Exploring pattern, reasons and determining factors of circular Mobility and Migration in India

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Abstract: This study examines how factors associated with place of origin and destination along with aspirations shape the different forms of geographical labour mobility in developing countries like India. This study is based on a primary survey of 450 respondents in five sub division of the district, Murshidabad (West Bengal, India). The present theoretical perspective found how poverty, regional deprivations, regional inequality under development intensified regional and income inequality which lead people to circulate. The result of current analysis found that petty business and employment-related reasons (economic push) are the most important factors followed by indebtedness of the respondents at the place of origin. In circular mobility, pull of destinations are from local demand of particular products and high profit margin while for employment throughout the year, high wage rate attract migrants. In the present study, circular mobility is facilitated by geographical proximity and well developed transport and communication networks. For the present form of mobility the determining role of socio-economic and demographic factors is observed at individual, household and community.

Key Words: Origin, Destination, Aspirations, cycles of mobility, migration, Socio-economic, Demographic

Introduction

Geographic redistribution of the labour force in whatever forms are one of the alternative left for the rural poor people living in the developing countries to earn means of livelihoods. In the absence of secure source of income, migration plays an important role as a coping mechanism. Movement of human being does not necessarily always takes in the form of permanent or seasonal but also in cyclical form throughout the year. Human mobility or simply mobility is the measure of how frequently population move over time in geographical space. In other words, it is a process by which the factors of production (workers/labour force) relocate across the regions or geographic space for economic and human resource development. Migrants constitute floating, and the invisible population who are commuting between source and destination areas and remaining on the periphery of society. The official sources of data in India (Census of India and NSSO) neither collect nor disseminate the actual magnitude of cyclical/circular mobility other than migration (i.e., temporary or permanent or seasonal). However, the 55th round of NSSO (1999-2000) reported only one percent of the total population in India are migrating temporarily for work excluded people who were in cyclical movement/circular mobility. Migration or much of it circular movement or circular mobility is now an integral part of the alternative livelihood strategies pursued by a large number of poor people living in the destitute condition in a rural area in India (Deshingkar and Farrington 2009; Bhagat, 2018; Kumar & Bhagat, 2018). The village level studies in large states of India (Rajasthan, Madhya Pradesh, Bihar, Odisha, Andhra Pradesh and Uttar Pradesh) documented vast, and growing numbers of temporary, seasonal and commuting (short-term internal out-migrants) accounted for near about 30 million or more (Deshingkar 2006b; Deshingkar and Anderson 2004, Mishra, 2016). The study by Deshingkar (2003) estimated every year about three lakhs labourers migrate from drought-prone Bolangir District in Western Odisha for work. The study of Srivastava (1998) and Byres (1999) also found seasonal migration from rural areas for manual work has increased dramatically in India since the 1960s (Bhagat, 2018). The field study by Rogaly et al. (2001) in eastern India also estimated over five lakhs people (parents and children) migrate seasonally in the rice-producing district (Bardhhaman, West Bengal) each year from the surrounding districts and neighbouring Jharkhand state (erstwhile south Bihar).

The literature on the economics of migration gave due emphasis to the 'push' factors operated at the place of origin and 'pull' of the destination (Bork, 2019; Bhagat, 2018) for the

process and outcome of migration. Landless agricultural labourers in rural areas belonging to particular class and caste experience mobility to meet the household's expenditure (Choudhary 1991; Chand et al. 1998; Gupta and Prajapati 1998; Naik et al. 2009) in comparison to economically well off. The main reasons for migration are seasonality and low employment, small land holdings, low incomes and indebtedness in villages (Singh and Kaur, 2007; Saha et al. 2018). Routine move out of the household's members from Murshidabad district for transplanting/harvesting rice reported half of them had no agricultural land and are below marginal landholdings (Rafique, 2003). On the other hand, the literature on behavioural approaches (Mukherji 1975; Wolpert 1970; Walker, 2017) viewed migration as a trade-off of net composite satisfactions derived from the destination place and satisfaction (kinship bonds, familial or social ties) derived from the source region. The new economics of labour migration (NELM) proposes that households rather than individuals make migration decisions in developing countries (Saha et al. 2018). It also gave due emphasis on the importance of a sense of relative deprivation in the place of origin as a determinant of which households send migrants. So, in this context analysis labour mobility which consists of changes in the location of workers both across physical space (geographic mobility) and across a set of jobs (occupational mobility) in developing countries like India is important one for policy initiation. In the present study two kinds of mobility is discussed; Circular mobility and Migration.

'Circular mobility' is defined as the process in which individuals from a particular household move out for occupation-related reasons and stayed for at least two weeks to less than six months at the place of destination and then returned back to their home, involving more than one outward movement and return. *'Migration'* in the present study is defined as the process in which 'any person from a particular household who had stayed away from his present place of origin for more than six months for occupation-related reasons during the last two years provided he is still migrating at the time of the survey. The present study also will focus on the inter-district and inter-state movements from the study area.

Objectives

With this background, the present paper is an attempt to;

a). Study the geographical labour mobility (i.e. circular mobility and migration) from Murshidabad district, West Bengal (India).

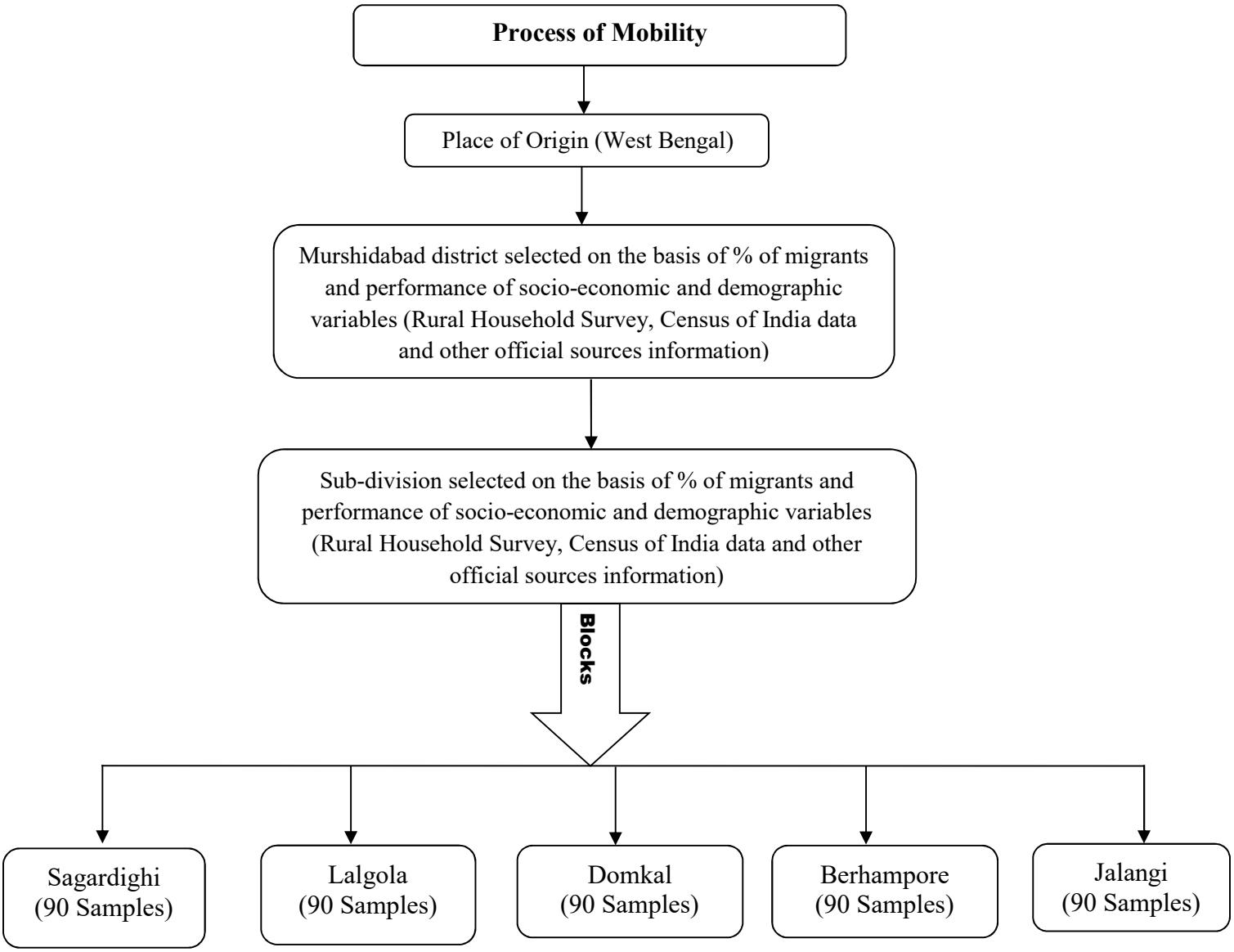
b). Secondly, analyse reasons and determinants of circular mobility and migration between the place of origin and destinations.

Data sources and Data collection tools, and methodology

Secondary sources of data: The major secondary source of data of human migration in India is Census of India (2001), and Rural Household Survey (2005-06) used to rationalise the present study and selection of the study area.

Primary source and data collection tools: Since both the secondary sources are lacking to capture the information of cyclical mobility of individuals throughout the year which is the major concern of the present study. So, the present study is entirely based on field survey data collected from a rural area of Murshidabad district in West Bengal.

(Snapshot of the sample design & sample collection)



The 2005 Rural Household Survey (RHS-2005) served as the sampling frame for the present study. Based on the RHS (2005-06) information out of total households reported any member of the households migrating for causal work district is selected. In the district at the subdivision level blocks with a higher proportion of households with any member of the households migrating for causal work from a particular sub-division were selected and samples were collected accordingly. Murshidabad district consists of five sub-divisions, and from each sub-division, one block was selected, and from each block, 90 samples were collected. So total five blocks were surveyed, and total sample size in the present study is 450. Selection of the villages, households, respondents and sample size were based on the outcome of pilot survey and information disseminated by the key informants (President of the petty business union, wholesaler, middleman and Government official at the block and Panchayats level). By using stratified random sampling technique distribution of samples between two groups of population circular mobility (280 respondents) and migrants (170 respondents) was decided. Since many of the key informants from the study area reported most of the people from the study area move out cyclically for short interval of time throughout the years, so sample size in circular mobility is large as compared to migrant respondents. On the other hand, the major thrust of the present attempt is to study the cyclical mobility of the rural people from the study area for the alternative sources of livelihoods cyclically. Since respondents in both the category of sample size are large enough (> 30 or 40), the sampling distribution tends to be normal, regardless of the shape of the data. So, it is assumed that the populations from which the samples are taken are normally distributed (Driscoll et al., 2000; Elliott and Woodward, 2007; Field, 2009).

Statistical tools and Techniques: A variety of statistical techniques have been used in the present study to analyse, present and modeling the quantitative information. To test the normal distribution of the sampled data Kolmogorov-Smirnov (K-S) and Shapiro-Wilk tests are used (Tarling, 2009). Descriptive statistics have been used to analyse the primary data set.
a. Simple statistical techniques like rates, ratio and percentage distribution have been used to meet the objectives and research questions of the study.

b. ***Multiple Response Analysis Technique:*** Multiple responses refer to the situation when respondents have choice to give more than one response for a particular question. It has been applied in many occasions in the present study. The execution of this test is done by using

SPSS software (Tarling, 2009). In the present study to identify the reasons for both cycles of mobility and migration this technique has been used as the sample respondents cited more than one reasons associated with place of origin and selection of destination. Similarly, to identify the major sources and purposes of loan among respondents in cycles of mobility and migration multiple response technique has been performed. In case of aspiration since most of the respondents cited more than one aspiration this technique has been applied.

c. *Binary Logistic Regression:* To estimate the probability of cycles of mobility or migration from the study area Binary Logistic Model is used (Tarling, 2009). The present study observed that cycles of mobility and migration is an on-going long-term economic strategy of the people from Murshidabad district of West Bengal. Rogaly, et al. (2002) from their field account also reported that migration of people from the eastern region of India is an on-going long-term economic strategy (Mukherjee, & Das, 2018). People are moving out for work in different forms typically in the absence of secured source of livelihood. The dependent variable is mobility of the respondents (cycles of mobility coded-1 or migration coded-0). A set of socio-economic and demographic factors are used as independent/explanatory variables.

Model Specification and Variables Definition,

$$\text{Logit (p)} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9 + \beta_{10} X_{10} + \beta_{11} X_{11} + \beta_{12} X_{12} + \beta_{13} X_{13} + \beta_{14} X_{14} + +E$$

p = Dependent variable (cycles of mobility-1 and migration-0).

$ß_0$ = Constant; $ß_1$ = Coefficient of variable X_1; E = Error Term

X_1=Current age of the respondents, X_2=Education level of respondents, X_3=Family size, X_4=Religion, X_5=Social group, X_6=Number of dependent (young + old+ unemployed), X_7=Number of children pursuing higher education, X_8=No. of daughters/sister at marriageable age, X_9=Liabilities or Debt, X_{10}=Land possessed as on date of survey, X_{11}=Social Network, X_{12}=Total number of years in mobility, X_{13}=Previous migration experiences, and X_{14}=Occupation before mobility

1. Geographical Labour Mobility from Murshidabad District

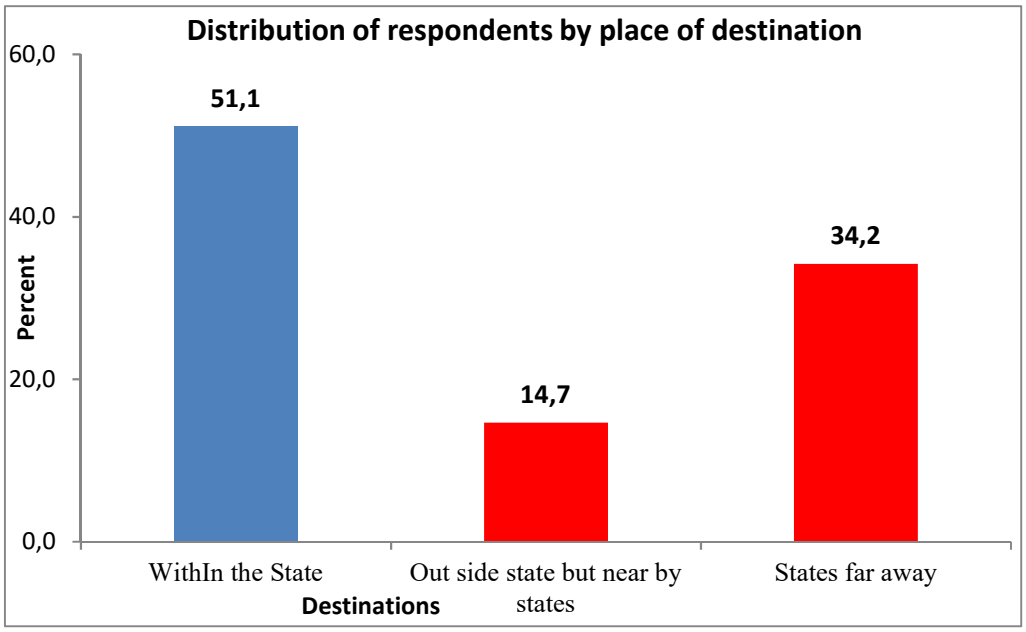
The issue of Geographical labour mobility (i.e., migration) from Murshidabad district to other districts within the state boundaries has a long history, but migration to states far away is a

recent phenomenon. The male population dominates migration from Murshidabad district (interdistrict and inter-state) for employment-related reasons (Rogaly et al. 2002; Rafique et al. 2006; Mishra & Sarkar, 2018). The secondary source of data (Census of India 2001) reported in term of movement within the state boundary the Hugli district received 7.18 thousand male out-migrants in 2001 Census from Murshidabad district. It is followed by Bardhhaman (5.37 thousand), North 24 Parganas (5.3 thousand) and Nadia (4.8 thousand). Regarding inter-state out-migration from the Murshidabad district, the most favourable destination is Jharkhand state which has a common border with Murshidabad district. The second most favourable destination place is Delhi (capital city of India) where the volume of migrants is approximately 4.24 thousand. The District Mumbai (suburban) and Mumbai receive 1.59 thousand migrants from Murshidabad. Out of which, 325 are female migrants.

Analyses of the pattern of geographical labour mobility (i.e., circular mobility and migration) from the study area which is based on the finding of a primary survey from the selected blocks of Murshidabad district (West Bengal, India) is the major concern of the study. Here, out of 450 sampled respondents more than half of the respondents float within the state boundary to earn livelihoods other than their place of origin (figure-1). Rest of the 49 percent is undergoing for mobility outside the state boundary. Interestingly, among the inter-state respondents pull of the states far away attracted more people than the neighbouring states. The selection of destination states by the respondents in two different type of mobility pattern present fascinating findings. Because of its geographical proximity to the mobile respondents, the most favourable destination is West Bengal. The respondent's practice circular mobility are more likely to float within the state boundary or hardly to the neighbouring states or states which have a common border with West Bengal. In the circular mobility, 102 percent of all the responses to the total cases are within the state. Rest of the 77 percent responses in the circular mobility is to the other states. In West Bengal, Kolkata is still a more favourable destination to the respondents opting for circular mobility. Those who are undergoing *circular mobility* between the place of origin and Kolkata are mostly worked in building and construction works (i.e., Mason and helpers). The second most conducive destination state to the respondents engaged in circular mobility is Bihar accounting for 35 percent of the total responses in circular mobility. In Bihar, most of the respondents are

involved in the petty business[1] are moving around in the districts like Araria, Katihar, and Purnia. Other neighbouring states like Jharkhand and Odisha are the third and fourth favourable destinations for the respondents opting for circular mobility for petty business. The states, Odisha and Jharkhand account for 18.6 percent and 18 percent of the total responses in circular mobility. In both, the states most favourable districts are Deogarh (*sconch bangles business*), Balasore (*hawking clothes*), Jagpur (*conch bangles business*), Mayurbhunj and Jharsuguda (Mason and helper work). The destination states located far away (Kerala, Tamil Nadu, Andhra Pradesh and Gujarat) from Murshidabad accounted for 4.5 percent of all responses (Maheshwari, 2016).

Figure-1



Source: Computed by author from field survey (2016). N (450)

The pattern of migration of the people which involves both long distances as well as a long spell of time outside the state boundary is engaged in different sets of occupations at the destination states. It is found from the result that most favourable destination for the migrants from the study area in the current migration stream is Kerala accounting for nearly 43 percent of all the responses in migration (Maheshwari, 2016). In Kerala, the most desirable destination districts are Aluva and Ernakulam where most of the respondents from Murshidabad migrate. The second most choice able destination states are Gujarat accounting

[1] *i.e. hawkering of mixed households items:selling of plastic and stainless steel utensils, sconch bangles business, hawkering clothes, purchasing and selling of agricultural products, collection, and selling of scraps materials*

for nearly 24 percent of the responses. In this state most favourable destination district is Surat where most of the respondents are engaged in house painting and fitting tiles on the floor. The skilled labourer from Murshidabad of this particular work created a huge demand for this type of work in Surat and other parts of India. Other southern states, i.e., Tamil Nadu (Chennai) and Karnataka (Bengaluru) are also other favourable destinations for the migrants from Murshidabad district accounting for 16 percent and 13 percent response to migration respectively. The states that follow it are Odisha and Jharkhand accounting for 11 percent and 3.5 percent of the responses. The neighbouring states where the level of urbanisation is low, low wage rate pulled fewer migrants from the study area. In these states, the most favourable destination districts are Ranchi (Jharkhand), Jharsuguda (Odisha) and Patna (Bihar).

2. Reasons for circular mobility and migration

2.1 Reasons associated with place of origin

The reasons associated with the place of origin and the place of destination acts differently. In the present study, the reasons for the present form of mobility from Murshidabad district are classified as reasons associated with the place of origin and destination. Further, during the field survey, respondents are asked to define specific reasons that pushed them from their place of origin and a specific reason that attract them to select the particular destination over other places. It emerges from the study that along with age of the respondents, the types of works engaged at the destinations very precisely determine the mobility pattern of the study area. As the respondents cited more than one reasons for their present move out and selection of destinations from the study area, multiple response analysis techniques have been used in the present analysis.

The tables generated by using Multiple Response Analysis (MRA) technique is presented in the table-1. Since most of the respondents cited more than one reasons for their present form of mobility, a total number of responses (1320 responses) is much higher than the total cases (450 respondents). In other words, on an average one respondent cited nearly three reasons for their present form of mobility from the study area. The analysis of pushing factors acting at the place of origin by type of mobility from the study area has observable differences. Those who are in circular mobility reported business related push while migrants respondents reported in search of employment or better employment and low wage rate is the actual push for their present form of mobility. In the case of respondents opting for the circular mobility cited petty business-related reasons for their present form of move out

accounting for around 113 percent of all responses. Employment-related reasons accounted for 29 percent. Out of which around 17 percent are for less number of work days, and low wage rate and rest is for in search of employment/better employment. Although circular mobility are overwhelmingly dominated by the petty businessmen many of the respondents in the circular mobility are also work as construction labourer so considerable share of employment-related reasons is observed (Bhagat, 2018). The landlessness as the reasons for the circular mobility accounted for around 13 percent of all the responses. The migrant respondents exclusively reported employment-related reasons as the dominant one acting at the place of origin accounting for more than 126 percent. Out of which migration for *in search of employment/better employment* is accounted for about 78 percent. About 49 percent is for l*ess number of work days throughout the year and low wage rate* in the place of origin. As it was found from the previous chapter that the traditional craft community in the district is on the verge of ruin either due to high competition from modernisation and globalised products and increased cost of local production. So, people who had practised their craft for several generations are forced to either shift their occupation or migrate to the alternate source of livelihoods. Decaying of traditional craftsmanship which is operated at the place of origin accounted for more than 45 percent responses among the migrant respondents. Lastly, more than 8 percent of all the responses reported landlessness is one of the pushing reasons operating at the place of origin. Although landlessness is found as one of the important reasons for migration of the rural people living in the destitute condition in India in the present attempt also very less number of respondents reported landlessness as the major reasons for their present form of mobility.

Table-1 Reasons associated with place of origin (percentage of responses to the total cases**)**

Reasons	Circular mobility	Migration
Lack of market, less profit margin and high competition	112.9	2.9
Less number of work days and low wage rate	14	48.8
In search of employment/better employment	12.9	77.6
Decaying of Traditional craftsmanship	12.0	45.2
Landlessness	12.9	8.2

Source: Computed from the field survey data, 2016

2.2 Reasons associated with place of destination

The reasons associated with the selection of the particular destinations among the respondents are presented in the (table-2). The result of the multiple responses for the selection of the particular destination indicates that the total responses are 792. It has been observed from the (table-2) that those are in circular mobility and engaged in petty business reported *local demand of the products* acting as a pulling force and accounting for about 69 percent of all the responses. The profit margin related reason from the particular petty trade accounted for 41 percent of all responses for the selection of particular destination. The next most important reason is a *cultural affiliation and geographic proximity* accounting for about 32 percent of all responses. The nearness to the home and homesickness, attachment with the family in a later age, sometimes either pull back or even halt to move out from the particular situation (Wolpert, 1970; Ritchey, 1976; Reja and Das, 2016). About 43 percent responses in the circular mobility are for high *wage rate/wage differences*. The hypothesis of the pull of employment throughout the year at the destination places also proved at the micro or macro level studies (Todaro, 1976; Gill, 1998; Litchfield and Waddington, 2003). Since many respondents in circular mobility are engaged in building and construction work, so pull of the destination place for employment throughout the year, and regular income accounted for more than 44 percent.

Table-2 Reasons associated with place of destinations

Reasons	Circular mobility	Migration
Local demand for the products	68.9	1.4
Profit margin high in the business	41.4	0.9
Employment throughout the year and regular income	44.2	74.5
High wage rate/ Wage differences	42.8	70.1
Cultural affiliation and geographic proximity	31.8	5.1
Others	1.1	8.8

Source: Computed from the field survey data, 2016

On the other hand, migrant respondents are mostly engaged in building and construction sectors and reported high wage rate/wage differences and employment throughout the year, and regular income pulled them in particular destinations. The available employment opportunities with fewer chances of the seasonality of work in particular destination pulled most of the respondents from the study area. The pull of *employment throughout the year and regular income* accounts for 74.5 percent of all responses. The second most dominant pull factor is high wage rate/wage differences accounting for more than 70 percent. Several

studies (Sjaastad, 1962; Harris and Todaro, 1970; Oberai and Bilsbarrow, 1984; Reja, 2016) indicated with higher wage rate at the destination and wage difference between origin and destination place pull the rural migrant labourers. Most of the migrants from the study area move out to the states in the south and western India (i.e. Kerala, Tamil Nadu, Maharashtra and Gujarat) where average wage for unskilled labour has increased from Rs. 150 to Rs. 450 (Zachariah and Rajan, 2011). About 9 percent migrants reported other pulling factors for the selection of particular destination over another.

2.3 Reasons for revisit by types of mobility

Respondents in the present form of mobility cited different reasons for a revisit to their respective villages. Among the migrant respondents, major reasons for the revisit to their home villages are homesickness accounting for more than 47 percent. The second most important reason is festival time only accounting for around 46 percent. Keeping in mind the long distance that has to be transverse by them to come and return to the origin and destination places and also the cost incurred due to long journey discourage them from visiting home frequently. Secondly, since most of the works are arranged informally, so the probability of losing works is very high with the frequent absence or leave from work sites. So, keeping these things in mind, they are tied to not take leave at a frequent interval. The third most important reasons for the home revisit among the migrants are family responsibility accounting for 44 percent of all responses. The requirement in agriculture and allied activities in native place accounted for around 8 percent among the migrant respondents. Most of the respondents in the migration process are at their young age and are less interested in working in agriculture or allied sectors due to seasonality and low wage rate. On the other hand, they are more interested in working in non-agricultural sectors where higher remuneration and regular wage work. Further in the process of migration from the study area almost all the respondents are engaged in building and construction work and henceforth travel long distances. Due to long distance, the role of good transport communication is insignificant among the migrants in case of frequent home revisit as compare to its counterpart.

Table-3 Reasons for revisit by types of mobility

Reasons	Circular mobility	Migration
Renewing of stocks	50.0	0.0
Distance	31.8	0.0
Requirement in agriculture and allied activities	24.1	8.0

Festival only	0.0	45.9
Family responsibility	82.1	44.1
When feeling homesickness	8.9	47.1
Others	3.6	7.1

Source: Computed from the field survey data, 2016.

On the other hand in the process of the circular mobility, renewing of stocks, the distance along with good transport communication network, requirements in agriculture and allied activities in native place, family responsibility frequently holds them back respondents to their native villages. Since most of the respondents in the circular mobility are engaged in petty business when all the items are sold out, they have to return to their native villages to take the goods again. Thus renewing of stocks in circular mobility is accounting for 50 percent. The highest percentage of responses in the circular mobility is a family responsibility which accounted for more 82 per cent. In the circular mobility, most of the respondents are at their latter age and family building stages. As it has been observed from the personal accounts of the respondents, people at their latter age develop more family attachment that may either prevent them to move out or move for a short distance and a short interval of time. Most of the respondents in circular mobility move for short distance keeping in mind to renew the stocks of goods. So around 32 per cent respondents reported distance along with better transport communication infrastructures for their frequent revisit to their home villages. Thus in the case of respondents opting for circular mobility, the significant role of transport and communication infrastructures is noticeable. The study of Srivastava (1998) observed improved infrastructure and reduced cost of transport made mobility process faster between origins to destinations for work. Most of the respondents in the circular mobility cover the distance between the place of origin and destination in an overnight journey, but it takes two to three days in case of those who are undergoing for migration. In circular mobility 24 percent of all responses are to the requirement in agriculture and allied activities in their villages that pull them to revisit home within a specific interval of time. The literature on micro-level studies found many seasonal migrants return back home for harvesting/agricultural work in a particular time of agricultural year (Mukherji, 1975; Rogaly 1998). In the circular mobility process, those who work in building and construction sectors either in Kolkata or cities in nearby states; they usually work for three to four months at the destination place. So, the considerable proportions of responses are in the category of homesickness accounting for 15 percent. Finally, in both the form of mobility *'other'* reasons

to return back home accounted for 3.6 percent (circular mobility) and 7.1 percent (for migration) of all responses respectively.

Case Study:1

One of the respondents (Sultan Mondal, 30 years old from Char kabilpur village, Lalgola) *When first time he moves out to Kolkata to work as construction helper, after few days he returned back home villages because he was missing his village, friends circles badly. So, he stopped to migrate for the time being. Since there is a little alternative source of means of livelihoods in his village to fulfil household consumption expenditures and his aspirations, so he again forced to move out from his native place but this time to a new destination state (Gujarat) along with his other friends. Since then he continues to do so. He usually returns home either during festivals (Eid[2]) or when feeling bore.*

Thus different attachments with the place of origin/native villages in terms to meet with their family in the respective home village or for agricultural work, for recreational purposes, to celebrate festivals are the causes that pull back the mobile respondents to return back to their respective home villages after a certain period. Thus, the whole mobility process is the outcome of the net composite satisfactions derived from the destination place may be perceived slightly greater than the origin place that pushes respondents. However, some other kinds of satisfaction (kinship bonds, familial or social ties) derived from the origin place are considered more which may hold back all the mobile respondents to their native place at a particular time (Mukherji, 1975). The material connection with the family sometimes holds back people by suppressing financial outcome from particular occupations. On the other hand, after a certain period of the composite satisfaction of the place of origin hold back the mobile respondents to the place of origin.

3. Determinants of Circular mobility and Migration

Theories of migration have offered several explanations about why people are migrating from rural areas to cities for work. In this section, the binary logistic model is used to explain the determining factors of circular mobility and migration in the context of theories of migration from Murshidabad district. In other words, the study tries to address to what extent the socio-economic and demographic characteristics determines the circular mobility and migration and what determines each of these distinctive mobility forms. The study of Vadean and Piracha (2009) analyse the determinants of temporary and circular mobility from the source area

[2] A religious festival of Muslim Community.

perspective. The present study also analyses the determining factors of circular mobility and migration from source area perspective. In the present study to find out the probability of individuals to opt for circular mobility or migration from the study area, the binary logistic model is used. The dependent variable is circular mobility. A sets of socio-economic and demographic characteristics is used as independent/explanatory variables. In the present study so far pattern of two types of mobility is discussed in the context of different socio-economic and demographic backgrounds. Here to find out the probability of individuals to opt for circular mobility or migration from the study area binary logistic model is used. The dependent variable is mobility (circular mobility coded-1 and migration coded-0). A set of socio-economic and demographic characteristics (Current age of the respondents, Education level of respondents, Family size, Religion, Social group, Number of dependent (young + old+ unemployed), Number of children pursuing higher education, No. of daughters/sister at marriageable age, Liabilities or Debt, Land possessed as on date of survey, Social Network, Total number of years in mobility, Previous migration experiences, and Occupation before mobility) is used as independent/explanatory variables.

Overall to interpret the model for the goodness of fit of the model likelihood ratio test and omnibus test applied and observed from the result that many predictors are significant. To interpret the model after taking account of other variables in the model the odds of being respondents in circular mobility is 1.647. Thus the odds of being circular mobility are 64 percent greater for respondents in circular mobility than migrants. Having fitted the model to see whether the results are within the bounds of a chance of occurrence Omnibus Tests of Model Coefficients is used. The result shows that entering variables reduces the -2Loglikelihood by 200.206 which is distributed as chi-squared with 26 degrees of freedom (df). This is significant at the .000 level, which implies that including the variables adds to our understanding or explanation of the odds of being a circular mobile respondents is higher.

To summarise the model the "pseudo" R^2 estimates in the Table 4 indicate that approximately 36 percent or 49 percent of the variance in respondents in Murshidabad district whether opted for circular mobility or migration can be predicted from the linear combination of all variables supposed to be predictors. However, the Cox and Snell R^2 (36 percent) is usually an underestimate. The '*Nagelkerke R square'* is estimated at 49 percent indicating that some demographic and socioeconomic variables are useful in predicting factors associated with place of origin for circular mobility from Murshidabad district.

Table 4 Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	396.463[a]	.359	.489

a. Estimation terminated at iteration number 6 because parameter estimates changed by less than .001

Table 5 presents the results from the estimation of binary logistic regression model of each independent variables. The decision whether for circular mobility or migration is modeled by considering above mentioned sets of independent variables acted in the place of origin. To interpret and describe the relationship between the dependent and explanatory variable in the model the value of Exp(B) is used which is also called as probability of occurring of a particular event over the probability of failure or non-occurrence of the same. In the migration literature, age is considered as one of the most powerful demographic determinants. The effect of individual age on the choice between migration and circular mobility is one of the most important demographically linked drivers. In the model, the age of the respondents is comprised of three dummies (age groups), such as 24-34 years, 35-44 years and more than 45 years, where age group less than 24 years is defined as reference category. All the dummies are statistically significant at 95% level confidence interval. The odds ratio of age group 35-44 years is 1.26. It expresses that those who are aged in between 35-44 years, they are more likely to adopt circular mobility than those who are 24 years or less (reference category) (p- 0.029). Similarly, the odds opting for circular mobility is 1.40 times greater for those aged more than 45 years than for those aged less than 24 years with associated p-value (sig.) of 0.08. Furthermore, it can also be interpreted from the model that the probability of circular mobility at the age of more than 45 years is 1.11times greater (1.404/1.259) than those of in the age groups of 35-44 years. An interesting fact is observed at the young adult ages (25-34 years) that the probability of migration is greater than the circular mobility. Thus, it can be concluded that the probability of adapting to circular mobility over migration increases with increasing age of the people. Further, the probability of circular mobility with increased general level of education does not find any such relationship prediction between the present form of mobility from the study area. Since both categories of respondents are moving out for the low-ends heavy manual labour intensive occupations (petty business and building construction work), the variations in level of education is minimal. In existing literature on migration studies, the role of family as a decision-making unit for the migration process is analysed. The type of family along with

family size may influence the decision to move or not to move for the purpose of work. In other words, families are the principal agents of decision-making. Increasing number of household members puts pressure on family resources. In many rural households, the average household income is inadequate to meet household's consumption expenditures. Thus, the probability of larger family to send the adult members for circular mobility for earning livelihood is high in extended families than nuclear families (Stark and Taylor, 1991). In the present study among the two compared groups, the probability of circular mobility is greater with large number of family size. It can be inferred from the result that the probability of respondents choosing circular mobility is 1.44 times greater for those who have family size six and more as compare to those of family size 2-3 members although the result is statistically insignificant. In terms of religion as an explanatory variable in the model there exists relationship between circular mobility and migration from the study area. It can be said form the model that the odds (probability) of respondents opting for circular mobility is 1.8 times higher for those belonging to Muslim community than those from Hindu Community which is highly significant statistically. Similarly in term of social groups of the respondents also indicate good relationship in the present form of mobility form the study area. It can be inferred from the result that the odds (probability) of respondents to choose circular mobility is 3.97 times greater for those who are from Other Backward Class than those who belong to non-Other Backward Class which is statistically highly significant (1 per cent level). The number of dependent family member puts pressure on the bread earner which in turn acts as a push factors for the migrants.

Table 5: Determinants of circular mobility and migration

Independent Variables	Categories	Exp(B)
Current age of the respondents	Less than 24 **(R)**	
	25-34	0.107**
	35-44	**1.259***
	More than 45	**1.404***
Education level of respondents	Not literate **(R)**	
	Up to primary (till class V)	0.556
	Up to secondary and above	0.379
Family size	2 to 3 **(R)**	
	4 to 5	0.786
	6 and more	**1.441***

Religion	Hindu (R)	
	Muslim	**1.810*** **
Social Group	Other than OBC (R)	
	Other Backward Class	**3.965*** **
Number of dependent (young + old+ unemployed)	No any dependent(R)	
	One and More dependent	**1.975***
Number of children pursuing higher education	No children pursuing higher education(R)	
	One and more children pursuing higher education	0.714
No. of daughters/sister at marriageable age	No(R)	
	Daughter/sister at marriageable age	**1.350*** **
Liabilities or Debt	No(R)	
	Yes	0.486
Land possessed as on date of survey	No	
	Yes	1.191*
Social Network	Own Self(R)	
	Co-villagers and Neighbour	0.998
	Relatives	**1.409****
Total number of years in mobility	Less than 4 years	
	4 to 9 Years	1.069
	10 years and more	1.094
Previous migration experiences	New Respondents(R)	
	Respondents with previously migration history	1.469**
	Respondents with parents migration history	0.647
Occupation before mobility	Building and Construction Labourers (R)	
	Agricultural labourer	1.606
	Petty Businessman	0.574
	Students	0.900
	Constant	16.936

Note: Dependent variables 'circular mobility coded (1) and migration (0). (R) = Reference Category *** Result is significant at 1% level ** result is significant at 5% level and * result is significant at 10% level. Number of observations 450 (circular mobility-280 and migration-170).

In the present study most of the respondents who are in circular mobility are at their later age of family life. So number of dependents is high among them than those who are migrant respondents. Thus, the pushing role of the number of dependents (young, old and unemployed) is 1.97 times higher among the respondents undergoing for circular mobility than those of migrating out which is statistically significant at 10 per cent level (sig. 0.073). Numerical representations of daughter or sisters at marriageable age cannot capture the magnitude of the family burden on the parents. To marrying off daughter or sisters is a social responsibility lying on parents which are to be fulfilled. Getting daughter or sisters marrying off in a hypergamous society involves large amount of monetary investment. In recent times the push social factors operated in the place of origin at the households level is analysed in the context of rural migration.

In the model, the odds of being undergoing for circular mobility is 1.35 greater for those who have daughter/sister at marriageable age than for those with no such burden with associated p-value (sig. 0.000) which is statistically significant at 1 per cent level. Migrant respondents with greater access to social network (social capital) may provide psychological support and continuous social and economic information about the destination places. The present form of mobility from the study area is developed by using the existing social network. It has emerged from the study that most important source of social network among the respondents is relatives. From the present model, it can be inferred that the respondents in circular mobility is 1.40 times higher of using relatives for the selection of destinations than those who move out independently with associated p-value (sig. 0.002) which is statistically significant at 5 percent level. On the other hand, migrant respondents are more likely to use the co-villagers and neighbours to select the destination. Further it can also be interpreted from the model that the probability for circular mobility using relatives as a social network is 1.41(1.40/.998) times greater than those of using the co-villagers and neighbours as social network. In terms of total number of years of mobility experiences of the respondents, it is observed from the result that the odd of the respondents whose duration of mobility experience is 5-9 years are 1.06 times higher to opt for circular mobility than those of with mobility experience 4 years or less. In the next category of mobility experiences (10 years and more) the odd of the respondents for circular mobility is 1.09 times higher than those of mobility experience 4 years or less. Both the result is statistically insignificant. The information of prime occupation of the respondents before the move out from the study area reported majority of them were in agriculture and allied sectors. Thus, comparison of the

respondents who worked as building and construction labourers with the respondents in agricultural works before moving out indicate higher probability of moving out from agricultural sector than that of building and construction and the result is statistically insignificant.

In migration studies crucial question is whether migrants were benefited from the previous migration experiences. Knowledge gained from previous move out enables individual to evaluate the benefits of alternate occupation. It can be inferred from the Table 5 that the probability of respondents to opt for circular mobility is 1.46 times higher among the respondents with previous migration history when compare with new respondents. The result is statistically significant at 5% level. On the other hand the respondents with parents migration history are more likely to opt for migration over circular mobility when compared with new respondents in the present form of mobility from the study area. Further the probability of circular mobility among the respondents with previous migration history is 2.27 times greater when compared with migration history of parents. Thus, knowledge gained from previous moves keep individuals in advantage to evaluate the benefits of alternative offer and occupational mobility over fresh respondents or respondents with family migration experiences. Migration is often linked to debt cycles which push households or any members to migrate (Deshingkar, 2003). In the present study the probability of indebtedness is high among the migrants when compare with the respondents in circular mobility. In terms of land possession of the households it is observed that the probability of land possession among the respondents in circular mobility is high when compared with the migrants and the result is statistically significant at 10 per cent level.

4. Discussion and Conclusion

Adaptations of neo-liberal policy and declining opportunities in the rural area have made agriculture non-profitable for small peasants. It has given a push to the movement of rural folk working as agricultural daily wage labourer from the farm to non-farm activities (Khasnabis 2008). Majority of the respondent in the study area were depended on agricultural wage labour and allied activities for their livelihood where seasonality of income, the low wage rate is common. On the other hand, shoot up of household's consumption-expenditures pushes to move out for diversified occupations instead of stuck in agricultural wage labour work. It is seen that with the flow of time the movements which used to be intra-state gradually shifted to inter-state. The Geographic proximity, requirement of goods and services, transport and communication network also plays an important role in the

development of the present form of circular mobility and migration from the study area. The economic push is one of the most important reasons operated at the place of origin for the present form of mobility. In an economic push, petty business and employment-related reasons are the most important pushing factors followed by indebtedness (Borhade, 2016). Among the compared group migrants reported employment and wage rate related reasons is the principal push factor while in circular mobility, petty business and indebtedness are the major pushing factors operating at the place of origin. The analysis of pull factors operating at the destination places among the compared group indicates those who are in circular mobility reported local demand for the products, profit margin high in the business and are the major pull and facilitated by distance & transport and communication system. On the other hand, those who are migrating reported employment throughout the year high wage rate and regular payments acting as the pull factors for migration. The determining role of socio-economic and demographic factors for the present form of mobility from the study area observed at the three levels (i.e., individual, households and community level). At the individual level, life cycle (present age of the target groups), the total number of years of mobility experiences and prime occupation before the present move out are the important determinants of what type of mobility respondents opt for. At the household level, the family size, number of dependents, and number of daughters/sister at marriageable age are also important determinants in the present study to opt for circular mobility by the respondents. Sometimes restrictions imposed by the nuclear family bound the male head of the household not to move out for work from their native place. In the nuclear family look after left behind is very critical, wives have to bear the burden of increasing responsibilities, managing their households, meet social expectations which lead to the greater mental stress of the left behind the female in the absence of male partner (Roy, 2011). At the community level, the determining role of religion (Muslim community), social groups (Other Backward Classes) and social network (relatives) observed among those who are opting for circular mobility from the study area. Finally, the study concludes that with the increasing age of the people social attachment with family increases that may ultimately affect their decision of the temporal length of stay in the destination places. The mobility of people from Murshidabad district (West Bengal) in whatever forms is an on-going long-term economic strategy in the absence of secure means of livelihoods which shift their course frequently like *'Rivers of Bengal'.*

5. Policy Recommendations

Based on the findings of hard to reach target groups in the study area as well as rest of the part of India the study suggests the large scale data agency in India (i.e. Census of India and National Sample survey or Demographic and Health Survey) should make either separate survey or included into their questionnaire to capture the cyclical mobility. In most of the surveys they exclude major chunk of circular or circular mobility respondents because of some pre decided definition of migrants. For the Murshidabad district specific policy the district has suffered from substantial decline in the traditional conventional and world famous crafts where people used to engage themselves. No effort has been observed from the state government as well as central government on last several decades, to address those issues and provide alternative livelihoods. So, Policy should be initiated to revamp the traditional crafts (silk, copper-brass, bidi and conch) of the district which once had world fame. It is emerged from the prolonged field survey in the district that it has potentiality for small and medium scale industries. The study suggests that large schemes to create the atmosphere of small and medium scale industries in the district which will not only retain those who are migrating out, but also will enhance the overall sustainable development of the district. Further for the promotion of sustainable development in every sphere of life in the study area flood risk and river bank erosion should be addressed not only as natural/physical event but also for its deep socio-economic concerns.

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