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To my wife Sabita who gave me the initial idea for this study.

A. Ghosh

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PREFACE

The present monograph is being prepared in three self-contained parts. Part I of the series is an analysis of immigration into Calcutta over the last several decades, primarily from the Western neighbour states of Bengal. A study of immigration as it has developed through the years and various problems associated with it has been discussed in detail.

In the second part a study has been made of a special class of immigrants, the East Pakistan refugees who have colonised and developed a satellite town in Jadavpur on the south-east of Calcutta city.

In the third part a growth model has been developed for the Calcutta Metropolitan Area after analysing the various interrelations — demographic and economic. While each of the monograph is a separate study in itself the three together gives a comprehensive analysis of the city and the Metropolis with special reference to immigration.

The present series of studies was financed by a grant from the Population Council Inc. of New York. Thanks are due to Dr. Dudley Kirk and Mr. W. Parker Mauldin of the Council who have taken sustained interest in our study and helped us in all possible ways.

The Registrar General of India, Sri Asok Mitra has offered us computing assistance and encouraged this study in various ways.

Our thanks are due to Prof. S. K. Basu and Prof. S. N. Sen of Calcutta University for making available to us the results of the Survey of Calcutta University during 1954—58 which proved an extremely valuable source for information.

My thanks are also due to Dr. Rosen of the Ford Foundation and Prof. S. K. Mukherjee of the Calcutta Metropolitan Planning Organisation for many stimulating discussions.

Apart from the three authors of this study a large number of research workers have contributed to this work, of these Sri Animesh Chakraborti, Sri Ajit Nag deserve special mention.

Finally, I must acknowledge the constant encouragement of the Vice-Chancellor, Dr. Triguna Sen, the Registrar, Sri P. C. V. Mallik at all stages of the work.

A. Ghosh.

PART I

IMMIGRATION AND ITS IMPACT ON THE SOCIAL AND ECONOMIC LIFE IN THE CITY OF CALCUTTA

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INTRODUCTION

Most metropolitan cities grow to maturity through a continuous stream of migrants flocking into it from outlying areas in search of jobs, or better prospects in life in some way or other. Calcutta in this sense is not an exception. The growth of Calcutta over the last few decades into the most populous metropolitan city in India has been largely due to the steady stream of migration into the city. Broadly, this flow of migrants may be described as consisting of two distinct streams. The original stream coming into Calcutta from the rural areas of Bengal and the rest of India, year after year, in search of a living, or of better education or better amenities. This may be called the normal stream of immigration into Calcutta, which inspite of year to year fluctuation has an even tenor and is an integral component of the growth of the city itself.

The other stream generally called the displaced migrants may fitly be described as a sudden flood of an unusual nature originating from rural areas of former East Bengal, now East Pakistan. This overflow originated in an abnormal political upheavel and as was natural in such cases, it came without the city being prepared to absorb it into its life and economy in any way.

The objective of this report is to study these two streams of migration into the city, the impact of this immigration on the original residents and the impact of the immigrants on the life and economy of the city itself. This monograph will deal with aspects of both the flows from the Eastern and Western regions of India. We shall study the migrant flow as a long-term flow from the past, turning towards the end into a heavy flood. We shall try to assess some of the long-term trends in other variables and the extent to which such long-term trends are in fact associated with the migrant flow into the city.

Results of survey carried out in a colony of displaced migrants will also be incorporated in relevant places in the various sections. The results of the intensive study published as a separate monograph gives us some aspects of the growth of migrant colonies, their impact on the economy and some important aspects of the process of growth of such colonies.

The detailed description of the various sections are given below:

Section I

The natural growth of population of Calcutta. Its trends and fluctuations. Estimates of migration. Estimates from cross-section study with correction factor.

Section II

The immigrant population of Calcutta. Problems of estimation. The trends and fluctuations over the last forty years. The inter-relation between migration, natural population and other economic factors. A model of immigration (Projection model).

Section III

Demographic data on migrants, age and sex composition, births and deaths etc.

Section IV

The growth of education and literacy over the years among the residents and the migrants in Calcutta and Jadavpur Colony.

Section V

A study of occupation and employment in its various aspects.

Section VI

Construction of estimates for the labour forces. A model for projection of labour forces.

Section VII

A detailed study of *per capita* income and assets formation. Special study of consumption budget in the Survey data, consumption standards and formation of durable assets in the refugee colony.

Section VIII

A study of the growth of housing amenities over years.

SECTION I

Any study of the impact of migration into the city of Calcutta involves an analysis of the flow of migrants and the determinants of the flow. Once the nature of the flow and its determinants are clearly understood, it may be possible to project the future levels of this flow and hence its effect on the growth of population and other economic parameters in the future.

The major problem involved in making a study of migration into Calcutta is the absolute scarcity of any data on migration. About the only information available in this respect in the census is the data by birth place which enables us, at best, to take a count of the persons who are migrants by census definition every ten years. Naturally, with a complete absence of any other information such data are subject to all types of ambiguities. Any fluctuation even of an essentially temporary nature, if it falls on the census year may completely upset the count of migrants and in fact has done so. Further, 10 years being a long time, a lot of migrants may come and go during this period without the census being able to register such facts. Again lack of data on age distribution also makes it very difficult to do any useful study of the demographic movements of these migrants at any point of time.

To compensate for this lack of information we have taken recourse to a cross section study of the migrants into Calcutta carried out by the University of Calcutta during 1954—58*. However, being a cross-section study at one point of time, using it to compensate for a historical series raises many problems and at best, approximations based on definite assumptions can be obtained. But in the absence of any data this seemed to be the only feasible alternative.

In this section we shall give a descriptive analysis of these available data on the migrant flow and alternative estimates built up by us from cross-section studies as stated before.

Table 1.1 shows the data on total population, natural population and migrant population in the census reports.

TABLE 1.1

Population of Calcutta

Census Years	Total	Natural	Migrant
1911	998,012	634,738	397,27.
1921	1,031,697	706,122	371,575
1931	1,140,862	784,387	378,776
1941	2,108,891 (1,730,074)	1,444,932 (1,066,115)	690,550 ..
1951	2,548,677	1,204,190	1,389,023

*In certain cases information is available for years upto 1956 while in others figures are available upto 1958-59.

Attached graphs also show the nature of this movement into the city every 10 years. It may be noted that in the 1941 Census it was agreed by census experts that an exaggeration of the population did take place. By properly smoothing the data it was found that the exaggeration probably took place only in the natural population and not the migrant population. This is also to be expected as political propaganda can more easily influence and penetrate the natural population which is comparatively well informed and educated. The corrected figures are given in Table 1.1 in brackets.

As pointed out before, the present census data are on a ten years basis and, therefore, it does not give us any idea either of the annual flow of migrants or its fluctuations. For this we have to turn to the findings of the Calcutta University Survey.

The Survey of the Calcutta University was conducted at one point of time but a question was asked as to the year of immigration into Calcutta. This does, therefore, give us an estimate of the yearly flow of migrants into Calcutta as far as the portion which has survived in Calcutta upto the date of survey is concerned. Naturally, therefore, this study gives us a lower level estimate of the flow of migrants, as to this flow has to be added those who came in a specific year but died or went away since then.

Table 1.2 gives the estimates of migrants made from the Calcutta University survey as cumulated on the basis of census years with corresponding census figures shown side by side.

TABLE—1.2

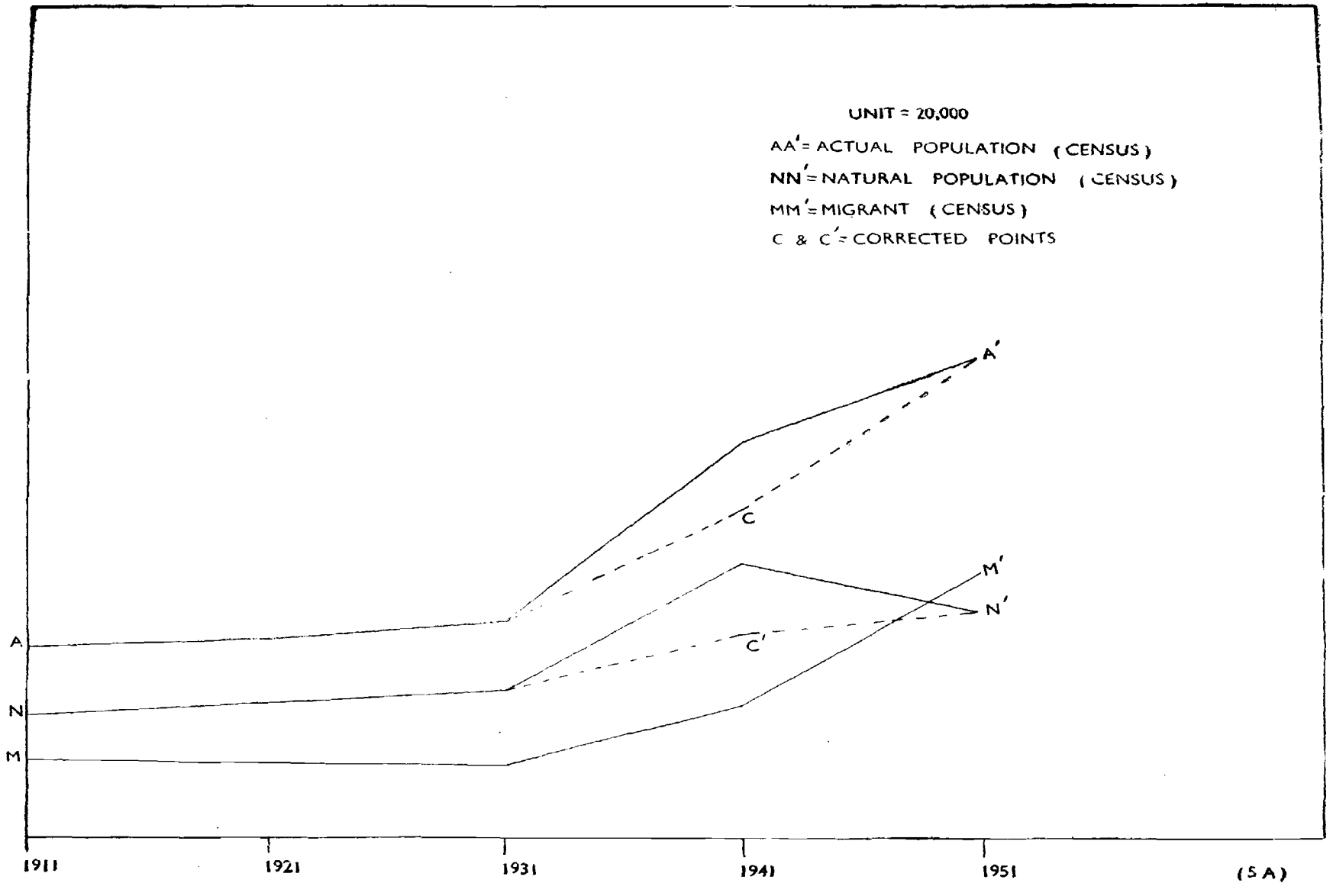
Year	Estimates of total migrants		Cumulated totals	Corresponding figures from census
	West India	East Pakistan		
1901—10	9,022	..	9,022	397,274
1911—20	43,990	2,268	55,280	371,575
1921—30	154,526	7,901	217,707	378,776
1931—40	283,693	29,896	531,296	690550
1941—50	437,098	326,562	1,294,956	1,389,023
1951—59	259,404	41,161	1,59,52,51	N.A.

It is quite understandable that the earlier the date of migration from the date of the survey the higher is the gap between the census and the survey as the original migrants have left or died and thus been omitted from the sample. But inspite of this the sample data have some consistency and a reconstruction on the basis of this sample data may be of some use as an alternative check to the very inadequate census data.

We shall now try some alternative reconstructions of migrants from the sample data, first, for the census years and subsequently for the years between census years.

These alternative estimates have been built up from the cross-section study of the Calcutta University with specific assumptions.

In the Calcutta University survey only the population existing in Calcutta in


UNIT = 20,000
AA' = ACTUAL POPULATION (CENSUS)
NN' = NATURAL POPULATION (CENSUS)
MM' = MIGRANT (CENSUS)
C & C' = CORRECTED POINTS
A'
C
M'
N'
C'
A
N
M
1911
1921
1931
1941
1951
(5 A)

1956-57 was sampled and, therefore, any information on population which came earlier but left before 1956-57 is excluded from the population. Naturally, the exclusion will affect the original population in direct proportion to the gap of the past date from the date of interview. Reconstructions have, therefore, been made assuming certain structural constancy and comparing recent years to years in the past.

Two such alternative procedures have been adopted which may now be explained briefly.

1. Let the migrants coming to Calcutta in a specific year be given. Then if the age distribution of these migrants are known we can divide up these migrants by their age distribution. We then assume that mortality among the migrant population is on the same level as given in the life tables prepared by 1951 Census actuaries for Bihar, Orissa and Assam. In the absence of any other information these rates are used to calculate the survival ratios as normally migrants are mainly from areas of this region.

Let ${}_oM_t$ be the total number of migrants coming in time t. If proportion in the i th age group is assumed to be K_i, then we have

$$ {}_oM_t = \sum_i K_i \cdot {}_oM_t . $$

For each age-group i, if S is the surviving ratio for the rest periods we have,

$S_I M$ =Migrants out of ${}_oM_t$ who survive one period from t.

$$ = \sum_i K_i \cdot S_{Ii} \cdot {}_oM_t, $$

If S_j ${}_iM_t$ =Migrants out of ${}_oM_t$ who survive j periods.

Then, $S_j M_t = \sum_i \sum_j S_{jt}$ ${}^oM_t$.

since $S_j M_t$ is the po pulation sampled at the end of j periods out of ${}_oM_t$ in our survey, then $S_j M$ may be equated to the estimate of the migrant coming in the year t and still surviving in the city. This is obtained from the survey carried out at t.

K_i, S_{ji} are all assumed to be known from other sources.

Thus,

$$ {}_oM_t = S_i M_t \frac{1}{\sum_i \sum_j K_i S_{ji}} $$

The above formula has been used to reconstruct the number of migrants.

For 1941—50, out of the estimate of migrants in the census we have taken off the estimate of displaced migrants and made our estimate separately for the migrants from West and East due to their very different age structure. The two separate estimates have then been added up.

2. In the second method we have assumed that single member families who come to Calcutta go back to their home if they are old and that the only way the number of migrants is affected is by retirement whereas multi-number groups are not similarly affected.

Table 1.3 gives the proportion of single and multi-number families by year of migration as seen in the survey of Calcutta in 1956.

TABLE--1.3

Date of Migration	Percentage of families		
	Total	Sigle Member	Multi-Member
1900—04	1	100·00	..
1905—09	5	60·00	40·00
1910—14	3	100·00	..
1915—19	17	64·70	35·29
1920—24	20	60·00	40·00
1925—29	53	77·36	22·64
1930—34	143	80·42	19·58
1935—39	113	76·99	23·01
1940—44	171	76;02	23·98
1945—49	275	86·54	13·45
1950—54	287	89·20	10·80
1955—59	180	89·44	10·55

In the Calcutta University survey a migrant was defined as coming into the city in 1935 or later. The data, therefore, from 1935 onwards only are reliable.

As may be noted from 1935 onwards, a rising trend is seen in the percentage of single member families to total. This may be attributed to differential retirement of the single member families.

We assume that the ratio between single member and multi-member families vary primarily because of this factor of retirement which differentially affects single member families.

Let the single-number migrants coming in the year of survey in our sample be denoted by $M_s(56)$ and the multi-member units by $M_m(56)$. Then the total number $= M_s(56) + M_m(56)$.

Ratio of single-member unit to total in 1956.

$$= \frac{M_s(56)}{M_s(56) + M_m(56)}$$

We assume this ratio, to be constant over the whole period i.e. migrants coming in each year display this ratio between single member and multi-member type.

Let ${}_sM_s(t)$ denote the single-member units in our sample coming in the year t and surviving to the date of survey. ${}_mM_s(t)$ denote the multi-member and in our Sample coming in the year t and surviving to the date of Survey. Let $M_r(t)$ be the number of migrants omitted from sample due to retirement.

Then with the assumptions already explained,

$$\frac{{}_sM_s(t) + M_r(t)}{{}_sM_s(t) + {}_mM_m(t) + M_r(t)} = \frac{M_s(56)}{M_s(56) + M_m(56)}$$

From this relation we get the value of $M_s(t)$ i.e. the number of migrants who have retired, on the basis of our sample.

As before ${}_sM_s(t)$ denotes the single member units in our sample coming in the year t and surviving to the date of survey, and ${}_oM_s(t)$ the original cohort which has left this surviving number.

Then with the assumptions already explained,

$$ {}_oM_s(t) = \frac{M_s(56)}{M_s(56)+M_m(56)} \times \left({}_sM_s(t) + {}_mM_m(t) + M_r(t) \right) $$

We now added up the three compounds--(1) number of migrants retired (2) number of single-member units surviving, (3) number of multi-member units still surviving to get the number of migrants who have originally come during the period in question.

On the basis of the above two reconstructions we have given below the number of migrants coming to Calcutta during census decades as below with comparable census estimates.

TABLE 1.4.

Year	Estimated by: Survival rate	Estimated by: Constant proportion between single member family and total	Migrant population coming during the period (census)	Migrant population at the end of the period (census)
1920—29	345,812	409,940	7,201	378,776
1930—39	479,244	582,529	311,774	690,550
1940—49	964,691	954,248	698,473	1,389,023 (889,817)*

Both the reconstructions we have made are lower level estimates but still they give rather larger figures than the corresponding census decades.

In fact, our estimates come closer to the accumulated total number of migrants as reported in the census at these periods.

All our reconstructions are based on samples of Calcutta in 1957 of original migrants, coming into the city earlier. This similarity, therefore, between Col. (3) and Col. (5) leads us to make certain tentative hypothesis which may be investigated more closely in future.

The basic point of this hypothesis is that the migrant population here are known to be overwhelmingly single member type. Retirement back home rather than death predominately affects this class. Some death and retirement takes place also among multi-member groups which is more than compensated by the natural increase in their family. Accepting, therefore, a current ratio between single-member and multi-member families and applying this to the multi-member group surviving from an earlier year we get approximately a correct estimate of the original number coming in a specific period as we would have got if

*Without East Pakistan Migrants.

depletion took place only in the single member units.

As is obvious the whole set of computation is based on rather elaborate reconstruction and, therefore, further research has to be done before firm estimates may be given.

The collapse of the census estimate of migrants in certain years *e.g.* in 1921 and 1931 is probably due to extraneous factors like temporary evacuation caused by the epidemic of influenza in 1920-21 and economic depression in 1930-31. These are instances of a decennial census being easily vitiated by temporary factors.

The use of assumption of constant proportion of single to multi-member units gives a close approximation of the cumulative census numbers of all these years. It is possible that our reconstruction closes the gap due to retirement effectively.

In table 1.2 we have given the number of migrants as given by census of the period and the migrants reported as coming during that period in a later survey. This naturally reveals a large gap as the date of migration and the date of survey become more and more separated in time.

A study was made of the nature of the gap between the estimates based on cross-section study of a sample of population surviving out of a certain original population of an earlier period and the actual counts at these earlier points of time and a correction formula devised for the decline.

Let us assume that estimates based on samples studied in 1956 are smaller because of a decay affecting the population from which samples have been taken.

Let Y_t be the difference between census and our estimate at time t,

i.e. $Y_t = P_t - P_{st}$

P_{et} denote population count of census and p_{st} that estimated from our sample we assume

$$V_t = A. e - K_t.$$

where, measures the gap between the date of survey and that of actual census count, such that the difference becomes smaller as the date of survey comes closer to the date of count and becomes a fixed number which is approximately the gap at the date where the two coincide.

Fitting this equation, the constants were found to be

$$Y_t = 3926. e - .035\ t$$

considering 1911 as the earliest point of time.

The estimated and observed differences on this basis were as follows:

TABLE—1.5

Year.	Difference	
	Estimated	Observed
1911	392,600	388,252
1921	276,700	316,295
1931	195,000	161,069
1941	137,400	159,254
1951	96,830	94,067

One may, therefore, take the co-efficient of t as the death-*cum*-retirement rate of the migrant population itself, this being roughly 3.5 per cent per annum. This would indicate in fact that retirement of migrants and replacement by fresh waves is a much more potent force than one normally assumes it to be. This figure for the migrants which include both death and retirement should naturally be higher.

The corresponding death rate in Calcutta was 2.28 p.c. in 1941—50 for the entire population and 1.64 p.c. for the adult population excluding 0—5 age group.

SECTION II

In the present section we shall study the flow of migrants in Calcutta as a time series and try to find out the trend and fluctuations in this series, our objective eventually being the setting up of a suitable model for projection of the flow. As may be seen in the graph following this section the long term trends of the flow, for the census and the sample surveys have fair resemblance. There is also a close movement of the migrant population with natural population. We, therefore, tried out several linear models to fit a simple curve to the migrant population. The following three models were fitted:

1. $M_t = \alpha + \beta\ {}_nP_t + \gamma . E_t$

where M is the number of migrants at time t; ${}_nP_t$ is the corresponding natural population according to census and E_t is the employment level in Calcutta.

2. $M_t = \gamma + \beta\ {}_nP_t + \gamma . t$

where employment has been replaced by a trend.

3. $M_t = \gamma + \beta\ {}^nP_t$

where M_t is assumed to be simply determined by the corresponding natural population.

The basic variable in all these cases was assumed to be the natural population. Direct industrial investment as will be seen later was stagnant in Calcutta along with industrial employment. The major incentive for expansion of employment has, therefore, come from these demands which are directly dependent on the growth of population itself *e.g.* tertiary services etc.

The constants fitted by a straight forward least square process were as follows:

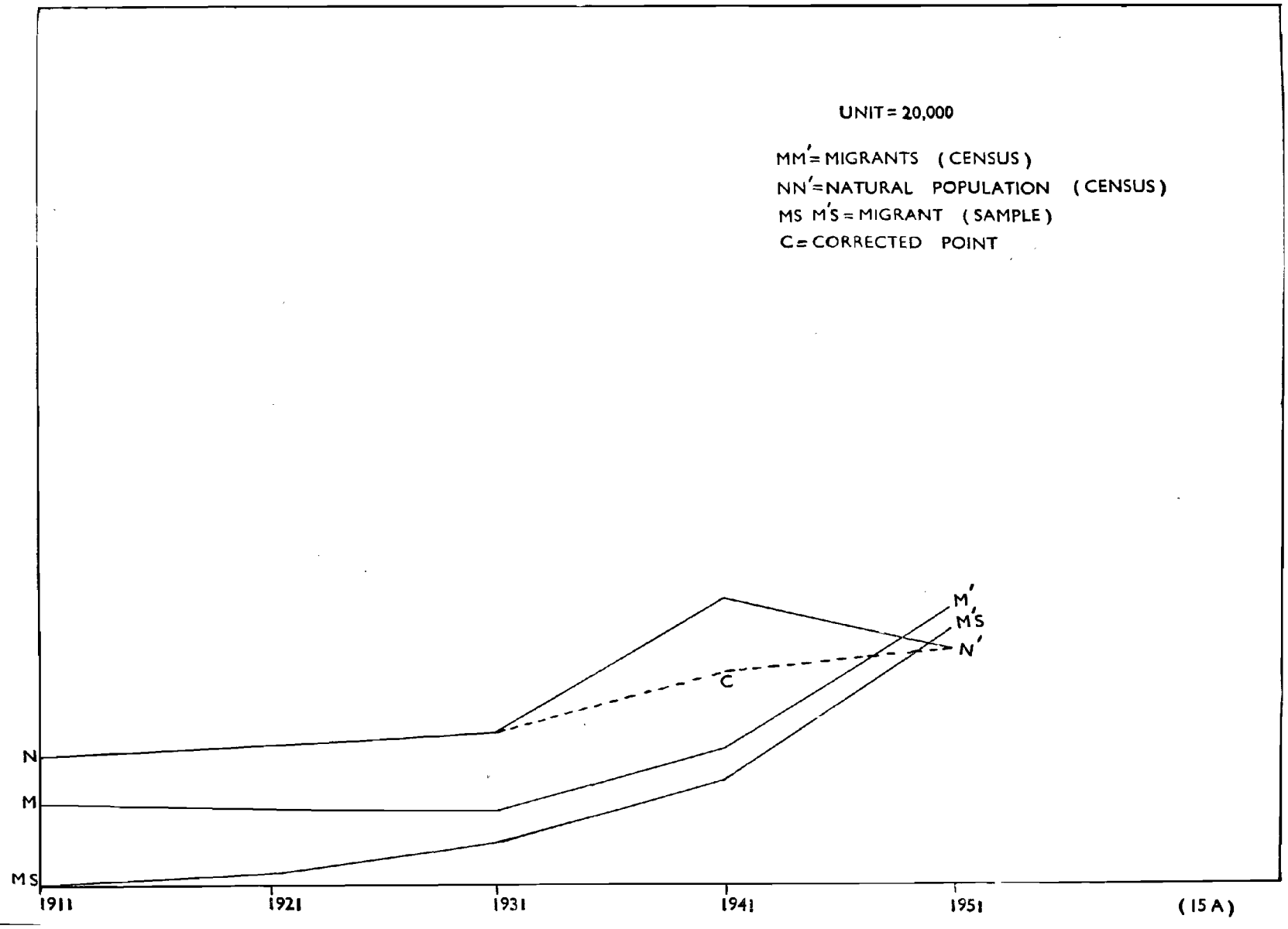
1. $M_t = .81\ {}_nP_t - \cdot 49\ E_t - 159 \cdot 01$
2. $M_t = \cdot 75\ {}_nP_t - 3 \cdot 86\ t - 425 \cdot 33$
3. $M_t = \cdot 74\ {}_nP_t - 1283 \cdot 84$

The following table gives the observed and estimated data on the basis of the fitted equations.

TABLE 2.1

Estimates of Migrants

Year.	Observed	Model I	Model II	Model III
1901	324,914	..	349,016	315,145
1911	397,274	343,601	368,765	341,322
1921	371,575	358,377	355,665	394,146
1931	378,776	450,778	399,703	452,062
1941	690,550	698,695	..	660,541
1951	1,389,023 (including displaced population)	1,376,047	1,388,218	889,817 (excluding displaced population)


UNIT = 20,000
MM′= MIGRANTS (CENSUS)
NN′=NATURAL POPULATION (CENSUS)
MS M′S = MIGRANT (SAMPLE)
C= CORRECTED POINT
M′
M′S
N′
C
N
M
MS
1911
1921
1931
1941
1951

(15 A)

As may be seen the projection in the simple model where natural population is the sole determinant of the migrant population gives a reasonably good fit over the years. For Calcutta this may not be entirely fortuitous. The migrant population or, the bulk of the migrant population coming into Calcutta has a high degree of occupational specialisation.

This specialisation is not based on skill but on the lack of local competition. Bulk of the migrant population, as will be seen in a later section, mainly go into trade and manual work, generally unskilled. They far out-number the natural population in this respect.

Naturally, therefore, as they mostly belong to specialised sectors which cater directly in many cases to the population they have a direct relation with it. The requirement of workers of those specialised sectors does possibly increase in a distinct ratio with the natural population itself. We may say, therefore, that the growth of the natural population determines the requirement of the additional members of the specialised sectors.

The long term trend in migration thus can be projected, though in a rather crude way, from available census material. But lot of things happen in between the census years that effect migrant movement and are, therefore, of vital importance to the life and economy of the city. It is necessary, therefore, that some study is made of the short-term fluctuations in the flow and of the determinations of the short term fluctuations in the flow. For this, once more, we have to turn to the cross-section analysis as found from the survey of the Calcutta University.

As pointed out before for such a study of fluctuations, census data coming once in ten years are of little use.

The main difficulty in making a proper appraisal of the nature of short term fluctuations from the survey data is the fact that the short range fluctuations have been to some extent distorted by the exponentially increasing gap between the actual population and the population which survived and were sampled during the survey. For the present, however, without going into this distortion factor, we shall assume that in the close neighbourhood of any point in time this distortion effect will be small and, therefore, short term fluctuations on annual data will give sufficient indication of the original fluctuations.

Table 2.2 gives the annual migrant flow as found in the sample survey conducted by the Calcutta University. The attached chart shows these movements over a long period of years. Along with the annual series given here for the migrant flow are also given some auxiliary series of economic importance with corresponding graphs.

TABLE 2.2

Year	Estimated number of migrants (West) from Calcutta Survey	Production in Jute industries (1000 tons)
1929	1,121	1,050
1930	64,227	1,115
1931	1,682	792
1932	18,860	774

TABLE 2.2—*concld.*

Year	Estimated number of migrants (West) from Calcutta Survey	Production in Jute industries (1000 tons).
1933	45,112	835
1934	30,074	821
1935	13,508	870
1936	16,057	945
1937	9,430	1,152
1938	65,246	1,242
1939	22,428	1,103
1940	58,008	1,264
1941	21,740	984
1942	31,782	1,225
1943	52,987	1,205
1944	21,740	954
1945	18,962	1,000
1946	36,242	1,085
1947	21,740	962
1948	123,815	1,035
1949	30,125	1,040
1950	73,071	825
1951	23,422	854
1952	30,686	945
1953	37,364	892
1954	39,046	868
1955	32,903	994
1956	40,702	1,092
1957	32,342	1,022
1958	11,163	1,056
1959	8,920	1056

It may be noted that the movements of East Pakistan and ordinary migrants are rather closely synchronized during 1937-51. The regression worked out between the two figures was—

$$M = \cdot 58\ M$$

There are possibly two reasons behind that correlation in annual movements.

One of the reasons possibly is that good economic prospects generally stimulated migration both from the East and the West

into this region. Naturally the flows are synchronised. This is, no doubt, one of the factors explaining sympathetic movement over the years.

But the fluctuations of the both, during 1947-51 in particular, deserve some closer analysis. It is known that a sudden spurt in migration from East Pakistan did take place during this period due to political reasons. It is now seen that precisely during this period a similar movement did take place in migration from the west of the province. This movement from the west again is unrelated to any of the general economic indicators in the strength of its reaction. One is tempted to speculate that what happened here may be compared to the acceleration principle explained earlier. Originally, migrants came from the east in sudden waves. Their arrival and their permanent colonisation led to demands from specialised sectors in which migrants from west play an important part. This in its turn led to increased flow also from the west. The subsequent migration thus from West was induced by the primary migration from East.

We shall now attempt to set up a model to describe the annual movement of migrants.

In an earlier model we have already estimated the trend in migrant population.

The following trend equation was fitted:

$$M_t = 33371 + 299{\cdot}78\ t \quad (1944 = 0)$$

A second trend equation was fitted to production of jute as given in Table 2.2.

$$Y = 1000{\cdot}3 + {\cdot}568\ t \quad (000 \text{ tons unit})$$
$$1944 = 0)$$

Using these two trend equations we found out the deviations in the two series from the trend in the usual way. Denoting these two deviations as—

$$M_t^{o\prime} \qquad \text{and} \qquad Y_t^{o\prime}$$

The following equation was fitted

$$M_t^{o\prime} = {\cdot}965 + {\cdot}043\ Y_t^{o\prime}$$

This relationship between short period fluctuations in migration and jute production level was accepted after trying out other variables shown in the graph. It was found that annual production of jute gave some sympathetic reaction to fluctuations in migration, the actual relationship being as given above.

Jute industry still, by and large, absorbs the largest number of the migrant population. It is, therefore, natural that movements of production of jute was found to be influencing short period fluctuations of the migrants from the west. Production rather than employment proved to be a useful regressor as overtime work and shift employments are quite important in the industry. The number of workers, therefore, do not reflect condition in the industry as overtime or short hours are not taken into account.

Using now the equation relating the migrants to natural population fitted in section II we determined the likely trend of migrants in the next 10 years from 1942-50. On this trend was superimposed the deviations expected because of fluctuations in the jute industry as in the following model.

$$M = {\cdot}74\ {}_nP + {\cdot}043\ Y_t^{o\prime} - 1282.875$$

The following series was obtained:

TABLE 2.3

Year	Estimated annual number of migrants with trend (Natural Population) and fluctuations (Jute production)
1942	680,126
1943	691,450
1944	673,304
1945	6,69,355
1946	675,908
1947	688,230
1948	705,006
1949	721,031
1950	749,934

We have not considered the flow of migrants drawn by the displaced population.

We can thus see that there are two factors influencing the flow of migrants. One of these is the growth of the natural population in Calcutta and its requirement of specialised occupational groups supplied mainly by migrants. The other is the fluctuation in the major economic activity of the locality in this case represented by output of jute industry.

The estimates for the ten-year total seem to tie up with the census though there is no alternate annual estimates from which a check can be made.

We have thus a model for following up the annual and the ten yearly totals for Calcutta for given projection of the natural population.

We shall now demonstrate a Projection *model with the natural population data of* 1941 as given by census of 1951, the projection being made for both 1951 and 1961. Here we shall consider decennial series.

We start with a formula for the projection of the annual natural population as given below:

$${}_nP_t + b({}_nP + {}_mP_t) - d\,{}_nP_t = {}^nPt+1$$

where,

${}_nP_t$ = Natural population at time *t*.

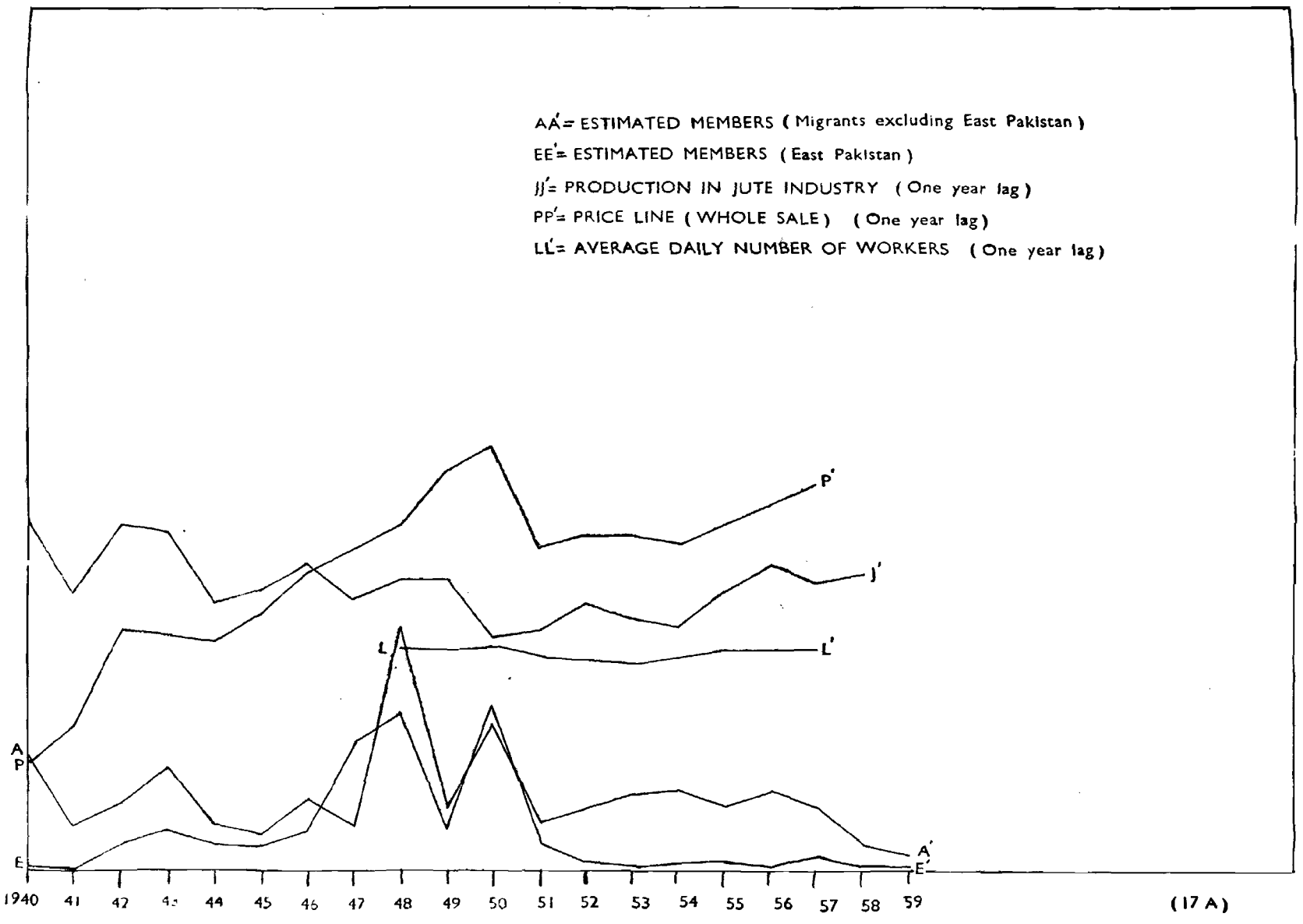
$b({}_nP_t + {}_mP_t)$ = births due to natural population and migrant population at t.

$d_n P_t$ = deaths occurring among natural population at t.

We get the total annual births from official sources. These, annual total births have been inflated by 20 per cent in order to take into account the births that escape registration as established in an earlier paper by one of the present authors.*

Official sources also give us the annual total number of deaths in total population. We however require the number of deaths that have taken place among the natural population. We first subtract from the total number of deaths, the number of *deaths that take place in the age group* (0—5) assuming that deaths occurring in the age group (0—5) take place in the natural population only as this age group is very small among the migrants from the

*A. Ghosh—A Study of Demographic Trends in West Bengal during 1901—5©—Population Studies, Vol. IX. No. 3, March 1956.


AA'= ESTIMATED MEMBERS (Migrants excluding East Pakistan)
EE'= ESTIMATED MEMBERS (East Pakistan)
JJ'= PRODUCTION IN JUTE INDUSTRY (One year lag)
PP'= PRICE LINE (WHOLE SALE) (One year lag)
LL'= AVERAGE DAILY NUMBER OF WORKERS (One year lag)
P'
J'
L
L'
A
P
E
A'
E'
1940
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

(17 A)

West. We assume same death rate for the migrants and the natural population and divide the deaths remaining according to the proportion that exists between the natural population and the migrants of 1941, into two components—(a) deaths among the natural population, (b) deaths among the migrants.

The equation relating the migrants and natural population enable us, given an initial natural population, to project the migrant for that period. The natural population is now projected with figures of births (natural and migrants) and deaths. This projected natural population is used to find out the level of migration. These two figures are used to find out the natural population of the next period as in the following model.

$$_nP_t + b(_nP_t + {}_mP_t) - d_nP_t = {}_nP + 1$$

$$_mP_t + 1 = (\alpha + \beta \cdot {}_nP_t + 1$$

$$_nP_t + 2 = {}_nP_t + 1 + b(n^P + 1 + {}_mP_t + 1) - d_nP_t + 1$$

Adding up our estimate of the natural population of 1961 with the estimated number of the migrants of 1961 we get our estimate of the population of 1961. We are also giving our estimate for 1951 done with the census figures of 1941. The corresponding census estimates of 1951 and 1961 are also given.

The projection is reasonably good. As our model was constructed before Census 1961 figures were available and checking was done only subsequently this give us some confidence in the model.

TABLE 2.4

	1951	1961
Natural Population		
Estimated	1,161,240	1,770,154
Observed	1,204,190	..
Total Population		
Estimated	..	2,951,684
Observed	..	2,927,289

SECTION III

In an earlier section we have studied the migrant flow as a whole, its nature and other important aspects. In the present section we shall briefly present some important demography data relevant to the present study.

The Table 3·1 gives the sex and age composition during 1921-51 in Calcutta.

TABLE 3·1

Percentage to total

MALE

Age Group	1921	1931	1941	1951
0—1	1·33	1·47	1·10	1·60
2—5	4·33	5·04	5·00	7·00
6—10	6·45	6·56	6·80	6·60
11—15	7·97	7·18	7·00	9·10
16—20	9·26	10·86	9·80	12·20
21—30	26·54	28·31	29·74	24·90
31—40	21·81	21·66	21·98	19·20
41—50	13·04	11·44	11·30	11·60
51—60	5·70	4·91	4·87	5·30
61 & above	3·56	2·58	2·30	2·50

FEMALE

Age Group	1921	1931	1941	1951
0—1	2·32	2·70	2·10	3·50
2—5	8·20	10·0	9·20	12·70
6—10	11.50	10·97	12·50	11·20
11—15	8·90	10·40	10·90	12·00
16—20	9·30	10·20	10·20	11·60
21—30	20·90	21·50	20·90	18·60
31—40	16·30	15·20	15·50	13·40
41—50	10·30	9·40	9·70	8·10
51—60	6·40	5·40	5·30	5·20
61 & above	5·70	4·10	3·90	3·70

We now come to the basic demographic tables as found from the sample survey in Calcutta and Jadavpur area.

TABLE 3·2

Age Group	Percentage of total			
	Original resident	Ordinary Migrants	Displaced Migrants	Total
0—9	32·66	4·06	5·97	20·78
10—19	17·77	16·65	27·24	18·61
20—29	13·33	34·74	26·44	21·36
30—39	11·53	27·51	16·63	16·95
40—49	11·16	11·49	10·54	11·18
50—59	8·05	5·45	7·09	6·56
60 & above	5·36	1·93	5·96	4·41
N.A.	·14	·17	·13	·15
Total	**100·00**	**100·00**	**100·00**	**100·00**
Members (Total)	6,979	3,621	1,509	12,109

TABLE 3·3

Number in Sample

Age Group	Displaced Migrants		Other Migrants		Original Residents		Total Population	
	Males	Females	Males	Females	Male	Females	Male	Females
0—4	2	3	25	20	646	577	673	600
5—9	42	43	50	52	544	512	636	607
10—14	114	111	125	74	400	335	639	520
15—19	99	87	280	124	269	236	648	447
20—24	118	95	490	133	296	239	904	467
25—29	113	73	494	141	216	179	823	393
30—34	86	54	467	116	250	169	803	339
35—39	65	46	344	69	237	149	646	264
40—44	39	44	220	53	288	138	547	235
45—49	38	38	106	37	247	106	391	181
50—54	31	34	47	28	232	98	310	160
55—59	19	23	31	19	162	70	212	112
60 & above	44	46	29	41	235	139	308	226
N.A.	..	2	6	..	10	..	16	2
Total	**810**	**699**	**2,714**	**907**	**4,032**	**2,947**	**7,556**	**4,553**

TABLE 3·4

Age Group	Percentage Distribution		
	Male	Females	Total
Upto 24	55·89	57·71	56·75
25—34	16·47	15·55	16·04
35—44	10·97	10·10	10·55
45—54	8·01	6·81	7·44
55—64	4·47	5·46	4·94
65—74	2·63	2·92	2·77
75 & above	1·23	1·12	1·18
N.A.	*0·33*	*0·33*	*0·33*
Total	3·647 **100·00**	3·318 **100·00**	6·965 **100·00**

It may be seen that the original residents and the migrants in the colony are in normal family group with fair component of females and children.

The displaced migrants in Calcutta have a higher proportion of adult males. The ordinary migrants have even less of a family life, a fact which is well-known.

The two most striking features of the age and sex composition of the sample population in Jadavpur area are the relative abundance of young people and that, unlike the migrants from the West of the province, the two sexes are, more or less, evenly balanced. 55·89% of the males, 57·71% of the females and 56·75% of the sample population falls within the age group 'upto 24'. This is, however, not unexpected. For, from the west whence the migration is not forced, only the job-seekers, who are usually men come to Calcutta. Migration from East Bengal, on the other hand, is almost entirely forced and the migrants crossed with family over to West Bengal for social security.

The same lack of family life among migrants from specific regions is seen in the following table which gives average family size by region of origin.

TABLE 3.5

Region Migrating From	Average size of Family
Bihar	1.31
U.P., C. P. M.P., and M.B.	1.36
Orissa	1·66
Assam and Tripura	1·25
Delhi, Punjab, Pepsu, Jammu and Kashmir, Rajasthan	1·94
Bombay, Saurashtra, Gujarat	6·67
Andhra, Travancore and Cochin, Madras, Mysore, Hyderabad	1·67
Outside West Bengal	3·00
Oustide India	1·79
No Entry	2·60
Not Available	1·00
Total	**2·09**

Important sources of migrants e.g. Bihar, Uttar Pradesh and Orissa send out only incomplete family units. Migrants from outlying regions further North or South, however, bring normal families with them.

Table 3·6 gives the age at migration.

TABLE 3·6

Year of Migration	Age Group								
	Upto 14	15-24	25-34	35-44	45-54	55-64	N.A.	Total	Average age of migration
1935—39	..	2·34	24·94	52·73	15·58	4·41	..	100·00 (385)	18·05
1940—46	2·39	15·14	43·57	27·49	7·16	4·15	·10	100·00 (964)	17·59
1947—50	10·54	28·48	40·58	12·56	4·71	2·91	·22	100·00 (892)	18·83
1951—54	15·55	40·41	30·09	8·57	2·62	2·62	·14	100·00 (688)	19·51
1955—57	16·96	53·18	18·11	6·20	2·94	2·12	·49	100·00 (613)	21·55
Temporary for one month .	31·25	18·75	25·00	15·63	3·12	6·25	..	100·00 (32)	..
N.A.	14·89	17·02	29·79	8·51	21·28	8·51	..	100·00 (47)	..
Total . .	**9·53**	**28·36**	**33·64**	**18·95**	**6·02**	**3·31**	**·19**	**100·00 (3621)**	..

The average age at migration shows very little change over the years. It may be seen that the average age is that of an adult earner starting life. This seems to have been slightly increasing over the years.

The following table gives the size of family by date of migration, with the average over all years.

TABLE 3·7

Date of Migration	Upto 14	15—19	20—24	25—29	30—34	35—39	40—44	45—49	50—54	55—59	60—64	65—69	70 & above	All years
Resident . . .	1·0	1·1	1·5	2·4	2·2	4·3	4·2	3·5	5·3	3·0	4·2	4·3	1·6	3·0
N. A. . . .	..	..	16·5	1·0	1·0	..	..	7·0	7·0	..	..	..	..	8·2
1900—4 . . .	..	..	..	..	..	..	..	..	..	..	..	1·0	..	1·0
1905—9 . . .	..	..	..	..	..	..	..	..	1·0	..	4·0	1·0	..	2·8
1910—14 . . .	..	..	..	..	..	..	..	..	..	1·0	..	..	1·0	1·0
1915—19 . . .	..	..	..	1·5	..	4·0	..	..	6·4	2·0	1·0	..	..	2·9
1920—24 . . .	..	..	..	1·0	1.0	..	5·0	2·0	2·0	2·0	3.1	..	..	2·6
1925—29 . . .	..	..	..	..	7·5	5·0	2·2	2·5	1·2	2·7	1·0	..	..	2·2
1930—34 . . .	..	..	..	3·0	1·6	2·2	2·3	1·6	2·0	1·4	1·8	2·0	..	2·0
1935—39 . . .	..	..	1·0	1·0	2·0	1·9	1·6	3·1	..	1·0	9·0	..	..	2·0
1940—44 . . .	..	..	3·0	1·3	1·9	1·6	3·2	2·0	3·0	..	2·0	1·0	1·0	1·9
1945—49 . . .	1·0	1·0	1·1	1·3	1·5	1·3	2·1	1·4	4·0	1·0	1·0	..	2·0	1·5
1950—54 . . .	1·0	1·0	1·0	1·1	1·4	1·8	1·3	1·8	3·3	1·0	9·0	..	1·0	1·3
1955—59 . . .	1·0	1·0	1·0	1·0	1·4	3·0	1·3	1·0	..	5·0	..	..	1·0	1·2

There is a slow increase in family size starting from 1915—19. This small family size reflects the natural increase due to natural increase in the migrant family.

These figures thus give us an idea of the natural increase in multi-member families over one years.

SECTION IV

In this section we consider an important aspect of civic amenities that is vitally linked with the progress of the city itself. This is the level of literacy in the city over the last 3 or 4 decades, and the impact of the migrant flow on this level.

The importance of this aspect of city life from the aspect of growth, or development cannot be exaggerated. If there is a continuous flow into the city of semi-literate or illiterate migrants particularly of an age at which no further education can be imparted easily, the health, hygiene and general, technical, cultural progress of the city is bound to suffer and growth of the economy of the city also will be hampered.

We first consider the background of literacy as we find it in the decennial census of Calcutta since 1931. For comparison we also give the figure for 1957 as found in the sample survey carried out by Calcutta University.

TABLE 4·1

Year	Percentage of literates	
	Males	Females
1931	44·49	29·07
1941	58·12	44·44
1951	58·69	43·35
1957	69·60	56·59

The level of literacy generally shows improvement during the last 40 years, though considerable illiteracy is still present.

In this change in the level of education of the city, however, the two streams of migrants have been influencing factors and we have, therefore, first to gauge the rate of literacy in the two migrant streams and how it has affected the city literacy levels.

The Table 4:2 below shows for 1957 the relative position by sex and age in the sample.

TABLE 4·2

(Total Sample)

Age Group	Sex	Illiterate	Literate	Moderately Qualified	Highly Qualified	N.A.	Total
Upto 14	Males	1,014	597	337	..	..	1,948
	Females	943	550	233	..	1	1,727
15—24	Males	281	425	804	39	3	1,552
	Females	233	332	334	15	..	914
25—34	Males	387	526	633	79	1	16,26
	Females	272	289	156	15	..	732
35—44	Males	308	418	401	65	1	193
	Females	225	202	67	4	1	499
45—59	Males	207	355	292	57	2	913
	Females	223	197	29	3	1	453
60 & above . . .	Males	75	118	88	26	1	308
	Females	149	73	4	..	..	226
N.A.	Males	5	2	..	..	9	16
	Females	1	..	..	..	1	2
Total		4,323	4,084	3,378	303	21	12,109
percentage		35·70	33·73	27·90	2·50	·17	100 · 00

TABLE 4·3

(Ordinary Migrants)

Age Group	Sex	Illiterate	Literate	Moderately Qualified	Highly Qualified	N.A.	Total
Upto 14	Males	71	80	49	..	..	200
	Females	46	59	41	..	..	146
15—24	Males	199	250	300	21	..	770
	Females	73	97	84	3	..	257
25—34	Males	297	360	265	39	..	961
	Females	109	88	54	6	..	257
35—44	Males	202	202	132	27	1	564
	Females	58	41	20	3	..	122
45—59	Males	59	75	38	11	1	184
	Females	42	36	5	1	..	84
60 & above	Males	5	13	10	1	..	29
	Females	28	13	..	..	..	41
N. A.	Males	2	..	..	..	4	6
	Females	..	..	..	..	..	..
Total		**1,191**	**1,314**	**998**	**112**	**6**	**3,621**
Percentage		32·89	36·29	27·56	3·09	·17	100·00

TABLE 4.4

(Displaced migrants)

Age Group	Sex	Illiterate	Literate	Moderately Qualified	Highly Qualified	N.A.	Total
Upto 14	Males	17	73	68	..	..	158
	Females	33	78	46	..	..	157
15—24	Males	7	56	152	2	..	217
	Females	33	80	68	1	..	182
25—34	Males	16	43	131	9	..	199
	Females	27	70	29	1	..	127
35—44	Males	4	43	54	3	..	104
	Females	34	45	10	1	..	90
45—59	Males	3	35	45	5	..	88
	Females	42	46	7	..	..	95
60 & above	Males	3	23	13	5	..	44
	Females	31	13	2	..	..	46
N.A.	Males	..	..	..	..	..	..
	Females	1	..	..	..	1	2
Total		251	605	625	27	1	5,09
Percentage		16·63	40·09	41·42	1·79	·07	100·00

There are no data to show the nature of the illiteracy among migrants over time in the census and we cannot, therefore, gauge this effect over the last 40 years. To provide, however, some sort of a dynamic picture we present in the following table the rate of literacy among migrants coming at different periods into the city. The present data relate only to the earning members of the family, but the migrants being pre-eminently an earning group the trends in the data will be sufficient indicators of the general level.

TABLE 4.5

(*Ordinary Migrants*)

Date of Migration	Illiterate	Literate	Moderately Qualified	Highly Qualified	Total
1901—1910	28·57	57·14	..	14·29	100·00 (7)
1911—1920	37·50	46·87	15·63	..	100·00 (32)
1921—1930	36·29	44·35	18·55	·81	100.00 (124)
1931—1940	38·70	49·80	10·73	·77	100·00 (261)
1941—1950	34·84	51·02	11·68	2·46	100·00 (488)
1951—1959	38·19	43·40	13·46	4·95	100·00 (364)
N. A.	33·33	33·33	33·34	..	100·00 (6)

TABLE 4.6

(*Displaced Migrants*)

Date of migration	Illiterate	Literate	Moderately Qualified	Highly Qualified	Total
1901—10	..	33·33	66·67	..	100·00 (3)
1911—20	..	..	100·00	..	100·00 (1)
1921—30	..	100·00	..	..	100·00 (2)
1931—40	..	25·00	58·33	16·67	100·00 (12)
1941—50	7·64	46·50	38·85	7·01	100·00 (157)
1951—59	4·17	37·50	50·00	8·33	100·00 (24)

It may be seen that over the last 3 or 4 decades no perceptible change in literacy level of the migrant group is observable. The rate of literacy among the residents is higher than among migrants from the west. Illiteracy among migrants has remained at a level of 35—40% for the last 40—50 years. Going into higher levels of education the position is also stagnant for the migrant stream. The relative ratio for the

residents is much higher. It is obvious that the levels of education and literacy of the city is consistently being diluted by the inflow of illiterate or semi-literate migrants and this is bound to affect city life considerably. The migrants into the city over the last 40 years show only around 10 per cent who are even moderately educated and even this percentage has a trend towards decline possibly due to greater scope for the educated in their own country. It is strange that this rate do not seem in the later years to be at all improving which would have been the case if basic literacy had really spread to the regions from which these migrants come.

Compared to the group from the West the East Pakistan migrants show higher rate of literacy and higher levels of education as a whole. This is even higher than that of the residents. There is, therefore, no doubt that this influx is raising the social and cultural level of the city and is a modernising influence. But while this is more encouraging there is another discouraging aspect of this education. The high proportion of the educated among the East Pakistan migrants have not added to the technical skill in the country.

The influx of educated but technically unskilled labour has led to undesirable crowding in the tertiary sector, a feature which we shall have opportunity of studying later on.

The following table gives the literacy level for the earning population by age for original residents and the migrants from East and West.

The migrants have been classed here under broad groups, according to the period of migration, to find out if there are differences in literacy among migrants of same age coming at different periods.

TABLE 4.7

Period	Age					
	Upto 24	25—34	35—44	45—64	65 & above	Total
Upto 1941	..	20·86	14·71	36·20	1·23	100·00
1942—46	2·38	54·76	33·33	9·53	..	100·00
1947—59	31·06	48·11	15·53	4·92	·38	100·00

Due to the fluctuating sample number nothing can be said about the group "—24". But some trend is observable among the migrants in "25—34" and "35—44", showing a gradual improvement among migrants coming at a later period in the matter of literacy. To some extent, however, this may be due to a slight shift in the regional flow of migrants from traditional sources to new sources further North-East or South.

The table given earlier for Calcutta show that the rate of literacy was stagnant from 1931—41. As groups above 25 have received primary education around 1941—45 this stagnation is not unlikely.

The obvious conclusion is that improvement in literacy if any, is a post-independence phenomenon.

As illiteracy is not a problem among East Pakistan migrants no special discussion is necessary.

We come to the regions of migration and levels of literacy. Table 4·8 show the migrating regions and corresponding rates of literacy.

TABLE 4.8

Region	Illiterate	Literate	Moderately Qualified	Highly Qualified	Total
Bihar, Orissa and U.P.	48·34	46·84	3·46	1·36	100·00 (664)
East Pakistan	6·53	44·22	40·70	8·55	100·00 (199)
Assam and Rest of India	13·21	56·61	15·09	15·09	100·00 (53)
Outside India	14·29	78·57	..	7·14	100·00 (14)
Elsewhere in Bengal	..	33·33	66·67	..	100·00 (3)
No Entry	1·18	98·82	..	..	100·00 (170)

It may be seen that the traditional sources of migrants *e.g.*, Bihar, Uttar Pradesh, Orissa send primarily migrants who are illiterate or just literate and who supply unskilled or semi-skilled labour. Groups from farther North, or South send migrants less in number but much better qualified and obviously in the upper walks of life.

The case of East Pakistan migrants also is similar to those better groups, that is they have high literacy rate as also a high level of education among them.

We have seen the general levels of literacy and education among the different streams of migrants. We now come to the picture of the refugee colonies surveyed by the Jadavpur team. What is the level of literacy and education in these refugee colonies ? It is necessary to discuss this as a separate section because of the fact that these refugee colonies like the working class areas around Calcutta are growing up as distint islands of their own. They are in fact miniature satellite towns which have sprung up around the city and which present locally problems of their own regarding economic and social affairs.

We start by comparing the educational attainments of the colonies as a whole with the Calcutta sample of migrants as below:

TABLE 4.9

	Illiterate	Literate	Moderately Qualified	Highly Qualified
Displaced Migrant	6·5	44·2	41·7	7·5
Refugee Colony	22·0	24·3	49·8	4·2

Generally, the level in the colonies are lower than that in the general migrant population in the city.

The migrants dispersed in the city represent the better off groups who have got better living space and better employment also. The more unfortunate ones have crowded in the colonies. Colonies are largely composed also of post-partition migrants and as such gives cross-section of all classes rather than of the upper class Hindus in East Pakistan.

Table 4·7 below gives the educational levels by sex.

TABLE 4.10

Education	Males	Females	Total
Illiterate	36·56	63·44	100·00 (1,529)
Literate	47·92	52·08	100·00 (3,982)
Moderately Qualified	79.58	20·42	100.00 (1,131)
Highly Qualified	86·69	13·31	100·00 (323)

Again a much higher female illiteracy compared to migrants in Calcutta and similar male literacy may be seen.

We now give dynamic picture of the migrant flow in so far as education and literacy are concerned.

As the flow of migrants into the colony only started around 1946 the table gives the position in detail from 1946 onwards.

TABLE 4.11

Date of Migration	Illiterate	Literate	Moderately Qualified	Highly Qualified	Total
Original Resident	..	95·13	1·35	3·52	100·00 (14)
Upto 1941	5·26	42·11	36·84	15·79	100·00 (19)
1942—46	..	24·00	40·00	36·00	100·00 (25)
1947	2·50	33·75	44·38	19·37	100·00 (160)
1948	4·80	37·12	41·49	16·59	100·00 (229)
1949	3·08	43·08	36·92	16·92	100·00 (65)
1950	7·84	50·54	32·68	8·94	100·00 (459)
1951	16·67	66·66	16·67	..	100·00 (12)
1947—51	5·95	44·00	36·97	13·08	100·00 (925)
1952—56	9·09	27·27	27·27	36·37	100·00 (11)
1957 & above	..	25·00	75·00	..	100·00 (4)

As may be seen trends in the colony give a clear picture of the steady decline in the level of literacy among displaced migrants coming here. There is a rising trend in

the colony of illiteracy showing that while the earlier normal migrants were an enterprising and qualified group the later migrants are much less prepared for an economic struggle.

This picture of the colony thus is a replica, rather exaggerated, of the changing character of the flow of East Pakistan migrants over the last few years.

The following table gives the age-wise classification which again confirms earlier conclusions.

TABLE 4.12

Age Group	Illiterate	Literate	Moderately qualified	Highly qualified	Total
upto 24	26·08	61·14	10·93	1·85	100·00 (3,953)
25—34	10·21	52·91	27·04	9·84	100·00 (1,117)
35—44	15·61	52·24	25·58	6·53	100·00 (735)
45—54	17·76	53·67	21·43	7·14	100·00 (518)
55—64	24·13	50·29	15·99	9·59	100·00 (344)
65—74	28·50	48·70	13·99	8·11	100·00 (193)
75 & above	28·05	47·56	18·29	6·10	100·00 (82)
N. A.	69·56	26·09	4·35	..	100·00 (23)

The older group of displaced migrants are more likely to be illiterate or just literate while the new generation is certainly better equipped that way. This shows that among migrants from East Pakistan, education was rather more deeply spread out and in recent years literacy has spread much further than in the city itself.

Possibly this once more reflects the fact that East Pakistan migrants are not a fair cross-section of the Hindu Population of East Pakistan, but rather a cross-section of the urban middle classes just as migrants in Bihar and Uttar Pradesh are a cross-section of the rural poor.

As far, however, as the level of education is concerned, Calcutta has gained rather than lost through East Pakistan migrants.

But as pointed out before, lack of any technical qualification, accompanied by a moderate level of general education has forced this group of migrant to compete for work in a rather narrow field in the tertiary sector leading to many critical problems in the city.

SECTION V

In the present section we take up some aspects of the impact of immigration on occupation and employment.

(1) The topics covered in the study are as follows: the occupational distribution in the population over the last three, or four, decades and the change, brought about by the immigrants.

(2) Occupational distribution among the migrants and the nature of shifts in these occupations.

Table 5·1 gives the percentage distribution of the population by occupation as given in the Census during 1911—51 for Calcutta.

TABLE 5.1

Occupation	Percentage distribution of persons				
	1911	1921	1931	1941	1951
(a) Production of Raw Materials	3·19	4·23	3·13	2·98	0·40
I Exploitation of Animals and Vegetations	3·15	4·22	3·11	..	0·33
II Exploitation of Minerals	0·04	0·01	0·01	..	0·07
(b) Preparation and Supply of Material Substances	54·59	51·64	42·71	51·65	68·58
III Industry	23·52	23·23	17·85	..	22·08
IV Transport	14·10	10·56	8·99	..	13·95
V Trade	16·96	17·85	15·86	..	32·55
(c) Public Administration & Liberal Arts	8·58	8·21	9·24	11·18	16·47
VI Public Force	1·42	1·04	1·18	..	..
VII Public Administration	2·31	2·60	3·30	..	..
VIII Profession & Liberal Arts	3·73	4·58	4·77	..	..
(d) Miscellaneous	33·65	35·92	44·92	34·19	14·55
IX Persons living on their income	1·12	0·78	1·98	..	..
X Domestic Service	13·60	11·63	15·75	..	..
XI Insufficiently described Occupations	16·09	19·90	24·82	..	..
XII Unproductive	3·95	3·60	2·37	..	..
Total	**100·00** (624,039)	**100·00** (649,566)	**100·00** (641,450)	**100·00** (1,109,500)	**100·00** (1,080,349)

Apart from group totals, the occupations which are commonly defined are only given here

We are here mainly trying to point out the change in occupational structure as far as they are influenced by immigration. In this respect the data for some professions are relevant. Trade, liberal professions and services have gone up significantly during 1941—51 a period of mass migration particularly from East Pakistan. But industrial employment does not show any effect of expansion due to this pressure. This is a pointer towards the increasingly parasitical, top heavy structure forced into the city by influx of a people without skills of a mechanical or industrial nature. This becomes even clearer once we go into the current survey in 1957 carried out by the Calcutta University and compare the occupational distribution of the population by group according as they are residents or migrants as in Table 5·2.

TABLE 5.2

Occupation	Percentage to total				
	Original Residents	Migrants (Displaced)	Migrants (Ordinary)	Total	Migrants in refugee colony
Non-Tech. Executive I	1·11	1·33	3·26	2·04	1·56
Non-Tech. Executive II	1·11	1·90	2·06	1·60	7·58
Recepients of Unearned Income	·26	1·33	3·88	1·90	0·10
Tech. & Professional I	1·71	3·24	3·36	2·57	3·12
Tech. & Professional II	2·57	5·90	3·45	3·30	6·75
Ministerial Technical	2·44	3·05	3·02	2·75	..
Ministerial Non-Tech.	6·50	11·05	10·65	8·54	35·93
Traders	21·17	30·29	25·32	23·97	24·09
Manual Workers Skilled	17·41	20·95	17·55	17·87	12·56
Manual Workers Unskilled	44·27	19·24	25·28	33·66	6·65
Miscellaneous	1·24	1·33	1·73	1·46	1·66
N.A.	·21	·38	·43	·32	..
Total	**100·00 (2,338)**	**100·00 (525)**	**100·00 (2,085)**	**100·00 (4,940)**	**100·00 (963)**

It may be seen that migrants supply mainly traders, unskilled and skilled labourers etc. In fact, migrants supply twice as many unskilled and skilled manual workers as the original residents. Of the total employed in the sample i.e. 4,940, 1,400, or roughly a third of the total are migrant manual labourers. If we add to this petty trade we come roughly to 1,900 which is around 40 per cent of the total employed.

This high degree of specialisation i.e. the migrants doing a specific type of job for which local competition is feeble is a factor explaining the stability of the

migrant flow from census to census as a ratio of the natural population. Before East Pakistan migration, trade absorbed roughly 17 per cent of the population through 1911—31 as in Table 5·1. This was upset by the rush of refugees who raised the figure upto 23 per cent. But accepting the fact from the constancy of earlier figure that there is a tendency towards this ratio achieving stability it may be expected that the percentage now attained will broadly be maintained in future.

The growth of the natural population as also the increase by migration lead to a proportionate expansion of this class of jobs in which migrants can be absorbed upto a point. So long as the ratio of these occupations remain constant relative to total, expansion of these jobs will keep in step with population.

The structure of occupation in the colony area shows a smaller percentage of trade, a much higher percentage of non-technical, clerical and other petty ministerial jobs and a much lower percentage of unskilled manual workers than in Calcutta proper. It is actually quite different in occupational structure from that of displaced migrants in Calcutta. The similarity, however, of trade once more emphasises the absorption capacity of a certain community of persons for workers in the distributing industries.

Table 5.3 gives the percentage distribution of migrants by mother tongue.

TABLE 5.3

1956—57

Present Occupation	Percentage to total								
	Bengali	Hindi Hindusthani	Urdu	Oriya	Panjabi, Rajasthani, Marwari, Sindhi	Telegu, Tamil, Gujarati, Kannada, Malyalam	Assamese, Kashmiri, Other Indian Language	English, Chinese, Other Asian Language. Other Languages	Total
Non-Tech. Executive I	3·12	·40	·93	·44	3·08	7·81	..	7·69	2·04
Non-Tech. Executive II	2·53	·13	1·40	·44	3·08	3·13	..	3·85	1·60
Receipients of Unearned Income	2·93	·73	1·40	·44	..	..	..	3·85	1·90
Tech. & Professional I	3·95	·86	·47	..	4·62	7·81	1·45	5·77	2·57
Tech. & Professional II	5·22	1·06	1·63	1·32	..	1·56	1·45	5·77	3·30
Ministerial Technical	4·71	·66	·47	·44	..	6·25	..	..	2·75
Ministerial & Non-Tech.	14·63	1·86	1·63	·44	4·62	14·06	1·45	5·77	8·54
Traders	23·13	28·37	23·78	12·78	35·38	21·88	..	7·69	23·97
Manual Workers Skilled	20·05	13·82	21·91	15·42	24·62	12·50	5·80	21·15	17·87
Manual Workers Unskilled	17·56	50·83	44·76	66·52	20·00	25·00	89·86	38·46	33·68
Miscellaneous	1·78	1·13	1·17	1·76	1·54	..	..	..	1·46
N. A.	·40	·13	·47	..	3·08	..	..	..	0·32
Total	**100·00 (2,529)**	**100·00 (1,506)**	**100·00 (429)**	**100·00 (227)**	**100·00 (65)**	**100·00 (64)**	**100·00 (69)**	**100.00 (52)**	**100·00 (4,940)**

It may be seen that migrants from Hindi or Urdu speaking areas supply mainly unskilled or semi-skilled manual workers and petty traders. This is not unexpected. Bengali speaking people contain only a low percentage of manual workers. This, as has been pointed out, is one of the factors explaining the steady flow of migrants from West in spite of a large influx from East Pakistan.

We present now a comparative study of residents and migrants keeping the same age classification for each group so that a more homogenous grouping may be achieved for comparative purposes.

The following table gives the occupational distribution by age. The main tables are given at the end of the section with a few summary tables for the adult age groups in the text. The summary tables show the distribution of occupation among original residents and migrants by age and by broad division according as these are pre-partition or post-partition. The age groups discussed below are 25—29, 30—34, 35—39 and 40—44.

Table 5.4

25—29

Occupation	Before Partition			After Partition	
	Original Resident	Ordinary Migrants	Displaced Migrants	Ordinary Migrants	Displaced Migrants
Non-Technical. Excu. I+II	1·09	..	..	0·58	..
Tech. & Professional I+II	3·26	2·13	..	1·73	3·03
Ministerial Tech. Non-Tech.	17·39	2·13	30·00	4·63	12·12
Traders	31·52	25·53	20·00	20·23	24·24
Skilled Labourers	16·30	21·28	..	15·61	30·30
Unskilled Labourers	26·09	42·54	60·00	52·60	21·21

30—34

Occupation	Before Partition			After Partition	
	Original Residents	Ordinary Migrants	Displaced Migrants	Ordinary Migrants	Displaced Migrants
Non-Tech. Excu. I+II	1·53	0·85	21·05	1·48	4·76
Tech. & Professional I+II	3·05	2·54	15·79	2·22	..
Ministerial Tech. Non-Tech.	9·93	..	15·79	8·15	14·29
Traders	37·40	21·19	10·53	17·04	42·86
Skilled Labourers	22·14	12·71	21·05	20·00	14·29
Unskilled Labourers	24·43	55·94	15·79	48·89	19·05

TABLE 5.4—*concld.*

35—39

Occupation	Before Partition			After Partition	
	Original Resident	Ordinary Migrants	Displaced Migrants	Ordinary Migrants	Displaced Migrants
Non-Tech. Excu. I+II	3·84	1·59	..	2·60	..
Tech. & Professional I+II	5·13	0·79	..	3·90	8·70
Ministerial Tech. Non-Tech.	10·26	..	41·18	3·90	13·04
Traders	*21·80*	*24·60*	*23·53*	*24·68*	*30·43*
Skilled Labourers	19·23	16·67	23·53	7·79	26·09
Unskilled Labourers	32·05	44·44	11·76	57·14	17·39

40—44

Occupation	Before Partition			After Partition	
	Original Resident	Ordinary Migrants	Displaced Migrants	Ordinary Migrants	Displaced Migrants
Non-Tech. Excu. I+II	5·08	2.54	..	5·40	..
Tech. & Professional I+II	3·38	0·85	25·00	..	..
Ministerial Tech.Non-Tech.	23·73	1·69	25·00	5·41	15·38
Traders	30·51	23·73	25·00	27·03	30·77
Skilled Labourers	11·88	15·25	..	2·70	23·08
Unskilled Labourers	20·34	44·92	..	54·05	7·69

It may generally be seen that among original residents if we consider different age groups we find in the later generation more manual workers both skilled and unskilled and less of the top four groups of professional and technical cadre. Though there are fluctuations, groups going into trade do not seem to have any trend. The effect of migration, it seems, has made competition harder at the top. Considering the ordinary migrants and displaced migrants it may be said that trade has increased in percentage since partition once more demonstrating the shock absorbing nature of this occupation among migrants. Unskilled workers are much higher in percentage among the ordinary migrants. One may generally conclude that the post parttion migration has very largely expended the tortiary sectors, which require no skill. One factor behind this of course is the forced migration from East Pakistan. The other factor is the stimulant supplied by both economic expansion in the five year plans, as also the sudden expansion of demand by inflow of migrants themselves.

In the refugee colony, it may be seen, that skilled and unskilled manual work and trade has much higher percentage in the younger generation than in the older generation, which goes to show that the mass migration in 1947 and after, has basically changed the character of the population in these colonies. While formerly the dominantly middle class occupational groups settled here, now mostly occupation groups of much poorer calibre are numerically predominant.

TABLE 5.5

Colony

Percentage to total

Age Group	Non-Tech. Excu.	Non-Tech. Excu. II	Tech. & Professional I	Tech. & Professional II	Ministerial & Non-Tech.	Unearned Income	Traders	Manual Worker Skilled	Manual worker Unskilled	Priest, Astrologer Marriage Broker	Misc. Jobs Retired persons with side Income
0—14	..	..	..	·86	..	..	..	1·23	2·94	..	..
15—24	..	2·70	12·24	15·52	12·77	..	10·00	29·51	19·61	..	25·00
25—34	33·33	39·64	32·66	26·73	39·80	..	27·71	33·69	31·37	..	..
35—44	50·00	21·62	10·20	22·42	26·37	..	29·15	20·08	21·57	..	50·00
45—54	11·11	27·03	20·41	16·39	15·75	..	23·43	10·25	12·75	46·67	..
55—64	5·56	7·21	16·33	10·34	4·48	100·00	6·86	4·10	4·90	20·00	25·00
65—74	..	·90	8·16	6·03	·50	..	1·71	·82	·49	33·33	..
75 & above	..	·90	..	1·72	..	..	1·14	..	..	..	..
N.A.	..	..	..	..	·33	..	..	·41	6·37	..	.
Total	100·00 (18)	100·00 (111)	100·00 (49)	100·00 (116)	100·00 (603)	100·00 (1)	100·00 (350)	100·00 (244)	100·00 (204)	100·00 (15)	100·00 (4)

TABLE 5.6

Residents

Occupation	AGE														
	0—14	15—19	20—24	25—29	30—34	35—39	40—44	45—49	50—54	55—59	60—64	65—69	70—74	75—79	Total p.c.
Non-Tech. Excu. I	..	..	..	..	1·53	1·28	..	3·64	6·45	5·88	..	..	..	..	1·45
Non-Tech. Excu. II	..	..	..	1·09	..	2·56	5·08	1·82	..	5·88	..	..	..	..	1·45
Tech. & Prof. I	..	..	1·67	1·09	0·76	3·85	3·38	1·82	6·45	..	..	..	..	..	1·99
Tech. & Prof. II	..	..	3·33	2·17	2·29	1·28	..	..	6·45	..	..	..	..	..	1·81
Ministerial (Tech. & Non-Tech.) (Tech. & Non-Tech.)	..	..	5·00	17·39	9·93	10·26	23·73	9·09	6·45	17·64	20·00	33·33	..	..	12·14
Unearned Income	..	..	..	..	..	1·28	..	..	3·23	..	20·00	16·67	..	..	0·72
Traders	..	46·15	28·33	31·52	37·40	21·80	30·51	32·73	35·48	29·41	..	16·67	..	100·00	31·16
Skilled Workers	..	..	23·33	16·30	22·14	19·23	11·88	14·55	12·90	11·76	20·00	..	..	..	17·22
Unskilled Workers	..	30·77	28·33	26·09	24·43	32·05	20·34	25·45	9·68	17·65	20·00	16·67	100·00	..	25·00
Miscellaneous	..	7·69	1·67	1·09	0·76	1·27	..	5·46	3·23	..	..	..	..	..	1·63
No Entry	100·00	15·38	8·33	3·26	0·76	5·14	5·08	5·46	9·68	11·76	20·00	16·67	..	..	5·43
Total	**100·00 (2)**	**100·00 (13)**	**100·00 (60)**	**100·00 (92)**	**100·00 (131)**	**100·00 (78)**	**100·00 (59)**	**100·00 (55)**	**100·00 (31)**	**100·00 (17)**	**100·00 (5)**	**100·00 (6)**	**100·00 (2)**	**100·00 (1)**	**100·00 (552)**

TABLE 5.7

(Ordinary Migrants upto 1941)

Occupation	AGE														
	0—14	15—19	20—24	25—29	30—34	35—39	40—44	45—49	50—54	55—59	60—64	65—69	70—74	75—79	Total
Non-Tech. Excu. I	..	..	..	..	..	..	0·98	..	2·08	..	..	..	..	..	0·45
Non-Tech. Excu II	..	..	..	..	1·59	2·47	1·96	..	..	..	..	..	..	..	1.13
Tech. & Prof. I	..	..	..	..	1·59	..	0·98	1·47	2·08	..	3·70	..	..	..	1·13
Tech. & Prof. II	..	..	..	4·76	..	1·23	..	1·47	..	3·85	7·41	..	..	..	1·35
Ministerial (Tech. & Non-Tech.)	..	..	..	..	..	6·17	11·76	10·29	12·50	3·85	3·70	..	..	..	7·21
Unearned Income	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Traders	..	..	50·00	28·57	19·05	30·86	21·57	22·06	27·08	19·23	22·22	50·00	100·00	100·00	24·55
Skilled Workers	..	..	..	14·29	15·87	16·05	14·71	17·65	18·75	23·08	3·70	..	..	..	15·54
Unskilled Workers	..	..	50·00	42·86	60·32	40·74	47·06	44·12	33·33	34·62	48·15	50·00	..	..	44·82
Miscellaneous	..	..	..	4·76	1·59	..	0·98	1·47	4·17	11·54	11·11	..	..	..	2·70
No Entry	..	..	..	4·76	..	2·47	..	1·47	..	3·85	..	..	..	..	1·13
Total	..	..	**100·00 (2)**	**100·00 (21)**	**100·00 (63)**	**100·00 (81)**	**100·00 (10)2**	**100·00 (68)**	**100·00 (48)**	**100·00 (26)**	**100·00 (27)**	**100·00 (4)**	**100·00 (1)**	**100·00 (1)**	**100·00 (444)**

TABLE 5.8

(Ordinary migrants post-patron) (1947 *and after*)

Occupation	AGE														
	0—14	15—19	20—24	25—29	30—34	35—39	40—44	45—49	50—54	55—59	60—64	65—69	70—74	75—79	Total
Non-Tech. Excu. I	..	..	..	0·58	1·48	2·60	2·70	..	..	..	..	..	..	..	0·90
Non-Tech. Excu. II	..	..	..	..	..	..	2·70	..	..	..	..	..	..	..	0·15
Tech. & Prof. I	..	..	..	..	2·22	1·30	..	..	..	..	..	..	..	..	0·60
Tech. & Prof. II	..	2·94	2·99	1·73	..	2·60	..	..	..	..	..	..	50·00	..	1·79
Ministerial (Tech. & Non-Tech.)	..	2·94	5·97	4·63	8·15	3·90	5·41	6·25	..	..	50·00	..	..	..	5·38
Unearned Income	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Traders	45·45	29·41	18·66	20·23	17·04	24·68	27·03	12·50	50·00	20·00	..	..	..	..	21·53
Skilled Workers	..	11·76	13·43	15·61	20·00	7·79	2·70	6·25	12·50	20·00	..	..	..	..	13·45
Unskilled Workers	18·18	41·19	51·49	52·60	48·89	57·14	54·05	62·50	37·50	60·00	50·00	..	..	..	50·37
Miscellaneous	..	2·94	1·49	2·89	0·74	..	5·40	6·25	..	..	..	..	..	..	1·94
No Entry	36·37	8·82	5·97	1·73	1·48	..	..	6·25	..	..	..	..	50·00	100·00	3·89
TOTAL	**100·00 (11)**	**100·00 (68)**	**100·00 (134)**	**100·00 (173)**	**100·00 (135)**	**100·00 (77)**	**100·00 (37)**	**100·00 (16)**	**100·00 (8)**	**100·00 (5)**	**100·00 (2)**	**100·00**	**100·00 (2)**	**100·00 (1)**	**100·00 (669)**

TABLE 5.9

Displaced population (Before 1947)

Occupation	Percentage to total							
	20—24	25—29	30—34	35—39	40—44	45—49	50—54	Total
Non-Tech. Excu. I	..	..	5·26	..	..	..	..	1·82
Non-Tech. Excu. II	..	..	15·79	..	..	25·00	25·00	9·09
Tech. & Professional I	..	..	15·79	..	25·00	..	..	7·27
Tech. & Professional II	..	..	..	..	..	..	..	..
Ministerial (Tech. & Non-Tech.)	..	20·00	15·79	41·18	25·00	25·00	..	23·04
Unearned Income	..	..	..	..	..	..	..	..
Traders . .	50·00	20·00	10·53	23·53	25·00	..	50·00	20·00
Skilled Workers	..	..	21·05	23·53	..	25·00	..	16·39
Unskilled Workers	50·00	60·00	15·79	11·76	..	..	25·00	18·18
Miscellaneous	..	..	..	..	25·00	..	..	1.82
No Entry . .	..	..	..	..	..	25·00	..	1·82
Total . .	**100·00 (2)**	**100·00 (5)**	**100·00 (19)**	**100·00 (17)**	**100·00 (4)**	**100·00 (4)**	**100·00 (4)**	**100·00 (55)**

TABLE 5.10

AGE (*Displaced Population*) 1947 *and after*

Occupation	0—14	15—19	20—24	25—29	30—34	35—39	40—44	45—49	50—54	55—69	70—79	Total
Non-Tech. Executive I	..	..	..	..	..	..	..	..	..	..	..	..
Non-Tech. Executive II	..	..	..	..	4·76	..	..	..	..	..	..	0·71
Tech. & Professional I	..	..	..	3·03	..	8·70	..	..	..	..	..	2·14
Tech. & Professional II	..	..	5·88	..	..	..	..	..	22·22	100·00	..	2·86
Ministerial (Tech. & Non- Tech.) .	66·67	..	11·76	12·12	14·29	13·04	15·38	..	11·11	..	..	12·14
Unearned Income .	..	..	..	..	..	..	..	..	..	..	..	..
Traders . . .	..	..	11·76	24·24	42·86	30·43	30·77	57·14	22·22	..	100·00	29·29
Skilled Workers . .	..	40·00	17·64	30·30	14·29	26·09	23·08	..	22·22	..	..	20·71
Unskilled Workers .	33·33	20·00	47·06	21·21	19·05	17·39	7·69	42·86	22·22	..	..	24·29
Miscellaneous . .	..	..	5·88	6·06	..	..	..	..	..	..	..	2·14
No Entry . .	..	40·00	..	3·03	4·76	4·35	23·08	..	..	..	..	5·71
Total .	**100·00 (3)**	**100·00 (5)**	**100·00 (17)**	**100·00 (33)**	**100·00 (21)**	**100·00 (23)**	**100·00 (13)**	**100·00 (14)**	**100·00 (9)**	**100·00 (1)**	**100·00 (1)**	**100·00 (140)**

It may be seen that a number of sectors show remarkable structural stability. Thus among migrants from West, trade absorbs roughly 35—37 per cent during 1921—51. Unskilled workers again have always had very steady prospect. This indicates that waves of migration coming in different years tend to have similar structural pattern in occupation.

It may be seen that the three occupations trade and manual work skilled or unskilled together has currently engaged some 88 per cent, 86 per cent, 83 per cent of the migrants coming in 1931—40, 1941—50 and 1951—60. This shows a fairly reasonable stability in migrant occupation in Calcutta. If we add to this miscellaneous petty occupations, the percentage in fact remains almost constant. The migrants from the West thus has been keeping to their traditional occupations and presumably more have come when more demand for such services have grown.

Much more change in this structure, however, is seen for East Pakistan migrants. Of the few who used to come before 1940 ministerial and professional occupations absorbed a much higher percentage. With mass migration, however, the situation has changed and larger numbers are going in for trade, manual work, skilled and unskilled. The small samples in 1921—30 and earlier have here been ignored. More competition between migrants from East and West for these jobs may be a reason in the slight decline in trade and skilled manual work among Western migrants.

The following table gives the distribution of occupations by date of migration for the refugee colonies. The colonies being of rather recent origin the periods are grouped separately starting from a date 'upto 1941'.

TABLE 5.11

(Ordinary Migrants)

Year	Non-Tech. Exec. I	Non-Tech. Exec. II	Tech. & Prof. I	Tech. & Prof. II	Ministerial & Tech.	Mins. & Non-Tech.	Unearned Income	Traders	Manual Workers Skilled	Manual Workers Unskilled	Misc.	No Entry refused, Not Avl.	Total
1901—10	..	..	..	14·29	..	..	..	57·14	..	28·57	..	..	100·00(7)
1911—20	..	..	..	..	..	3·12	..	28·13	25·00	40·63	..	3·12	100·00(32)
1921—30	..	1·61	0·81	2·41	0·81	8·06	..	25·00	14·52	38·72	1·61	6·45	100·00(124)
1931—40	0·77	0·77	1·15	0·77	0·77	5·75	..	22·98	15·32	49·80	1·15	0·77	100·00(261)
1941—50	0·41	0·41	0·82	1·02	0·82	6·97	..	21·93	15·57	47·96	1·84	2·25	100·00(488)
1951 Upto date	1·10	0·28	0·28	2·75	1·65	3·31	..	21·49	11·29	50·41	5·79	1·65	100·00(363)
Total	**0·63**	**0·55**	**0·71**	**1·65**	**1·02**	**5·65**	..	**22·66**	**14·35**	**47·83**	**2·75**	**2·20**	**100·00(1275)**

(Displaced Migrants)

1901—10	..	..	..	..	..	..	..	..	..	..	..	..	..
1911—20	..	..	..	..	..	..	..	100·00	..	..	..	..	100·00(1)
1921—30	..	..	..	..	..	..	..	..	50·00	50·00	..	..	100·00(2)
1931—40	..	16·67	..	..	..	33·33	..	16·67	25·00	8·33	..	..	100·00(12)
1941—50	0·64	2·55	3·82	2·55	1·27	11·46	..	28·02	19·75	22·93	4·46	2·55	100·00(157)
1951 Upto date	..	..	4·17	..	12·50	12·50	..	20·83	12·50	25·00	12·50	..	100·00(24)
Total	**0·51**	**3·06**	**3·57**	**2·04**	**2·55**	**12·76**	..	**26·53**	**19·39**	**22·45**	**5·10**	**2·04**	**100·00(196)**

TABLE 5.12

Serial No.	Year of Migration	Non-Tech. Excu. I	Non-Tech. Excu. II	Tech. & Prof. I	Tech. & Prof. II	Ministerial and Non-Tech.	Unearned Income	Traders	Manual Workers Skilled	Manual Workers Unskilled	Priest, Astrologer, Marriage Broker	Misc.	Total
1	Residents . .	..	..	..	..	..	..	..	..	..	..	..	..
2	Upto 1941 . .	9·68	16·13	9·68	6·45	51·60	3·23	..	3·23	..	..	..	100·00(31)
3	1942—46 . .	4·00	4·00	..	8·00	28·00	..	6·00	24·00	16·00	..	..	100·00(25)
4	1947 . . .	1·26	10·06	3·77	6·92	45·28	..	14·47	13·84	3·77	0·63	..	100·00(159)
5	1948 . . .	1·38	8·26	2·75	8·26	41·73	..	21·56	11·93	3·67	0·46	..	100·00(218)
6	1949 . . .	1·61	8·06	4·84	4·84	29·03	..	27·42	9·68	9·68	3·23	1·61	100·00(62)
7	1950 . . .	1·31	6·12	2·04	6·35	29·71	..	31·07	13·15	7·94	2·04	0·45	100·00(441)
8	1951 . . .	..	8·33	8·33	..	33·33	..	16·68	8·33	25·00	..	..	100·00(12)
9	1947—51 . .	1·23	7·51	2·80	6·73	35·42	..	25·34	12·67	6·50	1·46	0·34	100·00(892)
10	1952—56 . .	..	..	18·18	9·09	36·37	..	18·18	9·09	9·09	..	..	100·00(11)
11	1957—61 . .	..	..	..	..	75·00	..	..	..	25·00	..	..	100·00(4)
	Total . .	**1·56**	**7·58**	**3·12**	**6·75**	**35·73**	**0·10**	**24·09**	**12·56**	**6·65**	**1·35**	**0·31**	**100·00(963)**

For the five year period, as may be seen, trade has increased in proportion and so has ministerial work (petty clerk, assistant etc.). Superior employment has declined. The picture of the colony is not dissimilar to that outside for the East Pakistan immigrants. Sudden jumps in 1947—50 in trade and unskilled manual work show the importance of these occupations as entry trades to a refugee population in a big city.

In the following tables we make a more detailed study of the same by broad periods classifying the population by educational status.

TABLE 5.13

Education	Non-Tech. Excu. I	Non-Tech. Excu. II	Tech. & Prof. I	Tech. & Prof. II	Ministerial	Unearned Income	Traders	Skilled Workers	Unskilled Workers	Miscel-laneous	No Entry N.A.	Total
Upto 1941 (Displaced Migrants)												
Illiterate	..	..	..	..	..	..	..	..	..	..	..	..
Literate	..	..	..	..	..	..	..	60·00	40·00	..	..	100·00(5)
Moderately Qualified	..	12·50	..	..	37·50	..	37·50	12·50	..	..	..	100·00(8)
Highly Qualified	..	50·00	..	..	50·00	..	..	..	..	..	..	100·00(2)
Total	..	**13·33**	..	..	**26·67**	..	**20·00**	**26·67**	**13·33**	..	..	**100·00(15)**
1942—46 (Displaced Migrants)												
Illiterate	..	..	..	..	..	..	..	20·00	40·00	20·00	20·00	100·00(5)
Literate	6·67	..	..	..	13·33	..	20·00	26·67	33·33	..	..	100·00(15)
Moderately Qualified	..	13·33	6·67	..	33·33	..	33·33	..	6·67	..	6·67	100·00(15)
Highly Qualified	..	16·67	50·00	..	32·67	..	..	..	..	..	..	100·00(6)
Total	**2·44**	7·32	**9·76**	..	**21·94**	..	**19·51**	**12·20**	**19·51**	**2·44**	**4·88**	**100·00(41)**
1947—59 (Displaced Migrants)												
Illiterate	..	..	..	..	..	..	..	25·00	62·50	12·50	..	100·00(8)
Literate	..	..	..	..	4·48	..	35·81	26·87	25·37	2·99	4·48	100·00(67)
Moderately Qualified	..	1·79	1·79	3·57	19·64	..	26·78	16·07	21·43	..	8·93	100·00(56)
Highly Qualified	..	..	22·22	22·22	33·34	..	22·22	..	..	..	..	100·00(9)
Total	..	**0·71**	**2·14**	**2·86**	**12·14**	..	**29·30**	**20.71**	**24.29**	**2·14**	**5.71**	**100·00(140)**

TABLE 5.14

Education	Non-Tech. Excu. I	Non-Tech. Excu. II	Tech. & Prof. I	Tech. & Prof. II	Ministerial	Unearned Income	Traders	Skilled Workers	Unskilled Workers	Miscel-laneous	Refused No Entry N.A.	Total
Upto 1941 (Ordinary Migrants)												
Illiterate	..	..	..	0·61	0·61	..	25·16	14·11	57·07	1·22	1·22	100·00(163)
Literate	..	0·47	..	0·47	4·25	..	25·47	17·92	47·18	3·30	0·94	100·00(212)
Moderately Qualified	3·46	3·45	3·45	5·17	36·21	..	22·41	12·07	8·62	3·45	1·72	100·00(58)
Highly Qualified	..	33·33	33·33	16·67	16·67	..	..	..	..	..	..	100·00(6)
Total	**0·45**	**1.14**	**0·91**	**1.37**	**7·29**	..	**24.60**	**15·48**	**45·10**	**2.51**	**1·14**	**100·00(439)**
1942—46 (Ordinary Migrants)												
Illiterate	..	..	..	..	..	..	14·29	19·05	64·29	2·38	..	100·00(42)
Literate	..	..	..	..	1·09	..	29·35	17·39	47·83	3·26	1·09	100·00(92)
Moderately Qualified	..	..	..	8·70	52·17	..	13·04	4·35	17·39	..	4·35	100·00(23)
Highly Qualified	..	16·67	16·67	..	50·00	..	16·67	..	..	..	..	100·00(6)
Total	..	**0.61**	**0·61**	**1·23**	**9·82**	..	**22·70**	**15·34**	**46·01**	**2·45**	**1·23**	**100·00(163)**
1947—59 (Ordinary Migrants)												
lliterate	..	..	..	..	0·76	..	17·42	11·36	67·05	1·89	1·52	100·00(26)
Literate	0·33	..	..	0·33	2·93	..	24·43	16·94	49·17	2·61	3·26	100·00(307)
Modertely Qualified	..	1·27	2·53	8·86	24·05	..	26·58	8·86	11·39	..	16·46	100·00(79)
Highly Qualified	23·81	..	9·52	19·05	33·34	..	9·52	4·76	..	..	..	100·00(21)
Total	**0·89**	**0.15**	**0.60**	**1·79**	**5·51**	..	**21·46**	**13.41**	**50·23**	**1.94**	**4·02**	**100·00(671)**

TABLE 5.15

(Refugee Colony)

Education	Non-Tech. Excu. I	Non-Tech. Excu. II	Tech. & Prof. I	Tech. & Prof. II	Ministerial Non-Tech.	Unearned Income	Traders	Manual Workers Skilled	Manual Workers Unskilled	Priest, Astrologer, Marriage Broker	Miscellaneous Jobs, Retired persons with side income	Total
Illiterate	..	0·74	0·74	0·74	6·62	..	16·90	9·56	63·96	..	0·74	100·00(136)
Literate	·55	2·21	·28	3·46	18·42	·14	35·47	23·13	14·40	1·80	·14	100·00(722)
Moderately Qualified	·49	6·89	1·31	9·67	59·18	..	10·82	9·34	1·97	..	·33	100·00(610)
Highly Qualified	4·45	21·06	15·38	12·55	40·50	..	2·02	2·83	0·40	·81	..	100·00(247)
Total	**1·05**	**6·47**	**2·86**	**6·76**	**35.16**	**0.06**	**20.41**	**14·23**	**11.90**	**0·87**	**0·23**	**100.00(171)**

TABLE 5.16

Resident Population

Education	Non-Tech. Excu. I	Non-Tech. Excu. II	Tech. & Prof. I	Tech. & Prof. II	Ministerial	Unearned Income	Traders	Skilled Workers	Unskilled Workers	Miscel-laneous	Refused No Entry N.A.	Total
Illiterate	..	..	..	0·75	2·26	1·50	27·07	15·79	45·11	3·76	3·76	100·00(133)
Literate	0·38	0·75	0·75	1·13	2·63	..	39·10	22·18	26·32	1·50	5·26	100·00(266)
Moderately Qualified	2·19	3·65	4·38	4·38	37·22	1·46	21·17	10·22	5·84	1·46	8·03	100·00(137)
Highly Qualified	22·22	5·56	16·67	..	33·32	..	16·67	5·56	..	..	..	100·00(18)
Total	**1·44**	**1·44**	**1·99**	**1·81**	**12·09**	**0·72**	**31·05**	**17·15**	**24·90**	**1.99**	**5·42**	**100·00(5549)**

SECTION VI

In this section we shall try a quantitative assessment of the problem of employment and the impact of migration on employment. For this it is necessary to bring together data on the growth of the working population through natural increase and migration and the corresponding growth of employment.

Table 6.16 shows the growth of employment as defined by the census. The table gives break-down by industrial and non-industrial groups as also by sex.

TABLE 6·1(a)

Occupation	1911	1921	1931	1941	1951
Industrial	234,767 (37·62)	219,482 (33·79)	172,236 (26·85)	..	389,221 (36·03)
Non-Industrial	389,272 (62·38)	430,084 (66·21)	469,214 (73·15	..	691,128 (63·97)
Total	**624,039 (100·00)**	**649,566 (100·00)**	**641,450 (100·00)**	**1,109,500 (100·00)**	**1,080,349 (100·00)**
Rate of growth	..	+4·09%	—1·25%	+72·97%	—2·63%

TABLE 6·1(b)

Sex	1911	1921	1931	1941	1951
Males	551,125 (88·32)	581,566 (89·53)	594,124 (92·62)	1,036,600 (93·43)	1,012,572 (93·73)
Females	72,914 (11·68)	68,000 (10·47)	47,326 (7·38)	72,900 (6·57)	67,777 (6·27)
Total	**624,039 (100·00)**	**649,566 (100·00)**	**641,450 (100·00)**	**1,109,500 (100·00)**	**1,080,349 (100·00)**

It has been found in earlier surveys carried out by the Calcutta University that among the males 94 per cent of those who are in the age bracket (15—54) are either employed or in search of jobs and, therefore, constitute the labour force. So we can easily get an idea about the growth of the male labour force from the tables on age distribution of the population in the census. Analysis of these figures show that there is fair correlation between the male labour force and the number of males employed according to census which is reasonable to expect.

The following linear model was therefore fitted to the data :

$$Y = .76x + 1725.4 \quad \text{Unit} = 00$$

where, Y = No. of males employed

X = male labour force

Table 6.2 below gives the estimated and observed figures.

TABLE 6·2

Year	Males Employed	
	Observed	Estimated
1911	551,125	517,270
1921	581,566	591,958
1931	594,124	632 238
1941	1,036,600	998,163
1951	1,012,572	1,036,334

As may be seen, there is for most years a fair agreement between observed and expected figures. The female labour force, however, poses a problem. It is generally known that in the case of the females, majority of those who are in the age bracket 15—54 are not in the labour force which is defined as employed plus those seeking employment. We can not get any reliable data on the females who are looking for employment. Attempt has been made, therefore, to estimate the volume of employed women only in a different way. It was found that the number of women employed as percentage of males employed over the years, shows a steady downward trend. This trend is due to the relatively larger inflow into employment from the males than from the females. A trend equation fitted to this percentage enables us to forecast the number of women employed if the number of male workers is known.

The following figures give the employed females as percentage of employed males.

TABLE 6·3

Year	Females employed as p.c. of Males Employed
1911	13·23
1921	11·69
1931	7·96
1941	7·03
1951	6·69

The logarithmic trend equation fitted is:

$$Y = 23.89 \cdot 10.29 \log t$$

where, $$Y = \frac{\text{females employed}}{\text{males employed}} \times 100$$

and t indicates time.

The following table gives the estimated and observed as based on the model.

TABLE 6·4

Year	Females employed as p.c. of males employed	
	Observed	Estimated
1911	13·23	13·60
1921	11·69	10·51
1931	7·96	8·66
1941	7·03	7·43
1951	6·69	6·40

No estimate was made of the incidence of unemployment among women as the available data do not permit us to do so efficiently. The above, therefore, gives us only the estimate of the volume of actual employment among females.

From an analysis of census data, thus, we have a model which could give us the growth of the labour force (male) from the male population of working age. Further, from the male population of working age we can estimate the females employed. We are thus in a position to estimate the male labour force plus the females employed, though in a rather crude way by having some simple assumptions e.g. constancy of the fraction among adult males who are not in the labour force and stability in the relative pace of growth of the employed population and the population of working age. It is also assumed that unemployed females will, in any case, be numerically small and will not effect seriously our estimate of the labour force. We have also assumed that the male labour force is approximately very near the adult male population allowing for a small adjustment for the sick and infirm or the rentier.

Formally, we have,

$$E_M = f_1(P_{WM})$$
$$E_F = f_2(E_M)$$
$$E_M + E_F = f_1(P_{WM}) + f_2(E_M)$$
$$= f_1(P_{WM}) + f_2[f_2(P_W)]$$

where E_M and E_F are the male and female employed population and P_{WM} is the male population of working age.

We can now, given a structure of the population, with its deaths and births, calculate the adult male population and, therefore, the male labour force, on these assumptions, from our model.

We now go into an analysis of the determinants of this employment. To what extent population increase directly stimulates growth of employment and to what extent there is an indepedent trend component? This has been done by fitting the following model :

$$E_t = \alpha + \beta P_t + \gamma \cdot t$$

where P_t is population at t and γ is a trend coefficient, while E_t is employment at t.

From the model we can estimate the amount of employment the migrants will

be creating by their presence assuming their presence having similar effect as a segment of the population. This means that each migrant will partially stimulate by his presence jobs for others. Now for given t and given total population we get the increase in employment split up as due to population and time. We assume that the increase in jobs less the increase due to migrant population is the additional available jobs which would have been there even if there has been no immigration. The addition due to migrants is now compared to the number of migrants to get a rought picture of the impact due to migration as below.

In the first stage the employed is split up into two groups. The industrial group and others. This was done as it was felt that non-industrial group may be more easily affected by migration and population increase than the industrial group.

For the industrial group two separate linear models were tried out.

(1) $Y = 129{\cdot}20 + {\cdot}02\ t$ Unit = 1000 and
(2) $Y = 9{\cdot}4 + {\cdot}166x - 2\ 8\ t$

where, Y represents industrial employment and x the male labour force.

TABLE 6·5

Year	Employment in Industry		
	Observed	Estimated (1)	Estimated (2)
1911	135,091	128,800	139,764
1921	139,504	129,000	128,032
1931	107,318	129,200	108,830
1941	116,304	129,400	128,472
1951	148,196	129,600	141,142

As may be seen if the effect of the labour force and hence of the population is taken as fixed, time has a negative effect on industrial employment in Calcutta.

The only conclusion is that industrial growth here is more closely related to population growth itself rather than to other factors, *i.e.* industries directly catering to population have gone up.

Industrial growth thus is taking place in sectors where population growth is a potent influence.

For the non-industrial group the following model was fitted.

$Y = {\cdot}81\ x - 1{\cdot}86\ t - 1{\cdot}08$

giving the following values of expected and observed.

TABLE 6·6

Year	Non-industrial employment	
	Observed	Estimated
1911	116,029	403,860
1921	442,062	464,640
1931	486,806	488,970
1941	734,313	702,840
1951	864,376	882,690

As may be seen the population factor here is much more potent among non-industrial employment than in industrial employment. The obvious interpretation of this phenomenon is that the tertiary sector grows directly with the population.

We shall now try to study the impact of migration on employment. For this, the effect of the migrant flow on the labour force is to be isolated. The first step, here, is to try to project the natural population and the corresponding migrant population by methods described previously. It has been seen in the Calcutta University survey that the age structure of the migrants has generally been rather stable. The average age is nearly constant, as shown in an earlier chapter. This indicates that given the number of migrants a corresponding estimate of working population may be made from age structure at any time. The only adjustment is for sex. As is known female employment is still very low being only about 3 per cent in 1957. We can, therefore, ignore its movement now and concentrate on the total male adults and adjust it for females at a later stage.

Using our model the following estimate was made of the labour force for 1957 and 1961 with corresponding employments.

TABLE 6·7

Age Group	Type of Population	Estimated number in labour force in 1951
15 . . 54 . .	1 Natural population	5,79,600
	2 Ordinary migrant	5,95,719
	Displaced migrant	1,30,575
	Total	12,05,894

Volume of employment=1,089,024

Using our model for projection of natural population and ordinary migrants as also displaced migrants and subsequently the adult group, we get the following figures.

TABLE 6·8

Age Group	Type of Population	Estimated number in labour force in 1961
15 . .	1 Natural population	452,586
54 . .	2 Ordinary migrant	738,829
	3 Displaced migrant	164,767
	Total	1,356,182

Volume of employment=1,203,252

As may be noted there is an unemployment in absolute number of the order of 1,52,930, denoting an increase of about 40,000 where ordinary migrants have increased by nearly 1,30,000 and displaced migrants by 34,000. Thus the migrant flow is substantially adding to our unemployment figure. It is, however, difficult to say to what extent jobs ordinarily done by migrants from the West could also be taken up by the resident population or the migrants from the East. To some extent the flow from West has been maintained due to specialisation of a type on regional basis, i.e. migrants from West take up certain jobs for which residents or migrants from East are not in the market.

What is the result of this pressure on the migrants? Is there any evidence of greater unemployment for late-comers? It is difficult to gauge this for West migrants as their number is regulated to some extent by demand and supply. But the following table gives some idea.

TABLE 6·9

Date of migration	1954—55			1957—58		
	No. of members	Percentage of Earner	Percentage of Unemployed	No. of members	Percentage of Earner	Percentage of Unemployed
Residents	3,025	40·19	9·02	1,690	47·47	1·66
Upto 1900	9	33·33	33·33	..	..	..
1901—10	65	47·69	9·23	16	56·25	..
1911—20	183	37·70	10·38	82	47·56	3·44
1921—30	806	53·59	6·95	288	51·38	1·04
1931—40	556	51·17	4·86	1,063	52·33	1·26
1941—50	2,681	49·08	8·17	1,354	70·51	2·44
1951—60	577	56·15	8·66	533	70·16	2·25
Total	8,409	46·79	8·05	4,519	58·08	1·89

The trend of percentage unemployed seems to be increasing in the survey of 1954-55 as also in 1957-58, though the estimates vary considerably. One can broadly say that percentage unemployed among new hands is rather higher but there is one factor which may also have some effect. Unemployed migrants are not likely to stay here long and, therefore, unemployment figure must necessarily be lower older the migrant. It is, therefore, not easy from the above figures to give any precise idea in this respect.

SECTION VII

In this section we shall take up the associated topics of income, consumption and asset formation in general of the domestic type. Work is still continuing on the material collected from other reports. We shall, therefore, mainly confine our attention to the findings of the surveys conducted by the Calcutta University. Information was collected in the Calcutta University survey on income and durable assets. In the survey of Jadavpur area data were collected on consumption and asset formation in the refugee colonies and their neighbourhood.

The following table gives the average income for the three groups as found in the Calcutta University survey by educational qualification.

TABLE 7·1

Education	Monthly Income n Rupees		
	Original Resident	Migrant Ordinary	Migrant Displaced
Illiterate	60·54	56·65	44·56
Literate	90·74	66·81	74·67
L.P., U.P.	90·00	69·45	61·66
V—X Class	119·68	87·67	81·95
Entrance, Matric, School Final	244·53	204·77	138·78
B.A., B. Com.	303·86	324·28	180·38
B. Sc.	440·71	420·93	175·00
M.A. M. Com. & Higher Degrees	275·50	293·93	283·33
M. Sc. & Higher Degrees	1500·00	445·00	150·00

It should be noted that, in general, even for similar groups the migrant as a whole has fared badly compared to the original residents, particularly in the lower groups, obviously, due to the fact that migrants have less contacts and less bargaining strength. In the graduate group and M. A. group the 'ordinary migrants' are slightly better off mainly due to the fact that there are rather few migrants in this group from West, and they come into the upper range of services only. Another interesting feature is the much better level of income of the science graduates compared to that of the Arts graduates and even of the M.As. But in the displaced migrant group these differences have not been at all significant.

Table 7.2 gives similar data by age.

TABLE 7.2

Age Groups in years	Monthly average income (in Rupees)		Original Residents
	Displaced Migrants	Ordinary Migrants	
5—9	..	15·00	15·00
10—14	18·75	31·39	30·83
15—19	43·24	51·05	64·81
20—24	84·02	64·37	77·24
25—29	91·83	91·58	135·28
30—34	92·63	91·75	120·92
35—39	88·62	112·25	145·37
40—44	10·05	111·85	154·03
45—49	109·22	124·04	144·19
50—54	139·13	77·78	173·83
55—59	90·33	165·59	124·14
60—64	75·91	5·83	85·80
65—69	65·00	..	112·44
70—74	81·67	..	78·93
75—79	..	..	..

Once again, age for age, original residents are better off for reasons already discussed.

To get an idea of the relative position of the different sectors we give the following table showing average income by sector for the three groups of migrants.

TABLE 7.3

Sector	Average monthly income (in Rupees)		
	Original Residents	Ordinary Migrants	Displaced Migrants
Manufacture and processing of consumer goods	144·73	93·18	75·26
Man, Process, of capital goods	130·96	100·92	85·00
Operation of Public utilities	140·22	103·99	132·84
Construction	135·04	77·33	107·50
Distribution of consumer goods	111·93	70·00	89·17
Distribution of capital goods	153·25	90·29	162·92
General distribution	271·69	113·53	85·24
Public Services	165·46	148·01	115·89
Private Services	53·61	153·80	95·00
Domestic Services	84·86	48·26	32·77
Miscellaneous	64·07	56·07	77·1[illegible]

In the case of ordinary migrants except for the Government and private services the average income is very low and lower than those of the other groups.

The distinction in trade, service and all other fields among the old residents (who may originally have been migrants) and the new are quite significant.

Similar tables are given below for average income of the migrants from different regional groups.

TABLE 7.4

Region	Average Income in Rupees per unit
Bihar, U.P., C.P., M.P., Orissa etc.	69·33
Rest of India	175·68
Outside India	67·69
Elsewhere in Bengal	112·50
No Entry	106·65
Average	97·60
Migrating from East Pakistan	118·60
Resident	118·39

The general conclusions from the table are in conformity with other findings about regional groups among migrants. Bihar and Orissa supplying unskilled labour are worst off in the regional classification.

We now go into a more dynamic form of analysis. To what extent has the influx of migrants affected income? To answer this we consider the earning members only. Classifying the migrants by broad periods, the following table gives the average income of persons with the same age.

TABLE 7

(*In Rupees*)

Age Group	Original Residents		Migrants from West				Migrants from East Pakistan			
	Units	Average income	Up to 1941 Units	Average income	1942-46 Units	Average income	1947-58 Units	Average income	Units	Average income
Upto 14 . . .	..	..	..	..	..	..	7	26·00	3	26·00
15—24	65	72·80	1	26·00	7	75·43	188	52·93	22	76·45
5—34	209	87·08	75	116·64	82	99·88	302	70·95	73	115·21
5—44	127	166·29	177	95·08	57	93·58	112	96·07	53	127·45
45—54	77	180·95	112	108·91	9	119·56	22	74·18	30	107·00
55—64	19	188·32	51	136·98	1	75·00	7	64·71	..	..
65—74	7	132·43	3	42·33	1	26·00	1	75·00	1	75·00
75 & above . . .	1	26·00	1	75·00	..	..	..	..	1	26·00
Total .	505	123·79	420	107·12	157	97·00	639	69·61	183	110·58

It may be seen that among migrants date of migration has an effect on the average income when age is held constant, showing that later groups, particularly the post-partition groups fared worse than earlier groups. Analytical expression may be given.

Table 7.6 gives the average income by date of migration.

TABLE—7.6

Ordinary Migrants

Date of Migration	Units	Average Income
No Entry	3	533·67
Original Residents	505	118·83
1901—10	6	165·00
1911—20	30	116 80
1921—30	20	103·71
1931—40	56	98·98
1941—50	74	88·82
1951—59	37	76·14
Others	2	75·00
Total	1733	99·13

Other Migrants from East

1911—20		75·00
1921—30	2	75·00
1931—40	12	229·41
1941—50	147	115·50
1951—59	24	86·71
Total	186	121·57

It may be seen that 'average income' shows a falling trend from 1930 onwards which is fairly consistent.

In the following table we present data on asset formation of the more important type by the population of Calcutta by date of migration.

TABLE 7.7

Average per family

Date of migration	Light	Fan	Radio	Heater	Sewing Machine	Telephone	Motor Car	Refrige-rator
1901—10 . .	1·57	0·71	..	0·05	0·05	0·10	..	..
1911 20 . .	1·33	0·15	0·04	0·04	0·02	..	..	..
1921—30 . .	1·53	0·37	0·08	0·05	0·05	0·03	0·004	0·004
1931—40 . .	2·12	0·31	0·07	0·07	0·07	0·05	0·07	0·05
1941—50 . .	1·69	0·18	0·07	0·05	0·07	0·03	0·03	0·02
1951—59 . .	1·78	0·21	0·08	0·06	0·07	0·04	0·04	0·04
Resident . .	2·77	0·54	0·14	0·12	0·13	0·05	0·04	0·03
Average . .	2·02	0·32	0·09	0·07	0·08	0·04	0·04	0·03

Inspite of fluctuations there is a declining trend over time in the matter of quite essential assets like fan, radio etc. One point should be noted here. There is a strong element of change of habit in the matter of such equipment which would make a family oven sacrifice certain other essential household articles to get these items. The decline therefore is to be considered really significant.

We now present the results of the survey on consumption by date of migration for East Pakistan refugees in Jadavpur. The total and main component are given here by broad periods.

TABLE 7.8

Year of Migration	*Per captia* consumption (in Rupees)					
	Foodwear (Annual)	Pulses (Monthly)	Fish & Meat (Monthly)	Fuel & Light (Monthly)	Education (Monthly)	Gur & Sugar (Monthly)
Resident	44·70	4·61	4·02	1·82	3.92	1.14
Upto 1941	79·51	5·34	6·45	3·22	8·69	1·81
1942—46	39·97	4·66	3·56	1·71	4·21	0·98
1947—51	18·28	2·03	3·45	1·35	3·45	0·97
1952—56	49·42	6·69	6·02	2·00	4·85	1·63
1957—61	37·78	4·00	2·50	2·39	1·67	0·83

In spite of fluctuations most important items are on a declining trend. There is an unusual decline during 1947—51 showing the comparative poverty of the groups which came then.

Charts are given at the end of the table on some of these items.

It may generally be concluded that a consistent decline which may be traced partly to the migrant flow since partition can be traced in all these various aspects of income, consumption and asset formation in the area.

SECTION VIII*

The housing situation in Calcutta affects the three streams of population, the original residents, the ordinary migrants, migrants and the displaced migrants in different ways. It even affects the several sections of the ordinary migrants in different ways.

We shall, therefore, try to discuss the position for these streams of migrants separately as far as practicable.

To start with, it may be useful to give some descriptive information on the position of housing as it affects the migrants from different regions.

Table 8.1 gives the nature of residence by type of migrants. As may be seen, migrants from the West, particularly from Bihar, Uttar Pradesh, are worse off. Migrants from East Pakistan are slightly better off. Migrants from the other parts are even better off than the original residents in the type of residence occupied.

* Ref:

(1) Housing conditions in Calcutta—Shyamal Chakraborty.

(2) The City of Calcutta—a socio-economic survey 54-55 to 57-58. S. N. Sen.

(3) Census—1951.

(4) Report on the enquiry into the Housing Conditions in 21 urban centres in the State.

(5) Family Budget Enquiry 55-56 State Statistical Bureau, Government of West Bengal.

Table 8.1

Region	Nature of Residence					
	All pacca	All kachha	Mixed Variety	No Entry N.A.	Total Units	Total Percentage
Bihar	39·78	27·96	32·04	0·22	564	100·00
U.P., C.P.	48·65	27·03	24·32	..	148	100·00
Orissa	51·32	19·74	26·32	2·62	76	100·00
East Pakistan	51·26	19·60	29·14	..	119	100·00
Assam, Tippera	75·00	25·00	..	..	4	100·00
Delhi, Punjab, Bombay, Andhra, Kashmir	81·63	4·08	14·29	..	49	100·00
Outside India	78·57	14·29	7·14	..	14	100·00
Elsewhere in Bengal	100·00	..	..	..	3	100·00
No Entry, N.A.	56·55	17·83	25·34	0·28	1,077	100·00

Similar table (8.2) is given below giving the nature of ownership of original residents and migrants of different types for Calcutta as a whole. Conclusions of a very similar nature as regards ownership may again be derived i.e. migrants from Bihar, Uttar Pradesh, Orissa seem to be worse off. Original residents are rather better off in this respect as may be expected.

Table 8.2

Region	Ownership						
	Owned	Rented	Others	Quarters	No Entry N.A.	Total %	Total Units
Residents	11·91	70·22	14·44	2·71	0·72	100·00	554
Bihar	·43	72·26	21·29	5·59	0·43	100·00	465
U.P., C.P.	1·35	57·43	34·46	6·76	..	100·00	148
Orissa	1·31	72·38	15·79	9·21	1·31	100·00	76
East Pakistan	1·51	74·87	21·61	1·51	0·50	100·00	194
Assam, Tippera	..	75·00	25·00	..	..	100·00	4
Delhi, Punjab, Bombay Kashmir, Andhra	..	67·35	28·57	4·08	..	100·00	49
Outside India	..	35·71	35·71	28·57	..	100·00	14
Elsewhere in Bengal	..	100·00	..	..	..	100·00	3
No Entry, N.A.	1·72	66·74	26·00	4·78	0·76	100·00	523

We now give a detailed analysis of the type of ownership in the refugee colony surveyed directly by our unit. It may be seen that squatting has been the main form of getting possession in the refugee colony. And this, it will be seen later, has been taken recourse to strictly according to the status of the migrants. Ownership has generally been confined to be better off groups only.

Table 8.3 gives the nature of ownership by the date of migration. As may be seen, ownership has a definite falling trend with the date of migration for different types in the refugee colony. Some features may also be seen in Table 8.4 and 8.5 which analyse the nature of ownership in different income groups by the date of migration. It will be seen that there is a general decline in percentage owned as also in percentage rented or leased, denoting that with the date of migration upto 1950 normal system of possession has been less and less in use.

Table 8.3

Year of Migration	Not Available	Owned %	Others %	Squatted %	Govt. Allot.	Total No. of Units	Total %
Upto 1941	10·53	68·42	5·26	15·79	..	19	100·00
1942—46	40·00	6·67	..	45·33	..	25	100·00
1947	19·75	2·47	..	64·82	12·96	162	100·00
1948	10·48	3·06	..	79·91	6·55	229	100·00
1949	9·23	4·62	..	78·46	7·69	65	100·00
1950	4·14	3·27	0·22	11·50	0·87	459	100·00
1951	8·33	..	..	83·34	8·33	12	100·00
1947—51 (Total)	8·85	3·13	0·11	82·95	4·96	927	100·00
1952—56	45·46	18·18	..	36·36	..	11	100·00
1957—58	75·00	..	..	25·00	..	4	100·00
Resident	28·57	71·43	..	..	..	14	100·00

Table 8.4

Year		Income 2—50 Nature of Ownership					51—100 Nature of Ownership					10—200 Nature of Ownership				
		Owned	Rented and Leased	Others	No Entry N.A.	Total % & Units	Owned	Rented and Leased	Others	No Entry N.A.	Total %& Units	Owned	Rented and leased	Others	No Entry N. A.	Total% & Units
Flow	Residents	0·88	69·30	28·94	0·88	100·00 (114)	..	79·26	19·82	0·92	100·00 (217)	16·50	72·82	10·68		100·00 (10
	1901—10	..	..	100·00	..	100·00 (3)	50·00		50·00	..	100·00 (2)	..	..	..		..
From	1911—20	..	75·00	25·00	..	100·00 (4)	..	65·00	35·00	..	100·00 (20)	..	100·00	..		100·00 (3)
The	1921—30	..	57·90	42·10	..	100·00 (19)	1·35	60·81	37·84	..	100·00 (74)	..	70·59	29·41		100·00 (17)
	1931—40	..	64·52	33·87	1·61	100·00 (62)	1·46	77·37	21·17	..	100·00 (137)	..	97·73	2·27		100·00 (44)
West	1941—50	..	63·78	36·22	..	100·00 (127)	0·73	67·15	32·12	..	100·00 (274)	..	94·23	5·77		100·00 (52)
of	1951—59	..	51·87	47·50	0·63	100·00 (160)	..	63·02	36·30	0·68	100·00 (146)	..	85·72	14·28		100·00 (21)
Province	Not available	..	..	100·00	..	100·00 (1)	..	66·67	33·33	..	100·00 (3)	..	..	..		..
	Total	..	57·98	41·49	0·53	100·00 (376)	0·91	67·38	31·56	0·15	100·00 (656)	.. ..	91·24	8·76		100·00 137
		201—500					501—1000					1001 & above				
	Residents	36·17	61·70	2·13	..	100·00 (47)	28·57	57·14	14·29	..	100·00 (7)	50·00	50·00	..		100·00 (4)
	1901—10	..	..	..	..	100·00	..	..	..	..	100·00(1)	..	..	..		
	1911—20	50·00	..	..	50·00	100·00(2)	..	100·00	..	..	100·00(1)	..	..	..		
	1921—30	..	77·78	22·22	..	100·00(9)	..	100·00	..	..	100·00(1)	..	..	..		
	1931—40	11·11	88·89	..	..	100·00(9)	33·33	66·67	..	..	100·00(3)	..	100·00	..		100·00
	1941—50	11·11	77·77	5·56	5·56	100·00(18)	..	66·67	33·33	..	100·00(3)	..	100·00	..		100·00
	1951—59 Not available	..	100·00	..	..	100·00(4)	..	100·00	..	..	100·00(4)	..	100·00	100·00		00 100·00
	Total	9·52	78·58	7·14	4·76	100·00 (42)	15·28	76·93	7·68	..	100·00 (13)	..	83·33	16·67		100·00 (60)

Table 8.5

	Year	Income 2—50 Nature of Ownership					51—100 Nature of Ownership					101—200 Nature of Ownership				
		Owned	Rented and Leased	Others	No Entry & N.A.	Total% and Units	Owned	Rented and Leased	Others	No Entry & N.A.	Total% & Units	Owned	Rentd and Leased	Others	No Entry & N.A.	Total % & Units
Flow	1911—20	..	..	..	.	..	..	100·00	..	..	100·00 (1)	..	..	..	..	..
	1921—30	..	..	..	..	..	..	100·00	..	..	100·00 (2)	..	..	..	..	..
From	1931—40	..	100·00	..	..	100·00 (1)	..	75·00	25·00	..	100·00 (4)	..	100·00	..	..	100·00 (2)
East	1941—50	..	53·57	42·86	3·57	100·00 (28)	..	71·88	28·12	..	100·00 (64)	4·88	90·24	4·88	..	100·00 (41)
Pakistan	1951—59	..	33·33	66·67		100·00 (6)	14·29	42·85	42·86	..	100·00 (7)	..	85·71	14·20	..	100·00 (7)
	Total	..	51·43	45·71	2·86	100·00 (35)	1·28	70·51	28·21	..	100·00 (78)	4·00	90·00	6·00	..	100.00 (50)
			201—500	..	..	..	..	501—1000	..	..	..	..	1001—&	above	..	..
	1901—10	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	1911—20	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	1921—30	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	1931—40	..	100·00	..	..	100·00(2)	..	100·00	..	..	100·00(1)	..	..	..	..	..
	1941—50	..	100·00	..	..	100·00(13)	..	100·00	..	..	100·00(1)	..	..	..	..	..
	1951—59	..	100·00	..	..	100·00(1)	..	..	..	..	..	..	..	..	..	..
	Total	..	**100·00**	..	..	**100·00(16)**	..	**100·00**	..	..	**100·00(2)**	..	..	..	..	..

As may be seen 'owned' has decreased slightly and a steady increase has taken place in irregular lodging systems which are neither ownership nor rental type. Whenever the sample is large this trend may be detected for all groups of migrants.

The new feature that has come with the refugee is the growth of squatting on vacant plots. Naturally, squatting is bad as vagueness of property rights and insufficient capital prevent both landlord and occupier from developing it.

Table 8·6 gives information on the sanitory system as it has evolved through time primarily for the migrants in the refugee colonies.

The proportion of the houses which have both good water supply and sanitary condition, as may be seen, has sharply deteriorated during the period 47—51 following the mass migration. It has improved slightly later on but the overall trend is a deteriorating one.

We now come to a quantitative assessment of housing space for different types of migrants and for Calcutta as a whole over time. Table 8·7 gives the *per capita* room space over a number of years obtained from several sources.

TABLE 8·6

	No water & No privy	No water & service privy	No water & sanitary privy	Well & service privy	Well & sanitary privy	Tube-well & no privy	Tube-well & service privy	Tube-well & sanitary privy, Tap & sanitary privy	Total
Residents	7·14	7·14	7·14	7·14	--	--	14·29	57·14	14 100·00
Upto 1941	..	5·26	--	--	--	--	5·26	89·47	19 100·00
1942—46	16·00	24·00	4·00	--	..	--	36·00	20·00	25 100·00
1947	1·23	25·32	3·70	..	..	..	29·01	40·74	162 100·00
1948	0·87	34·94	2·62	0·87	0·44	0·44	33·19	26·63	229 100·00
1949	..	32·30	3·08	--	--	1·54	29·23	33·85	65 100·00
1950	2·18	42·91	1·31	0·87	0·22	0·44	40·08	11·99	459 100·00
1951	8·33	41·67	--	--	..	..	16·67	33·33	12 100·00
1947—51	1·62	37·11	2·16	0·65	0·22	0·43	35·38	22·43	927 100·00
1952—56	..	36·36	--	--	..	..	27·27	36·37	11 100·00
1957—58	..	25·00	..	--	--	..	..	75·00	4 100·00
Not available	..	..	..	--	--	..	..	..	..
TOTAL	20 2·00	357 35·70	22 2·20	7 0·70	2 0·20	4 0·40	343 34·30	245 24·50	1000

TABLE 8.7

Year	Per capita room space in sq. ft.	Source
1951-52	44·58	Census and State Statistical Bureau
1953-54	47·58	Calcutta University Survey
1955-56	46·18	State Statistical Bureau
1957-58	40·53	Calcutta University Survey

No data were available for a period earlier than 1951. Data again for 1951 were reconstructed with number of rooms from the census and the average size of room calculated from the figures given in the reports of the State Statistical Bureau.

The census materials on housing are based on different definitions and are not comparable.

Considering these deficiencies we may still note that there is a falling trend in the available room space over the years 1951—58.

Inspite of the inadequacy of the data some simple linear models were fitted to (a) population and *per capita* room space and (b) time and *per capita* room space, as given below. The equations obtained were as follows:

$Y=84{\cdot}078-{\cdot}017X$ in the case (a) where X represents population and Y *per capita* room space and

$Y=76.25-0.58t$ for the case (b) where t represents the trend of room space over the years and Y *per capita* room space.

As may be seen, in both the cases, the co-efficients are negative showing a decline of per capita room space with increasing population. The following table gives the observed and the estimated values from the two models.

TABLE 8.8

Year	X Population of Calcutta	Observed Y	Estimated Y $Y=76{\cdot}25-0{\cdot}58\,t$	Estimated Y $Y=84{\cdot}07-{\cdot}017\,x$
1951-52	2160	44·58	46·67	46·62
1954-55	2247	47·56	45·22	45·12
1955-56	2306	46·18	44·06	44·09
1957-58	2368	40·53	42·90	43·02

Coefficient of Correlation

Case (a)$=-0.53$ Case (b)$=-0.480$.

As may be seen the area has declined this kind of analysis for reliable conclusions to be drawn we approached the problem in a different way separately for the original residents and migrants. We attempted to estimate the *per capita* room space available for original residents as (1) a function of the age of the resident concerned—in this case the head of the Family. And (2) as a function of the age of the resident

as also his income in order to eliminate the effect of income over *per capita* room space. Table 8.9 gives the average floor space *per capita* (of the Resident population) by age-group of the head of the family.

TABLE 8.9

Age of Head	No. of Members	*Per capita* floor space
Upto 14	2	56·00
15—19	12	81·92
20—24	71	72·13
25—29	214	30·80
30—34	279	39·73
35—39	339	35·75
40—44	206	47·21
45—49	197	45·58
50—54	165	55·55
55—59	47	48·55
60—64	21	37·10
65—69	22	42·82
70—74	4	21·25
75 & above	1	18·00

A declining trend in housing space as age goes down may be distinctly noted.

The equation fitted between age of the resident and *per capita* room space was as follows:

$$Y=7.953+.973x$$

where Y is *per capita* room space and x age of the Head.

Table 8:10 gives the expected and observed values and the correlation coefficient. As may be seen the coefficient relating age to *per capita* space is quite significant leading to a conclusion that older the inhabitant the better off he is with regard to living space.

TABLE 8.10

Age of Head	*Per capita* room space	
	Actual	Esimated
27	30·80	31·52
32	39·73	35·89
37	35·75	40·25
42	47·21	44·62
47	45·58	48·98
52	55·55	53·35

Coefficient of Correlation=+0.922

(Floor space *per capita* of the original residents : Calcutta University Survey 57-58)

A point may rise here on the influence of income on room space, affecting the coefficient through the age of the resident which presumably has a high positive correlation with income. We have, therefore, also calculated a multiple regression equation including the effect of both age and income of the head together. The equation fitted was $Y = 5{\cdot}05 + 0{\cdot}839x + {\cdot}096z$ where x is age of the family head and z the *per capita* income of the family. The multiple correlation coefficient

$$R_{y.\,xz} = {\cdot}936.$$

As may be seen here the effect of income on *per capita* room space is rather small indicating that the room space occupied by a family depends much more on the point of time at which that inhabitant happened to occupy that space (indicated by age of Head rather than the income which he is earning currently). This is most certainly a reliable evidence of the increasing congestion in the city. An alternate equation was also fitted taking per family income and age of the head as given below:

$Y = 9.52 + 0.746x + 0.0205z$ (z=Income per family) (5) $R_{y.\,xz} = 0{\cdot}931$.

The two sets of estimates are given in Table 8:11 with the observed values.

TABLE 8.11

Age (x)	Income per family (Y)	Income *per capita* (Y)	*Per capita* floor space		
			Observed	Estimated (1)	(2)
27	88·64	37·57	30·80	31·48	31·31
32	90·81	40·36	39·73	35·25	35·77
37	130·15	30·23	35·75	39·79	39·00
42	208·15	72·96	47·21	47·17	47·29
47	171·42	46·84	45·58	48·10	44·61
52	220·70	37·48	55·55	52·84	52·28

We now finally consider the position of the migrants in this respect. The following table (Table—8·12) gives the *per capita* room space occupied by migrants classified by the date of migration. Graphical representations are given in accompanying charts. It may be seen that during 1946—52 violent fluctuations have taken place, the *per capita* space going down sharply and coming up again. This is mainly due to the uncertain situation during the post-partition era when large scale migration, heavy congestion in certain areas and subsequent squatting movement etc. disturbed the smooth nature of the data.

For fitting our model we have discarded those years and considered the comparatively more stable period between 1953—59 when things have settled down once more.

One interesting point that may also be noted here is the inverse correlation between the flow of migrants from East Pakistan and the *per capita* room space as is seen in the graph.

Several simple linear models were fitted to the data as follows:

$$Y = 53{\cdot}22 - {\cdot}029x \qquad r = -0{\cdot}74$$

where x is the cumulative number of migrants coming over the years and Y the *per capita* room space available to them.

As may be seen a negative co-efficient was obtained. Fairly good fit was found as may be seen in the table following:

The socond model fitted was
$Y=53.307-.0909t \quad r=-.70$
where t gives us the simple trend co-efficient, which again is seen to be negative.

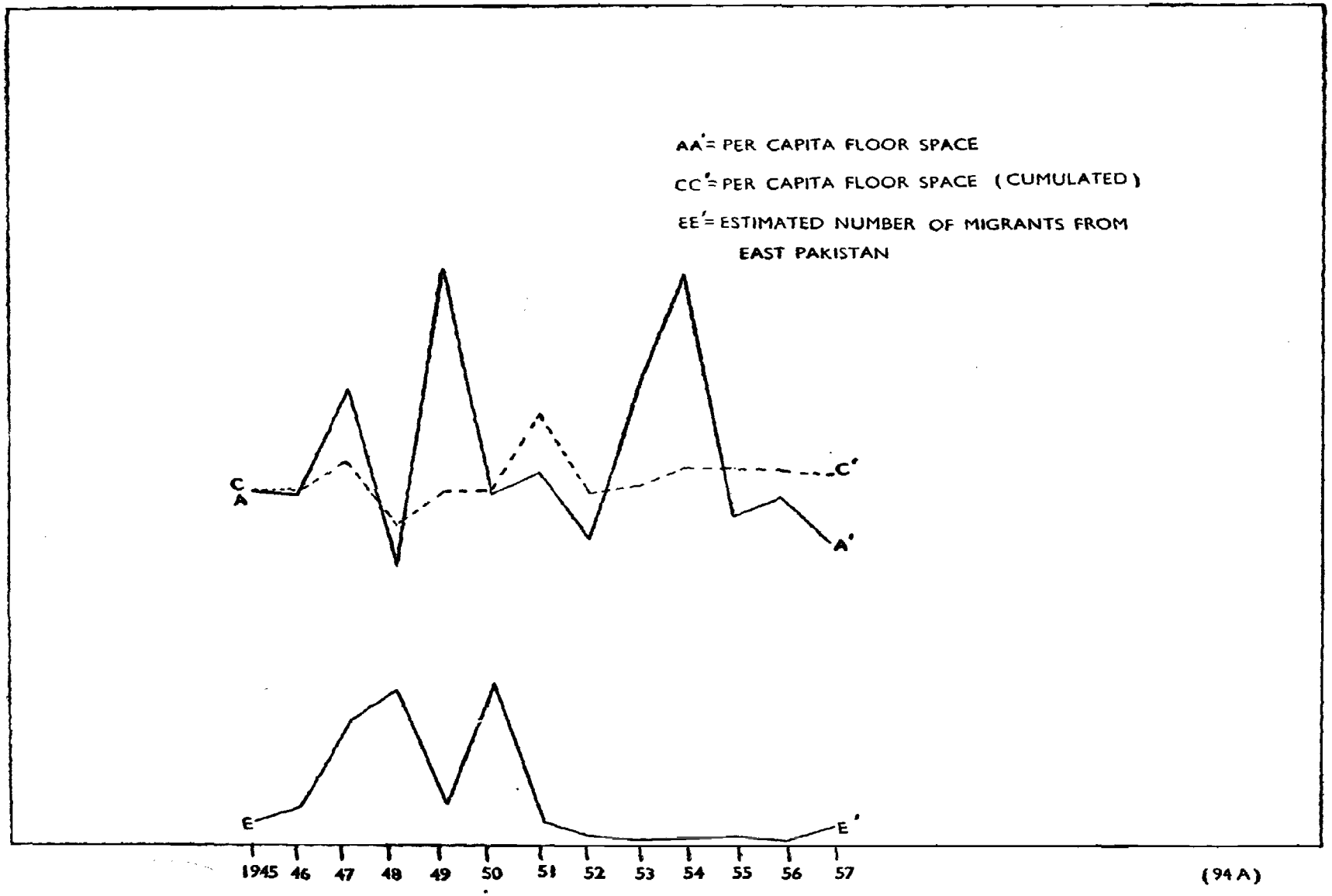
TABLE 8.12

Date of Migration	*Per capita* floor space	
	Individual Year	Cumulated
1945	46·10	46·10
1946	45·63	45·80
1947	59·59	50·05
1948	35·99	41·25
1949	74·89	45·76
1950	45·74	45·75
1951	48·31	55·90
1952	39·39	45·35
1953	58·30	46·49
1954	74·31	49·02
1955	42·42	48·59
1956	45·16	48·33
1957	38·76	47·80
1958	29·24	47·41
1959	9·52	46·66

TABLE 8.13

Source Date	Total Units	Average Area Per Unit
Upto 1941	11	12·55
1942—46	2	3·60
1947	17	3·16
1948	68	3·17
1949	44	3·10
1950	594	3·28
1951	32	3·13
1947—51	755	3·25
1952—56	90	3·21
1957—61	23	3·27
N.A.	119	0·55

As may be seen the area has declined with years. Particular decline has taken place in the colony since 1948 when mass migration took place. The decline is slow but quite consistent. As the colony however, has grown up from scratch and the flow into the colony is much smaller since 1957 no curve was fitted to this data.


AA' = PER CAPITA FLOOR SPACE
CC' = PER CAPITA FLOOR SPACE (CUMULATED)
EE' = ESTIMATED NUMBER OF MIGRANTS FROM EAST PAKISTAN
C
A
C'
A'
E
E'
1945 46 47 48 49 50 51 52 53 54 55 56 57

PART II

PROBLEMS OF GROWTH OF A REFUGEE COLONY : A STUDY OF EAST PAKISTAN REFUGEE SETTLEMENTS IN JADAVPUR, CALCUTTA

R. R. DAS

A. GHOSH

INTRODUCTION

A sample survey of the households in Jadavpur area, settled almost entirely by the displaced migrants from East Pakistan, was undertaken in 1961 by the Research Unit, Department of Economics, Jadavpur University, with financial assistance mainly from the Population Council, New York, and other organisations. It formed a part of the programme for a much wider and general study of the impact of immigration on the economy of West Bengal taken up by the University at the instance of the Population Council.

Before the 'partition' of Bengal, Jadavpur was, more or less, an uninhabited marshy area on the suburb south-east of the city. The colonisation of the area was started and finished in a remarkably short period, between 1947—51, mainly by the displaced migrants. Many problems of growth and development, therefore, came up very distinctly here as they took place within a very small span of time.

The predominant feature of the region has been the existence of numerous squatter colonies, the inhabitants of which constitute nearly 80% of the total population of the region. Most of the displaced migrants, particularly those who came between 1947—50, live in these squatter colonies.

The object of the survey has been to collect economic and demographic information regarding the population of the area for a type study of the growth of suburbs of Calcutta in general and that of squatter colonies in particular, as a result of the impact of immigration from East Pakistan, to be fitted in a much wider study of immigration in West Bengal.

Subsequently, it was felt that the information collected on various topics like occupational distribution, housing conditions, age-composition of the population of the area, by themselves, might prove to be of sufficient interest to the general public, and would provide a useful supplement to the report of the socio-economic survey (1954—58) conducted by the Calcutta University, which dealt with the city proper. It has been decided, therefore, to bring out the straightforward descriptive report of the survey.

The exact area covered by the survey corresponds roughly to ward No. 80 of the Calcutta Corporation. In the east and south-west, it is bounded by Raja Subodh Mallik Road and Netaji Subash Road respectively. On all other sides its boundary coincides with that of ward No. 80.

In March 1961, *i.e.*, at the time of the beginning of the survey, there were in all 9,423 households resident in the area. An elaborate list of these households, for a sampling frame, was prepared by our investigators, from which 2,000 households were selected at random in two independent subsamples. Thus, roughly speaking, one in every ten households were investigated in course of each round, exact sampling fraction being 0.1061.

The actual survey, as usual, was preceded by a pilot survey of about seventy households to ascertain the response that might be expected from the public, and their reaction to the questionnaire to be used, as also to gather some operational experience for a smooth and efficient execution of the survey.

The response received from the public had been very heartening. Informants, as a rule, were found to be very co-operative, and the cases of out-right refusal to answer our queries had been even less than ten in the course of the investigations of the 2,000 sample households. These were, however, replaced by fresh samples.

Field-work started early in March, 1961 and continued upto September, 1961. It was divided into the three following stages :

(i) Preparation of a houselist of the area for a sampling frame, which took nearly a month,

(ii) investigations of the sample households of the first sub-sample, which took nearly three months, and

(iii) investigations of the sample households of the second sub-sample which took another three months.

Field-workers were mostly recruited from among the under-graduate students of the University. They worked in part-time capacity and in their spare time, usually in the morning. The investigators had instructions to contact either the head or in his absence, a senior member of the household for investigation; and they being employed persons, had to be interviewed fairly early in the morning before they started getting ready for daily business or on Sundays or on other holideys. Evening investigations were virtually impossible; for, roads were narrow, tortuous and in most cases without lights, and thus it was impossible for an outsider to locate an address after dusk.

The information collected was coded and punched on Hollerith Cards. Punched cards were sent to I.C.T. for mechanical sorting and tabulation. Final tabulation from the three way and four way mechanically tabulated tables, and analysis were done by the research and other students of the Deptt. of Economics of the University.

Results of the second sub-sample could not be included in the present report as the tabulation and analysis of the data are not yet complete.

Parallel with the investigation of the resident families, a survey was carried out of the establishments or business enterprises in the area to get an idea of the nature of the economic activity going on in the area itself.

The report on the survey of families is presented in chapters two to six; and that of the business enterprises in chapter seven.

SECTION II

General Characteristics

The growth of population in Jadavpur area hes been a post-independence phenomenon. Out of 1,000 sample households investigated in course of the first sample only 14 (1·40%) have been found to be original residents of the area, and only 44 (4·40%) families came to the area before 1947. It is, however, true that some Muslim families who were original residents of the area emigrated to Pakistan after independence, but, in all probability, they were very few in number. After 1947 the growth, however, has been very rapid and the area virtually reached its present state by 1951-52. The main stimulus to this phenomenal increase in population in such a short time, had been the partition of Bengal which led to an enormous increase in the number of persons from urban areas of East Bengal eager to settle near Calcutta. Squatter colonies grew very fast and by 1951 land available for squatters was almost exhausted.

In this section is analysed the flow of immigrants into Jadavpur area.

A comparison has also been made of this purely local flow with the general flow of immigrants from East Pakistan.

Table 2·1 gives the samples and the estimates of the flow into Jadavpur area by date of migration. As explained before, there is in this stream from East Pakistan two distinct flows—one the normal stream which originated long before 1947 and was mainly due to economic reasons similar to those of migration from West or other parts of India. The other stream was mainly the one coming during 1947 onwards due to political reasons.

It may be noted that the immigrant streams into Jadavpur during 1947—51 are similar in their fluctuations to the corresponding streams flowing into Calcutta and West Bengal. It also has some synchronisation with the migrants from the West. Subsequently, the displaced immigrant stream dried up in Calcutta and Jadavpur area though the general flow of immigrants continued from the Western regions.

TABLE 2.1

Year	Sample		Estimated No. of members
	Number of units	Number of members	
1908	1	3	42
1914	1	4	56
1915	1	4	56
1917	1	5	70
1924	1	9	126

TABLE 2.1—concld.

Year	Sample		Estimated No. of members
	Number of units	Number of members	
1930	3	31	434
1932	1	8	112
1933	1	11	154
1935	1	3	42
1936	1	8	112
1938	1	8	112
1939	1	6	84
1940	3	20	280
1941	2	14	196
1942	1	8	112
1943	2	15	210
1944	5	36	504
1945	2	14	196
1946	15	107	1,498
1947	162	1,153	16,142
1948	229	1,665	23,310
1949	65	476	6,664
1950	459	3,041	42,574
1951	12	92	1,288
1952	3	12	168
1953	1	5	70
1954	4	19	266
1955	2	11	154
1956	1	5	70
1957	3	13	182
1958	1	5	70
Original residents	14	110	1,624

It is interesting to note that while migration from East Pakistan into the rural areas of West Bengal continued, the stream coming into both Calcutta and Jadavpur dried up. This is possibly due to the fact that people used to urban life and mainly aiming at urban professions came first and settled in or around the city and suburb. Agriculturists were slow to come and when they come they tended to go to the rural areas. Evidence of this has further been discussed in the chapter on occupation.

It was found in the survey that people migrating from East Pakistan in many cases, settled in other areas first and only subsequently moved into this area. The following table gives the groups under several broad classifications *e.g.* (1) the group that came before 1946 and went straight to Jadavpur, (2) the group that came before 1946, stayed in other areas and finally went to Jadavpur, (3) the group that came after 1946 and went straight to Jadavpur, and (4) the group that came after 1946 and moved into Jadavpur from other areas.

TABLE 2.2

Date of coming to Jadavpur	Before 1946		After 1946		TOTAL
	Straight from Pakistan	From other places of West Bengal	Straight from Pakistan	From other places of West Bengal	
1938	..	2	..	..	2
1942	..	1	..	..	1
1947	..	1	26	..	27
1948	1	1	70	..	72
1949	..	..	39	9	48
1950	..	11	474	127	612
1951	..	2	28	9	39
1952	..	2	9	18	29
1953	..	..	3	8	11
1954	..	2	4	9	15
1955	..	..	9	5	14
1956	..	..	2	11	13
1957	..	3	3	11	17
1958	..	2	1	24	27
1959	..	4	..	23	27
1960	..	1	..	12	13
1961	..	4	1	5	10
Total	**1**	**36**	**669**	**271**	**977**

TABLE 2.3

Date of Coming to Jadavpur

Date of Migration	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	Total	Average Group
1946 . . .	..	12	..	..	..	1	..	..	..	..	..	1	1	15	5·7
1947 . . .	9	47	6	3	1	2	2	2	3	9	7	5	..	96	5·4
1948 . . .	..	68	2	5	..	2	..	5	6	8	7	4	1	108	4·5
1949 . . .	..	..	1	1	1	1	..	1	..	1	4	..	1	11	7·5
1950 . . .	..	..	..	9	4	2	3	2	2	5	4	1	1	33	5·3
1951 . . .	..	..	..	..	2	1	..	1	..	..	..	1	..	5	4·2
1952 . . .	..	..	..	..	..	..	..	..	..	1	1	..	..	2	6 5
1953 . . .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1954 . . .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1955 . . .	..	..	..	..	..	..	..	..	..	..	..	..	1	1	6·0
Total .	**9**	**127**	**9**	**18**	**8**	**9**	**5**	**11**	**11**	**24**	**23**	**12**	**5**	**271**	**20·8**

A big stimulant to this was the success of the squatting movement through which areas were occupied and settled by migrants. The success of this move also encouraged many who originally were in Calcutta to come into Jadavpur area. It would be interesting to classify migrants into squatter and non-squatter and study their dates of coming to Jadavpur area as in Table 2·4.

TABLE 2.4

Date of coming to Jadavpur	Squatters	Others	Total
1938	..	2	2
1942	..	1	1
1947	22	5	27
1948	64	7	72
1949	46	2	48
1950	569	43	612
1951	31	8	39
1952	21	8	29
1953	9	2	11
1954	9	6	15
1955	8	6	14
1956	5	8	13
1957	..	17	17
1958	..	27	27
1959	1	26	27
1960	1	12	13
1961	1	9	10
Total	**788**	**189**	**977**

We may consider the group that came before 1946 and went to Jadavpur as the pioneers. Subsequently, however, the motivation get a bit mixed up. The group that came after 1946 (post-partition) into India and went straight to Jadavpur and the original pioneers together really paved the way for the mass immigration that followed.

One may then broadly conclude that the concentration in the area was primarily accomplished in 1950 by a determined body of squatters which largely determined its present state as a colony. In this respect thus empty land and nearness to a city with prospect of employment or help that mainly stimulated such a movement.

Though most of the households (abou 80 per cent) in Jadavpur were found to be occupying land forcibly acquired by squatting, there were also a good many who had perfectly valid right to the premises they occupied. And though households with legally valid occupancy rights were sometimes found even at the heart of a squatter colony, still in general the two types of households—the squatting and non-squatting—are separable in distinct blocks. By far the most important non-squatting block has been that extending fairly deep on either side of the Central Road and is on the north-east portion of ward No. 80. Other non-squatting blocks of varying sizes are situated along or near Netaji Subhas Road, the south-west boundary of the area under survey.

SECTION III

Sex, Age and Literacy

Distribution of the sample population and that of the heads of the sample Households by sex, age group and literacy is given in Tables No. 2.1 to 2.7.

It may be noted from Table No. 2.1 given below that, unlike the case in Calcutta or in Calcutta Industrial Region, there has not been any unusual disparity in the number of females as compared to males in any age group in the sample population. This is primarily due to the fact that the displaced persons who virtually constitute the entire population of Jadavpur had to migrate with their families and also, in the case of the squatter colonies, have to have their families here if only to keep possession of the forcibly occupied plots of land. On the other hand in Calcutta and the Calcutta Industrial Region, migrants from other states of India, particularly from Bihar, Orissa, and Uttar Pradesh, who constitute around 20 to 25 per cent of the total population come singly. This depresses the relative size of the female populations of the regions. For the same reason the age distribution of the population of Jadavpur is free from any unusual bulge in the working age group 16—60, as is the case in Calcutta or in the Calcutta Industrial Region. Single member migrants from other states of India are entirely in the working age group and therefore the age structure of the populations are lopsided towards the working age group 16—60.

TABLE 3.1

Age and Sex distribution of the populations in Jadavpur, Calcutta and Calcutta Industrial Region in 1961

Age Group	Jadavpur		Calcutta		Calcutta Industrial Region.	
	Males	Females	Males	Females	Males	Females
0—4	49·05	50·95	51·20	48·80	50·49	49·51
5—14	52·24	47·76	52·25	47·75	52·57	47·43
15—24	52·13	47·87	63·79	36·21	60·71	39·29
25—34	53·80	46·20	68·05	31·95	65·74	34·26
35—44	54·42	45·58	70·43	29·57	69·30	30·70
45—54	56·37	43·63	67·34	32·66	65·78	34·22
55—64	47·38	52·62	62·77	37·23	60·38	39·62
65 & above	51·09	48·91	52·62	47·38	49·98	50·02
Total	**52·38**	**47·62**	**62·03**	**37·97**	**60·02**	**39·98**

Persons in the age-group 0—16 in Jadavpur may be noted to be a bit higher. This has probably been due to an increase in the birth rate (estimated to have risen by 60 per cent between 1951—55 for the entire population of displaced migrants in West Bengal by the State Statistical Bureau, Government of West Bengal) among the colonisers who are almost entirely refugees from East Pakistan.

As regards the state of literacy (Tables Nos. 2.2 to 2.5) in Jadavpur area, 46·20 per cent of the total population were found to be illiterate. There was as usual great discrepancy between literacy figures for males and those for females. Only 34·05 per cent of the males as against 59·45 per cent of the females are illiterates. If, however, the '0—4' group is excluded the figures fall to 26·95 per cent and 54·62 per cent respectively revealing even greater real divergency between the state of literacy among the males and the females.

TABLE 3.2

Age and Literacy of the Sample Population

Age Group	Illiterate	Literate	Moderately Qualified	Highly Qualified	Total
0—4	100·00	..	..	..	100·00 (713)
5—9	95·60	4·40	..	..	100·00 (978)
10—14	28·57	71·43	..	..	100·00 (854)
15—24	13·13	85·45	1·28	0·14	100·00 (1,409)
25—34	26·88	70·00	2·78	0·36	100·00 (1,117)
35—44	34·83	63·53	1·50	0·14	100·00 (735)
45—59	45·52	51·65	1·64	1·19	100.00 (670)
60 & above	55·67	40·47	1·50	2·36	100·00 (467)
No entry	81·48	18·52	..	..	100·00 (27)
Total Ex. (0—4)	40·07	58·26	1·25	0·42	100·00 (6,257)
Total	**46·20**	**52·31**	**1·12**	**0·37**	**100·00 (9,670)**

TABLE 3.3

Age and Literacy of the Sample Male Population

Age Group	Illiterate	Literate	Moderately Qualified	Highly Qualified	Total
0—4	100·00	..	..	..	100·00 (360)
5—9	95·88	4·12	..	..	100·00 (534)
10—14	24·71	75·29	..	..	100·00 (425)
15—24	8·02	90·08	1·63	0·27	100·00 (736)
25—34	9·32	86·02	4·16	0·50	100·00 (601)
35—44	12·62	84·90	2·23	0·25	100·00 (404)
45—59	15·04	79·94	2·79	2·23	100·00 (359)
60 & above	21·55	70·69	3·ōz	4·74	100·00 (232)
No entry	..	..	..	..	..
TOTAL Ex. (0—4)	26·95	70·38	1·91	0·76	100·00 (3,291)
Total	**34·06**	**63·54**	**1·73**	**0·68**	**100·00 (3,651)**

TABLE 3.4

Age and Literacy of the Sample Female Population

Age Group	Illiterate	Literate	Moderately Qualified	Highly Qualified	Total
0—4	100·00	..	..	..	100·00 (335)
5—9	95·27	4·73	..	..	100·00 (444)
10—14	32·40	67·60	..	..	100·00 (429)
15—24	18·72	80·39	0·89	..	100·00 (673)
25—34	47·29	51·36	1·16	0·19	100·00 (516)
35—44	61·94	37·46	0·60	..	100·00 (331)
45—59	80·71	18·97	0·32	..	100·00 (311)
60 & above	89·36	10·64	..	..	100·00 (235)
No Entry	81·48	18·52	..	..	100·00 (27)
TOTAL Ex. (0—4)	54·62	44·84	0·51	0·03	100·00 (2,966)
Total	**59·45**	**40·07**	**0·45**	**0·03**	**100·00** (3,319)

TABLE 3.5

Year of Migration and Educational Qualification (of family heads)

Year of Migration	Illiterate	Literate	Moderately Qualified	Highly Qualified	Total
Upto 41	5·25	42·11	36·94	15·79	100.00 (19)
1942—46	..	24·00	40·00	36·00	100·00 (25)
1947	2·50	33·75	44·38	19·37	100·00 (162)
1948	4·80	37·12	41·49	16·59	100·00 (229)
1949	3·08	43·08	36·92	16·92	100·00) (65)
1950	7·84	50·54	32·68	8·94	100·00 (459)
1951	16·67	66·66	16·67	..	100·00 (2
1947—51	5·95	44·00	36·97	13·08	100·00 (925)
1952—56	9·09	27·27	27·27	36·37	100·00 (11)
1957 & above	..	25·00	75·00	..	100·00 (4)

Proportions of 'moderately qualified' and 'highly qualified' persons, among the males and the females excluding '0—4' group had been 1·91 per cent, 0·76 per cent and 0·51 per cent, 0·03 per cent respectively. These are rather low figures and are most probably due to the fact that the refugee families residing in the area come mostly of the low middle-class group in East Pakistan. To some extent, particularly for persons in higher age groups, this might also be due to the non-availability of proper facilities for higher education in East Bengal. The sudden, though slight,

increase of 'moderately qualified' and 'highly qualified' persons in the age-group 25—34, and the decided increase in the proportion of literates in the age-group '16—24', point to an increase in the availability of educational facilities, mainly due to the proximity of the region to Calcutta, and the consequent improvement in educational attainments among younger generations. Gradual fall in the figures for illiteracy in higher age-group as we move down the age-groups has clearly been due to the spread of literacy throughout British India, particularly in urban areas (from which areas of East Pakistan the families resident in Jadavpur have mostly come) during the decades preceding independence.

Study of literacy figures by age-group also reveal that after migration, education is spreading at a much faster rate among the females than among the males. Among the males 12·62 per cent 9·32 per cent and 8·02 per cent of the persons in the age-groups '35—44', '25—34' and '15—24' respectively are illiterates. The corresponding figures for females are 61·94 per cent, 47·29 per cent and 18·72 per cent. Now the survey being undertaken in 1961, all persons in the age-group '35—44', and the bulk of the persons in the age-group '25—34' had been in Pakistan when they were of an age to receive education, whereas those in the age-group '15—24' had mostly been here at Jadavpur when they were to receive education. Thus it may be said that as a result of the improvement in the availability of educational facilities consequent on migration to Jadavpur, male illiteracy fell from 12·62 per cent to 8·02 per cent whereas illiteracy among the females fell from 61·94 per cent to 18·72 per cent. And thus, it is obvious, females are making progress at a faster rate and would soon catch up the males.

Comparatively small percentages of 'moderately qualified' and 'highly qualified' persons, but more or less high percentage of just literates among the inhabitants of Jadavpur lead us to the supposition that they mostly belong to low middle-class group. We shall come across confirmatory evidences when we shall discuss occupational distribution and consumption expenditure of the population.

Comparison of the literacy figures of the persons resident in Jadavpur (who are almost entirely displaced migrants from East Bengal) with those of the displaced migrants in Calcutta reveals the decided superiority of the latter group, in the case of the males as well as in the case of the females—female superiority more pronounced than that of the males.

TABLE 3.6

State of Literacy in Jadavpur in 1961 and among the Displaced Persons in Calcutta in 1957

Region	Sex	Illiterate	Literate	Moderately Qualified	Highly Qualified	N.A.	Total
Jadavpur	Males	34·05	63·54	1·73	0·68	..	100·00 (3,651)
	Females	59·45	40·07	0·45	0·03	..	100·00 (3,319)
	Total	**40·07**	**58·26**	**1·25**	**0·42**	..	**100·00 (6,970)**
Calcutta	Males	30·10	32·32	33·83	3·52	0·23	100·00 (7,552)
	Females	44·93	36·09	18·08	0·81	0·09	100·00 (4,553)
	Total	**35·68**	**33·74**	**27·91**	**2·50**	**0·17**	**100·00 (12,105)**

The superiority of the Calcutta migrants, particularly of the females among them, shows that they are of a better economic class than those resident at Jadavpur. This is, however, only what should be expected; for, the squatters who form the overwhelming majority of the population of Jadavpur, are, in general, likely to have been financially much more indigent, as comparatively affluent people are seldom attracted to such risky illegal acts like forcible acquisition of vacant plots owned by others.

Though the state of literacy and educational attainments in Jadavpur is inferior to that of the displaced migrants in Calcutta, it compares favourably with that of the entire population (as will be apparent from the table given below) of Calcutta or of the Calcutta Industrial Region. In fact its position is slightly better in case of the males.

Table 3·7

Literacy in Jadavpur, Calcutta and Calcutta Industrial Region in 1961

Sex	Educational Qualification	Jadavpur	Calcutta	Calcutta Industrial Region
Males	Illiterate	34·05	36·45	39·70
	Literate	65·95	63·55	60·30
	Total	**100·00 (3,651)**	**100·00 (1,815,791)**	**100·00 (3,799,105)**
Females	Illiterate	59·45	47·69	53·99
	Literate	40·55	52·31	46·01
	Total	**100·00 (3,319)**	**100·00 (1,111,498)**	**100·00 (2,530,516)**
Total	Illiterate	46·20	40·71	45·41
	Literate	53·80	59·29	54·50
	Total	**100·00 (6,970)**	**100·00 (1,735,461)**	**100·00 (3,455,163)**

However, regarding female literacy Calcutta and the Calcutta Industrial Region, seem to be somewhat in advance—52·31 per cent in Calcutta and 46·01 per cent in Calcutta Industrial Region are literates as against 40·55 per cent at Jadavpur. Higher female to male ratio among the population of Jadavpur, has brought down more than proportionately the percentage of literates among the entire population.

Though there have been relatively more literate males among the displaced migrants that have come to Jadavpur, and for that matter, though there have been relatively more literates among those that have come to Calcutta Industrial Region, they have not, however, as we shall presently see, added to the supply of skilled persons that are in demand in this area. On the other hand their inflow have only led to gradual over-crowding of the already well supplied sectors like office workers, traders etc., and progressive deterioration of the employment situation.

Reason for higher percentage of literates among the males of Jadavpur than those of

Calcutta or the Calcutta Industrial Region, is, however, not far to seek. As has already been pointed out migrants from other Indian states like Bihar, Orissa and Uttar Pradesh etc. who use to be predominantly males and mostly illiterate, constitute a sizeable portion of the total populations of the regions, and therefore must have brought down considerably the male literacy figures of the populations of the regions. They do not, however, have any considerable influence on overall female literacy; for, though the females among them are likely to be even more backward in literacy, they are relatively small in number. Thus one may be quite certain that the level of literacy both among the males and females of the residents in Calcutta is at a higher level than that prevailing at Jadavpur.

Educational qualifications of the family heads when studied in relation to their date of migration reveal an interesting aspect of immigration from East Bengal. Proportion of qualified persons is found to be higher among those who have come earlier, whereas the late comers have lower percentages of qualified persons among them. This is probably due to the fact that qualified persons being, usually, of higher income group, and also being more equipped to face an economic struggle had been among the first to migrate to India. Persons with lower educational attainments being less sure of their ability to make a living in a new place, tried hard to stick to their native places in Pakistan and migrated only when life became intolerable after the recrude scene of communal killing in an extensive scale in East Pakistan in 1950.

SECTION IV

Occupation and Employment

A study of the occupational distribution of the earners in Jadavpur area, reveals the predominance of clarks (38·39 per cent) and traders (20·38 per cent). The so-called white-collar jobs claim 55·67 per cent of the total employed persons. Percentage of manual workers, both skilled as well as unskilled, is 22·78.

Traders in Jadavpur are, however, mostly petty traders who usually run a small stationery or grocery shop, often in their own household premises, and which, more often than not, gives only partial employment to the person concerned. Prosperous or affluent traders, characteristic to a city like Calcutta, are conspicuous by their absence, This will be evident from the table inserted below, which gives the distribution of different types of business enterprises in the area obtained from the information collected in course of a random sample survey of the business enterprises of the area, carried out simultaneously with the household survey.

TABLE 4.1

Type of Business	% of Shops
Grocery, tea	12·44
Saloon	3·88
Tailoring, Shoe making	7·28
Cloth, Hosiery	2·22
Stationery, Bangles	5·38
Rice, Chira, Muri	3·80
Laundry	2·65
Tea-stall	8·00
Sweetmeats	4·75
Medical	8·47
Photo, Electrical, Radio, Watch, Cycle	7·13
Blacksmithy, Hardware, Utensils	5·70
Bookbinding, Photo framing, Painting	1·90
Building Materials	6·49
Pan-bidi	5·46
Straw-cutting, Khole, Bhusi	1·90
Coal	1·50
Book-seller, etc.	4·35
Jewellery	3·17
Fruits, Vegetable, Meat	1·03
Factory	0·40
N. A.	1·90
Total	100·00 (1,263)

Presence of a large number of traders in the area is however, not unexpected. For, a petty trader requires no particular skill or any considerable capital; and therefore the displaced migrants who could not get a suitable employment (and there had been a large number of them) took up trade as it is easily taken up and which even though gave only partial employment, nevertheless yielded some income.

Comparatively small number of manual workers in the area might to some extent be due to habitual reluctance of the Bengalees, particularly those with some educational qualifications, to do manual work; to some extent it might as well be due to the absence of sufficient number of factories in the region.

Occupational distribution of the earners in Jadavpur when compared to that of Calcutta (in 1957), clearly shows the strong occupational bias of the region.

TABLE 4.2

Occupation	Calcutta	Jadavpur
Non-Tech. Exe. I	2·04	1·05
Non-Tech. Exe. II	1·60	6·48
Tech. & Prof. I	2·57	2·75
Tech. & Prof. II	3·30	7·01
Ministerial & Tech.	2·75	..
Ministerial & Non-Tech.	8·54	38·38
Traders	23·97	20·38
Manual Worker Skilled	17·87	10·75
Manual Worker Un-skilled	33·66	12·03
Miscellaneous	3·36	1·17
N. A.	0·32	..
Total	**100·00**	**100·00**

Proportion of white collar jobs and those of manual type are 20·80 and 51·53 respectively in Calcutta. In Jadavpur the proportions are almost entirely reversed, revealing clearly the bias of the area towards white collar jobs. Of the 51·53 per cent employed in white-collar jobs, however, nearly 70 per cent are just ordinary clerks, often a shop assistant with a mere pittance.

It may be noted that percentage of persons employed in trade in the two areas are close enough. This is a clear indication that the sector in Jadavpur is very much overcrowed. For, Calcutta, handling, as it is, a large volume of foreign trade of India, and being a nerve centre of internal trade of India, is expected to give employment to proportionately much greater number of persons than Jadavpur, which only has a narrow local market to cater for.

Thus, we may conclude that Jadavpur is predominantly an area of petty traders and of petty ministerial workers, who naturally belong to low middle class group.

Examination of the occupations of the heads of the families by date of migration, (Table No. 4·3) reveals progressive deterioration of employment position among the displaced migrants. After 1947, proportion of superior jobs as well as that of ministerial and non-technical service holders fell gradually over years. Correspondingly, those of petty traders and unskilled workers registered a gradual rise. This is partly because in later years persons with inferior educational qualifications had come but mainly because competition has become harder at the top.

TABLE 4.3

Year of migration and occupation of the family heads

Year of Migration	Non-Tech. Executive	Non-Tech. Executive	Tech. & Prof. I	Tech. & Prof. II	Ministerial Non-Tech.	Traders	Manual Worker Skilled	Manual Worker Unskilled	Priest, Astrologer, unearned income	Total
Upto 1941 . . .	9·68	16·13	9·68	6·45	51·60	..	3·23	..	3·23	100·00 (31)
1942—46 . . .	4·00	4·00	..	8·00	28·00	6·00	24·00	16·00	..	100·00 (25)
1947	1·26	10·06	3·77	6·92	45·28	14·47	13·84	3·77	0·63	100·00 (159)
1948	1·38	8·26	2·75	8·26	41·73	21·56	11·93	3·67	0·46	100·00 (218)
1949	1·61	8·06	4·84	4·84	29·03	27·42	9·68	9·68	4·84	100·0 (62)
1950	1·13	6·12	2·04	6·35	29·71	31·07	13·15	7·94	2·49	100·00 (441)
1951	..	8·33	8·33	..	33·33	16·68	8·33	25·00	..	100·00) (12)
1947—51	1·23	7·51	2·80	6·73	35·42	25·34	12·67	6·50	1·80	100·00 (892)
1952—56	..	..	18·18	9·09	36·37	18·18	8·09	9·09	..	100·00 (11)
1957—61	..	..	..	..	75·00	..	..	25·00	..	100·00 (4)
Total	1·56	7·58	3·12	6·75	35·73	24·29	12·56	6·65	1·76	100·00 (963)

Age-wise classification of the available data (given in Table No. 4·4) also confirms the same conclusions. Persons in lower age-groups, particularly the new entrants to employment market are being pushed down to lower employments. Expansion of the types of occupation sought after by the displaced migrants, and for that matter, by educated Bengalees in general, has not kept pace with that of the increase in the number of educated persons consequent on the inflex of the displaced migrants; and so persons with higher educational qualifications who would have ordinarily been absorbed in ministerial or some superior jobs, are compelled to seek employment in other sectors. This has probably led to an increase in the proportion of manual workers, both skilled as well as unskilled, in the younger age-groups. To some extent this also shows that the frequently referred aversion of the Bengalees to manual work is somewhat on the decline. Lower proportion of the traders among the fresh entrants shows once again that the line has become overcrowed and unprofitable.

TABLE 4.4

Age and Occupation

Age Group	Occupation									
	Non-Tech. Ex. I	Non-Tech. Ex. II	Tech. & Prof. I	Tech. & Prof. II	Ministerial & Non-Tech.	Traders	Manual Worker Skilled	Manual Worker Unskilled	Unearned Income etc.	Total
Upto 24	..	1·15	2·30	7·28	35·25	13·41	22·61	17·62	0·38	100·00 (261)
25—34	1·03	7·59	2·76	5·34	44·32	16·72	11·21	11·03	..	100·00 (580)
35—44	2·14	5·71	1·19	6·19	40·71	24·29	8·81	10·48	0·48	100·00 (420)
55—59	0·85	9·94	3·69	7·95	33·62	26·42	5·40	9·37	2·56	100·00 (352)
60 & above	..	6·02	8·43	19·28	18·07	26·51	4·82	7·23	9·64	100·00 (83)
N.A.	..	..	..	..	18·75	..	..	81·25	..	100 00 (16)
Total	1·05	6·48	2·75	7·01	38·38	20·38	10·75	12·03	1·17	100·00 (1,712)

As is obvious, a simple classification of the employed persons cannot be exepected to give a full idea of the employment position with regard to the inhabitants of the region. Income from a particular type of occupation, as is given in the classification used, may vary very widely indeed, and almost all persons who are in fact partly employed (we have seen in the case of traders that their number is likely to be considerable) are invariably returned as fully employed.

Proportion of totally un-employed persons, (Table No. 4·5) amount to 9·51 per cent of the total labour force. This is quite a high figure and is on a par with that of the total refugee population of West Bengal in 1955, estimated to be around 10 per cent from the figures available from the report of the refugee survey in 1955 by the State Statistical Bureau, Government of West Bengal. As is natural, maximum number of unemployed persons are in the age-group 'upto 24' which means that they are most numerous among the prospective entrants to employment. But as we move up along the age-groups the proportion of unemployed sharply declines.

TABLE 4.5

Unemployed Persons by age-group

Age-Group	Percentage of unemployed persons
0—14	2·22
15—24	53·34
25—34	31·11
35—44	3·89
45—59	6·11
60 & above	3·33
Total	100·00 (180)

It should, however, be noted that the actual figure for unemployment may not be a sufficiently reliable indicator to the incidence of actual unemployment, For as we have already seen employment in trade might in many cases be concealed unemployment. Apart from the traders there may be a good many among the others who are partially or casualy employed.

When employed persons are classified according to their place of work, suburban nature of the area under survey stands clear-revealed. 54·36 per cent of the total employed persons of the area work in Calcutta and 63·15 per cent in Calcutta Industrial Region excluding the area of survey. 25·16 per cent work in places within the survey area. Most of them, however, are petty traders or unskilled workers like domestic servants, who actually cater to the needs of the population of the region under survey. Thus it is clear that the income earned by persons working outside the area is in part spent within the area and this gives rise to demands giving employment to domestic servants, grocers, stationers and such other persons who cater to the needs of the population.

TABLE 4.6

Location of place of work and occupation

Location	Occupation									
	Non-Tech. Ex. I	Non-Tech. Ex. II	Tech. & Prof. I	Tech. & Prof. II	Ministerial & Non-Tech.	Traders	Manual Worker Skilled	Manual Worker Unskilled	Unearned Income etc.	Total
In the immediate neighbourhood.	.. ..	1·11 (0·63)	4·76 (1·27)	9·17 (6·33)	0·16 (0·63)	11·95 (25·95)	1·28 (1·27)	42·93 (53·80)	80·00 (10·13)	9·99 (100·00)
Within Ward No. 80 .	7·14 (0·42)	1·11 (0·42)	19·05 (3·33)	23·86 (10·35)	5·08 (12·92)	34·41 (49·16)	16·03 (10·42)	14·14 (11·67)	10·00 (0·83)	15·17 (100·00)
Calcutta . . .	57·14 (0·93)	73·33 (7·67)	47·61 (2·33)	34·86 (4·42)	75·41 (53·48)	38·48 (15·35)	51·92 (9·42)	27·27 (6·28)	5·00 (0·12)	54·36 (100·00)
Outside Calcutta but within Calcutta Indt. Region .	21·45 (2·16)	15·56 (10·07)	11·91 (3·60)	10·00 (7·91)	10·33 (45·32)	2·04 (5·04)	14·10 (15·83)	7·07 (10·07)	.. ..	8·79 (100·00)
Not available . . .	14·29 (1·08)	8·89 (4·32)	16·67 (3·78)	22·02 (12·97)	9·02 (29·74)	13·12 (24·33)	16·67 (14·05)	8·59 (9·19)	5·00 (0·54)	11·69 (100·00)
Total	100·00 (1·05)	100·00 (6·47)	100·00 (2·97)	100·00 (6·64)	100·00 (38·52)	100·00 (20·40)	100·00 (10·78)	100·00 (12·00)	100·00 (1·17)	100·00 (100·00) (1,716)

TABLE 4.7

Education and Occupation

Education	Occupation										
	Non-Tech. Ex. I	Non-Tech. Ex. II	Tech. & Prof. I	Tech. & Prof. II	Ministerial & Non-Tech.	Unearned Income etc.	Traders	Manual Worker Skilled	Manual Worker Unskilled	Total	Unemployed Persons
Illiterate	.. ..	1·80 (0·73)	1·96 (0·38)	2·63 (1·10)	4·69 (11·36)	30·00 (2·20)	22·86 (29·30)	18·92 (12·82)	55·83 (42·12)	15·91 (100·00)	10·6[1] ..
Literete	72·22 (0·95)	82·29 (6·76)	27·45 (1·03)	87·73 (7·34)	93·95 (45 59)	70·00 (1·03)	77·14 (19·83)	81·08 (11·01)	42·72 (6·46)	79·37 (100·00)	89·39 ..
Moderately Qualified	22·22 (6·67)	14·41 (26·67)	37·26 (31·66)	7·89 (15·00)	1·36 (15·00)	.. ..	.. ..	.. ..	1·45 (5·00)	3·50 (100·00)	.. ..
Highly Qualified	5·56 (4·76)	0·90 (4·76)	33·33 (80·96)	1·75 [(9·52)	.. ..	.. ..	.. ..	.. ..	.. ..	1·22 (100·00)	.. ..
Total	100·00 (1·05)	100·00 (6·47)	100·00 (2·97)	100·00 (6·64)	100·00 (38·52)	100·00 (1·17)	100·00 (20·40)	100·00 (10·78)	100·00 (12·00)	100·00 (100·00) (1,716)	100·00 (180)

TABLE 4.8

Year of Starting and Occupation

Year of Starting	Non-Tech. Ex. I	Non-Tech. Ex. II	Tech. & Prof. I	Tech. & Prof. II	Ministerial & Non-Tech.	Trade	Manual Workers Skilled	Manual Wokers Unskilled	Priest s Astrologers & unearned income	Total
1920—30	.. ..	13·33 (5·41)	15·56 (13·73)	11·11 (4·31)	26·16 (1·82)	15·56 (1·99)	6·67 (1·64)	4·44 (0·96)	6·67 (15·79)	100·00 (2·62)
1940—46	2·87 (27·78)	6·90 (10·81)	2·30 (7·84)	0·57 (0·86)	63·80 (16·87)	9·20 (4·55)	7·47 (7·10)	6·32 (5·29)	0·57 (4·26)	100·00 (10·14)
47	.. ..	14·55 (7·21)	3·64 (3·92)	1·82 (0·86)	54·54 (4·56)	7·27 (1·14)	5·45 (1·64)	12·73 (3·37)	.. ..	100·00 (3·21)
48	2·15 (11·11)	5·38 (4·50)	2·15 (3·92)	6·45 (5·17)	45·16 (6·38)	26·88 (7·10)	7·53 (3·83)	4·30 (1·92)	.. ..	100·00 (5·42)
49	... ..	.. ..	2·44 (1·96)	7·32 (2·59)	48·77 (3·04)	21·95 (2·56)	9·76 (2·19)	7·32 (1·44)	2·44 (5·26)	100·00 (2·59)
50	0·62 (11·11)	4·64 (13·51)	0·93 (5·88)	7·74 (21·55)	18·89 (9·27)	45·50 (41·76)	10·84 (19·13)	9·29 (14·42)	1·55 (26·32)	100·00 (18·82)
51	2·00 (5·56)	8·00 (3·60)	4·00 (3·92)	12·00 (5·17)	36·00 (2·74)	26·00 (3·69)	6·00 (1·64)	6·00 (1·44)	.. ..	100·00 (2·91)
1947—53	0·89 (27·78)	5·69 (28·83)	1·78 (19·61)	7·30 (35·34)	30·43 (25·99)	35·23 (56·25)	9·25 (28·42)	8·36 (22·60)	1·07 (31·58)	100·00 (32·75)
1952—56	0·85 (16·66)	10·20 (32·43)	1·70 (11·70)	6·80 (20·69)	40·79 (21·88)	18·98 (19·03)	7·93 (15·30)	12·75 (21·63)	.. ..	100·00 (20·57)
1957—61	1·14 (27·78)	5·03 (19·82)	3·66 (31·37)	8·47 (31·90)	43·48 (28·28)	12·36 (15·34)	16·48 (39·34)	9·15 (19·23)	0·23 (5·26)	100·00 (25·47)
N.A.	.. ..	2·07 (2·70)	5·52 (15·69)	5·52 (6·90)	20·68 (4·56)	6·90 (2·84)	10·34 (8·20)	43·45 (30·29)	5·52 (42·11)	100·00 (8·45)
Total	1·05 (100·00)	6·47 (100·00)	2·97 (100·00)	6·76 (100·00)	38·35 (100·00)	20·51 (100·00)	10·66 (100·00)	12·12 (100·00)	1·11 (100·00)	100·00 (100·00) (1,716)

SECTION V

Housing and Civil Conditions

Some data have also been collected on housing condition of the locality. These are not enough to give a detailed and complete picture of the state of housing of the area, but may be cited to give a rough general idea.

As has already been pointed out earlier, about 80 per cent of the population of the area live in squatter colonies. These squatter colonies consist of hurriedly improvised huts on forcibly occupied plots of land. Swiftness necessary to acquire land forcibly as also uncertainty regarding future legal position and lack of capital, stood in the way of any prior or subsequent development of the area and, in most cases, even of any large scale repair work. Most of the houses stood on plots of about three kottahs of land and, in a majority of cases, are of *kutcha* floor, bamboo walls and tiled or tinned roof. As a matter of fact, even to a casual observer temporary and camp-like nature of the houses will be apparent. In the non-squatting sectors things are better and the houses are, in general, brickbuilt.

Water supply position and sanitary conditions (Table No. 5·1) in this area, though somewhat better than those in Calcutta, leave much to be desired. 2·40 per cent of the households of the area are without any lavatory of their own and for their exclusive use. 39·90 per cent are without tubewells (perhaps the only source of drinking water) and have to procure water for their daily use from those of their neighbours or from those sunk for communal use. The corresponding figures for the Calcutta city, as given in Sri Chakrabarty's* book on 'Housing Condition in Calcutta', have been 12·00 per cent and 30·00 per cent respectively. These figures will not, however, give a correct picture of Calcutta for nearly 78·00 per cent of the families have had to share a latrine with others and 60·00 per cent of the families a water tap with others. Thus we find that so far as provisions of water and that of latrines are concerned, Jadavpur is decidedly in a better position than Calcutta city. However, though over 97·00 per cent of the households have their own exclusive latrines, over 70·00 per cent of them are of service type. This is clearly unhygienic for the degree of congestion prevailing in the area. Only 26·90 per cent of the houses located mostly in the non-squatting blocks, have latrines of the sanitary type.

*Housing Condition in Calcutta—by Syamal Chakrabarty, M.A.; Book land Pvt. Ltd., Calcutta.

TABLE 5.1

Sanitary condition and Water Supply Position

Year of Migration	No water & no privy	No water & service privy	No water & sanitary privy	Well & service privy	Well & sanitary privy	Tube well & no privy	Tubewell & service privy	Tubewell & sanitary privy	Total
Residents	7·14	7·14	7.14	7·14	..	..	14·29	57·14	100·0 (14)
Upto 1941	..	5·26	..	..	..	..	5·26	89·47	100·00 (19)
1942—46	16·00	24·00	4·00	..	..	..	36·00	20·00	100·00 (25)
1947	1·23	25·32	3·70	..	..	..	29·01	40·74	100·00 (162)
1948	0·87	34·94	2·62	0·87	0·44	0·44	33·19	26·63	100·00 (229)
1949	..	32·30	3·08	..	..	1·54	29·23	33·85	100·00 (65)
1950	2·18	42·91	1·31	0·87	0·22	0·44	40·08	11·99	100·00 (459)
1951	8·33	41·67	..	..	..	..	16·67	33·33	100·00 (12)
1947—51	1·62	37·11	2·16	0·65	0·22	0·43	35·38	22·43	100·00 (927)
1952—56	..	36·36	..	..	..	..	27·27	36·37	100·00 (11)
1957—58	..	25·00	..	..	..	..	..	75·00	100·00 (4)
N. A.	..	..	..	..	..	..	..	..	..
Total	2·00 (20)	35·70 (357)	2·20 (22)	0·70 (7)	0·20 (2)	0·40 (4)	34·30 (343)	24·50 (245)	100·00 (1000)

Average number of rooms available per family is 2·17 in Jadavpur as against 0·89 in Calcutta. Thus, people at Jadavpur may be said to enjoy, on an average, more living space than people at Calcutta. This is, however, only to be expected. For in squatter colonies, the residents, as a rule, allotted themselves plots on 'one family one plot' basis; and on these plots, they were to build houses for their own use. Thus in general a household in a squatter colony occupy one entire premise, and may be said to enjoy a degree of privacy which might well be described as a luxury for families of corresponding income group in Calcutta though they lack many basic amenities of city life.

Irregular nature of ownership, has also made the Calcutta Electricity Supply Corporation reluctant to extend electricity supply to the squatter colonies and therefore even being so near to a source of supply of electricity, the houses, in squatter colonies are without lights and are thus deprived of one of the basic amenities of a civil life.

When classified according to nature of ownership (Table No. 5·2) of the houses they occupy, by far the majority of the families (80·00 per cent) are found to be living on forcibly accupied plots. Very few families, on the whole, live in rented houses and almost all of those few are in non-squatting blocks. Absence of rented households in the squatter colonies is, however, quite easily explained. Squatters in general did not have enough capital to put up a house big enough to have spare rooms to be rented out, and uncertainty regarding occupancy right made them reluctant to allow others to take possession of even a part of their houses, as there was always a danger that tenants might in future put forward a claim to ownership.

TABLE 5.2

Nature of Ownership

Year of Migration	Not Available	Owned	Squatted	Govt. Allotted	Others	Total
ts	28·57	71·43	..	..	..	100·00 (14)
Upto 1941	10·53	68·42	15·79	..	5·26	100·00 (19
1942—46	40·00	6·67	45·33	..	..	100·00 (25)
1947	19·75	2·47	64·82	12·96	..	100·00 (162)
1948	10·48	3·06	79·91	6·55	..	100·00 (229)
1949	9·23	4·62	78·46	7·69	..	100·00 (65)
1950	4·14	5·27	91·50	0·87	0·22	100·00 (459)
1951	8·33	..	83·34	8·33	..	100·00 (12)
1947—51	8·85	3·13	82·95	4·96	0·11	100·00 (927)
1952—56	45·46	18·18	36·36	..	..	100·00 (11)
1957—58	75·00	..	25·00	..	..	100·0 (4)

When nature of ownership is studied with respect to year of migration families migrating before 1947 are found to have a smaller proportion of squatters among them. The proportion of the squatters touched the peak figure of 91·50 per cent in 1950. That was, as we know, the worst year of migration and consequently the displaced migrants of the year were in a much more desperate state and were, therefore, prepared to adopt desperate means to get themselves rehabilitated.

As has already been pointed out, in squatter colonies, the occupiers are not yet the legal masters of the plots they occupy, and the settlement of their occupancy rights, in spite of some governmental effort in that line, is still pending, even after more than a decade. Naturally, therefore, the squatters do not pay municipal tax, and as an inevitable consequence, are neglected by the Calcutta Corporation, though these squatter colonies constitute the bulk of ward No. 80. As a result of the negligence of the Corporation conservancy and sewerage system in the squatter colonies are in a deplorable condition. Seldom a conservancy worker of the Corporation visits the interior parts of these colonies. Barring a few main roads, most of them are narrow, tortuous, *kutcha* and without lights. In the rainly season, it is common experience, to find many such roads in the interior to remain waterlogged for weeks together.

SECTION VI

Consumption Expenditure

As possible indicators to economic well-being of the sample households some information was collected on consumption expenditures of the sample families. This has been given in Table Nos. 6·1 and 6·2.

Though income figures would have been a better indicator, questions on income were deliberately omitted from the questionnaire as incomes are seldom correctly returned. Admittedly however, consumption expenditures, particularly when, as in our case, item-wise expenditures are asked for, also have the possibility to be misreported, but they are likely to be more reliable than income figures, and would serve as a better indicator of the economic well-being of the population, apart from giving a fairly detailed idea about is consumption pattern.

Entire consumption expenditure of a family has been grouped under six main consumption heads, *e.g.* (1) 'Footwear and Clothing', (2) 'Cereals and Pulses', (3) 'Vegetables Fish and Meat', (4) 'Gur and Sugar', (5) 'Fuel and Light', and (6) 'Education'. Expenditure on items like 'Milk and Milk Products', 'Stationery', 'Upholstry' etc. though collected separately have conveniently been merged with one or the other of the six main consumption heads, as expenditure on them has been found to be rather too small.

TABLE 6.1

Year of migration of family heads and per capita *consumption in Rs. of the sample population on different major items*

Year of migration	Per capita consumption in rupees					
	Foot-wear (Annual)	Pulses (Monthly)	Fish & Meat (Monthly)	Fuel & Light (Monthly)	Education (Monthly)	Gur & Sugar (Monthly)
Residents	44·70	4·61	4·02	1·82	3·92	1·14
Upto 1941	79·51	5·34	6·45	3·22	8·69	1·81
1942—46	39·97	4·66	3·56	1·71	4·21	0·98
1947—51	18·26	2·03	3·45	1·35	3·45	0·97
1952—56	49·42	6·69	6·02	2·00	4·85	1·63
1957—61	37·78	4·00	2·50	2·39	1·67	0·83
Total	20·47	2·25	3·54	1·41	3·59	0·99

As more than 80 per cent of the families of the area under survey are squatters and as a good proportion of the remainder are owners of the houses they occupy, percentage of rented households in insignificant; and therefore rent does not enter as an

important item in consumption schedule of the area, as it does into that of Calcutta.

Per capita monthly consumption of the sample population has been found to be as low as Rs. 13·50 P. When classified according to year of migration of the family heads, persistent decline in *per capita* consumption, reaching a minimum (Rs. 12·77) for those migrating between 1947—51, is observed. This is clearly due to the fact that the period 1947—51 being the time of heavy migration from East Bengal most of the migrants of that period could not as yet rehabilitate themselves satisfactorily and are still struggling hard for an economic existence.

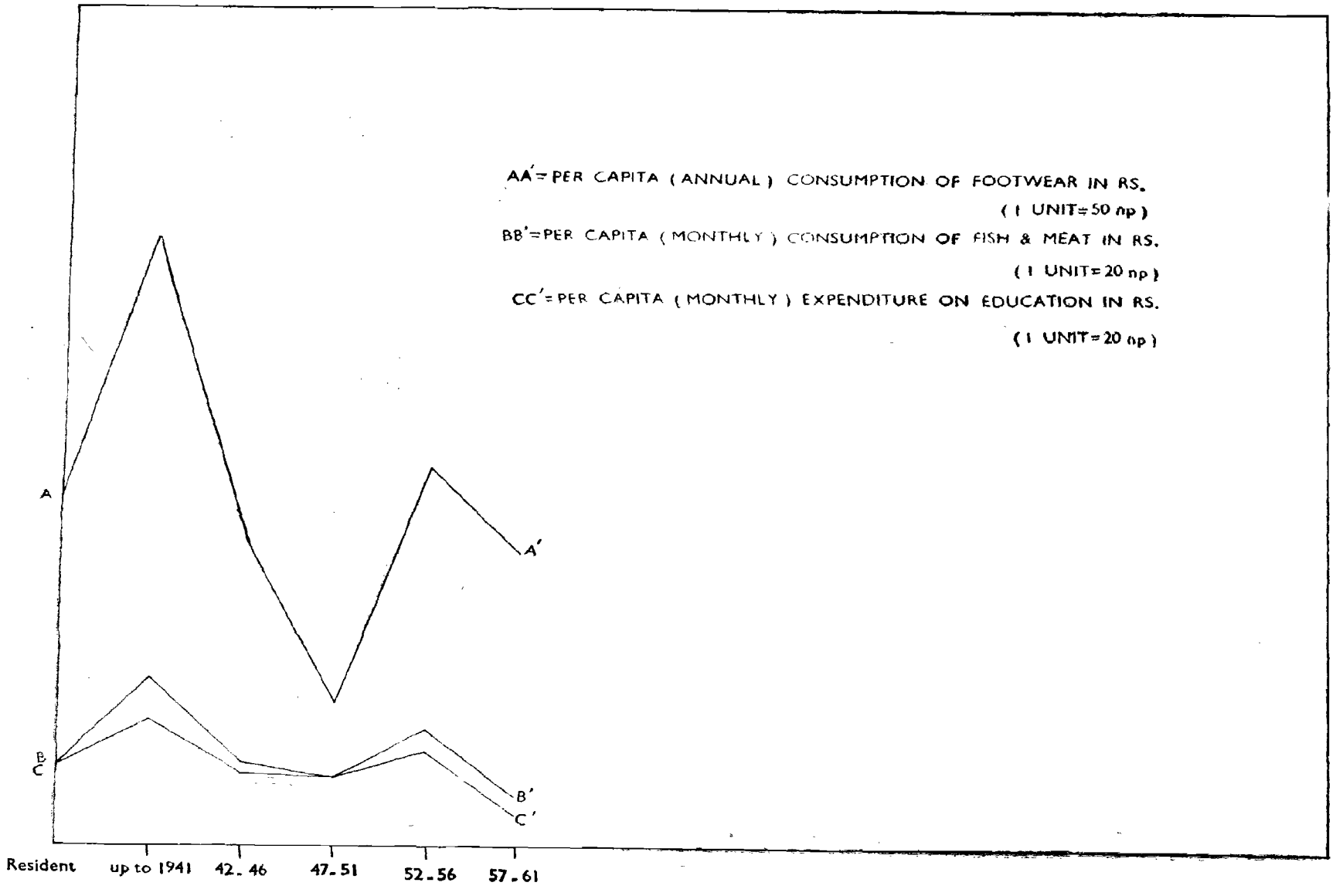
Item-wise percentage distribution of this meagre total *per capita* consumption expenditure, shows, as expected, that the bulk (over 50 per cent) of it is spent on food. It has already been pointed out that the proportion of expenditure on items like 'milk and milk products', Stationeries', 'Upholstry' etc. (proportion spent on them is known to have direct correspondence with increase in income) has been insignificant.

TABLE 6.2

Percentage distribution of annual per capita *consumption on different major items*

Year of migration	Percentage *per capita* annual consumption						
	Footwear and clothing	Cereals & Pulses	Fish, Meat & Veg.	Fuel & Light	Education	Gur & Sugar	Total
Residents . . .	19·36	23·97	20·90	9·46	20·38	5·93	100·00 (Rs.230·82)
Upto 1941 . . .	20·62	16·62	20·07	10·02	27·04	5·63	100·00 (Rs.385·63)
1942—46 . . .	18·05	25·26	19·29	9·27	22·82	5·31	100·00 (Rs.221·41)
1947—51 . . .	11·91	15·91	27·01	10·57	27·01	7·59	100·00 (Rs.153·26)
1952—56 . . .	16·27	26·44	23·79	7·90	19·16	6·44	100·00 (Rs.303·70)
1957—61 . . .	21·66	27·50	17·20	16·44	11·49	5·71	100·00 (Rs.174·46)
Total . . .	**12·79**	**16·66**	**28·20**	**10·44**	**26·58**	**7·33**	**100·00 (Rs.162·16)**

There is one very important peculiarity in the consumption pattern of the area. Proportions spent, in general, on education are found to be disproportionately high. Even for the families migrating between 1947—51, and having the lowest *per capita* total consumption, this percentage (27.01) is very high. Evidently, this reflects the importance attached to education by the inhabitants of the region. They, it appears, are prepared to cut down their consumption on other heads in order to enable them to send their children to school. This once again confirms our supposition that people of low middel class group, who in general, are known for their predilection towards education constitute the bulk of the population of Jadavpur.


AA'= PER CAPITA (ANNUAL) CONSUMPTION OF FOOTWEAR IN RS.
(1 UNIT= 50 np)
BB'= PER CAPITA (MONTHLY) CONSUMPTION OF FISH & MEAT IN RS.
(1 UNIT= 20 np)
CC'= PER CAPITA (MONTHLY) EXPENDITURE ON EDUCATION IN RS.
(1 UNIT= 20 np)
A
A'
B
C
B'
C'
Resident
up to 1941
42 - 46
47 - 51
52 - 56
57 - 61

SECTION VII

In the earlier sections we have discussed the problems of occupation and employment generally. We have seen the problems posed by the immigrants from East Pakistan. In this connection, we have broadly touched upon the various problems faced by an immigrant colony and the gradual lines of evolution of these colonies.

In this section, we shall go more deeply into the problems of occupation and employment in the colony itself. For this purpose, in addition to the survey of migrant families in the colony a detailed study was made of the various enterprises in the colony. This was done as information on the problems associated with employment, or, occupation can some time be better appreciated in relation to the enterprise itself. The tables are generally based on a sample of 196 units out of a total of 1,263. (15·5 per cent). Owing to rejections this number varies from table to table. Where relevant, corresponding population estimates are also given. The following aspects of local employment are taken up here.

1. The dependence of the population on local employment and its extent. The concept of the multiplier and its size.

2. The structure of local occupations and the mobility of such occupations.

3. The local labour force and employment.

4. Nature of local enterprise, employment generation and size of capital.

4a. A study of some aspects of viability of local enterprises.

5. Growth of a local enterprise over time, growth of its assets, capital formation, labour force and employment potential.

6. Detailed study of the life cycle of local employment and enterprises.

Table 7·1 gives the distribution of occupation according as they are local or non-local as found from the household survey carried out in the colony.

The bulk of local employment is mainly based on what are called petty trade and petty business of some type or other. Some of this employment has a very low income and may even be described as concealed unemployment. The figure for unemployment in the area is 11 per cent which is slightly higher than that in the city.

Trade claims roughly fifty per cent of the locally employed, skilled and unskilled labour claim another big portion.

TABLE 7.1

Occupation	In the immediate neighbourhood	Within Jadavpur area	Calcutta	Outside Calcutta proper but within Calcutta industrial	Elsewhere in Bengal	Rest & not available	Total
1	2	3	4	5	6	7	8
Non-Tech. Executive I		5·53	44·43	16·67	56·67	27·78	100·00 (18)
Non-Tech. Executive II .	0·90	0·90	60·37	11·71	10·81	15·31	100·00 (111)

TABLE 7.1—*concld.*

Occupation	In the immediate neigh-bourhood	Within Jadavpur area	Calcutta	Outside Calcutta proper but within Calcutta industrial	Elsewhere in Bengal	Rest & not available	Total
1	2	3	4	5	6	7	8
Tech. & Professional I . .	4·08	16·33	40·83	10·20	10·20	18·36	100·00 (49)
Tech. & Professional II .	8·62	22·41	32·77	9·48	5·17	21·55	100·00 (116)
Ministerial	0·17	4·48	69·48	9·95	4·31	11·61	100·00 (603)
Traders . . .	11·71	33·71	37·72	2·00	0·57	14·29	100·00 (350)
Manual Worker Skilled .	0·82	11·88	50·00	10·25	7·78	19·27	100·00 (244)
Manual Workers Unskilled .	41·67	13·73	26·47	6·86	1·47	9·80	100·00 (204)
Priests, Astrologers etc. . .	13·33	6·67	6·67	..	..	73·33	100·00 (15)
Misc. Jobs etc.	..	25·00	..	..	..	75·00	100·00 (4)
Total . .	4·03 (69)	14·00 (240)	50·23 (861)	8·05 (138)	4·32 (74)	19·37 (332)	100·00 (1,714)

It may be seen that Calcutta absorbs the bulk of the employed persons but quite a large proportion of the total are also employed locally. In fact, 309 (69+240) persons out of a total employed population of 1,714, or, 18 per cent, are absorbed locally. Assuming this ratio as constant we can set up the following model.

Let E_L, E_{nl}, E_t denote local, non-local and total employment, then we can write,

$$E_t = E_l + E_{nl}$$
$$= cE_t + E_{nl}$$
$$Or,\ (1-c)E_t = E_{nl}$$
$$Or,\ E_t = \frac{1}{1-c} \cdot E_{nl}$$

$$\text{Thus, } \frac{1}{1-c} \text{ or } \frac{1}{1-.18} = \frac{1}{.82}$$

gives the average local multiplier for employment per unit of employment generated outside the area. Roughly, thus, employment outside the colony generates an additional 20 per cent employment inside the colony.

An alternative approach to the same problem may be given through local enterprises.

The estimated total employment in the area is 24,178 from our sampling fraction as found in the household survey. The survey of the enterprises gives the estimate of local employment in all types of enterprises and services of this nature as 4,354. This gives us again an estimate of C= ·178 which is near enough to the estimate obtained from the family schedule giving a multiplier of the order of

$$\frac{1}{1 - .178} = \frac{1}{.82}$$

meaning that an employment outside the area which is analogous to autonomous employment creates around 20 per cent employment within the colony.

The non-local occupations are mostly situated in Calcutta. The nature of that occupation have been described in an earlier section.

The following table gives in detail the distribution of enterprises in the locality by type.

Type of Business	Number of Shops
Grocery, Tea	157
Saloon	49
Tailoring, Shoe making	92
Cloth, Hosiery	28
Stationery, Bangles	68
Rice, Chira, Muri	84
Laundry	36
Tea Stall	101
Sweetmeats	60
Medical	107
Photo, Electrical, Radio, Watch, Cycle	90
Tin, Black smith, Trunks, Hardware, Utensils, Brassware	72
Book binding, Photo framing, Painting	24
Building materials	82
Pan-bidi	69
Wheat or Straw cutting, fodder	24
Coal	19
Book Seller, Typewriter, Image making, Decorator	55
Jewellery	40
Fruits, Vegetable, Meat	13
Factory	5
N. A.	24
Total	1,263

While there may be some errors of omission, the above table gives an approximate estimate of shops in the locality, from which the sample was drawn.

As is natural, the majority of the shops are catering services, or distributive trades. They are thus entirely in the tertiary sector. There are no manufacturing or cottage craft type of units. In some way, this also shows the lack of special skills in the migrant population which forces them only on to the tertiary sector or service.

The small familial type of the enterprises are further reflected in the following table giving the distribution (sample) by both the type of enterprise and capital invested in the business.

TABLE 7·2

Total Capital	Grocery, Tea	Saloon	Tailoring, Shoe making.	Cloth, Hosiery	Stationery, Bangles	Rice, Chira, Muri	Laundry	Tea Stall	Sweetmeats	Medical	Photo, Electrical, Radio, Watch, Cycle	Tin, Black smith, Trunk, Hard-ware, Utensil, Brassware	Book binding, Photo framing, Painting	Building materials	Pan-bidi	Wheat or Straw cutting, Khole, Bhusi	Coal	Book Seller, Type writing, Image making, Decorators	Jewellery	Others	Total
Upto 250 . .	3	2	4	..	1	1	1	8	1	..	2	3	1	1	4	..	2	1	1	..	36
251—500 . .	1	3	4	1	1	..	..	6	3	2	1	1	2	1	2	2	..	1	1	1	32
501—750 . .	2	..	3	..	1	1	1	..	..	2	1	..	..	..	1	1	..	..	..	..	13
751—1000 . .	5	2	2	..	1	..	2	1	..	4	..	1	..	..	1	..	..	..	2	..	21
1001—2000 . .	9	..	1	1	3	1	1	..	3	2	5	4	1	1	3	1	..	1	..	..	36
2001—3000 . .	3	1	..	..	2	1	..	3	1	4	3	..	..	1	1	..	..	..	..	..	19
3001—4000 . .	..	..	..	..	1	3	..	..	..	1	..	2	..	1	1	..	..	2	..	..	11
4001—5000 . .	..	..	..	2	2	..	..	..	..	2	..	2	..	..	2	..	..	..	..	..	9
5001—7500 . .	8	..	..	..	..	1	..	..	..	1	1	1	..	1	..	1	..	..	2	..	16
7501—10,000 . .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
10,001 & above .	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1
N. A. . . .	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2
Total . .	31	8	14	4	13	8	5	18	8	19	13	14	4	5	11	7	2	5	6	1	196

A further feature emphasising this small, familial type of enterprise is given by the following table showing the distance of the enterprise from residence by date of migration of the proprietor.

TABLE 7.3

Year of migration	On the premises	1/8th mile	1/4th mile	1/2 mile	1 mile	1-1/2 mile	2 mile	3 mile	4 mile	8 mile	12 mile	Total
(East Pakistan Migrants)												
Upto 42	1	..	2	3	2	..	..	..	..	..	..	8
43—46	3	..	4	..	..	..	..	1	..	..	..	8
47—56	50	7	44	10	20	4	3	1	2	1	1	143
(Other Migrants)												
Upto 42	2	..	..	..	..	..	..	..	..	..	..	2
43—46	1	..	..	..	1	..	..	..	..	..	..	2
47—61	14	..	1	..	1	..	..	..	..	..	..	16
Resident	6	1	3	1	1	2	..	..	1	..	..	15
Total	77	8	54	14	25	6	3	2	3	1	1	194

Most enterprises are located within half a mile from the residence. Migrants have often opened shops right in their houses as they are mostly of a part-time character.

Table 7·4 gives the classification of the occupations by date of starting which brings out the nature of evolution of economic life in this recently colonised area.

TABLE—7·3

Date of Starting	Non-Tech Excu. I, II Tech. & No. Prof. I, II.	Menials	Shop Assistant	Tailoring	Stationery	Fish, Meat, Eggs, Grocery, Green Grocer,	Business Misc.	Hawker, Milkman, Canvassor	Hotel, Confectionery Restaurant, Tea Stall, Pan-bidi etc.	Jewellery	Medical	Hardware, Building materials	Electrical Appliances, Radio, Watch etc.	Laundry	Fuel etc.	Cloth	Cycle parts, Motor parts, Machinery (part.)	Manual Worker Skilled	Manual Worker Unskilled	Marriage broker, Astrologer, Priests	Misc. Jobs, Rtd. Persons with side income	Total
Original Residents	.. 1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
1912—1930	3 ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3
1932—1935	2 ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2
1936—1940	2 1	..	..	..	..	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	5
1941—1945	.. ..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	3
1946—1950	14 9	1	3	8	3	40	17	8	1	1	1	5	1	1	..	..	1	34	15	5	..	168
1951—1955	8 5	..	4	..	4	10	3	2	4	..	..	1	..	..	1	..	1	3	14	..	..	60
1956—1960	11 10	3	2	1	1	9	3	1	6	1	..	..	1	..	..	2	..	6	4	..	1	62
1961	2 1	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	2	1	..	..	7
Total	**42 27**	**4**	**9**	**11**	**8**	**59**	**24**	**12**	**11**	**3**	**1**	**6**	**2**	**1**	**1**	**2**	**2**	**45**	**35**	**5**	**1**	**311**

As may be seen no local enterprise practically existed before 1948. From 1948 some of the catering types started working and from 1950 onwards more essential types of enterprises like groceries came up. Enterprises dealing with articles other than food came much later.

The colony is very recent and, therefore, there is little of interest in studying change of occupation from a structural standpoint. But change of occupation has importance in another way. In a refugee colony relative stability of occupations are an indicator of success in making a living. Many occupations are taken up not because they are paying but rather because they can be easily taken up. Such occupations are left also as soon as something better comes up. We, therefore, study the shift of occupation in some detail.

The tables below give the change of occupation in two stages. The first one gives the change from pre-migration occupation to post-migration occupation and the 2nd one gives the change from one post migration occupation to another.

TABLE 7·5

Pre-migration occupation	Post-migration occupation 1	2	3	4	5	6	7	8	9	10	11	12	Total
1 Dealer of household durables, Stationery, Jewellery etc.	15	1	3	..	..	..	2	..	..	..	..	..	22
2 Cloth & Footwear	1	4	1	..	..	..	..	..	..	..	..	..	6
3 Food, Drink, Tobacco	..	..	7	..	..	..	..	..	..	..	..	..	8
4 Personal Services	..	..	..	..	..	..	..	..	..	..	..	..	..
5 (*a*) Profession	..	..	..	9	..	..	..	..	..	..	..	..	9
(*b*) Others	1	..	..	..	8	..	..	..	..	..	..	..	..
6 Fuel & Light	..	..	..	..	..	..	..	..	..	..	..	..	..
7 Groceries	1	2	3	..	1	..	7	..	..	..	..	..	14
8 Miscellaneous	1	..	5	..	..	..	1	4	2	..	..	..	13
9 Services (Office)	2	1	2	..	1	..	3	2	8	..	..	..	19
10 Student	5	2	2	..	8	..	3	2	12	4	..	..	38
11 Cultivation	1	1	6	..	3	..	1	..	..	..	..	..	12
12 Unemployed	..	..	1	1	..	..	..	..	..	..	..	..	2
Total	28	11	30	10	21	..	18	8	22	4	..	..	152

TABLE 7.6

1st Post-migration occupation	2nd Post-migration Occupation												Total
	1	2	3	4	5	6	7	8	9	10	11	12	
1 Dealer of household durables, Stationery, Jewellery etc.	18	1	3	..	..	..	6	..	..	..	..	..	28
2 Cloth & Footwear	1	..	1	..	1	..	2	3	..	..	..	..	10
3 Food, Drink, Tobacco	..	..	25	..	..	..	..	..	..	..	..	..	25
4 Personal services	..	..	..	14	..	..	..	..	..	..	..	..	14
5 (*a*) Profession	..	..	..	..	25	..	1	..	..	..	..	..	26
(*b*) Others	..	..	..	..	..	..	..	..	..	..	..	..	..
6 Fuel Light	..	..	..	..	..	..	..	..	..	..	..	..	..
7 Groceries	..	..	1	..	..	..	15	1	..	..	..	..	1
8 Miscellaneous	4	..	1	..	..	..	1	11	..	..	..	..	17
9 Services (Office)	4	1	1	1	5	..	1	5	5	1	..	..	24
10 Student	..	..	..	1	2	..	..	..	..	..	..	..	3
11 Cultivation	..	..	..	1	..	..	2	..	..	..	..	..	3
12 Unemployed	..	..	..	..	..	..	..	..	..	..	..	..	..
Total	26	4	29	17	33	..	22	20	5	1	..	..	15

Some general features may be noted. More changes have taken place in the 1st than in the second *i.e.* more stability has come with time.

A lot of people in services have gone for business, in the second stage.

Groceries and stationeries have been changed a lot in the 1st stage, cloth and footwear in the 2nd stage have similarly been given up.

It is rather difficult to generalise but it seems that small shops can multiply faster and survive in competition with others if they are selling some commodity were, variety or range and, therefore, size of stock is not essential but distance is an essential factor. Thus to buy cloth or stationery one goes a little distance if a better shop is available giving wider choice. For tea or cigarette one prefers the nearest. Hence shops of the latter type tend to multiply and manage to stay, though, evidently they squeeze each other.

The change from one occupation to another gives an indication of the relative popularity and stability of different types of enterprises. An even better indicator of the same would be given by a study of the average duration of enterprises. This duration has been studied both for type of enterprises as also for date of migration in tables 7·8 and 7·9. The enterprises are grouped according as these are first attempt at business or second attempt and so on. This has been done as we often find that staying in business means moving from one failure to another.

TABLE 7·7

Type of 1st Business in Calcutta	No. of Shops
Cloth, Hosiery	1
Hardware, Tin, Utensils, Brassware	2
Grocery, Tea	6
Photo, Electric, Radio, Watch, Cycle	3
Wheat milling or Straw cutting, Khole, Bhusi	3
Saloon	5
Rice, Chira, Muri	3
Jewellery	2
Stationery, Bangle	4
Tea Stall	12
Book-seller, Type-writing, Image making, Decorator	2
Laundry	1
Pan-Bidi etc.	5
Building materials	2
Book-binding, Photo framing, Painting	3
Coal	2
Medical	4
Sweetmeats	4
Tailoring, Shoe making	11
Hawker	7
Others	2
	84

TABLE 7·8

Type of Enterprises	Average duration in years by stage of enterprise		
	1st-2nd	2nd-3rd	3rd-4th
1 Dealers in Household durables, Stationery, Jewellery	12·78	6·73	5·25
2 Cloth & Footwear	9·33	7·60	4·00
3 Food, Drink and Tobacco	17·00	6·68	5·70
4 Personal Services (professional)	17·72	7·33	8·29
5 Personal services (others)	15·67	8·19	7·80
6 Fuel & Light	..	..	..
7 Groceries	17·44	8·35	5·75
8 Miscellaneous	21·71	8·06	11·71
9 Services	12·44	6·64	3·17
10 Student	..	..	1·00
11 Cultivation	24·00	..	..
12 Unemployed	..	..	..
13 Average of Employed persons	16·45	7·45	4·49

This is further expanded in table 7·9 which gives the average life for both the group staying on and the group leaving. The number on which averages are based are given in brackets.

TABLE 7·9

Year of migration	Av. of those in 2nd stage not changing	Av. of those in 2nd stage changing to third	Av. of those in 3rd stage not changing	Av. of those in 3rd stage changing to 4th	Av. of those in 4th stage in final stage
Upto 46	5·16 (6)	8·85 (7)	343 (7)	6·00 (1)	4·00 (1)
47	12·50 (4)	5·86 (7)	7·85 (7)	3·20 (5)	4·60 (5)
48	10·88 (18)	6·55 (24)	6·54 (24)	8·00 (1)	5·00 (1)
49	11·67 (6)	6·25 (4)	6·75 (4)	5·00 (4)	6·00 (1)
50	10·35 (32)	9·05 (23)	4·91 (23)	2·17 (6)	5·00 (6)
51 to date	8·67 (8)	4·83 (6)	4·00 (6)	..	..

It may be seen that there is no significant difference between average life of different occupations or between enterprises due to date of migration. But, it is obvious that occupation which are frequently changed has less life or, in other words, the more the number of changes less is the duration.

In connection with this aspect of refugee business it would be relevant to present data analysing the history of past enterprises that have been recorded by proprietors who are now engaged otherwise. This is of interest as it is generally known that mortality of petty trade is very high and that often it is a slow way to destitution and bankruptcy in a highly competitive region.

Table 7·10 gives the business enterprises given up by date of giving up and average capital invested in the current business. The average capital of current business is an indicator of the personal economic level of the proprietor concerned.

TABLE 7·10

Date of giving up	No. given up (sample)	Estimated number of shops given up	Average Capital in Rs. in next business
50	3	19	500
52	2	13	3,350
54	1	6	1,150
56	5	32	1,024
57	3	19	2,107
58	4	26	2,548
59	3	19	2,185
60	1	6	2,100
61	2	13	1,7[illegible]
Total	24	153	1,8[illegible]

In the table above relating to given up enterprises, we have given both the sample as also the corresponding estimate to give an idea of the dimension of such occurrence in the area.

No particular trend by date of giving up is seen in the capital structure. Apart from the generally petty size of the shops no significant features are observed.

Table 7·11 gives the average capital with which next business was started to indicate the economic condition of the persons who failed in one enterprise. These tables are given by type of enterprise.

TABLE 7·11

Types	No. of Shops (Sample)	Estimated No. of Shops	Average Capital in Rs. in next business
Grocery, Tea	5	32	2,930
Tailoring, Shoe making	1	6	2,000
Cloth, Hosiery	5	32	1,416
Stationery, Bangles	2	13	530
Tin, Blacksmith, Trunk, Hardware, Utensils	1	6	2,600
Book binding, Photo framing, Painting .	1	6	1,080
Building materials	1	6	1,500
Book-seller, Type-writing, Decorator .	2	13	2,000
Others	6	39	1,543
Total	24	153	1,801

The capital in next business is not much different from the general average which indicate that these failures are very often transfers of insignificantly small assets from one type to another without much change.

Table 7·12 gives the type of business given up with the type taken up instead.

TABLE 7·12

(Estimate)

Number given up	Number taken up																
	Grocery, Tea	Saloon	Tailoring, Shoe making	Cloth, Hosiery	Stationery Bangle	Rice, Chira Muri	Laundry	Tea Stall	Sweetmeats	Tin, Blacksmith, Hardware, Utensils, Trunk	Book binding, Photo framing, Painting	Building materials	Pan-bidi	Wheat or Straw cutting, Khol Bhusi	Book-seller, Type-writing, Decorator, aking I	Others	Total
Grocery, Tea	--	--	--	--	--	6	--	--	7	--	--	6	--	13	--	--	32
Saloon	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tailorinig, Shoe making	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6
Cloth, Hosiery	13	--	--	--	6	--	7	--	--	--	--	--	--	--	--	6	32
Stationery, Bangle	6	--	--	--	--	--	--	--	--	7	--	--	6	--	--	--	13
Ricc, Chira, Muri	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Laundry	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tea Stall	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sweetmeats	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tin, Blacksmith, Trunk, Hardware	--	--	--	--	6	--	--	--	--	--	--	--	--	--	--	--	6
Book-binding, Photo framing, Painting	--	--	--	--	--	--	--	6	--	6	--	--	--	--	--	--	6
Building material	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6
Pan-bidi	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Wheat etc.	--	--	--	--	--	--	--	6	--	6	--	--	--	--	--	--	--
Book-sellers etc.	--	--	--	--	7	--	--	--	--	--	--	--	--	--	--	--	13
Others	19	--	--	--	--	--	--	--	--	13	--	--	--	--	--	--	38
Total	**38**	--	--	--	**19**	**6**	**7**	**6**	**7**	32	--	6	12	13	--	6	152

As the data are small no significant conclusion may be drawn. Of the important groups taken up are grocery, mechanical groups etc. while not loss has been suffered by cloth, hosiery. Grocery has had a high turnover but no net loss in number. This is possibly because grocery is a convenient entry trade with stationery, pan-bidi and tea shops etc.

Table 7·13 gives the financial condition of the proprietors who have reported failures in one set of enterprises.

TABLE 7.13

(*Average per Shop in Rs.*)

Year of failure	No. of Shops	Initial Capital	Capital acquired before failure	Capital acquired after failure	Domestic Assets before failure	Domestic Assets acquired after failure
1950	3	500	173	3,125	1,075	48
1952	2	3,350	3,500	2,500	4,450	..
1954	1	1,150	..	..	9,000	5,000
1956	5	1,024	143	233	3,838	2,070
1957	3	2,107	1,283	..	950	450
1958	4	2,548	317	100	3,483	400
1959	3	2,185	..	330	625	..
1960	1	2,100	..	..	4,500	..
1961	2	1,795	..	..	2,500	..

In some cases business capital has been lost due to failure but not always. Domestic assets in most cases were acquired before failure. In some enterprises evidence of success in new business is shown by acquiring of larger domestic assets after failure in one business. In general it may be said that neither success nor failure is spectacular. Both are affecting the proprietors only very slowly. We conclude this section with a small note on the profession of Hawking, which is a time honoured entry trade in any big city.

As a petty profession this is an entry trade for the poorest group of migrants. Table 7·14 below gives the number by date of starting and average life and investment.

TABLE 7.14

Year of Starting	No. of Hawker	Average Life	Average Investment (*in Rs.*)
1948	1	10	90
1949	3	8	1,463
1950	6	7	1,278
1953	3	5	110
Total	13	7	960

TABLE 7.15

Year of migration	Year of starting of Hawkery								
	1949	1950	1953	1954	1956	1957	1958	1959	Tota.
1947	..	..	..	..	..	..	1	..	1
1948	1	..	..	..	1	..	..	..	2
1949	..	1	..	1	..	..	..	..	2
1950	..	1	1	..	1	1	1	1	6
1953	..	..	..	..	2	..	..	..	2
Total	1	2	1	1	4	1	2	1	13

We now give figures on some of the secular trends in economic activities in the area. Tables 7·16—7·19 give the growth of local enterprise, employment, capital and population. The data are given in cumulated form by year of starting.

TABLE—7·16

(*Sample in Rs.*)

ar of starting	No. of Shops started	Capital fixed	Capital working	Total Capital	Average Capital
1937	1	500	..	500	500
1945	1	100	35	135	135
1946	1	100	150	250	250
1947	2	2,015	308	2,323	1,162
1948	2	1,250	800	2,050	1,025
1949	9	8,825	5,743	14,568	1,619
1950	36	43,650	24,930	68,580	1,905
1951	8	16,500	4,600	21,100	2,638
1952	13	16,200	11,250	27,450	2,112
1953	14	11,200	7,245	18,445	1,318
195	6	4,676	3,000	7,676	1,279
1955	4	3,610	6,551	10,161	2,540
1956	17	13,280	16,715	29,995	1,764
1957	11	12,250	19,370	31,620	2,875
1958	20	15,525	20,570	36,095	1,805
1959	20	15,385	12,750	28,135	1,407
1960	17	8,205	5,905	14,110	830
1961	11	4,620	9,265	13,885	1,262
Total	193	177,891	149,187	327,078	1,695

TABLE 7.17

(*Sample*)

Date of Starting	No. of Shops	No. of Employees: Family	No. of Employees: non-Family	Initial No. of Employees	Final No. of Employees	Av. Initial No. of Employees	Av. Final No. of Employees
1937	1	2	..	2	2	2	2
1945	1	1	..	1	1	1	1
1946	1	1	3	2	4	2	4
1947	2	3	7	6	10	3	5
1948	2	3	3	6	6	3	3
1949	9	12	8	18	20	2	2
1950	36	39	34	60	73	2	2
1951	8	10	7	20	17	3	2
1952	13	15	7	22	22	2	2
1953	14	16	9	22	25	2	2
1954	6	8	..	7	8	1	1
1955	4	7	1	8	8	2	2
1956	17	20	16	34	36	2	2
1957	11	14	12	22	26	2	2
1958	20	28	32	52	60	3	3
1959	20	24	16	33	40	2	2
1960	17	23	4	25	27	1	2
1961	11	16	5	21	21	2	2
Total	**193**	**242**	**164**	**261**	**406**	**37**	**41**

TABLE 7.18

(*Estimated number*)

Year of Starting	Estimated No. of Shops	Estimated Initial Employee	Estimated Final Employee	Cum. No. of Shops	Cum. No. of Initial Employee	Cum. No. of Final Employee
1937	8	16	16	8	16	16
1945	8	8	8	16	24	24
1946	8	16	32	24	40	56
1947	15	45	75	39	85	131
1948	15	45	45	54	130	176
1949	75	150	150	129	280	326
1950	300	600	600	429	880	926
1951	60	180	120	489	1,060	1,046
1952	105	210	210	596	1,270	1,256
1953	105	210	210	699	1,480	1,466
1954	45	45	45	744	1,525	1,511
1955	30	60	60	774	1,585	1,571
1956	135	270	270	909	1,855	1,841
1957	90	180	180	999	2,035	2,021
1958	150	450	450	1,149	2,485	2,471
1959	150	300	300	1,299	2,785	2,771
1960	135	135	270	1,434	2,920	3,041
1961	90	180	180	1,524	3,100	3,122

TABLE 7·19

(*Estimated number*)

Year	Estimated No. of Shops	Estimated Capital (in Rs.)	Cum. No. of Shops	Cum. Capital (in Rs.)
1937	8	4,000	8	4,000
1945	8	1,080	16	5,080
1946	8	2,000	24	7,080
1947	15	17,430	39	24,510
1948	15	15,375	54	39,885
1949	75	121,425	129	161,310
1950	300	571,500	429	732,810
1951	60	158,280	489	891,090
1952	105	221,760	594	1,112,850
1953	105	138,390	699	1,251,240
1954	45	57,555	744	1,308,795
1955	30	76,200	774	1,384,995
1956	135	238,140	909	1,623,135
1957	90	258,750	999	1,881,885
1958	150	270,750	1,149	2,152,635
1959	150	211,050	1,299	2,363,685
1960	135	112,050	1,424	2,475,735
1961	90	113,580	1,524	2,589,315

Employment again has been rising with capital, and the labour capital ratio over the years was as follows :

TABLE 7.20

Year of Starting	Cum. Final Employee (No.)	Cum. Capital (in Rs.)	Capital per Employee (in Rs.)	Population per shop
1937	16	4,000	250·00	150
1945	24	5,080	211·67	181
1946	56	7,080	126·43	183
1947	131	24,510	187·10	527
1948	176	39,885	226·62	812
1949	326	161,310	494·82	392
1950	926	732,810	791·37	217
1951	1,046	891,090	851·90	193
1952	1,256	1,112,850	886·03	159
1953	1,466	1,251,240	853·51	135
1954	1,511	1,308,795	866·18	127
1955	1,571	1,384,995	881·60	123
1956	1,841	1,623,135	881·66	105
1957	2,021	1,881,885	931·17	95
1958	2,471	2,152,633	871·16	83
1959	2,771	2,363,685	853·01	..
1960	3,041	2,475,735	814·12	..
1961	3,221	2,589,315	803·89	..

Capital to labour ratio has been rising sharply from 1949, partly due to price rise and partly due to increased competitive strength, up to 1957, declining slightly again since 1957.

The average domestic capital and business capital acquired is given by year of starting and by the intervening years from starting.

TABLE 7.21

Capital Acquired, Business and Domestic

Year of Starting	No. of Shops	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th	13th	Before Starting Business
		of starting business													
1937 to 1946 . .	Business	..	..	..	..	250	..	300	..	..	..	..	..	..	..
	Domestic	..	..	..	200	..	..	..	..	135	..	..	..	..	150
Total . . .	..	..	..	..	**200**	**250**	..	**300**	..	**135**	..	..	..	..	**150**
1947 to 1953 . .	Business	26,523	18,390	1,925	1,165	9,510	1,015	1,175	150	3,569	5,891	1,062	..	172	456
	Domestic	47,312	10,745	4,200	16,360	10,445	7,650	9,585	30,375	4,674	1,290	13,410	7,900	..	52,040
Total . . .		**73,835**	**29,135**	**6,125**	**17,525**	**19,955**	**8,665**	**10,760**	**30,525**	**8,243**	**7,181**	**14,472**	**7,900**	**172**	**52,496**
1954 to 1961 . .	Business	36,049	2,645	2,377	450	1,260	778	..	..	..	..	..	..	..	5,662
	Domestic	38,805	745	10,714	6,890	16,534	16,620	..	..	..	..	..	..	..	189,580
Total . .		**74,854**	**3,390**	**13,091**	**7,340**	**17,794**	**17,398**	..	..	..	..	..	..	..	**195,242**
GRAND TOTAL .		148,689	32,525	19,216	25,065	37,999	26,063	11,060	30,525	8,378	7,181	14,472	7,900	172	247,888

We now come to two important features of growth in a colony. These are the effect of competition within the colony on growth and the attraction provided by the colony to outsiders.

One index of this would be the No. of transfers of enterprises taking place and the number of refugees who are being involved.

Table 7·22 gives by year of migration, the number of transaction taking place as purchases out of refugees and the number of shops replacing other shops.

TABLE 7.22

(*Sample*)

Year of migration	Previous owner			Previous shop replaced, if any			Total
	Purchased	Refugee	Non-refugee	Started	Refugee	Non-refugee	
Original Residents	1	1	..	14	1	3	15
Migrants from East Pakistan							
Upto 40	1	..	..	6	..	..	7
41—46	..	..	..	9	1	..	9
47—56	9	6	1	134	14	3	143
Migrants from other region							
Upto 40	..	..	..	1	..	..	1
41—46	..	..	..	1	..	..	1
47—61	..	..	..	16	..	..	16
Date N.A.	..	..	..	2	..	..	2
Total	11	9	1	183	16	6	194

Out of 183 shops started 11 were purchased of which 9 were from refugees. Again 22 were shops replacing other shops of which 16 refugee shops replaced. Thus a fraction as large as a tenth of the shops are changing hands among the refugees. Original residents also started shops when the refugees came. How did they fare may be seen from the table below where residents and migrants for the West are analysed for their role in local enterprises.

Migrants from other areas also were encouraged to start business as may be seen from the above table and the table following.

TABLE 7.23 (A)

Type of Shop	*Resident*	Migrant from East *Pakistan*	Migrant from other areas	*Total*
1 Manufacturing	2	23	3	28
2 Dealer in goods	5	74	8	87
3 Caterer of services	8	62	9	79
Total	15	159	20	194

TABLE 7·23 (B)

Year of migration	Resident	Migrant from East Pakistan	Migrant from other areas	Total
	15	..	..	15
Up to 41	..	7	1	8
41—46	..	9	1	10
47—upward	..	143	18	161
Total	**15**	**159**	**20**	**194**

159 migrant shops, thus, have stimulated 15 residents and 20 other western migrants to open shops. This is another aspect again of the snow balling aspect of enterprises. Using the same model as before we can again formulate :

Let S^n_{EP} S^n_c and S^n_t

denote shops belonging to migrants from East Pakistan migrants from other areas. and to total migrants respectively.

Then, $S^n_{EP} + S^n_c = S^n_t$

$$S^n_o = \lambda\, S^n_t \left(\lambda = \frac{35}{194} = .18\right)$$

$$S^n_t = \frac{1}{1 - .18} \cdot S^n_{EP}$$

$$= \frac{1}{.82} \cdot S^n_{EP}$$

Giving us again the attraction in terms of other units stimulated by business started by the original migrants.

PART III

A GROWTH MODEL OF THE CALCUTTA METROPOLITAN AREA

A. GHOSH

105 R. G. of India—17.

SECTION I: INTRODUCTION

Demographic and economic factors and their inter relation over-time in the growth of a metropolitan region.

SECTION II

Demographic factors in growth: growth through natural increase and migration.

SECTION III

Economic factors in growth, occupation and employment structure: regional/local/national markets as factors in growth of employment.

SECTION IV

A model for growth of employment.

SECTION V

The interdependence of migration with employment and a growth model for migration.

SECTION VI

A complete model for growth of population and economic activity.

SECTION I

The object of this monograph is to analyse the major forces at work which are shaping the demographic and economic life of the Calcutta Metropolitan Region. The analysis is being done with a view to project into future decades the probable lines of development of this sprawling area as a whole and of Calcutta city, which is the heart of the region. The primacy of Calcutta in the Eastern zone of India is unquestioned.

The volume of employment it offers the magnitude of output, the large volume of foreign trade, the density of its population, all these place it in a position of unique importance in Eastern India. With the growth of the industrial complex of steel and engineering in the eastern belt its position as the only easily available port has become still more important. This position of the metropolitan area has been due to a fairly long period of historical growth and it is not the purpose of the monograph to go into the old history to trace the factors behind it. It is sufficient for our purpose to try and locate the major movements, demographic and economic, over the last few decades, the interaction between all-India growth and growth of the Metropolis and such factors in this inter-relationship as will enable broadly to determine the future lines of development of the area.

There are, by and large, two groups of factors that go to develop the life of a metropolis. One of these set may be called the demographic set. Given that due to some reason or other, certain initial clustering has taken place in an area, the biological laws of growth of human population generates a momentum in the future which helps it to retain its lead over similar clusters started later.

Many other economic stimulants to growth also have similar effect. Given a certain amount of overhead facilities that has grown in an area, such facilities draw more activities in. The entry of these activities in their turn leads to the availability of more overhead facilities. This process of mutual attraction determines that once a certain critical size has been obtained a system of chain reaction, or a feed back process will help to keep up the growth of the cluster into the distant future. Granting that the city and the metropolitan area of Calcutta did start with some initial advantages historical, physical or political, this feed back process kept it advancing to a larger and larger size once a critical mass has been acquired by it. The object of the monograph is not to dig into past history so much as to analyse this feed back process and construct a model to explain its economic and demographic growth in the immediate past and to forecast the immediate future.

The monograph is divided into six Sections. In Section II we have given a demographic analysis of the city and the metropolitan region, that is, we have discussed the births, deaths, natural increase and migration and its effect on the population. In Section III we have traced the occupation and employment structure of the city and the Metropolis, the importance of the different kinds of markets on its economy. In Section IV we have gone into the growth model for employment in the Metropolis from the standpoint of the national market and the share of the Metropolis, the relevant total market, etc. In Section V the interdependence is traced between migration and employment leading to a model for migration. In Section VI is presented a complete model of growth of population and economic activity

Section II

Table 2.1 gives the data on total population, natural population, and migrant population as given in the Census from 1911-1961 for Calcutta and Calcutta Metropolitan Area.

TABLE 2.1

Year of Cen	Total Population			Index		
	Urban India	Calcutta Metropolitan area	Calcutta	Urban India	Calcutta Metropolitan area	Calcutta
1911	27,592,914	1,804,346	998,012	100·00	100·00	100·00
1921	29,821,285	1,927,081	1,031,697	108·08	106·80	103·38
1931	35,029,084	2,192,678	1,140,862	126·95	121·52	114·31
1941	45,594,994	3,337,066	1,730,074	165·24	205·94	211·31
1951	61,867,109	4,893,982	2,548,677	224·21	271·23	255·38
1961	78,835,939	6,596,888	2,927,289	285·71	365·61	293·31

The average natural increase during 1911-61 has been 193 per cent in Calcutta and 266 per cent in the metropolitan area. The natural increase is mainly due to excess of births over deaths. But there is a small component of births to immigrants occurring in the area since such births to immigrants are, by definition, included in the natural population.

It was agreed by Census experts that an exaggeration of the population did take place in the 1941 Census. By properly smoothing the data (as in graph) it was found that the exaggeration probably took place in the natural population and not the migrant population. This is to be expected as political propaganda can more easily influence and penetrate the natural population which is comparatively well-informed and educated. The adjusted figure for the city is given in Table 2·1 in brackets.

But, barring the distortion of the population during 1941, the growth rate in 1951 and 1961 has been equally heavy. A contributory factor of course has been the East Pakistan migrant flow during 1947-1960. But even ignoring that increase the growth has been much heavier in the metropolitan region than in urban India as a whole.

The natural increase of the population is due to net increase of births over deaths. For the present, we may generally assume that in the short range, the birth and death rates have secular trends not strongly affected by economic movements. Hence, for the purpose of estimating the growth of natural population, estimates of births and deaths are all that is required. Table (2.2) gives the estimated rates of births and deaths per 1,000 of the population in Calcutta city during 1921-60.

TABLE 2.2

Year	Registered Rates per 1,000		Birth rates calculated on natural increase plus deaths	Birth rates in Calcutta Metropolitan area calculated on natural increase plus death
	Birth	Death		
1921—30	17·16	29·65	37·17	41·97
1931—40	12·94	19·93	36·99	42·75
1941—50	12·99	18·45	20·43	23·75
1951—60		11·17	19·95	27·92

Owing to the comparative lack of figures for the metropolitan region we have used its natural increase with the registered death-rate for the Calcutta city to give a set of birth rates. This is on the assumption that death–rates in Calcutta and the metropolitan region are rather similar.

The author has in previous papers* made some studies of the biological increase in Calcutta and West Bengal and for the present purpose the findings of these studies may be accepted. On the basis of these studies it may be stated that death figures in urban areas are not very much off because of the difficulty of disposing off the dead body. But figures of birth are grossly underestimated as the registration system is badly organised in the city and is worse in the suburban areas. A correction of the birth figures by 20% in Calcutta and by 25-30% in the suburban areas of the metropolitan region seemed to be quite in order. This correction along with death and immigration seemed to give a set of figures in good agreement with corresponding Census counts. Accepting, however, that the birth and death rates are to be adjusted in order that the natural increase as reported in the Census is more or less arrived at, the biological increase in each ten year interval in the city and the Metropolis is given in the last two columns of the above table.

Table 2.3 gives the natural and immigrant population in the Census years 1911-1961 with the percentage breakdown of the increase as between natural and the immigrant section.

TABLE 2.3

Year	Calcutta Metropolitan area		Calcutta area	
	Nat.	Migr.	Nat.	Migr.
1911 .	981,191 100·00	823,155 100·00	634,738 100·00	397,274 100·00
1921 .	1,042,257 106·22	884,824 107·49	706,122 111·25	371,575 93·53
1931 .	1,296,050 132·09	896,628 108·93	784,387 123·58	378,776 95·34
1941 .	1,927,091 235·01	1,409,975 171·29	1,039,524 227·64	690,550 173·82
1951 .	2,145,209 218·63	2,748,773 333·93	1,204,190 189·71	1,389,023 349·64
1961 .	3,107,767 316·73	3,489,121 423·87	1,385,546 218·29	1,541,743 388·08

Percentage Breakdown of the Increase ‡

Year	Calcutta Metropolitan area		Calcutta	
	Nat.	Migr.	Nat.	Migr.
1911—20	49·75	50·25	..	..
1921—30	95·56	4·44	93·40	6·60
1931—40	55·74	44·86	88·99	11·01
1941—50	14·00 (50)	86·00 (50)	14·68	85·32
1951—60	56·62	43·48	59·66	40·34

*1 A Study of Demographic Trends in West Bengal during 1901-1950. (Population Studies. Vol. IX No. 3. March 1956)

2 A note on the measurement of differential fertility among the population of Calcutta and Bombay. (Unpublished)

It may be seen that in the metropolitan region, excepting for the decade 1921-30, the share in increase due to births and due to immigration seem quite close. The figures in 1941-1950, if the East Pakistan immigration is included, are grossly distorted. But excluding them we can see that normal immigration-increase was fifty per cent of the total increase as given in brackets.

Any study of the long-term impact of this immigration into the City and the Metropolis involves an analysis not only of the flow of migration but also of the determinants of the flow. Once the nature of the flow and its determinants are clearly understood it may be possible to project the future levels of this flow and hence its effect on the growth of population and other economic variables in the future.

The major problem involved in making this kind of analysis is the scarcity of data on immigration, in somewhat greater detail, which may be required for such studies.

About the only information available in this respect in the Census is the data by birth place which enable us to have an enumeration of the persons who are migrants by Census definition every ten years. Naturally, with a complete absence of any other information such data are subject to all types of ambiguities. Any fluctuation even of an essentially temporary nature, if it falls on the Census year may completely upset the count of migrants and, in fact, has done so. Further, ten years being a long time, migrants may come and go during this period without the Census being able to register such facts. Again lack of data on age distribution and other details also makes it difficult to do any useful study of these migrants at any point of time.

To compensate for this lack of information, recourse was taken to a cross section study of the immigrants into Calcutta carried out by the University of Calcutta during 1954-58 and a similar study of East Pakistan refugees by Jadavpur University. Being a cross-section study at one point of time, using it to compensate for a historical series raised many problems. Some approximation*, based on definite assumptions were obtained to supplement Census data.

*Monograph No. 1. Section 2. Table No. 2.3.

SECTION III

Employment is the key to the attraction of a metropolitan area for migrants. It is necessary, therefore, to look into the broad aspects of the occupation and employment structure of the city and the Metropolis, in order to understand the scope and limitation of the employment opportunities that draw immigrants into the city.

The occupational structure shown here is important as it shows the nature of employment in the city over time. They give us some broad ideas about the economy and the nature of employment it offers.

Table (3.1) and (3.2) give the precentage distribution of persons as per census, gainfully engaged in various occupations during 1911—1961 in the city and similar data for the Metropolitan area for dates and regions as defined. The topics covered in the study are as follows:

1. The occupational distribution in the population over the last four decades and the change, brought about by immigration.

2. Occupational distribution among the immigrants and the nature of shifts in these occupations.

3. Problems of employment in relation to immigration.

TABLE 3·1

Occupation	Percentage distribution of Persons in Calcutta					
	1911	1921	1931	1941	1951	1961
(A) Production of raw materials	3·19	4·23	3·13	2·98	0·40	·28
I. Exploitation of Animals & Vegetations	3·15	4·22	3·11	..	0·33	·23
II Exploitation of Minerals	0·04	0·01	0·01	..	0·07	·05
(B) Preparation & Supply of material Substances	54·59	51·64	42·71	51·65	68·58	64·74
III Industry	23·52	23·23	17·85	..	22·08	29·17
IV Transport	14·10	10·56	8·99	..	13·95	11·68
V Trade	16·96	17·85	15·86	..	32·55	23·89
(C) Public Administration & Liberal Arts	8·58	8·21	9·24	11·18	16·47	15·26
VI Public force	1·42	1·04	1·18	..	..	10·57
VII Public Administration	2·31	2·60	3·30	..	..	
VIII Profession & liberal Arts	3·73	4·55	4·77	..	..	4·69
(D) Miscellaneous	33·65	35·92	44·92	34·19	14·55	19·70
IX Persons living on their income	1·12	0·78	1·98	..	..	4·41
X Domestic service	13·60	11·63	15·75	..	..	9·90
XI Insufficiently described Occupation	16·09	19·90	24·82	..	..	5·41
XII Unproductive	3·95	3·60	2·37	..	..	
Total	**100·00** (624,039)	**100·00** (649,566)	**100·00** (641,450)	**100·00** (1,109,500)	**100·00** (1,080,349)	**100·00** (11,827,689)

Apart from group totals, the occupation which are commonly defined are only given here.

TABLE 3·2

Occupation	Calcutta with suburbs in 24 P.C. & Howrah		Calcutta Industrial Area	Calcutta Metropolitan Area
	1921	1931	1951	1961
(A) Production of Raw materials	4·34	3·10	0·58	0·14
I Exploitations of Animals & Vegetations	4·32	3·05	0·50	..
II Exploitation of Minerals	0·02	0·05	0·08	..
(B) Production & Supply of Material Substances	52·29	44·28	72·04	69·29
III Industry	25·41	19·47	37·99	37·57
IV Transport	10·32	8·95	12·26	10·01
V Trade	16·56	15·86	21·79	21·71
(C) Public Administration & liberal Arts	7·65	8·70	8·02	14·36
VI Public force	0·97	1·08	1·10	9·14
VII Public Administration	2·38	3·01	4·73	
VIII Profession and Liberal Arts	4·28	4·61	2·19	5·22
(D) Miscellaneous	35·74	43·92	19·36	16·21
IX Persons living on their income	0·81	1·74	..	1·54
X Domestic Service	10·70	14·98	7·49	6·91
XI Insufficiently described Occupation	20·81	24·92	..	7·76
XII Unproductive	3·42	2·28	..	
Total	**100·00 (759,353)**	**100·00 (714,289)**	**100·00 (1,940,437)**	**100·00 (2,607,353)**

It is important to note in these tables the occupational structure specially with reference to the influence of immigration. In this respect the data for some occupations are relevant. Trade, liberal professions and services have gone up significantly during 1941-51, a period of mass immigration into Calcutta, from East Pakistan. This is a pointer towards the parasitical, top heavy structure forced into the city by influx of a people without skills of a mechanical, or, industrial nature. This becomes even clearer once we go into the survey of 1957 carried out by the Calcutta University and compare the occupational distribution of the population by group according as they are residents or migrants as in Table 3.3.

TABLE 3.3

Occupation	Percentage to Total				
	Original Residents	Displaced Migrants	Ordinary Migrants	Total	Migrants in Refugee Colony
Executive & Professional (Tech/Non-Tech)	6·50	12·37	12·13	9·51	19·01
Ministerial Tech.	2·44	3·05	3·02	2·75	..
Ministerial Non-Tech.	6·50	11·05	10·65	8·54	35·93
Traders	21·17	30·29	25·32	23·97	24·09
Manual workers Skilled	17·41	20·95	17·55	17·87	12·56
Manual workers Unskilled	44·27	19·24	25·28	33·66	6·65
Miscellaneous	1·71	3·05	6·05	3·70	1·76
Total	**100·00 (2,338)**	**100·00 (525)**	**100·00 (2,085)**	**100·00 (4,940)**	**100·00 (963)**

It was seen that immigrants supply mainly traders, unskilled and skilled labourers etc. In fact, immigrants supply twice as many unskilled and skilled manual workers as the original residents. Of the total employed in the sample (i.e. 4940) 1400, or nearly a third of the total are migrant manual labourers. If we add to this the number in petty trade we come roughly to 1900 which is around 40 per cent of the total employed.

This high degree of specialisation i.e. the immigrants doing a specific type of job for which local competition is feeble, is a factor explaining the stability of the immigrant flow from Census to Census as a ratio of the natural population. Before partition, trade absorbed roughly 17 per cent of the population through 1911-31 as in Table 3.1. This was upset by the rush of refugees who raised the figures. But accepting the fact that there is a tendency towards this ratio achieving stability, it may be expected that the percentage now attained will be maintained in future.

The growth of the natural population as also the increase by immigration lead to a proportionate expansion of the class of jobs in which immigrants can be absorbed upto a point. As long as the ratio of the number in these occupations remain constant relative to the total population, expansion of these jobs will keep in step with population.

Considering the ordinary migrants and displaced migrants it may be said that trade has increased in percentage since partition specially during 1947-1951, demonstrating the shock absorbing nature of this occupation among migrants. Unskilled workers are much higher in percentage among the ordinary migrants. One may generally conclude that the post partition migration has very largely expanded the tertiary sectors, requiring no skill. One factor behind this of course is the forced migration from East Pakistan. The other factor is the stimulus supplied by general economic expansion in the five year plans, as also the sudden expansion of demand by inflow of migrants themselves.

It has been seen earlier in this chapter that industry, transport, trade and public administration together keep 68·58 per cent of the persons employed. The growth of employment in the city and the Metropolis is to be mainly looked for in the growth of industries, trade, communications, service and profession.

We shall study the trend of employment described above in two broad groups, industrial and non-industrial.

Table 3.4 shows the industrial and non-industrial employment in the city and the Metropolis during 1911-1961. For the Metropolis the employment figures include non-agricultural employment in rural areas of the region, which could not be isolated from the urban figures for the years upto 1941. From 1951 the urban figures could be isolated. They are given in brackets.

TABLE 3.4

Occupation	Calcutta					
	1911	1921	1931	1941	1951	1961
Industrial	234,767 (37·62)	219,482 (33·79)	172,236 (26·85)	.. ..	389,221 (36·03)	483,175 (40·80)
Non-Industrial	389,272 (62·38)	430,084 (66·21)	469,214 (73·15)	.. ..	691,128 (63·97)	699,614 (59·20)
Total	**624,039 (100·00)**	**649,566 (100·00)**	**641,450 (100·00)**	**1,109,500 (100·00)**	**1,080,349 (100·00)**	**1,182,789 (100·00)**

TABLE 3·4—*concld.*

Occupation	Calcutta Metropolitan area*						Calcutta Metropolitan area	
	1911	1921	1931	1941	1951	1961	1951	1961
Industrial . .	..	438,872 (36·04)	457,473 (33·52)	615,800 (35·46)	789,527 (32·50)	894,922 (34·32)	666,395 (34·85)	876,289 (34·46)
Non-Industrial .	..	778,877 (63·96)	911,210 (66·58)	1,121,000 (64·54)	1,639,866 (67·50)	1,712,431 (65·68)	1,245,755 (65·15)	1,666,422 (65·54)
Total . .	..	**1,217,749 (100·00)**	**1,368,683 (100·00)**	**1,736,800 (100·00)**	**2,429,393 (100·00)**	**2,607,353 (100·00)**	**1,912,150 (100·00)**	**2,542,711 (100·00)**

*Including rural non-agricultural.

Two things strike one in these tables: the predominant role of the non-industrial as against the industrial and the rising trend in non-industrial employment over time in the city and the Metropolitan area.

A big metropolitan area caters economically to a very large region and its growth can be traced ultimately to the growth of the entire market it serves. One way of studying the determinants of growth is to analyse these markets separately as stimulants to growth. A grouping was, therefore, made of the registered industrial establishments in the Calcutta Metropolitan area considering whether they are catering to a national market, or a regional market or a local market. Table 3·5 divides employment by groups according as they serve a national market, or a regional market, or a local market. In making this division generally we tried to demarcate an industry as national, regional or local by commonly known facts about whether the product is consumed only locally or whether it is an industry of a basic type catering the Indian economy as a whole. Table 3.6 gives the percentage growth rates of the different industrial sectors during 1950-59.

TABLE 3·5

Total Employment in the Calcutta Metropolitan Area

National Market

Industry	1921	1931	1941	1951	1961	%growth during 1951-1961
Jute Mills	272,780	249,492	302,457	302,620	224,212	74·1
Basic Metal Industry . . .	25,557	14,469	44,500	125,325	172,303	137·5
Transport Equipment . . .	159	..	6,900	36,366	51,016	140·3
Paper and Printing . . .	6,706	471	..	36,942	48,379	130·9
Chemical and Products . . .	14,993	16,931	16,800	23,108	39,862	172·5
Petroleum and Coal . . .	37	..	..	10,607	20,500	193·5
Public, Legal and Business Services .	85,536	136,351	455,300	139,984	213,599	152·6
Transport and Communication . .	37,197	31,515	73,200	79,867	105,838	132·5
Total . .	**442,965**	**449,229**	**899,157**	**754,819**	**875,709**	**116·0**

TABLE 3·5—*concld.*

Employment in the Calcutta Metropolitan Area

(Regional Market)

Industry	1921	1931	1941	1951	1961	%growth during 1951-1961
Cotton Textiles	17,796	21,678	60,187	55,153	975,448	176·9
Textiles : Others	3,417	6,149	6,456	55,783	77,743	139·4
Food, Drink, Tobacco	31,356	42,282	66,200	93,903	115,728	123·2
Hides, and Skins	22,92	13,164	26,800	35,550	34,636	97·4
Transport	81,325	73,825	108,500	201,004	155,237	77·2
Total	**136,186**	**151,620**	**268,143**	**441,393**	**480,892**	**108·9**

Employment of Calcutta Metropolitan Area

(Local Market)

Industry	1921	1931	1941	1951	1961	%growth during 1951-1961
Trade	161,584	194,784	261,200	587,844	565,937	96·3
Household Services	124,064	396,166	184,500	188,430	180,230	95·6
Construction and Maintenance	58,305	36,517	38,300	62,737	84,364	134·5
Cement, Potteries	12,055	29,662	58,300	N.A.	N.A.	..
Clothing, Jewellery, Laundry	27,350	41,519	N.A.	N.A.	N.A.	..
Personal Services Except Household Services	251,454	56,121	N.A.	380,000	407,226	113·1
Electric and Gas	2,626	3,053	11,500	14,170	12,995	91·7
Bricks and Tiles	20,588	14,069	N.A.	N.A.	N.A.	..
Glass and Glassware	1,160	4,334	35,700	1,233,181	1,250,752	101·4
Total	**638,598**	**762,156**	**569,500**	**1,233,181**	**1,250,752**	**101·4**

NOTES :—

1 Basic Metal products include Manufacture of Machinery and Manufacture of metal products.

2 Transport : Transport by air and Transport by rails.

3 Petroleum and Coal includes Rubber.

4 In case of 1941 Public and Legal and Business Services means Public and all the Services except Household services.

5 Construction and Maintenance including Bricks and Tiles.

TABLE 3·6

All India Registered Factory Employment

Industry	Employment 1950	Employment 1959	Percentage growth 1950—59
Clothing, Jewellery	6,985	18,394	263·34
Metal Products	53,495	115,105	215·17
Cement, lime etc.	21,014	43,548	207·23
Chemical and Products	63,670	126,711	199·01
Gins, Presses	83,701	160,972	192·32
Transport and Equipment	152,515	290,992	190·80
Man. of Machinery	120,440	220,720	183·26
Electricity	21,989	37,970	172·68
Basic Metal Industry	93,738	151,958	162·11
Glass and Glassware	25,878	39,764	153·66
Rubber, Rubber Products	20,829	31,955	153·42
Paper and Printing	89,289	133,717	149·76
Bricks & Tiles	89,877	132,992	147·97
Hides, Skins	18,027	26,269	145·72
Food, Drink, Tobacco	433,290	619,312	142·93
Petroleum, Coal	12,790	16,653	130·20
Cotton Mills	622,339	787,514	126·54
Textiles, Others	87,946	105,692	120·18
Shipbuilding, Repairing	28,779	30,965	107·60
Jute Mills	303,364	280,394	92·43

It will be seen that national market industries in general have increased quite fast. Almost similar increase has been registered by the regional market industries. Local market industries have not increased as fast. In fact they have actually declined in many cases. In the Metropolitan area the main impetus to industrial growth is coming from all India market rather than local market.

It will also be seen that most of the manufacturing establishments cater to a national market rather than to a regional or local market.

The non-industrial employment, however, is more indirectly determined. There is a small component in non-industrial employment that is stimulated directly by national demand but a large part of the non-industrial employment is generated indirectly. It may thus be said that basic industrial activities and its ancillaries like transport, communication etc. form the core of the economic activity of the Metropolis. This core depends, on factors of national importance and the movement of these factors are determined as a part of the national economy itself. Given these the second groups of industries are generated as a kind of multiplier activity centering around the core. In the next section, we propose a model of growth on this hypothesis. That is, we employ all India trends of growth in national market industries to determine for us the trend of the growth of industry while for other non-industrial activities the trends of industrial growth within the Metropolitan Region itself is taken as the determining variable.

SECTION IV

The classification of industries according to whether they are of national, or regional, or local importance is the starting point in the present model. We take the national market industries as the basic group which generate activity throughout the economy. They are the autonomous injections in Keynesian terminology. Since they have nationally determined market, their progress primarily depends on the national economy itself. We can assume that trend of the national growth of these industries will give us an indicator of the overall future growth of these industries.

But while all India growth may be high, or low, the share of the Metropolis may move differently. So the second step is to determine the time-trend in the share of the Metropolis. These two combined together give us the pattern of growth of these industries in the Metropolitan Region.

The model may be formulated thus for the national market group of industries.

$$E_{CMA} = E^{INDIA} \times \frac{E_{CMA}}{E_{INDIA}}$$

If $E_{INDIA} = F_1(t)$ where E stands for employment

and $\frac{E_{CMA}}{E_{INDIA}} = F_2(t)$

that $E_{CMA}(t) = F_1(t) . F_2(t)$

The estimation procedure in the present case was as follows:

Trend equations were fitted to the industrial growth of India by least-square method. Similar trend equations were fitted to the shares for the Metropolitan Area also by least squares. The two equations were used to obtain projections beyond 1961. The projected Indian growth and share of the Metropolis were multiplied to obtain employment figure in CMPO. Normally this procedure may lead to some bias. In this case, however, both being considered only as functions of time, formally they can be shown to lead to the same procedure as obtaining a trend directly for employment in the Metropolitan Region. This was not done as it was thought that the logic of our process of analysis is better revealed by showing it in two stages.

In such cases two stages least-square techniques are also used to have unbiased estimation. It was found, however, that the difference in this second procedure would be, in any case, negligible as far as predictions were concerned. In the present method an added advantage was that we could follow the two stages of the analysis independently and change any equations we did not think to be reliable.

Table 4.1, col. (2) gives the percentage growth for India as a whole for the national market industry during 1950-1959, the figures referring to employment in registered factories only.

The figures show in general a steeply rising trend over last ten years in most

Industries. It is likely that all these industries will also similarly have a rising trend in the future. On this assumption exponential or modified exponential growth curves were fitted to the data. The equations obtained are also shown in Table 4.1.

TABLE 4·1

Name of the Industry	%Growth during 1950-59	Equation of all India Growth
Jute Mills	92·43	log E=log 103·4—0·0137 t
Manufacture of Machinery	183·26	log E=log 77+0·0459 t
Cotton Mills	126·54	log E=log 124·3—(0·4848)t log ·4580
Basic Metal Industries	162·11	log E=log 83·56—0·0337 t
Transport and Transport Equipment	190·80	log E=log 84·92+0·0353 t
Manufacture of Metal Products	215·17	log E=log 99·97+0·0454 t (log E=log 142·90+0·0370 t)
Paper and Printing	149·76	log E=log 134·2+0·0205 t
Rubber and Rubber Products	153·42	log E=log 145·6+0·0238 t
Chemical and Chemical Products	199·01	log E=log 83·99+0·0332 t
Food, Drink and Tobacco	142·93	log E=log 99·47+0·0300 t
Shipbuilding and Repairing	107·60	log E=log 80·79+0·0287 t
Textiles: Others	120·18	log E=log 239·3—(0·4468)t
Glass and Glassware	153·66	log E=log 93·65+0·0334 t
Bricks and Tiles etc.,	147·97	log E=lo 92·34+0·0400 t
Electricity, Gas, Steam, Cement	172·68	log E=log 87·40+·0295 t
Lime and Potteries	207·23	log E=log 170·1+0·0205 t
Petroleum and Coal	130·20	log E=log 93·61+0·0279 t
Clothing, Jewellery Works etc.	262·34	log E=log 120·0+0·0439 t
Processes connected with Hides and Skins	145·72	log E=log 110·9+0·0153 t
Gins and Presses	192·32	log E=log 202·5—(·4340)t log 1383

A study of the growth curves reveals the nature of Indian industrialisation during the lats decade. Most of the basic, heavy and light industries which are essential to rapid industrialisation have in fact been growing at a rate of over 3 per cent annum in India as a whole. These include, Manufacture of Machinery, Basic Metals, Transport and equipment, Metal-products, Chemicals and products. The old industries of India like Jute, Cotton, Textiles etc. have not been growing, but declining slowly.

Power industries and Cement was growing at just under 3 per cent per annum and so is petroleum.

The future of the various manufacturing industries, assuming similar growth for next 10—20 years, may be easily predicted from these equations. The basic industries will on this assumption continue growing fast. It is possible that power, petroleum etc. will in fact catch them up. Traditional

industries will decline or grow only very slowly. Some of the consumer's industries like Food, Drink, Clothing etc., would grow with increased urbanisation as is evidenced by the fast growth over the last ten years.

Projections were made of all India growth of the industries over the next two decades. Tables 4.2 gives these figures for 1961, 1971 and 1981.

TABLE 4·2

Estimates of all India Employment in Selected Industries

Name of Industries	1961	1971	1981
Jute Mills			
Manufacture of Machinery	266,895	767,805	2,212,483
Cotton Mills	141,624	800,468	800,468
Basic Metal Industries	170,228	369,796	803,335
Transport	343,464	774,471	1,746,297
Metal Products	135,972	386,513	1,100,051
Paper and Printing	211,079	338,494	382,262
Rubber Products	37,257	64,428	111,453
Chemical	149,017	319,727	687,591
Food, Drink and Tobacco	826,732	1,649,671	3,293,022
Shipbuilding and Repairing	41,414	80,225	155,357
Textiles	137,918	137,918	137,918
Glass and Glassware	47,175	101,789	219,664
Bricks and Tiles	171,298	430,263	1,080,511
Electricity, Gas, Steam	43,406	85,647	168,941
Cement, Potteries etc.	47,823	76,648	122,891
Petroleum and Coal	19,720	37,528	713,022
Clothing and Jewellery etc.	23,057	63,291	192,436
Hides and Skins	27,473	39,046	82,691
Gins and Presses	159,872	159,822	159,871

We now come to the second stage of the model. This is to determine the trend of the share of the Metropolis in all India growth.

Table 4.3 gives the percentage increase in employment in each industry for India as a whole, with the share of the Metropolis in 1950 and 1959 and the difference in the share during 1950—59 as also the equations fitted to the trend of the share.

TABLE 4·3

Industry	% Increase during 1950-59	Share of CMA in India in percentage 1950	1959	Difference	Equations fitted
Clothing, Jewellery. . .	163·34	22·13	10·83	—11·30	log R=log 37·04—·0268
Metal Products . . .	115·17	37·83	27·07	—10·76	Share Constant : 5·20 percent. (Average of last 5 years)
Cement, Lime etc. . .	107·23	14·87	11·66	— 3·21	log R=log 22·67—(·4420)t
Chemical and Products .	99·01	28·31	15·97	—12·34	log R=log 22·67—(·4420)t log ·5882
Gins and Presses . . .	92·32	55·90	0·84	—55·06	log R=log 21·58—(·0844)t log 211·7
Transport and Equipment .	90·80	16·09	11·16	— 4·93	log R=log 16·69—·0167t
Manufacture of Machinery .	83·26	30·37	24·77	—5·60	log R=log 42·71—0·0258t
Electricity . . .	72·68	25·11	14·13	—10·98	Share constant 19·24 (Average of last 5 years)
Basic Metal Industry . .	62·11	16·31	21·58	5·27	log R=log 84·47—0·0134t
Glass and Glassware . .	53·66	22·82	21·28	—1·54	log R=log 30·96—0·0235t
Rubber Products] . . .	53·42	80·10	66·81	—13·29	Share Constant 2·93 (Average of last 5 Years)
Paper and Printing . .	49·76	23·08	19·31	—3·77	log R=log 59·05—0·0267t
Bricks and Tiles . . .	47·97	3·41	5·31	—1·90	Share Constant : 6·64 (Average of last 5 years)
Hides and Skins . . .	45·72	N.A.	5·65	N.A.	Share Constant : 5·88 (Average of last 5 years)
Food, Drink and Tobacco .	42·93	3·89	2·91	—0·98	log R=log 27·90—0·0299t
Petroleum, Coal . . .	30·20	55·82	17·69	—38·13	log R= 8·87+0·0179t
Cotton Mills . . .	26·54	4·49	5·45	0·70	log R=log 54·55—0·0397t
Textiles : Others . . .	20·18	7·78	6·93	—0·85	Shares Constant : 13·60 (Average of last 5 years)
Shipbuilding, Repairing . .	—7·60	38·77	42·79	—4·02	log R=log 2·813+0·0337t
Jute Mills . . .	—7·57	92·98	68·79	—24·19	log R=log 8·56—0·0998t

It may be seen that in most of the industries the Metropolis has a falling share over the years.

This area being substantially industrialised is not growing at the same fast pace as the industries in other parts of India.

There are a few industries which are favourably placed with an almost constant share. These include Machine fabrication, Paper and printing, Food, drink and tobacco, Textile and Glassware, Bricks and tiles, clothing, Jewellery. All of these industries excepting the first two, have a high final demand content for consumers, and, therefore, are almost functions of the rate of growth of the population. As such in this metropolitan area with its very large internal market they are growing fast and keeping pace with the population.

In other industries, however, it is not to be supposed that there is actual decline except in a few cases. In most of them there is only a lower rate of growth in the Metropolitan area showing that in many

fields the Metropolitan Area has ceased to offer as much growth prospect as other comparatively virgin region.

On the basis of the fitted equations the following projections were made for the share of the Metropolis in the growth of employment by selected industrial groups for 1961, 1971 and 1981.

TABLE 4·4

Estimated share of the Culcutta Metropolitan Area in percent of all India employment

Industries	1961	1971	1981
Jute Mills	..	..	..
Manufacture of Machinery	19·98	10·78	5·82
Cotton Mills	5·20	5·20	5·20
Basic Metal Industries	21·58	22·67	22·67
Transport	10·52	7·16	4·86
Metal Products	23·58	13·02	7·19
Paper and Printing	19·24	19·24	19·24
Rubber Products	60·08	44·19	31·47
Chemical	14·52	8·45	4·92
Food, Drink and Tobacco	2·93	2·93	2·93
Shipbuilding	33·95	18·37	9·93
Textiles : Others	6·64	6·64	6·64
Glass and Glassware	21·72	21·72	21·72
Bricks and Tiles	5·88	5·88	5·88
Electricity, Gas, Steam	12·22	6·14	3·08
Cement, Limes and Potteries	12·33	18·62	25·65
Petroleum and Coal	15·17	6·08	2·44
Clothing, Jewellery etc.	13·60	13·60	13·60
Process of Hides and Skins	6·11	13·28	28·85
Gins and Presses	0·43	0·03	..

Combining these two sets of projections according to our model we get the following projection for industrial employment in the Metropolitan area as far as registered factories are concerned for the years 1961, 1971 and 1981.

TABLE 4·5

Estimated Employment in selected Industries in the Metropolitan Area

Industry	1961	1971	1981
Jute Mills	204,235	153,736	116,552
Manufacture of Machinery	53,326	79,240	128,767
Cotton Mills	41,624	41,624	41,624
Basic Metal Industry	36,735	73,855	182,116
Transport and Transport Equipment	36,132	53,104	85,219
Manufacture of Metal Products	32,062	48,118	79,094
Paper and Printing	40,612	62,120	73,547
Rubber Products	22,384	27,771	35,074
Chemical Products	21,637	26,446	33,829
Food, Drink and Tobacco	24,224	45,113	96,486
Shipbuilding and Repairing	14,060	14,668	15,427
Textiles : Others	9,158	9,158	9,158
Glass and Glassware	10,246	20,477	47,711
Bricks and Tiles	10,072	23,074	63,534
Electricity, Gas, Steam	5,304	5,257	5,203
Cement, Lime and Potteries	5,897	13,063	31,522
Petroleum and Coal	2,992	2,342	17,398
Clothing, Jewellery etc.	3,133	7,779	26,171
Hides and Skins	1,679	4,629	23,856
Gins and Presses	687	80	..

We have so far considered only registered factory employment which includes only employment in units of ten or more workers with power or twenty or more workers without power. To estimate total employment, both registered and unregistered, the registered employment in Census years were compared with the total employment as recorded in the Census. A curve was fitted to the registered employment and total industrial employment over Census years, on the assumption that similar relation will prevail over non-Census years.

The following equation was fitted.

$$\text{Log } E_I = \text{Log } E_R + 0.0335t$$

The equation shows a progressive rise in the rate of smaller unregistered units compared to the larger units over time. Table 4.5 below gives the projection of total industrial employment on that basis from registered employment.

TABLE 4·6

Year	Employment in '000	
	Registered	Total
1960	568	829
1961	576	847
1962	585	868
1963	596	890
1964	608	916
1965	624	943
1966	637	973
1967	653	1,005
1968	671	1,041
1969	690	1,080
1970	712	1,122
1971	733	1,199
1981	1,112	1,908

We now come to the non-industrial sectors. It is assumed that the non-industrial sectors are primarily dependent on the injections from the industrial sectors. That is, the industrial sectors generate demands which create corresponding demands in the non-industrial sectors. Some studies made on relative growth of immigrant population and employment in the non-industrial sector, as discussed in later chapters, suggest that in a big metropolitan area employment in non-industrial sectors are strongly influenced by immigrants coming in expectation of work. While the local population goes into more well defined occupations, petty trades, unskilled labour and similar low paid entry trades more naturally, accommodate unskilled migrants. On these considerations the following model was fitted to the data.

$E_{ni}=\alpha+\beta E_i+\gamma.\ \Delta M$

where E_i and E indicate industrial and non-industrial employment respectively. ΔM (indicates) Incremental migration during the year.

The equation was fitted on the census data for E_i, E_{ni} and ΔM for the census years 1921, 1931, 1941, 1951 and 1961.

To fit this equation only Census data were available. Therefore, the incremental migration ΔM was defined as increment between two consecutive Census years i.e. as $M_t - M_{t-10}$

The fitted equation is given below :

$E_{ni}=79\cdot30+1\cdot70\ E_i+0\cdot16\Delta M.$

An average rate of migration was calculated from the data of 1951 and 1961. This was assumed to be unchanged during 1971 and 1981 for calculating M for these periods.

The equation for predicting Δ M was as follows :

$M_{1961}=M_{1951}\ (1+i)^{10}$

$M_{1951}=27487730$

$\therefore\ i=0\cdot024$

Working on that basis we obtained the corresponding figures for E_{ni} from **Ei** and M for 1961, 1971 and 1981 as given below.

TABLE 4·7

Year	ΔM	Industrial Employment	Non-industrial Employment
1961	81,776	861,000	1,476,863
1971	103,664	1,199,000	2,054,966
1981	1,180,937	1,908,000	3,432,629

SECTION V

In the last Section an attempt was made to estimate total employment by assuming a specific immigration rate. This assumption is now dropped and immigration rate is taken as a built-in variable for the model. To do this it is necessary to analyse the relation existing between growth of population and economic activity with the flow of immigrants. The immigration from East Pakistan is mainly due to political reasons. Any attempt therefore, to fit a simple model on this flow is bound to be futile. This flow is, therefore, considered as exogenously determined and we concentrate mainly on the migrant flow from provinces west of the region.

As may be seen in the graph following this section, the long term trends of the flows for the Census and the Calcutta University survey, have good resemblance. There is also a close correspondence between the movements of the migrant population and those of the natural population. We, therefore, tried out several linear models to fit a simple curve relating population to the immigrant flow. The following models were fitted.

1 $P_{(t)}=\alpha+\beta\ {}_nP_{(t)}+\gamma t$

${}_mP^{(t)}$ is the number of migrants, ${}_nP^{(t)}$ the natural population and t time.

2 $P_{(t)}=\alpha+\beta\ {}_nP^{(t)}$

where ${}_mP^{(t)}$ is assumed to be simply datermined by the corresponding natural population.

The constants fitted by a straight forward least square process for Calcutta were as follows:

1 ${}_mP^{(t)}=0\cdot75\ {}_nP^{(t)}-3\cdot86t-425\cdot33$ 2 $P^{(t)}=0\cdot74\ {}_nP^{(t)}-1283\cdot84$

Table 5.1 gives the observed and estimated data on the basis of the fitted equations.

TABLE 5·1

Estimates of Migrants

Year	Observed	Model I	Model II
1901	324,914	349,016	315,145
1911	397,274	368,765	341,322
1921	371,575	355,665	394,146
1931	378,776	399,703	452,062
1941	690,550	..	660,541
1951	1,388,023 (Including Displaced population)	1,388,218	889,817 (Excluding displaced population)

As may be seen the projection in the simple model where natural population is the sole determinant of the immigrant population gives a reasonably good fit over the years. This may not be entirely fortuitous. The immigrant population or, the bulk of the immigrant population coming into the Metropolis has, as is seen in Chapter III, a high degree of occupational specialisation.

This specialisation is not based on skill but on the lack of local competition. Bulk of the immigrant population as will be seen in later sections mainly go into trade and manual work, generally unskilled. They far out-number the natural population in this respect.

Naturally, therefore, as they mostly belong to sectors which cater directly in many cases to the population, they have a direct relation with it. The requirement of workers of these sectors does increase in a distinct ratio with the natural population which determines the requirement of the additional members in the specialised service sectors.

In the above equations migration is related to population. Population, has been used as a sort of 'catch all' variable in the absence of more specific casual variables. Actually in an economic sense it is not enough to say that population growth (*e.g.* expansion of market, demand of industry etc.) attracts immigrants. It is necessary to pinpoint exactly the economic effects of population growth which attracts immigrants.

The most logical way to start enquiring into this dynamics of metropolitan population growth through immigration is to look into the nature of growth of employment opportunities. But data on direct expansion of full-time employment proper is very defective and fail to explain properly the growth of the migrant population in the city. The consequence of this is that the major component of growth of the city through immigration can not be related to employment. While direct full-time registered employment has not grown quite fast, a very large growth has taken place in comparatively ill-defined casual or semi-casual employment of tertiary types, so usual in a big city. 'Washing each other's shirt, is for big metropolitan cities a major occupation of a very large number. It is not possible to get an adequate measure of this from the available employment data. An activity index of a crude type was built up with several general indicators for use in an employment index. An economic-demographic model was formulated as follows:

$$ {}_nP(t) = {}_nP(t\text{-}1) + b_r \{ {}_nP(t\text{-}1) + {}_mP(t\text{-}1) \} - d_r \ {}_nP(t\text{-}1). $$

$$ {}_mP(t) = \alpha_1 + \beta_1 \ {}_nP(t) + \gamma_1 \frac{X(t)}{X(o)} + \delta_1 . \ {}_mP(t-1). $$

$$ P(t) = {}^nP(t) + {}^mP(t). $$

As may be noted, the present formulation is a little more meaningful as it now includes the effect of the growth of economic activity in a narrow sense to the flow of migrants.

The empirical equation for the migrants was computed as follows:

$$ {}_mP(t) = 869.75 + .669P(t) + 0.009 \frac{X(t)}{X(o)} - 0.675 \ {}_nP(t-1). $$

where P(t) is the total population; ${}_nP(t)$ is the natural population; $\frac{X(t)}{X(o)}$ is the activity index; P(t) is the migrant population, all referred to period t; and P(t — 1) is the migrant population in period (t — 1); b_r and d_r are the birth rate and death rate respectively; and α_1, β_1, γ_1 and δ_1 are constants.

Generally, the fit was found to be good. In a later section, an explanation will be provided for the introduction of the lagged population figure.

Various alternative models were tried out for the purpose of estimating that migrant flow. The initial experiment was conducted by considering natural population itself as one of the variables, introducting at the same time some economic variables for the purpose of bringing in direct economic prospects. This was done as the data on economic activity were though to be rather inadequate for building a good series.

In all models using population as a regressor, however, population swamped all other effect. The co-efficient relating economic activity with migrant population seemed to be insignificantly small, or negative.

Usually, models of growth are constructed with employment possibilities as the determinant drawing in immigrant population by the prospect of employment. In this sense, the growth in India and possibly in the whole of the underdeveloped but densely populated parts follows a different pattern. Employment here is pushed up to meet a larger and still larger growth in numbers. If planned increase of jobs does take place in urban areas it still lags behind the number wanting jobs. In fact, expansion of employment temporarily may result only in further accelerating this influx into the urban areas of still more people, looking for jobs. So long as we do not break even *i.e.* create more jobs than are wanted by the population of the entire country, population pressure seems to lead economic development by the nose.

The model thus demonstrates that we are still not masters of our economic destiny but are being led by the nose into situations created by the growth of population in the surrounding region as a whole.

By definition, labour force follow directly from the population. The Census definition of gainfully employed is far too loose and is almost coterminous with the labour force. Since labour force is determined by the age structure of the population, naturally a casually defined employment will move with the population. This is an inverted Malthusian situation in the sense that the conclusion seems to emerge that population in the Metropolis is increasing, willynilly, on its own momentum and employment is somehow tagging along. People are not coming to the city lured by jobs but are being driven into the city in search of a living and trying their hand at anything available.

A suitable approach in such a situation is to consider the flow of immigrants as being caused by two forces operating simultaneously. One of the force is the positive one of lure of jobs in the city. The other is the negative one of a growing scarcity of employment in the area from where they have come. The 'pull' of economic activity in Calcutta as we have seen is not by itself sufficiently strong. But it will now be seen that if the 'push' from the origin of emigration is taken into account together they become a much more potent force for adequately determining the flow of immigrants.

The situation may be explained by a simple illustration. Let us take the probability that of ten rural people seeking

job in the city starting today three will get a job in six months. That is, conditions in the city are such that only three out of ten such people will get a job in six months. Let us suppose, however, that if these ten people looked for job in their native area only one in ten will get a job in six months. Then for any individual the chances of getting a job in the city is three times as bright compared to his prospects if he stayed in the native area. Even if, therefore, the job situation is bad in Calcutta it may still be very much more attractive compared to prospects in rural areas. We have an activity index for the city to indicate the trend of direct pull of employment prospect in the city. We now calculate a corresponding activity indicator for the rural areas from which immigrants come, to show the relative position for employment in those areas.

Assuming that the bulk of the migrants from West come from the agricultural labour class of rural Bihar or Uttar Pradesh we prepared the following series showing the sown area per agricultural labourer in Bihar during the Census years. A trend was fitted to the annual series and projection were made for the years 1971 and 1981 from the equation

$$\log A_g I. = \log 113{\cdot}9 - .05$$

TABLE 5·2

Year	Net Area sown per agricultural labour (observed)	
1931	6·99	
1941	6·77	
1951	6·67	
1961	4·55	
	Projected from the fitted equation	
1971	57·03	Index with 1921 as base year
1981	50·89	

It is assumed that this index of sown area per agricultural labour may be used as an index of the demand for labour in the area.

This index gives us the relative employment prospects considering the forces of the 'push' factor, just as our former index gives the same from demand origination in the Calcutta Metropolitan region (the 'pull' factor).

Using these two indices an equation was fitted for immigrant flow as follows.

$$m^{(t)} = a + b\,E + c.\ A\ I(t).$$

where E_E as before is the index of activity which pulls and AgI(t) the index of activity at centres of emigration which gives the 'push' factor.

We may now proceed to build up a unified model for projecting employment and migration for 1971 and 1981.

It was seen previously that the non-industrial part of employment was very much influenced by the growth of migration. This was thought reasonable as the migrant population often are unskilled and whenever they come they start by taking up any available work on hand. Hence non-industrial employment was made to depend on prospects for business in general as felt through the employment level, as also, on the net increase in migration. The non-industrial employment was estimated therefore as

$E_{NI} = \alpha + \beta E_i + \gamma.\Delta M$

combining together now the different equations we get :

$E_t = E_{i(t)} + E_{NI(t)}$.

$E_N I_{(t)} = \alpha + \beta.\ E_{i(t)} + \gamma.\ \Delta M(t)$.

$M(t) = a + b.E_t + c.\ AgI(t)$.

the symbols being defined as below :

E_t = Total employment in time t.

$E_{i(t)}$ .. Total industrial employment in time t.

$E_{NI(t)}$ .. Total non-industrial employment in time t.

M(t) or $m^{P(t)}$ ....migration into the Metropolis in time t.

AgI(t).....Indcx of land to men ratio of Bihar in time t.

$\Delta M(t)$.....M(t) — M(t — 10).

with numerical values for the coefficients, we have,

$E_t = E_{i(t)} + E_{NI(t)}$ .....(i)

$E_{NI(t)} = 79{\cdot}30 + 1{\cdot}70\ E_{i(t)} + 0{\cdot}16\Delta M(t)$ .....(ii)

$M(t) = 1022880 + 1{\cdot}33\ E_t - 12100\ AgI(t)$ .....(iii)

By the substitution from (ii) and (iii),

$E_{NI(t)} = 79{\cdot}30 + 1{\cdot}70\ E_{i(t)} + 0{\cdot}16\ [1{\cdot}33\ (E - E_{t-10}) - 12100\ \{AgI(t) - AgI(t-10)\}]$

This expression thus enables us to estimate E_{NI} for E_i and AgI.

The following table gives the computed values of employment in non-industrial sector, total employment and migration for 1961, 1971, and 1981 with the actuals and observed values for 1961.

TABLE 5·3

	Actual	Computed		
	1961	1961	1971	1981
ENI	1,171,2431	1,474,268	2,177,026	3,744,202
M	348,9121	3,427,121	4,789,077	7,924,549
E	2,607,353	2,673,268	3,351,026	5,652,202

SECTION VI

We present in this chapter a tentative formulation of an inter-dependent system of equations describing the growth and interaction of population, employment and migrants.

The present model is provisional and some more experimentation is necessary before a final form may be established. Problems of bias arising in the present procedure for using single equation least square approach in a simultaneous system should also be considered in more detail.

Ignoring this for the time being the model is presented, as it is believed that, by and large, the model gives a structurally consistent set of figures. The equation system of the model is given below with necessary explanation:

1.1 $n^{P(t)}=n^{P}(t-1)+b_r\{n^{P}(t-1)+m^{P}(t-1)\}-d_r.\, n^{P}(t-1)$.

1.2 $m^{P(t)}=a+b\, E_t + c.\, AgI\,(t)$.

1.3 $P(t)=n^{P(t)}+m^{P(t)}$.

1.4 $\lambda_t.\, E_t = X(t)$.

2.0 $X(t)=X_1\,(t)+X_2\,(t)$.

2.1 $X\,(t)=a_{11}.\, X_1\,(t)+a_{12}.\, X_2\,(t)+F_{1h}+F_{1g}+E_{ext} - I_{ext} + K$.

2.2 $X_2\,(t)=a_{21}.X_1\,(t)+a_{22}.X_2\,(t)+F\ \Sigma$

3.1 $F_{1h}=\mu_{11}P(t)+\mu_{12}.X(t)\times\mu_{10}$.

3.2 $F_{1g}=\mu'_{11}P(t)+\mu'_{12}.X(t)+\mu'_{1c}$.

3.3 $F_2E = \mu''_{21}P(t) + \mu''_{22}X(t) + \mu''_{20}$.

Explanation of symbols :

$P(t)$ ..... Total population at time t.

${}_nP(t)$ ..... Natural population at time t.

${}_mP(t)$ ..... Migrant population at time t.

b_r ..... birrh rate in the Metropolis.

d_r ..... death rate in the Metropolis.

$AgI(t)$ ..... Iddex of land to man ratio at time t of the regions from which migran s come.

E_t ..... Total employment at time t.

t ..... Average productivity of labour at time t.

$X(t)$ ..... Total output at time t.

$X_1(t)$ ..... Output of sector 1 at time t.

$X_2(t)$ ..... Output of sector 2 at time t.

a_{ij} ..... Input coefficient of Leontief type.

F_{1h} ..... Final demand of household or private account in sector 1.

F_{1g} ..... Final demand of government account in sector 2.

$F_{2\Sigma}$ ..... Final demand on government account and household account in sector 2.

K ..... $E_{int} - I_{int}$.

E_{int} ..... Flow to other region in I_{ndia} for sector 1.

I ..... Import into the Metropolis of sector 1 goods from other regions of India.

E_{ext} ..... Flow to other region outside India for sector 1.

I_{ext} ..... Import from other regions outside India for sector 1.

The model has three structural parts. The first part (1·1—1·3) consists of the demographic variables and their inter-relations with each other and with the economic variables. The second part (2·0—2·1) gives the input-output relations which are introduced at present in only two sectors but which should be expanded for more meaningful results. These give the interactions of the different sectors and their impact on the output and, therefore, on the employment. Finally, there are the equations (3·1—3·6) giving the inter-relations between final demand, population, and other variables.

The equations are now discussed separately.

1.1. This is an identity if, the birth and death rates are given as data. It describes the growth of the population of the metropolis as determined by the natural population, the births and the deaths in the population and the flow of immigrants.

1.2. This is an equation determining the flow of immigrant population. The immigrant flow is governed by the man-land ratio of the region from which migrants come and the index of employment of the metropolis itself.

It determines the level of migration on the basis of the employment index of the region of immigration and land labour ratio of the emigrating region, denoting the 'push' and 'pull' factors respectively.

The effect of employment index as seen here is significant; but as we have noted earlier economic activity in the metropolis by itself does not fully explain the flow of immigrants. Activity in the metropolitan region reflects only one of the factors putting people to the urban area. In many cases the urbanisation trend is also a shift of the underemployed and unemployed from village to the town and the pull of urbanisation is due to expectation of better prospect than an actual realisation of the same.

1.3. This is an identity giving total population as its two components *e.g.* the natural and immigrant population. Emigration is ignored as small and insignificant.

As may be seen, the demographic equation depends partly on the immigrant population which in turn is determined among others by the volume of output or employment in the region. But it is also hypothesied that the flow of immigration is governed by the activity level of the region of emigration which is exogenous. The birth and death rates are now made independent of other variables in the model.

2.0. This is an identity relating total output with the output of the two sectors: secondary and tertiary. (2.1, 2.2) are the usual input-output equations of the open type which leave the different components of the final demands exogenous. These equations will take care of the inter-sectoral interaction, i.e., between the industrial and the non-industrial. For more useful results these equations could be elaborated with more sectors introduced into the model giving their impact on the level of output which eventually determines total output levels.

These are taken from unverified approximate sources. These figures are tentative and have to be checked. Circular

effect of population and demand is maintained. The exogenously assigned data are the internal trade both as inflow and outflow. These last two could not be evaluated due to lack of suitable data at present and have been taken as given.

As will be seen from the model, it has one coefficient (productivity of labour) which is exogenous and, therefore, it is possible to make projections only for given values of productivity.

An evogenous value has to be assigned for K. K is the balance of inter-regional trade. There are two reasons for making this variable exogenous.

Firstly, inter-regional trade data are hopelessly incomplete, specially with regard to industrial manufactures. Secondly, a growing import surplus is accumulating in the industrial sector of the model owing to the increasing use of Calcutta Port as the importing centre for the industrialisation of the Eastern India as a whole. This flow of import which is increasing rapidly is really a re-export from Calcutta to other areas and should normally appear as re-export, but in the present framework this could not be done adequately.

In the absence of these re-export figures from Calcutta, the internal import bill for Calcutta is rising, the foreign import into Calcutta area is rising but the internal export from Calcutta is, more or less, stagnant. We had, therefore, been forced to make estimates of this by assigning a balance of internal trade.

3.1—3.5. are demand equations which determine the level of final demands by the different final consumers. It is assumed that in sector 1 the level of household expenses towards consumption, or investment will be decided on the one hand by population and by the level of output on the other. The level of total output is used in place of income as a more easily measured variable. Governmental demand of goods in sector 1, is assumed to be determined by population of the Metropolis with a time trend. It is also assumed that the total final demand in sector 2, will be governed partly by level of the population of the region, partly by the level of total economic activity and partly by a secular trend. The level of export from Calcutta to other regions inside India as well as the level of import from these regions to Calcutta have been treated as exogenous. Foreign export and import are made entirely functions of time.

Given constant birth and death rates, the system can be expressed eventually as a difference equation where the growth of the population is expressed in terms of itself and its lagged variable with suitable coefficients which will involve all the other coefficients of the system in them.

The following set of emperical values were obtained by a simple least square procedure.

Empirical Values of Parameters

1.1 $_nP(t) = {}_nP(t-1) + b_r \{P(t-1) + P(t-1)\} - d_r \, {}_nP(t-1)$

1.2 $_mP(t) = 1022.88 + 1.33\, E_t - 12.10\, AgI(t)$. (in thousands).

1.3 $P(t) = {}_nP(t) + {}_mP(t)$

1.4 $\lambda_{\bullet} E_t = X(t)$ $\begin{cases} \lambda_{51} = \text{Rs. } 1221.00 \\ \lambda_{55} = \text{Rs. } 1404.15 \\ \lambda_{61} = \text{Rs. } 1587.30 \\ \lambda_{71} = \text{Rs. } 1953.60 \end{cases}$

2.0 $X(t) = X_1(t) + X_2(t)$

2.1 $X_1(t) = 0.2449\, X_1(t) + 0.1006\, X_2(t) + F_{1h} + F_1 + E_{ext} - I_{ext} + K.$

2.2 $X_2(t) = 0.1134\, X_1(t) \times 0.0836\, X_2(t) + F_{2\Sigma}$.

3·1 $F_{1h} = 530.89\,P(t) + 0.002\,X(t) + 7000.00$ (in thousand rupees) (at base price, 1950=base).

3·2 $F_{1g} = -0.60\,P(t) + 84215.00\,X(t) + 467157.00$ (in thousand rupees) (origin= 1950, at base price, base=1950).

3·3 $F_{2B} = -1.30\,P(t) + 66467.00\,t + 818154.00$ (in thousand rupees) (origin=1950 at base price; base=1950).

In the absence of any data, we had no option but to work the model with various values of k and choose a set of k's that seemed reasonable. The observed and expected values for 1955, 1961 and 1971 are given below. The fit was very poor for 1951 owing to the fact that equation for Government demand gave too high a value corresponding to the actual. This again was due to the fact that the post-independence stimulus to Government expenditure started a little later than 1951 making a sudden expansion of demand which could not be approximated in a simple linear form. The completely integrated approach, therefore, was upset because of the very poor fit in one of the equations.

In later years however this element became less erratic and the fit improved and the projection for 1961 agreed well with actually computed estimates. The figure for 1971 also seem reasonable. These are given in table 6·1.

TABLE 6·1

Projected values of the endogenous variables

(Unit=1000)

Symbol	Exp.	1955	1961	1971
Pm	Migrant	27,65·29	3,879·24 (3,489·12)	4,831·73
P	Population	53,50·90	6,987·01 (6,596·89)	8,403·18
E	Employment	2,320·92 (2,200·75)	2,553·26 (2,297·81)	3,397·98
X	Total Output (Rs.)	131,20,714·20 (30,90,188·73)	39,07,804·20 (36,47,155·08)	66,90,405·19
X_1	Sect. I Output (Rs.)	16,66,979·60	20,96,186·67	38,14,410·31
X_2	Sect. 2 Output (Rs.)	14,53,734·55	19,40,307·84	28,75,992·92
F1h	Household F. D. (Rs.) Sect. 1	30,32,850·39 (28,44,368·34)	36,41,359·25	45,11,796·26
F_1g	Govt. F. D. (Rs.) Sect. 1	884,795·86 (9,66,100·00)	13,89,474·34	22,34,567·69
F_2W	Household & Govt. F.D. Sect. 2 (Rs.)	11,43,153·36 (1,247,900·00)	15,40,730·84	22,14,122·24
K		1,404·15	1,587·30	1953·60

The figures in brakets give the corresponding observed figures as roughly estimated directly from official data. As may be seen the fit for a tentative first approach is not discouraging.

As noted before, however, this kind of model construction can only be a continuous process of experimentation. The present model is the first result of the experiment and only by sustained work over longer period can a more improved version be built up. Such a version will also imply better official figures than are available now.

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