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PATTERNS OF POPULATION MOBILITY IN THE DELHI METROPOLITAN AREA AND THEIR IMPACT ON THE URBAN DYNAMICS Presentation of the system of investigation

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1 - CONTEXT OF THE STUDY

Promoted the capital of the British Indian Empire in 1911, then capital of independent India in 1947, Delhi is the Indian metropolis (over a million inhabitants in 1981) which has experienced the highest demographic growth over the last decades. Its population has expanded from 1.4 million in 1951 to 8.4 million in 1991. The rate of growth, however, slows down over that same period: 5.1% per year from 1951 to 1961, 4.5% to 4.6% from 1961 to 1981, and 3.9% per year between 1981 and 1991.

Today, Delhi is a city in full expansion: although traditionally, it has always had a political and administrative role to play, it is now becoming one of the country's major centres of economic growth. In addition, the capital has pioneered original experiences in town and country planning, with a rigorous planning of the city, policy of urban public transport, the creation of satellite towns, measures of land control, relocation of slum dwellers. However, despite these policy measures, speculation on land and formation of slums could not be avoided. Delhi thus provides an example of how a capital with several millions of inhabitants has developed, with a sustained growth in the context of willful urban policies.

Moreover, this capital's dynamics is part of an urbanisation process, that has two characteristics at a national level. Firstly, with a level of urbanisation that is relatively moderate (26% in 1991), India remains a predominantly rural country - and will remain so in the medium term. Secondly, the urban scene is dominated by the big metropolises, and the urbanisation process has gone hand in hand with a growing concentration of the urban population in the metropolises of a million- and multi-million inhabitants.

In Delhi, like in other large metropolises in the world, the process of urbanisation seems to be linked to other specific phenomena:

- the deconcentration of the urban core;

- a process of suburbanisation, with the rapid development of suburbs and the formation of satellite towns;

- an increased differentiation and segmentation of the metropolitan area;

- the development of commuting between place of residence and place of work as well as the development of other forms of circular mobility between different places of residence inside and outside the town, resulting in complex and multi-polar spatial residential patterns which go beyond the urban/rural dichotomy.

The development of a metropolis like Delhi, with several millions of inhabitants, raises crucial and specific problems in terms of urban administration. Furthermore, the rate of demographic growth, in spite of its slow down, remains quite significant, which compounds the task of town planners.

Understanding how cities function and, in the firt place, how their population dynamics function, is an indispensable prerequisite for any attempt at town planning. In this research project on Delhi, the study of population movements is used as a preferential tool to analyse and understand better the dynamics of the metropolis: its development as well as its internal structuring and transformations.

2 - THE RESEARCH PROGRAMME

2.1. Research objectives

The main objective of this research project is to improve our knowledge of the different forms of spatial mobility and of the complex spatial residential patterns in a large metropolis, and to analyse the different types of mobility practiced by the population in relation to its absoption into the urban labour market and conditions of access to a dwelling.

Then, it aims to analyse the impact of such residential and occupational strategies on urban dynamics, and this at three levels:

- Impact on the global dynamics of the town, in terms of geographical spread of the urban agglomeration and development of suburbs and satellite towns, that is, more generally, impact on the process of metropolisation and suburbanistion;

- Impact on the internal structure of the metropolitan area, in terms of population redistribution within the urban space and in terms of differential dynamics of certain neigbourhoods, and, more genrally, role of residential strategies in the process of spatial segmentation;

- By putting Delhi into its regional context, the different forms of population mobility will be also examined in order to better understand the structure of the exchanges that take place between the metropolis and the neighbouring states of North India, or other places of the national territory, or even international space.

In this perspective, we shall also examine the links between the urban policies at the macro-level and the individual's residential practices at the micro-level.

The following two questions guide our investigation:

- What are the residential practices developed by the population, its strategies as regards the occupation of the geographical and economic space of Delhi metropolitan area? What are the occupational, familial, etc... determinants of such practices?

- What impact do these residential practices have on the global and intra-urban dynamics of Delhi?

Particular attention will be given to the forms of temporary and circular mobility and their evolution. The permanent versus transitory character of the circular mobilities will be questioned: do these complex residential patterns represent a step towards a settling down into the city or do they tend to become perennial? What lessons can be drawn as to the impact of such patterns on urban dynamics?

The objective of such research in the Indian national context will also be to understand to what extent the development of the forms of circular mobility can help to maintain a relatively moderate rate of urbanisation.

The research project on Delhi is also conducted in the perspective of an international comparison with another metropolis of the developing world, Bogota (Colombia)¹. This will also allow us to compare the different patterns of spatial mobility in two large metropolises which face some similar problems although they belong to contrasting geographical and socio-political contexts.

2.2. Research methodology

The official systems of demographic data production in India (the censuses and the National Sample Survey) do not provide adequate information on the different forms of spatial mobility in relation to urban dynamics: first they focus mainly of migration seen as a relatively permanent tranfer of residence, and secondly the level of aggregation of the data on migration does not allow a differential analysis of the neigbourhoods inside a given urban agglomeration. Hence, in addition to making use of the bibliographical and statistical data available on Delhi, this research programme relies essentially on specific surveys carried out on samples of populations in some selected neighbourhoods of the metropolitan area (see below section 3.1).

¹ The reserch project in Delhi is conducted in collaboration with the Institute of Economic Growth, with the financial support of ORSTOM (Paris). In Bogota, the research project is conducted by Françoise DUREAU (ORSTOM) in collaboration with the CEDE (University of Andes). The comparative programme on the residential practices of the populations and their impact on the dynamics and segmentation of large metropolises has received a financial support from CNRS - *PIR-Villes* (Paris).

In order to get a better understanding of the urban transformations linked to the residential behaviour and to the spatial mobilities practiced by individuals and their families, the system of observation follows three basic principles:

- To take into consideration the set of all types of mobility, regardless of the distance (intra-urban movements in the metropolitan area and migrations towards and from Delhi) or the duration of the movement (permanent or temporary migrations and daily commuting).

- To introduce a longitudinal approach, which helps us to understand the way in which people combine different residential practices throughout the different stages of their life cycle.

- To take into consideration the family units in the observation and analysis of the migratory practices, in order to relocate individuals' mobility behaviours into their familial context, and thereby recover the collective dimension of the mobility logic, evidenced in numerous socio-anthropological works.

Only a combination of the quantitative and qualitative approaches can adequately meet the three principles stated above, and help us to determine the direction and socio-demographic compositions of the principal population flows towards, from and inside the Delhi metropolitan area, as well as the individual and family strategies under which these population movements take place. This is why, through the combination of quantitative and qualitative approaches, the observation system adopted includes two main parts:

- A Statistical Survey carried out on a sample of approximately 1,500 households of the metropolitan area. The survey is based on a structured questionnaire filled for every person who sleeps (even temporarily) in each of the neighbourhoods included in the sample. Information is collected regarding commuting between the place of residence and the place of work or study, the residential system, temporary mobilities as well as the migratory trajectory.

- An Anthropological Observation will supplement the statistical observation and will consist of semi-directed interviews carried out on a sub-sample of approximately 50 people, selected in such a way that they represent the categories shown by the statistical survey. The purpose of these interviews is to collect detailed migration, occupational and familial histories, to observe the support network that intervene in the residential strategies, and hence to deepen in the understanding of the population's migratory behaviour, especially of the people who move the most.

The observation of spatial mobilities and residential practices was complemented by the collection of basic information on the contextual background of each neighbourood selected for the survey: civic amenities available, land use pattern, history of the neighbourhood, how the area has developed over the last decades in terms of housing, civic amenities and economic activities, whether it has benefitted from specific urban policies or whether it results mainly from non governmental initiatives (including unauthorized settlements). This will allow us to analyse the extent to which the main characteristics of the neighbourood (in terms of housing and economic activities in particular) may influence certain residential strategies at the individual and household levels, and, reciprocally, to which extent the residential strategies have an impact on the dynamics of the neighbourhood and the structuring of the city.

3. THE QUANTITATIVE SURVEY OF POPULATION MOBILITY

3.1. Universe of reference and zones selected for the survey (Figure 1)

The area of reference : the metropolitan area of Delhi.

Following the specific aspects of the process of metropolisation observed in Delhi, namely: the process of suburbanisation and development of satellite towns; and the development of cicular mobilities which go beyond the urban/rural dichotomy, it appears that the relevant area of reference for a study concerned with the development of Delhi cannot be limited to the administrative boundaries of the urban agglomeration.

For the purpose of this study, the area of reference is the Delhi Metropolitan Area, as identified for the first time by the Master Plan of Delhi (1962) and defined by the National Capital Planning Board in its Regional Plan for 2001 on the basis of a study of the Delhi region.

Thus, the Delhi Metropolitan Area consists of:

- Delhi National Capital Territory including Delhi urban agglomeration, the small and medium-sized towns of the hinterland, as well as the rural areas;

- 6 ring towns located within a radius of 35 kilometres around the capital, and whose demographic and economic development is inter-dependent with that of Delhi, and involves large-scale commuting.

Selection of the zones to be studied

Given, on the one hand, the population size and geographical spread of a metropolis like Delhi (propably close to 10 millions today), and, on the other hand, our time and cost constraints which allowed us to survey a total sample of maximum 1500 households, it was obviously not possible to envisage a sample that would be representative of the entire Delhi metropolitan area.

Considering our research objectives, what appeared important was to have:

- on the one hand, a sample representative at a local level (neigbourhood), since the objective of the survey implies the measurement and a close analysis of intra-urban flows among neighbourhoods;

- and, on the other hand, to highlight the different patterns of population mobility that count in the global functioning of the metropolitan area.

Therefore, we have reduced the universe of the study and selected specific zones in the Delhi metropolitan area. The selection was done according to a reasoned choice, on the basis of the analysis of the 1991 census data², as well as other information available on the land use patern and types of settlement and housing.

Considering again the size of the urban agglomeration as well as the size of some of the ring towns (two of them with a population over half a million), and, on the other hand, the permitted maximum size of the sample (1500 households), we found it more interesting for the purpose of this survey to focus the observation on certain types of zones, in order to better highlight the most significant aspects of the process of metropolisation at work in the Delhi region, that is: the rapid growth of the peripheral zones of the urban agglomeration; and, concerning the ring towns, the creation of satellite towns and new residential townships. Subsequently, we decided to focus on zones of more recent settlement with higher rate of population growth (between 1981 and 1991), hence indicating important movements of population towards those zones, and which are generally located in the peripheral zones.

Nevertheless, we included in the sample a relatively centrally located zone, in order to have a better representation of the various types of residential patterns and urban dynamics. For the same reason, we have also planned to conduct an additional survey of a sample of houseless people sleeping on the pavement or in the night shelters located in the old city (the historical core of the town) where the highest concentration of pavement dwellers is found.

² See DUPONT (V.) & MITRA (A.) - "Population distribution, growth and socio-economic spatial patterns in Delhi. Findings from the 1991 census data". *Working Paper Series* N° E/164/94, Institute of Economic Growth, 1994.

The other criteria applied to select the zones then aimed at taking into account the diversity of the neighbourhoods found in the metropolitan area in terms of : geographical sector, residential density, economic functions, socio-economic characteristics of the population, types of settlement and housing - which are linked to urban policies and public interventions. This approach will allow us to conduct a differential analysis of the residential practices of the people in relation with urban policies which have been implemented.

The main characteristics of the zones selected are described in Table 1.

4.2. Sampling frame

For the 4 zones located in Delhi metropolitan area and for one ring town (NOIDA), the electoral rolls updated in October 1994 for Delhi and January 1995 for Noida, have been used as a sampling frame. In order to limit the risk of non exhaustivity of the electoral rolls, we used these lists to draw, not a sample of individuals, but a sample of dwelling units. The dwelling units were identified by the voters' addresses, and all the households living in the selected dwelling units were surveyed, whether or not the individuals were registered in the electoral rolls. In that manner, we could survey a good number of new comers or tenants who were not registered.

In each zone we applied a stratified and three-stage sampling (see Table 2). At the first stage, we selected polling stations, from the list of polling station in each zone, with probability proportional to the size (in nombre of voters in the polling station).

At the second stage, in each polling station of the sample, we selected the dwelling units, independently with equal probability using random numbers generated by electronic computers. At the third stage, we surveyed all the households in each dwelling unit of the sample.

This samling scheme was applied independently in each strata of each of the studied zones. Each zone was previously divided into 2 to 6 strata, according to the type of settlement and housing, following field observation (see Table 1).

In the sixth zone selected, a new township in the outskirt a ring town, electoral rolls involved too many limitations to be used as a sampling frame: no updating, number of persons not registered likely to be particularly high-in a new neighbourhood with some phases still under construction.

Therefore, the list of occupied dwelling units was established on the basis of a land use survey of all the plots; this survey was conducted with the help of maps prepared by the builders and showing the boundaries of the zone as well as the boundaries of the plots. Then, we used this sampling frame to apply a two-stage sampling similar to the one applied in the other zones : the dwelling units were selected independently with equal probability using random numbers; then all the households in each dwelling unit of the sample were surveyed.

The stratification of the zone was established according to the type of settlement and the period since developed, on the basis of the master plan established by the builder and field observation.

Finally, the total sample consists of 1229 dwelling units, corresponding to 1413 households surveyed.

Figure 1. Description of the observation system

GEOGRAPHICAL . INFORMATION SYSTEM

Delhi National Capital Territory consisting of : Delhi Urban Agglomeration divided into 143 census charges + 6 small towns + rural hinterland
6 ring towns

DEFINITION OF THE UNIVERSE OF STUDY

1. DELIMITATION OF THE METROPOLITAN AREA OF DELHI

Delhi Metropolitan Area as identified by the Master Plan of Delhi and the National Capital Planning Board, on the basis of geographical criteria (distance to Delhi), as well as criteria of demographic and economic interdependency

Delhi Metropolitan Area = Delhi National Capital Territory + 6 ring towns

2. SELECTION OF THE ZONES TO BE STUDIED

4 ZONES IN DELHI

Selected according to: geographical location, population dynamics, socio-economic characteristics, type of settlement and housing

1 RING TOWN + 1 ZONE IN THE OUTSKIRT Selected according to: geographical location, population dynamics, urban fonctions, type of urban planning operation implemented

SYSTEM OF DATA COLLECTION ON SPATIAL MOBILITY

1. EXTERNAL DELIMITATION AND STRATIFICATION OF EACH OF THE STUDY ZONE

4 ZONES IN DELHI + 1 RING TOWN

External delimitation according to the division into electoral consistencies and polling stations Stratification according to the type of settlement following field observations

1 ZONE IN THE OUTSKIRT

Delimitation according to the land use survey established by the builder Stratification according to the period since built and to the type of settlement following field observations

2. SELECTION OF THE SAMPLE OF HOUSEHOLDS

4 ZONES IN DELHI + 1 RING TOWN : stratified and three-stage sampling on the list of dwelling units

1 ZONE IN THE OUTSKIRT : stratified and two-stage sampling on the list of dwelling units

3. SURVEYS

STATISTICAL SURVEY

ANTHROPOLOGICAL SURVEY

Sample of 1413 households

Sub-sample of about 50 persons (survey to be conducted in 1996)

Table 1	-	Description	of	the	selected	zones	
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STUDIED ZONES	CHARACTERISTICS OF THE ZONE*	N° of strata and criteria*	N° of sample house holds
IN DELHI URBAN	AGGLOMERATION		
1. TIGRI	Neigbourhood located in the southern periphery High residential density and rapid population growth Low income groups, many construction workers Different types of settlement and housing : large slum, resettlement colony, unauthorized colony, flats built by the Delhi Development Authority for low income groups	4 Criteria: type S	176
2. MAYUR VIHAR - TRILOKPURI	Widespread zone located in the eastern periphery Middle to very high residential densities, and rapid population growth Different income groups, high proportion of persons employed in services Different types of settlement and housing : slum pockets, large resettlement colony, unauthorized and <i>a posteriori</i> regularized colonies, many flats built by the Delhi Development Authority, co-operative group housing societies, urban villages	6 Criteria: type S	343
3. NEHRU STADIUM	Small zone, relatively centrally located, in New-Delhi Slum: highly densely populated, developed since 1979-80 Government flats (for government employees) built at the same time	2 Criteria: type S	164
4. ROHINI-BADLI	Widespread zone located in the west-northern periphery, including an industrial zone Low residential density and very rapid population growth Low and middle income groups, with high proportion of industrial workers Different types of settlement and housing : slums, resettlement colony, unauthorized colony, flats built by the Delhi Development Authority for different income groups, individual plots with independent houses, urban villages	3 Criteria:- type S	171
TOTAL DELHI			854
Additional survey to be conducted in OLD DELHI	Historical core of the city Extremely high residential density and negative population growth High concentration of commercial activities and small scale industrial units The survey will focus on the houseless people sleeping on the pavements or in the night shelters run by the Municipality.		

Table 1 - Description of the selected zones (continued)

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STUDIED ZONES	CHARACȚERISTICS OF THE ZONE*	N° of strata and criteria*	N° of sample house holds
IN THE RING TOWN	NS OF THE METROPOLITAN AREA		
5. NOIDA (entire territory)	New town developed since the 80s, east of Delhi, including a very large industrial estate Very rapid population growth All income groups Different types of settlement and housing : planned sectors for individual plots and group housing, slums, urban villages	3 Criteria : type S	395
6. DLF QUTAB ENCLAVE(residential township in the outskirt of the town of Gurgaon)	New residential township in the outskirt of the town of Gurgaon, south of Delhi Developed by a private builder with some phases still under construction Very low residential densities High income groups Individual houses mainly, a few group housing, a colony for the employees of a car factory	7 Criteria: type S + period since developed	164
TOTAL RING TOWNS			559
TOTAL 6 ZONES (already surveyed)			1413

* The demographic characteristics refer to the 1981-91 decade. ** Criteria of stratification: type S = type of settlement and housing, as described in the 2nd column, on the basis of field observation

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<u>}</u>	STATISTICAL SURVEY (February- April 1995)
	DELHI + 1 RING TOWN (NOIDA)
GENERAL STRUCTURE	Stratified and three-stage sampling
SAMPLING FRAMÉ	Electoral rolls of the 4 zones in Delhi and of one ring town, including list of polling stations and voters' list. The latter were used as a list of dwelling units (after identification and counting on the basis of the voters' addresses)
STRATIFICATION	Stratification based on the type of settlement and housing, following field observation
SELECTION OF POLLING STATIONS	In each zone and strata, selection of polling stations with probability proportional to the size (in numbre of voters in the polling station)
(IST STAGE)	> 110 polling stations
SELECTIONS OF DWELLING UNITS	From each selected polling station, dwelling units were selected independently with equal probability using random numbers generated by electronic computers.
(2ND STAGE)	> 1076 dwelling units
SELECTION OF HOUSEHOLDS (3RD STAGE)	Survey of all the households in each dwelling unit of the sample > 1249 households
	*
<u> </u>	1 ZONE IN ANOTHER RING TOWN (GURGAON)
GENERAL STRUCTURE	Stratified and two-stage sampling
SAMPLING FRAME	List of the occupied dwelling units in the zone, established on the basis of a land use survey of all the plots
STRATIFICATION .	Stratification based on the type of settlement and the period since developed, on the basis of the master plan established by the builder and field observation
SELECTION OF DWELLING UNITS	In each strata dwelling units were selected independently with equal probability using random numbers generated by electronic computers.
(1ST STAGE)	> 153 dwellings units
SELECTION OF ' HOUSEHOLDS (2ND STAGE)	Survey of all the households in each dwelling unit of the sample
	> 164 households
TOTAL SAMPLE	> 1229 dwelling units
	> 1413 households

Table 2- General characteristics of the sampling frame

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4.3. The questionnaire of the statistical survey

To finalise the questionnaire of the statistical survey, we have benefitted from the lessons drawn from the implementation of a similar survey in Bogota (as mentioned above). Basically, the questionnaire follows the design conceived for the study of population mobility in this metropolis³ with - of course-some necessary adjustments to take into account the specificity of the Indian context. The questionnaire is presented in Appendix.

Sections A and B: Characteristics of the settlement and of the dwelling unit

The first section focusses on the dwelling unit: type of settlement, building and dwelling unit, period since built, number of households inside it, number of rooms, availability of basic facilities, occupation conditions and mode of access to property. Although the questions are very simple, they provide the basic information needed to analyze the conditions of access to the dwelling unit, which are essential elements in the process of residential insertion of the migrants into the different neighbourhoods of the metropolitan area.

Sections C-I, C-II and C-III: Demographic and Socioeconomic Characteristics of the Members of the Household and Commuting (Residence - Place of study, and Residence - Place of Work)

The list of the members of the household is established by applying definition criteria different to the ones usually used in census and household surveys. In fact, in order to embrace the temporary moves as well as the complex residential systems (multi-residential) it is necessary to include in the observation not only the regular residents of the household but also the people for whom the dwelling unit surveyed makes part of their residential system. For the survey, the following were counted as members of a household:

- The usual residents: A person is considered a usual or regular resident if he/she lives most of the year in the household, even if at the time of the survey, the person is absent (for a short period of time, i.e. less than 6 months of absence accumulated over the year).

- The temporary residents: A person is considered a temporary resident if he/she lives most of the year in another dwelling unit, but has lived in the household surveyed for at least 30 (consecutive or non-consecutive) days within the twelve months preceding the date of the survey (whether or not the individual is present at the time of the survey).

Sections C-I, C-II and C-III of the questionnaire are devoted to gathering the demographic and socioeconomic characteristics of each member of the surveyed household: sex, age, marital status, religion, caste, education level, characteristics of the main and secondary occupations. We tried to follow the definitions used in the Census and the National Sample Survey to be able to relate the information obtained through these sources with the survey's results.

In addition to this basic data, two series of questions are included regarding the respondents' daily moves from their residence to their place of study and from their residence to their place of work; that is, their commuting, which is described in spatial terms (exact location of destination), type of transportation used, time, and cost in cases where public transportation is used.

³ See for example: DUREAU (F) - 'Le programme de recherche CEDE-ORSTOM sur "Les formes de mobilité spatiale des populations de Bogota (Colombie) et leur impact sur la dynamique de l'aire métropolitaine". Présentation du système d'enquête'. Paper presented to the seminar *Analyse comparée des processus d'insertion urbaine* [Comparative Analysis of processes of urban insertion], CERPOD - IFAN - ORSTOM - CEPED - University of Montreal, Bamako, Mali, 25-28 October 1994.

Section C-IV - Summary of the migratory trajectory of the household members

The purpose of Section C-IV is to collect a summary of the migratory trajectory from the person's birth until the date of the survey. Information about 4 key stages of his/her residential trajectory is gathered: place of birth, departure from place of birth, arrival to Delhi and arrival to the present dwelling. Details about the activity carried out in the last place of residence before migrating to Delhi will further allow us to link occupational and residential mobilities. Two additional variables were created at the time of coding, on the basis of the migratory table used to collect the information : the number of migratory steps before the last arrival in the Delhi metropolitan area, and the number of dwelling units occupied in the Delhi metropolitan area.

Section C-IV provides the necessary information to estimate the migratory flow towards and inside the metropolitan area, and its characteristics in terms of individual data (Sections C-I,-II and -III) and the types of trajectories that can be deduced from questions C-IV-1 to C-IV-14.

In addition, these provide us with basic information about the summarized migratory trajectory of all the household members, which allows us to introduce the family unit in the analysis of residential practices.

Section C-V-System of Residence of the Members of the Household

The purpose of questions in section C-V is to investigate, based on the temporary moves, the systems of residence that the members of the household have and to detect the bi- or tri-residential practices of the population. This section identifies for each respondent two places of residence outside the dwelling unit where the survey is conducted, and the type of activity carried out by the person while living in those additional dwelling units. As in the definition of the members of the household, a dwelling unit is considered "another dwelling unit" (i.e., another component of the residence system) of an individual only when he/she has lived there at least 30 consecutive or non-consecutive days within the year previous to the survey.

Section D. Characteristics of the family members living outside the dwelling unit surveyed.

This section is the result of our interest to introduce the family as the unit of the spatial mobility analysis. The collection of data about the place of residence and present activity of the parents and parents in law, children and / or spouse not living in the dwelling unit surveyed provides an observation of the system of residence of the family and a very interesting comprehension of the function of some individual residences, such as the function of the urban residence in the economic and social reproduction of the family, and an understanding of the conditions around the occupation strategies developed by the family in the economic and geographic space.

3.4. Implementation of the survey and first evaluation

Following a pilot survey, the statistical survey was conducted by a team of 10 field investigators and two supervisors from mid-Februray to end of April, 1995; 1413 households were interviewed.

The duration of the interview varied significantly, according not only to the size of the household, but also to the field investigator, from 20 minutes to more than one hour, with an average around 45 minutes.

The rate of refusal remained low : 2,5% on the average for the total sample, and it increased with the socio-economic strata: from 0.6\% in the slums, up to 4,9\% in the new residential township for high income group people, with a maximum of 10\% in the government flats for fairly high rank officers.

Globally, the questionnaire was well accepted by the respondents, however certain questions aroused more suspicion or non-responses. In particular the question about income faced cases of non-

response among traders, businessmen, indutrialists, etc. of the higher income groups, or, if not refusal, likely under-reporting. Certain people refused to give their caste name; nevertheless, the proportion of persons who refused to be identified on the basis of their ascribed caste will be revealing in terms of social change.

Quite often, the investigators also noticed a certain lassitude or lack of interest from the respondents in the last part of the questionnaire (Part D) devoted to the other relatives. In particular questions about in-laws, especially if they were already deceased, led to more frequent non-reponses or unaccurate responses.

Yet, apart from the examples mentioned above, the cases of non-responses to a given question remained very rare.

In section C-IV, devoted to the summary of the migratory trajectory, the systematic chronological record of every migratory step in the provided table proved to be extremely useful. Such a method is even a prerequisite to ensure a good reliability of the information.

In section C-V devoted to the system of residence, the graphic representation of the various stays in the calendar especially designed proved also to be very efficient.

The evaluation of the survey conducted in Delhi confirms the global efficiency of the questionnaire already tested and applied in Bogota, in particular as far as the collection of data on the different forms of spatial mobility is concerned.

The approach implemented on the basis of the methodological lines presented above, constitutes a tool of observation and analysis in order to study how the different forms of population mobility contribute to the dynamics of an urban area, to its development as well as to its internal tranformations.

ORSTOM - IEG

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SURVEY ON SPATIAL MOBILITIES IN THE METROPOLITAN AREA OF DELHI

February - April 1995

A. IDENTIFICATION

A1. Town:					A9. Full address
A2. Zone				-	
AZ. ZONE		1			
A3. Locality	· 1	,	1		
A4. Strata	<u> </u>			-4	
		1	1	1	
A5. Block / polling station	r	1	ī	1	
A6. Building	······				
_	I	1			ten Marine films have held hand
A7. Dwelling unit	ł	ı I	ī	1	A10. Name of the household head
A8. Household	· · · · · · · · · · · · · · · · · · ·	<u> </u>			
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B- CHARACTERISTICS OF THE BUILDING AND OF THE DWELLING UNIT

B-I- CHARACTERISTICS OF	THE BUILDING							
B1. Type of settlement whe	ere the building is located	d						
Public sector:	- Government f	lats/houses 1 II						
	- DDA flats	2 11						
	- Rehabilitation	a colony 3 II						
	- Resettlement colony 4 1I							
Private formal sector:	- Private builde	er (independent house or collective housing 5 II						
	- Co-operative	group housing society 6 II						
Informal sector:	formal sector: - Non authorized colony/building							
	- Regularized o	colony 8 II						
	-Slum, encroad	ched huts 9 II						
Traditional sector:	- Old city and e	xtension 10 II						
	- Urban village							
B2. Type of building (purpo	se for which the building	ı is used)						
- Residential only		111						
- Workshop, factory cum resi	dence	2 II						
- Shop cum residence		311						
- Office cum residence		4 [1						
- Any combination of (2), (3) a	and/or (4)	5 []						
- Other type of establishment	or institution (school, he	ospital, place of entertainment, of worship, eating place etc) 6 []						
- Building under construction	า	711						
-No building structure (footp	ath, under bridge, pipes	etc) 8 II						
- Other (specify):		91_1						
B3. Period since built								
-Less than 1 year (1994)	1 []	- 10 to less than 20 years (1974-83) 4 II						
- 1 to less than 5 years (1989	-93) 2 II	- 20 to 48 years (from Partition to 1973) 5 II						
- 5 to less than 10 years (198	4-88) 3 II	- 48 years and more (before the Partition) 6 I I						
B-II- CHARACTERISTICS OF	THE DWELLING UNIT	(on the basis of the material used for construction)						
B4. Type of structure		- Katcha 3 II						
- Pacca	1 []	- No structure 4 11						
- Semi- pacca	21 1							
B5. Type of dwelling unit :		,						
- Independent house	11_1	 Living in a place not intended for residential purpose 411 						
- Flat-apartment	2	- Place in a night shelter 511						
- Hut, tent (jhuggi-jhompri)	31 1	- Other (specify): 61						
B6 How many groups of peo	ple prepare food separa	tely in this dwelling unit ? (N° of households)						
	· .							

B-III- CHARACTERISTICS OF THE LIVING ACCOMMODATION OCCUPIED BY THE HOUSEHOLD

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B7. How many living rooms does this household occupy in an exc (excluding kitchen, bathroom, verandah, garage, workshop, store	li	
B8. What type of kitchen facility do you have in this dwelling unit	?	
- Separate room for the exclusive use of this household	111	
- Separate room shared with one or more households	2	
- No separate room	311	
B9. What type of bathing facility do you have in this dwelling unit?		
- Attached bathroom for the exclusive use of this household		1 []
- Detached bathroom (in the premises, for common use of house)	holds in the building)	2
- No bathroom		3 11
B10. What type of tollet facility do you have in this dwelling unit?		
- Attached toilet, for the exclusive use of this household		1 []
- Detached toilet (in the premises for common use of households	in the building)	21_1
- No toilet in the building premises		311
B11. Is drinking water supplied within the premises	B12. Is electricity supplied in this dwellin	g unit ?
of this dwelling unit? - Yes 1 II - No 2 II	-Yes 111	- No. 2 II
B13. Status of occupancy: The dwelling unit occupied by this hour		
- Owned by one of the member of the household and is totally paid		1 I I Go to B15
- Owned by one of the member of the household who is still paying	for it	2 I I Go to B15
- A rented accommodation (from private owner)		3 I I Go to B14-A
government accommodation		4 II Go to C
- An accommodation provided without rent by the employer (private	•	5 II Go to B14-
Occupied under usufruct (free occupancy, other than provided by t	he employer)	6 I I Go to B14
- Squatted (with no right of occupancy)		7 11 Go to C
- Occupied under any other modality (specify):		8 I Go to B14
B14. Is there any relationship between any member of the househ	old and the owner of the dwelling unit?	
- Yes 1 11 Go	2 11	
B15. How did you acquire this dwelling unit or piece of land? (tick i	more than one option if applicable)	
- By inheritance		1 II
- With a loan	2	
- With your own resources		3
- Other manner (specify) :	4 []	

C-CHARACTERISTICS OF THE HOUSEHOLD MEMBERS

C4- GENERAL CHARACTERISTICS (For all the household members)

C4- GENERAL CHARACTERISTICS (FOR all the flot	Individual Nº 1	Individual N° 2	Individual Nº 3
C1. Name and surname			
C2. Residential status (1) usual resident - present (3) temporary resident - present (2) usual resident - absent (4) temporary resident - absent	·	<u> </u>	II
C3. Relationship with the head of the household (1) household head (10) mother/father in law (2) spouse (11) sister / brother in law (3) un-married child (12) nice / nophew (4) married child (13) other relatives (5) daughter in law /son in law (14) domestic, employee (6) grand-child (15) relatives of the employee (7) mother /father (16) the nant (8) sister / brother (17) guest (9) grand-mother / grand-father (18) other non relative	ll_l	IİI	III
C4. Male (1) or female (2)? C5. Age in total years completed last birthday or Year of birth	MI1II FI2I I Age II Year of birth 19 II_I	MI1II FI2II Age II Year of birth 19 I I	M 1 F 2 I Age I I I Year of birth 19 I I
C6. What is your current marital status ? (1) Never married (3) Widowed (2) Currently married (4) Separated or divorced	II	<u> </u>	<u> l</u> l
C7. What is your mother tongue ?	111	<u> </u>	
C8. What other languages do you speak ? (2 maximum)	·		<u>_</u>
C9. What is your religion ? (1) Hindu (2) Muslim (3) Sikh (4) Christian (5) Buddhist (6) Jain (7) Other religion (8) No religion			ll
C10. What is your caste or community?			
C11. To which category does it belong? (1) Scheduled caste (2) Scheduled tribe (4) Others - Upper castes	II		l1

C-II- EDUCATION (For household members aged 5 years and above)

C12. Do you know how to read and to write ?	Yes: 111 No: 121	Yes: 1 1 1 No: 2 1	Yes: 1 1 1 No: 2 1
C13. What is the highest educational level you have attained? (1) None (7) College -under graduate (2) Pre-school (8) Graduate (3) Primary: 1st to 4th standard (9) Professional degree (4) Middle: 5th to 7th standard (10) Post-graduate (5) Secondary: 8th to 10th st. (11) Technical degree/centicate (6) Higher secondary: 11th to 12 st. (12) Other (specify)	اا :	<u> </u>	II
C14. Do you still attend any pre-school, school or college/university ?	Yes 1111 No 121 Go to C-III	Yes 1	Yes [1] [No [2] [Go to C-#/
Name: C15. What is the name and Town: address of the school Locality: /college that you attend? Address			
C15, Which mode of transportation do you use to go to this school / college from your house? (1) On foot (5) Scotter-rickshaw, motor-cycle rickshaw (2) Bicycle (7) School bus, chartered bus (3) Motorcycle, scotter (6) Public bus (4) Private car (9) Train (5) Cycle-rickshaw (10) Other (specify)	1 6 1 6 2 7 3 8 4 9 5 10	1 6 2 7 3 8 4 9 5 10	1 6 2 7 3 8 4 9 5 10
C17. How long does it take you to reach this school / college from your house (one way) ?	minutes	minutes	minutes
C18. How much does it cost you for one way? Or per month? (in rupees) (Public transportation)	I I I per way	per way	per way

See. 1

C-III- ACTIVITY AND OCCUPATION (For all the household members)

	Individual Nº 1		Individual Nº 2		Individual Nº 3	
	main activity	secondary	main activity	secondary	main activity	secondary
C19 What have you done most of the time during the last 12 months ? (1) Worked (2) Looked or was available for a job (3) Household duties (4) Studied (5) Young child (not studying) (6) Lived on rent, interests, remittances, pension (7) Old aged, disabled, ill (8) Other non workers	1 Go to 2 - C20 3 4 Go 5 b 5 b 6 G1 7 8	1 Go to 2 C20 3 4 Go 5 to 6 C-IV 7 8	1 6 60 2 6 60 3 7 60 3 7 60 5 7 60 5 7 60 5 7 7 7 7 8 7	1 Go to 2 Go to 3 G 4 G 5 G 6 C 7 G 8 G	1 Golo 2 C20 3 Go 5 Io 6 C31 7 8	1 Go to 2 C20 3 4 Go 5 I0 6 C-IV 7 8
C20. What was your principal / secondary occupation during the last 12 months ?						1 1 1 1
C21. In this job, were you working as an: (1) employer (3) employee in the public sector (2) own-account worker (4) employee in the private sector (5) unpaid heper						ll
C22. Was this work : (1) permanent/regular (3) seasonal (2) temporary (4) casual		ll		ll		اا
C23. In this job, what is your monthly income ? (in rupees)						
C24. What is the name of the company, establishment, enterprise for which you work?						
C25. Approximately how many people work in this establishment / enterprise ? (1) From 1 to 5 (3) From 11 to 20 (2) From 6 to 10 (4) More than 20		<u> </u>	1I	II	II	II
C26. What is the main activity of the establishment / enterprise for which you work ? (1) Agriculture, livestock, hurking, forestry and fishing (2) Minking and quarrying (3) Manufacturing (4) Electricity, gas and water (5) Construction (6) Wholesale and retail trade, restaurants and hotels (7) Transport, storage and communication (8) Financing, insurance, real estate and business services (9) Community, social and personal services			\ <u>\</u>	اا ·	II	II
C27. What is the address of the place where you work? (1) At home: Go to C31 (2) Other place: -Give the address: Town Locality Address:	Home/autside	Home/cutside	Home'autside 	Home/autside 	Home/outside _ _ 	Home/outside _ _
C28. Which mode of transportation do you use to go to your place of work ? (Tick more than one if applicable) (1) On foot (6) Scooler-rickshaw, motor-cycle rickshaw (2) Bicycle (7) Chantered bus (3) Motorcycle, scooter (8) Public bus (4) Private car (9) Train (5) Cycle-rickshaw (10) Other (specify)	1 6 _ 2 7 _ 3 _ 8 1 4 _ 9 _ 5 _ 10 _	1 6 2 7 1 3 8 1 4 9 1 5 10 1	1 6 _ 21 7 _ 3 8 _ 4 9 _ 51 10	11 6 21 71 71 31 81 41 91 1 55 10 10	1 6 2 7 3 8 4 9 5 10	1 6 2 71 3 8 1 4 9 1 5 10 1
C29 How long does it take you to go from your house to your place of work (one way)? (in minutes)				<u> </u>		
C30. How much does it cost you for one way? Or per month? (in Rupees) (Public transportation)						
C31. In addition to this activity, have you done any type of gainful work, including as an unpaid helper in family enterprise, during the last 12 months ?	(se occupation)	per month peat C19 to C30 condary to to C-IV	(se occupation)	per month peat C19 to C30 condary to to C-IV	occupation) (se	per month beat C19 to C30 condary

C-IV-MIGRATORY STEPS (For all the household members)	INDIVIDUAL N° 11
C32. Where were you born ?	C41. What was your principal occupation in that place ?
(1) Outside India <u>[1]</u> Country:	
(2) In India outside Delhi Urban Agglomeration [2].] State:	C42. In that job, were you working as an: (1) employer (3) employee in the public sector (2) own-account worker (4) employee in the private sector (5) unpaid helper
(3) In Delhi Urban Agglomeration 1311 District: 111 Locality: 111 C33. Was that place rural 111 110	C43. Was that work : (1) permanent/regular (3) seasonal (2) temporary (4) casual []
C34. Have you always been living in Delhi?	C44. What was the main activity of the establishment /enterprise for which you worked in that place?
YES 1_1_1 Go to C35 NO 1_2_1_1 Go to C36	(1) Agriculture, livestock, hunting, lorestry and fishing (2) Mining and quarrying (3) Manufacturing (4) Electricity, gas and water
C35. Have you always been living in this dwelling unit? YES I_1_I Go to C-V NO I_2_I Go to C46	 (5) Construction (6) Wholesale and retail trade, restaurants and hotels (7) Transport, storage and communication (8) Financing, insurance, real estate and business services (9) Community, social and personal services
C36. When did you leave the town/village where you were born ? 19 II_I	C45. For which reasons did you come to live in Delhi? (see code)
or. At what age ? II	1st 1_1 2nd 1_1 3rd 1_1
C37. When did you come to live in Delhi (for the last time)? 19 I1 or: For how many years have you been living in Delhi ? II	C46. When did you come to live in this dwelling unit (for the last time)? 19 II or: For how many years have you been living in this dwelling unit?
C38. Where did you live before coming to Delhi?	C47. Where did you live before moving in this dwelling unit?
Place of birth YES [1] NO [2] Country: I State: I District: I Tehsil: I	(1) Outside Delhi Urban Agglomeration I_1_1I Go to C-V (2) In Delhi Urban Agglomeration I_2_1I District: II Locality: II
C39. Was that place rural [_1_1 or urban [_2_1_1 ?	C48, Was that place rural [1] or urban [2] [?
C40. What was your main activity in that place before your departure? (1) Worked 1 (2) Looked or was available for a job 2 (3) Household duties 3 (4) Studied 4 (5) Young child(not studying) 5 (6) Lived on rent, interests, remittances, pension 6 (7) Old aged, disabled, ill 7 (8) Other non workers 8	C49. For which reasons did you move in this dwelling unit? (see code) 1st II 2nd II 3rd II
C45, C49: Reasons for migration / change of dwelling (3 maximum): (1) transfer due to service (2) in search of employment (3) in search of better employment (4) to take up a job (5) to start own enterprise, business, shop, profession (6) better proximity to place of work (7) for studies (8) acquisition of own house/lat	 (9) better and/or cheaper housing conditions (10) better civic or other amenities and/or facilities (11) eviction from the previous dwelling (12) social, political problems at the previous place of residence (13) for marriage (14) due to movement of parents / earning members (15) migration following binh at the mother's parents' place (16) other familial reasons (17) other (specify)

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 If necessary, use the following table to reconstitute the individual's migratory steps

 YEAR
 AGE
 PLACE

C-V-SYSTEM OF RESIDENCE (For all the house		INDIVIDUAL Nº I I I		
C50. Where have you lived for the last 12 months ?	nce - less than 1 week 1 _ Go to the - from 1 week to less than 1 month 2 I next person - 1 month and more 3 _ Total N° of months absent			
I_2_II Spent most of the time outside this dwelling	Number of days present this dwelling		CONTINUE	
C51. During the time you were absent, did you stay for at I	east 30 days in one place	- not necessarily in a continuous	manner?	
Yes I_1_I_I Go to C52 Could you give us some information about the dwelling most of the time when you were absent from the present dw	where you lived	welled to different places 1_2_1_1	Go to the next person	
		Other dwelling Nº 1	Other dwelling Nº 2	
C52. How many days of the last 12 months did you spend	in that dwelling ?		1 1 1	
C53. When and how frequently did you stay in that dwelling	? (see calendar)			
C54. Where is that dwelling located ? (1) Outside India: Country (2) In India outside Delhi U.A.: State, District, Teshil (3) In Delhi Urban Agglomeration: District, Locality	Country: State: District Teshil:			
C55. Is it in a rural (1) or urban (2) place ?	Locality	Rura/Urban	Rura/Urban	
C56. In that place, in which kind of dwelling did you stay? (1) A private dwelling where a relative lives (2) A private dwelling where no relative lives (3) A hotel, guest house, dharamshala (4) A work site (factory, construction site) (8) Any other	school juaner (specify)	<u> </u>		
C57. For which reasons did you stay in that dwelling applicable) (1) Work (6) Health (2) Studies (7) Religious purpose (3) Rest, holidays (8) Previous or usua (4) Visit family, relatives (9) Other reasons (5) (5) Delivery	e I place of residence	1 6 2 7 3 8 4 9	1 6 2 7 3 8 4 9	
C58. Did you work in that place ?		Yes 1 Continue No [2 Go to C64	Yes 1 Continue No 2 Go to C64	
C59. Was you occupation different from the one you hat present dwelling ?	ve when you stay in the	Yes I_1_I_I Continue No [_2_1_I_Go.to C64	Yes I_1_I_I Continue No [_2I Go to C64	
C60. What kind of work did you do in that place ?			1111	
C61. In that job, were you working as an: (1) employer (2) own-account worker (4) employee in the (5) unpeid helper	public sector private sector		II	
C62. Was that work: (1) permanent/regular (3) seasonal (2) temporary (4) casual				
C63. What was the main activity of the establishment /e worked in that place? (1) Agriculture, livestock, hurning, forestry and fishing (2) Mining and quarrying (3) Manufacturing (4) Electricity, gas and water (5) Construction (6) Wholesale and retail trade, restaurants and hotels (7) Transport, storage and communication (8) Financing, insurance, real estate and business services (9) Community, social and personal services	interprise for which you		II	
C64. Did you stay in any other place for at least 30 days in necessarily in a continuous manner- apart from the dwe and the one you just described ?	the last 12 months - not lling where you are now	Yes 1_1_ Repeat C52 to C63 (other dwelling N° 2) No 1_2_1_ Go to the next person	Go to the next person	

Write in the following calendar the duration of stay in each dwelling unit, using the following abbreviations : DS: dwelling unit surveyed D1: other dwelling unit N° 1 D2: other dwelling unit N° 2

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DS. owe	inng unit s	uiveyea			ier oweiling	Unit in- 1		D2: 0	wher owell	ng unit N=	2				_
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]	1				1						/	1	
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	1/2 102 57	A BUILD	1 11-07		1	L	I		1			1.00	Lines Int	Andlet	Ł
Feb. 94	March 54	April 94	May 94	June 94	Juty 94	Aug.94	Sept.94	Oct. 94	Nov. 54	Dec. 94	Jan. 95	Feb. 95	March 95	April 95	

CHARACTERISTICS OF THE FAMILY MEMBERS NOT LIVING IN THE DWELLING UNIT SURVEYED

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	STICS OF T	HE FAMILY	MEMBER		VG IN THE DWELLING UNIT SURVEY	D7
D1	D2.	D3	D4 When did	D5 Age	Where was he/she born?	Where does (did) he/she live?
Individual	Sex:	Is he/she	he/she die?	Age Or	(1) Outside India: Country	
	(1) M (2) F	still alive?	or How many	Year of	(2) In India outside Delhi U.A.: State,	District, Tehsil
	(2) F	(1) Yes	years ago ?	birth	(3) In Delhi U.A.: District, Locality	/ Rural (1) or urban (2) ?
		(2) No		Data		
head's father				I		Country-
			19		Country	State
			1 1 1	. 40	District	District
			years ago	191		Tehsil
			Jogio año	Year of birth	Tehsii	Locality
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head's mother			401 1 1			Country
			191_1_1		Country	State
				~~~	State	District
			years ago	191 1 1	District	Tetsil
			years ago	Year of birth	Tehsi	Locality
				[	Locality	111121131 R/U11
head's spouse				1		Country
			19 <u> </u>		Country	State
	1	1	I	Age	State	District
	1			191 1 1	District	
		1	years ago	Year of birth	Tehsii	
	l	I		ļ	Locality	
spouse's father				1		
			19		Country	Country
•		1		Age	State	State
		l		191	District	District
	1		years ago	Year of birth	Tehsi	
	1				Locality	Locality
spouse's mother	1					
			19		Country	Country
				Age	State	State
				101 1 1	District	District
			years ago	19 Year of birth	Tehsi	Tehsil
				10di 0i Ditti	Locality	Locality
head's child (1)	1			1	Locality	
Indu a orma (1)	1 1 1	1 1 1	191 1		Country-	Country
name:	1			Age	State	State
				101 1 1	District	District
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head's child (2)		1				<u>11111211311RU11</u>
1100000011110 (2)		1 1 1	191		Country	Country
name:				Age	State	State
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head's child (3)	1	1	1		11 <u>1121131</u> RU	1 <u>111121131</u> RU
	1 1 1	1 1 1	19		Country-	Country
name:	l	1		Age	State	State
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	1	1	years ago	19       Year of birth	Tehsil	Tehsil
	1	1	1	i cai oi oi di di	Locality	Locality
head's child (4)	1	1	1	1		<u>1111121131</u> RUI_I
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name:	I ''	l ,—,	l	Age	State	State
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	1		years ago	Year of birth	Tehsi	Tehsil
	1	1		Tear of Dirth	Locaiity	Locality
head's child (5)	1	<u> </u>	t	1	1111121131 R/UL	
meau s chinu (S)			191 1 1	1 1 1	Country-	Country
	''	I ''	'`` <u>'</u> ''	Age	State	State
name:	1	1	1 1 1		District	District
	1	1	years ago		Tehsi	Tehsil
	1		,	·Year of birth	Locality	Locality
		<u> </u>	<b> </b>	+		1111121131R/UL1
head's child (6)	1 1 1		19	1 1 1	Country	Country-
		''			State	State
name:	1	ł			District	District
1		ļ	years ago	191_1	Tehsil	Tehsil
	1		1,0000	Year of birth		Locality
	1	1	I	<u> </u>	[ LUCH]	

				T	D12
D8	D9	D10	D11	Di	Dia Another the legity members listed in this dwelling unit
main	What is (was) his/her	employ-	industrial	Individual	Apart from the family members living in this dwelling unit and those just listed above, do you or does your spouse have other relative(s) living in Delhi?
activity	principal occupation?	ment	category		and those just listed above, do you or does your spouse
		status			nave other relative(s) aving at Denne
			·	hard's father	4
1		1		head's father	Yes 1_11 No 1_2_11
	1			1	Yes 111 No 1211
	1.				
1	1 1 1 1 1				
				head's mother	
				nous e memer	
			1		
					CODES
	1		1	head's spouse	D8. What is (was) his/her main activity ?
		1 1		· ·	(1) Worked
					D8. What is (was) his/her main activity ? (1) Worked (2) Looked or was available for a job (3) Household duties
1			1	1	(4) Studied
1			1	1	<ul> <li>(4) Studied</li> <li>(5) Young child (not studying)</li> <li>(6) Lived on rent, interests, remittances, pension</li> </ul>
			<u> </u>		
				spouse's	(7) Old aged, disabled, iil (8) Other non workers
				father	(o) Other Inth Workers
					1 1
1		l	1		
				spouse's	D10. In this job, is (was) he/she working as an:
				mother	(1) employer (2) own-account worker
		[			(3) employee in the public sector
			1		(1) employer (2) own-account worker (3) employee in the public sector (4) employee in the private sector (5) unpaid helper
1	1		1		(5) utpautieper
J	<u> </u>		l	handle shild	Did What is lugal the main activity of the actablishment (
				head's child	D11. What is (was) the main activity of the establishment / enterprise for which he / she works (worked)? (1) Agricuture, livestock, hurking, forestry and fishing (2) Mining and quarrying (3) Manufacturing (4) Electricity, gas and water (5) Construction
''				(1)	(1) Apriculture, livestock, hurting, forestry and fishing
	· ·			1	(2) Mining and quarrying
					(3) Manufacturing
1	1 1 1 1				(4) Creaticity, gas and Hales
	······································			head's child	(6) Wholesale and retail trade, restaurants and hotels
		1 1		(2)	<ul> <li>(6) Wholesale and retail trade, restaurants and hotels</li> <li>(7) Transport, storage and communication</li> <li>(8) Financing, insurance, real estate and business services</li> <li>(9) Community, social and personal services</li> </ul>
I		·'	l	(	(b) Financing, insurance, real estate and business services (9) Community, social and personal services
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