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LABOR MIGRATION INTO URBAN CENTERS AND URBAN UNEMPLOYMENT IN KENYA

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LABOR MIGRATION INTO URBAN CENTERS AND URBAN UNEMPLOYMENT IN KENYA

A thesis submitted to the Graduate School of the University of Wisconsin in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

by

Henry Rempel

Degree to be awarded

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To Professors: Baldwin

Morgan

Miracle

This thesis having been approved in respect to form and mechanical execution is referred to you for judgment upon its substantial merit.

Robert M. Bock

Dean

Approved as satisfying in substance the doctoral thesis requirement of the University of Wisconsin.

Robert E. Baldwin

Major Professor

Marvin Miracle

Theodore Morgan

Date of Examination, October 19 1970

LABOR MIGRATION INTO URBAN CENTERS AND URBAN UNEMPLOYMENT IN KENYA

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PREFACE

This dissertation represents another of a growing number of case studies of internal labor migration in less developed countries. As in other studies of this type, a central concern is to explain why some men choose to migrate while others choose to remain in their present location. In contrast to most other studies of this type, the scope of this thesis is restricted to in-migration into urban centers within Kenya. Furthermore, rather than relying primarily on census data, original data on migration flows and income levels were generated through the use of a survey. Also, an explicit attempt is made to test some of those more recent migration theories which seek to incorporate urban unemployment as an integral part of the explanation of the rural-urban migration process.

The approach to the subject is basically in the human capital tradition, seeking to explain migration on the basis of the expected costs and benefits to be derived from a spatial move. Although emphasis is placed on the expected costs versus the expected benefits to migration, some consideration is given to the push versus the pull aspects of migration and to the formulation of the selection process which determines who migrates and who chooses to remain. Throughout, primary consideration is given to the economic determinants of migration although some non-economic factors are considered as well.

The empirical work is based primarily on a survey of 1,444 men who were resident in one of Kenya's eight largest urban centers at the

time of the survey and who had migrated there during the period of 1964 to 1968. The nature of the questionnaire used in the survey enables two complementary approaches to the subject. The one approach is in the form of regression analysis based on the migration and income histories of the migrants involved in the survey. In addition, the questionnaire contained a variety of questions designed to gain the migrant's opinions on why he moved, how long he intended to stay, and what he thought of life and work in urban centers. An analysis of these responses is presented along with the regression results.

A case study of this type could have been carried out in any one of a number of countries. Kenya proved to be suitable in the sense that rapid urbanization based on urban in-migration was taking place under the conditions of a rural-urban wage differential and rather widespread urban unemployment. Furthermore, the Government of the Republic of Kenya granted permission for the study and provided the co-operation necessary for the success of the project.

In addition to acknowledging the vital co-operation of the various government officials, the author wishes to express his appreciation to John R. Harris and Michael P. Todaro for granting permission to carry out this aspect of their larger research project and for their assistance in preparing earlier drafts of parts of this thesis. Similarly, I wish to acknowledge the assistance of my thesis committee, Professors Robert E. Baldwin, Theodore Morgan, and Marvin P. Miracle. A note of thanks is extended as well to the many students who carried out the interviews, assisted in the preparation of the data for computer analysis, and typed the various manuscripts involved. Here special

mention must be made of Mrs. Elaine Berman who played a key role in preparing the data, Miss Elena Spielman who typed earlier drafts of the thesis, and Mrs. Georgina Buddick who typed this final draft. Also, special mention must be made of Mr. Robert Scott of the Computing Centre, University College, Nairobi, for valuable assistance in programming and for making the arrangements for the use of the Government of Kenya Treasury computer, and to the members of the programming staff of the Social Science Research Institute at the University of Wisconsin for similar assistance.

Also, the author wishes to acknowledge the assistance provided by the various institutions that made this study possible. First, there is the Institute for Development Studies, University College, Nairobi, and more specifically the Director, Professor James Coleman, who arranged for the use of Institute facilities and the availability of research assistants. In terms of financial support, special mention needs to be made of the Mid-West Consortium for the grant enabling my family and me to spend a year in Kenya, the Rockefeller Foundation for providing money for interviewers and research assistants, the Government of Kenya for computer time, the Canada Council for a grant making possible an additional year of research at the University of Wisconsin, and the Graduate School of the University of Wisconsin for a grant for computer time at the University of Wisconsin.

Finally, I wish to mention my wife and children who shared with me the exciting experience of living in Kenya and provided the encouragement needed to carry this study through to completion.

TABLE OF CONTENTS

LIST OF TABLES

CHAPTER I

RURAL-URBAN LABOR MIGRATION AND URBAN UNEMPLOYMENT: THE NATURE OF THE PROBLEM

A distinctive characteristic of labor markets in Africa has been the migration of people from a home area to those areas where wage employment was available.[1] In more recent times, especially since Independence was granted, the important areas of wage employment in many African countries have tended to be centered in the towns and cities. As a result, the 1960's have been characterized by a distinct "drift" of people from rural areas to urban centers. At the same time, the existence of a large number of urban unemployed has been creating a situation which is of growing concern to both politicians and social scientists alike.[2]

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[1]Eliot J. Berg, "The Economics of the Migrant Labor System," Urbanization and Migration in West Africa, ed. Hilda Kuper (Berkeley: University of California Press, 1965), p. 160.

[2]The existence of both rural-urban migration and urban unemployment is so apparent to the observer in Africa that the presence of these phenomena is merely assumed in the literature without any real attempt to document the extend of the problem. Some examples are Josef Gugler, "On the Theory of Rural-Urban Migration: The Case of Subsaharan Africa," Sociological Studies 2: Migration, ed. J. A. Jackson (Cambridge: Cambridge University Press, 1969), pp. 134-155; P. C. W. Gutkind, "African Responses to Urban Wage Employment," International Labour Review, XCVII (February, 1968), pp. 135-166; John R. Harris and Michael P. Todaro, "Migration, Unemployment and Development: A Two-Sector Analysis," The American Economic Review, LX (March, 1970), pp. 126-142; Robinson G. Hollister, "Manpower Problems and Policies in Sub-Saharan Africa," International Labour Review, XCIX (May, 1969), pp. 515-532; and Michael P. Todaro, "A Model of Labor Migration and Urban Unemployment in Less Developed Countries," The American Economic Review, LIX (March, 1969), pp. 138-148.

In the case of Kenya, during the period between the 1948 and 1962 censuses, the number of Africans residing in towns with a population of 2,000 or more increased from 3.1 to 5.3 per cent of the total African population.[3] The estimated annual growth rates of the eight towns and cities under consideration in this study are given in Table 1.1. The totals for these eight urban centers represent 85.5 and 80.1 per cent respectively of the total urban population for the years 1948 and 1962. The estimated annual growth rate for Kenya's population during this same period is just under three per cent.[4]

Information on the extent of urbanization since the 1962 Census is limited indeed. For the 1962-1970 period, the Town Planning Section of the Nairobi City Council uses estimates of annual growth rates ranging from 4.9 to 7 per cent for the city of Nairobi and an estimate of 5.2 per cent for all the other towns in Kenya.[5] Unpublished

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[3]Kenya, Statistics Division, Ministry of Economic Planning and Development, Kenya Population Census, 1962, Vol. III: African Population (Nairobi: Government Printer, 1966), p. 23.

[4]The difference in the population totals between 1948 and 1962 indicates an annual growth rate of 3.3 per cent. Etherington, on the basis of fertility studies, etc., proposes the median growth rate of 2.94 per cent or the modal growth rate of 2.64 per cent are likely closer to the actual growth rate. D. M. Etherington, "Projected Changes in Urban and Rural Population in Kenya and Its Implications for Development Policy," Education, Employment and Rural Development: the Proceedings of a Conference Held at Kericho in September, 1966, ed. James R. Sheffield (Nairobi: East African Publishing House, 1967), pp. 54-74. Ominde, in his study of Kenya's population, accepts Etherington's estimates. S. H. Ominde, Land and Population Movements in Kenya (London: Heinemann Educational Books, Ltd., 1968), p. 85.

[5]Nairobi City Council, Town Planning Section, City Engineer's Department, City of Nairobi Planning Report No.1: Population (Nairobi, 1967), Figure 19.

statistics from the Town Planning Department of the Ministry of Settlement of the Government of Kenya indicate the use of a rate of 7.2 per cent to project the annual growth rate of African population in both the urban and peri-urban sections of Kisumu for the period 1967 to 2000. In an unpublished census of Thika which was completed in 1968 by Mr. Elisha Onyango, Housing Officer for the Thika Municipal Council, a population total of 29,463 is indicated.

TABLE 1.1.--Estimated growth of African populations in the eight largest urban centers

Urban Center	Population 1948	Population 1962	Rate of Growth (per cent per annum)
Nairobi	64,397	266,946	6.5
Mombasa	42,853	111,847	7.1
Kisumu	5,336	14,119	7.2
Nakuru	12,845	30,189	6.3
Eldoret	5,408	15,059	7.6
Thika	2,806	11,352	10.5
Nanyuki	3,041	8,919	8.0
Nyeri	1,858	6,256	9.1
Totals*	138,544	353,987	

*The population totals are understated somewhat in that they do not include the peri-urban regions around Nairobi and Kisumu. These peri-urban regions contained approximately 73,000 and 30,000 Africans respectively, as of the 1962 Census.

Source:

Kenya, Statistics Division, Ministry of Economic Planning and Development, Kenya Population Census, 1962, Vol. III: African Population (Nairobi: Government Printer, 1966), p. 23.

Comparable data on the extent of urban unemployment are not as readily available. The practical difficulties involved in tabulating the actual number unemployed are extensive when many men are "under-employed," others are only temporarily in the labor market, while still others are merely visiting in the towns to determine whether they want to stay. No doubt a second reason why data are not available is that the publication of such statistics would be politically explosive. A comparison of employment data for the years 1965 to 1967 with the estimated growth rates for the eight urban centers indicates that some towns probably experienced increasing rates of unemployment while others may have experienced decreasing rates of unemployment.[6]

Associated with such a shift is the spatial location of people from a rural area to an urban center, there can exist a variety of economic, social and political costs and benefits.[7] For example, economic costs are incurred in the actual move itself as well as in the provision of housing, sewer and water facilities, schools and other amenities in the urban centers for the incoming migrants. Furthermore, an economy incurs a very real cost if the migrants are employed less productively following migration than prior to their migration. The increase in crime, marriage breakdown, etc., believed to be associated with rapid urbanization and widespread unemployment is an example of the social costs involved. Politically, a potentially explosive situation exists in

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[6]Kenya, Statistics Division, Ministry of Economic Planning and Development, Statistical Abstract, 1966, p. 134; and Kenya, Statistics Division, Ministry of Economic Planning and Development, Statistical Abstract, 1968, p. 165.

[7]For a discussion of some of the possible benefits of rural-urban migration see Marvin P. Miracle and Sara S. Berry, "Migrant Labour and Economic Development," Oxford Economic Papers (New Series), XXII (March, 1970), pp. 90-104.

that a large number of unemployed people are continuously present in the midst of the signs of development so evident in urban areas, yet they are not permitted to share in these advantages of economic development.

More specifically, in Kenya, during the time of this survey, the pronouncements of some public officials, the debate in the Kenyan Parliament and the statements of some social scientists led one to believe that Kenya was beset with an urban unemployment problem bordering on crisis proportions. Although it was not clear which of the above mentioned costs concerned the politicians and social scientists most, it was clear that the magnitude of these costs was sufficient to warrant serious consideration of various means of controlling the net flow of labor to urban centers. At the time, government efforts, under the assumption that the migrants had land to which they could return, were limited primarily to moral suasion by calling on the urban unemployed to return to their land. Within government circles, interest was growing in rural development as a solution. Also, some consideration was being given to the spatial decentralization of industry as a possible control measure. The use of an enforced back-to-the-land movement was not proposed openly, although the passage of an Anti-Vagrancy Act was certainly a move in that direction.

Presumably, the intention of these proposed solutions to urban unemployment is not to completely eliminate rural-to-urban migration, but rather to regulate the size of the migration flow. This presumption is based on Kenya's desire to achieve economic development, the evidence of historical experience and the theories of economic development which conclude that economic development necessitates rural-to-urban migration.

In the early stages of development in countries like Kenya, the

population is predominantly dependent on agricultural activity as a means of livelihood. As a result of the spatially diffused distribution of agricultural activity, the population during its early stages of development tends to be spread out over all of those areas which are suitable for agriculture. In contrast to agricultural activity, industrial activity tends to have a concentrated spatial distribution. Therefore, during the process of development, the agglomeration of labor resources may become necessary, depending on the relative importance of industrial activity to the economy and the labor input coefficients of these industrial activities.

It is on this point that the historical experience of countries which have realized a relatively high level of development provides a rather unequivocal picture. First, all such countries have experienced a marked decline in the proportion of the population in agricultural activity. This is true even for those countries dependent on an export sector based on primary products. Furthermore, these countries have experienced a rather distinct agglomeration of industrial activity in urban centers. As a result, the economic development of these countries has been associated with a rural-to-urban shift in the spatial location of the population.

In addition, economic development theories have tended to place considerable importance on shifting labor resources from the indigenous agricultural sector of the economy. This emphasis is especially prominent in the "dual economy" literature. For example, the Fei and Ranis model utilizes the re-allocation of labor from the agricultural to the industrial sector as the criteria for measuring the degree of

success of development efforts.[8]

Therefore, given Kenya's desire for economic development, a certain amount of rural-to-urban shift of the population is to be expected. The questions remaining are when should this shift in the spatial location of the population take place and what measures should be adopted to control the flow of migrants. In evaluating the applicability of programs such as forcing people back to the land or increasing the employment opportunities in the rural areas as a method of controlling the flow of rural-to-urban migration, the pertinent questions that need to be raised are: (1) what are the costs (both in terms of explicit expenditures and in terms of modifying such goals as economic development) involved in these proposed solutions to urban unemployment; (2) what are the benefits to be derived from these proposed programs; and (3) will these programs in fact alleviate the urban unemployment problem. The overall objective of this study is to provide some answers to parts of the last question. More specifically, this study will seek to specify and quantitatively estimate the underlying determinants of the rural-to-urban migratory behavior that gives rise to the urban unemployment problem.

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[8]John C. H. Fei and Gustav Ranis, Development of the Labor Surplus Economy: Theory and Policy (Homewood: Richard D. Irwin, Inc., 1964).

CHAPTER II

A MODEL OF LABOR MIGRATION

In a specification of the underlying determinants of rural-urban migratory behavior, several different factors need to be considered. First, what are the motivating forces which cause an individual to move? Are the forces which motivate an individual to leave his present location basically similar to the forces that motivate him to select one particular destination from a range of possible destinations?[1] If the overall motivation for migration is broken down into its constituent push and pull aspects, is it relevant and feasible to measure the relative strength of the pull versus push forces? Furthermore, since in general not all people in one area decide to move to some other area, what is the nature of the selection process which causes some to decide to move while others decide to remain?

In a series of recent studies on migration, both in the United States and in less developed countries, economic forces have been identified as a primary motivation for migration.[2] In a survey of

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[1] Leatrice and John MacDonald indicate studies on motives for migration are in general unimformative since they fail to see the need to separate out the motive for leaving an area from a motive for moving elsewhere. "Motives and Objectives of Migration: Selective Migration and Preferences Toward Rural and Urban Life," Social and Economic Studies, XVII (December, 1968), pp. 417-434.

[2] Some examples are Ralph E. Beals, M. B. Levy and L. N. Moses, "Rationality and Migration in Ghana," Review of Economics and Statistics,

literature on migration in Subsaharan Africa, Gugler, concludes that economic forces have been predominant as the cause of rural-urban migration.[3] Building on the findings of these earlier studies we present in this chapter a theoretical model of rural-urban migratory behavior that is intended to provide an answer to the questions raised above. The approach is to specify first those explanatory variables which are distinctly economic in character and then to expand the model to include some non-economic factors.

A rather standard approach to specifying the economic determinants of migratory behavior is to hypothesize that individuals base their locational decisions on what they perceive to be their respective expected net income over time in different locations.[4]

$$(2.1) \quad M_{ij}(t) = f(V_i(t), V_j(t), D_{ij}(t))$$

where: "M_{ij}" is a measure of the number of people who move

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XLIX (November, 1967), pp. 480-486; John C. Caldwell, African Rural-Urban Migration: The Movement to Ghana's Towns (New York: Columbia University Press, 1969); Lowell E. Gallaway, "Industry Variations in Geographic Labor Mobility Patterns," The Journal of Human Resources, II (Fall, 1967), pp. 461-474; R. N. Harris and E. S. Steer, "Demographic-Resource Push in Rural Migration: A Jamaican Case Study," Social and Economic Studies, XVII (December, 1968), pp. 398-406; Bruce H. Herrick, Urban Migration and Economic Development in Chile (Cambridge: M.I.T. Press, 1965); Leatrice and John MacDonald, op. cit., pp. 417-434; Gian S. Sahota, "An Economic Analysis of Internal Migration in Brazil," Journal of Political Economy, LXXVI (March/April, 1968), pp. 218-245; and Larry A. Sjaastad, "Income and Migration in the United States," (Unpublished Ph.D. dissertation, Department of Economics, University of Chicago, 1961).

[3]Gugler, op. cit., p. 137.

[4]Larry A. Sjaastad, "The Costs and Returns of Human Migration," Journal of Political Economy, LXX (October, 1962), pp. 80-93.

from "i" to "j" during time period "t";[5]

"V" is the present value at time "t" of an expected real income stream over some relevant time horizon;

and "D_{ij}" is the money cost of moving from "i" to "j", which includes forgone income and the cost of sustenance as well as the actual cash outlay for moving.

For the purposes of this study an important consideration is the manner in which the expected income stream, and hence "V", is defined. Assuming individuals are motivated by income maximization considerations, then clearly the individual who chooses to migrate is hoping to realize the prevailing average income in the urban center of his choice. Nevertheless, the nature of reality is such that during some relevant time period he may be employed in the modern sector or employed in the traditional (including self-employment) or totally unemployed. Therefore, as indicated by Todaro, the migrant's expected income from employment in the modern sector is a function of both the prevailing income in the modern sector and the probability of being employed there, versus being "underemployed" in the traditional sector or unemployed.[6]

According to the Todaro model, in any one time period the probability of being employed in the modern sector, say "P", is directly related to the probability, say "π", of being selected as an employee

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[5]Throughout this paper the subscript "i" will be used to designate the source of migration while "j" represents the urban center of in-migration. The combination "ij" indicates a move from "i" to "j". The letter "f" will be used throughout to indicate a functional relationship which need not indicate the same function each time it appears.

[6]Todaro, op. cit.

from a given stock of unemployed and underemployed. Todaro assumes that the selection of such an employee is strictly a random process, in which case, for any one individual in the labor force at urban center "j", the probability of obtaining a job in the modern sector within "z" time periods after migration, "$P_j(z)$" is:

$$(2.2) \quad P_j(0) = \pi_j(0)$$

and

$$(2.3) \quad P_j(1) = \pi_j(0) + \{1 - \pi_j(0)\}\, \pi_j(1)$$

therefore

$$(2.4) \quad P_j(z) = P_j(z-1) + \{1 - P_j(z-1)\}\, \pi_j(z)$$

or

$$(2.5) \quad P_j(z) = \pi_j(0) + \sum_{t=1}^{z} \pi_j(t) \cdot \prod_{s=o}^{t-1} \{1 - \pi_j(s)\}$$

where: "$\pi_j(t)$" equals the ratio of new modern sector employment openings in urban center "j" during time period "t" relative to the number of accumulated job seekers in the same urban center during the same time period.

It should be noted here that such a selection process implies, for each individual, a value of "P_j" which varies directly with the length of stay by this individual in urban center "j".

Combining this value for "P" with the corresponding income prevailing in "j", the expected income in urban center "j" during an individual's planning horizon can be expressed as:

$$(2.6)\quad V_j(t) = \int_{t=o}^{z} P_j(t)\, Y_j(t)\, e^{-rt} dt$$

where: "$Y_j(t)$" is the average real income of individuals employed in the modern sector at time "t" in urban center "j";

"z" is the number of time periods in a migrant's planning horizon;

and "r" is a discount rate reflecting the migrant's degree of consumption time preference.

In a similar manner, it is possible to express expected income in a typical rural area, say "V_i" ("V_R" in the Todaro Model), in terms of the average income in "i" and the probability of realizing this income, say "P_i".

Incorporating the above definition of an expected income stream into a standard income maximization model we see an individual comparing the average real income in urban center "j" and the probability of getting this income with the sum of his expected real income if he stays in "i" plus the cost of moving from "i" to "j". If only income maximization considerations are relevant to the decision, then the individual will move from "i" to "j" if $V_j - V_i > D_{ij}$. Stated alternatively, to induce migration to some other location, the "pull" force "$V_j - V_i$", must be sufficiently strong to more than cover the cost of moving. Furthermore, if more than one alternative location has a pull sufficiently strong to induce migration, then the selection of one particular migration destination will be determined by the strongest pull force relative to the respective costs of moving to each of these alternative locations. Alternatively, if all individuals, regardless

of the rural area they come from, do in fact have an equal chance of being selected for employment in urban center "j", then the source of migrants will include all the rural areas which have an expected income such that the inequality $V_j - V_i > D_{ij}$ holds.[7]

If we now expand the migration model to include the possibility of more than one urban migration destination and more than one rural source of migration, then it becomes necessary to introduce an additional income variable to enable an explanation of possible variations in the migration patterns between the various rural-urban combinations. The need for such an additional explanatory variable can be illustrated with the following example. Let us assume there is an additional rural area "m" and an additional urban center "n" such that $V_m > V_i$, $V_n > V_j$, $V_n - V_m = V_j - V_i$, $D_{mn} = D_{ij}$, but $D_{in} > V_n - V_i$. In this situation there would be no migration from "i" to "n" since the respective pull force is not sufficient to cover the cost of the move. Furthermore, according to the hypothesis stated above, we would expect comparable migration flows between "i" and "j" and between "m" and "n" since the respective pull forces relative to the costs of moving are identical. Will these migration flows in fact be comparable? We postulate that they will not be comparable because the residents of "i" are worse off if they stay in "i" than the residents of "m" if they stay in "m" since $V_m > V_i$. Therefore, we consider it relevant to add the expected income in the rural area as an additional explanatory variable which represents a measure of the respective push forces from

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[7]This assumption of an equal probability of being selected for employment in urban center "j" is relaxed on page 15.

each rural area. This addition would be in keeping with Friedlander's observation with reference to migration over time from Puerto Rico where he noted migration may decline, even though income is rising in both countries in such a manner that the income differential remains constant, since the rise in income in Puerto Rico represents an elimination of the push forces from Puerto Rico.[8]

As a result of these separate specifications of the push and pull forces in migratory behavior, equation 2.1 can be re-written in the form:

$$(2.7) \quad M_{ij}(t) = f\{V_j(t) - V_i(t),\ V_i(t),\ D_{ij}(t)\}$$

This general hypothesis, which is limited to the economic determinants of migration, is considered to be a necessary aspect of an explanation of migratory behavior but, as it stands now, it is not considered to be a sufficient explanation. The existence of imperfections in the way the labor market operates could result in changes in the general results obtained from this model. In addition, the model implies the existence of accurate information in each of the rural areas with reference to job and income availability in each of the urban centers. Finally, recognition needs to be given to the possible role of non-economic forces as determinants of migration. Therefore, we propose modifications to a strict expected income maximization model to enable us to encompass these additional aspects of migratory behavior.

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[8]S. L. Friedlander, Labor Migration and Economic Growth: A Case Study of Puerto Rico (Cambridge: M.I.T. Press, 1965), p. 40.

The basic migration model, as stated above, is based on an assumption of an equal probability of being selected for employment from a given stock of unemployed. If, in fact, discriminatory hiring practices exist, then this assumption needs to be modified, which in turn results in variations in the value of "V_j" as perceived by the residents in the various rural areas. Such discriminatory practices may be personal in nature where individuals from some particular clan, ethnic group or area are given preferential treatment. Alternatively, the discrimination may arise from the fact that any given stock of unemployed in "j" is not made up of homogenous labor, in which case the men with a higher level of education, more experience or of a particular age group may be given preferential treatment. To the extent that the discriminatory behavior affects total rural areas, the result will be variations in "V_j" between rural areas. Such variations in "V_j" cause variations in the pull forces even though expected income in the various rural areas is basically similar. As a result, the discriminatory treatment would cause variations in migration flows between the various rural-urban combinations. If the discriminatory treatment affects differently the people within a rural area, then the result will be that some people within an area will migrate while others choose to remain. For example, if in rural areas there is little variation in expected income across all levels of education attainment, then the men with above average educational attainment may be "pulled" to "j" while the men with little or no education are not attracted because they perceive a lower probability of being employed and thus a lower "V_j" than in the case for the men with more education.

With reference to the implicit assumption on information flows,

there is a need to recognize the possible effects on migratory behavior of limited information availability or the availability of information of questionable quality. If the extent and quality of information is not distributed equally between rural areas and within any one rural area, then we can expect variations in migratory behavior as a result of variations in the perception of earnings possibilities in various urban centers. In addition, the variations in perceived expected income as a result of variations in the quantity and quality of information available may explain part of the selection process within any rural area where one individual decides to move to some other urban center while a third person chooses to remain in the rural area. For the purposes of our model we postulate that information about income and job opportunities in urban centers is carried primarily by friends and family members. According to this hypothesis, the extent and destination of previous migration from an individual's clan or immediate home area will determine the quantity and the nature of the information he receives. This information will determine his perception of "V" in each of the urban centers and thus determine his migratory behavior.

The possible relevance of non-economic variables as determinants of migration is entered into our model in the form of consumption preferences favoring the amenities available in urban centers relative to the amenities available in rural areas. We do not see these non-economic variables as a sufficient cause for migration but, rather, given an economic incentive to move, variations in amenity availability can serve as an additional inducement to move as well as a determinant of the particular migration destination selected. As in the case of expected income, we postulate the pull of amenity availability is the

difference between amenities available in "j" and the amenities available in "i" relative to the push of amenity availability as measured by the level of amenities available in "i".

Incorporating some of these additional hypotheses into the formal model, we obtain the following relationship:

$$(2.8)\quad M_{ij}(t) = f\{V_j(t) - V_i(t),\ V_i(t),\ D_{ij}(t),\ E(t),\ C_{ij}(t),\ A_j(t) - A_i(t),\ A_i(t)\}$$

where: "E" is a measure of the quality of the labor available for employment;

"C_{ij}" is a measure of clan contacts from "i" available in "j";

and "A" is a measure of amenity availability.

Several questions can be raised with reference to the completeness of this migration model. The first question relates to the practical problem of empirical measurement. For example, it is difficult to incorporate into the variable "A" an adequate measurement of all the forces included in a "bright lights" hypothesis of labor migration. We return to this question in Chapter IV when we develop an econometric model to be used as a test of this migration model. A second question relates to the inclusion of those forces which may be relevant as an explanation of migratory behavior. For example, a variable measuring the cost of living in each urban center and in each rural area would be relevant if there are significant variations in the cost of living between urban centers and between rural areas. A third question relates to issues which are conceptually relevant but are virtually impossible to measure. This problem is indicated by Somers when he proposes that

the gains from migration are primarily economic but the costs of movement are frequently non-economic and in a form which is difficult to measure.[9] The validity of such a conclusion is indicated by the studies in which distance moved was used as a proxy for the economic costs of movement. The degree of significance of such a distance variable has resulted in the conclusion that distance measures more than the economic costs of migration.[10]

As in these other studies, no explicit attempt is made to specify such non-economic variables in our migration model. One possible option which can be used to separate out some of these non-economic forces is to enter dummy variables for each origin of migration or, if feasible, for each major ethnic group involved in the migration process under consideration.

Summary

In this chapter we present a theoretical model which is intended to explain the determining forces underlying rural-to-urban migratory behavior. Primary emphasis is placed on economic variables with the expected real income in both the rural migration source and the urban migration destination and the costs involved in moving from the one location to the other entered as actual variables. In comparison with other studies of internal migration flows, a unique aspect of this model

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[9]Gerald G. Somers, "The Returns to Geographic Mobility: A Symposium," The Journal of Human Resources, II (Fall, 1967), p. 428.

[10]For example see Beals, et al., op. cit.; Walter Elkan, "Migrant Labor in Africa: An Economists Approach," The American Economic Review, XLIX (May, 1959); Sahota, op. cit.; or Sjaastad, "Income and Migration in the United States."

is the inclusion of the probability of obtaining employment in the specification of the expected income variables.

The non-economic variables included in the migration model are the levels of educational attainment of the migrants, a proxy for clan contacts from a rural area in the urban centers, and an index of amenity availability in the rural areas and urban centers. Some other variables which are conceptually relevant but difficult to measure are mentioned but not included as variables in the model.

CHAPTER III

THE CHARACTERISTICS OF THE MEN WHO MIGRATE TO URBAN CENTERS

The purpose of this chapter is to present a description of the men in the survey sample. Included in this description are the rural-to-urban movements of the men, their personal characteristics and some aspects of their background. A comparison of this information with available information on the adult male population of Kenya enables some hypotheses on the selection process which determines who migrates to an urban center and who remains in a rural area to be tested. The source of information for this chapter is the tabulations of the responses to the questions in the survey questionnaire.[1]

The tabulations of questionnaire responses are based solely on the 1,091 survey questionnaires. In a number of tables, the province of birth does not correspond with the migration origin used in the regression analysis. The row heading "urban center" includes the eight urban centers under consideration in this study. The number for any one province excludes the men born in the urban center(s) located within the province. Tanzania and Uganda were not included in the regression

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[1] A brief description of the sampling procedure and the survey is provided in Chapter IV and in Appendix B. The sampling procedure and the administration of the survey is documented in detail in a previous paper, "Rural-to-Urban Labour Migration: An Interim Report," (Nairobi: Institute for Development Studies, Staff Paper No. 39, August, 1968).

analysis.

For a number of tables the sample was divided into either two age or two education categories to test for significant variation in responses among the two age or education sub-groups. The two education sub-groups are the men who have a maximum of primary education versus the men who have completed at least one year of secondary education. There was no obvious dividing point to form the two age categories so the sample was divided at the median age. The result was a group of younger men age 15 to 22 years, and a group of older men age 23 to 50 years.

For a valid chi-square test, it was necessary to group the data categories to obtain a minimum of five observations in any one table cell. As a result, unless stated otherwise, a chi-square test is based on four groups of urban centers. These are Nairobi, Mombasa, the Western towns (Kisumu, Nakuru and Eldoret), and the Central towns (Thika, Nanyuki and Nyeri). The probability of obtaining a particular computed chi-square value by chance is designated with the symbol "α"

The rural-urban migration observed in Kenya originated from six of Kenya's seven provinces. On the western edge, bordering Lake Victoria is Nyanza Province. This is predominantly a Luo area which contains one major urban center, Kisumu. Western Province is located north of Nyanza Province. This is a Luhya area which does not contain any of the major urban centers. More than 70 per cent of the migrations from Western Province originate from Kakamega District, which is located approximately an equal distance from both Kisumu and Eldoret. To the east the next province is Rift Valley which included the former "white highlands" and now contains both Nakuru and Eldoret. During the time

of our survey there was very limited rural-to-urban migration from this province. The next province, Central, contains the densely populated Kikuyu areas, and includes all the remaining urban centers except Mombasa. Some three hundred miles east of Nairobi is Mombasa, Kenya's seaport and the center of economic activity in Coast Province. In between Central and Coast Provinces is Eastern Province. This is a rather sparsely populated area in which the Kamba, Meru and Emba peoples predominate.

Tables 3.1 and 3.2 indicate the magnitude of the migration flows between the province of birth and each of the eight urban centers. In Table 3.1, the migration flows are expressed as a percentage of the totals in each urban center, while in Table 3.2, the migration flows are expressed as a percentage of the total population in each province. Table 3.3 indicates the distribution of the major ethnic groups within each of the eight urban centers.

Some caution should be exercised in interpreting Table 3.2. In effect, a separate sample was drawn in each urban center. Since the number of men selected in any one urban center was not necessarily proportional to the importance of that center in the migration process, the total sample for the eight urban centers is not necessarily indicative of the total urban in-migration population.

These three tables indicate the importance of the Kikuyu of Central Province in the urban in-migration flows. The Luo of Nyanza Province and the Luhya of Kakamega District are the other two important sources. Although comparison with previous migration studies is complicated by the changes in provincial boundaries, there does appear to be a high degree of correspondence between these migration flows and

TABLE 3.1.--The percentage distribution of the men in each urban center who were born in a particular Province

Provincial Birthplace of Migrants	Urban Center								Totals
	Nairobi	Mombasa	Kisumu	Nakuru	Eldoret	Thika	Nanyuki	Nyeri	
Urban Center	3.2	2.0	4.6	. .	1.9	4.9	2.0	. .	2.7
Nyanza	15.0	14.6	65.9	22.7	19.2	27.2	4.1	4.7	21.2
Western	14.8	15.4	26.4	22.7	50.0	6.2	4.1	1.2	16.3
Rift Valley	3.2	. .	2.3	19.7	7.7	. .	10.2	2.4	3.6
Central	43.2	9.0	. .	27.3	9.6	42.0	61.2	88.1	31.7
Eastern	16.9	26.0	.8	3.1	. .	18.5	18.4	3.6	14.6
Coast	1.0	27.5	. .	. .	3.9	. .	. .	. .	7.0
Uganda and Tanzania	2.7	5.5	. .	4.5	7.7	1.2	. .	. .	2.9
Totals	100	100	100	100	100	100	100	100	100

TABLE 3.2.--The percentage distribution of the men born in each Province who migrated to a particular urban center

Provincial Birthplace of Migrants	Urban Center								Totals
	Nairobi	Mombasa	Kisumu	Nakuru	Eldoret	Thika	Nanyuki	Nyeri	
Urban Center	41.4	17.3	20.7	. .	3.4	13.8	3.4	. .	100
Nyanza	24.3	16.0	36.8	6.5	4.3	9.5	.9	1.7	100
Western	31.1	22.0	19.2	8.5	14.7	2.8	1.1	.6	100
Rift Valley	30.8	. .	7.7	33.3	10.3	. .	12.8	5.1	100
Central	46.7	6.7	. .	5.2	1.4	9.9	8.7	21.4	100
Eastern	39.6	41.5	.6	1.3	. .	9.4	5.7	1.9	100
Coast	5.3	92.1	. .	. .	2.6	. .	. .	. .	100
Uganda and Tanzania	31.2	43.8	. .	9.4	12.5	3.1	. .		100
Totals	34.3	23.3	11.9	6.1	4.8	7.4	4.5	7.7	100

TABLE 3.3.--The percentage distribution of the major ethnic groups in each of the eight urban centers

Ethnic Groups	Urban Center								Totals
	Nairobi	Mombasa	Kisumu	Nakuru	Eldoret	Thika	Nanyuki	Nyeri	
Kikuyu, Embu and Meru	51.6	10.4	2.3	38.8	15.4	48.1	85.7	94.0	38.3
Kamba	12.8	27.3	.8	1.5	. .	15.2	2.0	. .	12.1
Luhya and Kisii	15.6	15.3	31.5	25.4	48.1	7.6	4.1	3.6	17.5
Luo	14.8	14.5	63.8	22.4	23.1	27.8	6.2	1.2	20.9
Coast Tribes	1.6	26.7	. .	. .	7.7	. .	. .	1.2	7.1
Other	3.6	5.8	1.6	11.9	5.7	1.3	2.0	. .	4.1
Totals	100	100	100	100	100	100	100	100	100

the migration flows evident in the 1962 census. For example, Ominde reports the following breakdown of migration sources for Nairobi City: Central - 44.90 per cent; Nyanza - 35.28 per cent; Rift Valley - 1.38 per cent; Southern - 16.70 per cent; and Coast - 1.48 per cent.[2] The distribution for Mombasa is: Central - 12.25 per cent; Nyanza - 24.96 per cent; Southern - 24.23 per cent; and Coast - 35.97 per cent.[3] For comparison with Table 3.1, Nyanza Province would equal approximately the current Nyanza and Western Provinces, while Southern would equal the current Eastern Province. The major exception here would be Embu and Meru Districts which were previously in Central Province but now are in Eastern Province.

There is some indication of a positive correlation between the size of an urban center and the distance covered in a rural-urban move.[4] For example, Nyeri draws 88 per cent of its migrants from Central Province and Kisumu draws mainly from Nyanza and neighboring Western Provinces. In contrast, Nairobi and Mombasa attract considerable numbers from most sources. This is especially evident for the Luo and the Luhya who must travel some two hundred miles to Nairobi, and an additional three hundred miles to Mombasa. Nakuru and Eldoret appear to be an exception to the general rule, although both draw from their most immediate surroundings, given that there is very limited rural-urban migration from Rift Valley Province. Nanyuki is not the exception it

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[2]Ominde, op. cit., p. 124.

[3]Ibid., p. 130.

[4]In the regression analysis for the total sample, the correlation coefficient between log "P_j" and "D_{ij}" ranges from .34 in 1967 to .52 in 1964. The highest correlation coefficient is obtained for the secondary education sub-group.

would appear, since all but one of the Eastern Province in-migrants are from the nearby Embu and Meru Districts. Thika is a distinct exception, although the high degree of similarity in the distributions for Thika and Nairobi indicates Thika may be merely an extension of the Nairobi labor market. The two centers are within twenty-seven miles of each other.

The age distribution of the migrants is consistent with the hypothesis that younger men predominate in the migration process. Table 3.4 indicates that more than 80 per cent of the men were less than thirty years of age at the time of migration. A comparison of the age distribution of the sample with the projected age distribution of adult males for 1968 indicates comparable percentages in the 15 to 19, and 25 to 29 age categories. The major deviation is the disproportionately large number of migrants in the 21 to 24 age category which is offset by a declining proportion of the men above thirty who engage in rural-urban migration. There is very limited indication of significant variation in the age distribution of the men among urban centers (α=.1). The variation in the age distribution of the men among provinces of birth is not significant (α=.9).

There does not appear to be significant variation in the distribution of the marital status of the men in the sample versus the comparable group of men in Kenya's population. Table 3.5 indicates 52.5 per cent of the men in the sample are single. At the time of the 1962 Census, 41.5 per cent of the African men in the 15 to 49 age category were reported to be single.[5] A higher percentage of single men in the sample was expected since the sample has a proportionately

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[5]Kenya, Statistical Abstract, 1966, Table IX.1, and Statistical Abstract, 1968, Table 17.

TABLE 3.4.--The percentage distribution of the age of the men in each of the eight urban centers

Urban Center	Age						Totals
	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 50	
Nairobi	23.5	43.9	14.8	7.8	5.7	4.3	100
Mombasa	26.2	37.9	21.0	6.9	4.4	3.6	100
Kisumu	26.4	29.6	19.2	12.0	6.4	6.4	100
Nakuru	26.9	37.3	11.9	13.4	6.0	4.5	100
Eldoret	26.9	38.5	13.5	5.8	5.8	9.5	100
Thika	25.9	55.6	12.4	3.7	1.2	1.2	100
Nanyuki	13.0	34.8	23.9	8.4	10.9	13.0	100
Nyeri	15.9	46.3	21.9	9.8	1.2	4.9	100
Total	23.9	40.9	17.3	8.0	5.0	4.9	100
Projected 1968 population*	23.2	19.5	16.3	13.5	11.2	16.3	100

*These projections are for the total African male population within these age categories. The source is Kenya, Statistics Division, Ministry of Economic Planning and Development, Kenya Population Census, 1962, Vol. III; African Population (October, 1966), Appendix IV, g.

TABLE 3.5.--The percentage distribution of the marital status of the men who migrated to each of the eight urban centers

Urban Center	Marital Status			
	Single	Married and wife resident in urban center	Married and wife resident outside of urban center	Percentage of married men whose wife is resident elsewhere
Nairobi	52.3	20.8	26.9	56.5
Mombasa	59.4	12.3	28.3	69.6
Kisumu	41.7	31.5	26.8	45.9
Nakuru	59.7	16.4	23.9	59.3
Eldoret	50.0	19.2	30.8	61.5
Thika	60.5	16.0	23.5	59.4
Nanyuki	24.5	34.7	40.8	54.1
Nyeri	54.2	7.2	38.6	84.2
Totals	52.5	19.0	28.5	60.0

larger number of younger men.

There is a distinct indication of significant variation in the distribution of marital status among urban centers ($\alpha=.001$). This variation cannot be explained on the basis of variations in the distribution of the age and education of the migrants among urban centers since it is evident also within each of the age and education subcategories (age: $\alpha=.01$; education: $\alpha=.02$). An alternative explanation is that the young "school leavers" tend to head for Nairobi once their path to higher education has been cut off. This hypothesis is not borne out by Table 3.5. It is Thika, Nakuru, Mombasa, and to some extent Nyeri, but not Nairobi, that receive more than an average number of single men. A third possible explanation is a tendency for the smaller towns, which draw migrants primarily from nearby areas, to receive married men who leave their wives in the home area. This hypothesis applies to Nyeri but not to Kisumu nor to Mombasa. Possibly the explanation lies in differing social and cultural practices among ethnic groups.

With reference to the education variable, there is direct evidence of a relationship between a migrant's education and his propensity to migrate to an urban center. Twenty-five per cent of the migrants have some secondary education while an additional 47 per cent have 5 to 8 years of formal schooling (Table 3.6). Of these men with 5 to 8 years of education, 75 per cent appear to have completed primary education.

Because of a lack of data, it is difficult to compare the distribution of educational attainment for the comparable segment of Kenya's population. According to the 1962 Census, the levels of

TABLE 3.6.--The percentage distribution of the levels of educational attainment of the men who migrated to each of the eight urban centers

Urban Center	Education			
	No Formal Education	Standards 1 - 4	Standards 5 - 8	Forms 1 - 6
Nairobi	10.8	13.5	41.7	34.0
Mombasa	15.5	18.4	50.1	16.0
Kisumu	11.6	21.7	45.8	20.9
Nakuru	17.5	12.7	55.5	14.3
Eldoret	30.8	9.6	38.5	21.1
Thika	5.0	7.5	52.5	35.0
Nanyuki	10.0	12.0	68.0	10.0
Nyeri	7.6	12.7	45.5	34.2
Totals	12.7	14.8	47.1	25.4

educational attainment of African men in the 15 to 59 age category is distributed as follows: no formal education - 53.5 per cent; Standards 1 to 4 - 22.3 per cent; Standards 5 to 8 - 21.9 per cent; and Forms 1 to 6 - 2.3 per cent.[6] Certainly the census distribution understates the 1968 levels of educational attainment since there have been significant advances in the provision of educational opportunity in the post-Independence period. This is evident in the survey sample where 34 per cent of the men under twenty-three have some secondary education, while only 16 per cent of the men twenty-three and older have some secondary education. The comparison of the survey education distribution

[6]Kenya, Statistical Abstract, 1968, Tables 17 and 19.

with that from the census indicates the propensity to migrate to an urban area increases with education. Of the men with some secondary education, 84 per cent were in school the quarter prior to migration.

A second aspect of the relationship between the education and rural-urban migration which is more difficult to explain is the significant variation in the distributions within the sample. One significant variation is the distribution of the levels of educational attainment among provinces of birth (α=.001). Central Province and, to a certain extend, Nyanza Province provide proportionately more men in the secondary education group, while Coast and Eastern Provinces provide a low number. Eastern and Rift Valley Provinces provide proportionately more men with no formal schooling, while Coast and Nyanza Provinces provide proportionately more men with some primary education. This variation could be the result of variations among provinces in the availability of employment opportunities in rural areas or in the quality of primary education, which determines a student's ability to compete for the limited number of secondary school admissions available in Kenya.

In addition, the distribution of the levels of educational attainment between urban centers is significant (α=.001). Furthermore, there is significant variation among urban centers in the performance on the KPE exams at the end of primary education (α=.01). Nairobi, Thika and Nyeri receive a proportionately larger number of men with some secondary education in contrast to Mombasa, Nakuru and Nanyuki which receive a low number. Nanyuki and Nakuru, and to a lesser extent Thika and Mombasa, receive a proportionately larger number of men who have 5 to 8 years of education. Nakuru, Eldoret and Mombasa receive a disproportionate number of men with no education. Nairobi, Nyeri, Thika

and Kisumu receive a proportionately larger number of men who have completed KPE.

TABLE 3.7.--The percentage distribution of the levels of educational attainment of the men born in each of the Provinces

Province of Birth	Education			
	No Formal Education	Standards 1 - 4	Standards 5 - 8	Forms 1 - 6
Urban Center	13.8	7.0	51.6	27.6
Nyanza	8.0	12.5	51.8	27.7
Western	13.8	17.3	44.8	24.1
Rift Valley	17.9	10.3	46.1	25.7
Central	8.8	11.3	44.5	35.4
Eastern	21.4	19.5	46.6	12.5
Coast	14.5	22.4	54.0	9.1
Uganda and Tanzania	21.9	25.0	40.7	12.4
Totals	12.7	14.8	47.1	25.4

To some extent, this variation among urban centers may be explained by the variations in educational opportunities in the dominant sources of migration for each urban center. For example, the high number of men with no formal schooling who go to Nakuru, Eldoret and Mombasa may be the result of the high number of men with no formal schooling in Rift Valley and Eastern Provinces. Similarly, the large number of better educated men in Kisumu and Nyeri may be the result of good educational opportunities in Nyanza and Central Provinces. There may be somewhat of a tendency for the Nairobi-Thika market to attract a disproportionate

number of men with secondary education and men with primary education who have completed KPE.

TABLE 3.8.--The percentage distribution of KPE performance of the migrants who have completed primary education

Urban Center	KPE Performance	
	Have Not Completed KPE	Have Completed KPE
Nairobi	29.3	70.7
Mombasa	48.8	51.2
Kisumu	30.0	70.0
Nakuru	46.7	53.3
Eldoret	50.0	50.0
Thika	25.0	75.0
Nanyuki	34.8	65.2
Nyeri	19.4	80.6
Totals	35.1	64.9

In Table 3.9, the cross-tabulation of the education of the migrants and the education of their fathers is presented. In the 1962 Census, the distribution of the levels of educational attainment for men in the 35 to 59 age category is as follows: no formal education - 72.7 per cent; Standards 1 to 4 - 18.0 per cent; Standards 5 to 8 - 8.4 per cent and Forms 1 to 6 - .9 per cent.[7] This distribution, which roughly approximates the distribution of the age of the fathers'

[7] Ibid.

of the migrants, does not vary to any great extent from the row totals in Table 4.9. Therefore, migration does not appear to be determined by level of educational attainment of the fathers of the migrants.

TABLE 3.9.--Cross-tabulation of the education of the migrants and the education of their fathers (percentages)

Education of the Migrant's Father	Migrant's Education				Totals
	No Formal Education	Standards 1 - 4	Standards 5 - 8	Forms 1 - 6	
No Formal Education	12.1	13.3	38.4	14.1	77.9
Standards 1 - 4	.3	.9	4.7	6.6	12.5
Standards 5 - 8	.3	.6	3.8	4.3	9.0
Forms 1 - 6	. .	. .	.2	.4	.6
Totals	12.7	14.8	47.1	25.4	100

The most important activity of the men in the quarter prior to migration was obtaining an education (47.4 per cent). Only a small proportion of the men, 16.6 per cent, were engaged in farming. An additional 19.6 per cent were employed for wages, which may have been on a farm. The variation between provinces of birth in the distribution of the nature of employment prior to migration is significant ($\alpha = .001$).[8]

[8]For the chi-square test, the four columns of Table 3.10 were Nyanza, Western or Rift Valley, Central and Eastern or Coast. The four rows were in school, employed for wages, self-employed or farming and employed part-time or unemployed.

TABLE 3.10.--The percentage distribution of the nature of employment of the men prior to their rural-urban migration

Province of Birth	Nature of Employment						Totals
	In School	Employed for Wages	Self-Employed	Farming	Employed Part-time	Unemployed	
Urban Center	41.4	20.7	3.5	13.8	10.3	10.3	100
Nyanza	48.9	15.1	4.8	16.5	3.5	11.2	100
Western	41.8	18.6	2.3	20.9	2.8	13.6	100
Rift Valley	53.8	15.4	7.7	2.6	5.1	15.4	100
Central	54.4	14.5	3.5	9.6	3.2	14.8	100
Eastern	39.9	14.6	4.4	27.8	4.4	8.9	100
Coast	50.0	14.5	3.9	22.4	2.6	6.6	100
Uganda and Tanzania	21.9	31.2	12.5	18.8	3.1	12.5	100
Totals	47.4	16.0	4.2	16.6	3.6	12.2	100

The deviations from expected values are primarily in the in school, farming and unemployed columns. Central Province has a proportionately larger number of men in school while Western Province has a low number. Rift Valley Province also has a high proportionate number but is unimportant in the total sample. With the exception of Western Province, there is an inverse relationship in each Province between the number engaged in farming and the number unemployed. This distribution also varies significantly within each of the two age sub-groups (α=.001).

Table 3.11 indicates the relationship between the nature of employment prior to migration and the migration destination. The variation in the distribution among urban centers is significant (α=.001). In addition, the variation in this distribution is also significant within the two age sub-groups (α=.001), and within the two education sub-groups (α=.001). The Nairobi-Thika labor market has provided a strong attraction for the men who were in school before migrating. The urban centers which draw predominantly from Central Province have a proportionately low number of men who were farming prior to migration. The unemployed are especially attracted to Nakuru, Nanyuki and Nyeri. For Nanyuki and Nyeri, these unemployed are largely in the over twenty-two age category, while for Nakuru, the majority are twenty-two years or under. With the exception of Nyeri, the unemployed prior to migration are almost exclusively in the primary education sub-group.

One of the reasons why relatively few of the men were farming prior to migration is that only one third of the men have land which they can farm (see Table 3.12). In addition, 31 per cent of the migrants either no longer have a father or their father has no land.

TABLE 3.11.--The percentage distribution between urban centers of the nature of employment of the men prior to their rural-urban migration

Urban Center	Nature of Employment						Totals
	In School	Employed for Wages	Self-Employed	Farming	Employed Part-time	Unemployed	
Nairobi	57.0	16.0	2.4	10.2	3.7	10.7	100
Mombasa	41.5	14.2	5.9	24.5	4.4	9.5	100
Kisumu	37.9	18.6	3.9	26.4	2.3	10.9	100
Nakuru	44.8	16.4	6.0	10.4	1.5	20.9	100
Eldoret	36.5	11.6	3.8	30.8	3.8	13.5	100
Thika	56.9	14.8	4.9	14.8	3.7	4.9	100
Nanyuki	40.0	14.0	6.0	10.0	4.0	26.0	100
Nyeri	41.0	21.7	3.6	8.4	3.6	21.7	100
Totals	47.4	16.0	4.2	16.6	3.6	12.2	100

Therefore, the majority of the migrants are landless and almost one-half of the men without land have no prospect of obtaining land unless they can earn sufficient money to purchase it. Furthermore, in the four cells in Table 3.12 which indicate both the migrant and his father possess land, approximately half of these claims are for the same piece of land. The migrant already refers to the land as his land, even though the father still possesses it.

TABLE 3.12.--The percentage distribution of the amount of land owned by the migrant and by his father

Migrant's Father	Migrant			Totals
	Owns No Land	Owns One to Five Acres	Owns More Than Five Acres	
Migrant Has No Father	22.4	11.2	5.7	39.3
Owns No Land	8.9	.6		9.5
Owns One to Five Acres	17.0	7.3	.7	25.0
Owns More Than Five Acres	17.8	4.1	4.3	26.2
Totals	66.1	23.2	10.7	100

As indicated in Table 3.13, the urban centers that draw primarily the Kikuyu of Central and Rift Valley Provinces, or the Luhya of Western Province, have been receiving migrants who have proportionately less land. The dominant deviations in Table 3.13 are in the three "Kisumu" cells which account for two-thirds of the computed chi-square value (α=.001). The variation in the distribution between urban centers also is

significant within the age and education sub-groups (age: $\alpha=.001$); education: $\alpha=.001$).[9]

TABLE 3.13.--The percentage distribution of the amount of land owned by the migrants in each urban center

Urban Center	Acres of Land			Totals
	No Land	One to Five Acres	Five Acres or More	
Nairobi	74.3	19.3	6.4	100
Mombasa	59.4	31.1	9.5	100
Kisumu	31.8	39.5	28.7	100
Nakuru	73.1	16.4	10.5	100
Eldoret	69.2	23.1	7.7	100
Thika	70.4	19.7	9.9	100
Nanyuki	76.0	14.0	10.0	100
Nyeri	83.4	7.1	9.5	100
Totals	66.1	23.2	10.7	100

Summary

The empirical test of the model developed in Chapter II is based in part on information obtained from a survey of men who migrated from a rural area to an urban center between 1964 and 1968. This chapter provides some of the characteristics of the men included in the survey sample.

[9]The row limits for the chi-square test are no land, one to three acres of land, and four acres or more.

As was the case prior to 1962, the rural-urban migration flows are dominated by the Kikuyu of Central Province, the Luo of Nyanza Province and the Luhya of Kakamega District. There is some indication that the distance over which an urban center attracts rural residents varies directly with the size of the urban center. As a result, there is a distinct tendency for men to migrate to the nearest urban center with the exception of Nairobi, Thika and Mombasa. Because of various similarities in the characteristics of the migrants in Nairobi and Thika, a proposal is made that for the purposes of studying rural-urban migration, the two centers might be viewed as one labor market.

On the basis of the information in this chapter, a typical migrant is likely to be relatively young and either single or married with a wife resident elsewhere than in his urban center. In addition, he will likely have completed more formal education than the average Kenyan his age, and he will have less actual or potential claim to land ownership than is true for the average Kenyan. There are some notable exceptions to this typical picture. For example, a migrant in Mombasa, Nakuru or Thika is more likely to be single, while a migrant in Kisumu is least likely to have a wife who is resident outside of Kisumu. Also, a migrant in Kisumu is much more likely to have actual or potential claims to land than migrants in the other centers. The limited claims to land is a possible explanation why farming is relatively unimportant (16.6 per cent of the sample), as an occupation prior to migration.

CHAPTER IV

THE REGRESSION MODEL

The labor migration model presented in Chapter II focuses attention on the incidence of rural-to-urban migration. The model indicates the various factors which enter into an individual's decision to either migrate to an urban center, or to remain in a rural location. To test this type of model adequately, it would be necessary to interview permanent residents at both the origin and the destination of migration, as well as the people who actually migrate from the one location to the other. Since such a survey was beyond our resource capability, it was decided to test a more limited migration model. In this more limited model an attempt is made to explain the rate of migration from rural areas to urban centers on the basis of variables which are average magnitudes for each combination of rural area and urban center. This "rate of migration" model is based directly on the migration model we developed in Chapter II.

In specifying the precise relationships between the variables, we envision the following decision-making process. The residents of a given educational level in area "i", with a given "V_i" and "A_i", receive a series of communications from the various urban centers concerning the prevailing magnitudes of "V" and "A" in each of these centers. On the basis of this information, as modified by the relative cost of moving to the various centers and by the extent of clan contacts

in each urban center, a certain percentage (greater than or equal to zero) of the residents of a given educational level in "i" decide to move to an urban center, say center "j". Assuming this relationship to be linear, we have at time "t" for a given level of educational attainment,

$$(4.1)\quad M_{ij}^{E}(t) = a_1(V_j^{E}(t) - V_i^{E}(t)) + a_2 V_i^{E}(t) + a_3 D_{ij} + a_4 C_{ij} + a_5 \frac{A_j}{A_i} + a_6 N_j + a_7 T_0^{i} + \ldots + a_{12} T_5^{i} + u$$

where: "M_{ij}" is now defined as the percentage of the residents in area "i" that migrates to "j";

"N_j" is the number of people in urban center "j";

"T_0^{i}" to "T_5^{i}" is a series of dummy variables for tribal affiliation where "T_k" takes a value of one if "k" is the dominant tribe in "i", otherwise it is equal to zero;

and "u" is a random disturbance term.

To carry out a statistical test of this regression model, it was necessary to obtain data on rural-urban migration flows and the expected income variables in both the rural areas and the urban centers. For this purpose a survey was carried out in Kenya during December, 1968.[1] The questionnaire was administered by some fifty students from the

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[1] Documentation of the sampling procedure and a description of the survey are included in an earlier paper, "Rural-to-Urban Labour Migration: An Interim Report," (Nairobi: Institute for Development Studies, Staff Paper No. 39, August, 1969). Copies of all instruments used in the survey and a brief description of the survey are attached as an Appendix to this thesis.

University College, Nairobi.

For sampling purposes, the relevant population included all the people who had migrated to one of the urban centers in Kenya. For practical reasons, the scope of the survey was limited to a population of men, ranging in age from 15 to 50 years, who had migrated to one of Kenya's eight largest urban centers since Kenya's Independence (December, 1963), and who were still resident in one of these urban centers. This restriction on the survey meant losing the information of those migrants who had returned to a rural area. This loss was offset by a considerable reduction in the cost of the survey and in a simplification of the sampling procedure. Limiting the survey to men only did not reduce the validity of the statistical test and enabled us to use published sources of data which tend to be limited to men. A lower age limit of fifteen was chosen since this is the break typically found in these data sources. The upper age limit was set deliberately on the low side to minimize the effect of the people retiring to rural areas after a period of employment in an urban center. Kenya's Independence was chosen as an obvious reference point to which all the respondents could readily relate as each attempted to recall his migration, employment and income history.

A critical decision for this study was the definition of the respective areas involved in both the origin and the destination of migration. Again, both were defined in terms of what was practical, given the availability of published data sources. Rural areas were defined in terms of Kenya's administrative districts. This was the only geographical unit for which the needed data was available. This type of definition proved reasonably acceptable since the most recent re-districting had been based on the distribution of the major ethnic

groups.

The migration destinations were limited to the nine urban centers which had more than 5,000 resident Africans according to the 1962 Census, and which are typically included in the Ministry of Labour's Annual Report. These nine centers are: Nairobi District, Mombasa Municipality, Kisumu Municipality, Nakuru Municipality, Eldoret Municipality, Thika Township, Nanyuki Township, Nyeri Township, and Kitale Municipality. Subsequently, Kitale was dropped since growth after Independence was limited to natural growth rates and, as a result, we were informed that we would not find in-migration there.

The goal of the sampling procedure was to select at random a set of buildings in each of the eight urban centers and then to interview the relevant men resident in each of these buildings. The selection of buildings was made on the most recent maps available for each of the urban centers.[2] The preferred approach would have been to select buildings within any one urban center in proportion to the distribution of the relevant population throughout the urban center. Since the required information on the distribution of the migrant population was not available, the existing information on the distribution of the total population was used as a proxy. This proxy is appropriate, provided the average and the variance of the number of people per building is comparable among different areas of the urban center.

In the selection of actual buildings on a map, some stratification by types of housing was carried out where feasible in order to reduce the cost of the survey. In the majority of the areas involved in the

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[2] A list of the maps used is included in Appendix A.

sampling procedure, a table of random numbers was used in the selection of individual buildings. The exceptions were in the category of temporary housing where actual buildings were not indicated on the map (e.g., Mathari Valley in Nairobi), or where the location of buildings would have made it very difficult to identify a particular house as indicated on the map (e.g., the peri-urban area of Kisumu). In these latter cases, the areas involved were divided into identifiable clusters of buildings; a cluster was selected at random, and then the interviewer was instructed to cover twenty houses located in the approximate location of the selected cluster.

Using the approach of selecting buildings to obtain a sample of migrants, there was a tendency to miss those migrants not residing in known buildings during December, 1968. If there were migrants who had no residence and spent all of their time outdoors, then they were missed completely. An alternative situation was people residing in buildings not indicated on the map. In all cases where it was known that new buildings had been erected after the publication of the map, these buildings were incorporated into the sampling procedure. Some examples are Uhuru Estate in Nairobi and the new Municipal Council Housing in Thika. A more difficult problem was the unauthorized housing which did not appear on the available maps. Although it was not possible to incorporate all the small areas that exist throughout the urban centers, rather extensive sampling was carried out in known areas of unauthorized housing. To our knowledge there was adequate and representative sampling in the areas of unauthorized housing.

On the basis of this survey, 1,091 regular questionnaires plus

an additional 353 "short" questionnaires were completed.[3] The ratio of completed questionnaires to known sample members was higher than 80 per cent. The primary reason for not obtaining an interview was the inability to locate the particular respondent. Eighteen men refused to grant an interview. Twenty-one completed questionnaires had to be rejected since the information provided was incomplete. The questionnaire was designed to cover up to a maximum of three urban in-migrations during the five year period under consideration. To the extent that there were multiple migrations, our sample includes some urban-to-urban migration. Combining this survey information on rural-to-urban and urban-to-urban migration with other published data, we obtain a matrix of information for 146 migration combinations. In the pages that follow we indicate how each variable in the regression model was measured on the basis of the data available.[4]

The Dependent Variable

The dependent variable "$M_{ij}(t)$", is measured in terms of the number of men in the sample who had migrated from "i" to "j" during some time period "t". This variable is expressed in the form of a percentage which is obtained by dividing the number of migrants from "i" to "j" during time period "t" with the population resident in "i" as reported in the 1962 Census. The preferred approach would have been to use only the number of adult men resident in "i" but this breakdown has not been calculated for the changes in administrative districts which took place

[3] A copy of these questionnaires is included in Appendix B.2 and 3.

[4] A brief discussion on the reliability of the data used in this study is included in Appendix C.

after the 1962 Census. As a result, it was necessary to use the total population figures as given in the 1966 Statistical Abstract.[5]

The Expected Income Variables

For the purposes of this study, the key economic variables in the set of explanatory variables included in equation 4.1 are "V_i" and "V_j". Implicit in this model is a decision making process in which an individual estimates the present value of his expected income if he remains in his present location and the present value of his expected income if he moves to an urban center "j". On the basis of the difference between these two values, as modified by some other economic and social considerations, he then decides to move to "j" or to stay in "i". The standard procedure for obtaining the respective values of the various expected income streams would be to discount the relevant average income figures at some appropriate discount rate over the relevant time horizon.

For this study, it is our intention to incorporate into the calculation of the respective present values the probability of gaining employment at the prevailing average income.[6] The method used to incorporate the probability of being employed utilized the identity that

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[5] Kenya, Statistical Abstract, 1966, Table 13.

[6] If all in-migrants typically receive jobs which pay less than the average in "j", then this prevailing average income will be proportionately lower than the average for all residents in "j". If the average wage for in-migrants tends to be lower than the average for all residents in "j" because in-migrants accept the jobs available when they arrive rather than wait for the job openings suited for their capabilities, then the probability of gaining employment in "j" will reflect a degree of under-employment.

the average income of a particular vintage of migrants to "j" must be equal to the product of the probability of these men gaining employment at the income level prevailing in "j" and the average income in "j". Similarly, the average income in "i" of a given vintage of migrants from "i", prior to their migration, must equal the probability of their being employed at the prevailing income level and the average income in "i". On the basis of these identities, we postulate that potential migrants perceive their expected income in "i" in terms of their own past income experience in "i" and the past income experience in "i" of other recent migrants from "i". Similarly, they perceive their expected income in "j" in terms of the current income experience of previous migrants to "j". Stated more formally, "V_i" was measured as follows:

$$(4.2)\quad V_i^E(t) = \frac{Y^E(t-1)}{(1+r)} + \frac{Y^E(t-2)}{(1+r)^2} + \frac{Y^E(t-3)}{(1+r)^3} + \frac{Y^E(t-4)}{(1+r)^4}$$

where: "$Y_{(t-1)}$" is the average income in "i" in time period "t - 1" of the men who migrated in time "t";

"$Y_{(t-2)}$" is the average income in "i" in time period "t - 2" of the men who migrated in time periods "t" or "t - 1";

"$Y_{(t-3)}$" is the average income in "i" in time period "t - 3" of the men who migrated in time periods "t" to "t - 2";

"$Y_{(t-4)}$" is the average income in "i" in time period "t - 4" of the men who migrated in time periods "t" to "t - 3";

"r" is a discount rate reflecting the migrant's degree

of consumption time preference;

and "t" refers to quarterly time periods.

"V_j" was measured in the same manner as "V_i" with the exception that the "Y's" were defined as follows:

"$Y_{(t-1)}$" is the average income in "j" in time period "t" of the migrants in "j" who arrived in time period "t - 1";

"$Y_{(t-2)}$" is the average income in "j" in time period "t" of the migrants who arrived in time period "t - 2", etc.

In calculating the "Y's", the income variables used included both cash income from wages, business or farm sources, and the value of income in kind in the form of food, housing, or agricultural produce. In the calculations a migrant who was a student in a particular quarter was not included in the set of observations used to compute the expected income for the quarter. The nature of the data placed limitations on the length of the time horizons open for consideration. Questioning on income was limited to four quarters prior to migration so the "V_i" is based on a one-year time horizon. The nature of the urban data enables us to consider a longer time horizon for "j". As a result, "V_j" was calculated for both a one-year and a two-year time horizon. The interest rate paid for consumption loans was considered to be the appropriate discount rate. We did not have actual information on the prevailing interest rate on consumption loans but there was some consensus among Institute members and men from the Statistics Division of the Ministry of Economic Planning that 16 per cent per annum was a likely rate. To enable a test of the model's sensitivity to changes in interest rates,

the expected income values were estimated also on the basis of a 3 per cent and a 5 per cent rate per quarter. On the basis of some preliminary calculations, it was determined that a time horizon of eight quarters and a discount rate of 3 per cent provided the best fit for the regression model. The results presented at the end of the chapter are based on these values.

These expected income variables can be entered into the regression equation in several forms. Equation 4.1.a indicates migration takes place in response to absolute differences in expected income. An alternative and possibly preferable specification would be to express the rate of migration as a function of relative income differences, (V_j/V_i). Although this alternative formulation captures the intent of the migration model, it reduces the possibility of obtaining a separate measure for the pull and the push forces to migration. In addition, this second specification can be considered a restriction of the model. For example, in the double-log form, this specification states that the elasticity of migration with respect to "V_j" and "V_i" is equal but of opposite sign. In order to obtain the advantages of both approaches, the regression results are reported in both forms. In the case of relative income differences, a measure of high potential arable land per capita was entered in the equation as a proxy for push forces.[7]

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[7]Land area, measured in square miles per person, was calculated from Kenya, Statistics Division, Ministry of Economic Planning and Development, Statistical Abstract, 1966, Table 13. These results were adjusted to reflect the extent of "high potential" arable land in each district as reported in Table 75. Limited value is placed on the term "high potential" since it is based solely on the amount of rainfall recorded in each area. It is a better estimate of arable land available than total acreage, but it ignores other relevant factors such as the existence of rough terrain and limited accessibility to markets for agricultural output.

With reference to the expected income variables, two possible sources of bias exist. First, the income variables will be biased if incomes in "i" and "j" have been changing at different rates. Since we did not have information on the rates of change in income broken down by districts, no attempt was made to adjust the values to counter a possible bias. A similar effect would be realized if prices are changing at different rates in "i" versus "j". The only price index available was for Nairobi so no adjustments were made for price changes. In Nairobi, the change in the price index over the total time period under consideration was 10 per cent with no marked change from year to year. A second possible bias is in the probability of being employed since our sample includes only those men who migrated to urban areas and remained there. We postulate that the men who chose to leave were more likely to be unemployed or employed at low wages, or they had above average earning possibilities in a rural area. To the extent that these postulates apply, we have in fact overstated the probability of being employed in "j" and understated the probability of being employed in "i". Both of these have the effect of reducing the expected income differential between "i" and "j". As a result, the existence of such a bias will cause us to understate the effect of rural-urban income differentials on migration. The degree of bias should decline as we approach the time of the survey since the recent migrants would still be in the urban areas even though they are still unemployed.

The Cost of Moving and Information Flows

For the purposes of determining the social and the economic costs of moving, two variables "D_{ij}" and "C_{ij}", have been entered.

Conceptually, the preferred approach would have been to net out the economic cost of moving from the difference in expected income between "i" and "j". Since it was not possible to measure the economic cost of moving, the distance variable has been entered as a proxy. In each of the administrative districts, distance was measured from the approximate geographic center of the district. As other studies have shown, distance tends to represent more than the economic cost of moving. In an attempt to separate out some of the non-economic costs, "C_{ij}" has been entered as a proxy for clan contacts from "i" available in "j". Basically, "C_{ij}" is the number of people born in "i" who were resident in "j" at the time of the 1962 Census.[8] Since these data had not been adjusted to accord with the present districts, it was necessary to make numerous estimates. For the urban centers other than Nairobi and Mombasa, the assumption was made that movement to the urban center was proportional to the movement to the district in which the urban center was located. For new districts, the contribution to movement was considered to be the same as the district(s) which existed previously. No adjustments were made to the 1962 data to reflect possible movements in population after 1962.

Amenity Levels

As a measure of the pull effects of the "bright lights", an amenity index was developed for each district and each urban center. The calculation of each index was determined by the availability of

[8] Kenya, Statistics Division, Ministry of Economic Planning and Development, Kenya Population Census, 1962, Vol. III: African Population (Nairobi: Government Printer, 1966), Appendix IV (c).

relevant data. For the urban centers, the index was based on cinema seats available, hospital beds available, secondary school classrooms available, and gallons of water consumed per month.[9] The index for rural districts was calculated from the Regional Physical Development Plan for each province as developed by the Town Planning Department of the Ministry of Lands and Settlement. Both indices were computed on a per capita basis. Since our measure of amenity availability was limited to indices, the decision was reached to combine the two as a ratio as presented in equation 4.1. The variable "N_j" has been added as an additional variable to capture the possible effects of a wider range of opportunity in large urban centers even though the amenity availability per capita is identical to that of a smaller urban center.

The Intercept Term

In order to capture the effect of possible discriminatory hiring practices between rural areas, the preferred approach would have been to compute "V_j" relevant to "M_{ij}" on the basis of the current income experience of only those migrants to "j" who have come from "i". The number of observations available was not adequate to enable the use of this preferred approach. Therefore, a set of dummy variables based on tribal affiliation was entered to capture any possible variations in migratory behavior, either because there are discriminatory hiring practices in the urban centers or because there are variations among

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[9] Information on hospital beds and secondary classrooms was provided by the Town Planning Department of the Ministry of Lands and Settlement. Twentieth Century Theatre provided the information on cinema seats. The information on water consumption was obtained from the Town Engineers of the eight urban centers.

ethnic groups in their propensity to migrate. For the purposes of this variable, dominance in a rural area was defined in terms of the largest number resident in the area according to the 1962 Census.[10] If the origin of migration was another urban center, all these dummy variables were entered as zero.

Variations in Migratory Behavior Between Education Groups and Between Age Groups

In specifying the migration model, we noted the possible discriminatory hiring practices which might arise if a given stock of unemployed in an urban center is not made up of homogenous labor. One possible determinant of variations in the quality of labor which can be measured readily is education. Since the explanatory variables are entered as an average magnitude for a rural-urban combination, it is difficult to enter education directly as a variable. As a result, the sample was divided into two education groups. Such a division of the sample enables us to run a separate regression for each education group as well as for the total sample. In these separate runs for each education group, the dependent variable and the expected income variables are measured from the results within each education sub-group. The other variables remain the same for all runs.

The two education sub-groups are the men who have completed up to a maximum of Standard VIII (primary education), versus the men who have completed a minimum of Form I (secondary education). The level of educational attainment was measured as of the time of the survey

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[10]Kenya, Kenya Population Census, 1962, Table V.2.

which, in a few cases, was higher than would have been the case at the time of migration. The breakdown for our sample is approximately 75 per cent in the primary education and 25 per cent in the secondary education group.

Similarly, one would expect variations in migratory behavior between age groups. To begin with, the potential time span for collecting the difference in expected income streams between urban and rural is longer for young men, so they have a greater incentive to invest in a spatial move. Furthermore, it is to be expected that the degree to which the future is discounted varies directly with age.[11] As a result, a move relative to the cost of making the move is less attractive to older men. Finally, there is some indication that some time spent in an urban center may carry a degree of prestige bordering on initiation into manhood.[12] Therefore, in order to measure the possible variations in migratory behavior between age groups, the sample has been divided also into two age groups to enable a separate regression run for each age group.

For the age groupings there were no distinctly logical dividing points so a distribution of the age of the migrants, measured at the time of migration, was obtained and a decision was made on the basis of this distribution. For each of the five years, 1964 to 1968, the age distribution of the men who migrated in a given year was in the form of a curve with only one maximum and with a median age of either 22 or 23 years. As a result, the decision was reached to divide the sample

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[11] Albert Zucker, "A Note on the Declining Tendency With Age for Investment in Human Capital," The Journal of Human Resources, II (Fall, 1967), pp. 538-540.

[12] Gugler, op. cit., p. 137.

into two groups basically equal in size, age 15 to 22 years, and 23 to 50 years.

A Double-Log Specification of the Model

Given the nature of the variables in the model, a double-log specification seems appropriate. Such a specification has the dual advantage of enabling direct comparison with other similar studies and enabling the interpretation of the coefficients as elasticities. There are two exceptions to this overall specification. The distance variable "D_{ij}", which tends to measure more than the economic costs of movement, is entered in a non-log form since its negative effect on migration is expected to rise proportionately faster than the magnitude of "D_{ij}". The amenity variable "A_j/A_i", which is merely an index, is entered also in a non-log form since the value of this ratio may be close to zero in several cases.

Some question can be raised about the use of a single linear equation since the extent of previous migration to "j" relative to the rate of additional job openings will determine the stock of unemployed in time "t" and thus the probability of gaining employment during time period "t". At the same time, the exodus of migrants from "i" can affect the expected income for "i" if the marginal product of the remaining people rises because some of the people migrated. Nevertheless, we decided against a simultaneous system of equations since the Todaro model is one of disequilibrium as long as migration continues to take place at a rate different than the rate of job creation. Furthermore, the model specifically constrains the urban wage from adjusting to a market clearing equilibrium through the existence of a minimum wage

administratively determined. Unemployment arising from migration is the equilibrating force over time. What we want to test now is the hypothesis that individuals do indeed migrate in response to expected real wage differentials perceived at some point in time. At a point in time, as perceived by a prospective migrant, the expected real wage differential and the other explanatory variables are given. Although in the dynamic model a decision to migrate can influence expected real wages, in our regression analysis we are testing the behavioral hypothesis underlying this model, namely that a person migrates given the existence of a wage differential.

The Regression Results

In the five sets of tables that follow, we report the regression coefficients and "t-ratios" (in parentheses underneath the respective regression coefficients) for the regression model. The "a" and the "b" in the table number indicates the two alternative expected income specifications of the model. In the first set, Table 4.1, we report the regression coefficients for the migration flows in each of the five years based on the total sample. In the second set of tables, 4.2, the data for the five years have been combined and then broken down into the two education groups and the two age groups. Tables 4.3 and 4.5 report the regression coefficients for annual migration flows within the primary education group and the two age groups. In Table 4.4, two years had to be combined because of the limited degrees of freedom available. For 1964 in Table 4.5, there were not sufficient degrees of freedom to include the dummy variables. The number of observations in the secondary education group was too limited to run annual regressions.

TABLE 4.1.a.--Annual rural-urban migration of adult males in Kenya

Variable	Year 1968	1967	1966	1965	1964
Constant	-8.986 (5.31)	-6.507 (2.87)	-8.771 (3.86)	-8.435 (4.97)	-9.344 (5.89)
$\text{Log}_e(V_j-V_i)$	.1832 (1.08)	.3521 (1.58)	-.1445 (.54)	.2030 (.56)	-.0050 (.03)
$\text{Log } V_i$	.6884 (1.02)	-.4563 (.54)	.3545 (.39)	.0714 (.12)	.1750 (.28)
D_{ij}	-.0023 (2.37)	-.0022 (1.77)	-.0019 (1.60)	-.0022 (1.95)	-.0028 (2.08)
$\text{Log } C_{ij}$	.1690 (2.84)	.1467 (1.58)	.2092 (2.25)	.1915 (2.20)	.2974 (3.99)
A_j/A_i	-.0103 (1.96)	-.0048 (.84)	-.0084 (.78)	-.0019 (.34)	-.0093 (1.40)
$\text{Log } N_j$	.0867 (.75)	.2283 (1.28)	.1311 (.79)	.1430 (.91)	.1906 (1.31)
Kikuyu	-.9630 (2.92)	-1.132 (2.20)	-.8620 (1.86)	-1.160 (2.41)	-.7033 (1.86)
Embu-Meru	-1.576 (2.91)	. . . .	. . . .	. . . .	. . . .
Kamba	-.9807 (1.95)	-1.425 (2.48)	-1.520 (2.79)	-1.503 (2.90)	-.9190 (1.85)
Luhya	-.4052 (.99)	-2.144 (3.73)	-1.250 (2.16)	-1.951 (3.06)	-1.508 (2.87)
Luo	-.8743 (2.03)	-1.064 (1.49)	-.7374 (1.44)	-1.246 (2.74)	-1.072 (1.96)
Coast	1.095 (1.25)	.6165 (.77)	.6682 (1.23)	. . . .	. . . .
$\bar{R}^2$	.3560	.4433	.3907	.5092	.6021
F-statistic	5.438	4.383	3.335	5.422	5.527
Degrees of Freedom	58	35	28	32	19

TABLE 4.1.b.--Annual rural-urban migration of adult males in Kenya

Variable	Year 1968	1967	1966	1965	1964
Constant	-6.028	1.982	-4.780	-1.844	1.866
	(2.77)	(.48)	(.92)	(.41)	(.25)
Log (V_j/V_i)	.2978	.1224	-.4913	.6311	.5342
	(.63)	(.21)	(.81)	(1.14)	(.91)
D_{ij}	-.0022	-.0014	-.0020	-.0024	-.0025
	(2.22)	(1.38)	(1.62)	(2.22)	(1.83)
Log C_{ij}	.1617	.1619	.2071	.2705	.2888
	(2.56)	(2.09)	(2.16)	(2.65)	(3.96)
A_j/A_i	-.0083	-.0059	-.0046	-.0027	-.0058
	(1.66)	(1.13)	(.80)	(.50)	(.85)
Log N_j	.1038	.1929	.1315	.0737	.1890
	(.87)	(1.31)	(.77)	(.47)	(1.32)
Log L_i	.2301	1.709	.5547	1.100	1.943
	(.54)	(2.45)	(.63)	(1.43)	(1.44)
Kikuyu	-.9837	-.6495	-.6475	-1.178	.2436
	(2.96)	(1.28)	(1.03)	(2.52)	(.32)
Embu-Meru	-1.645	. .	. .	. .	. .
	(3.08)	. .	. .	. .	. .
Kamba	-.7874	.8538	-.7422	-.2492	1.680
	(1.15)	(.81)	(.54)	(.25)	(.89)
Luhya	-.5239	-1.056	-.8859	-2.124	-.9696
	(1.38)	(2.47)	(1.28)	(3.16)	(1.48)
Luo	-1.092	-1.448	-.7097	-1.439	-.8613
	(2.84)	(2.51)	(1.34)	(3.11)	(1.55)
Coast	1.202	1.182	.9667	. .	. .
	(1.31)	(1.50)	(1.23)	. .	. .
$\bar{R}^2$	.4223	.4423	.3829	.5365	.6390
F-statistic	5.294	4.841	3.263	5.930	6.285
Degrees of Freedom	58	42	28	32	19

TABLE 4.2.a.--Rural-urban migration of the men within each education group and each age group during the period 1964 to 1968

Variable	Primary Education	Secondary Education	Ages 15 to 22 Years	Ages 23 to 50 Years
Constant	-9.325	-5.669	-8.527	-7.306
	(4.80)	(2.03)	(7.30)	(4.67)
Log $(V_j - V_i)$	.0305	-.1927	.2185	.3022
	(.12)	(.68)	(.90)	(1.32)
Log V_i	.9893	-.9808	.3486	.2554
	(1.28)	(1.25)	(.93)	(.47)
D_{ij}	-.0041	-.0035	-.0033	-.0032
	(5.22)	(1.82)	(3.82)	(3.74)
Log C_{ij}	.1602	.0373	.1226	.2277
	(3.19)	(.33)	(2.10)	(4.30)
A_j/A_i	-.0138	-.0133	-.0116	-.0186
	(2.93)	(2.08)	(2.22)	(4.55)
Log N_j	.3419	.4177	.3090	.1307
	(3.33)	(1.98)	(2.82)	(1.22)
Kikuyu	-1.681	-.3283	-1.163	-2.134
	(5.89)	(.56)	(3.74)	(7.01)
Embu-Meru	-1.335	. .	-.6651	-2.058
	(3.16)	. .	(.85)	(5.11)
Kamba	-1.135	. .	-.9789	-1.569
	(2.67)	. .	(2.02)	(3.98)
Luhya	-1.414	-.4138	-.8918	-1.907
	(4.52)	(.56)	(2.59)	(5.50)
Luo	-.7240	.3561	-.6717	-1.378
	(2.13)	(.53)	(1.76)	(3.99)
Coast	-.8760	. .	-.6299	-1.423
	(1.98)	. .	(1.46)	(2.84)
$\bar{R}^2$	.5041	.2897	.4347	.5705
F-statistic	10.59	2.556	6.981	11.21
Degrees of Freedom	101	24	81	80

TABLE 4.2.b.--Rural-urban migration of the men within each education group and each age group during the period 1964 to 1968

Variable	Primary Education	Secondary Education	Ages 15 to 22 Years	Ages 23 to 50 Years
Constant	-7.087 (3.14)	2.208 (.54)	-8.833 (3.02)	-3.998 (.19)
Log (V_j/V_i)	-.7993 (1.83)	1.094 (2.41)	.1067 (.37)	.6714 (1.71)
D_{ij}	-.0042 (5.20)	-.0014 (.97)	-.0035 (4.00)	-.0025 (3.00)
Log C_{ij}	.1473 (2.81)	.1482 (1.59)	.1244 (2.04)	.2566 (5.09)
A_j/A_i	-.0153 (3.43)	-.0042 (.67)	-.0124 (2.31)	-.0141 (3.42)
Log N_j	.3638 (3.40)	.3317 (1.80)	.3254 (2.85)	.0676 (.65)
Log L_i	-.0328 (.09)	2.090 (2.83)	-.2195 (.46)	1.067 (3.01)
Kikuyu	-1.676 (5.48)	.1919 (.35)	-1.307 (3.90)	-1.914 (6.59)
Embu-Meru	-1.291 (2.82)	. . . .	-.6775 (.83)	-1.649 (4.14)
Kamba	-1.108 (1.71)	. . . .	-1.313 (1.71)	-.2993 (.57)
Luhya	-1.379 (4.45)	.3205 (.46)	-1.003 (2.79)	-1.740 (5.47)
Luo	-.6853 (2.04)	-.5412 (.98)	-.8001 (2.17)	-1.609 (4.75)
Coast	-.9164 (1.87)	. . . .	-.8360 (1.60)	-.8624 (1.72)
$\bar{R}^2$	.5019	.3499	.4293	.6065
F-statistic	10.50	4.077	6.849	12.84
Degrees of Freedom	101	24	81	80

TABLE 4.3.a.--Annual rural-urban labor migration of men in the primary education group

Variable	Year 1968	1967	1966	1965	1964
Constant	-7.972	-13.18	-6.863	-7.057	-11.75
	(3.01)	(6.65)	(4.45)	(4.32)	(4.84)
Log $(V_j - V_i)$	-.4690	1.033	-.1141	-.2139	.1119
	(1.19)	(2.84)	(.55)	(.83)	(.49)
Log V_i	.5336	2.293	-.5558	-.2573	1.108
	(.46)	(2.61)	(.94)	(.42)	(1.17)
D_{ij}	-.0024	-.0003	-.0022	-.0029	-.0016
	(2.83)	(.29)	(2.23)	(2.45)	(.82)
Log C_{ij}	.1894	.2747	.1638	.2144	.2347
	(3.24)	(3.30)	(1.85)	(2.21)	(2.25)
A_j/A_i	-.0128	-.0001	-.0043	-.0124	-.0100
	(2.83)	(.03)	(.86)	(1.85)	(1.06)
Log N_j	.0425	-.1931	.0842	.0416	.2393
	(.35)	(1.08)	(.51)	(.27)	(1.25)
Kikuyu	-.5217	-1.275	-.4648	-.7042	-.2441
	(1.54)	(2.42)	(1.10)	(1.36)	(.44)
Embu-Meru	-.8373	. .	. .	. .	. .
	(1.75)	. .	. .	. .	. .
Kamba	-.2279	-1.105	-.7824	-.4019	-.7988
	(.56)	(1.93)	(1.59)	(.69)	(1.13)
Luhya	.0531	.4015	-.2147	-1.254	-.9593
	(.14)	(.74)	(.34)	(2.02)	(1.46)
Luo	-.3124	-1.005	-.5220	-.3809	-.9147
	(.83)	(1.69)	(1.19)	(.73)	(1.06)
Coast	1.829	.7616	1.453	.3855	. .
	(2.33)	(1.16)	(2.95)	(.57)	. .
$\bar{R}^2$	.5039	.4168	.4653	.4981	.3597
F-statistic	6.037	3.596	3.698	4.245	2.467
Degrees of Freedom	47	28	22	24	14

TABLE 4.3.b.--Annual rural-urban labor migration of men in the primary education group

Variable	Year 1968	1967	1966	1965	1964
Constant	-6.272 (2.33)	.1004 (.21)	-3.132 (.66)	4.476 (.49)	.8861 (1.19)
Log (V_j/V_i)	-1.440 (2.38)	-.4993 (.76)	.1122 (.21)	.4147 (.72)	.7989 (1.01)
D_{ij}	-.0022 (2.36)	-.0012 (1.24)	-.0023 (2.33)	-.0025 (2.27)	-.0013 (.81)
Log C_{ij}	.1956 (2.99)	.2284 (2.62)	.1506 (1.69)	.2396 (2.49)	.2341 (2.35)
A_j/A_i	-.0118 (2.55)	-.0077 (1.44)	-.0029 (.62)	-.0067 (1.11)	-.0051 (.59)
Log N_j	.0279 (.25)	.0474 (.30)	.0853 (.53)	.0057 (.04)	.2497 (1.46)
Log L_i	.0784 (.17)	1.600 (1.99)	.8842 (1.08)	2.220 (1.37)	3.288 (2.42)
Kikuyu	-.6558 (1.93)	.0883 (.14)	-.0131 (.02)	.1830 (.22)	1.276 (1.46)
Embu-Meru	-1.061 (2.12)	. . . .	. . . .	. . . .	. . . .
Kamba	-.3575 (.51)	1.794 (1.41)	.4786 (.38)	2.506 (1.11)	3.645 (1.83)
Luhya	-.0628 (.16)	.0403 (.08)	.1175 (.18)	-.6154 (.76)	.0895 (.11)
Luo	-.5421 (1.43)	-.2392 (.37)	-.4220 (.91)	-.1423 (.26)	-.3089 (.38)
Coast	1.754 (2.09)	2.391 (2.70)	2.082 (2.80)	1.790 (1.53)	. . . .
$\bar{R}^2$	.4685	.3333	.4821	.5209	.5050
F-statistic	5.375	2.824	3.883	4.551	3.603
Degrees of Freedom	47	28	22	24	14

TABLE 4.4.a.--Annual rural-urban labor migration of the men who are ages 15 to 22 years

Variable	Year 1968	1967	1966-65
Constant	-6.008 (3.44)	-3.719 (.92)	-6.232 (3.64)
Log $(V_j - V_i)$	.2267 (1.10)	-.2613 (.31)	-.2786 (.88)
Log V_i	-.7265 (.90)	-1.713 (.94)	-.9055 (1.25)
D_{ij}	-.0013 (1.13)	-.0016 (.68)	-.0004 (.25)
Log C_{ij}	.2418 (3.10)	.3656 (1.95)	.3010 (2.61)
A_j/A_i	-.0080 (1.38)	-.0030 (.32)	-.0136 (2.17)
Log N_j	-.1487 (.99)	-.2222 (.85)	.0238 (.14)
Kikuyu	-.6578 (1.50)	-1.734 (1.67)	-.8137 (1.49)
Kamba	-.5112 (.99)	-2.029 (1.60)	-.8860 (1.30)
Luhya	-.3323 (.68)	. . . .	. . . .
Luo	-.2011 (.41	. . . .	-.3890 (.67)
Coast	.8176 (1.00)	. . . .	.2551 (.37)
$\bar{R}^2$	.3386	.3540	.5262
F-statistic	2.739	1.733	4.028
Degrees of Freedom	25	6	16

TABLE 4.4.b.--Annual rural-urban labor migration of the men who are ages 15 to 22 years

Variable	Year 1968	1967	1966-65
Constant	-1.141 (.20)	-1.959 (.31)	-12.17 (1.50)
Log (V_j/V_i)	.7356 (1.90)	-.3192 (.26)	.3358 (.70)
D_{ij}	-.0014 (1.24)	-.0016 (.67)	-.0005 (.33)
Log C_{ij}	.2854 (3.33)	.3668 (1.94)	.2736 (2.42)
A_j/A_i	-.0114 (2.11)	-.0029 (.30)	-.0137 (2.07)
Log N_j	-.1700 (1.16)	.3213 (.85)	-.0138 (.08)
Log L_i	1.514 (1.50)	.8125 (.85)	-.6852 (.47)
Kikuyu	-.2258 (.44)	-1.197 (1.52)	-.9667 (1.09)
Kamba	1.572 (1.11)	-1.645 (1.65)	-.1634 (.77)
Luhya	.0928 (.21)	. .	. .
Luo	-.1357 (.28)	. .	-.2960 (.50)
Coast	1.550 (1.65)	. .	.1195 (.11)
$\bar{R}^2$	.3821	.3494	.4929
F-statistic	3.090	1.720	3.808
Degrees of Freedom	25	6	15

TABLE 4.5.a.--Annual rural-urban labor migration of the men who are ages 23 to 50 years

Variable	Year 1968	1967	1966	1965	1964
Constant	-8.359 (3.12)	-10.88 (4.23)	-9.830 (3.05)	-12.46 (7.30)	-12.40 (5.07)
Log $(V_j - V_i)$	.1989 (1.51)	.0668 (.25)	.0041 (.01)	.2055 (.86)	.3190 (1.29)
Log V_i	.4038 (.40)	2.143 (2.08)	1.000 (.77)	1.183 (1.97)	1.474 (1.93)
D_{ij}	-.0017 (1.41)	-.0007 (.38)	-.0026 (1.63)	-.0015 (1.01)	-.0048 (2.59)
Log C_{ij}	.0793 (1.05)	.3820 (3.06)	.1938 (1.45)	.0902 (.80)	.2864 (3.48)
A_j/A_i	-.0063 (.95)	+.0023 (.35)	-.0093 (1.15)	-.0065 (1.07)	-.0284 (1.60)
Log N_j	.0671 (.45)	-.3685 (1.55)	-.0039 (1.75)	.2627 (1.71)	.1539 (.94)
Kikuyu	-.6191 (.95)	-1.902 (2.99)	-.7029 (.94)	-.0958 (.14)	. .
Embu-Meru	-1.514 (1.84)	. .	. .	. .	. .
Kamba	-1.059 (1.34)	-3.101 (4.62)	-.9471 (1.27)	-1.091 (1.69)	. .
Luhya	-.9697 (1.42)	-3.860 (5.22)	-1.502 (2.19)	-.1199 (.11)	. .
Luo	-.6680 (.80)	-1.482 (1.70)	-.5630 (.80)	-.3030 (.46)	. .
Coast	1.485 (1.57)	. .	. .	. .	. .
$\bar{R}^2$	.3800	.5857	.0693	.5752	.6856
F-statistic	3.026	4.594	1.265	4.180	6.255
Degrees of Freedom	27	13	16	12	7

TABLE 4.5.b.--Annual rural-urban labor migration of the men who are ages 23 to 50 years

Variable	Year 1968	1967	1966	1965	1964
Constant	-5.219 (1.39)	-4.354 (.66)	-2.929 (.34)	1.191 (.09)	-14.50 (3.50)
Log (V_j/V_i)	.6247 (.90)	-1.880 (2.20)	-.0623 (.06)	.3096 (.26)	-.6893 (1.74)
D_{ij}	-.0018 (1.46)	-.0015 (.96)	-.0024 (1.43)	-.0011 (.69)	-.0054 (3.21)
Log C_{ij}	.0895 (1.05)	.2522 (2.99)	.2083 (1.56)	.1553 (1.40)	.2486 (2.88)
A_j/A_i	-.0060 (.94)	-.0033 (.52)	-.0080 (.93)	.0065 (.98)	-.0366 (2.29)
Log N_j	.0827 (.54)	-.1224 (.76)	-.0243 (.11)	.1947 (1.17)	.1035 (.63)
Log L_i	.3682 (.59)	.1527 (.13)	.8091 (.53)	1.868 (.78)	-1.088 (1.78)
Kikuyu	-1.080 (1.94)	-1.579 (2.15)	-.5051 (.47)	.1880 (.22)	. .
Embu-Meru	-1.633 (2.19)	. . . .	. . . .	. . . .	. . . .
Kamba	-.9507 (.92)	-2.550 (1.50)	.0460 (.02)	1.097 (.35)	. . . .
Luhya	-1.103 (1.67)	-3.159 (3.94)	-.8696 (.83)	-1.216 (1.16)	. . . .
Luo	-1.103 (1.73)	-.7925 (.73)	-.5724 (.79)	-.4337 (.61)	. . . .
Coast	1.449 (1.49)	. . . .	. . . .	. . . .	. . . .
$\bar{R}^2$	.3435	.6001	.0552	.4986	.6924
F-statistic	2.759	4.659	1.222	3.349	6.417
Degrees of Freedom	27	13	16	12	7

In all the regression runs, the dependent variable in the log of the percentage of men in area "i" within the relevant education or age group who migrate to urban center "j" in time period "t".[13] The six names - Kikuyu, Embu-Meru, Kamba, Luhya, Luo, and Coast - are dummy variables for ethnic groups as defined with the term "T" in equation 4.1. For the urban-to-urban migration observations, all of the dummy variables were entered as zero so it was necessary to include an intercept term. The coefficient of determining "$\bar{R}^2$" has been adjusted for degrees of freedom.

In interpreting the regression results in Tables 4.1 to 4.5, it is important to keep in mind that the percentage of men from "i" who migrate to "j" is in all cases less than one. The logarithm of a fraction is a negative number. As a result, the dependent variable in this regression analysis was a negative number. The negative value of the "constant" must be seen in these terms. The higher the absolute value of the "constant", the smaller the percentage of men in rural areas who would engage in rural-urban migration if the value of all the explanatory variables was zero.

The inclusion of dummy variables for ethnic groups states that the slope parameters are the same among ethnic groups but allows for variations in the intercept term. For each ethnic group the intercept term is obtained by adding the coefficient for the ethnic group to the value of the constant term. For example, for the year 1968 in Table 4.1.a,

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[13] The use of a double-log function made it necessary to limit consideration to those observations where the dependent variable was greater than zero and "V_j" was greater than "V_i". Throughout, only those rural-urban combinations with a "V_j" and a "V_i" based on a minimum of five migrants were used.

the intercept term for the Kikuyu is -9.949 while for the Luo it is -9.860. Therefore, if all explanatory variables were zero, a greater percentage of men from Luo districts would migrate than would be the case for the Kikuyu districts.

Summary

In this chapter a regression model is developed on the basis of the migration model presented in Chapter II. Included is a brief description of the survey which provided a major portion of the data. Each variable is described in terms of the manner in which it was measured in the regression equation. The chapter concludes with a set of tables which present the regression results. The interpretation of the results is carried out in the following chapter.

CHAPTER V

THE DETERMINANTS OF RURAL-URBAN MIGRATORY BEHAVIOR

According to the migration model developed in Chapter II, rural-urban migration flows vary directly with the urban expected income "pull" forces, the number of clan contacts in urban centers, the ratio of an urban amenity index to a rural amenity index, and the population size of an urban center. In addition, the model postulated an inverse relationship between migration flows and the rural expected income "push" forces, and the cost of moving from "i" to "j". The empirical results of the regression analysis based on this migration model are presented in Tables 4.1 and 4.5. In this chapter, these regression results and the responses to related questions in the survey questionnaire are utilized to identify the underlying forces which determine rural-urban migratory behavior.

Throughout this chapter regression coefficients are defined as significant on the basis of a 95 per cent confidence interval for a "Student-t" distribution. Also, the regression coefficients which are significant at a 90 per cent level are reported. In all such cases the coefficients are identified as being significant at the 90 per cent level. The format and wording of actual questions used in the survey can be determined in Appendix B.2. In the questionnaire, the term "checklist" indicates that the responses listed in the questionnaire were included solely for recording purposes and were not to be presented to the

respondent.

In a summary of the regression results for the distinctly economic variables, only the proxy for the cost of moving, "D_{ij}", indicates some consistency in being significant as an explanatory variable. As defined in the econometric model (equation 4.1), there is only limited evidence of urban expected income pulling rural men into the urban centers. For the total sample, the coefficient of "$V_j - V_i$" is not significant in any of the five years. If the sample is broken into the four sub-groups, the coefficient is significant only in the primary education group for the one year, 1967 ($a_1 = 1.033$). If the dummy variables "T_1" to "T_6" and the urban population variable "N_j" are dropped, then "a_1" is significant in several additional cases.[1] In the primary education group for the year 1968, $a_1 = -.8565$, while for the older men the 1968 value of $a_1 = .2721$. Also, over the five year period the regression coefficient "a_1" is significant for the younger men ($a_1 = -.5567$).

The existence of a rural "push" force cannot be demonstrated from these data. All the coefficients for rural expected income (V_i) and high potential arable land available per capita in rural areas (L_i) which are significant have an unexpected positive sign. This positive association between "V_i" and rural out-migration to urban areas is most evident among the older men. For the total sample, if the dummy variables are dropped, "a_2" is significant at the 90 per cent level in 1968 ($a_2 = 1.175$)

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[1]The urban population variable "N_j" is positively correlated with the urban expected income variable "V_j". As a result, the regression coefficient and the "t-ratio" associated with "V_j" tend to increase in magnitude if "N_j" is dropped from the equation.

and in 1964 (a_2 = .9598). If the sample is broken down into sub-groups, the coefficient "a_2" is significant at the 90 per cent level for the older men in three of the five years. (In 1967, a_2 = 2.143; in 1965, a_2 = 1.183; and in 1964, a_2 = 1.474.) If the dummy variables are dropped, "a_2" is also significant at the 90 per cent level for 1968 (a_2 = 1.278). In the primary education group, "a_2" is significant in 1967 (a_2 = 2.293). For the five year period, if the dummy variables are dropped, "a_2" is significant at the 90 per cent level for the younger men (a_2 = .5894).

For the variable "L_i", the coefficient "a_6" is significant for the total sample in the one year 1967 (a_6 = 1.709). If the sample is broken down into sub-groups, "a_6" is significant in 1964 in the primary education group (a_6 = 3.288). At the 90 per cent level, "a_6" is also significant in 1967 (a_6 = 1.600). If the dummy variables are dropped, "a_6" is also significant for the older men in 1967 (a_6 = 1.094). For the five year period, a_6 = 2.090 for the secondary education group and a_6 = 1.067 for the older men. Both values are significant at the 95 per cent level. If the dummy variables are dropped, "a_6" is also significant at the 90 per cent level for the primary education group (a_6 = .3842).

If the two expected income variables are combined in the form of a ratio to explain migration flows on the basis of relative income differences, the resulting regression coefficients are significant only in a few cases and have an unexpected negative sign several times. For the total sample, if the dummy variables are dropped, the coefficient "a_1" is significant at the 90 per cent level in two years (a_1 = -.6343 in 1965 and -.7595 in 1964). In the four sub-groups, a_1 = 1.440 in 1968 for the primary education group, -1.880 in 1967 for the older men, and

.7356 in 1968 for the younger men. The last value is significant only at the 90 per cent level. If the dummy variables are dropped, a_1 = -.7834 in 1965 in the primary education group, .8220 in 1966-65 in the younger age group, and -.5861 in 1965 for the older men. Over the five year period, a_1 = 1.094 for the secondary education group, -.7993 for the primary education group, and .6174 for the older men. The latter two values are significant at the 90 per cent level.

The remaining economic variable "D_{ij}" is consistently significant in the total sample and over the five year period.[2] In all cases, the coefficients have the expected negative sign. If the total sample is broken down into the four sub-groups, then in the primary education group the coefficient "a_3" is significant only in the years 1968, 1966, and 1965. If the dummy variables are dropped, "a_3" is significant in each year in the older men sub-group. (1968 = -.0031; 1967 = -.0045; 1966 = -.0025; 1965 = -.0029; and 1964 = -.0048. The 1967 and 1966 coefficients are significant at the 90 per cent level.) Also, in the primary education group in 1964, a_3 = -.0031; and in the younger men sub-group in 1967, a_3 = -.0032. Both coefficients are significant at the 90 per cent level.[3]

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[2] In the total sample, the coefficients for "D_{ij}" are: 1968 = -.0023; 1967 = -.0022; 1966 = -.0026; 1965 = -.0024; and 1964 = -.0025. The 1967 and the 1964 coefficients are significant at the 90 per cent level. Over the five year period, the coefficients for "D_{ij}" are: primary education = -.0041; secondary education = -.0035; younger men = -.0033; and older men = -.0032. The coefficient for secondary education is significant at the 90 per cent level. In form "b" of the equation, the coefficient for "D_{ij}" in the secondary education group is not significant.

[3] The other migration studies using a similar regression equation also report a regression coefficient for the distance variable which is statistically significant and has a negative sign. Beals et al., op. cit.,

The regression results reported above do not provide conclusive evidence that the expected incomes in the migration source and destination areas are an important determinant of the rate of rural-urban migration in Kenya. To conclude that a rural-urban expected income differential does not pull rural residents into urban centers would be contrary to the results reported in other migration studies. For example, Beal et al., in their study of interregional migration in Ghana report a regression coefficient of 2.719 for the income of the men in the destination area who are age 15 to 24 years, and a coefficient of 2.906 for the level of income of all men in the destination area.[4] Sahota, in his study of migration in Brazil, reports coefficients of 2.25 for the men who are age 15 to 29 years, and 1.82 for the men who are age 30 to 59 years.[5]

Although both of these studies use a similar approach to study migration, there are differences between these two studies and our study which may account for their larger, consistently significant regression coefficients. First, both studies consider interregional migration within a country versus our consideration of urban in-migration.[6] In addition, in both studies the net migration of a whole generation is regressed on the level of income at a point in time. Also, Sahota uses the number of

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Sahota, op. cit., and Sjaastad, "Income and Migration in the United States." The magnitudes of the regression coefficients in these studies cannot be compared directly with the results reported here since we chose to enter "D_{ij}" in a non-logarithmic form in contrast to these other studies.

[4]Beal et al., op. cit., Tables 1 and 3, equation 2.

[5]Sahota, op. cit., Table 1, regressions 3 and 6.

[6]This difference is likely of limited significance. As Gugler indicates, in Africa the reasons for interregional and rural-urban migration are quite similar. Gugler, op. cit., p. 137, n. 1.

migrants from "i" to "j" rather than the rate of migration from "i" as his dependent variable. Furthermore, in neither study is an expected income variable defined in terms of the probability of obtaining employment. Nevertheless, other migration studies in Africa, using different statistical techniques, confirm the results of the impact of income variables in the destination area on migration obtained by Beal et al., and Sahota, rather than the results reported in this study. Barber in his study in the Federation of Rhodesia and Nyasaland, Caldwell in his study in Ghana, and Elkan in his study in Uganda record the importance of income and employment opportunities in an urban center or some other destination area as a determinant of migration.[7]

The accumulated evidence on the importance of a low expected income in the migration source area as a push to migration is not as conclusive. Beal et al., do realize regression coefficients with the desired negative sign which are statistically significant.[8] For the level of income in the source area, Sahota reports coefficients of -.77 for the men age 15 to 29 years, and -1.69 for the men age 30 to 59 years.[9] The latter is statistically significant at the 95 per cent level but the former is significant at only the 90 per cent level. Caldwell reports a distinct tendency for households in Ghana of an above average economic level to produce a disproportionate number of persons planning rural-

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[7]William J. Barber, The Economy of British Central Africa: A Case Study of Economic Development in a Dualistic Society (Stanford: Stanford University Press, 1961) Chapter XV; Caldwell, op. cit., chap. 4; and Elkan, Migrants and Proletarians.

[8]The reported regression coefficients are -1.399 for the men age 15 to 24 years, and -1.476 for all adult males. Beal et al., loc. cit.

[9]Sahota, loc. cit.

urban migration.[10] He proposes two possible reasons for this tendency. First, the households of an above average economic level have a greater likelihood of keeping their children in school which in turn has a determining impact on rural-urban migration. In addition, a household may have achieved an above average economic level because a family member is already in an urban center providing financial assistance as well as being an important contact which induces additional rural-urban migration. The existence of similar tendencies in Kenya could account for the positive sign associated with the regression coefficients for the rural expected income variables.

Therefore, we conclude a positive sign for a regression coefficient on a rural expected income variable is not without precedent in the literature, but the limited significance of the urban expected income variable necessitates additional explanation. A possible explanation is that the men in the sample were not motivated by economic forces. This hypothesis is not borne out by the evidence that distance does deter migration. Also, the migrants' explanations of their own behavior indicate economic factors are the determining forces. In question 6 of the survey questionnaire, the men were asked why they decided to leave their home districts. As indicated in Table 5.1, 84 per cent of the men said they migrated because of limited economic opportunities in their home area. In contrast, only .2 per cent left because of a lack of social amenities in their home areas. In Table 5.2, we note that 75.6 per cent of the men who could not find work in their home area did not give a second reason for leaving. Of the men who indicated the lack of land as a primary reason

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[10] Caldwell, op. cit., pp. 83-86.

for leaving, 87.9 per cent indicated an inability to find work as their second reason for leaving.

TABLE 5.1.--The percentage distribution of the primary reasons given by the migrants for leaving their previous location.

Reasons for Leaving	Education		Ages		Total Sample
	Primary	Secondary	15 - 22	23 - 50	
Could Not Find Work	82.8	76.1	79.9	82.6	80.9
Land Was Not Available	3.5	2.1	1.4	5.2	3.2
Could Not Enter a School	2.9	8.1	7.3	.9	4.4
Schools Not Available or of Poor Quality	.5	.7	.7	.4	.6
Lack of Social Amenities		.7	.4		.2
Other Reasons	10.3	12.3	10.3	10.9	10.7
Totals	100	100	100	100	100

A chi-square test of the primary reason for leaving the home area was based on the two economic reasons (rows one and two in Table 5.1), versus all the other reasons. The variation in the distribution of the two types of reasons for leaving between provinces of birth was not significant ($\alpha = .70$). There is significant variation in the distribution of these reasons for leaving between both the two education sub-groups and the two age sub-groups. For the hypothesis of no interaction between the reasons for leaving and education ($\alpha = .001$), while for the hypothesis of no interaction between these two variables within one of the four urban center groupings ($\alpha = .02$). The comparable statistics for the age variable are .01 and .05 respectively. From Table 5.1, we note the older

TABLE 5.2.--The percentage distribution of the primary and the secondary reason given by the migrants for leaving their previous location

Second Choice Response	First Choice Response					Totals
	Could Not Find Work	Land Was Not Available	Lack of Schools	Lack of Social Amenities	Other Reasons	
No Response	75.6	9.1	66.0	50.0	81.0	73.5
Could Not Find Work	. .	87.9	16.0	. .	16.3	5.2
Land Was Not Available	10.9	. .	. .	. .	.9	8.9
Lack of Schools	2.8	3.0	14.0*	. .	.9	3.0
Lack of Social Amenities	.8	. .	. .	. .	.9	.8
Other Reasons	10.2	. .	4.0	50.0	. .	8.6
Totals	100	100	100	100	100	100

*The 14 per cent is possible because three columns were grouped together. Six of the seven responses indicated lack of schools in their first response and poor quality of school in their second response.

men experienced above average difficulty in finding employment in their home area while the men with secondary education had the least difficulty. The variation in the availability of land as a reason for leaving is greatest between the two age groups with the older men showing the greatest concern. The lack of schools and social amenities is of greatest concern to the younger men and the men with secondary education.

A possible alternative explanation for this limited significance of the expected income variables is an error in the specification of the variables. As reported above, income is a significant explanatory variable in other migration studies. As a result, our inclusion of the probability of obtaining a job in the specification of "V" may have reduced the explanatory power of the income variables. This hypothesis is not borne out by the responses to question 7 where the men were asked why they chose their particular migration destination. Some 61 per cent of the men indicated their choice of urban center provided the best possibility of finding employment. The only other reason of distinct importance was the presence of friends in that particular urban center. There may be considerable overlap between these two reasons since the possibility of finding employment is determined in part by the existence of friends in the urban center. We note, for example, that 28.7 per cent of the men who indicated the possibility of finding work as their primary reason indicated the presence of friends in the urban center as their second reason (Table 5.5). Similarly, 36 per cent of the men who indicated the presence of friends as their primary reason indicated the possibility of finding employment as their second reason. In both cases, approximately one-half of the men did not indicate a second reason for their choosing a particular urban center.

TABLE 5.3.--The percentage distribution of the primary reason given by the migrants in each urban center for selecting this particular migration destination

Reason for Selection	Urban Center								Totals
	Nairobi	Mombasa	Kisumu	Nakuru	Eldoret	Thika	Nanyuki	Nyeri	
Best Chance for Finding Work	65.7	41.8	78.9	65.6	57.7	61.7	66.0	73.7	61.5
Schools Available	6.2	1.6	4.7	3.0	. .	6.2	. .	. .	3.8
Social Amenities Available	.5	.8	. .	. .	. .	. .	. .	. .	.4
I Have Friends Here	16.8	43.0	11.7	28.4	40.4	24.7	18.0	5.0	23.9
It is Close to my Home Area	2.4	1.2	.8	. .	. .	1.2	2.0	10.0	2.1
Other Reasons	8.4	11.6	3.9	3.0	1.9	6.2	14.0	11.3	8.3
Totals	100	100	100	100	100	100	100	100	100

TABLE 5.4.--The percentage distribution of the primary reason given by the migrants in each education and age sub-group for selecting their particular migration destination

Reason for Selection	Education		Ages		Total Sample
	Primary	Secondary	15 - 22	23 - 50	
Best Chance for Finding Work	60.9	63.6	57.4	66.8	61.5
Schools Available	2.4	7.3	6.0	1.2	3.8
Social Amenities Available	.4	.4	.4	.5	.4
I Have Friends Here	25.6	19.2	27.0	20.7	23.9
It is Close to my Home Area	2.5	1.1	.9	3.3	2.1
Other Reasons	8.2	8.4	8.3	7.5	8.3
Totals	100	100	100	100	100

For the purposes of a chi-square test, the primary reasons for choosing a particular urban center were divided into the best chance of finding employment versus the other reasons. The variation in the distribution of these two types of reasons between the four groupings of urban centers was significant (α=.001). Kisumu, Nakuru, Nairobi, Nyeri, and Nanyuki ranked above average with reference to expected employment opportunities, while Mombasa, Eldoret, and to some extent, Nakuru ranked above average on the presence of friends and relatives. Nyeri ranked high on being close to home. This variation in the distribution between the two variables was also significant within an education sub-group (α=.001), and within an age sub-group (α=.001). The variation in reasons for choosing an urban center between the education sub-groups was not

TABLE 5.5.--The percentage distribution of the primary and the secondary reasons given by the migrants for selecting their particular migration destination

Second Choice	First Choice: Best Chance for Finding Work	Schools Available	Social Amenities Available	I Have Friends Here	It is Close to my Home Area	Other Reasons	Totals
Best Chance for Finding Work	. .	15.0	25.0	36.0	9.0	17.4	10.4
Schools Available	3.0	17.5*	. .	3.5	2.3	. .	3.6
Social Amenities Available	2.4	. .	. .	.4	1.1	. .	1.7
I Have Friends Here	28.7	17.5	25.0	. .	6.7	4.3	19.0
It is Close to my Home Area	3.2	. .	. .	1.9	1.1	. .	2.5
Other Reasons	7.1	5.0	. .	6.6	. .	. .	6.2
No Response	55.6	45.0	50.0	51.6	79.8	78.3	56.6
Total	100	100	100	100	100	100	100

*The 17.5 per cent is possible because two columns were grouped together. Six of the seven responses indicated the quality of the schools in their first response and the availability of schools in their second response.

significant (α=.10). The variation between the age sub-groups was significant (α=.01), but not between the two age groups within one of the urban center groupings (α=.20). The older men indicate an above average concern about the possibilities of finding employment and rely less on the presence of friends and relatives.

Some additional evidence of the importance of employment opportunities in urban centers as a reason for moving to a particular urban center can be found in the responses to question 46 as given in Table 5.6. In this question, the men were asked to envision a job paying 200 K shillings per month which was available in either the urban center or their home district and then they were asked to indicate their locational preference.[11] Some 78 percent of the men indicated a preference for their home area. The remainder of the men gave various reasons for preferring their migation destination with the better living conditions available in the urban centers scoring the highest response rate. According to the interviewers' impressions, the primary reason for preferring a rural area under these conditions was the lower cost of living in rural areas.

To the extent that the sample was dominated by men who are temporary urban migrants tending to circulate between rural areas and urban centers, the explanatory value of the expected income variables may be reduced if such men are motivated by different forces than the men who plan to become a part of the urban labor force. The responses to questions 38 and 39 indicate that 59 per cent of the men consider them-

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[11]The 200 shilling figure should not be emphasized too much since some interviewers evidently took the liberty to raise this amount for the respondents who had a much higher income.

TABLE 5.6.--The percentage distribution of the rural versus urban location preference of the migrants if they could have the same job with the same income in either place

Location Preference	Urban Center								Totals
	Nairobi	Mombasa	Kisumu	Nakuru	Eldoret	Thika	Nanyuki	Nyeri	
Home Area	79.4	78.2	68.3	73.1	73.1	84.0	72.9	90.5	78.1
Urban Center Because he has More Friends Here	2.2	3.2	3.2	4.5	9.6	. .	2.1	2.4	2.9
Urban Center Because There are More Things to do Here	4.7	1.2	5.7	3.0	. .	1.2	14.5	3.5	3.7
Urban Center Because Living Conditions are Better Here	3.6	8.5	9.8	8.9	15.4	6.2	4.2	2.4	6.5
Urban Center Because There are Better Employment Opportunities Here	3.8	4.5	5.7	3.0	. .	7.4	2.1	. .	3.8
Urban Center for Other Reasons	6.3	4.4	7.3	7.5	1.9	1.2	4.2	1.2	5.0
Totals	100	100	100	100	100	100	100	100	100

selves as a permanent part of the urban labor force (Table 5.7). An additional 10 per cent are uncertain about their future migration plans. Of the 31 per cent who are planning to leave within five years, approximately one-third of the men fit into the labor circulation category, while another third are leaving because they are unemployed or wish to improve their employment position elsewhere (Table 5.8). Of the men who are uncertain about their future plans, 28.5 per cent fit into the labor circulation category while 43 per cent are concerned about improving their employment position (Table 5.9). Combining the information from these two tables, we note that only 12.8 per cent of the total sample is made up of temporary migrants, so we conclude that the sample is not dominated by men who circulate between rural areas and urban centers.

In response to question 42, one-third of the men indicate a future migration destination. Of these potential destinations, 71.7 per cent are the same as the province of birth of the migrants involved. An additional 24.5 per cent of these men are going to another urban center and only 3.8 per cent of these men are thinking of moving to a province other than their province of birth.

Finally, the only explanation of the limited explanatory ability of the expected income differentials which is consistent with the data available is an error of some form in the measurement of the urban expected income variable. Although the existence of such an error cannot be demonstrated explicitly, one possible error could be the measurement of "V_j" in terms of the employment and income experience of all migrants to "j" during some relevant time period. If our theory of a direct relationship between rural-urban expected income differentials and the rate of migration holds, then the existence of a low expected income

TABLE 5.7.--The percentage distribution of the future migration plans of the migrants in each urban center

Migration Plans	Urban Center								Totals
	Nairobi	Mombasa	Kisumu	Nakuru	Eldoret	Thika	Nanyuki	Nyeri	
Plans to Stay	23.8	21.3	24.0	22.4	26.9	16.1	30.0	31.0	23.5
Plans to Stay Until Retirement	41.5	42.5	22.5	40.3	42.3	16.1	28.0	22.6	35.5
Plans to Leave Within Five Years	24.3	26.0	38.8	31.3	26.9	55.5	36.0	39.3	31.0
Uncertain About Future Plans	10.4	10.2	14.7	6.0	3.9	12.3	6.0	7.1	10.0
Totals	100	100	100	100	100	100	100	100	100

TABLE 5.8.--The percentage distribution of the reasons for leaving their present location as given by the migrants who plan to leave their present location within five years

Reason for Leaving	Urban Center								Totals
	Nairobi	Mombasa	Kisumu	Nakuru	Eldoret	Thika	Nanyuki	Nyeri	
Target Worker	20.9	21.2	18.0	14.3	14.4	8.9	27.8	30.3	19.5
Target Worker, to Buy or Improve a Shamba	17.6	4.5	. .	. .	. .	6.7	38.9	3.0	8.9
Leave to Take Care of a Shamba	2.2	9.1	2.0	. .	7.1	4.4	. .	. .	3.6
Leaving Because Unemployed	8.8	10.7	12.0	33.3	35.7	4.4	. .	. .	10.4
Wishes to Improve his Employment Status Elsewhere	14.3	16.7	36.0	33.3	7.1	37.8	11.1	18.2	22.2
Other Reasons	30.7	33.3	30.0	14.3	35.7	33.4	16.7	48.5	31.6
No Response	5.5	4.5	2.0	4.8	. .	4.4	5.5	. .	3.8
Totals	100	100	100	100	100	100	100	100	100

TABLE 5.9.--The percentage distribution of the reasons for leaving their present location as given by the migrants who are uncertain about their future migration plans

Reason for Leaving	Urban Center								Totals
	Nairobi	Mombasa	Kisumu	Nakuru	Eldoret	Thika	Nanyuki	Nyeri	
Target Worker	12.8	15.4	21.0	25.0	. .	. .	. .	. .	12.9
Target Worker, to Buy or Improve a Shamba	20.5	3.9	. .	25.0	50.0	. .	33.3	16.6	11.9
Leave to Take Care of a Shamba	. .	11.5	5.3	. .	. .	. .	. .	. .	3.7
Leaving Because Unemployed	15.4	7.7	26.3	25.0	50.0	10.0	. .	16.6	15.6
Wishes to Improve his Employment Status Elsewhere	23.1	26.9	42.1	. .	. .	40.0	66.7	. .	27.5
Other Reasons	28.2	34.6	5.3	25.0	. .	50.0	. .	66.8	28.4
Totals	100	100	100	100	100	100	100	100	100

differential between any one rural-urban combination would indicate there is little or no migration from this rural district to this urban center. The urban expected income variable was measured on the basis of the urban income experience of all previous migrants to "j". As a result, "V_j" will reflect primarily the employment and income experience of the men from those rural districts which provided a large number of migrants to "j" in response to a high rural-urban expected income differential. To the extent that the variations in rural-urban expected income differentials among rural districts is caused by variations in "V_j" experienced by the districts with many migrants to "j" versus the districts with limited migration to "j", the "$V_j - V_i$" used in the regression analysis will be biased toward those rural districts providing many migrants to "j". The existence of such a bias would reduce the statistical significance of the regression coefficient for the "$V_j - V_i$" variable since the bias upwards of the "$V_j - V_i$" associated with a low rate of rural-urban migration would be greater than the downward bias of the "$V_j - V_i$" associated with a high rate of rural-urban migration.

The possible error in the measurement of "V_j" indicated above could have been eliminated by estimating a separate "V_j" for the men from each rural district. This preferred approach had to be rejected because of the limited degrees of freedom available. The one indication of the existence of such an error in the measurement of "V_j" provided in the regression results is the coefficients obtained for the dummy variables which were entered for each of the major ethnic groups. The major ethnic groups were added in the form of dummy variables in an attempt to sort out possible variations in migratory behavior either because of discriminatory hiring practices in the urban centers, or because there are

variations among ethnic groups in their propensity to migrate. In Table 4.1.a, we note that most of the coefficients for the dummy variables are significant and the coefficients which are significant increase the magnitude of the intercept term. The major exceptions are the Coastal Tribes which are not significant. There is no obvious pattern in the coefficients for the other ethnic groups with a range of -.7033 for the Kikuyu in 1964, to -2.144 for the Luhya in 1967. Over the five year period, all coefficients for the dummy variables for the men with primary education and the older men are significant and negative in sign. For the younger men, the Embu-Meru and the Coastal Tribes are not significant. The ethnic group variables are not significant in the secondary education sub-group. For the coefficients that are significant, the Kikuyu have the highest negative value while the Luo and the Coastal Tribes have the lowest negative value. If the sample is broken down into sub-groups, only some of the coefficients for some of the ethnic groups are significant in the one sub-group, primary education. The major exception within this group are the Coastal Tribes which have a positive sign. The rather consistent degree of significance of the regression coefficients for the dummy variables in both the total sample and over the five year period indicates that there are variations in migratory behavior between ethnic groups, except in the secondary education sub-group.

Although the existence of such variations in migratory behavior among ethnic groups does not verify the errors in measurement hypothesis, it is consistent with this hypothesis. In order to determine whether the variations in migratory behavior among ethnic groups could be attributed to discriminatory hiring practices in the urban centers, a comparison was made of the average annual expected income across all urban centers

experienced by the Kikuyu, the Luo, and all other ethnic groups. The variation in these average values was not significant. Therefore, if a significant error in the measurement of "V_j" exists, the expected income data does not enable us to substantiate such an error on the basis of discriminatory practices in the labor market.

As a result, the explanation of the limited significance of the rural-urban expected income differential which appears to correspond best with the data available is variations among ethnic groups in their propensity to migrate, given a particular rural-urban expected income differential. According to the responses to the questionnaire, the dominant reasons for rural-urban migration within any one ethnic group were economic in nature. The expected income data provided similar evidence for one of the ethnic groups, the Kikuyu. A separate regression was run for the Kikuyu, the Luo, and all the other ethnic groups combined in which the year-to-year percentage changes in the number of migrants from "i" to "j" were regressed on the year-to-year percentage changes in "V_j" and "V_i". The regression coefficient for "V_j" was significant for the Kikuyu in two of the four years. From 1967 to 1968, the regression coefficient was 4.1, while from 1965 to 1966 it was 3.8. These results correspond with the regression results for the dummy variables which indicated the men from the Kikuyu areas had the lowest propensity to migrate if all the other explanatory variables in the model were zero, in contrast to the men from the Luo areas who had the highest propensity to migrate.

Similarly, there may be an error in the measurement of "V_i" which is based on the experiences of the men who were not students prior to migration. If there are variations among sources of migration in the

degree of correspondence between the experiences of the men who were not students and the employment and income opportunities available in each district to the men leaving school, then "V_i" will not reflect adequately the push force from each district. We were not able to determine whether such variations existed.

In interpreting the regression coefficients for the proxy variable for land ownership, some caution needs to be exercised. Most of the coefficients for "L_i" are not significant and the limited number that are statistically significant have an unexpected positive sign. Over the five year period the elasticity of the rate of migration with respect to land ownership ranged from 1.067 for the men age 23 to 50 years, to 2.090 for the men in the secondary education sub-group. These results do not support the hypothesis that men are being pushed out of rural areas by a shortage of land.

This conclusion that a scarcity of land is not a relevant determinant of rural-urban migration is based on a very rough approximation of land availability which overstates the amount of land available to the men in our sample.[12] The data input for the regression analysis indicates the existence of an average of 5.33 acres of land for each man, woman, and child. If adjusted for quality of land, the average is reduced to

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[12]Even though the proxy variable used for land ownership overstates the amount of land available to the men in our sample, it need not be an overstatement of the amount of land available to all rural-urban migrants. As Elkan indicates, "If the market for land does not enable a farmer to capitalize the expected future earnings from his land, then the farmer has a distinct incentive to maintain his claim to his land (Elkan, "Migrant Labor in Africa," p. 195). As a result, many of the relevant men who had land worth claiming may have returned to their home area prior to our survey.

1.58 acres of high potential land per capita. These averages are considerably higher than the amount of land actually possessed by the migrants. As indicated in Table 3.12, only 10.7 per cent of the men had five acres or more of land and half of these plots of land were still in the possession of the migrant's father. Furthermore, prior to migration, only some seventy men were receiving cash incomes from their shambas, averaging 41.5 shillings per month. In addition, approximately 160 men were receiving sufficient food from their shambas for the equivalent of 4.4 adults.[13] Therefore, the proxy variable used for land ownership in the regression analysis appears to have overstated the land ownership of those migrants who remained in the urban centers until the time of the survey.

In addition, the proxy variable for land ownership did not measure the accessability of the arable land to the markets for cash crops. If a farmer's goal is to earn cash income, then the farm land suitable for cash crops serves as a substitute for rural-to-urban migration only if the transportation system enables the farmer to sell his excess output.[14] The various rural areas of Kenya under consideration in this study did not have equal access to the major markets for cash crops. For example, the Luhya of the northern parts of Western Province experienced some difficulty in moving their maize to market.

The variable which is consistently significant in explaining

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[13]For coding purposes, a child was considered to be equivalent to one-half an adult.

[14]Robert E. Baldwin, Economic Development and Export Growth: A Study of Northern Rhodesia, 1920 - 1960, (Berkeley: University of California Press, 1966), p. 133, and Barber, op. cit., p. 239.

migration flows in "C_{ij}", the proxy for clan contacts from "i" resident in "j". For the total sample, the coefficient for "C_{ij}" is significant in all cases except the year 1967 in Table 3.1.a. The range in the elasticity of "M_{ij}" with respect to "C_{ij}" is from .1690 in 1968 to .2974 in 1964. Over the five year period, the regression coefficient is significant in all sub-groups except the secondary education group (primary education = .1602; younger men = .1226; and older men = .2277). If the sample is broken down into sub-groups, the coefficient for "C_{ij}" is significant in both the primary education and the younger men sub-groups. For the older men, the coefficient for "C_{ij}" is significant in 1967 and 1964.

The importance of clan contacts indicated by the regression analysis is verified by the responses to questions 8 and 19 in the questionnaire. In question 8, the men were asked to rank the three most important sources of information about their migration destination. As indicated in Table 5.10, 65.6 per cent of the men ranked either family members or friends as their most important source of information. With reference to the second most important source of information, 38.7 per cent of the men listed relatives or friends, while an additional 43.8 per cent did not indicate a second source (Table 5.12). Of the men who ranked family members as their first source, 36.7 per cent did not have a second source, 52.8 per cent indicated friends as a second source, 77.71 per cent did not indicate a third source, and 3.8 per cent indicated friends as a third source. Of the men who answered friends as their first source, 39.4 per cent did not have a second source, 74.1 per cent did not have a third source, 38.2 per cent listed relatives as a second source, and 2.7 per cent listed relatives as a third source. Of

TABLE 5.10.--The percentage distribution of the primary sources of information about the urban centers as given by the men in each urban center

Sources of Information	Urban Center								Totals
	Nairobi	Mombasa	Kisumu	Nakuru	Eldoret	Thika	Nanyuki	Nyeri	
Newspapers	11.9	10.7	7.0	12.1	3.9	13.6	4.0	11.0	10.4
Radio	3.3	2.1	.8	3.0	. .	9.9	2.0	. .	2.7
Labour Exchange	1.9	1.6	2.3	3.0	3.9	7.4	4.0	1.2	2.5
Family Members	27.4	36.9	36.4	37.9	51.9	22.2	36.0	18.3	31.8
Friends	37.1	25.8	44.2	34.9	32.7	21.0	34.0	39.0	33.8
School Teacher	2.7	.8	3.1	3.0	1.9	3.7	6.0	1.2	2.4
Career Counsellor	1.6	. .	. .	. .	. .	3.7	. .	3.7	1.1
Other Sources	14.1	22.1	6.2	6.1	5.7	18.5	14.0	25.6	15.3
Totals	100	100	100	100	100	100	100	100	100

the remaining sources of information, no one source dominates the distribution with "other sources" having the highest frequency.

TABLE 5.11.--The percentage distribution of the primary sources of information about the urban centers as given by the men in each education and age sub-group

Sources of Information	Education		Age		Total Sample
	Primary	Secondary	15 - 22	23 - 50	
Newspapers	7.5	18.2	12.9	7.7	10.4
Radio	2.2	4.2	3.6	1.6	2.7
Labor Exchange	2.0	3.8	1.8	3.4	2.5
Family Members	36.0	20.3	37.3	25.8	31.8
Friends	34.4	32.2	27.2	41.0	33.8
School Teacher	1.5	4.9	3.6	1.2	2.4
Career Counsellor	.6	2.4	1.1	1.2	1.1
Other Sources	15.8	14.0	12.5	17.5	15.3
Totals	100	100	100	100	100

For a chi-square test, Table 5.10 was divided into four rows--newspapers or Radio or Labour Exchange, family members, friends and school teacher or career counsellor, or other sources. In Table 5.12, the first row of "no response" was added as an additional row. For both tables, all chi-square tests on the interaction between sources of information and the urban center, education, and age variables were significant at the level of $\alpha=.001$. For the men in Nairobi, Thika, and Nyeri there is proportionately less reliance on family members while the men in Nairobi, Kisumu, and Nyeri rely proportionately more on friends.

The men with secondary education have a distinct tendency to rely more on other sources than relatives or friends.

TABLE 5.12.--The percentage distribution of the second source of information about the urban centers as given by the men in each education and age sub-group

Sources of Information	Education		Age		Total Sample
	Primary	Secondary	15 - 22	23 - 50	
No Response	47.4	33.9	37.9	49.5	43.8
Newspapers	4.3	11.5	7.3	5.3	6.2
Radio	3.9	6.0	5.7	3.0	4.5
Labour Exchange	1.5	2.1	1.9	1.4	1.7
Family Members	15.9	18.2	15.5	18.2	16.5
Friends	23.1	19.6	25.1	18.9	22.2
School Teacher	1.4	5.3	3.4	1.4	2.4
Career Counsellor	.5	1.7	1.4	.2	.8
Other Sources	2.0	1.7	1.8	2.2	1.9
Totals	100	100	100	100	100

In question 19, an attempt was made to determine the process used by the men to obtain their first job in an urban center. Again, as reported in Table 5.13, the most important single process was based on assistance from friends or relatives. Also, the interaction between the method used to find employment and the urban center and education variables was significant ($\alpha=.001$).[15] The hypothesis of no interaction

[15]For the chi-square test, the second and third rows were grouped together, as were rows four to eight.

TABLE 5.13.--The percentage distribution of the methods used by the mon in each urban center in obtaining their first job

Method Used in Obtaining First Job	Urban Center								Totals
	Nairobi	Mombasa	Kisumu	Nakuru	Eldoret	Thika	Nanyuki	Nyeri	
Friend or Relative	35.3	33.5	50.4	38.8	34.6	30.9	48.0	42.2	37.6
Newspaper	6.4	5.9	10.8	1.5	1.9	6.2	6.0	3.6	6.0
Labor Exchange	4.8	4.3	8.5	3.0	1.9	33.3	8.0	2.4	7.0
Radio	.3	. .	. .	1.5	. .	. .	. .	. .	.2
Heard of Job and Applied	15.2	21.6	10.8	4.5	3.9	9.9	. .	7.2	13.3
Other Method	18.2	19.7	9.3	16.4	17.3	13.5	34.0	32.5	18.8
Started His Own Business	5.1	3.2	. .	. .	. .	. .	2.0	4.9	2.9
Still Unemployed	14.1	11.8	9.3	32.8	40.4	6.2	2.0	7.2	13.8
No Response	.6	. .	.9	1.5	. .	. .	. .	. .	.4
Totals	100	100	100	100	100	100	100	100	100

between the method used to find employment and age could not be rejected (α=.50), while the hypothesis of no interaction between the two variables within an urban center grouping could be rejected (α=.05). The men with primary education rely more on relatives and friends (41 per cent versus 28 per cent of the secondary education group), while the men with secondary education place greater reliance on newspapers and on hearing of job opportunities from others and then applying in person. The variation in the number of unemployed was small among the two education groups. In contrast, 19.4 per cent of the younger men were unemployed versus 6.9 per cent of the older men.

Included in the regression equations were two variables to measure the possible effects of amenity availability on migration flows. The first variable "A_j/A_i", is a ratio of indices. At best, this variable was only a rough approximation of variations in amenity availability between rural-urban migration combinations. As a result, the limited significance of the variable and the unexpected negative signs does not demonstrate conclusively that amenities do not determine rural-urban migration flows. Nevertheless, the amenities included in our measure of amenity availability have only very limited explanatory effect.

In the total sample, only the year 1968 contains a coefficient of "A_j/A_I" which is significant at the 90 per cent level (a_5 = -.0103). Over the five year period, all four sub-groups did contain significant amenity regression coefficients. For the primary education group, a_5 = -.0138; for the secondary education group, a_5 = -.0133; for the younger men, a_5 = -.0116; and for the older men, a_5 = -.0816. The log of "N_j" is a significant variable in three of the four sub-groups (for the primary education group, a_6 = .3419; for the secondary education

group, a_6 = .4177; and for the younger men, a_6 = .3090). The secondary education coefficient is significant at the 90 per cent level. If the sample is divided into the four sub-groups, "a_5" is significant in 1968 (-.0128), and 1964 (-.0124) for the primary education group. The latter coefficient is significant at the 90 per cent level. For the younger men, "a_5" is significant in 1966-65 (-.0136). For the older men, "a_6" is significant in 1967 at the 90 per cent level (-.0039).

One indication why the amenity variable is of limited significance can be seen in Table 5.14 where we note that 56 per cent of the men do not attend cinemas. In addition, 3.1 per cent of the men have not changed their attendance habits after migration while 10.5 per cent are attending less often than prior to migration. As a result, variations between urban centers in the increased availability of cinemas could have had a determinative effect on the migration decisions of only 30.4 per cent of the men. Some 21 per cent of the men do attend more often because of the increased availability of cinemas in urban centers. Although the availability of dancing places was not used in the measure of amenities utilized in the regression analysis, Table 5.15 indicates that they are not an important determining factor in migration decisions. Some 70 per cent of the men do not attend dancing places. Only 15.3 per cent increased their attendance after migration. Approximately one-half of these men indicated that the availability of better dancing places in urban centers was the reason why they frequented these places more often.

The reading of newspapers appears to be an amenity for which there was a considerable increase in use after migration. Some 63 per cent of the men increased their reading of newspapers with the greater availability of newspapers in urban centers being the most important

TABLE 5.14.--The percentage distribution of cinema attendance by the migrants in each urban center

Cinema Attendance	Urban Center								Totals
	Nairobi	Mombasa	Kisumu	Nakuru	Eldoret	Thika	Nanyuki	Nyeri	
Does Not Attend	61.5	64.8	66.9	57.6	57.7	42.0	22.0	20.2	56.0
Attends About the Same	3.0	2.0	7.1	6.1	1.9	2.5	4.0	.	3.1
Attends Less Often	10.1	5.5	7.1	9.1	9.6	22.2	16.0	19.1	10.5
Attends More Often Because There are More Cinemas Here	18.8	20.2	17.3	16.6	23.1	22.2	28.0	38.1	21.2
Attends More Often Because he has More Money	3.6	5.5	.	9.1	5.8	8.6	8.0	10.7	5.2
Attends More Often for Some Other Reason	3.0	2.0	1.6	1.5	1.9	2.5	22.0	11.9	4.0
Totals	100	100	100	100	100	100	100	100	100

TABLE 5.15.--The percentage distribution of attendance at dancing places by the men in each urban center

Attendance at Dancing Places	Urban Center								Totals
	Nairobi	Mombasa	Kisumu	Nakuru	Eldoret	Thika	Nanyuki	Nyeri	
Does Not Attend	69.6	69.7	74.2	78.8	84.6	65.4	76.0	55.0	70.4
Attends About the Same	4.9	2.0	9.4	1.5	2.0	1.3	2.0	. .	3.6
Attends Less Often	7.9	14.6	5.5	9.1	5.8	22.2	12.0	11.2	10.7
Attends More Often Because There are Better Dancing Places Here	11.5	7.1	4.7	7.6	3.8	2.5	2.0	13.8	8.1
Attends More Often Because He Has More Money	1.7	2.7	3.9	. .	. .	3.7	2.0	2.5	2.2
Attends More Often For Some Other Reason	4.4	3.9	2.3	3.0	3.8	4.9	6.0	17.5	5.0
Totals	100	100	100	100	100	100	100	100	100

TABLE 5.16.--The percentage distribution of the newspaper reading habits of the migrants in each urban center

Newspaper Reading Habits	Urban Center								Totals
	Nairobi	Mombasa	Kisumu	Nakuru	Eldoret	Thika	Nanyuki	Nyeri	
Cannot Read	3.8	4.7	1.6	4.5	4.0	. .	4.0	1.2	3.3
Does Not Read Newspapers	14.6	21.4	26.6	22.3	31.4	7.4	4.0	4.8	17.0
Reads Newspapers About the Same	13.2	11.5	15.6	3.0	9.8	3.7	4.0	6.0	10.6
Reads Newspapers Less Often	4.9	7.5	6.2	6.0	7.8	14.8	10.0	8.3	7.1
Reads Newspapers More Often Because They are More Readily Available	29.9	41.5	28.1	37.3	29.4	23.5	26.0	25.0	31.8
Reads Newspapers More Often Because He Has More Money	8.4	7.9	4.7	16.4	7.8	27.2	8.0	25.0	11.0
Reads Newspapers More Often Because He Wants Information on Job Openings	18.6	1.2	7.0	4.5	9.8	11.1	28.0	20.2	11.9
Reads Newspapers More Often for Some Other Reason	6.6	4.3	10.2	6.0	. .	12.3	16.0	9.5	7.3
Totals	100	100	100	100	100	100	100	100	100

reason for this increased usage. Again, this amenity was not included in the measurement of the amenity variable "A".

For all three amenities, the interaction between amenity use and the urban center, education and age variables is significant. As indicated in Tables 5.17 to 5.19, the men with secondary education and the younger men have a proportionately greater propensity to increase their use of amenities after they have migrated to an urban center. This result is consistent with the smaller negative value of the coefficient for "A_j/A_i" for these two groups in the regression analysis.

TABLE 5.17.--The percentage distribution of cinema attendance by the migrants in each education and age group

Cinema Attendance	Education		Age		Total Sample
	Primary	Secondary	15 - 22	23 - 50	
Does Not Attend	65.1	29.7	47.6	65.0	56.0
Attends About the Same	3.1	3.4	3.6	2.8	3.1
Attends Less Often	7.7	18.4	11.7	9.2	10.5
Attends More Often Because There are More Cinemas Here	16.4	34.9	25.5	16.8	21.2
Attends More Often Because he has More Money	3.8	9.3	7.5	2.6	5.2
Attends More Often for Some Other Reason	3.9	4.3	4.1	3.6	4.0
Totals	100	100	100	100	100

TABLE 5.18.--The percentage distribution of attendance at dancing places by the men in each education and age group

Attendance at Dancing Places	Education		Age		Total Sample
	Primary	Secondary	15 - 22	23 - 50	
Does Not Attend	80.0	43.4	63.4	77.6	70.4
Attends About the Same	2.8	6.0	3.6	3.8	3.6
Attends Less Often	8.1	17.9	13.0	8.3	10.7
Attends More Often Because There are Better Dancing Places Here	4.7	17.5	10.1	6.1	8.1
Attends More Often Because he has More Money	1.0	5.7	2.8	1.6	2.2
Attends More Often for Some Other Reason	3.4	9.5	7.1	2.6	5.0
Totals	100	100	100	100	100

The comments included on some of the questionnaires indicate that the availability of specialized training courses in particular urban centers, especially Nairobi, was the basis for deciding on a particular migration destination. In Table 5.20, there is some indication of a proportionately larger current enrolment in specialized training courses in Nairobi. In Table 5.21, we note it is the younger men and the men with secondary education who predominate in the enrolment in specialized training courses.

Considering the overall explanatory ability of the model, we note a tendency to explain approximately one-half of the variation in the log of "M_{ij}". For the total sample, equation "b" provides somewhat better predictive ability with a range of "R^2" from .3829 in 1966 to .6390 in

TABLE 5.19.--The percentage distribution of the newspaper reading habits of the migrants in each education and age group

Newspaper Reading Habits	Education		Age		Total Sample
	Primary	Secondary	15 - 22	23 - 50	
Cannot Read	4.3		1.4	5.0	3.3
Does Not Read Newspapers	21.6	4.5	12.4	22.3	17.0
Reads Newspapers About the Same	10.3	11.5	9.0	12.8	10.6
Reads Newspapers Less Often	7.4	6.3	8.3	5.4	7.1
Reads Newspapers More Often Because They are More Readily Available	29.6	38.1	35.7	28.0	31.8
Reads Newspapers More Often Because he has More Money	9.0	16.4	13.1	8.3	11.0
Reads Newspapers More Often Because he Wants Information on Job Openings	10.8	15.0	12.5	11.2	11.9
Reads Newspapers More Often for Some Other Reason	7.0	8.2	7.6	7.0	7.3
Totals	100	100	100	100	100

1964, in contrast to a range of .3560 in 1968 to .6021 in 1964 in equation "a". Over the five year period, the model predicts best for the older men ($\bar{R}^2$ = .5705 in equation "a" and .6065 in equation "b"), and has the lowest explanatory ability for the secondary education group ($\bar{R}^2$ = .2897 and .3499 respectively). This result needs to be contrasted with the "$\bar{R}^2$" of .0693 (.0552 in equation "b"), in the year 1966 in the

TABLE 5.20.--The percentage distribution of the number of men in each urban center who are enrolled in special training courses

Enrolment Status	Urban Center								Totals
	Nairobi	Mombasa	Kisumu	Nakuru	Eldoret	Thika	Nanyuki	Nyeri	
No Courses Completed and Not Enrolled Currently	65.5	75.5	74.0	82:0	80.8	58.0	70.8	67.5	70.4
One or More Courses Completed	17.5	12.9	17.1	9.0	9.6	33.3	20.9	20.5	17.1
Currently Enrolled in a Course	17.0	11.6	8.9	9.0	9.6	8.7	8.3	12.0	12.5
Totals	100	100	100	100	100	100	100	100	100

older men sub-group. This is the lowest "$\bar{R}^2$" realized in any of the regressions considered. For the younger men, there is a tendency for the explanatory ability of the model to decline as we approach the present. The "$\bar{R}^2$" in 1966-65 was .5262 which declined to .3386 in 1968.

TABLE 5.21.--The percentage distribution of the number of men in each education and age group who are enrolled in special training courses

Enrolment Status	Education		Age		Total Sample
	Primary	Secondary	15 - 22	23 - 50	
No Courses Completed and Not Enrolled Currently	76.3	54.3	67.7	73.3	70.4
One or More Courses Completed	16.6	18.5	15.9	18.9	17.1
Currently Enrolled in a Course	7.1	27.2	16.4	7.8	12.5
Totals	100	100	100	100	100

Summary

In measuring the magnitude of the specified determinants of rural-urban migration, we note the distance involved in a move represents a distinct deterrent to migration while the number of clan contacts available in an urban center is an important determinant of migration. The data available does not provide consistent evidence of the importance of a rural-urban expected income differential as an attractive force to urban centers. Since the regression coefficients for the dummy variables entered for the various ethnic groups were statistically significant, we concluded the economic forces were a determinant of migration within any

one ethnic group, but the responses among ethnic groups to a given economic incentive varied sufficiently to reduce the significance of the expected income variables in the regression analysis. The data did not provide a basis for concluding that rural-urban migration was the result of people being pushed from the rural areas by a scarcity of land or a lack of employment opportunities in the rural areas. Also, the difference in amenity availability between rural areas and urban centers did not appear to be a significant determinant of rural-urban migration, especially for the older men and the men with limited formal education. On the basis of the values for the coefficient of determination obtained in the regression analysis, the overall predictive ability of the model appears to be greatest for the older men and lowest for the men with secondary education.

CHAPTER VI

CONCLUSIONS

The purpose of this study was to identify the type of rural person who migrates to an urban center and then to identify the forces which cause him to move from a rural to an urban setting. Two different approaches were used to test the hypothesis designed for the purpose of this study. One approach utilized regression analysis based on published data and migration and income data obtained through a survey to test the validity of a migration model, and to measure the magnitude of the forces which determine migratory behavior. The other approach was based on the explanations of their own behavior given by the men interviewed in the survey. These two approaches did not produce the same results in all cases. In this concluding chapter we summarize the conclusions derived from these two approaches to the subject.

With reference to the question who migrates to an urban center, the first conclusion relates to the age of the migrants. As expected, the migrants were predominantly young. Eighty per cent of the men were less than thirty years old at the time of migration and a large number of men were in the 21 to 24 age bracket. There is some indication that there was less risk involved in a move for the older men who chose to migrate. Prior to migration, there was more unemployment among the older men; yet after migration the older men were more successful in obtaining some type of employment (6.9 per cent were unemployed at the time of the survey in

contrast to 19.4 per cent of the younger men). One possible explanation for this variation in urban unemployment may be a greater willingness of the younger men to remain unemployed for a time in order to obtain a better job.

There was conclusive evidence that the propensity to migrate increases with the level of educational attainment. If a person has secondary education, the probability of a rural-urban move appears to be very high. There was significant variation in the education of migrants between urban centers. There was no obvious explanation for this variation, although it may be the result of variations between rural areas in the extent and quality of education provided. There was limited evidence that the Nairobi-Thika labor market attracted a proportionately larger number of better educated men. In these two centers, there was a disproportionate number of men who were in school prior to migration, had passed the KPE exam, and had some secondary education. From our survey data, it cannot be demonstrated that school-leavers gravitate to Nairobi.

With reference to the ethnic background of the migrants, the Kikuyu of Central Province, the Luo of Nyanza Province, and the Luhya of Kakamega District in Western Province predominate. For all the ethnic groups, the number of men engaged in farming prior to migration was relatively small. One reason why a small number of men were engaged in farming is the limited access to land experienced by the men in the survey. With the possible exception of the Luo, the migrants had well below the average amount of land per capita available in each province. The significant variation in the amount of land owned by the Luo men and in their tendency to take their wives with them to an urban center indicates

there may be social and cultural differences between the Luo and other ethnic groups in the forces which determine migratory behavior.

In the regression analysis, one measure of variations in rural-urban migratory behavior between ethnic groups was the inclusion of dummy variables for the major ethnic groups. In interpreting the significance of the coefficients of these dummy variables, it is important to keep in mind that the dependent variable is the log of a very small percentage of men from a rural area who have moved to an urban center. For the total sample, the mean value of the regressand was approximately minus seven. In reporting the coefficients of the dummy variables and the intercept term, we noted that the magnitude of the negative numbers involved was highest for the Kikuyu and lowest for the Luo and the Coast Tribes. Therefore, if all the explanatory variables were zero, the proportion of men from a rural area who would migrate to an urban center would be lowest in the Kikuyu districts and highest in the Luo and Coast Tribe districts.

Our two approaches to the question why these men moved to an urban center provided different results in the identification of significant pull and push forces. The measurement of pull forces in the form "$V_j - V_i$" or "V_j/V_i" did not provide conclusive results. On the other hand, the explanation of their own behavior by the migrants indicates the distinct importance of employment opportunities in urban centers as the reason for selecting a particular migration destination. The measurement of push forces in the form of "V_i" or "L_i" indicated there was no basis for concluding that the men were pushed from their rural areas. Nevertheless, the men indicated that the dominant reason for leaving their home area was the lack of economic opportunities in these areas.

The results obtained on the variable "D_{ij}" indicate that distance was a significant barrier to migration. The purpose of this variable was to measure the effect of the cost of making a rural-urban move on migration flows, but as was the case in other migration studies, it probably measures more than the economic costs of a move. Distance was the greatest barrier to a move for the men with primary education. For this group, the change in the log of "M_{ij}" associated with a change in "D_{ij}" was -.0041. There was only limited evidence that distance was a significant barrier to migration for the men with secondary education. There was some indication that the larger urban centers attracted migrants over a greater distance.

Along with the evidence that distance was a barrier to migration, there was conclusive evidence that clan contacts in an urban center attracted migrants to the urban center. Clan contacts were the most important source of information about employment and income conditions in urban centers and they frequently assisted the migrant in obtaining employment. Over the five year period, the effect of clan contacts on migration flows was most pronounced for the older men. In their group, the elasticity of "M_{ij}" with respect to "C_{ij}" was .2277. In contrast, "C_{ij}" was not a significant explanatory variable for the men with secondary education.

Throughout our analysis, the amenity variables did not appear to have a significant bearing on migration decisions. Both the migration model and the responses to questions on the use of particular amenities indicate use habits do not change extensively after migration. To the extent that the use of an amenity increases, it is only partially the result of the greater availability of the particular amenity in the

urban centers. In posing the hypothetical situation of a particular job available in both an urban and a rural setting, we found the men to be concerned primarily with maximizing real income. Only a limited number of men indicated a preference for the improved quality of living available in urban centers.

The final conclusion relates to the extent of temporary rural-urban labor circulation evident in our sample. There was some evidence of labor circulation. Some 12.5 per cent of the men characterized themselves as temporary urban workers. This proportion is not insignificant since the majority of these temporary migrants had most likely come during the previous two years. Also, we note that more than half the men who are married have not moved their wives to an urban center. Therefore, we conclude that temporary migration still occurs, but it is a minority occurence which does not involve a majority of the rural-urban migrants in Kenya.

The question remaining is what are the implications of these conclusions for the pervasive unemployment problem in Kenya. The results of this study indicate rural-urban migration flows will tend to increase unless explicit action is taken to reduce the magnitude of the flows. For example, an important determinant of migration is the existence of clan contacts in the urban centers. A continued flow of migrants will increase the number of clan contacts available which, in turn, will induce additional migration. Also, Kenya's continued efforts to expand educational opportunities will increase the internal migration flows since the propensity for rural-urban migration rises directly with the level of educational achievement. Furthermore, improved transportation and communication links within Kenya will serve to reduce the deterring

effect of distance on migration.[1]

How then can these existing tendencies to stimulate migration be countered to limit the urban in-migration to the absorptive capacity of the urban sector? First, it will not be adequate to either admonish the men to return to their land or to force the men back to their land since only a minority have land and only a very small portion of these men were deriving cash income from their land. The use of moral suasion or force may serve to limit even further the rural-urban labor circulation which still exists but this will affect only a small proportion of the total number of male migrants. For the majority of the men, a back-to-the-land policy would necessitate making land available to the men.

An alternative approach to solving the urban unemployment problem would involve reducing the rural-urban income differential. For example, the rural-urban differential could be reduced by removing the urban minimum wages which constrain wage adjustments from carrying out their market clearing function. This approach to the problem carries considerable merit from an economic as well as a practical standpoint.[2] From our analysis it is not clear what the effects of removing the minimum wage would have on prospective migrants.[3] The men in the sample

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[1]Improved and cheaper transportation facilities could have the opposite effect on migration if such improvements open the possibility of expanding rural output which is now constrained by limited access to the markets for the output.

[2]John R. Harris, and Michael P. Todaro, "Migration, Unemployment and Development: A Two-Sector Analysis," The American Economic Review, LX (March, 1970), pp. 126-142.

[3]The effect would be greatest on the men with the least education. It is unlikely that an elimination of minimum wages would correct the wage structure realized by an African elite seeking full equality with the expatriate personnel they were replacing. The men with the higher levels of education are likely aspring to this type of job.

expressed their motives for migration in terms of better employment opportunities in the urban centers rather than in terms of better earning opportunities. Possibly this type of expression reflects the migrant's realization that he would receive at least the urban minimum wage if he could obtain employment in an urban center so his concern centered on obtaining a job. If the minimum wages were eliminated, then the prospective migrant might become more conscious of wage levels as well as job opportunities. In other words, it would introduce an additional element of uncertainty into his migration decision making process. As long as the minimum wages remain then, according to the responses to our questionnaire, migration will continue until the communication network made up of friends and family members in the urban centers indicate jobs are no longer available. Such a message is unlikely to come from an urban center which is expanding with increased industrial activity and increased social services for the residents.

A second manner in which the rural-urban expected income differential could be reduced is by increasing the number of job openings available in the rural areas. The majority of the men indicated a preference for their home area provided they could find comparable jobs with comparable income. To provide an adequate number of jobs in the rural areas implies some form of industry decentralization in Kenya. It is beyond the scope of this study to determine whether the net costs involved in such an industry decentralization would be of the magnitude to make this a feasible solution to the urban unemployment problem.

The men do appear to be very conscious of the differences in the cost of living between the urban centers and rural areas. The rural-urban real income differential could be altered by changing the cost of

living in the urban centers relative to the rural areas. For example, raising the monthly rent in City Council housing would raise the cost of living in the urban centers and may have a deterrent effect on migration. Conversely, the provision of free public education throughout Kenya would reduce the cost of living more in the urban centers where school fees are higher and encourage a man to bring his family (prospective entrants to the urban labor market), even though it may not induce additional male to migrant at the present time.

The men in the sample did not place much emphasis on more and better amenities available in the urban centers as a determinant of migration. It would appear that the various urban Councils can continue to attempt to improve social services available to their residents without affecting migration flows provided they do not reduce the cost of living in the urban centers and they do not increase substantially the demand for labor. There was some indication that Nairobi attracted men because of the facilities for additional training available there. It would be difficult to provide the variety of training opportunities available in Nairobi throughout the rural areas, but it might be possible to re-distribute the migration flows somewhat among the various urban centers by allocating future training facilities to the other urban centers in Kenya.

APPENDIX

APPENDIX A

A LIST OF THE MAPS USED IN THE SAMPLE SELECTION

Nairobi

The maps were prepared by Professor S. H. Ominde, Geography Department, University College, Nairobi, for use in the 1969 Census. Information on the types of housing in Nairobi was provided by the Town Planning Department, Nairobi City Council. The data on population distribution was obtained from City of Nairobi Planning Report No.1, Population.

Mombasa

The maps were prepared by the Coast Province Town Planning Office of the Ministry of Lands and Settlement for use in their housing survey. Relevant information for the sample selection was obtained from the results of the housing survey.

Kisumu

The map used in the survey was from the Survey of Kenya series 1966/67 with a scale of 1:5000. The information on population distribution was provided by the Engineering Department of the Kisumu Municipal Council.

Nakuru

The map used in the survey was from the Survey of Kenya series 1968, with a scale of 1:5000/1.2500. The information on population

distribution was provided by Mr. Walter Kirubi, Acting Deputy Town Clerk, Nakuru Municipal Council.

Eldoret

The map used in the survey was from the Survey of Kenya series, 1967 with a scale of 1:5000. The information on population distribution was provided by S. M. Mruthui, Chief Municipal Health Inspector, Eldoret Municipal Council.

Thika

The map used in the survey was from the Survey of Kenya series, 1966 with a scale of 1:2500. The information on population distribution was provided by Mr. Elisha Onyango, Housing Officer, Thika Municipal Council.

Nanyuki

The map used in the survey was the Nanyuki Short Term Development Plan (May), (1:5000) of the Town Planning Department, Ministry of Lands and Settlement, dated 12.7.68. The information on population distribution was provided by the Town Clerk of the Nanyuki Urban Council.

Nyeri

The map used for the survey was the Nyeri, Survey of Kenya, 67, First Edition (zones from 1:5000) Short Term Development Map. The information on population distribution was provided by the Town Clerk of the Nyeri Municipal Council.

APPENDIX B

THE SURVEY

In this appendix, we include the following instruments which were used in the survey:

1. Building Information Sheet
2. Survey Questionnaire
3. Short Questionnaire
4. Letter of Introduction
5. Manual of Instructions for the Survey of Rural to Urban Migration Questionnaire
6. Suggested Questions for Filling in the Tables in the Questionnaire
7. Instructions to Supervisors

The questionnaires used in the migration survey were administered by a group of students from University College, Nairobi. Each interviewer participated in two training sessions which included an interview with a relevant migrant. The interviewers were paid a daily rate to minimize the incentive to merely complete a large number of questionnaires. Each interviewer carried a letter of introduction (B.4) which could be used, if necessary, to indicate the official purpose of the survey. For the survey, the interviewers were divided into teams of six to nine men. Each team had a supervisor who was responsible for assigning the interviewers to their respective areas, assisting interviewers if they encountered local opposition, and checking the completed questionnaires.

The questionnaires were available in both English and Swahili and the interviewers were free to use the copy they preferred. In most cases the interviewers came from the general area of the urban center in which they were interviewing. As a result, the interviewers were able to translate the questions into the local tribal language if the respondent could not understand either English or Swahili. There were only two or three cases where the interviewer could not converse directly with the respondent and he had to call on a third person for assistance.

The questionnaires were developed with helpful comments from other members in the Institute for Development Studies. Prior to the survey, the initial questionnaire was pre-tested. The supervisors were sent to houses in Nairobi selected in the same manner as for the actual survey. Each supervisor was instructed to complete a Building Information Sheet for each house and then obtain a minimum of three relevant interviews. I personally accompanied one of the supervisors during the course of these interviews. On the basis of this pre-test, several changes were made in the questionnaire. First, the questions about members of the family were dropped since they were of limited relevance and the men seemed to resent having their family counted. In addition, questions on the personal characteristics of the migrants were moved to the end of the questionnaire. This information was of secondary importance so this change enabled us to obtain the essential information before the respondent lost interest in the interview. Also, tables were provided at the relevant places in the questionnaire to facilitate the recording of employment and income information. The pre-test also provided helpful insights on what to stress in the training of interviewers.

In preparation for the survey, a letter was sent to the relevant District Commissioners informing them of the nature and purpose of the survey. Each team of interviewers reported to the District Commissioner and other relevant authorities before starting the survey in an urban center. Each interviewer then located a particular building as indicated on a map and administered the Building Information Sheet (B.1). On the basis of the information on this sheet, the relevant migrants could be identified and interviewed. The survey questionnaire (B.2) was used for the men who had migrated between the beginning of 1964 and the end of 1968. The short questionnaire (B.3) was used for the men who had migrated in 1962 or 1963. In all cases, the questionnaire was to be completed solely on the basis of the answers obtained from the actual migrant. In addition to the general instructions (B.5), each interviewer was given a sheet (B.6) which could be used to assist in filling in the employment-income tables.

B1 Building Information Sheet

Interviewer ..... Date .....

Urban Centre .....

Enumeration Division .....

Building Number .....

Provide a brief description of the location of this building:

.....

1. Is this building a single house-hold unit? (....Yes; .....No)
2. IF NO ABOVE - This building has ..... (flats, rooms)
3. IF SINGLE HOUSEHOLD UNIT - How many men (16 YEARS AND OLDER) are staying (living) in this house? .....
4. Do all of there men normally stay here or are some just visiting now? If some are just visiting, how many? .....
5. Are these some men who normally stay here but just now are visiting somewhere else: If yes, how many? .....
6. Now, of these men who normally stay here how many have come to ..... since January, 1964, (that is since Uhuru)? ..... How many have come to ..... in 1962 or 1963? .....
7. IF THE BUILDING IS A MULTI-DWELLING UNIT, OBTAIN THE INFORMATION IN QUESTIONS 3 TO 6 FOR EACH FLAT (OR ROOM) AND RECORD IT BELOW.

Flat (or room) No.	Total Men Staying (Q.3)	Men Just Visiting (Q.4)	Men Visiting Elsewhere (Q.5)	Men Who Migrated Since Uhuru (Q.6)	Men Who Migrated in 1962 or 1963 (Q.6)
1					
2					

A.B.E. Survey Questionnaire

Confidential

SURVEY OF RURAL-TO-URBAN MIGRATION

Interviewer ..... Date .....

Urban Centre .....

Building Number .....

(IF APPLICABLE) Flat (or room) Number .....

FROM THE BUILDING INFORMATION SHEET FILL IN:

(a) The number of men staying regularly in this (house, flat, room) .....

(b) The number of men in this (house, flat, room) who have come to ..... after Uhuru .....

(c) The number of men in this (house, flat, room) who came to ..... in 1962 or 1963 .....

First, I would like to ask some questions about where you have been living since Uhuru.

1. Where were you living at the time of Uhuru? Town or village ..... in District .....

2. After Uhuru, when did you first come to .....? month (APPROXIMATE) ....., 196...

3. Between the time of Uhuru and when you first came to ..... did you live for a time (AT LEAST THREE MONTHS) in either Nairobi, Mombasa, Kisumu, Nakuru, Thika, Eldoret, Nanyuki or Nyeri? {....Yes; ....No}

   IF YES - (1) Urban Centre .....
   from month ....., 196...
   to month ....., 196...

   (2) Urban Centre .....
   from month ....., 196...
   to month ....., 196...

4. Since coming to ..... have there been times when you lived in another district or urban centre? (FOR AT LEAST THREE MONTHS) {....Yes; ....No}.

IF YES - (1) District or Urban Centre .....
from month ....., 196...
to month ....., 196...

(2) District or Urban Centre .....
from month ....., 196...
to month ....., 196...

FOR FUTURE REFERENCE PURPOSES, FROM QUESTIONS 1, 3, 2 AND THEN 4, LIST THE RURAL-TO-URBAN MIGRATIONS IN THE ORDER IN WHICH THEY TOOK PLACE.

5. Migration	From District	To Urban Centre	Date
1			196...
2			196...

I would like to ask a few questions about why you came to ..... and what you were expecting to find when you first arrived here.

6. What made you decide to leave the home you had in the district before you came to .....?

Anything else? {CHECK LIST - USE 1 TO INDICATE HIS FIRST RESPONSE AND 2 TO INDICATE HIS SECOND RESPONSE}

(1) ... I could not find work where I was living before

(2) ... Land was not available so I had to go out to find work

(3) ... I was transferred by my employer

(4) ... I could not get into school in my home areas

(5) ... I could not get my child into school there

(6) ... The schools were of very low standard there

(7) ... There were no dancing places, cinemas, etc. there

(8) .., Others (explain) .....

7. Once you had decided to leave your previous home, why did you choose to come to .....?

{CHECKLIST - USE 1 AND 2 AS IN 6 ABOVE}

(1) ... That was the place where I had the best chances of finding work

(2) ... There are good schools here

(3) ... There are opportunities here to get into school

(4) ... I wanted the opportunities for social life (dancing, cinemas, etc.) available here

(5) ... I was transferred here by my employer

(6) ... I have relatives (friends) here

(7) ... Others (explain) .....

8. In reaching your decision to come to ..... you must have had some information about job possibilities, income, living conditions, etc. in .....

Which of the following gave you the most information about .....

{USING 1, 2 AND 3, RANK THE THREE MOST IMPORTANT}

(1) ... Newspapers

(2) ... Radio

(3) ... The Labour Exchange

(4) ... Family members

(5) ... Friends

(6) ... School teacher

(7) ... Career counsellor

(8) ... Others (explain) .....

9. When you first arrived in ..... what type of work were you hoping to get? .....

10. When you first arrived in ..... how much income did you expect you could earn? shs..... per (month/week/day)

You are being very patient and helpful. Thank you very much. We now come to the most important part of this survey - the type of work you were doing before you moved to the city (or town), the type of work you were doing after you got there, and the income received in each case. Let us start with the first time you moved to a city (or town).

QUESTION 11 to 13 REFER TO MIGRATION 1 - SEE Q.5

11. During the year before you moved to ..... what were you doing? {MARK ALL THAT APPLY}

(1) ... Were you in school?

(2) ... Were you employed for wages? {IF YES, FILL IN CATEGORY (a) IN Table 1}

(3) ... Were you in business for yourself (selling newspapers, shining shoes, or running your own shop, etc.) {IF YES, FILL IN CATEGORY (b) IN Table 1}

(4) ... Were you farming? {IF YES, THIS WILL BE COVERED IN QUESTIONS 22 to 26}

(5) ... Were you at any time employed only part time such as doing casual (day) labour? {IF YES, FILL IN CATEGORY (c) IN Table 1}

(6) ... Were you totally unemployed for a time? {IF YES, FILL IN CATEGORY (d) IN Table 1}

12. During this year were you at any time staying in either your parents' house, a friend's house, or in a house provided by your employer? {....Yes; ....No}

13. IF YES - (a) From month ....., 196...
to month ....., 196...

(b) Did you pay rent for staying there?
{....Yes; ....No}

(c) Did you get most of your meals there as well?
{.... a few; .... about half; .... most; .... all;
.... none}

(d) Did you pay for these meals? {.... Yes; ....No}

Now I would like to ask some questions about what you are doing at present here in ..... What type of work (if any) do you have? How long have you had this job? What were the starting wages you received? Was there a raise in wages? Is there a housing allowance, a bonus, etc. associated with this job?

(What about before that, what were you doing? ETC.)

ON THE BASIS OF QUESTIONS SUCH AS THESE, FILL IN Table 2 FOR THE FULL PERIOD OF HIS CURRENT STAY IN .....

Table 1. Job and Income History for the Twelve Months Prior to Migration 1:

(1) (2) (3) (4) (5) (6) (7)

(a) Employment for wages

	Type of Work	Starting Wage shs./Mon.	Wages Raised to shs./Mon.	Housing Allowance, Bonuses, etc. shs./Mon.	From Mon.196..	To Mon.196..
Job 1						
Job 2						

(b) Operating his own business

	Type of Business or Trade	Net Income (shs. per year)	From Mon.196..	To Mon.196..
Business 1				
Business 2				

(c) Employed for wages on a part-time or casual basis

	Type of Work	Days per Week	Hours per Day	Wages shs./Day	From Mon.196..	To Mon.196..
Job 1						
Job 2						

(d) Totally unemployed

	From Mon.196..	To Mon.196..
Period 1		
Period 2		

(e) Miscellaneous income.

	Shillings	From Mon. 196..	To Mon.196..
Source 1			
Source 2			

CHECK COLUMNS 6 AND 7 TO MAKE SURE THE FULL TWELVE MONTHS HAVE BEEN ACCOUNTED FOR

---o0o---

Table 2. Job and Income History for the Length of the Current Stay in .....

(1)	(2)	(3)	(4)	(5)	(6)	(7)

(a) Employed for wages

	Type of Work	Starting Wage shs./Mon.	Wages Raised to shs./Mon.	Housing Allowance, Bonuses, etc. shs./Mon.	From Mon.196..	To Mon.196..
Job 1						
Job 2						

(b) Operating his own business.

	Type of Business or Trade	Net Income (shs. per year)	From Mon.196..	To Mon.196..
Business 1				
Business 2				

(c) Employed for wages on a part-time or casual basis

	Type of Work	Days per Week	Hours per Day	Wages shs./Day	From Mon.196..	To Mon.196..
Job 1						
Job 2						

(d) Totally unemployed

	From Mon.196..	To Mon.196..
Period 1		
Period 2		

(e) Miscellaneous income

	Shillings	From Mon.196..	To Mon.196..
Source 1			
Source 2			

CHECK COLUMNS 6 AND 7 TO MAKE SURE THE CURRENT STAY IN ..... HAS BEEN COMPLETELY ACCOUNTED FOR.

14. When you first came to ..... did you stay with a friend, a family member or in a house provided by an employer? {....Yes; ....No}

IF YES, CONTINUE WITH 15 AND 16. IF NO, SKIP TO Q.17

15. What job or business did he have?.....

{IF THE HOST APPEARS TO BE PRESENT OMIT Q.16}

16. (a) How long did you stay there?
From month ....., 196...
to month ....., 196...

(b) Did you pay rent for staying there? {....Yes; ....No}

(c) Did you get most of your meals there as well? {.... a few; .... about half; .... most; .... all; ..... none}

(d) Did you pay for these meals? {....Yes; ....No}

17. Since then have you at any time lived in a friend's house, in the house of a family member, or in a house provided by an employer? {....Yes; ....No}

IF YES, CONTINUE WITH 18, OTHERWISE SKIP TO Q.19. IF THE HOST APPEARS TO BE PRESENT, THEN OMIT Q.18

18. (a) How long did you stay there?
From month ....., 196...
to month ....., 196...

(b) Did you pay rent for staying there? {....Yes; ....No}

(c) Did you get most of your meals there as well? {.... a few; .... about half; .... most; .... all; .... none}

(d) IF YES - Did you pay for these meals? {....Yes; ....No}

19. When you first came to .....: did a friend or family friend member help you find work? {....Yes; ....No}

IF YES - What job or business did he have at the time? .....
.....

IF NO - How did you find your first job? {CHECK LIST}

(1) ... I answered an advertisement in the newspaper

(2) ... Through the Labour Exchange

(3) ... I heard of jobs through the radio

(4) ... I heard from others of a job opening so I applied

(5) ... Others (explain) .....

20. Since coming to ..... have you been receiving money from friends or relatives who live outside of .....? {....Yes; ....No}

IF YES - about how many shillings a month did you receive?

.....

From month ....., 196...
to month ....., 196...

21. Since coming to ..... have you been sending money out of ..... to friends or relatives or to improve your shamba? {....Yes; ....No}

IF YES - about how many shillings a month have you been sending?

.....

From month ....., 196...
to month ....., 196...

IF THE RESPONDENT HAS HAD ONLY ONE RURAL-TO-URBAN MIGRATION (see Q.5) THEN THE SURVEY TO THIS POINT HAS COVERED THE RELEVANT JOB AND INCOME HISTORY WITH THE EXCEPTION OF SHAMBA INCOME. BUT IF THE RESPONDENT HAS HAD MORE THAN ONE RURAL-TO-URBAN MIGRATION (see Q.5), THEN WE STILL NEED TO COVER THE TIME PERIOD BETWEEN HIS FIRST AND HIS LAST MIGRATION. USING THE SAME TYPE OF QUESTIONS AS FOR Table 2, FILL IN Table 3 TO COVER THE TOTAL PERIOD BETWEEN THE FIRST AND THE LAST MIGRATION.

Table 3. Job and Income History for the Time Period Between the First and Last Migration

(1) (2) (3) (4) (5) (6) (7)

(a) Employed for wages

	Type of Work	Starting Wage shs./Mon.	Wage Raised to shs./Mon	Housing Allowance, Bonuses, etc. shs./Mon.	From Mon.196..	To Mon.196..
Job 1						
Job 2						

(b) Operating his own business

	Type of Business or Trade	Net Income (shs. per year)	From Mon.196..	To Mon.196..
Business 1				
Business 2				

(c) Employed for wages on a part-time or casual basis

	Type of Work	Days per Week	Hours per Day	Wages shs./Day	From Mon.196..	To Mon.196..
Job 1						
Job 2						

(d) Totally unemployed

	From Mon.196..	To Mon.196..
Period 1		
Period 2		

(6) Miscellaneous income

	Shillings	Housing Provided	Meals Provided	From Mon.196..	To Mon.196..
Source 1					
Source 2					

CHECK COLUMNS 6 AND 7 TO MAKE SURE THE TOTAL TIME PERIOD BETWEEN THE FIRST AND THE LAST MIGRATION HAS BEEN ACCOUNTED FOR

In addition to wage income and income from their own business, some people receive income from their own shamba.

22. Do you have a shamba? (1) ....Yes; (0) ....No)

23. IF NO - Did you have a shamba before moving to .....
(SEE MIGRATION 1) ((2) ....Yes; (0) ....No)

IF YES TO EITHER 22 OR 23, THEN CONTINUE WITH 24. IF NO TO BOTH 22 AND 23, THEN CONTINUE WITH QUESTION 27.

24. How many acres do (did) you farm? .....

25. In what district is (was) your shamba? .....

26. When did you get this land? Year 19 .....

FILL IN THE ANSWERS TO THE FOLLOWING QUESTIONS IN Table 4. COVER ALL YEARS FOR WHICH HE HAD THE SHAMBA STARTING WITH THE FIRST FULL YEAR PRIOR TO MIGRATION 1 (OR AT THE DATE THE LAND WAS OBTAINED IF THIS IS LATER THAN MIGRATION 1)

Now, please think back to year 196... Did you make any money selling cash crops or food that you grew on your shamba?

IF YES - What crops and food did you sell?

How many (acres, trees, cows, etc.) did you have?

After you had paid your farming expenses, how many shillings did you make that year?

During that year did you get any rent money from your shamba? If yes, how many shillings?

During that year how many adults and how many children got most of their food at your shamba?

Table 4. Shamba Income

Year	Type of Crop	Quantity Produced: Acres	Trees	Cows	Other	Net Income shs./year	Rental Income shs./year	Food Grown for Adults	Child.
1963									
1964									
1965									
1966									
1967									
1968									

We have now completed all the questions about your work and your income. You have been most helpful. Thank you very much. I would now like to ask some questions about yourself and about your plans for the future.

27. In what district (or urban centre) were you born? .....

28. How old are you (APPROXIMATE)? .....

29. To what tribe do you belong? .....

30. Are you married? (...Yes; ....No)

31. IF YES - In what district (or urban centre) is your wife (wives) living? .....

32. Have you passed KPE (or CPE)? (....Yes; ....No)

IF YES, CONTINUE WITH QUESTION 34. IF NO, ASK QUESTION 33 BUT OMIT QUESTIONS 34 TO 36.

33. What is the highest standard in primary school that you have completed? .....

34. Have you attended a secondary school? (....Yes; ....No)

35. IF YES - What form did you reach? .....
What type of secondary school was it?

(1) ... Government aided

(2) ... Harambee

(3) ... Private

Have you passed KSSE? (....Yes; ....No)

36. Do you have any of the following:

(1) ... A P_4 teacher training certificate

(2) ... A P_3 teacher training certificate

(3) ... A trade test certificate

(4) ... A P_2 teacher training certificate

(5) ... School certificate or GCE, O level

(6) ... P_1 teacher training certificate

(7) ... Higher school certificate or GCE, A Level

(8) ... S, teacher training certificate

(9) ... University degree

(0) ... None of the above

37. Are you now taking or have you already completed any special training course such as a correspondence course, an apprenticeship, a driver training course, or an agricultural course at a farm training centre?
{.... completed; .... now taking; .... no}

IF YES - what course(s)? .....

How many months did (will) it take to complete the course? .....

38. Do you wish to stay in ..... for the rest of your life?
{....Yes; ....No}

IF NO - Do you wish to stay in ....., until you retire?
{....Yes; ....No}

IF NO, CONTINUE WITH 39. IF YES, CONTINUE WITH 43.

39. How much longer do you wish to stay? {CHECK LIST}

(1) ... Less than three months

(2) ... Three months to a year

(3) ... One to two years

(4) ... Two to five years

(5) ... More than five years

40. Why do you wish to stay for that period of time?
{RECORD HIS ANSWER, DO NOT SUGGEST ANSWERS}
.....

41. Why would you leave? {CHECK LIST}

(1) ... Cannot find work here

(2) ... The wages are too low here

(3) ... I do not like the work I can get here

(4) ... I must return to my home area to take care of my shamba

(5) ... I have inherited some land from my father

(6) ... I just do not like living here

(7) ... The same reason as given in Q.40

(8) ... Other (explain) .....

42. Where do you think you will go? (name district or urban centre)
.....

43. Do you go to cinemas more or less in ..... than you did where you lived before you came here?
{(1) .... more; (2) .... about the same; (3) .... less;
(0) .... I do not go to cinemas}

IF MORE OFTEN - Why do you go more often? {CHECK LIST}

(1) ... There are more cinemas here than where I lived before

(2) ... I have more money now so I can afford to go more often

(3) ... Other (explain) .....

44. Do you go to dances more or less often in ..... than you did where you lived before you came here?
{(1) .... more; (2) .... about the same; (3) .... less;
(0) .... I do not go to dances}

IF MORE OFTEN - Why do you go more often? {CHECK LIST}

(1) ... There are more places here where one can dance

(2) ... There are better dancing places here

(3) ... I have more money now so I can afford to go dancing more often

(4) ... Other (explain .....

45. Do you read newspapers more or less often in ..... than you did where you lived before?
{(1) .... I cannot read; (2) .... more; (3) .... about the same;
(4) .... I do not read newspapers}

IF MORE OFTEN - Why do you read newspapers more often? {CHECK LIST}

(1) ... Newspapers are more readily available here

(2) ... I have more money now so I can afford to buy newspapers

(3) ... I need to read newspapers here to learn of job openings, etc.

(4) ... Other (explain) .....

46. If you were offered a job paying shs. 200 per month in your home district and the same kind of job also paying shs. 200 here, which

which job would you rather have? .....
(0) .... in home district; (1) .... here)

IF HE ANSWERS HERE - Why would you choose the job here in .....?
(CHECK LIST)

(1) ... I have more friends here

(2) ... There are more things to do here

(3) ... Living conditions are better here

(4) ... If I lost the job I would have a better chance of getting another one here

(5) ... Other (explain) .....

47. If you were offered a job here in ..... paying shs. 200 per month, would you accept the same kind of job in your home district if it paid {(1)..shs. 210?; (2) ... shs. 220?; (3) ... shs. 240?; (4) ...shs. 250?}

{CONTINUE FROM shs. 210 UP UNTIL YOU GET A YES ANSWER}

48. {TO BE ASKED ONLY IF THE RESPONDENT IS CURRENTLY UNEMPLOYED}

What do you think is the main reason why you are not able to find work here? {CHECK AS MANY AS APPLY}

(1) ... You have too little education

(2) ... Your tribe is discriminated against when a firm hires more people

(3) ... The Government is not trying hard enough to create jobs for the unemployed

(4) ... The trade unions only look out for the welfare of their own members and not for people like you

(5) ... Other (explain) .....

49. The Tanzania Government has recently established a law which seeks to re-settle the urban unemployed but landless workers on cooperative farming ventures; or for those who have their own land, the Tanzania Government is sending the urban unemployed back to their land to become farmers. Do you think this is a good policy? (CHECK LIST)

(1) ... Yes

(2) ... No

(3) ... Do not know

(4) ... I have not heard of the policy

(5) ... Refuses to express an opinion

IF HE IS CURRENTLY UNEMPLOYED - Would you be willing to go back to your farm or to a Government cooperative, or would you prefer to stay in ..... and continue to try and find work? {CHECK LIST}

(1) ... Yes

(2) ... No

(3) ... Do not know

(4) ... I have not heard of the policy

(5) ... Refuses to express an opinion

50. Some people claim that the reason why there is so much unemployment in the city is that city wages are very much higher than farm income and that at these high wages there are not enough jobs for everyone. They say that if city wages were lowered there would be more jobs and less unemployment. Do you agree that there would be more jobs and less unemployment here if the wages here were lowered?

(1) ... Agree

(2) ... Disagree

(3) ... Do not know

(4) ... Refuses to express an opinion

Thank you very much. You have been most helpful. Now I would like to ask a few questions about your father and then we are finished.

51. Is your father living? {....Yes; .... No}

IF YES, CONTINUE WITH 52. IF NO, GO TO QUESTION 57.

52. In what district (or urban centre) does your father live? .....

53. Does your father have a shamba? {....Yes; ....No}

IF YES - How many acres of land does he have? .....

54. How did he get this land? {CHECK LIST}

(1) ... Inherited

(2) ... Clan

(3) ... Gift

(4) ... Cleared

(5) ... Consolidation

(6) ... Rented

(7) ... Purchased

(8) ... Provided by his employer;

(9) ... Other (explain) .....

55. IF APPLICABLE - Is this the same shamba as your shamba? {....Yes; ....No}

56. Does your father work for wages? {....Yes; ....No}

IF YES - What job does he have? .....

Does your father have a business of his own? {....Yes; ....No}

IF YES - What type of business is it? .....

57. What is the highest standard (or form) in school that your father completed? .....

Name of Respondent .....

IMPRESSIONS OF THE INTERVIEW

1. The respondent was:

   (1) ... Quite cooperative

   (2) ... Neutral

   (3) ... Not very cooperative

2. The respondent was:

   (1) ... Seemed to remember well and likely was giving accurate answers

   (2) ... Had difficulty re-calling the information desired from him

   (3) ... May not have been giving accurate answers

3. The interview lasted about ..... minutes.

B.3. Short Questionnaire

Confidential

SURVEY OF RURAL-TO-URBAN MIGRATION

(Short Form - 1962 and 1963 migrants only)

Interviewer ..... Date .....

Urban Centre .....

Enumeration Division .....

Building Number .....

(IF APPLICABLE) Flat (or room) number? .....

FROM THE BUILDING INFORMATION SHEET FILL IN:

(a) The number of men staying regularly in this (house, flat, room) .....

(b) The number of men in this (house, flat, room) who have come to ..... after Uhuru .....

(c) The number of men in this (house, flat, room) who came to ..... in 1962 or 1963 .....

In order to successfully complete our study of men who migrated to ..... after Uhuru, it is necessary for us to know the income in the year 1964 (the year after Uhuru) of the men who migrated to ..... in either 1962 or 1963. I would appreciate it if I could ask you a few questions about yourself and about your work and your income in 1964.

1. When did you come to .....? (..... 1962; ..... 1963)
   Month? (APPROXIMATE).....

2. Where were you living before you came to .....?
   District .....

3. How old are you? (APPROXIMATE).....

4. To what tribe do you belong? .....

5. What is the highest standard (or form) in school that you have completed? .....

NOW WE NEED TO OBTAIN HIS COMPLETE EMPLOYMENT AND INCOME HISTORY FOR THE YEAR 1964. USING THE SAME TYPE OF QUESTIONS AS FOR Tables 2 AND 4 IN THE REGULAR QUESTIONNAIRE, FILL IN Table 1. NOTE SHAMBA INCOME AND MEALS IS INCLUDED IN THIS TABLE AS WELL.

Table 1. Job and Income History for 1964

(1) (2) (3) (4) (5) (6) (7)

(a) Employed for wages

	Type of Work	Starting Wage shs./Mon.	Wages Raised to shs./Mon.	Housing Allowance, Bonuses, etc. shs./Mon.	From Month	To Month
Job 1						
Job 2						

(b) Operating his own business

	Type of Business or Trade	Net Income (shs. per year)	From Month	To Month
Business 1				
Business 2				

(c) Shamba income

Type of Crop Sold	Net Income from Crops (Shillings)	Rental Income (shs.)	Food Grown For Adults	Food Grown For Child.

(d) Employed for wages on a part-time or casual basis

	Type of Work	Days per Week	Hours per Day	Wages shs./Day	From Month	To Month
Job 1						
Job 2						

(e) Totally unemployed

		From Month	To Month
Period 1			
Period 2			

(f) Miscellaneous income

	Shillings	Housing Provided	Meals Provided	From Month	To Month
Source 1					
Source 2					

CHECK OVER COLUMNS 6 AND 7 TO MAKE SURE THE FULL YEAR 1964 IS ACCOUNTED FOR

B.4. Letter of Introduction

UNIVERSITY COLLEGE, NAIROBI
Incorporating The Gandhi Memorial Academy

Institute for Development Studies
Social Science Division
Telephone: Nairobi 22036

P.O. Box 30197
NAIROBI, KENYA
Telegrams: Varsity Nairobi

Dear Sir:

The bearer of this letter ..... has been specially trained to carry out this survey of the men who have moved to either Nairobi, Mombasa, Kisumu, Nakuru, Thika, Eldoret, Kitale, Nanyuki or Nyeri. He is committed to treating all information received in a confidential manner.

The purpose of this survey is to understand the reasons why men are moving from rural areas to the cities and larger towns. We are especially interested in determining whether the income received in these cities and towns is the same, larger, or smaller than the income you were receiving in the rural areas before you moved to the city. In order to get this information we have selected at random a number of houses in each of these cities and towns and we now wish to interview the men living in these houses. Your co-operation will be greatly appreciated.

The responses to this questionnaire will be analyzed at the Institute for Development Studies in Nairobi. All responses will be treated in a confidential manner. The results will be published in such a manner that it will be impossible to identify any of the men interviewed.

This study is important for planning better cities and towns as well as for planning rural development. This study is not associated with politics, tax collection, or the census. Your responses will not be used for any of these purposes.

The Principal Investigators.

Dr. John Harris,
Visiting Research
Fellow.

Dr. Michael Todaro,
Research Fellow.

Mr. Henry Rempel,
Visiting Research
Associate.

B.5. Manual of Instructions for the Survey of Rural to Urban Migration Questionnaire

General Instructions

1. Locating the Building

The procedure to be used to select a sample of men to be interviewed is to select at random buildings, as designated on maps of the eight urban centres, and then to interview all relevant members resident in these buildings. You will be provided with the location of particular houses which have been selected at random for the purpose of this survey. You are to exercise great care in locating the exact buildings assigned. Although all buildings known to be non-residential have been eliminated from the sample, it is still possible that some of the buildings assigned to you are a place of business rather than a place where people live. (In such cases make sure there is no one living above or behind the shop.) If so, report this to your supervisor and he will assign an alternative building. If an assigned building is vacant, your supervisor will assign an alternative building as well. IN NO CASE whatsoever are you to substitute an alternative house on your own.

2. Who to Interview

Upon locating the right building, the next step is to identify the residents of the building who are relevant for our study. The Building Information Sheet is to be used for this purpose. One Building Information Sheet is to be completed for each building assigned. The "enumeration division" and "building number" will be part of your instructions on the location of a building. The purpose of "a brief description of the location of this building" is to enable us to locate

their exact building for a follow-up interview (if needed). Here you can use any number or name that appears on the building (or yard) plus any other distinguishing features, etc., which would enable identification of the building at a later date.

The purpose of questions one and two is to identify the type of building involved. If the building is a single household unit it will be possible to complete questions 3 to 6 directly for the whole building. If the building has two or more household units (e.g. some City Council housing), then complete question 2 and use the table in question 7 to record the answers of questions 3 to 6 as administered separately in flat (or household unit). Use the same procedure for each room if the building is a rooming house. If the building has more than nine household units, just expand the table as needed. In the case of a multi-household building do not expect any one individual to provide all the information for the building - approach each flat (or room) separately.

The relevant population for our survey is African males 16 to 50 years of age. The purpose of question 4 is to eliminate the adult males who are just visiting. The term "visiting" may prove difficult since an individual who is staying with a friend while looking for employment will likely consider himself (and be considered by others) a visitor. Nevertheless he is relevant for our survey since he has come to a city or a town for the purpose of seeking employment. Therefore, be sure to determine whether a so-called visitor is merely a visitor or actually staying there. Question 5 is intended to identify residents who may be temporarily absent. Question 6 then refers to the answer to question 3 plus the answer to question 4. The regular questionnaire is to be applied to all males indicated in the first part of question 6. The

"short form" questionnaire is to be applied to all males included in the answer to the second part of question 6. In the case of a multi-household building this would be the last two columns of the table in question 7.

EXCEPTIONS - The relevant population for our study is African males, ages 15 to 50, who have migrated to at least one of the eight urban centres during the period 1964-1968. Of all the adult males in this category a few may not be relevant for our study. These exceptions are:

(a) Transfers - some individuals moved to their present location because they were transferred there by their employer. Therefore, this is not really a voluntary migration for the purposes of employment, and thus not applicable for our survey. Nevertheless, such an individual may have migrated since 1964 to the urban centre from which he was transferred. If so he is relevant and a questionnaire is to be completed to cover this migration.

(b) University graduates trained abroad. If an individual's previous location was a foreign country in which he was attending a university or college, then you are to eliminate him from the sample since he did not migrate within Kenya.

(c) Members of the Kenya Parliament. The members may well qualify in that they move back and forth between Nairobi and their constituency but this is not the type of migration relevant for our study.

If you encounter an exception then you are to indicate this in writing to your supervisor so that he can account for all individuals listed under question 6.

If a house or flat is occupied by non-Africans then enquire

whether these are African men staying there as servants. If so, request permission to interview them. Servants quarters associated with a house are to be treated as part of the house. In the case of servants quarters associated with a house occupied by Africans, treat the servants quarters as a flat in the same building.

3. Initiating the Interview

The co-operation of the house occupants is essential for the success of this survey. Therefore, be polite and courteous at all times. Explain briefly the purpose of the study and ask for permission to ask a few questions. Be prepared to show your letter of introduction if this seems desirable. If opposition or hesitancy is encountered, stress that the building has been selected at random and the effect of non-cooperation will be to bias the sample. Be sensitive to the need to return at an alternative time if this seems desirable. If so, try to establish a precise time that would be suitable.

4. Filling in the Questionnaire

The value of the responses given in each questionnaire are dependent upon your skill in asking the questions and recording the answers. Feel free to interpret a question as necessary but be careful not to cause the respondent to provide desired answers versus his own answers. Where applicable, record his actual answers rather than merely your interpretation of his answer. In a number of questions possible answers have been listed. These questions are identified with the term "CHECK LIST". These options in such questions are not to be read to the respondent; they are provided solely as an aid to you in recording responses. If the response does not coincide with any of the options given, then record his

response in the category "other". All questions except the possible exceptions as given in the questionnaire must be answered. Distinguish a refusal to answer from a "don't know". Do not write in the margin or on pp. 18 and 19. Fill in your impressions of the interview while you have the interview clearly in mind, not at the end of the day. Never erase - merely place a line through an error. Use a pen at all times. If additional space is needed use the back side of the same page.

5. The Importance of Interviewing the Men Selected

A failure to interview any of the relevant men selected for a sample will introduce a bias into the overall survey. Therefore, if you are unable to obtain a respondent's co-operation, then confer with your supervisor to see what you should do. Furthermore, if a relevant respondent is not in, you are to return at least twice more in an attempt to gain an interview.

Specific Instructions

1. The long questionnaire - Survey of Rural-to-Urban Migration

This questionnaire is to be filled in for each adult male who has migrated to the urban area in which you are working (see the few exceptions listed above). The questionnaire is to be filled in solely upon the basis of an interview with the individual migrant. IN NO CASE whatsoever are you to fill in a questionnaire on the basis of answers given by others present in the building.

First fill in the information on the top of the page. The enumeration division, building number, and flat (or room) number must coincide with the Building Information Sheet you are completing for this building.

The information on number of men can be obtained directly from the Building Information Sheet where question (a) refers to the men under consideration in question 6 of the Building Information Sheet, while (b) and (c) are the two answers of question 6 respectively. (In the case of a multi-household building the relevant question would be 7, not 6.)

Q. 1 - 5

These questions are intended to determine the respondent's complete migration history since January 1st, 1964. A migration is defined as a move to a different district or urban centre for a period of at least three months for the purposes of finding employment. The exception would be the last move which may be less than three months since he arrived in the urban centre; it is still a migration if he has come for the purpose of obtaining employment. After you have obtained the migration history, summarize the information in the table in Q.5, starting with the first rural-to-urban migration after January 1st, 1964.

Q. 6 and 7

The purpose of question 6 is to determine why he left his previous residence while Q.7 is intended to identify why he chose this particular urban center versus other possibilities. Attempt to obtain two reasons in each question. Identify his first choice with 1 and second choice with 2. Obtain his reasons - do not read out the options provided.

Q. 8

This question is somewhat more difficult in that the respondent is expected to rank the three most important information sources. Read the whole list and ask him to select the most important, then obtain his

second choice, etc.

Q. 11

Question 11 deals with the 12 months prior to the respondent's first rural-to-urban migration as identified in Q.5. In Q.11 you are able to identify his activity during these 12 months. For each activity identified fill in the appropriate section in Table 1. (The exception is farming which is covered in questions 22 to 26.) If he was in school, income will likely be limited to room and board received which is covered in questions 12 and 13.

Table 1, 2, and 3

These tables are basically the same in content. The difference in the tables is that they apply to different time periods in the migrant's job and income history. These tables represent the most important aspect of the questionnaire and great care should be excercised in filling them out.

Category (a) - The "employment for wages" section is applicable if the respondent has been employed by someone else. List each job separately.

- Under type of work provide a job title which best describes the nature of his work.
- In column 3 indicate the starting wage for the job.
- If he received a raise indicate the wage, after receiving the raise, in column 4.
- For column 5 attempt to identify all additional income related to the job. He may have included these in columns 4 and 5, but we want the housing allowance separate so you best ask about

housing allowance before recording columns 4 and 5.

- Columns 6 and 7 refer to the time period for which he had the job. Encourage him to be as specific as possible by using national holidays in Kenya as an aid for him to remember the time involved.

Category (b) - "Operating his own business" applies if the respondent was self-employed. Net income refers to his overall receipts minus his operating expenses. Note operating expenses are to be limited to those associated with running his business (e.g. wages, rent, cost of materials, etc.), and are not to include personal or family consumption expenditures (e.g. buying food, clothing, etc.).

Category (c) - Part time employment is the same as employed for wages except the individual did not have regular or steady employment. Here we need to determine approximately how much he worked as well as his income whenever he was employed.

Category (d) - Here you merely need to record when he was totally unemployed. Nevertheless, make sure he was totally unemployed by asking him how he supported himself during this time.

Category (e) - Under miscellaneous income we make provision for the respondent to identify income for which he does not care to identify the source. We are primarily interested in the amount of income and only secondarily in its source.

After completing the table check down columns 6 and 7. In these two columns you should now have covered the full twelve months prior to the respondent's first migration.

Q. 12 and 13

These two questions then make provision for income received in

kind, specifically, housing and food.

NOTE - Attached to the back of this Manual of Instructions is a page with a set of questions you can use in filling out Tables 1, 2, and 3. Feel free to detach this page and use it as needed. Your supervisor has additional copies.

Table 2

The interview now changes to his current situation and reaches back to when he last moved to his current location. Table 2 is intended to provide the job and income history for the total current stay in his present location. You may start from his present job and then continue back until his arrival in the current location, or you may start with his first job when he arrived and precede to present. It does not matter which you call job 1 as long as you clearly indicate the date for which he had the job. The same comments apply here as in Table 1.

Q. 14 - 18

These again refer to income in kind and apply to his current stay in his present location. Note that he may have stayed at more than one place. In addition, we ask the nature of employment of his friends or relatives who provided this assistance. Q.16 may be embarrassing if the one providing the housing and meals is present during the interview. If so, you can omit this question.

Q. 19

Here we attempt to determine how he went about getting his first job in the current location. This question will not apply if he has been unemployed since he first arrived. Note the options listed are for

recording purposes only and are not to be read out along with the question.

Q. 20 and 21

Here we are interested in determining money flows between urban centres and rural districts. Q.20 actually represents income to the respondent and is important for that reason.

Table 3

Table 3 applies solely if the respondent has had more than one migration. If so, you still need to cover the time period between the first and the last migration. Cover this total time period here in the same manner as in Table 2.

Table 4

Table 4 and questions 22 to 26 are applicable only if the individual has had a shamba at any time since one year prior to his first rural-to-urban migration. The purpose of the type of crop and the amount is solely to provide a check on the reliability of his stated income. If he sold coffee, ask him how many trees he had; if he sold milk, ask him how many cows he had, etc. These columns on trees, acres, cows, etc., are to be filled in only as they appear relevant to the type of crop or food he sold. If he did not sell milk we are not interested in whether he had cows or not. Again, operating expenses are to be limited to the costs of running the farm and are not to include personal or family consumption purchases. The purpose of the number of adults and children who received their food at the shamba is to determine the value of farm output not sold commercially. Fill this in for each year for which he

had the farm.

Q. 27 - 37

In these questions we obtain some basic information about the respondent. In Q.36 check each one that is relevant. The answer received for Q.35 may indicate some of the options in Q.36 are not relevant. In Q.37 we are interested in courses which involved some formal training. For each course indicate a course title or a course description so that we will know what course was involved. If there is more than one course indicate the months involved for each one.

Q. 38 - 42

These questions refer to the respondent's intentions with reference to possible future migrations. If he is planning to leave at some time in the future, then on the basis of his answer to Q.39 attempt to have the respondent indicate why he will stay that particular time period (see Q.40).

NOTE - Q.41 deals with why he would leave so do not phrase Q.40 in these terms. If he is basically dissatisfied with his current location the answer to Q.40 may be the same as for Q.41.

B.6. Suggested Questions for Filling in the Tables in the Questionnaire

1. If he was employed for Wages

Tell me about the last job you had. What type of work was it?

When did you first get this job?

How many shillings were you making per month?

Was these any additional income such as housing allowance or houses?

Now, what about before that, what were you doing then? etc.

2. If he was self-employed

What type of business (or trade) did you have?

When did you start this business (or trade)?

Now after you had paid all the expenses of the business such as wages for workers, rent, taxes, the cost of buying your goods, etc., how much money was left over at the end of the year?

Now, what about the year before that. How much money was left over? etc.

3. If unemployed

Were you completely out of work during this time? If so, how did you support yourself?

Did you have any casual (day labour) during this time?

If yes, about how many days a week did you work per week?

What income did you receive for this work?

4. Miscellaneous income

Now we have talked about your work (or business) since you came here. During this time has there been any other income that you have received? If so, how much? (IF HE IS RELUCTANT TO TALK ABOUT IT DO NOT ASK FOR THE SOURCE OF SUCH INCOME, MERELY TRY TO GET THE AMOUNT.)

Note: In Table 3 in the long questionnaire and in Table 1 of the short questionnaire you are to fill in under miscellaneous income whether he was staying with someone without paying rent (including a house provided by an employer and whether he was receiving meals from someone else. If yes, merely place an "X" in the space provided and record the time from month, 196... to month, 196...

B.7. Instruction to Supervisors

1. Numbering the Questionnaires

On each completed questionnaire you receive place a number on the upper right hand corner of the front page. If you start with number 1 and then number each successive questionnaire consecutively, then you will have an immediate check on how many questionnaires have been completed. When you code a questionnaire place the number of the first page on the upper right hand corner of each page so that we will not run into difficulty if some questionnaires come apart. In numbering the short questionnaires use a separate numbering system, starting again with number 1.

2. Checking a Completed Questionnaire

You are to collect the completed questionnaires daily, preferably at the end of the day. Check through each one in the presence of the interviewer to assure that they have been properly completed.

(a) All questions must have an answer with the exception of those preceded with an "if yes" or "if no."

(b) Check the questionnaire for internal consistency. First note the dates of the migrations and then make sure that Tables 1, 2, 3, and 4 have been properly filled in, in accordance with the migration dates. Table 1 may be blank if the respondent was in school throughout these twelve months or if he was working his shamba. Table 2 will definitely have an entry. On Table 4, make sure that the last column, "food grown" is filled in. If someone has a shamba it is very unlikely that it is vacant. Also, if someone has migrated in the middle of a year, make sure

interviewers are asking about shamba income during the first part of that year as well as for the year before. On Tables 1, 2, and 3 make sure the complete relevant time period is accounted for. In checking these tables frequently ask whether the interviewer is asking questions about all parts of the tables.

(c) In questions 6, 7, and 8 determine whether the interviewer is trying to get more than one response.

(d) In the cases in which it is relevant, question 40 will be a good check on whether the interviewer is taking sufficient time to properly complete the questionnaire. The recorded answer should be a clear, complete statement in response to the question. The same applies in all questions where the option "other" has been checked.

(e) Make sure p. 17 is being filled in. If the time for an interview is consistently 30 minutes or less, make special efforts to determine whether the interviews are being carried out in a conscientious manner.

3. Work Schedules

The survey has been set up with the expectation that each interviewer will average a minimum of 20 long questionnaires per week. It is your responsibility to maintain this schedule. You are to assist them in overcoming local opposition and in organizing a schedule so that they are setting up interviews for the evening or the next day as well as carrying out interviews.

4. For each building assigned, a building information sheet must be completed. This applies even if a building is vacant or used for

commercial purposes. Then, for each completed building information sheet, all migrants must be accounted for with a relevant questionnaire or with a written statement indicating why he has not been interviewed.

APPENDIX C

A NOTE ON THE RELIABILITY OF THE DATA USED IN THE STUDY

For this study basically two types of data sources were utilized. The one source was published data generally available while the second source was the data generated by our survey. With regard to the published sources, there may exist errors in the data available or errors may have arisen in the way we utilized the information in our study. The most important source utilized was the published report of the 1962 Census. For a less developed country this census appears to have been of relatively good quality. The totals reported in the census have been used by various scholars interested in Kenya's population. The one internal check on the accuracy of the census data was the comparison of the results from the General Census and the Sample Census which accounts for about 80 per cent of the African population. On the basis of this comparison, the overall total appears "correct to within 1 per cent."[1] It should be noted our study did not include the districts made up of nomadic peoples which presented special difficulties in the census.

In our use of census data we were interested in comparing the population totals for each rural district (the denominator in the dependent variable), and in comparing the population totals of the eight

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[1]Kenya, Statistics Division, Ministry of Economic Planning and Development, Kenya Population Census, 1962, Vol. III: African Population (October, 1966), p. 16.

urban centers (the variable "N_j"). Therefore, the type of census error that would affect this study would be variations in the degree of accuracy of the data among the rural districts used in this study and among the eight urban centers. Unfortunately, the variation between the General Census and the Sample Census results was greater than 1 per cent in certain districts but we were not in a position to attempt adjustments to the totals reported.

We experienced additional difficulties in our use of the census data to measure the number of clan contacts. Only Nairobi and Mombasa were enumerated as separate districts so estimates of previous population movements to the other six towns had to be made on the basis of previous population movements to the district in which each town was located. Also, the census data used for the "C_{ij}" variable did not reflect the most recent boundary changes so additional estimates had to be made for the distfiets whose boundaries had been changed. Although errors in judgement likely occurred as we developed these estimates, we are not aware of any systematic bias which would have an adverse effect on the analysis contained in this study.

For the distance variable the mileage between various locations has been established and can be considered accurate. The problems encountered involved the use of the center point of a district as the origin for the migration from the district. It is not necessarily true that movement from the geographic center of a district represents the average distance all migrants would have to travel to a point inside or outside of the district. Although the possibility of such an error was recognized, we chose to use the geographic center of the district for lack of a better alternative.

For the amenity variables, the fact that we had to limit our consideration to indices and the crude nature of these indices overshadowed any errors which might have existed in the data utilized in measuring these variables. We recognize the severe limitations placed on these variables and as a result we do not wish to emphasize the lack of significance of the coefficients obtained for the amenity variables in the regression analysis. Nevertheless, the regression results were confirmed by the results on amenity use obtained in the survey.

For the remaining variables which were measured from our survey data, the concern here is the accuracy of the data generated. The survey was designed to obtain the information needed for these variables and the problems encountered in measuring the variables from the survey data have been discussed in the text of the thesis. With reference to the survey there are three possible sources of error: errors in the sampling procedure, errors in the administration of the questionnaire, and errors in processing the data after it had been collected.

In the sampling procedure a form of random sampling was used throughout. Although questions can be raised about the procedure of selecting buildings to obtain a sample of men, this procedure appears most suitable given the situation and has been used in other surveys (Mombasa Labour Force Survey, 1969 and the Ministry of Economic Planning, Budget Survey in Nairobi, 1968). In the selection of buildings it was necessary in some cases to make allowances for variations in the number of people resident in any one building. During the survey it was impossible to maintain an equal degree of coverage across all eight urban centers of the houses selected in each urban center, but we attempted to maintain equal coverage throughout all parts of any one urban center. As a result,

the interviews obtained should be viewed as eight separate samples. The existence of a systematic bias in the type of men who could not be located or who refused an interview was not apparent.

In the actual administration of the survey we attempted to maintain close supervision over each interviewer's work to minimize intentional or unintentional errors in the way he conducted the interview and filled in the questionnaire. The work of each interviewer was checked daily by his supervisor to ensure that the questionnaire was complete and the information obtained was internally consistent. The interviewers were paid a daily rate in an attempt to emphasize quality rather than quantity of work. All except one supervisor were chosen from an upper level seminar in economic development. The migration model was analyzed in the seminar to enable the supervisors to gain some appreciation for the type of data needed. The interviewers were selected from the student body of University College, Nairobi. The vast majority of the students selected had previous survey experience (census enumerator, survey research with a Nairobi firm, or survey research with other faculty members at University College, Nairobi).

Throughout the planning and administration stages of the survey, there was considerable concern about the respondent's ability to recall and his willingness to relate his past migration and income history. Experience in other surveys conducted within the Institute for Development Studies, University College, Nairobi, indicated people who are not used to storing information by writing it down do have an amazing ability to recall past details in their life. We attempted to use obvious reference dates such as Independence Day as aids in recalling information. The questionnaire was designed to move back from the respondent's present

location and employment experience to the time before and after his migration. The interviewers were asked to record their impressions about how co-operative the respondent had been and whether he appeared to be giving accurate information to the best of his ability. Although we have not used these impressions in our analysis, most men appear to have been quite willing to co-operate in the survey. If there was a tendency to over or under-state income this will affect our results primarily if the mis-statement was in opposite directions or the mis-statement was proportionately greater for either the rural or urban income.

After the survey had been completed the questionnaires were coded, the information was transferred to coding sheets, and then it was punched on to computer cards. At each of these three stages a second person was drawn in to check for errors in the original work. In addition, a check was made via computer to assure that the values of all the variables were within prescribed limits.

It is not possible to make direct comparisons between our results and results reported in other studies in Kenya since the population from which we were sampling was different than the population under consideration in these other studies. Nevertheless, the results obtained in our study appear to be "reasonable" when compared with the similar information available. For example, the Economic Survey of Central Province -- 1963/64 reports an average monthly income per household of Kℓ 14.7 in urban areas and Kℓ 6.9 in rural areas.[2] These totals do not vary substantially from our 1964 average expected income for the Kikuyu of

[2]Kenya, Statistics Division, Ministry of Economic Planning and Development, Economic Survey of Central Province -- 1963/64 (1968), Table 80.

Kℓ 12.2 and Kℓ 8.9 per month respectively. The Economic Survey, 1969 reports an average monthly earning of all employees of Kℓ 16.1.[3] In his 1969 labor force survey of Mombasa, Hall reports a median income between Kℓ 15.05 and Kℓ 30 per month and a mode between Kℓ 5.05 and Kℓ 15 per month.[4] These values compare reasonably well with our 1968 expected average monthly income for all other tribes than Kikuyu and Luo, of Kℓ 16.1, especially if we recognize that according to Hall's sample 76 per cent of the labor force in Mombasa had always lived there.

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[3]Kenya, Statistics Division, Ministry of Economic Planning and Development, Economic Survey, 1969, Table 8.12.

[4]C. A. S. Hall, "Mombasa Labour Force Survey," (Mombasa: Provincial Planning Office, Interim Working Paper No. 4, May, 1969), Table IX.

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TITLE OF THESIS Labor Migration Into Urban Centers and Urban Unemployment In Kenya

Full Name Henry Rempel

Place and Date of Birth Manitoba, Canada, Feb. 24, 1937

Elementary and Secondary Education

Rutledge Primary School, Manitoba

Moray Primary School, Manitoba

Steinbach Collegiate, Manitoba

Colleges and Universities: Years attended and degrees

University of Manitoba, 1958-61, B. Com.

Ohio State University, 1963-64, M.A.

University of Wisconsin, 1966-71, Ph.D.

Membership in Learned or Honorary Societies American Economic Association

Canadian Economic Association

Omicron Delta Epsilon

Publications

Major Department Economics

Minor(s) African Studies

Date October 19, 1970

Signed Robert E. Baldwin
Professor in charge of thesis