

CHAPTER-1
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1.1. Introduction:

Migration is the most significant component in demography for studying the changes in the population size. Migration is the third component of population changes after the birth rate and death rate. It is the movement of an individual from one place to another. In demography, this movement is often defined as a permanent change of residence or long-term residence change (Toney and Bailey, 2014). This change of human residence occurs from one geographical region to another permanently or temporarily, and the socio-economic factors influence it. Generally, migrations is articulated by the different push and pull factors like poverty, scarcity of cultivable land, unemployment, urbanization, excessive population pressure on limited resources, environmental degradation, etc. In these circumstances, the individual decision to migrate involves the process of weighing up potential costs and benefits (Davin, 1999).

1.2. Definitions of Migration:

The term migration is so broad that it varies in nature, scope, or purpose of the study or discussion. In this pretext, a geographer studies it on the time and distance significance, whereas a sociologist has emphasized social and cultural consequences of migration. The 'out-migration' is considered a phenomenon of moving out from the source of origin and departs for the same geographical unit's destination source. So, in this context, there are various definitions of migration.

Lee (1966) defines the migration "as a permanent or semi-permanent change of residence. No restriction is placed upon the distance of the movement or the voluntary and involuntary nature of the act, and the distinction is made between external and internal migration."

An individual is reviewed as a "migrant" if his/her place of origin is dissimilar from the "place of enumeration" (Census of India, 1961). In the 1971 Census, an existing question like the last residence was added to assemble migration information. The Census reveals that migrants depend on the "place of birth" and "place of usual residence."

Kok (1997) emphasized the migration is defined as the movement of people over some distance and from one usual place of residence to other places.

According to the "Oxford Advanced Learner's Dictionary of Current English," to migrate means to "move from one place to another (to live there)" while the Dictionary of Human Geography (2000) migration is "permanent or semi-permanent change of residence by an individual or group of places."

Bhagat and Lusome (2006) emphasized if “the place of birth or place of the last residence is different from the place of enumeration; a person is defined as a migrant. On the other hand, if the place of the last residence and the place of enumeration is the same is a non-migrant”.

Rajan et al. (2020) pointed out that during the COVID-19 pandemic, India’s Government implements a nationwide lockdown on 24 March 2020 with strict restrictions on migration and transportation links summarily cut off overnight. In India, “the pandemic precipitated a severe ‘crisis of mobility,’ with migrant labourers in many major cities seeking to return to their hometowns. Their desperate attempts to return home by any means available rendered the lockdown ineffective in several areas, prompting clashes with authorities, last-minute policy relief and, eventually, the arrangement of transport measures”.

1.3. Terminologies of Migration: There are some important terminologies on migration as follows;

Migrant: It is the person who relocates within some geographical units or political units within the country (Census of India, 2011).

Out-Migrant and In-Migrant: The person who leaves their birthplace temporarily or permanently is known as out-migrants, whereas the person who enters another destination is known as in-migrant (Census of India, 2011).

In-Migration and Out-Migration: Both types of the journey of migration are connected to internal migration. In-migration refers to the migration occurring within the same country. On the other hand, out-migration defines as “migration out of the area”. As an example, we may say migration from West Bengal to Delhi is in-migration, while West Bengal is out-migration.

Immigration and Emigration: The term Immigration and Emigration are related to international migration. Immigration means migration in people from one country to another country, and emigration refers to migration out of the country, e.g., if people from our country moving out to Bangladesh are termed as immigration for Bangladesh. In contrast, for India, it is called the emigration phenomenon.

Refugee: When a person is living outside in his/her country from his/her birthplace due to panic of oppression or persecution for causes of racism, religious persecution, nationality, membership in a specific social group, or political opinion (Nair, 2007), India is host country of the refugee from the countries like Bangladesh, Srilanka, China, etc.

Streams of Migration: It indicates when a group of peoples is moving from one country to another within a particular period. It is the movement of common origin and destination is called a migration stream or migration current.

Migration Interval: It is the occurrence of migration over a different period in a region categorized into intervals of 1 to 4 years or more than four years. The particular interval of the year is known as the migration interval.

Place of Origin (Departure): The place of birth of a migrant and the place which people leave is the place of origin.

Place of Destination (Arrival): The place of arrival or place of visit is called the place of destination.

Gross and Net Migration: Gross migration is the sum of in-migration and out-migration. The term net migration refers to the balance of movements in opposing directions. Regarding a specific area, it is the difference between in-migration and out-migration (Clark, 2020).

Voluntary Migration: Migrant movement is regulated by their discretion to choose whether to migrate or not to choose an area of migration termed as (Ottonelli and Torresi, 2013).

Forced Migration: The migration event which happened by compulsion is known as forced migration. It is caused by physical and social calamities like earthquakes, landslides, floods, famine, war, etc. (Peterson, 1958; Betts, 2009).

Impelled Migration: Individuals are not forced out of their country but leave because of the persistence of adverse situations such as warfare, political problems, religious persecution, etc. This migration is also called “reluctant” or “imposed” migration (Peterson, 1958).

Step Migration: A migrant move from his/her place of birth to the last destination. This progression is called step migration Example- village, to a town, and finally to a city referred by Ravenstein in 1885 (Sewastynowicz, 1985).

Chain Migration: “A series of migrations within a family or defined group of people is called chain migration. A chain migration usually begins with one family member who supposed to send the remittance from the place of work to conduct a journey for the other family members to the new location, and the same source of origin is usually considered as migration fields the congregating of people from a particular place into certain localities or small towns” (Banerjee, 1983).

Border migration: Migration is involving take place between two national borders.

Temporary migration: When migrants spent time away from habitual residence has a limited time duration.

Permanent migration: When migrants spent time away from habitual residence, it has no limited time duration.

Contract migration: Labour migrants are moved for a temporary worker programme for a limited period.

Seasonal migration: Peoples moved from one place to another place and lived less than one year, and migrated over time for suitable living conditions and occupation purposes.

Individual Migration: Peoples are migrated individually for the weak economic condition.

Family migration: Peoples migrated with family from one place to another place.

Massive migration: Large numbers of peoples are migrated from one to another destination.

Migration flow: Peoples moving from one location to another location during a specific period. It also depending on direction; it is called either immigration or emigration flow.

Human Mobility: Human mobility defines how individual peoples moves within a geographical region. Human mobility studies reference movements rather than the groups that made them and the places where they occurred (Montanari, 2005).

Reverse Migration: When peoples moved “destination” to “origin,” called reverse migration or return migration, the COVID-19 situation in India triggered a massive reverse migration of thousands of labourers back to their villages (Dandekar and Ghai, 2020).

1.4. Major Theories of Migration:

In the early 1960s, in the time of quantitative revolution in geography, we found different theories and models among geographers. Despite great difficulties, the theory and model building of migration is quite encouraging, which has been started from 1885 of Ravenstein’s laws of migration. E. Lee (1966, pp.288-297) has given a set of hypotheses relating to Push and Pull factors of migration. Many theories and models are framed on migration. We discuss some of the theories and models of migration.

Ernest George Ravenstein first published his immigration laws in 1885 in the “Journal of the Statistical Society.”It was the first formal attempt at theoretical formulations on migration. His analysis was done based on movements of peoples of inter-country in Britain on Census data. He studied the following essential points;

- a. The distance of migration: Migrants are select short distances for their movement from one place to another. It indicates distance-decay function and performance for a large center of commerce and industry among long-distance migration.... “even in the case of countries of dispersion which have a population to spare for other countries, there takes place an inflow of migration across that border which lies furthest away from the great center of absorption” (Ravenstein, 1885:191).
- b. Migration Stages: The choice and destination of migration by migrants from rural areas first move to nearby towns and large cities. The long-distance from the

originator which sustains them, the less speedily do these course flows (Ravenstein, 1885:191).

- c. Rural-Urban differentiation: The natives of the towns have a low degree of propensity to migrate than their counterparts in the countryside.

The theories of migration developed by many scholars after Ravenstein model/ Lewis dual economy model (1954) and its Renis-Fei (1961) extension have an implicit reference to rural-urban migration? According to this theory, wage and social factors are responsible for migration. The higher wages rate indicates better job opportunities, and good educational facilities are responsible for urban migration from rural areas.

The Gravity model is based on Newton's laws of gravitation for population movements. Scholar John Q. Stewart first pointed out the isomorphic relationship of population movements with Newton's Laws of gravitation (James, 1972, p.517), which later became known as the Gravity model. Accordingly, the index of migration can be expressed as follows:

$$MI = K \cdot \frac{P_1 P_2}{D_2}$$

MI is Migration Index, P1= Population size of settlement 1, P2 is the population size of settlement 2, d is the distance between two settlements, and K is the constant. This model provided a cross-section of the micro-level interaction system of migration regarding time, space, and direction. This model believes that any area's power to attract migrants dependson its economic base.

In 1940, G.K. Zipf gave a concept of specific population size and distance relationship in his 'principle of least Effort.' His theory expressed as follows;

$$M_{ij} = K \cdot \frac{P_i P_j}{D_{ij}}$$

Where M_{ij} is the magnitude of movement between two places, i and j, P_i and P_j denote population sizes in places i and j, D_{ij} is the distance between the places i and j, and K is the constant. According to Zipf, the greater distance needed more significant effort and reduced the number of migrants. The application of this theory in American cities did reveal an inverse correlation between distance and magnitude of migration.

In the year 1940, S.A. Stouffer introduced the intervening opportunities model to improve upon the Zipf's principle of least effort. According to Stauffer, the distance should be indicated in "socio-economic" rather than geometric terms for determining migration. His hypothesis of the theory was that the number of people relocating for a given distance was

‘directly proportional to the number of opportunities,’ i.e., the number of opportunities by places between the two places in question (Stouffer, 1940, p.846). It may be expressed as under-

$$Y = K \cdot \frac{X^*}{X}$$

Y is an assumed number of out-migrants from a place to a particular area, x^* is several opportunities within this area, and X is the ‘number of opportunities intervening between origin and midway,’ and K is Constant. In this case, the real opportunities of migrants like employment, environment, housing, etc.

Everett, S. Lee (1966) reformulated ‘Ravenstein’s laws of migration’ to analyze the internal process of migration. He explained his theories by the push and pull factors. He generalized the following essential factors for the decision of migration:

- a) Factors determining in the area of origin.
- b) Factors determining at the destination.
- c) Factors that act as intervening obstacles and
- d) Personal factors that specific to the individual.

Lee indicates the factor influencing the migrant’s perception into pluses, minuses, and zeroes; the intervening obstacles and individual perceptions are the fundamental determinants in Lee’s model. The Pull forces or pluses attract people towards an area, whereas pushing factors or minuses drive people away, and zero maintains the balance between push and pull factors.

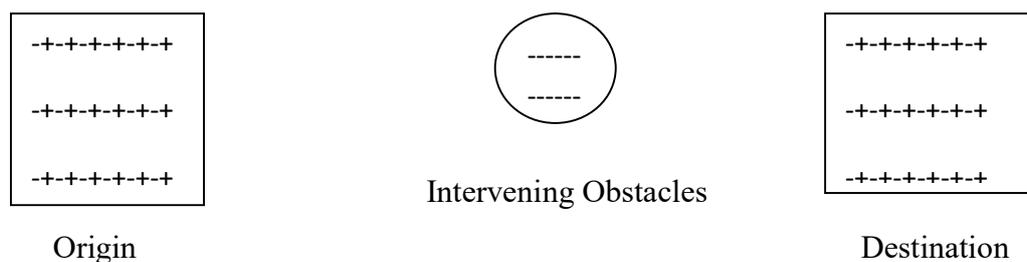


Figure 1.1: Lee’s Model of Migration

1.5. Literature Review:

1.5.1. Nature, Pattern and Flow of Out-Migration

Global Perspectives

Pu et al. (2019), in their research entitled “A spatial dynamic panel approach to modeling the space-time dynamics of interprovincial migration flows in China” found that migration plays a significant role in growth and development. They identified spatial and temporal aspects of

migration flows in China. The result shows the population and age structure's size play significant roles in China's migration process.

Nabi (1992), in his article "Dynamics of internal migration in Bangladesh," found that its high population density determined the internal migration characteristics and flow. This was also mentioned that the unequal hierarchical relations of people with land in Bangladesh possess migration.

Patnaik, A. (1995), in his article "Agriculture and Rural Out-Migration in Central Asia, 1960-91," depicted migration is the crucial element for social mobility. The research mainly focused on how the agriculture sector reflects rural migration in Central Asia.

In his research, KC (2003) found "Internal Migration in Nepal" the volume and pattern of life-time internal migration by zones, regions, and districts that discuss various migration streams. The nature of internal migrants and non-migrants was studied concerning literacy, occupational and ethnic status.

Mberu (2005) discussed in the article entitled "Who Moves and Who Stays? Rural Out-Migration in Nigeria," studied the multinomial logistic regression model, which predicts the association between individual households' characteristics, education, health, ethnicity, etc.

Rebhun and Brown (2015), in their research "Patterns and selectivities of urban/rural migration in Israel," have identified rural to urban out-migration in Israel. They pointed to a comparative study on the rural and urban migration pattern of Jews and Non-Jews. Urban-rural migration emphasizes the importance of specific individual characteristics and reflects the impact of life course and socio-demographic characteristics.

National Perspectives

The present study reveals to review some critical, relevant literature related to the issue of migration.

Scholar Davis (1951) in his study "The Population of India and Pakistan" pointed out the prevalence of caste, joint family system, different tradition rules of society, language and cultural diversity, less education, rural agricultural society of India indicating the historically Indians are less mobile.

De Haan (2002) studied in his article "Migration and livelihoods in historical perspective: A case study of Bihar, India" which revealed that 'unskilled labours are not migratory, that the migration has remained circular.' The research attempts to understand the complicated relationship between migration from the origin and socio-economic development. The research's main focus was on the lower section of the society. The result

has shown that western Bihar has higher mobility of the population, transforming its societal and economic structure.

Lusome and Bhagat (2006) in the study “Trends and patterns of internal migration in India, 1971-2001” reveal to “provide the trends and patterns of internal migration during 1971-2001” based on census data for that period. Results depict that the scenario of internal migration has changed over the years. However, it is found that the growth of internal movement varies by sex, and the streams of migration and the ‘dynamism of the Indian population has significantly increased during the 1990s’.

Keshari and Bhagat (2010) in the paper “Temporary and seasonal migration in India” studied that ‘India is the second-most populous country in the world’ and socio-economic variations reflected in the pattern of temporary and seasonal migration. They identified that seasonal migration for employment purposes is one of India’s most essential livelihood strategies.

Basu and Chakraborty (2010) explained in their paper “Migration from Bihar, Orissa, and Uttar Pradesh to West Bengal during the period 1901-199” the size and features of out-migrants from Bihar, Orissa, and Uttar Pradesh. They identified more than 80 percent of the total immigrants in West Bengal.

Sundari (2011), in the paper “Gender Dimension of Internal Migration: A Spatial Analysis of Tamilnadu” reveals the changing trends and pattern of female migration in Tamilnadu state and its districts. This paper examined the female migrant population with their proper reason.

Taralekar et al. (2012) studied in their paper “A Study to Assess Pattern of Migration across India Based on Census Data” the pattern of interstate and international migration, which depends on the usual place of residence, for all duration of zone-wise in India and its reasons for migration and to assess push and pull factors influencing migration. This paper finds these migration patterns are associated with various factors like GDP, Literacy rate, Population density, and Urbanization.

Dhak (2014), in his paper “Present out-migration Pattern and Issues for Bihar,” analyses the recent pattern and determinants of out-migration in Bihar. This paper mainly focuses on a comparative picture of the all-India figures that have also been presented throughout. In this, the people of Bihar show a preference for migrating to other states. Job opportunities in the other states increasingly attract these migrants from Bihar; instead, the lion’s shares of them migrate to become self-employed in their migratory destinations. This

paper also advocates a policy framework that would recognize migration across states in India.

Chandrasekhar and Sharma (2015) pointed in their study “Urbanization and spatial patterns of internal migration in India” out three types of migration mobility have been pronounced; short-term, commuting, and return migrations in India. The persons who have migrated one month to 6 months but less than one year are called short-term migrants, while a commuting worker his/her place of work is not fixed, or place of work differs from the usual place of residence. As per statistics in 2009-10, there are 8.05 million commuters in India. Commuting workers are one of the essential characteristics of the population in developing countries.

Kone et al.(2018) depicted in their study “Internal borders and migration in India” internal migration as the critical component for India’s economic growth and development. The used district-wise migration mobility in India as per the 2001 Census and highlighted the role of “state borders” as necessary “impediments to internal mobility.”

Bhagat and Keshri (2018) studied the intensity and flow of internal migration in the country in their study “Internal Migration in India: Intensity, Flows, and Impact”. They focused on “three levels of migration” like “intra-district, inter-district, and inter-state migration.” They pointed out that the mobility, including within and between the state migrants, consists of 30 percent of the Indian population and find out that the intensity of migration is based on the permanent or semi-permanent change of residence, which does not include seasonal and migration. Moreover, this is the primary reason for the slow mobility of India compared to other Asian countries.

Bhattacharjee (2020) reveals in the study “Development and internal out-migration in India in the post-economic reform era” where internal out-migration aspects within the country after the post-independence era at the state level. She used the panel regression method to measure the states’ out-migration behaviour in development policies’ milieu. The study development has been categorised in different sectors like sector-wise, gender-wise, stream-wise, etc.

Mitra and Murayama (2012) in their paper entitled “Rural to urban migration: a district-level analysis for India” which attempts to studied the “rural-urban migration” for gender-wise separately at the district level (inter-state and intra-state), and these papers showed different rates of migration and finally delineates some implications of migration in terms of health and other infrastructural amenities at the place of destination.

Prasad et al.(2009) explained the “socio-economic and demographic” features of migrants and their types, pattern, history, and migration in their paper “Migration to Greater Mumbai Urban Agglomeration: A Study of Characteristics of Principal Migrants and Their Social Linkage”.

Another critical study “Patterns and Determinants of Female Migration in India: Insights from Census”, Mahapatro, (2010) shows that the trends, features, and patterns of female migration in the country and identified the determinants of the female migrants.

Singh (2010) in his paper “Migrants to Mumbai: District wise Inflow and Characteristics” attempts a comparative analysis and characteristics of migrants and non-migrants in Mumbai. This paper examined the best information on in-migrants and out-migrants movement during the period of 199-2001. He also analyzed the overall characteristics of the migrant household.

Korra (2011), in his paper “Nature and Characteristics of Seasonal Migration; A Case Study in Mahabubnagar District of Andhra Pradesh” discussed the rural condition of migrant and non-migrant households. This paper also deals with the nature and form of the migration process in the villages. This paper nicely presented examples of different case studies of migrant workers from villages, from where it expresses the villages’ real situation.

1.5.2. Determinants of Out-Migration

Global Perspectives

In their study “Distribution of Distance associated with Marriage Migration: A Micro level Study of Bangladesh”, Rahman and Akter (2010) highlighted ‘the marriage’ is a potent migration factor. Marriage imposes economic and socio-cultural constraints on both women and men. The pattern of marriage migration varies from society to society according to customs and norms. So, this study investigated the characteristics of marriage migrants; and examines the relationship between distance and marriage migration.

Nurullah and Islam (2011) reveals in their work “Determinants of socio-economic characteristics on female migrants: Logistics regression model approach”, migration is an essential factor in changing a region or a country’s size. They studied the effects of socio-demographic features of out-migrants.

The causes of Rural-Urban Migration in a geographical region have been done by Okhankhuele and Opafunso (2013) in their work “Causes and Consequences of Rural-Urban Migration Nigeria: A Case Study of Ogun Waterside Local Government Area of Ogun State”. They used “purposive sampling techniques” to collect data from households. It found “the majority of the migrants migrated to continue their education rather than searching

foremployment. It also revealed that the consequences of out-migration on the family include assisting parents in their profession, lack of workforce to work on farms, and desertion of the area to the aged and children. The paper recommends concerted government policy aimed at closing the lacuna between wage and other socio-economic differentials between the rural and urban areas, government's support in the development and funding of small and medium scale rural enterprises and agriculture".

Sander (2014) in the study "Internal Migration in Germany, 1995-2010: New Insights into East-West Migration and Re-urbanisation" reveals probable determinants and consequences of internal migration stream affects regional distribution of population.

Tegegne and Penker (2016), in their research "Determinants of rural out-migration in Ethiopia: Who stays and who goes?" has rural out-migration in Ethiopia is a common phenomenon. They surveyed the determinants of household migration by using the logistic regression model, and they found a positive relationship among migration decisions with different socio-economic characteristics like age, household size, educational status, etc.

National Perspectives

Ramasamy (1998) presented a paper "Rural labour Migration: Causes, Consequences, and Remedies" where he explained that different sectors had triggered rural-urban migration. The urban areas are well ahead of rural areas in terms of industrial and commercial activities, which attract job-seeking rural people; the push factor also operates from behind as sometimes worsening economic statuses such as stagnating agriculture and land unavailability, extensive farming, and growing pressure of unemployment. He finds out that the process of labour migration cannot be stopped entirely in a country like ours; it can be smoothed out and harmonized. Therefore, "investment in the social infrastructure is highly required and villages" must be the "focal point of development," only then the intractable problems associated with rural-urban migration can be effectively tackled.

Scholars Singh and Aggarwal in 1998 in their paper "Rural-Urban Migration: The Rate of Push and Pull factors Revisited" revealed "the rate of major push and pull factors behind the migration based on the data collected from 1991 Census of 25 districts of North Western Uttar Pradesh" migration as well as characteristics of hills and plains, and identified "female cultivators of hills have a higher percentage of migration from rural to the urban area. They have observed that return migration is very low in the area. People who migrate from a rural area in search of better jobs are usually reluctant to return even after their retirement because they are better apprised about the no availability of the same

opportunities and facilities in rural areas as in urban areas”. So, this is indicating the growth of the migration rate of persons from urban to rural areas.

Sahre (1998) depicted in his research “Seasonal Migration of Labour in Maharashtra and the contract Labour system” the low productivity in agricultural production is mostly a result of inadequate irrigation facilities. As a result of this, families below the poverty line and rural labour force do not get any employment in agriculture, and so labourers migrate from their villages to different factories for “contract-based seasonal work.”

Shanthi (2006) examined “Female Labour Migration in India: Insights From NSSO Data” where the extent of employment-oriented migration of females in India in the “age group 15-60, irrespective of the reasons for migration reveals that in the post-migration period work” sharing of these migrants’ raises sharply in all the states.

Hassan and Khan (2012) attempts “Determinants of Rural Out-Migration in India” which focused that the work or employment (35.88%) is the primary cause of rural out-migration followed by moved with household (26.23%), marriage (23.14%), and so on. The work depicted the high rate of rural out-migration from the central-eastern states and low from India’s north-eastern states while rural out-migrants with household have highly recorded from the northern states lower from eastern states of India. The western and north-western parts of India highly recorded the marriage related reason of rural out-migration in India. However, the north-eastern states of India depicting high rural out-migration due to education-related reasons.

Debnath and Nayak (2018) depicted the “pattern and determinants of male out-migration in West Bengal.” They have categorized different districts of West Bengal into the different physiographic region. The research focused that rural Bengal generally depending on agricultural activities, and most of the rural peoples are agricultural labours. Lacks of employment in rural areas, most males migrate towards the country’s different urban areas, while females are migrating due to marriage-related reasons.

Local Perspectives

In this concern, a study by Chowdhury et al. (2017) “Out-Migration in Search of Livelihood: A study of the Rajbanshi Migrants from Koch Bihar, West Bengal” the Koch Bihar district is dominant by the *Rajbanshi* movement to other states. Their ethnographic study revealed that about 47 percent and 31 percent of the Rajbanshi peoples migrated due to low income and unemployment-related reasons. The study also found that about 92 percent of the surveyed respondents were compelled to migrate out of Koch Bihar. This is also important

because Rajbanshi out-migration's tendency has been started since 1965s onwards and was in its peak since the 1990s in Koch Bihar district.

1.5.3. Consequences of Out-Migration

Global Perspectives

Lipton (1980), in his research entitled "Migration from rural areas of poor countries: The impact on rural productivity and income distribution," it is a common trend and its different impact on rural productivity. He argued that town ward emigration and its effects, in turn, increase "interpersonal and inter-household inequality within and between the villages." The consequence of migration depends on the numbers of involved, duration, return, origins, and destination.

Ajaero and Onokala (2013), in their research "The effects of rural-urban migration on rural communities of southeastern Nigeria," found "the effects of rural-urban migration in the rural places of origin of migrants may be manifest in two ways. First, the rural-urban migrants send remittances to their relatives in the rural areas, and these remittance-receiving households use the remittances for various purposes. Secondly, these rural-urban migrants execute various rural development projects in their rural areas of origin."

National Perspectives

Rele (1969) in his research "Trends and significance of internal migration in India" found that Indian out-migration is dominated by rural-rural, intra-state out-migration where females are dominated as marriage-related migration. Most of the rural out-migration of male's phenomena happens due to shortage of jobs and wage differential character in the country's rural area.

Noronha (1998) in his research "Migrant construction workers in Goa" studied the migrant workers in Goa. This study shows that migrant construction workers have had a "positive and a negative impact on the Goan economy" and concluded that migrant construction workers have come to stay in Goa as long as the locals are averse to doing construction work.

Rani and Shaylendra (2001) in their working paper "Seasonal Migration and Rural-Urban Interface in Semi-Arid tropics of Gujarat: Study of a Tribal village" studied that seasonal migration is a direct consequence of structural changes, which have taken place both in origin and in the target areas of migration. The seasonal migration has improved the man-land ratio temporarily in the village, and as such, they observed that the migration is

mostly a consequence of both “push and pull factors in rural and urban areas,” as observed in their study.

Zachariah et al. (2001) studied “Impact of migration on Kerala’s economy and society” which shows that about 1.5 million persons of Kerala are outside of the country. They focused on “More than a million families depend on an internal migrant’s earnings for subsistence, children’s education, and other economic requirements.” In their paper on “Social, economic and demographic consequences of migration on Kerala,” they focused on the direct and indirect effects of migration at origin as well as the destination. Indirect impact of out-migration changes in fertility, mortality, and other demographic features.

Srivastava and Sasikumar (2003) in their work “An Overview of Migration in India, Its Impacts and Key Issues” studied the impacts of “internal and international migration, both of which are large-scale with impacts on economic growth and poverty reduction in many regions of the country.” This research also depicted the patterns, trends, and nature of labour migration, reviewed existing government and non-governmental policies and programmes, and briefly examines critical policy issues and options.

Zachariah et al. (2003) in their work “Dynamics of migration in Kerala: dimensions, differentials, and consequences” show the impact of migration on demographic transition (fertility, family planning, infant mortality, child mortality, etc.). They depicted “Status of women, children, and elderly persons in the utilization patterns of remittances as well as their socio-economic impact on households and the community; and impact of migration on labour market conditions.”

Korra (2011), in his working paper “Short Duration Migration in India: An Appraisal from Census 2001,” discussed short duration migration had played a significant role in permitting rural people to manage the effects of agricultural problems and traumatize rural socio-economic conditions. The study reveals that “short duration migrants are largely concentrated in rural areas and migrated searching for work/employment towards urban and other prosperous rural areas. Short duration migrants are primarily illiterate and less qualified and belong to either the older age group or below 14 years”.

Abbi (2012), in her paper “Impact of Internal Migration and Urbanisation on Transformation of Rural Habitat: The Case Study of Navi Mumbai,” shows the socio-economic and demographic changes which have taken place in the households of the originals (rural) habitats during the last 40 years due to implementation of various city development schemes launched by the state Govt. in this year.

Kundu (2013), in his article entitled “Impact of rural labour out-migration on Availability of labour-force at source area: an opinion survey in the block of Dumkal in Murshidabad District, West Bengal,” and found a different positive and negative impact of out-migration in Murshidabad district.

Das et al. (2020), in their article “Effects of labor out-migration on socio-economic set-up at the place of origin: Evidence from rural India,” have shown it harms rural labour sending area and significant impact on education on children, local economy in Malda district of West Bengal.

The literature reviews indicate that all issues relating to out-migration are not discussed under an umbrella. Moreover, any researcher’s present study area was unveiled, or governmental initiative was negligible for reducing rural out-migration. The present researcher has explored significant issues relating to the geographical analysis of rural out-migration in Koch Bihar district.

1.6. Statement of the Research Problem:

Rural out-migration is the bone of the livelihood strategy in the country. People’s movement from rural (origin) areas to other areas (destination) has been considered one of the problems for achieving its development efforts. The lack of poor rural infrastructure, lack of industry, poverty, lower-income, and under-employment produce the out-migrant from rural areas to the other areas for achieving jobs and livelihood strategies. So, it is identified as a ‘survival strategy’ for rural peoples. Out-migration is considered an essential economic development factor, which has acquired a special significance in commercialization in agriculture in rural India. In the agricultural sector, larger households become richer while small landholding households are too risky and left behind the origin. Both the rich and poor are almost equally migrated to the other regions in the country. Koch Bihar is a Border Adjacent District (BAD) in Indo-Bangladesh border having different regional features, patterns, determinants, and effects out-migrants have their importance. However, there is a lack of studies on nature, characteristics, determinants, consequences, and implantation on rural out-migration in Koch Bihar district.

1.7. Scope of the Study:

Koch Bihar district is an agrarian district in West Bengal where approximately 70% people are depended on agriculture. In the district, the majority people belong to scheduled caste and minority communities; there is no notable industry in the district. Income from the agricultural sector is very low and even erratic both for farmers and agricultural labourers. As a consequence, in search of secured job opportunities and better livelihood people from

the rural areas have migrated from their birth place. On the other hand, the shortage of agricultural labourers during the peak agricultural season also affects the district's economy. The out-migration is undergoing the radical change in demographic patterns as streams in the district. The majority of this movement is from rural to urban areas. In the present economic crisis, when we are facing unavailability of resources, the problem of migration is likely to become acute. The out migration in the district is mostly influenced by social structures and patterns of the development. The uneven development of inter-district and Intra-district areas is the main cause of out-migration. In these disparities, most of the migrants are landless poor and who mostly belongs from Scheduled caste and minority communities constitute the major portions of the migrants in rural Koch Bihar district. Under the present circumstances, there is an urgent need to study about the issues related to rural out-migration in the district.

1.8. Objectives:

The study of out-migration from rural areas of Koch Bihar district is based on the following objectives-

1. To highlight the overall scenario of rural out-migration in Koch Bihar district.
2. To identify the major causes of rural out-migration of the district and socio-economic background of out-migrant of the district.
3. To make a comparative assessment of migrant and non-migrant households.
4. To identify the nature, trends, and patterns of rural out-migration in the district.
5. To assess the consequences of rural out-migration in Koch Bihar district.
6. To assess the role of government developmental programme with particular reference to MGNREGS on out-migration.

1.9. Hypothesis:

The following hypotheses have been proposed to carry out the study;

1. Rural out-migration in the district is age and gender-selective.
2. There is a sign of seasonality in migration streams from rural areas to urban areas.
3. The rural out-migration changes the socio-economic and demographic condition of the district.

1.10. Data and Methodology:

The study has been mainly confined to the out-migration from rural areas of the sample villages in Koch Bihar district. The overall work has been developed based on the general framework and in-depth study of various issues related to out-migration in the country with both primary and secondary data. In terms of the present objectives of the study, the

following methods have been adopted to investigate the problem. The district comprises an approximate 3387 sq. km geographical area in West Bengal. It has 12 CD blocks, 128-gram panchayats, with 1132 inhabited villages sharing only 3.82% of the state's landmass. From the perspectives of the sample study, these villages are the smallest unit of the study. The household unit has been considered from 64 selected sample villages in the district to collect the primary data.

1.10.1. Data Type and Source:The study has been conducted on both the primary and secondary data. The collection and organization of the data is as follows;

Primary data collection

Questionnaires have been considered as a useful tool for the collection of primary data from the field. A researcher often frames the questionnaire based on fixed alternative questions or closed or open-ended questions to find the answers. The questionnaire enables to collect more information from large respondents with a limited period. Besides, it can minimize the interviewer's bias and allow the use of a large sample size to result in more dependable and reliable results (Kothari, 2004; Ahuja, 2014).

With the schedules, which have a set of questions, the researcher goes to respondents, ask them questions that are listed and record the replies in the space meant for the same in the designated format. In a certain situation, the enumerator may help the respondents recording their information to different queries. Here the investigators may discuss the objectives of the "investigation and also remove the difficulties" of the respondent. This method is very suitable and "extensive inquiries and can lead fairly results" (Kothari, 2004).

A sample survey of 398 households from 64 sample villages was conducted with a questionnaire and schedule (**Appendix-I**).Based on the following information;

- a) Essential information like name, age, sex, marital status, and so on.
- b) Literacy status;
- c) Occupational details (present, past);
- d) The economic condition of the family;
- e) Income and expenditure related questions;
- f) Migration details like history, trend, pattern, duration, destination, types, causes, consequences, etc.

Secondary data Collection

- a) The district map has been collected from the Census of India.

- b) The information related to land use collected from the Survey of India topographical sheets and USGS satellite imageries of the different years were used for this purpose. Besides, for the spatial analysis, the GIS platform has been used for the study.
- c) History of migration in the district, data has been collected from the 1951 Census to the 2011 Census.
- d) In addition to these, migration data have also been collected from NSSOs (64th round; 2007-08).

Sample Design:

For the empirical and spatial nature of migration, specific sampling methods have been used to select sample villages and sample households in the district.

- a) Selection of the sample villages: There is a 12 Community Development block (CD block) in Koch Bihar district. After selecting all the blocks, the villages are identified for field surveys based on their household number. At least 5% of sample villages have randomly been selected from each block in the district. Thus, a total of 64 sample villages have been covered under this study. The villages' selection is also made based on villages' location from the Block Development Office, viz., within 4 km., 4-8 km, and above 8 km (**Appendix-II.A**).
- b) Selection of Sample Size: For determining the sample size from the target population, different strategies have been considered for this study. In this case, the researcher has been used as a simple random sampling technique. It is the most common and simple sampling method where every unit of "population has an equal chance" of being drawn in the sample.

For selecting households of the sample, villages were conducted randomly based on the households' migration status. In this regard, the sampling households may be stratified into migrant and non-migrant households. For this purpose, the households have at least one migrant by the survey, ranging from 3 to 6 months or more than selected for research. The data were collected from both the migrant and non-migrant households/beneficiaries of the sample villages with pre-tested questionnaires and schedules and the case study method.

The sample size is determined by the formula devised by Cochran in 1975 from the large populations. At 95% confidence level and the estimated proportion of an attribute present in the population, p=0.5 (50%), q=1-.5=0.5, the size of the sample household should be.

$$n_0 = \frac{Z^2 pq}{e^2}$$

n_0 is the sample size, Z value found in the Z table (1.96), and e is the precision level (0.05). Let this formula select the number of households for the study of rural out-migration in Koch Bihar district from the selected sample villages. The researcher gets the sample size as 385.

Cochran formula for finite population correction for proportion for the final selection of the sample for rural out-migration as follows;

$$n = \frac{n_0}{1 + \frac{(n_0-1)}{N}}$$

Where, n is the reduced sample size, n_0 is the initial sample size calculated as per target population criteria, and N is the population size, and we get the sample size (n) 383. In this case study, the researcher has selected the sample size (n) 398(**Appendix-II.B**).

1.10.2. Methodology:

The study was carried out with the district's out-migrated and non-migrated households to fulfill the above objectives. In this study, the information collected through experiment or inquiry may represent tables, graphs, charts, etc. The cartographic and statistical analyses of data are used to validate the study. The maps can be shown in different ways, such as colour or shades, by dots, by placing pictograms in the geographical unit, and various techniques of cartograms have exhaustively been used to research rural out-migration from Koch Bihar district to get quick result for further analysis.

The various quantitative techniques have been used for different aspects of out-migration analysis, such as migration rate, migration stream, migration pattern, migration determinants, migration consequences, etc. Some important quantitative methods as follows;

The rate of out-migration is beneficial to measure the intensity of out-migration of a population. The out-migration rate is “the ratio of the total volume of migration during a specific period and the total population” (Wunch and Temote, 1978; Narayan and Singh, 2015). The formula for identifying the rate of out-migration (OMR) is –

$$OMR = \frac{Mi}{pi} * k$$

Where, OMR=Out migration rate, M_i =Total number of migrants during a given year or a period, p_i = Midyear population; K = denotes a constant (100/1000).

Migration streams: The movement of people from an area of origin (place of birth) i to the area of destination j during a given interval of time denotes migration stream from i to j (Ramakumar and Gopal, 1986). Then the migration stream denotes;

$$\frac{M_{ij}}{P_i} * k$$

Where, P_i is the population (out-migrant) at the area of origin or place of birth, M_{ij} is the out-migrated persons from area i (area of origin) to j (destination). K is the constant (100/1000). The index of the satisfaction (developed by Hall, Yeh, and Tan, 1975) of villages, the index of satisfaction has been applied as follows;

$$IS = \frac{(fs - fd)}{N}$$

Where, IS= Satisfaction Index, fs=No. of satisfied respondents, fd= No. of dissatisfied respondents, and N=Total respondents. This Index of Satisfaction values indicates the strength and lacuna of different opportunities in the district. The value of this remains +1 and -1. The greater value or positive values indicate the greater degree of satisfaction.

Chi-Square Test: The X^2 (Chi-square test) by Karl Pearson (1900) was used to measure the effect of out-migration on rural areas. It is an elementary and most widely used non-parametric test also. The Chi-square test is used in various situations to solve varied problems, e.g., such as testing hypotheses for determining the reliability and association, independence, etc. (Alvi, 1995; Sarkar, 2013). This test is very similar to the standard deviation. This method is used to test between observed (O) and estimated (E) frequencies. The following formula generates it;

$$x^2 = \sum \frac{(o - e)^2}{e}$$

Lorenz Curve: The Lorenz curve is widely used as a graphical representation of studying inequality. This curve was devised by Max O. Lorenz (1905). In this study, the curve is used for showing the monthly income and expenditure inequality between both migrant and non-migrant respondents. The degree of inequality of any distribution is directly proportional to the degree of concavity of the curve. Hence, in this graph, the more concavity, the more inequality (Sarkar, 2013; Gupta, 2008).

The Gini's Co-efficient (G) is a mathematical measurement of inequality of a distribution (Gini, 1972). This is defined as $0 \leq G \leq 1$. Therefore, $G=0$ corresponds to perfect equality and $G=1$ corresponds to perfect inequality. G can be calculated from the following formula;

$$G = 1 - \frac{\sum(x_i \cdot y_{i+1}) - \sum(x_{i+1} \cdot y_i)}{1000}$$

Logistic Regression: To identifying the most potent determinants of out-migration, the "logistic regression model" with mostly "a likely variable was fitted and estimated using the maximum likelihood method" (Kumar, 2004; Rogerson, 2001). This method denotes the

probability of rural out-migration. Here, P is the function of index variables Z, So, the set of variables is X1, X2...and so on. Z is equal to the logarithm of the odds ratio (OR), i.e., of the “probability of migration to the probability of non-migration” (Narayan and Singh, 2015). The dependent variable recorded in dichotomous (0 & 1), ‘0’ means not migrant and ‘1’ means migrant. The reference categories were chosen the first level of each independent variable, and a significance level of Wald statistics values have been tested in 3 levels of α like 0.1, 0, 05, and 0.01.

The equation of logistic regression is the following:

$$\text{Logit (Y)} = \ln\left(\frac{p}{1-p}\right) = \alpha + \beta_1x_1 + \beta_2x_2 + \epsilon$$

Where p is the probability of the event and α is intercepted, β s are regression coefficients, and xi is set.

Multiple Linear Regressions:

A “multiple linear regression model” was used to determine employment and income factors for the beneficiaries who worked under MGNREGS. Two empirical models have been used for the assessment of MGNREGS on rural out-migration.

$$Y_{a\&b} = a + b_1X_1 + b_2X_2 + \dots + b_7X_7 \quad (1 \ \& \ 2)$$

Where,

$Y_{a\&b}$ = Number of days and income of the beneficiaries worked under MGNREGS,

a = Intercept, a parameter scale.

1.11. Limitations of the Study:

Though apparently, the said study seems very easy because the study respondents would answer correctly with accuracy, and subsequently, the study would be carried out. However, speculation arises about the awareness of the respondent. There may be many absent people during data collection, and whose duration of residence is unknown. In this regard, some inconveniences may be arisen to carry out the work. On the other hand, the term ‘place of birth’ is understood and answered correctly by the respondent. However, the respondent may not be aware of the exact place of birth. A person living at a specific place may report it as his/her place for quite a long time.

1.12. Conclusion:

The above study clears definitions, terminologies, classification of migration. The chapter mainly deals with the research problem statement, review of the literature, objectives, hypothesis, data source, Methodology, and limitations of the study in Koch Bihar district.

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