a District Hospital with specialized services, two area hospitals, two sub-divisional hospitals, five Community Health Center (CHC)-I, five CHCs and 103 Primary Health Centers. Apart from these medical college hospital which act as referral facility for the whole district patients. In spite of this, the overall health situation of the district is not very different from the state scenario. AIDS and malaria are the two main health problems of Ganjam district. Besides these seasonal occurrences of cholera, dysentery and diarrhoea are regular feature. The situation is aggravated by prevalent traditions and superstitions mainly in rural areas where people rely on quacks. Moreover, the poor sanitation leads to many health hazards of the district (Ganjam District plan, 2007-08).

The relationship between migration and its impact on healthcare has dual possibility, where this two-way relationship shows that migration leads to increase in income and on improved to accessibility to health care facilities; eventually increase health status. Empirically it shows that higher income, improves better health, better health enable a person to be longer days' in workforce and it increases productivity which probably due

to increases an individual's migration, and in turn increases the individual's (and possibly his family's) health care. Study also proved that, improved health information due to migration may be lead to improved health status of left behind family members in general and child health in particular. Further, changed socio and economic conditions due to mobility have an important bearing on access to health services. Socio-economic status of certain group of population or area has been the main reasons for unequal health indicators across the states of the country. In this regard, migration can generate substantial welfare gains for migrants and their families further the country as whole. In this connection, it is expected the flow of remittances of migrants may append substantial resources to migrants' household. That pulls them to move upward in out of pocket health expenditure, which will determine the child health status in particular and overall health status in general of the migrants' households.

Unlike the country and state, the level of internal migration also increases in the district (figures not mentioned in table). Therefore, it is a matter of great concern while designing the policies, the policy makers should not overlooked with overwhelmingly. They are looking internal migrant remittances as apparatus to make differences of health and economic scenario of the poor district like Ganjam of Odisha.

## **Part 2: Methods and Materials**

After careful review in several past studies pertaining to migration and its impact, an impact has been made here to adopt a resonance mechanism in rural Odisha with a view to replicate the procedure in an universal manner. We prepare the research design as detailed below.

### **1.2.1: Research design**

A systematic review of past literature relating to study comprehended there is a need of a mixed research design approach to be followed. In view of this, the proposed study would comprise both primary and secondary data, in a qualitative and quantitative in components. The qualitative component of the study was taken care into account the Case studies and Focus Group Discussion (FGD) interview to understand the impact of migration on child health through migrant's remittances. The quantitative aspects was consisted on semi-

structured questionnaire, which would include both open-ended and close-ended questions regarding the impact of economic migration on health status of children and their left behind family members, pattern of health care expenditure and awareness and availability of health knowledge and health information and flow and determinant of migrants' remittances through personal interview method. The various tools adopted for the study in consonance with the qualitative and quantitative component. The detailed research design is summarised in Table 1.2.1.

**Table 1.2.1: Overview of the research design**

Qualitative Approach	Quantitative Approach
<p>A. Focus Group Discussion with both migrant, non-migrant household include village teacher, post master, bank authority, village head/pradhan and panchayat members</p> <p>B. Case studies: village heads, knowledgeable persons, teachers, medical persons, Post office employees and bank employees.</p> <p>C. Observational review</p>	<p>A. Household survey through personal interview for quantifying direct and indirect impact of migration on study area.</p> <p>B. Analysis of data from secondary sources to find out the level, pattern and trend of the internal migration in India and Odisha</p>

Within the mix-design landscape, the followings were developed to address all the indicators of impact of migration:

Semi structured schedule for household interview

Checklist for Focus Group Discussion (FGD) with communities

Checklist for case studies

The various research instruments were developed carefully to review numerous past research studies and consultation with the expert. These instruments were pre-tested in the sample study area before finalizing.

## **1.2.2: Sampling methodology**

### **1.2.2.1: Sample Size Calculation**

The key objective of the study is to find out the impact of rural-urban out migration on health status of left behind family members in general and child health in particular. In



order to provide estimates of these indicators, the study identified a statistically robust sample size w.r.t. to specific proportion level indicators (*proportion of rural-urban out migration out of total rural population of the district*). The sample size decision for estimating impact of migration on health i.e., outcome level indicators value was dependent on level of statistical significance required and permissible margin of error.

The key outcome level indicators of the impact study assumed a) majority of the migrant households improve their purchasing power at par with increasing their economic status through migrants' remittance. b). The purchasing power of the household will measure in terms of consumption expenditure such as on food, nutrition and health and health care protection that will improve the health status of the members. Based on the above considerations the required sample size (n) for a variable of interest as a proportion can be given by;

$$n = (Z^2 * \{(p)*(q) / E^2\}) * D$$

Where,

**p**- Proportion of outmigration of Ganjam district as per data given in 2001 census

**q**- 1-p

**Z**- z-score corresponding to a confidence level (i.e., at 95% confidence level standard value 1.96)

**E<sup>2</sup>**- Margin of error at 5% (standard value of 0.05)

**D**- Design effect for the study

Based on the above formula adequate sample size computed for a stratum using above-mentioned indicator comes out with 282 households as a robust sample size. However, the study covered 300 households, keeping in the mind around 10% of household's non-response, refusal and absent during the survey to round-up the sample size. For comparison and to assess impact of migration on health status of left behind the study selected equal number of non-migrant households (i.e., 300 HHs as non-migrant) from the sample villages using same selection criteria.

To validate this process while arriving at the proposed sample size, the sample size was also assessed by taking in account of power i.e., efficiency to detect and measure change, besides the level of statistical significance. The sample size for each target group was also estimated using the following formula:

$$n = D \frac{\left[ \sqrt{2P(1-P)}Z_{1-\alpha} + \sqrt{P_1(1-P_1) + P_2(1-P_2)}Z_{1-\beta} \right]^2}{\Delta^2}$$

Where:

D = design effect;

$P_1$  = the estimated proportion of out-migration from census 2001;

$P_2$  = Projected proportion at time of survey, that quantity ( $P_2 - P_1$ ) is the size of the magnitude of change it is desired to be able to detect;

$P = (P_1 + P_2) / 2$ ;

$Z_{1-\alpha}$  = the Z-score corresponding to the probability with which it is desired to be able to conclude that an observed change of size ( $P_2 - P_1$ ) would not have occurred by chance; and  $Z_{1-\beta}$  = the Z-score corresponding to the degree of confidence with which it is desired to be certain of detecting a change of size ( $P_2 - P_1$ ) if one actually occurred, [ $\alpha = 0.05$  ( $Z_{1-\alpha} = 1.65$ )  $\beta = 0.20$  ( $Z_{1-\beta} = 0.84$ )]. The sample size thus computed to detect a minimum change of 5 percentage points, for change in impact of migration, the sample size comes out to be around 278-288.

Though the sample size arrived at was similar sample using both the processes, the first process was considered as the 'P' value used while second process is primarily an assumption in absence of quantifiable estimate.

### **1.2.2.2: Sample Distribution**

#### **Stage I: Selection of District**

The sample design of the study was based on a multi-stage stratified random sampling. For primary data collection, the study proposed Ganjam district of Odisha. The selection of the district is based on the prior information of higher rate of the infant and child mortality in rural areas among the coastal districts of Odisha and high rate of out migration as per the information provided in Census 2001 and past studies (Mishra, 1998;

Tripathy and Dash,1997; Nayak, 1993; Report of the Labour Commissioner, 1989). The selection of the district is also made purposively besides above fact-findings.

**Stage II: Selection of Blocks**

To ensure a representative sample at second stage two blocks were selected randomly using an index value that is comprises three indicators<sup>1</sup>. The composite index value of blocks is divided into two equal strata after making a single index. Randomly one block from each stratum was selected .

To ensure a representative sample and to avoid the error in sample selection process, blocks was selected adopting following method. The method, which is commonly used for calculating the index value popularly known as ‘Composite Index’, adding weighted average value of three different components i.e., percent of female literacy, percent of out- migration and percent of workers. The constructed composite index would reflect the position of the concerned category of the block that reduces the sample biasness. The methodology adopted for the construction of ‘Composite Index of blocks’ is quite analogous to the Human Development Index of United Nations Development Programme (UNDP) with a minor modification. Under this procedure, the composite index computed as a weighted average of three parameters as mentioned above from a district profile data set, where the weights vary inversely related to the variation of the components<sup>2</sup>. The detail methodology runs as follow:

Let  $X_{ij}$  represent the value of the  $i^{th}$  variable parameter in  $j^{th}$  Block, ( $i = 1, 2, 3, \dots, 10$ ;  $j = 1, 2, \dots, 5$ ). Let us write

$$Y_{ij} = \frac{X_{ij} - Min_j X_{ij}}{Max_j X_{ij} - Min_j X_{ij}} \dots\dots\dots (1)$$

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1A) Block wise percent of migrant workers from past study b) Block wise percent of workers from census of India, 2001 C) Block wise percent of female literacy from Census of India, 2001. Often these indicators are used by developmental economist to measure the development of economy

2 The principal component analysis assumes that the various indicators are linearly related. When non-linearity is present, this method is more appropriate.

Where,  $\text{Min}_j X_{ij}$  and  $\text{Max}_j X_{ij}$  are the minimum and maximum of  $X_{ij}$  respectively. However, if  $X_{ij}$  is negatively associated with the indicators, equation (1) can be written as:

$$Y_{ij} = \frac{\text{Max}_j X_{ij} - X_{ij}}{\text{Max}_j X_{ij} - \text{Min}_j X_{ij}} \dots\dots\dots (2)$$

Obviously, the scaled dimension index values,  $Y_{ij}$ , vary from zero to one.

In all parameters, no normal or goal post value has been defined. The observed maximum value of the parameters has been taken as the goal post value and observed minimum value is taken as the minimum.

From the matrix of scaled dimension values,  $Y = \{(Y_{ij})\}$ , we may construct the ‘Composite Index of different block of districts as:

$$Y_j = W_1 Y_{1j} + W_2 Y_{2j} + W_3 Y_{3j} + \dots\dots\dots + W_m Y_{mj} \dots\dots\dots (3)$$

Where, the weights  $W_i$  vary inversely as the variation in the respective indicator subject to the condition:  $0 < W_i < 1$  and  $W_1 + W_2 + W_3 + \dots\dots\dots + W_m = 1$

Such that,

$$W_i = \frac{K}{\sqrt{\text{Variance} Y_i}} \dots\dots\dots (4)$$

Where,  $K = \left[ \sum_{i=1}^m \frac{1}{\sqrt{\text{Variance} Y_i}} \right]^{-1} \dots\dots\dots (5)$

The index value of blocks,  $Y_j$ , also varies from zero to one. The choice of weights in this manner ensures that large variation in any one of the indicators will not unduly dominate the contribution of the rest and distort the inter-group comparisons across the blocks within the district. In this process the study selected *Hinjilicut* and *Khallikote* block as study blocks.

**Stage III: Selection of Villages**

In next stage, two villages from each block were selected randomly to obtain the estimated sample size. In view of time, cost and resources four villages from two blocks

were taken into consideration for primary data collection. From Primary Census Abstract (PCA)- 2001 we obtained block wise list of villages of Ganjam district. Moreover, we included only those villages where total household equal to or more than two hundred<sup>3</sup>. Selection of villages within block was made using following procedure. Then all villages within block were separated according to their distance of village from health facility (i.e., more than ten kilometers and less than ten kilometers). Followed by random selection of one village from each group i.e., one from far away and other one from close to facility. In this process finally, '*Sikiri*' and '*Sapuapalli*' villages from the *Hinjilicut* block and '*Kendupata*' and '*Tulasipur*' from the *Khallikote* block were taken into consideration as study villages.

#### **Stage IV: Selection of households**

Final stage the study selected sample households and ultimate respondents. From the selected villages the study enlisted all the households to indentify migrant and non-migrant households. To fulfill the objectives of the study the study identified migrant households using a correction factor<sup>4</sup>. Using correction factor the study identified sample households. The estimated desired sample distributed among identified households proportionately in four villages using Probability Proportion to Size (PPS) sampling technique. For comparative assessment, equal number of non-migrant households were undertaken to avoid influences of other factors on sample size and distortion of findings of the study.

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3 It was assumed that more number of household in the village may would have been more out migrant households hence it would be easy and possible to obtain the desired estimated sample size in a limited time and resources.

4 The correction factor is defined as those household have at least one child age ten or less than ten years of old and at least one of adult member (Preferably the father of the child) would have out migrate to any other urban place in India for work as migration purpose i.e., economic migration for at least three or more than three years preceding the survey (major time of the year devoted for work purpose to earn money at destination). Further, if household have more than two eligible members migrated, only one member in the household were selected for study to avoid sample biasness.

In total, 600 (300 households of migrant and 300 of non-migrant households) households were selected from four villages of two blocks in Ganjam district for primary survey. In qualitative aspects, study conducted two FGD and four Case study interviews from each sample village. Thus, in total, eight FGDs and sixteen case studies were conducted to comprehend the impact of out-migration on child health. Essentially, the questions in the qualitative study includes migrants' health knowledge, information and pattern of health care expenditure, the changing socio- economic position of the migrant households over a period, in which enables us to enrich the quantitative research findings. The primary information were collected during month of October to November, 2009. An overview of quantitative and qualitative sample size is presented in Table 1.2.2.1 and 1.2.2.2.

**Table 1.2.2.1: An Overview of the Quantitative sample size**

Particular	Migrant	Non-migrant
Number and Name of the district	1 ( <b>Ganjam</b> )	
Number of block	2( <b>Hinjilicut</b> and <b>Khallikote</b> )	
Number of Village	4( <b>Sikiri</b> and <b>Sapuapalli</b> from <b>Hijilicut</b> block and <b>Kendupata</b> and <b>Tulasipur</b> from the <b>Khallikote</b> Bolck)	
Number of sample HHs in a Village	300	300
Criteria for selection of HH within a village	Correction factors	Correction factors
Total Sample Size	300	300

**Table 1.2.2.2: An Overview of the Qualitative sample size**

	Activity	Numbers/ Target population
<b>1</b>	Focus Group Discussion (FGD)	Eight FGD with sample villagers two from each village. Each FGD minimum 6-10 persons in mixed of migrant and non-migrant members included service provider also.
<b>2</b>	Case study	Four from each village, thus total sixteen Case studies. with village heads, schoolteachers, medical personnel, bank and post office employees and knowledgeable persons within the village

### **1.2.2.3: Secondary data Sources**

The secondary data were collate, compiled and analyzed to observe the level, pattern and trend of the internal migration in Odisha and India. In view of paucity of secondary data at district level, the study restricted the analysis up to the state level. To observe the level, pattern and trend of migration, the study analyzed Census of India from 1971 to 2001 and various round of the National Sample Survey such as 38<sup>th</sup>, 43<sup>rd</sup> 50<sup>th</sup> and 55<sup>th</sup>. Besides these large-scale data sources, the study also used the published reports.

### **1.2.2.4: Statistical methods**

The proposed study carried out by using uni-variate, bi-variate and multivariate statistical analysis to ascertain the number of categorized independent factors for a set (s) of dependent factors (s). In uni-variate analysis, the study shows the simple frequency in percentage term. The study used the cross tabulation or correspondence analysis for bi-variate analysis. To understand the mean differences of health knowledge and health information of migrant and non-migrant households the study used non-parametric Mann-Whitney ‘U’ tests of Analysis of Variance (**ANOVA**)<sup>5</sup>.

In multivariate analysis, we used liner regression, logistic regression and probit regression analysis to ascertain the influences of independent variables over dependent variable. The study also uses factor analysis-principal component analysis to find out the interdependence relationship among the variables and making wealth index/wealth quintile for sample study. The detail methods and techniques are discussed in subsequent paragraphs.

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5 In statistics there are a number of tests available for comparing two independent samples. Nevertheless, the different tests have different data requirements and nature of analysis and requirement of researcher. The Mann-Whitney ‘U’ test requires ordinal data (ordered categories) or scale data in two groups. More on the Mann-Whitney ‘U’ test is a non-parametric test, analogue to the independent samples ‘t-test’ can be used when you do not assume that the dependent variable is a normally distributed and the nature of variable will be interval variable (you only assume that the variable is at least ordinal).

#### 1.2.2.4.1: Wealth Index

We computed wealth index one of the key indices to understand the economic status of households, which is used throughout the analysis of the study. The wealth index has been developed and tested in a large number of countries in relation to inequalities in household income, use of health services, and health outcomes (Rutstein et al., 2000). It is an indicator of the level of wealth, which is consistent with expenditure and income measures (Rutstein, 1999). The economic index is constructed using household asset data and housing characteristics (List given in last of this section). Each household asset is assigned a weight (factor score) using principal component analysis, and the resulting asset scores are standardized in relation to a normal distribution with a mean of zero and standard deviation of one (Gwatkin et al., 2000). Then, each household is assigned a score for each asset, and the scores were summed for each household; individuals are ranked according to the score of the household in which they reside. The sample is then divided into quintiles i.e., five groups with an equal number of individuals in each. In our study, one wealth index has been developed for the whole sample. Thus, overall at sample study level, twenty percent of the household population is in each wealth quintile.

To calculate wealth index of factor score we used Principal Component Analysis (PCA). Principal Components Analysis (PCA) for the computation of Wealth Index (WI) in study population. “Principal Components Analysis is a data reduction technique where the primary goal is to construct linear combinations of the original variables that account for as much of the (original) total variation as possible. The successive linear combinations are extracted in such a way that they are uncorrelated with each other and account for successively smaller amounts of the total variation” (Dillon & Goldstein, 1984).

We define the wealth Index as a weighted average of principal components of indicators with respect to household assets where the weights are the variance of successive principal components. Thus if  $X_1 \dots\dots\dots X_k$  are  $k$  indicators of household asset and characteristics.

$$P_1 = \alpha_{11} X_1 + \dots\dots\dots + \alpha_{1k} X_k$$



$$P_k = \alpha_{k1} X_1 + \dots + \alpha_{kk} X_k$$

are successive principal components, the WI is defined as:

$$WI = \frac{\lambda_1 P_1 + \dots + \lambda_k P_k}{\lambda_1 + \dots + \lambda_k} \dots \dots \dots (1)$$

Where,  $\lambda_1 = \text{Var } P_1, \dots, \lambda_k = \text{Var } P_k$

Present case  $k = 31$  and  $\lambda_1 > \lambda_2 > \lambda_3 > \dots > \lambda_{31}$  are successive eigenvalues of the 31 x 31 correlation matrix of observations on household assets. We have arranged them in descending order with respect to sample population, which they reside. We shall compute as many principal components as the number of indicators of household assets. The total variation in indicators accounted for by all principal components. Since the first principal components accounts for the largest proportion of variance, we assign the highest weight to it i.e.,  $\lambda_1 / \sum \lambda_i$ . Likewise, the second principal component has been accounted for the second largest proportion of variance, hence, second largest weight  $\lambda_2 / \sum \lambda_i$ ; and so on. To obtained, Wealth Index (WI) under Principal Component Analysis (PCA) we followed following steps:

Let X denotes an (n\*k) matrix, where n refers to the number of observations (sample population) and k refers to the number of variables (Household assets and characteristics).

Step1: Transform the variables in to their standardized form with the help of the formulae  $(X_{ks} - \bar{X}_k) / SD_k$ , where  $X_{ks}$  is the value of kth indicator in sth state ( $k = 1, 2, \dots, 12; s = 1, 2, \dots, 21$ ),  $\bar{X}_k$  &  $SD_k$  are Arithmetic Mean (A.M.) and Standard Deviation (S.D.) of the k<sup>th</sup> indicator respectively. This makes the analysis free from scales and units of measurement.

Step 2: Prepare a (k\*k) correlation matrix (R) by using the (n\*p) matrix of standardized variables.

Step 3: Compute the eigenvalues ( $\lambda_i$ ) from the correlation matrix by solving the determinant equation  $|R - \lambda I| = 0$ .

Step 4: corresponding to each eigenvalue ( $\lambda_i$ ) we solve the matrix equation  $(R - \lambda_i I) \alpha_i = 0$  to obtain  $31 \times 1$  eigenvector, subject to the constraint  $\alpha' \alpha = 1$ .

Step 5: Principal components of different variables are obtained as normalized linear functions of standardized variables, where the coefficients are elements of successive eigenvectors.

In the present case while running PCA we have identified eight principal components by the rule of the thumb, whose eigenvalues are greater than one. These four components accounts for 63% of variation of data.

Step 6: As mentioned procedure we shall compute other components by using successive eigenvectors for different states.

Step 7: Finally, the formula mentioned in equation (1) is used to determine the index value of the household where the population concerned.

The wealth index of the sample population is based on these 31 assets and housing characteristics. These are; household electrification; sources of drinking water; type of flooring; materials used in exterior walls; type of roofing; cooking fuel; ownership of a bank or post-office account; and ownership of a mattress, a pressure cooker, a chair, a cot/bed, a table, an electric fan, a radio/transistor, a black and white television, a colour television, a sewing machine, a mobile telephone, any other telephone, a computer, a refrigerator, a watch or clock, a bicycle, a motorcycle or scooter, an animal-drawn cart, a car, a water pump, a thresher, and a tractor.

#### **1.2.2.4.2: Standard of Living Index (SLI)**

For measuring economic position of the household study computed Standard of Living Index (SLI). It reflects a summary of household's indirect economic stature, which is calculated giving weighted score to household possessed durable assets.

### **List of Durable goods**

Mattress, Pressure cooker, Chair Cot/bed, Table, Clock/watch, Electric fan, Bicycle, Radio/transistor, Sewing machine, Telephone, Mobile phone, Refrigerator, Television (black and white), Television (colour), Moped/scooter/motorcycle, Car, Water pump, Bullock cart, Thresher, Tractor, House type, Toilet facility, Source of lighting, Main fuel for cooking, Source of drinking water, Ownership of agricultural land, Ownership of livestock.

### **Score value of goods**

House type: **4** for pucca, **2** for semi-pucca, **0** for kachha;

Toilet facility: **4** for own flush toilet, **2** for public or shared flush toilet or own pit toilet, **1** for shared or public pit toilet, **0** for no facility;

Source of lighting: **2** for electricity, **1** for kerosene, gas, or oil, **0** for other source of lighting;

Main fuel for cooking: **2** for electricity, liquid petroleum gas, or biogas, **1** for coal, charcoal, or kerosene, **0** for other fuel;

Source of drinking water: **2** for pipe, hand pump, or well in residence/yard/plot, **1** for public

Ownership of agricultural land: **4** for 5 acres or more, **3** for 2.0–4.9 acres, **2** for less than 2 acres or acreage not known, **0** for no agricultural land;

Ownership of livestock: **2** if owns livestock, **0** if does not own livestock;

Ownership of durable goods: **4** each for a car or tractor, **3** each for a moped/scooter/motorcycle, telephone, refrigerator, or colour television, **2** each for a bicycle, electric fan, radio/transistor, sewing machine, black and white television, water pump, bullock cart, or thresher, **1** each for a mattress, pressure cooker, chair, cot/bed, table, or clock/watch. Index scores range from **0–14** for a Low SLI to **15–24** for a Medium SLI and **25–67** for a High SLI.

### **1.2.2.5: Data Analysis**

A data entry application was developed using C S Pro 3.3 to make electronic data for analysis. The collected quantitative data were analyzed using statistical packages like SPSS 15.0. and STATA 10. For qualitative analysis ATLAS-ti was used for content and

transcript analysis and ANTHROPAC was used to measure the nutritional status of study children.

### **Section III. Social, economic, demographic and health profile of Ganjam district**

#### **1.2.3: About Ganjam District**

The district Ganjam got its name from the word "Ganj-i-am" which means the "Granary of the World". The district is named after the old Township and European fort of Ganjam situated on the northern bank of river Rushikulya which was the head quarter of the district. Ganjam district is situated in the coastal region of the state, broadly divided into two natural divisions i.e., coastal plains in East and hills, and hilly lands in West.

In Ganjam hills are very close to sea. As such the rivers flowing from the hills are not very long and are subject to sudden flood. The coastal plain in east of district contains more fertile and irrigated land. However, towards centre and south, the district is hilly with beautiful well water valley and south-eastern portion in fertile agricultural land. The extreme north-east of the district is occupied by a portion of the famous Chilika lake. The tableland of the west is a continuation of the great rocky range of the eastern Ghats. Add to this, the district is endowed with rich natural resources, forests, flora and fauna, and water resources. The main attractions of the district are sun surf sand of Gopalpur sea beach, colourful Chilika lake, hot sulphur spring water at Taptapani and hilly terrain of Taratarini. The rock edicts of king Ashok, inscribed on a hill then known as Kapingala Parbat is found at Jaugada of Ganjam district (Ganjam District plan, 2007-08).

In ancient time, the Ganjam area was a part of ancient Kalinga emperor, which was occupied by Magadha emperor Ashoka in 261 B.C. In, 1757 French Commander Bussy, who marched into Ganjam and realized areas of tribute from feudal chiefs, it as English who ultimately defeated the French in the Deccan and annexed Ganjam in 1759. The office of the Collector Ganjam was established in 1794. Originally, the district was in Madras Presidency in the British period, with three Government –Taluks, sixteen large proprietary estates and thirty five minor Zamindar. In Madras presidency, the area of the district was 8,311 Square miles of which 5205 square miles comprised of agency tracts.

The Headquarter of the district at Ganjam was abandoned in 1855 owing to out-break of a dreadful epidemic fever by which 80% population of Ganjam town was reduced .The Headquarter temporarily shifted to Gopalpur then to Berhampur and finally to Chatrapur in and around 1902. The district got separated from Madrass Presidency and formed a part of the newly created State of Odisha province with effect from 1.4.1936. The district Ganjam the third largest district of Odisha lies between 180-46 North to 200 north latitude and between 830-48' east to 850-11 east longitude with a total geographical area of 12,556 square kilometres the district is surrounded by Andhra Pradesh in south, Phulabani and Gajapati districts in the west and Bay of Bengal in the east. Having, Ganjam is one of the most resource rich and developed districts of Odisha. In spite of its richness in various areas, the district remains one of the backward district in Odisha economy.

**Table 1.2.3.1: General profile of the Ganjam district**

Particulars	Unit	Particulars	Units
Geographical Area	9,499.7 Sq.K.Ms.	No. Of municipalities	01
No. of Sub-divisions	26.69	No of NACs	17
No. of Tahasils	14	No. of Police Stations	28
No of C. D. Blocks	22	No. of G.Ps	475
No. of R.I. Circles	198	No. of revenue villages	3,229

Source: Directorate of Statistics & Economic Survey of Odisha, District at glance (2007) Bhubaneswar

### **1.2.3.1: Social, economic and demographic profile of the district**

Ganjam district accounts for 8.05 of the states territory and accommodated 9.93 % of the state's population. Majority of them are dependent on agriculture and it is the only major source of livelihood for the district. Table 1.2.3.2.1 gives detail demography profile of Ganjam district.

**Table 1.2.3.2.1: Population growth, sex ratio and urbanization of the district**

Year	popula tion in lakh	Decadal growth rate of populations %	Density of population per square KM	Percent share of the Ganjam Population to total Population	Male	female	Female/ Male per thousan d males	Percent of Urban
1971	22.93	22.50	183	10.45	11.23	11.71	1042	11.33
1981	26.69	16.40	213	10.12	13.14	13.55	1031	14.25
1991	31.43	17.72	251	9.93	15.62	15.81	1012	14.97
2001	31.61	16.88	385	8.59	15.82	15.79	998	17.6

Source: Directorate of Statistics & Economic Survey of Odisha, District at glance (2007) Bhubaneswar

The decadal population growth of Ganjam district was found 22.50 % in 1971 to 16.40% in 2001. The density per-square kilometer was 183 in 1971 to 385 in 2001 indicating thereby over concentration of population in the same square kilometer space of area. It is further noticed that density of Ganjam is higher (385) than Odisha (236) in 2001. So far as percentage share of the district population to the state total it was 8.59 in 2001 to 9.93 in 1991 as against 10.12 in 1981 and 10.45 in 1971. About sex ratio, the district has more female population than male up to 1991 census after that the female population decreases. The sex ratio is more biased towards females per 1000 males whereas stood at 1042 in 1971, 1012 in 1991, and 998 in 2001. Ganjam is more rural than urbanite populace district among the district of the state. Other hand majority of population in the district mainly live in the rural areas. It is found that in 1971 nearly 89 % of the total population of the district resides in rural areas as compared to 86 % in the 1981 and further it decline to 85% in the 1991 and finally 82.4 % in 2001 this declining trend of rural residents indicates the increasing urbanization in Ganjam district.

**Table 1.2.3.2.2: Literacy and Schedule caste and Tribe population**

Year	District shares among the districts in Odisha		Percent of SC to total	Percent of ST to total	Male	Female	Total
	Schedule caste (SC)	Schedule Tribe (ST)					
1971	3.65	2.28	15.92	9.98	4.25	1.36	24.4

1981	4.01	2.53	15.02	9.47	72.0	28.00	31.30
1991	4.24	2.97	16.67	9.44	63.88	29.87	36.62
2001	9.65	1.11	18.56	2.87	75.22	46.44	60.77

Source: Directorate of Statistics & Economic Survey of Odisha, District at glance (2007) Bhubaneswar

The literacy rate of the district has substantially improved over the decades. Table (1.2.3.2.2) indicates that, percentage share of literate population to total was 24.40 in 1971 to 31.30 percentage in 1981 and further it has increased 36.62 in 1991 to 60.77 in 2001. Ganjam district has more concentration of scheduled caste than scheduled tribe population. It is observed that in 1971 both scheduled castes and scheduled tribes accounted for 5.93 lakh i.e., 25.9 % of the total population in the district against 10.76 lakh i.e., 21.33 % of total population. The SC and ST population together accounted for 6.54 lakh i.e. 24.5% of the total in the year of 1981.

**Table 1.2.3.2.3: Occupational distribution Land utilization pattern and land-man ratio**

Occupational distribution			Land Utilization pattern		Land- man Ratio	
Category of workers	Number of workers (000)	% to Total	Percent of land utilization	Area in '000' hectares	Years	Land Man ratio in Ganjam
Total workers	14276	37.8	Net area shown	394	1980-81	0.15
Main workers	9589	25.4	Fallow land	12	85-86	0.15
Marginal workers	4687	12.4	Barren and uncultivated land	47	90-91	0.15
Cultivators	4247	11.2	Cultivated wetland	11	2,000-2001	0.14
Agriculture labourers	4999	13.2	Miscellaneous tree and grove	22		

Total	37798	100	Permanent pasture	20	
			Gross cropped area	598	
			Intensity of cropping	151	

Source: Directorate of Statistics & Economic Survey of Odisha, District at glance (2007) Bhubaneswar

Around, 13.2 % are agriculture worker as their occupation, 11.2 % are cultivators and 12.4 % are marginal workers according to the census 2001. It is observed that agriculture sector is less absorbing capacity in Ganjam district ( only 24% of labour both agricultural labourers and cultivators were engaged in this sector). More than one eighth of the total workers are marginal workers. The land utilization pattern of Ganjam district has observed that a total net sown area is 394 thousand hectares. Of total hectare 12 thousand hectares are fallow land, 47 thousand hectares are barren and uncultivated land, 11 thousand hectares are cultivated wet land, 22 thousand hectares permanent pasture, 598 thousand hectares are gross cropped area, 151 thousand hectares are used for intensity of cropping and 11 thousand hectares are miscellaneous tree and grove. The man- land ratio has showed a steady decline over the years in Ganjam district and it is summarized in Table 1.2.3.2.3. The low land man ratio result of excessive sub-division and fragmentation of land holding due to excessive pressure of population on land. Thus two thing have worked simultaneously in agriculture in the first place there is large concentration of small and marginal farmers in the district but they are operated by them is small. The declining land man ratio compelled the farmers like small and marginal category to migrate from the district, with a view to get employment opportunities.

**Table 1.2.3.2.4: Social and economic indicators of the district**

Characterstics	DLHS-III(2007-09)		DLHS-III(2002-04)	
	Total	Rural	Total	Rural
Total literate Population (Age 7 +)	66.4	63.3	Na	na



Literate Male Population (Age 7+)	78.5	76.1	Na	na
Literate female Population (Age 7+)	55.5	52.2	Na	na
Percent girls (age 6-11) attending Schools	97	97.7	Na	na
Percent boys (age 6-11) attending Schools	96.2	97.2	Na	na
Have Electricity connection	52.9	45.7	54.6	41.8
Have Access to toilet facility	23.3	17.0	27.8	10.6
Use piped drinking water	31.4	22.8	36.9	20.3
Use LPG for cooking	12.0	7.3	16.8	4.2
Live in a pucca house	44.5	41.5	39.7	30.7
Own a house	97.6	98.1	na	na
Have a BPL card	45.3	45.4	na	na
Own Agriculture Land	40.7	46.0	na	na
Have a television	31.4	26.3	29.1	13.5
Have a mobile phone	20.8	16.9	na	na
Have a Motorized Vehicle	9.7	7.4	11.3	4.5

Source: District Level Household Survey-Reproductive and Child Health Survey (DLHS-RCH)-III, fact sheet, (2007-09)

Table 1.2.3.2.4 reveals the trend of social and economic indicators of Ganjam district. The trend data facilitates to draw a comparative picture of the district over a period. It is observed that, over a period the possession of household assets in Ganjam district has increased with increases in household's standard of living. However, the increasing pace is much more in rural areas. For instances; 31.4 % of household have television in the DLHS-RCH-III, in comparison to 29.1% in DLHS-RCH-II. However, in the rural area it has been increased 26.3% from 13.5 % during same period. This portrays an improvement scenario of Ganjam over a period.

### 1.2.3.2: Health status of Ganjam district

An attempt has been made to present the health scenario of the district in this section. The health scenario of Ganjam district is below satisfactory focus on women and children health and more particularly in rural areas. The scenario also has not change significantly over a period despite concerted effort has been made both private and public level.

**Table 1.2.3.3.1: Some selected women health indicators of Ganjam district**

Particulars in percentage	DLHS - 3 (07-08)		DLHS - 2 (02-04)	
	Total	Rural	Total	Rural
Mothers registered in the first trimester when they were pregnant with last live birth/still birth	68.9	66.3	na	na
Mothers who had at least 3 Ante-Natal Care visits during the last pregnancy	66.0	62.2	51.5	49.2
Mothers who got at least one TT injection when they were pregnant with their last live birth / still birth	97.7	97.6	75.1	75.3
Institutional births	55.4	51.0	32.7	25.3
Delivery at home & other places assisted by a doctor/nurse /LHV/ANM	8.6	6.5	20.1	16.8
Mothers who received post natal care within 48 hours of delivery of their last child	97.3	96.8	na	na

Source: District Level Household Survey-Reproductive and Child Health Survey (DLHS-RCH)-III,

It has been observed that, there is considerable improvement on maternal health indicators of Ganjam district particularly in the rural areas. One in every fourth (25.3%) women in the district delivered their baby at institutional in the year of 2002-2004 and has gone up more than double i.e., one in every two (51.0%) in 2007-08. Similarly, three Antenatal care visits during the last pregnancy increases 49.2 % to 62.2% in the same period. The total figure also increases 32.7 % to 55.4 % in institutional delivery and 51.5 % to 66% in three ANC visits during the last pregnancy. Selected women health indicators are presented in Table 1.2.3.3.1.

**Table 1.2.3.3.2: Some selected child health indicators of Ganjam district**

Particulars in percentage	DLHS - 3 (07-08)		DLHS - 2 (02-04)	
	Total	Rural	Total	Rural
Children (12-23 months) fully immunized (BCG, 3 doses each of DPT, and Polio and Measles)	44.1	42.4	47.7	46.7
Children (12-23 months) who have received BCG	83.2	82.4	84.1	88.5
Children (12-23 months) who have received 3 doses of Polio Vaccine	60.3	59.4	66.1	65.9
Children (12-23 months) who have received 3 doses of DPT Vaccine	60.6	61.5	68.1	68.4
Children (12-23 months) who have received Measles Vaccine	65.9	67.8	60.9	61.4
Children (9-35 months) who have received at least one dose of Vitamin A	55.2	55.0	na	na
Children (above 21 months) who have received three doses of Vitamin A	14.0	11.4	na	na
Children with Diarrhoea in the last two weeks who were given treatment	63.3	59.8	59.5	61.0
Children with acute respiratory infection/fever in the last two weeks who were given treatment	66.9	65.8	na	na

Children had check-up within 24 hours after delivery (based on last live birth)	20.1	16.9	na	na
Children had check-up within 10 days after delivery (based on last live birth)	22.4	20.1	na	na
Children breastfed within one hour of birth	56.8	57.0	na	na
Children (age 6 months above) exclusively breastfed	36.4	37.3	na	na
Children (6-24 months) who received solid or semisolid food and still being breastfed	87.7	88.1	na	na

Source: District Level Household Survey-Reproductive and Child Health Survey (DLHS-RCH)-III, fact sheet, (2007-09); na- Not available

Table 1.2.3.3.2 shows few child health indicators of Ganjam district. Percent of children age (12-36) fully immunized is only 44.1 % against 42.4 % in rural area for the 2007-08. It was 47.7% and 46.7% in 2002-2004. Similarly, children who had diarrhoea last two weeks prior to the survey had given treatment 61% in 2002-04 to 63% in 2007-08. However, it has been observed that all most all child health indicators are achieved just half or more than half in Ganjam.

**Table 1.3.3.3.3: Health Knowledge and Health Information**

Particulars in percent	DLHS - 3 (07-08)		DLHS - 2 (02-04)	
	Total	Rural	Total	Rural
Knowledge of HIV/AIDS among married Women (age 15-49)				
Women heard of HIV/AIDS	82.8	81.5	50.6	43.8
Women who knew that consistent condom use can reduce the chances of getting HIV/AIDS	20.9	18	2.9	4.3
Women having correct knowledge of HIV/ AIDS	77.5	74.3	na	na
Women underwent test for detecting HIV/ AIDS	3.9	3.1	na	na
Women heard of RTI/STI	24.7	22.5	38.0	43.1
Knowledge of HIV/AIDS among Un-married Women (age 15-24)				
Women heard of HIV/AIDS	85.0	84.4	na	na
Women who knew that consistent condom use can reduce the chances of getting HIV/AIDS	23.4	18.7	na	na

Women having correct knowledge of HIV/ AIDS	78.0	76.6	na	na
Women underwent test for detecting HIV/ AIDS	0.0	0.0	na	na
Women heard of RTI/STI	20.5	18.7	na	na

Source: District Level Household Survey-Reproductive and Child Health Survey (DLHS-RCH)-III, fact sheet, (2007-09); na- Not available

Health knowledge and health information makes significant differences on health practice and health outcomes. In large scale, survey like DLHS-RCH provides some information concerning health knowledge and health information among married and unmarried women age (15-49). Among currently married women in the district who heard about HIV/AIDS is 82.2% as compared to 81.5% in rural areas. The percent of women who heard about RTI/STI is 24.7% in 2007-08 has gone up 43.1 % in 2002-04. The health knowledge and information indicators are summarized in Table 1.2.3.3.3.

**Table 1.2.3.3.4: Programme level indicators**

Women facilitated/motivated by ASHA for	DLHS - 3 (07-08)	
	Total	Rural
Ante-Natal Care	11.6	13.0
Delivery at Health Facility	14.5	16.7
Use of Family Planning Methods	98.5	98.1

Source: District Level Household Survey-Reproductive and Child Health Survey (DLHS-RCH)-III, fact sheet, (2007-09)

For improve health status particularly among vulnerable population government have been made several efforts with introduces various programme and schemes. Among the programmes, National Rural Health Mission (NRHM) is one of them which is introduced in recent past (November, 2005). The main aim of the programme is to improve the maternal and child health indicators. Several components are addressed under this programme; it has seen from the Ganjam districts performance that the effectiveness of the programme is more in the rural population as compared to total population. For instances; 16% of the rural women motivated by Accredited Social Health Activist (ASHA) for delivering their baby at health facility as compared to 14 % in total district population. The programme level indicators are summarized in Table 1.2.3.3.4.

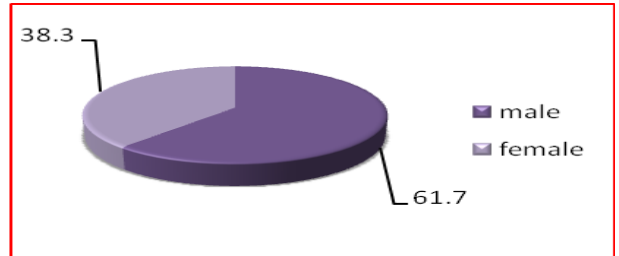
## Section 1.2.4: Sample Profile

### Figure 1.2.4.1.1: Gender profile of respondent

The proposed study conducted personal interview in the study area to collect the quantitative information, to quantify the impact of internal rural-urban out-migration on health status of household members in general and child health in particular. In this section, we analyses the respondents profile and the sample population profile.

#### 1.2.4.1: Respondents profile

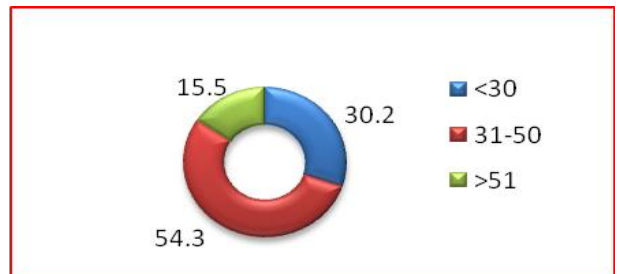
The gender-wise distribution of respondent is shown in graph 1.2.4.1.1. More than six (61.7%) out of every ten respondents are male in comparison to four (38.3%) out of every



ten respondent female. More than half (54.3%) of sample respondent are in age group of 31-50 years in comparison to 30.2 % in age less than 30 years and 15.5% are in the age group of more than 51 years. It is also found that the respondent of the study area

are more in younger i.e., 31-50 years range.

Figure 1.2.4.1.2 explains broad age group-wise distribution of respondent. Mean age of the respondent is 38 years. The sample profile of the study organized in two parts i.e., household composition and household characteristics or assets.



#### 1.2.4.2.1: Household Composition

The broad age group wise distribution of sample population and household mean size member is depicts in Table 1.2.4.2.1. The study covered 2,739 populations. The age distribution is shows that around three (27.9%) out of each ten sample population is less than age under 10 and one out of ten (7%) is beyond age 60. Around 65 % of the population are in the age group between 10-59 years. Of course, the study has its own limitation while analyzing the age group wise population distribution because of sample

biasness (selective sample criteria followed for inclusion in sample frame). The Mean size of household member is 4.6 persons in study area.

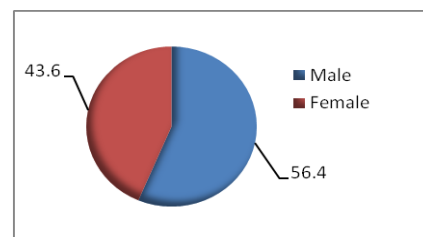
**Table 1.2.4.2.1: Percentage of population by broad age group**

Age group wise sample population	Number of sample	Percent
0-4	279	10.2
5-9	486	17.7
10-14	228	8.3
15-19	86	3.1
20-24	174	6.4
25-29	281	10.3
30-34	359	13.1
35-39	312	11.4
40-44	116	4.4
45-49	68	2.5
50-54	106	3.9
55-59	70	2.1
60-64	77	2.8
65-69	20	0.7
70-74	36	1.3
75-79	22	0.8
80 <sup>+</sup>	19	0.7
<b>Mean size of Household members</b>	<b>4.6</b>	
<b>Number of sample</b>	2739	100

Source: computed using primary data

**Figure- 1.2.4.2.3: Gender-wise distribution of**

The figure (1.2.4.2.3) shows that gender distribution of the study population. It is found that male respondent is little higher than female respondent. The relative difference of female and male is 13%.



**Table 1.2.4.2.1: Social group wise distribution of study population**

Indicators	Number of sample HH	Percent
<b>Caste</b>		
Schedule Caste	104	17.3
Schedule Tribe	51	8.5
Other Backward Categories (OBC)	187	31.2
General	258	43.0
<b>Religion</b>		
Hindu	593	98.8
Muslim	7	1.2
Others	0	0.0
Total	600	100.0

Source: computed using primary data

Social group distribution of respondent analysis is presented in Table 1.2.4.2.1. In social groups social caste and religion of respondents are analyzed. It is found that 43.0 % of head of the household are belongs to general caste, 31.2% are Other Backward Categories, 17.3% are schedule caste, and 8.5 % are belongs to schedule tribe. It also found that 98.8% of head of the household is Hindu as their religion and few belongs to Muslims i.e., 1.2% as their religion.

**Table 1.2.4.2.2: Educational and marital status of study population**

Indicators	Number of sample	Percent
Literacy rate (5 <sup>+</sup> ) age		
Illiterate	393	16.7
Up to primary	778	33.1
Up to middle	352	15.0



Up to high school	583	24.8
Up to higher secondary	117	5.0
Up to graduation	101	4.3
More than graduation	25	1.1
<b>Total</b>	<b>2349</b>	<b>100.0</b>
<b>Marital Status</b>		
Never married	1155	42.2
Ever married	1490	54.4
Widow/Widower	91	3.3
Divorce/ Separated	3	0.1
<b>Total</b>	<b>2739</b>	<b>100.0</b>

Source: computed using primary data

Study included information on literacy percentage (5<sup>+</sup>) ages and their marital status of all household members. The results is presented in Table 1.2.4.2.2. Educational status of study population is seen, 16.7 % are illiterate, 33.1% are completed primary schooling, 15% are completed up to middle school, 24.8% percent are up to high school, 5.0% are completed up to high secondary, 4.3 % are completed graduation and very few i.e., 1.1% are completed above graduation. Analyzing by marital status of sample population, it is found that, 42.2% are never married, 54.4% are currently married, 3.3% are widow/ widower, and very few percent i.e., (0.1) of sample population are divorced/ separated.

#### 1.2.4.2.2: Household Characteristics

**Table 1.2.4.2.1: Household Characteristics**

Indicators	Number of sample	Percent	Indicators	Number of sample	Percent
<b>Source of Energy for lighting</b>			<b>Exterior material of the wall</b>		
Kerosene	151	25.2	No walls	6	1.0
Electricity	449	74.8	Thatch/Plamleaf/Reed grass	56	9.3
<b>Source of Energy for cooking</b>			Mud grass mixture	14	2.3
LPG	41	6.8	Plastic/polytheen sheet	3	0.5

Kerosene	77	12.8	Plam/bamboo	13	2.2
Coal	24	4.0	Wood	10	1.7
Charcoal	19	3.2	Brunt bricks	104	17.3
Wood	137	22.8	Tin	10	1.7
Cow dung or crop residuals	80	13.3	Asbestor	1	0.2
Electricity	222	37.0	Cement	383	63.8
<b>Type of household Structure</b>			<b>Main Source of Drinking water</b>		
Kuchha	107	17.8	Piped into dwelling	29	4.8
Pucca	399	66.5	Piped into yard/plot	8	1.3
Semi-Pucca	94	15.7	Public tap/standpipe	28	4.7
<b>Main Material of Roof</b>			Hand pump	480	80.0
Thatch/Plamleaf/Reed grass	77	12.8	Protected well	42	7.0
Mud Grass mixture	10	1.7	Unprotected well	4	0.7
Plastic/polythene sheet	8	1.3	Protected spring	7	1.2
Plam/bamboo	24	4.0	Un protected spring	2	0.3
Wood	5	0.8	<b>Type of toilet facility</b>		
Brunt bricks	4	0.7	Flush toilet	14	3.5
Tin	48	8.0	Flush to septic tank	10	2.5
Asbestor	11	1.8	Flush to pit latrine	26	6.5
Cement	401	66.8	Flush to somewhere else	37	9.3
Others	12	2.0	Flush do not where	4	1.0
<b>Total Number of family member per household</b>			Pit ventilated	<b>18</b>	4.5
Less than three members	175	29.2	Improved	5	1.3
More than	425	70.8	Pit latrine with slab	13	3.3

three members					
<b>Mean number of person per household 4.5</b>			Pit latrine without slab	11	2.8
Percent do not have toilet facility	200	33.3	Thout slab	7	1.8
Percent treating Drinking water	96	16.	Twin pit	18	4.5
			Dry toilet	237	59.3
<b>Total</b>	<b>600</b>	<b>100</b>	<b>N</b>	<b>600</b>	<b>100</b>

Source: computed using primary data

Table, 1.2.4.2.1 reveals that household characteristics of sample population. Overall, it is found that three (74.8%) in every four households have electricity as their source of lighting while (25.2 %) are using kerosene as their source of lighting. Several types of fuel are used for cooking in study area, electricity is very common fuel using for cooking followed by wood and cow-dung as the most common type of fuel. Overall, 37% of households rely mainly on electricity, 22.8% wood, 13.3% on either crop residues or dung cakes, 12.8% on kerosene, 6.8% on liquid petroleum gas, 4% on coal, and 3% on charcoals. Regarding type of house construction, one-fifth (17.8%) of households in study area, live in houses that are kachha (made from mud, thatch, or other low-quality materials), one-sixth (15.7%) are live in semi-pucca houses (using partly low-quality and partly high-quality materials). Another two-third (66.5%) live in pucca houses (made with high-quality materials throughout, including the roof, walls, and floor) in study area. Crowded housing conditions may affect health as well as the quality of life. More than seventy (70.8%) percent of households live in houses with three or more persons. The mean number of persons per household is 4.5 in study area.

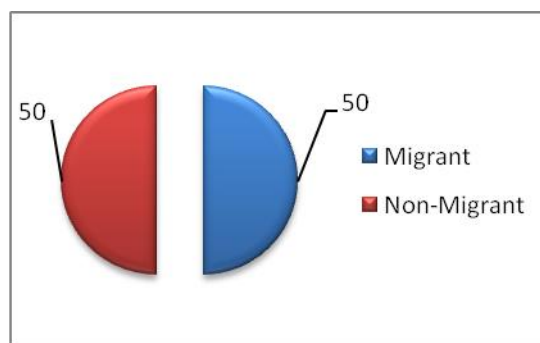
Water sources and sanitation facilities have an important influence on health of household members, especially children, the study included questions on sources of

drinking water and types of sanitation facilities available for household members. It is utmost importance of welfare government to provide safe drinking water. Providing safe drinking water and sanitation facilities will be double benefited one hand it will reduce the unnecessary pressure on the health system through reducing morbidity and other hand will improve the productivity of people. It is found that, 11.8 percent of households using piped drinking water, 80 percent are using drink water from hand pumps, 7 percent drinks water from protected wells, and 2.3 percent drink surface water. Regarding treating drinking water it is observed that 16.0 percent of the households are treating the water before drink using either any form of filter, or boiling methods. Available of sanitation facilities for household members, it is found that 59.3% have dry toilet, 22.8% of households have a flush toilet that uses either piped water or bucket water for flushing, 18.2% have a pit toilet or latrine, and 33.3% have no facility.

**Figure 1.2.4.2.4: Percent of sample household by migrant status**

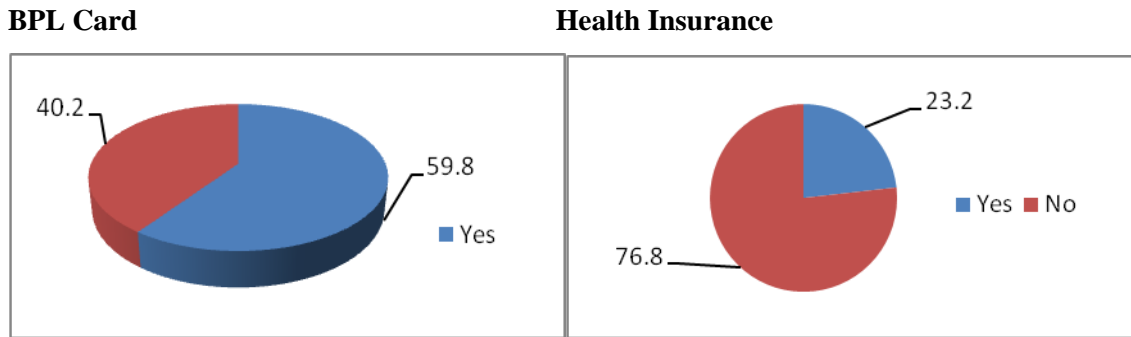
To achieve the objectives of the study, the study selected the equal number of the household as migrant and non-migrant

households. Out of 600 sample households 50% of households are migrants and 50% are non-migrants households that is depicted the graph (1.2.4.2.4). To understand the percent of household benefited from various government schemes, the study probed one question i.e.,



possession of PL/APL/Annrrapura/Antodaya cards. The possession of the card would enable us to understand actual beneficiaries from government scheme. It is found that nearly 60% of sample households are getting benefit from government programmes and 40% percent are deprived from the programme.

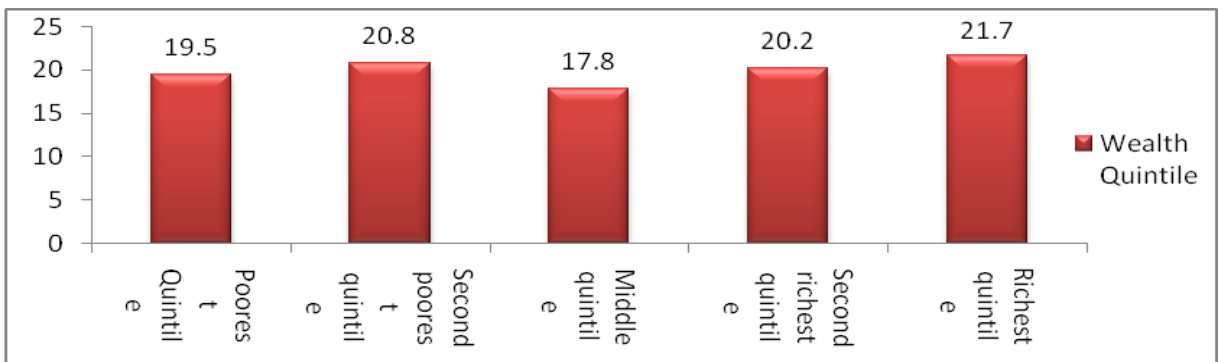
**Figure 1.2.4. 2. 5: Percent of household have BPL/APL/Antodaya/Annranpurna card and health insurance**



Health insurance increases the household wealth position through insurance claims in a predictable manner and other hand it save the household wealth through unpredictable health expenditure. Many studies probed that household having health insurance is better health status in comparison to household do not covered health insurance. In view of this, we probed it to know the possession of the health insurance in any member of the household. It is found that one-fourth (23.2%) of the study household has health insurance. Both possession of card and health insurance is depicted the figure 1.2.4. 2. 5

As we know wealth index is sound measure for measurement of wealth position of population, hence the study used the wealth quintile in analysis. Adopting above mention technique we constructed a wealth index. It is observed that less than one- fifth (19.5 %) of sample population are belongs to poorest quintile, 20.8% are in second poorest quintile, 17.8% have a middle quintile, 20.2% have a second richest quintile, and 21.7% are belongs to the richest quintile that is shown in graph 1.2.4.2.6.

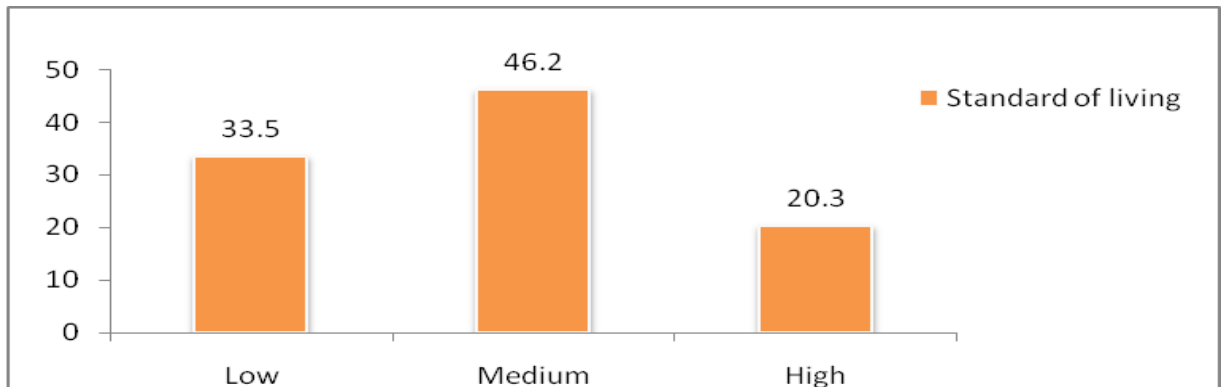
**Figure 1.2.4.2.6: Sample population distribution by wealth quintile**



Source: computed using primary data

Further, to understand household's economic position we developed standard of living index. Analyzing sample household by household standard of living index it is found that one-third (33.5%) of households belongs to low standard of living, 46% belongs to medium standard of living, and 18% are belongs to high standard of living and it is presented in figure 1.2.4.2.7.

**Figure 1.2.4. 2.7: Household distribution by Standard of Living Index (SLI)**



Source: computed using primary data

### **Section 1.2.2.5: Research Questions**

The following research questions framed while conceptualizing the proposed study:

1. Does migration help to improve the health status of children of the migrant households?
2. Other thing remaining same, does the additional income earned by the migrant provide additional resources to be spent on health care among migrant households?
3. Does migration help in transferring health knowledge to the place of origin and is that make any differences on health practices in contrast to non-migrant households?
4. Does migration promote health knowledge and health information to migrants' household?
5. Does migration affect the efficiency of health production that leads to improve health outcomes of their families at origin?

To find the answer of the above question the study has proposed the following objectives.

### **Section 1.2.2.6: Objectives of the study**

Keeping the above facts in mind this study proposes the following objectives.

**Broad Objective:** The broad objective of the proposed study is to find out the relationship between flow of remittances from internal rural-urban out migration and its impact on child health. While the specific objectives of the study are to:

- i. study the determinant and flow of remittances among migrant households in rural Odisha.
- ii. understand the pattern and differential of health care spending among migrant and non-migrant households in rural Odisha.
- iii. examine the degree of differences of child health and well-being status of migrant and non-migrant households in rural Odisha.
- iv. understand the differences of the health knowledge and health information and its impact on child health among migrant and non-migrant households in rural Odisha.

#### **Section 1.2.2.7: Hypotheses**

To fulfill these above objectives the study has formulated following hypotheses, which are tested in due course of different phases of the study.

- 1). It is hypothesized that household having migration are better off in economic status which is positively associate with a more spending on health care in general and child health care in particular in comparison to non migrant households.
- 2).The health expenditure of migrant households are determined by migrants' remittances
- 3). Health status of children of migrant households is better off in comparison to non-migrant households.
- 4).It is hypothesized that migrant household are more aware about health conscious, health knowledge and health information over non-migrant households.
- 5).The migrants' households are better off in their human capital (Child health and Education) as compared to their non-migrant counterparts.

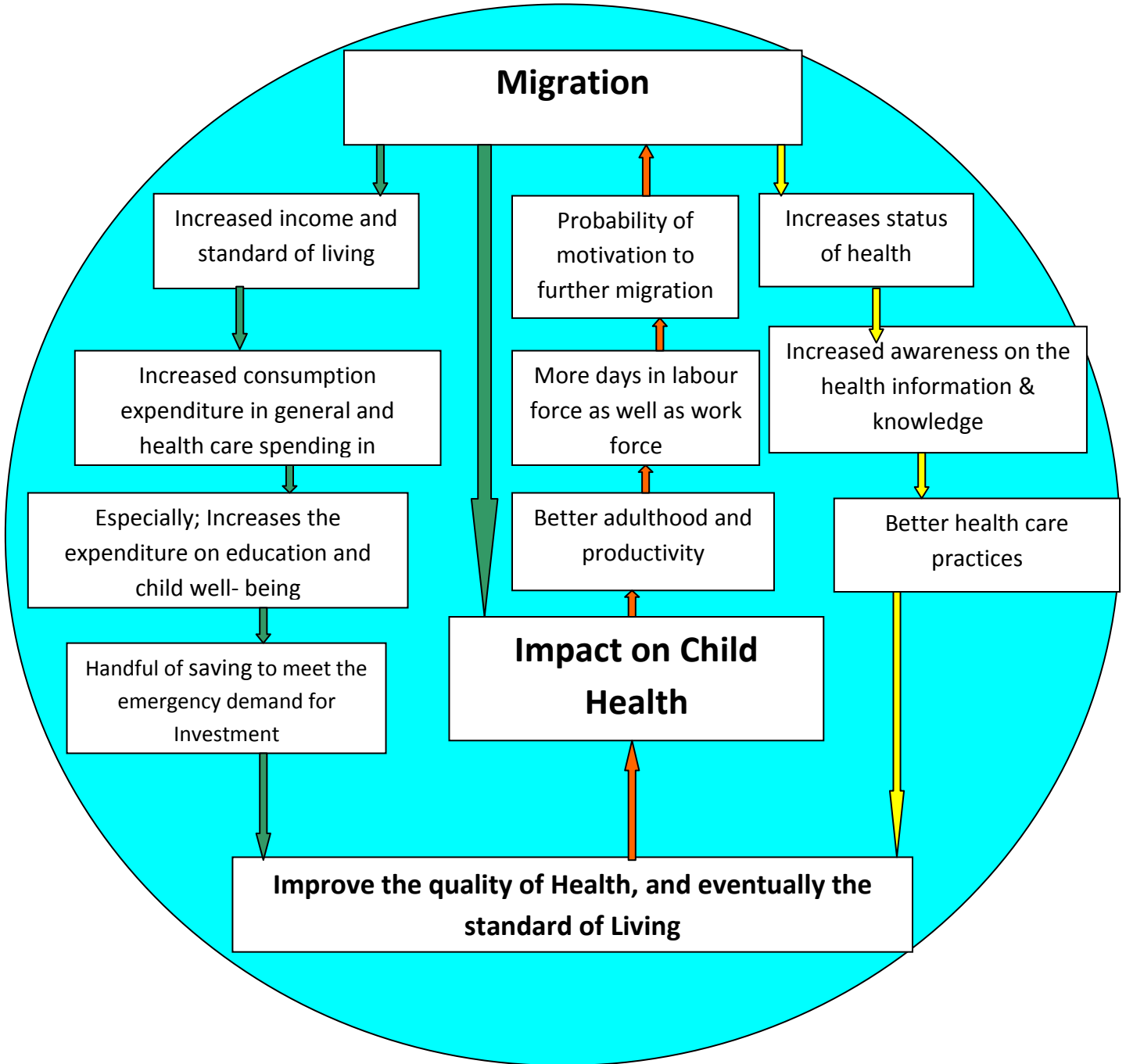
#### **Section 1.2.2.8: Conceptual framework**

The conceptual framework of the study is summaries in 1.2.2.8 and figure 1.2.4.2.8. It has three different vertical wings. The first vertical wing explains, migration increases the income and standard of living of the migrant households. The increasing income perpetuates migrant households to increase their consumption expenditure particularly on

nutrition food, health and education of household members. Moreover, increasing income along with standard of living of household eventually grips the demand for household expenditure, particularly the unpredictable health care expenditure including emergency expenditure. The increasing income due to migration process will scale-up the household in upper stage of economic, social and health aspects. Second wing of conceptual log-frame explains, migration brings the health knowledge and health information from destination and innovative health practices that brings out the changing health care practices of the migrant households at origin that will improve the health status of the migrant households members. In together increasing income and standard of living and health knowledge, , information improves the health status of household members particularly among children. Furthermore, improved health status at childhood seems to be better health in adult and young stage and longer period in work or labour force. Longer period in labour force motivate the healthy person to obtain better opportunities even if in migration.



Figure 1.2.4. 2.8 Conceptual framework



### **Section 1.2.2.9: Details of chapters**

The research study has been presented in following six chapters:

#### **Chapter-I: Introduction**

The chapter One focuses on the overview of the study, meaning, forms, reasons of migration, the rational for undertaking Odisha and Ganjam as a field study. This chapter also discusses about methodology of the study. The conceptual framework, precise chapter plan along with summary of chapter and limitation of the study are also discussed at end of this chapter.

#### **Chapter-II: Review of Literature**

The chapter Two mainly devoted to review of the past studies pertaining to our research questions, objectives and hypothesis. History of Indian migration with level, trend and pattern are discussed in this chapter. This chapter also talks about the impact of migration on demographic, social and health aspects. Furthermore, impact of income on health, pattern and trend of health care expenditure in India and Odisha are discussed at end of the chapter.

#### **Chapter-III: Flow and Determinants of Internal Migrants' Remittances**

The objective of the chapter three is to explore the general nature, characteristics, flow of migrant's remittances and its consequences. More details this chapter talks about the determinant of migrants' remittances in rural Odisha.

#### **Chapter-IV: Health Knowledge, Information and Health Care Expenditure**

The chapter four systematizes the impact of health information, knowledge and health care expenditure on health outcomes. Besides health knowledge and information the study also discusses the level of women empowerment, decision-making and household member access to various institutions. The pattern of health care expenditure on health out-comes among migrant and non-migrant households is discussed in this chapter.

#### **Chapter-V: Child Health and Child Well-being (CW)**

Chapter five mainly discusses the difference of health status and health outcomes among migrant and non-migrant household members. Moreover, this chapter discusses the difference of children nutritional status, incidence and burden of various reported diseases among migrant and non-migrant households.

## **Chapter-VI: Summary and Conclusion**

The conclusion of the study is presented in chapter six. This chapter discusses the overall summary findings of the study. Finally, we attempted to provide some policy implications in this chapter.

### **Section 1.2.2.9.1: Limitation of the study**

The study is subject to the following limitations.

1. The study is confined to the analysis of only economic migration, i.e., migration for economic purpose only. No attempt has been made to analyse other forms of migration, though it is an important area of enquiry. The conclusion so derived is generalized for all the different types of migration. This may involve error of approximation.
2. The study has been undertaken with a noble thought of analyzing the impact of remittances of migration on child health of the left behind families. Dearth of large scale data pertaining to the study compels the investigator to adopt primary survey. Sample method has been adopted towards this end. Though every effort has been made to avoid the selectivity biasness of the selection of the sample, the researcher is not free from the fear of this.
3. The study assumes that the health status of both migrants and non-migrants are same before the occurrence of migration. Practically this may not be so.
4. It is difficult to distinguish the impact of migrants' health knowledge and health information on health care practices of left behinds at origin. Since it is a Herculean task to capture this information in quantitative form concerning the study, we have adopted a perception-based approach to reach the conclusion. The findings of the study purely based on the primary data collected through personal interview method. This procedure is based on the memory, perception and recall method followed by the investigator. Hence, it may involve personal biasness.

Therefore, it is the humble submission of the researcher that the readers should kept in mind above facts while interpreting the findings of the study.

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