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#### Brea-Porteiro, Jorge Avelino

EFFECTS OF STRUCTURAL CHARACTERISTICS AND PERSONAL ATTRIBUTES UPON LABOR MOBILITY IN ECUADOR

The Ohio State University

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# EFFECTS OF STRUCTURAL CHARACTERISTICS AND PERSONAL ATTRIBUTES UPON LABOR MOBILITY IN ECUADOR

#### DISSERTATION

Presented in Partial Fulfillment of the Requirements for the Degree Doctor of Philosophy in the Graduate School of The Ohio State University

By

Jorge Avelino Brea-Porteiro, B.A., M.A.

\* \* \* \* \*

The Ohio State University

1986

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## TABLE OF CONTENTS

### PAGE

ACKNOW	LEDGEMENTS i	i
VITA	ii	i
LIST OF	FIGURES	7
LIST OF	TABLES v	i
CHAPTER		
I.	INTRODUCTION	l
	Themes of the Study	<b>1</b> 5
П.	THEORETICAL APPROACHES TO THE STUDY OF POPULATION MOBILITY	5
	2.1 THE FUNCTIONALIST APPROACH62.2 THE STRUCTURALIST APPROACH82.3 ALTERNATIVE APPROACHES12Summary of the Chapter14	5324
Ш.	STUDY AREA AND RESEARCH PROCEDURES 10	5
	3.1 STUDY AREA       16         Data       17         3.2 RESEARCH PROCEDURES       21         3.3 CHARACTERISTICS OF ECUADOR       22         Physical Characteristics       22         Socioeconomic Characteristics       24	571225

IV. AGRARIAN STRUCTURE IN ECUADOR         4.1 AGRARIAN STRUCTURE BEFORE 1964         4.2 AGRARIAN STRUCTURE AFTER 1964         4.3 DIMENSIONS OF THE AGRARIAN STRUCTURE         Summary of the Chapter         V. INDIVIDUAL AND PLACE ATTRIBUTES OF MIGRANTS AND CIRCULATORS         5.1 COMPARISON OF MIGRANTS, CIRCULATORS, AND STAYERS         Personal Attributes         Place Characteristics         5.2 COMPARISON OF ORIGINS AND DESTINATION         Summary of the Chapter         VI. INDIVIDUAL ATTRIBUTES, PLACE STRUCTURE, AND LABOR MOBILITY         6.1 METHOD OF ANALYSIS AND MODEL SPECIFICATION         6.2 NATIONAL ANALYSES         6.3 REGIONAL MODIFICATIONS         6.4 INTERACTION EFFECTS         Summary of the Chapter		Dimensions of the Socioeconomic Structure
4.1 AGRARIAN STRUCTURE BEFORE 1964         4.2 AGRARIAN STRUCTURE AFTER 1964         Agrarian Change and Circulation         4.3 DIMENSIONS OF THE AGRARIAN STRUCTURE         Summary of the Chapter         V. INDIVIDUAL AND PLACE ATTRIBUTES OF MIGRANTS AND CIRCULATORS         5.1 COMPARISON OF MIGRANTS, CIRCULATORS, AND STAYERS         Personal Attributes         Place Characteristics         5.2 COMPARISON OF ORIGINS AND DESTINATION         Summary of the Chapter         VI. INDIVIDUAL ATTRIBUTES, PLACE STRUCTURE, AND LABOR MOBILITY         6.1 METHOD OF ANALYSIS AND MODEL SPECIFICATION         6.2 NATIONAL ANALYSES         6.3 REGIONAL MODIFICATIONS         6.4 INTERACTION EFFECTS         Summary of the Chapter	IV.	AGRARIAN STRUCTURE IN ECUADOR
<ul> <li>V. INDIVIDUAL AND PLACE ATTRIBUTES OF MIGRANTS AND CIRCULATORS</li> <li>5.1 COMPARISON OF MIGRANTS, CIRCULATORS, AND STAYERS</li> <li>Personal Attributes</li> <li>Place Characteristics</li> <li>5.2 COMPARISON OF ORIGINS AND DESTINATION</li> <li>Summary of the Chapter</li> <li>VI. INDIVIDUAL ATTRIBUTES, PLACE STRUCTURE, AND LABOR MOBILITY</li> <li>6.1 METHOD OF ANALYSIS AND MODEL SPECIFICATION</li> <li>6.2 NATIONAL ANALYSES</li> <li>6.3 REGIONAL MODIFICATIONS</li> <li>6.4 INTERACTION EFFECTS</li> <li>Summary of the Chapter</li> </ul>		<ul> <li>4.1 AGRARIAN STRUCTURE BEFORE 1964</li> <li>4.2 AGRARIAN STRUCTURE AFTER 1964</li> <li>Agrarian Change and Circulation</li> <li>4.3 DIMENSIONS OF THE AGRARIAN STRUCTURE</li> <li>Summary of the Chapter</li> </ul>
5.1 COMPARISON OF MIGRANTS, CIRCULATORS, AND STAYERS         Personal Attributes         Place Characteristics         5.2 COMPARISON OF ORIGINS AND DESTINATION         Summary of the Chapter         VI.         INDIVIDUAL ATTRIBUTES, PLACE STRUCTURE, AND LABOR MOBILITY         6.1 METHOD OF ANALYSIS AND MODEL SPECIFICATION         6.2 NATIONAL ANALYSES         6.3 REGIONAL MODIFICATIONS         6.4 INTERACTION EFFECTS         Summary of the Chapter	v.	INDIVIDUAL AND PLACE ATTRIBUTES OF MIGRANTS AND CIRCULATORS
VI.       INDIVIDUAL ATTRIBUTES, PLACE STRUCTURE, AND LABOR MOBILITY         6.1       METHOD OF ANALYSIS AND MODEL SPECIFICATION         6.2       NATIONAL ANALYSES         6.3       REGIONAL MODIFICATIONS         6.4       INTERACTION EFFECTS         Summary of the Chapter       Summary of the Chapter		<ul> <li>5.1 COMPARISON OF MIGRANTS, CIRCULATORS, AND STAYERS</li> <li>Personal Attributes</li> <li>Place Characteristics</li> <li>5.2 COMPARISON OF ORIGINS AND DESTINATION</li> <li>Summary of the Chapter</li> </ul>
6.1 METHOD OF ANALYSIS AND MODEL SPECIFICATION         6.2 NATIONAL ANALYSES         6.3 REGIONAL MODIFICATIONS         6.4 INTERACTION EFFECTS         Summary of the Chapter	VI.	INDIVIDUAL ATTRIBUTES, PLACE STRUCTURE, AND LABOR MOBILITY
VII. SUMMARY AND CONCLUSIONS		<ul> <li>6.1 METHOD OF ANALYSIS AND MODEL SPECIFICATION</li> <li>6.2 NATIONAL ANALYSES</li></ul>
	VII.	SUMMARY AND CONCLUSIONS
Research Procedures and Findings		Research Procedures and Findings

v

## LIST OF FIGURES

FIGURE	PA	GE
1.	Cantones of Ecuador	19
2.	Terrain of Ecualor	23
3.	Urban-Rural Continuum	31
4.	Manufacturing-Agricultural Frontier	33
5.	Mineral Extraction-Economic Recession	34
6.	Long Standing-Recent Agricultural Settlement	50
7.	Domestic-Export Agriculture	51
8.	Very Large-Medium Sized Farms	52

## LIST OF TABLES

TABLE	PA	GE
1.	Income Distribution for Urban and Rural Areas, 1975	27
2.	Factor Analysis of Socioeconomic Contextual Variables	30
3.	Land Distribution by Farm Size, 1954	38
4.	Land Distribution by Farm Size, 1968	41
5.	Land Use by Farm Size, Sierra, 1954-74	42
6.	Hired-in Labor by Farm Size, Sierra, 1974	45
7.	Wage Earnings of Small Farm Households by Sector, 1974	46
8.	Factor Analysis of Agrarian Contextual Variables	48
9.	Comparison of Migrants, Circulators, and Stayers Using t-Test	56
10.	Attributes of Migrants, Circulators, and Stayers	59
11.	Migrants and Circulators Compared by Origins and Destinations	61
12.	Characteristics of Places of Origin and Destination	64
13.	Logistic Regressions Results for National Analyses	74
14.	Regional Modifications for Migration Analyses	77
15.	Regional Modifications for Circulation Analyses	79
16.	Direct and Interaction Effects on National Migration	82
17.	Summed b-Coefficients for Hypothetical Contextual Settings	83
18.	Direct and Interaction Effects on National Circulation	85
19.	Summed b-Coefficients for Hypothetical Contextual Settings	86

#### CHAPTER I

#### INTRODUCTION

Population mobility is considered one of the more pressing demographic issues of the 1980s (Standing, 1984). Throughout the Third World, internal movements have depopulated certain areas while creating excessive overcrowding in others. Most governments in developing countries perceive the present population maldistribution as a greater hindrance to development than population growth per se. Until recently, the concern of policy makers and academics focused on rural-urban migration and its role in the process of urbanization and the growth of primate cities. This emphasis resulted in the relative neglect of other important types of movement.

Among the least understood forms of mobility is circulation, defined by Zelinsky (1971: 255-6) as

a great variety of movements, usually short-term, repetitive, or cyclic in nature, but all having in common the lack of any declared intention of a permanent or long-lasting change in residence.

Circulation includes seasonal moves, with similar or complementary activities being pursued at each place of residence; wage-labor migration, involving mobility in search of temporary employment; and, according to some typologies, daily commuting (Standing, 1985; Conaway, 1977; Gould and Prothero, 1975). The basic criterion is the geographic separation of kinship obligations and work-related activities.

- 1 -

Labor circulation is widespread in many countries, being particularly pronounced in less-developed rural areas where peasant or smallholder agriculture coexists with commercial modes of production, and in urban centers or mining areas where temporary employment tends to be abundant. Hence, the relationship between agrarian structure and labor circulation in developing countries is of great importance.

Circulation research has tended to focus on Africa and Southeast Asia, while Latin America has been considered a region where most moves are permanent (Goldstein, 1978).<sup>1</sup> In fact, Latin American circulation is a phenomenon of increasing incidence (Matos Mar and Mejia, 1982; Peek, 1982; Balan, 1981). Reasons include structural changes that have taken place in rural areas such as abolition of certain forms of land tenancy, increased use of machinery in large farms, and commercialization of agriculture. These result in an increased use of temporary labor and, to some extent, in the proletarianization of the agricultural labor force (Commander and Peek, 1983; Peek, 1982).

Mobility research has been guided by two perspectives: functionalist and structuralist. Functionalists consider mobility a strategy of individuals or households to maximize income and minimize risk. This view is congruent with micro-analytical approaches that explain mobility in terms of costs and benefits of moving. Structuralists, on the other hand, emphasize political and economic processes within which movement takes place. In this view, mobility is largely determined by societal structures, and individual decisions play a secondary role.

Recent publications on the topic include Chapman and Prothero, 1985; Prothero and Chapman, 1985; Standing, 1985; Hugo, 1982; Matos Mar and Mejia, 1982; Goldstein, 1978; Goodman and Redclift, 1977.

These perspectives are not mutually exclusive (Brown and Lawson, 1985; Brown and Jones, 1985; Brown and Sanders, 1981). Functionalist explanations emphasize individual decision making, whereas structuralist perspectives focus on the overall socioeconomic and political context within which individual decisions are made. Hence, both are necessary, interrelated, and complementary to one another. Wood (1981, 1982) and Forbes (1981, 1984) also argue for holistic approaches which identify the complex interrelationships between individual and structural factors. However, few, if any, studies have used such a comprehensive framework.

This study, on the other hand, integrates aggregate and individual levels of analysis, thus bridging two diverse philosophical positions, structuralist and functionalist, respectively. This is done by including in the analysis variables reflecting both contextual and individual characteristics and assessing the relative role of each.

The study also builds upon the methodological suggestions arising from the expansion method paradigm (Casetti, 1972, 1986). The expansion method is a technique for investigating the drift and/or stability of a model's parameters. The paradigm associated with it motivates the research workers to ask questions concerning the possible variation of parameters and the theoretical rationales for such variation. In the analyses that follow, issues concerning the contextual variation of the effects of personal attributes on propensity to migrate are investigated. This investigation reflects the substantive theoretical concerns reviewed in the sections that follow as well as the methodological suggestions arising from the expansion method paradigm.

#### THEMES OF THE STUDY

This dissertation analyzes the relationship between agrarian structure and labor mobility, using Ecuador as study area. The underlying hypothesis is that mobility incidence and pattern are primarily a function of agrarian conditions and attributes of individuals responding to those conditions.

The Ecuadorean agrarian system consists of three well-defined but overlapping modes of production: *hacienda, industrial plantation,* and *minifundio.* Each mode is characterized by a distinct organization of production elements (land under cultivation, technology used, type of labor employed, kind of crops grown), which affect the form of labor mobility.<sup>2</sup> Similarly affecting mobility is the transformation from one mode of production to another, which is characteristic of development. For example, the abolition of feudalistic forms of tenancy releases permanent agricultural workers who, finding only temporary work elsewhere, become circulators rather than permanent migrants. Likewise, production on medium-sized and large farms has become more capital intensive, leading to greater reliance on temporary labor. With development, therefore, labor circulation becomes an increasingly important phenomenon.

Another structural factor stimulating circulation in Ecuador is the oil boom that occurred during the 1970s. A noteworthy outcome of this development was significant growth in construction and service sectors in urban areas. The resulting increase in demand for unskilled labor promoted migration, mostly temporary, from the rural Sierra.

<sup>&</sup>lt;sup>2</sup> These three modes of production and their impact on circulation are discussed in detail in Chapter 4.

At the individual level, circulation is recognized as an income maximization strategy. But under identical structural conditions, different people make dissimilar decisions. It is important then to understand how circulators differ from permanent migrants and non-migrants, and how decision making varies by personal characteristics.

In summary, recognizing the importance of structural and individual factors, this dissertation seeks to integrate both functionalist and structuralist approaches. The relative importance of each set of factors is assessed by including aggregate and individual variables in a single model. Contextual variation in the role of variables is explored.

#### **OVERVIEW OF THE DISSERTATION**

Having delineated the conceptual framework and themes of this dissertation, the following chapter (Chapter II) reviews theoretical approaches to the study of population mobility. Chapter III introduces the study area and data, discusses research procedures, and presents a general overview of the geographic and socioeconomic characteristics of Ecuador. Chapter IV focuses on the agrarian structure, its characteristics and changes experienced since 1964, when agrarian reform laws were implemented. Chapter V describes individual attributes of migrants, circulators, and stayers, as well as structural characteristics of their places of origin and present residence. Chapter VI examines the relationship between structural and individual variables and labor mobility. The relative importance of each set of factors is assessed. A summary and conclusions are provided in Chapter VII. Attention now turns to a review of theoretical approaches to mobility research.

#### CHAPTER II

# THEORETICAL APPROACHES TO THE STUDY OF POPULATION MOBILITY

As noted in Chapter I, the study of population mobility has been guided primarily by two perspectives – functionalist and structuralist. These are reviewed in the first two sections of this chapter. Both these approaches are over-simplifications as they do not address adequately the complex relationship between society and individual which underlies population movement. Thus, alternative approaches that attempt to integrate macro, or societal, and micro, or individual, levels of analysis are considered in section 2.3.

#### 2.1 THE FUNCTIONALIST APPROACH

The functionalist approach to population mobility is based on neoclassical microeconomic theory, and views migration as the geographic movement of labor in response to imbalances in the spatial distribution of land, capital, and labor. Accordingly, labor moves from places where it is plentiful and capital scarce to areas where capital is abundant and labor scarce (Lewis, 1954; Fei and Ranis, 1964). In this manner, labor flows constitute a mechanism whereby regional imbalances are corrected, and continue until an equilibrium condition is attained. The theory assumes that each mover selects the destination that provides the greatest return. The aggregate flow, then, is the cumulative result of individual decisions based on the rational evaluation of costs and benefits involved in the move (Wood, 1982).

- 6 -

The functionalist perspective dominated migration literature throughout the 1960s. An early example is the study of Elkan (1959), which found that labor circulation in African societies was a response to variations in economic opportunities among areas. Another example is the well-known Todaro model in which the decision to move from rural to urban places is related to the expected rural-urban income differentials and the probability of obtaining an urban job (Todaro, 1969; Harris and Todaro, 1970). Todaro sought to explain Third World rural-urban migration despite marked urban unemployment. More recent studies have considered population mobility to be the household's decision, rather than the individual's, to maximize income and avert risk (Fan and Stretton, 1985). This work demonstrates that risk-averse decision makers prefer circulation even when migration promises higher expected incomes.

The popularity of the neoclassical perspective in migration research stems from its solid theoretical foundation and the operational quality of its models. However, the approach has been criticized for the equilibrium conditions it predicts, its disregard for historical processes, and its reductionist nature that ignores the contextual setting within which individual decisions are made. To elaborate, consider the context of developing countries. In contrast to the expected equilibrium, research findings suggest that population mobility exacerbates regional disparities. This is because backwash effects that drain labor from periphery to core are cumulative, increasing the poverty of less developed areas (Myrdal, 1957; Portes, 1978). The neoclassical perspective is also insensitive to specific historical conditions that influence population mobility. As Portes (1978) points out, the emergence of a mobile labor force is often the consequence of legal and political institutions that a dominant society imposes upon a subordinate one; thus many less developed economies do not send out labor until they are coerced to do so. These processes are not captured by functionalist models. Fur-

thermore, under conditions of extreme poverty, deterioration in rural areas, and/or expulsion of peasants from their land leaves laborers with no alternative but migration. Within such contexts, a cost-benefit analysis is not applicable. In short, neoclassical analyses in the context of developing countries often focus on secondary or superficial aspects of population mobility, while the primary determinants remain undetected.

#### 2.2 THE STRUCTURALIST APPROACH

Unlike the functionalist approach, which sees population mobility as the result of individual decisions, the structuralist perspective is concerned with the sociocultural and economic structures of a given society, and how these affect mobility. This approach is represented in a number of models including dependency theory, internal colonialism, center-periphery framework, and the global accumulation perspective (Wood, 1982). The central and common notion is that population movement can only be examined through the analysis of structural transformations that take place in a society (Balan, 1981). In this view, migration, or circulation, is a macrosocial rather than an individual phenomenon. Accordingly, structural changes that stimulate aggregate population movements are the main concern, while individual motives are secondary.

The structuralist approach has been used extensively in research on Third World migration. Studies employing this perspective include Balan (1981), Roberts (1978), and Jellin (1977) on Latin America; Murray (1980), Amin (1974), and Mitchell (1969) on Africa; and Titus (1978), Forbes (1980), and Lipton (1980) on Asian contexts. To illustrate some important structuralist concepts the studies of Balan and Amin are summarized.

Balan (1981) examines changes in patterns of internal migration in Latin America during the past one hundred years. Unlike studies following the models of Lewis and Todaro, which focus on the urban sector, Balan emphasizes the role of agrarian structure. The underlying hypothesis is that the agrarian social structure largely determines the elasticity of labor supply and the nature of its demand, and hence the characteristics of internal migration. Balan argues that the development of commercial agriculture was the main factor influencing internal migration in Latin America from the late 1800's to about 1930. Much of this mobility was over short distances, rural destined, and temporary. This period was characterized also by a shortage of labor which prompted coercive recruitment methods. Profound changes, however, occurred after 1930 as a result of demographic and industrialization processes. Rapid population growth took place during 1930-1960 throughout Latin America when mortality rates decreased and life expectancy increased, while fertility remained high. Industrialization in cities attracted much of the surplus labor but was unable to absorb it all. Internal migration became predominantly urban destined and permanent.

Rural-urban migration has received considerable attention in the literature, primarily because of the socioeconomic urban problems it generated. According to Balan, however, this research bias has masked the importance of other migratory patterns, such as seasonal migration and mobility associated with agricultural frontier settlement. Seasonal migration between rural areas has played a fundamental role in the development of capitalist agriculture, as peasants combined wage labor on commercial farms and *haciendas* during the peak season with subsistence agriculture on their plots. Balan notes how these predictable seasonal migration patterns are changing as a result of transformations in the agrarian structure, involving mechanization and expulsion of peasants from the *haciendas*. The new phenomenon is the emergence of

a rural proletariat, i.e., a class of landless agricultural laborers who do not reside on commercial farms or *haciendas*, and are not engaged in subsistence agriculture. This type of wage worker, having lost all means of production, circulates among farms where employment is available. As a result of mechanization, however, these job opportunities are mostly temporary.

In short, Balan sees migration as a response to structural changes, particularly those taking place in the agrarian sector, which are beyond the control of the migrants themselves. Hence, to understand population mobility an historical analysis of structural transformations is essential.

With regard to West Africa, Amin (1974) argues that modern labor mobility can be best understood through the uneven impact of capitalist expansion upon tribal societies. According to Amin, the spatial impact of capital in West Africa produced three types of regions. First, those organized for large scale export production which have entered already the capitalist phase, involving private appropriation of land, and the availability of wage labor. Second, those formed as a result of colonial economic policies, serving as labor reserves. Third, those which are not yet part of the system, and serve only as auxiliary reserves.

In addition to regional differentials in capital development, policies applied in different regions, including coercion and imposition of taxes, ensure the labor supply. Thus, for Amin, migration in West Africa is the result of societal reorganization brought about by the expansion of capitalism and its labor needs.

Titus (1978) tested Amin's theory in Indonesia by means of a statistical analysis of lifetime migration patterns. To accomplish this, Titus classified Indonesia's prov-

inces into three categories. The first category includes places with high mobility rates and high in-migration; the second, places with low mobility rates; and the third, places with high out-migration rates. He also categorized provinces as Center and three levels of Periphery. Cross-correlating the two sets of data, Titus shows that 1) greatest mobility together with net in-migration is found in the two provinces classified as Center (Jakarta and North Sumatra), and in the relatively developed periphery; 2) lowest mobility and zero migration balance is found in the isolated and largely self-sufficient periphery; and 3) highest mobility together with net out-migration appears in the highly integrated but stagnating peripheral provinces near the center regions. Titus concludes that this is sufficient evidence to confirm the applicability of Amin's theory in Indonesia.

. .

The two works summarized above demonstrate the need to examine societal structures, and how they are transformed, to explain population mobility. They note that macrostructural forces are beyond the control of the potential migrants, and hence the inadequacy of analyzing migration in terms of individual cost-benefit calculations. These are the fundamental points of the structuralist perspective.

The strength of the structuralist approach is that through historical analysis provides the specific context within which mobility takes place. However, the approach also has weaknesses. For example, it tends to overemphasize the importance of macroeconomic forces and to underestimate the role of human agency (Forbes, 1984). Thus, it pays little or no attention to factors that motivate individuals. In this sense, structuralists are as economically deterministic as functionalists. Furthermore, the approach lacks precise analytical methods to test its theories. But perhaps the greatest challenge facing structuralists is the problem of linking macrostructural forces

that operate at different levels — international, national, and local — and factors motivating individuals. Population mobility should not be seen as the result of macrostructural forces only.

#### **2.3 ALTERNATIVE APPROACHES**

As noted in the previous sections, functionalists view population mobility as the sum of intentional decisions, individual choice or voluntarism is assumed. By contrast, structuralists maintain that mobility is the result of external forces beyond the control of individuals. Both perspectives are overly simplistic for they disregard the complexity of the relationship between individuals and society. There is a need to integrate the two approaches that operate at different levels of analysis, and to overcome the false dichotomy between "the individual, his family and the local community on the one hand and the larger political economy on the other" (Swindell, 1979:255). The task of this section is to review two alternative approaches that attempt such integration, the first was suggested by Woods (1982) and the second by Forbes (1984).

To overcome the limitations of individual and structuralist perspectives to the study of migration, Wood shifts the unit of analysis to the household. It is the household, rather than the single individual, that seeks to maintain and reproduce itself by achieving a balance between consumption needs, labor power at its disposal, and alternatives for generating income. To this end, the household employs a series of "sustenance strategies" which reflect adaptation to macrostructural forces such as job opportunities, commodity prices, land concentration, and access to credit. When the household is unable to achieve the desired income with the strategies adopted, or when alternatives to improve its conditions exist elsewhere, geographic mobility of some or all of its members is likely to occur. The link between structure and individual behavior is established through the household as it interacts with the social, economic, and political environment. Thus, this approach potentially identifies the complex relationships between structural and behavioral factors that determine population mobility.

The second approach seeking to combine macro (structural) and micro (functionalist) perspectives was advanced by Forbes. To analyze relationships between society and individuals Forbes turns to the concept of *structuration* in which the individual reproduces and/or transforms society, and, simultaneously, is socialized by it (Thrift, 1981:77). In this view, structures are not constraints on or barriers to action but are instead essentially involved in its reproduction (Gregory, 1981: 10). Forbes suggests that the concept of structuration is useful in formulating a theory of mobility based on both individual and societal levels of analysis.

Forbes also proposes the use of methods associated with time-geography. This approach, derived from Hagerstrand's work on Swedish migration patterns, involves tracing an individual's trajectory through space and time, and provides a systematic methodology for the collection of longitudinal data on individual behavior.

To use time-geography methodology within the framework of structuration, analyses of individuals must be approached

not from the point of view of the way time, space, and society (in its broadest sense) constrain the behaviour of the individual, but from the way in which time, space, and society selectively *influence* the individual, and, just as importantly, the way the indivudal *feeds back* into (and, ultimately, *reproduces*) the society and transforms it. (Forbes, 1984:160)

Thus, macrostructures, rather than determining, influence the behavior of individuals who, at the same time, are able to transform them. Without constituting a theory, Forbes' proposals provide useful guidelines towards the development of an integrative conceptual framework for the analysis of population mobility.

#### SUMMARY OF THE CHAPTER

This chapter reviewed the two theoretical approaches most widely employed in the analysis of population mobility. The functionalist perspective, discussed first, is based on neoclassical microeconomic theory, and views population mobility as the result of decisions of individuals who weigh costs and benefits involved in the potential move. According to this approach, population mobility is a response to imbalances in the spatial distribution of land, capital, and labor, as well as the correcting mechanism. By contrast, the structuralist perspective considers population mobility the result of macrostructures beyond the control of the individual. Migration, rather than having an equilibrating effect, exacerbates regional disparities. Neither approach was found satisfactory for both overlook the complex relationship between individuals and society. For this reason, alternative approaches, those of Wood and Forbes, attempting to integrate individual and structural factors were considered.

To integrate individual and structural forces, Wood shifts the unit of analysis to the household. It is the household, interacting with societal structures, that makes the decision to migrate, thus establishing the linkage between individuals and macrostructures. The second alternative approach, that of Forbes, uses the concept of structuration, which defines a two-way dialectical relationship between the individual and society, as a framework to analyze population mobility. Forbes also proposes timegeography methodology for the collection of longitudinal data on individuals.

Of particular interest to this dissertation are the works of Balan (1981) and Forbes (1981, 1984). The former, using the historical-structural approach, demonstrates the importance of agrarian structure in analyzing patterns of population mobility in Latin America. He shows how recent structural transformations in the agrarian sector produced a rural proletariat with profound impact on the pattern and nature of labor mobility. Related to rural proletarianization is the process of *descampesinizacion*, i.e., the vanishing of peasant or subsistence agriculture. These processes ultimately result in the dissolution of the peasant class, as discussed by de Janvry (1981).

Also relevant is the work of Forbes on circulation in South Sulawesi. Forbes asserts that permanent labor migration hastens the dissolution of pre-capitalist forms of production, while circulation preserves both petty commodity and peasant subsistence production. Thus, the theoretical distinction between migration and circulation is critical.

#### СНАРТЕЯ Ш

#### STUDY AREA AND RESEARCH PROCEDURES

The previous chapter reviewed the theoretical approaches most commonly used in analyses of population mobility. The following points emanate from this review:

- Macro (structural) and micro (individual) levels of inquiry should be linked as both are necessary and interrelated.
- The relationship between agrarian structure and labor mobility in Latin America, and probably throughout the Developing World, is of fundamental importance.
- Latin American circulation is an increasingly important phenomenon related to rural proletarianization.
- The theoretical distinction between migration and circulation is critical.

These issues are addressed by analyzing the interrelationships between agrarian structure and labor mobility in Ecuador. As a preamble, this chapter introduces the study area (section 3.1), discusses research steps to be undertaken (section 3.2), and presents an overview of Ecuador's geographic and socioeconomic characteristics (section 3.3).

#### 3.1 STUDY AREA

Ecuador was selected as the study area for several reasons. First, the country possesses extreme spatial diversity within relatively short distances. This permits the

emergence of adaptive strategies, not commonly found in other settings, whereby populations take advantage of resources in a variety of ecological zones. An example is vertical circulation<sup>3</sup> (Belote and Belote, 1985).

Second, according to the 1974 Census of Population about 27 percent of Ecuador's labor force were migrants or circulators, an indication of labor mobility's importance.

Third, Ecuador experienced significant structural changes since the late 1960s. Some of these changes were brought about by the 1964 and 1970 Agrarian Reform laws (Commander and Peek, 1983; Peek, 1982; Peek and Antolinez, 1980). Others were triggered by petroleum discoveries in 1967, which initiated a period of unprecedented economic growth. Specifically, real GDP grew at an average annual rate of almost 8 percent during the 1970s, exports rose from US\$ 400 million in 1970 to US\$ 1.1 billion in 1980 (1975 prices), and manufacturing output increased 150 percent (World Bank, 1984).

Fourth, few, if any, nations worldwide offer data as rich as Ecuador's. These are discussed below.

#### Data

Aggregate and individual level data are used in this research. The former, taken from the 1974 published Censuses of Population and Agriculture, provide contextual variables for 111 cantones of Ecuador (Figure 1). These are used to describe its

<sup>&</sup>lt;sup>3</sup> Because of the inverse relationship between temperature and altitude, mountainous areas at low latitudes offer a range of vertically arranged ecological regions, from tropical forest at the lowest elevations to tundra at the highest. Populations have responded to this phenomenon by moving among altitudinal zones to diversify economic activities. Unlike transhumance, these movements, known as vertical circulation, are only minimally related to seasonality (Belote and Belote, 1985).

socioeconomic and agrarian structure.

The second set of data pertains to 208,809 economically active individuals, which represent a subset of 834,790 records sampled from the 1982 Population Census by Centro Latinoamericano de Demografia (CELADE). These provide personal characteristics of circulators, migrants, and stayers; specifically, age, sex, educational attainment, occupation, and economic sector of employment.<sup>4</sup>

The CELADE data are unusually rich in three respects: large sample size, range of variables provided, and their representation of an entire nation.

<sup>&</sup>lt;sup>4</sup> Stayers, as defined here, are persons who are neither migrants nor circulators.



Figure 1: Cantones of Ecuador

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#### Figure 1 (continued)

#### CARCHI 1. Tulcán 2. Espejo 3. Montúfar IMBABURA 4. Ibarra 5. Antonio Ante 6. Cotacachi 7. Otavalo PICHINCHA 8. Quito 9. Cayambe 10. Mejia 11. Pedro Moncayo 12. Ruminahui 13. Santo Domingo de los Colorados COTOPAXI 14. Latacunga 15. Pangua 16. Pujīli 17. Salcedo 18. Saquisili TUNGURAHUA 19. Ambato 20. Ba os 21. Patate 22. Pelileo 23. Pillaro 24. Quero BOLIVAR 25. Guaranda 26. Chillanes 27. Chimbo 28. San Miguel CHIMBORAZO 29. Riobamba 30. Alausi 31. Colta 32. Chunchi 33. Guamote

34. Guano

CANAR 35. Azogues 36. Biblian 37. Canar AZUAY 38. Cuenca 39. Girón 40. Gualaceo 41. Puate 42. Santa Isabel 43. Sigsig LOJA 44. Loja 45. Calvas 46. Célica 47. Espindola 48. Gonzanamà 49. Macarà 50. Paltas 51. Puyango 52. Saraguro ESMERALDAS 53. Esmeraldas 54. Eloy Alfaro 55. Muisne 56. Quininde MANABI 57. Portoviejo 58. Bolívar 59. Chone 60. El Carmen 61. Jipijapa 62. Junin 63. Manta 64. Montecristi 65. Pajàn 66. Rocafuerte 67. Santa Ana 68. Sucre 69. 24 de Mayo LOS RIOS 70. Babahoyo 71. Baba 72. Puebloviejo

73. Quevedo 74. Urdaneta 75. Ventanas 76. Vinces **GUAYAS** 77. Guayaquil 78. Balzar 79. Daule 80. El Empalme 81. Milagro 82. Naranjal 83. Naranjito 84. Salinas 85. Samborondón 86. Santa Elena 87. Urbina Jado 88. Yaguachi EL ORO 89. Machala 90. Arenillas 91. Pasaje 92. Pinas 93. Santa Rosa 94. Zaruma NAPO 95. Tena 96. Aguarico 97. Orellana 98. Putumayo 99. Quijos 100. Sucumbios PASTAZA 101. Pastaza 102. Mera MORONA SANTIAGO 103. Morona 104. Gualaquiza 105. Limón Indanza 106. Palora 107. Santiago 108. Sucúa ZAMORA CHINCHIPE 100

T	U	9	•	Zamor	8	
-		-				

- 110. Chinchipe 111. Yacuambi

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However, the cross-sectional nature of these data requires that the impact of structural change upon circulation be inferred by examining places which, at the same point in time, are at different levels of development.

#### **3.2 RESEARCH PROCEDURES**

Analysis of the relationship between agrarian structure and labor mobility in Ecuador is carried out in four steps. The first, reported in section 3.3 of this chapter, describes Ecuador's geographic regions and socioeconomic structure. To augment the initially qualitative discussion, and provide a set of contextual variables for use in subsequent statistical analyses, selected socioeconomic characteristics, drawn from the 1974 Census of Population, are factor analyzed and canton-specific factor scores derived.

The second step, reported in Chapter IV, reviews the evolution of Ecuador's agrarian system, giving special attention to structural changes related to implementing its 1964 agrarian reform laws. To augment this discussion, and obtain a set of contextual variables for use in subsequent statistical analyses, selected agrarian characteristics, taken from the 1974 Census of Agriculture, are factor analyzed and canton-specific factor scores derived.

The third step, reported in Chapter V, examines individual attributes of migrants, circulators, and stayers, who are compared in terms of age, gender, educational attainment, occupation, and economic sector of employment. Individual level data from the CELADE sample are used. Attention then turns to structural characteristics of their places of origin and destination. Origin-destination linkages are identified. The above three steps come together in the **fourth**, reported in Chapter VI. This accounts for individual out-circulation and out-migration, as 1/0 variables, in terms of contextual characteristics and individual attributes. Logistic regression is used.

#### **3.3 CHARACTERISTICS OF ECUADOR**

This section first describes physical and socioeconomic characteristics of the study area and, then, by means of factor analysis, identifies underlying dimensions of its space economy.

#### **Physical Characteristics**

Ecuador is a small South American nation with an area of approximately 283,600 square kilometers. Based on its topographic features, the country may be divided into three distinctive regions — the Andean highlands or Sierra, the coastal area or Costa, and the eastern plains or Oriente — but their borders are not precise-ly defined (Figure 2).

Most geographers depict the Costa and Oriente as extending up the Andes to an elevation of about 500 meters. Under this definition, the Oriente includes about half of Ecuador's territory, the remainder is equally divided between Sierra and Costa. By contrast, the Junta Nacional de Planificacion (National Planning Board) places each province entirely in a single region. Under this scheme, the Costa contains 16.5% of the national territory, Sierra 24.3%, Oriente 57.4%, and Galapagos 1.8%

The Sierra is dominated by high Andean ranges which occur as two major cordilleras separated by a series of basins. These depressions, at elevations from 2,000 to



Figure 2: Terrain of Ecuador

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3,000 meters, contain most of the region's agricultural land and population. In general, large estates, or haciendas, control the more fertile land at the basin bottoms, while small farms are found on the slopes where erosion is severe.<sup>5</sup> In addition, the range of crops that can be grown on slope land is limited by the inverse relationship between temperature and altitude. For example, the important Andean staple maize cannot be grown above 3,300 meters; and wheat, barley and beans above 3,600 meters. As elevation increases, therefore, so does reliance on root crops, particularly, potatoes.

West of the Andes, the **Costa** is a relatively narrow but complex region composed of hills, plain and Andean piedmont. The hill portion, bordering the Pacific, is a plateau-like formation characterized by dry, poor land. Rainfall is abundant in the northern part of this subregion, but decreases rapidly southward. In much of Manabi and northern Guayas, for example, precipitation is not sufficient for agriculture, and arid conditions prevail from the Guayas' Santa Elena peninsula to the Peruvian border. Thus, significant agricultural enterprise is found only in parts of Manabi (coffee, cotton) and Esmeraldas (bananas); by contrast, fishing is an important occupation along the southern coast, experiencing notable growth since the 1970s.

East of the hill portion is a fertile alluvial plain built by stream deposition carried down Andean slopes. This area is the most important agricultural zone of Ecuador. Its Guayas Basin, for example, leads in the production of bananas, Ecuador's primary agricultural export. Cacao, another important cash crop, also occupies large acreage in portions of the Guayas lowland where climatic and drainage conditions are

<sup>&</sup>lt;sup>5</sup> Soil erosion has become a major problem in Ecuador, especially in the Sierra and Oriente where slopes are steep and soils porous. The process is accelerated by human activities such as row-cropping hillsides, over-grazing, deforestation, and poor irrigation techniques (Hicks, 1977).

favorable; and the basin's southern part, where flooding occurs during the rainy season, produces enough rice to satisfy domestic needs.

The Andean piedmont is the Costa's third component. Traditionally, there has been little economic activity in much of this area, especially its northern part. However, construction of a road between Santo Domingo and Quito in 1947 stimulated settlement through planned and spontaneous colonization. As a result, banana growing expanded from the Guayas lowland, northward, onto productive slopes of the large alluvial fan between the Esmeraldas and Guayas watersheds; and by 1960, Santo Domingo, located at the apex of this fan, had become a flourishing town.

The Oriente, the third major region, includes eastern slopes and piedmont of the Andes, and Ecuador's portion of the Amazon Basin. Oil discoveries and exploitation brought important developments to this vast, but thinly populated area. Road and pipeline construction attracted temporary workers, many of whom, taking advantage of increased accessibility, settled permanently. However, soils are leached, fertility is low, most of the area remains inaccessible, and technical assistance, credit or other forms of government aid have been lacking. Therefore, further colonization of the Oriente seems unlikely, particularly because agricultural land is still available in other regions of Ecuador.

#### Socioeconomic Characteristics

The discovery and exploitation of petroleum initiated a period of unprecedented economic growth which impacted many aspects of Ecuador's society. Between 1960 and 1980, for example, life expectancy increased by 10 years, death and infant mortality rates dropped by more than 40 percent, and higher education expanded by 34 percent. This impact, however, spread unevenly across geographic regions, income groups, and economic sectors.

Spatial inequalities are illustrated by comparing rural and urban areas in terms of educational attainment and income. In 1974 average educational attainment in rural areas was 2.3 years, but in urban centers 5.3 years. Similarly, only 28 percent of rural population passed from primary to secondary schools, whereas 69 percent did so among the urban population.

More relevant to circulation is the uneven distribution of income between rural and urban areas, and between population subgroups, as illustrated in Table 1; further, these disparities have been increasing. A 1979 World Bank study, for example, reveals that, during 1968-1975, the highest 0.5% income group increased their share of total income by 0.3 percentage points, whereas the lowest 20% decreased their share by 0.4 percentage points, thereby widening the gap between the richest and poorest groups. Under these circumstances, circulation, as a strategy for ameliorating neardestitute conditions, becomes increasingly likely.

Similarly, although all economic sectors grew during the 1970s, growth was not evenly distributed. For example, construction prospered at the decade's beginning, but declined as petroleum-related infrastructure was completed. Manufacturing, on the other hand, grew throughout the period at an average annual rate of 9.5 percent. By contrast, agriculture as a whole stagnated, but segments within it differed in experience. Specifically, output increased rapidly in fishing, at an average annual rate of 13.2 percent; forestry, 9.6 percent; and livestock, 6.1 percent; but crop production grew only by 3.5 percent yearly. And within the crop subsector, most growth occurred in domestic products, particularly, oil seeds, fruits, and vegetables; while agricultural exports such as bananas, cacao, and coffee remained stagnant.

<u>Quartile</u>	Annual <u>per Em</u> r Urban <u>Areas</u> (US\$)	Income oloyed Rural <u>Areas</u> (US\$)	Annual <u>per Car</u> Urban <u>Areas</u> (US\$)	Income <u>pita</u> Rural <u>Areas</u> (US\$)	Percen Income Urban <u>Areas</u> (%)	tage of <u>Held</u> Rural <u>Areas</u> (%)	Urban over rural share of income =1.0
First	312	97	94	29	4.3	3.0	1.43
Second	918	290	278	88	14.6	8.9	1.64
Third	1,520	596	461	181	23.6	18.1	1.30
Fourth	3,715	2,295	1,126	695	<u>57.5</u> 100.0	70.0 100.0	0.82

Table 1: Income Distribution for Urban and Rural Areas, 1975.

(a) S/25 = US\$1

(b) Calculated on the basis of 1 employed supported 2.3 persons.

Several reasons account for the overall stagnation of agriculture. First, unlike industry, it did not enjoy tariff protection, and thus was less resistant to the incursion of imports. Second, export taxes, which subsidized other economic sectors, were levied on agriculture. Third, legal provisions required the use of domestically produced agrochemicals and fertilizers, but the cost of these were highly inflated. Finally, agriculture suffered from inadequate marketing channels and poor cultivation techniques.

Economic growth declined dramatically after 1979. Underlying the recession were increasing foreign exchange constraints and unfavorable terms of trade. These occurred as export prices of Ecuador's goods, including petroleum, fell, and oil production/export decreased. As a result of these conditions as well as political uncertainties related to border conflicts with Peru and future government policies, the private sector slowed its rate of investment. Finally, the already stagnating agricultural sector was further damaged in 1982-1983 by droughts and floods that destroyed crops and marketing infrastructure in the Costa; increasing thereby the reliance on food imports. The only sector which continued to grow during 1979-1983 was fishing. Shrimp exports, for example, increased in volume by 48 percent annually, primarily from pisciculture introduced in the lowlands of El Oro and Guayas provinces during the 1970s.

Currently, Ecuador is emerging from this recession. Full recovery, however, will require removal of constraints on productivity and promotion of exports.

#### Dimensions of the Socioeconomic Structure

As a means of summarizing Ecuador's socioeconomic structure and providing contextual measures which can be used in subsequent statistical analyses, factor analysis was employed. This uses twenty one canton-specific variables taken from the 1974 Census of Population. Their definitions, means and standard deviations, as well as factor loadings, are listed in Table 2.

The mean values indicate that Ecuador has a young population, average age 22; an almost balanced sex composition, 51 percent males; 78 percent of its population residing in rural areas; a high age dependency ratio of 1.0; and a high child-woman ratio of almost 827. Educational attainment is low, average 2.8 years; almost one-third of the population 6 years old and over had no education at all; and only 0.7 percent received college education. Agriculture employs nearly 68 percent of the labor force, and the population pressure is high, average 3.6.

These variables reduce to three factors accounting for 72.5 percent of the overall variance (Table 2). The first factor depicts an urban-rural continuum. Loading positively are mean years of education; percent employed in tertiary, construction, and utility sectors of the economy; and the percent employed in professional, managerial, and technical occupations. Loading negatively are percent residing in rural areas, percent of population with no education, percent employed in the agricultural sector, and percent employed in agricultural/fishing occupations. That this represents an urban-rural continuum is confirmed by examining factor scores for each canton (Table 2, Figure 3). High positive scores occur for cantones with large cities, such as Quito, Ambato, Cuenca, Loja, and Guayaquil. By contrast, high negative scores are found for rural cantones in the Sierra and in the Costa's Guayas Basin and province of Manabi.

Table 2: Factor Analysis of Socio-Economic Contextual Variables

<u>Variables Name</u>	Mean	Deviation	Factor	Factor	Factor 111	<u>Communality</u>
Mean age	22.059	1.911	.098	.843	. 137	.739
Dependency ratio ((population<14 + population>65)/						
population between ages of 15 and 65)	1.004	0.113	.320	247	636	.568
Percent male	51.140	2.920	024	798	.434	.826
Percent of employment in agriculture	67.760	20.040	· .757	516	·.257	.905
Percent of employment in mining	0.440	1.300	.098	172	.735	.580
Percent of employment in manufacturing	9.320	10.190	. 129	.823	.115	.707
Percent of employment in utilities	0.260	0.430	.480	.214	.040	.277
Percent of employment in construction	2.970	3.420	.507	. 188	.592	.643
Percent of employment of tertiary activities	7.750	5.770	.874	.142	183	.817
Percent population residing in rural areas	78.350	18.200	872	177	.124	.807
Mean years of education	2.832	0.768	.878	.001	.267	.843
Percent of population with no education	32.310	11.490	· .662	. 154	190	.498
Percent of population with college education	0.740	0.930	.835	.230	. 196	.788
Population pressure (total population/employed						
population)	3.606	U.648	. 156	154	667	.493
Child-woman ration (population under 5/females		433 400				
aged 15-49) x 1000	826.800	122.400	358	-,741	028	.678
Percent of employed persons who are agriculturalists						
or fishermen	68.440	19.790	756	561	202	.9287
Percent of employed persons who are professionals,						
managers or technicians	4.040	2.240	.881	.032	. 190	.813
Percent of employed persons who are clerks	1.890	1.510	.896	.170	.172	.862
Percent of employed persons who are vendors and						
sales clerks	5.020	5.590	.809	.074	·.274	.734
Percent of employed persons who are craftsmen and	10				_	
operators	12.580	11.720	.294	.821	.188	.796
Percent of employed persons who are in services	3.780	3.020	.924	. 184	. 183	.921
X variance explained - by each factor			47.1	15.1	10.3	
- cumulative			47.1	62.2	72.5	

n = 111

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Factor two depicts a manufacturing-agricultural frontier dichotomy. Loading positively are mean age, percent employed in manufacturing, and percent employed in craftsman/operator occupations. Loading negatively are percent males, child-woman ratio, percent employed in the agricultural sector, and percent employed in agricultural/fishing occupations. Cantones with high positive scores on this factor contain, or are proximate to, growing urban centers such as Quito, Ambato and Cuenca. These areas have an expanding manufacturing base, more employment opportunities for females, and relatively low fertility (Table 2, Figure 4). By contrast, cantones with high negative scores are largely undeveloped such as Muisne and Quininde, in Esmeraldas; El Carmen, in Manabi; and several cantones in the Oriente. Recent colonization is probably responsible for the high percentage of males in these areas.

Factor three depicts a mineral extraction-economic recession dichotomy. Loading positively are the percentages employed in mining and construction. Loading negatively are dependency ratio and population pressure. Cantones with high positive scores are located in the Oriente and northern Sierra (Table 2, Figure 5), where petroleum exploitation required the building of roads, pipelines, and related infrastructure. Cantones with high negative scores are in economically depressed areas of the Costa.



Figure 4: Manufacturing-Agricultural Frontier

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Figure 5: Mineral Extraction-Economic Recession

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# SUMMARY OF THE CHAPTER

This chapter discussed the study area, data, and research procedures. It was noted that Ecuador provides an excellent setting for analyzing the relationship between agrarian structure and circulation. Its spatial diversity, for example, stimulates labor movement between different ecological zones, and structural changes experienced during the last two decades affected the incidence and pattern of temporary migration.

The data, their unusual richness as well as their limitations, also were discussed. Individual level data consist of a sample of 208,809 individual records derived from the 1982 Population Census. Canton level data are taken from the 1982 Population Census and the 1974 Census of Agriculture. Both sets represent the entire nation, and provide a broad range of variables.

Research procedures fall under four steps. The first, reported in this chapter, discussed Ecuador's physical regions, socioeconomic characteristics, and development aspects. To summarize the multifaceted nature of socioeconomic structure, pertinent variables were factor analyzed. Three independent factors were identified: urbanrural continuum, manufacturing-agricultural frontier dichotomy, and mineral extraction-economic recession.

The second step, reported in chapter IV, focuses on Ecuador's agrarian system and its recent structural changes; the third, reported in chapter V, examines individual attributes of migrants, circulators, and stayers, as well as structural characteristics of their places of origin and destination; the last step, reported in chapter VI, uses logistic regression to  $\epsilon_{\pi p}$  lain circulation/migration in terms of contextual and personal characteristics.

# CHAPTER IV

#### AGRARIAN STRUCTURE IN ECUADOR

The overview of Ecuador's socioeconomic structure, presented in Chapter 3, noted the large rural component of its population and agriculture's importance as a source of employment. In fact, according to 1974 census data, Ecuador's population was 59 percent rural, and agriculture employed 46 percent of the labor force. In spite of this prominence, rural conditions deteriorated during the 1970s, and urban-rural differentials became more pronounced.

This dissertation focuses on the interrelationships between agrarian structure and circulation. The nature of that structure and its change over time are of particular concern. Hence, this chapter discusses agrarian conditions before and after the 1964 reform laws (sections 4.1 and 4.2), and reports results from a factor analysis of selected variables pertaining to agrarian structure (section 4.3).

#### 4.1 AGRARIAN STRUCTURE BEFORE 1964

Until 1970, Ecuador's economy was based on export crops produced largely in the Costa. Output increased significantly during the 1940s and 1950s, reflecting government efforts to attract foreign investment. At the same time, however, food crop production, concentrated in the Sierra, stagnated, largely as a result of low productivity associated with prevailing land distribution and tenancy systems.

With regard to land distribution, Ecuador's rural landscape has been characterized by the existence of large landholdings, *latifundios*, which occupy most of the agricultural land, and smallholdings, *minifundios*, which contain most of the rural population. The high degree of land concentration prior to land reform is discernible in the following. Farms over 500 ha. comprised 0.4 percent of all holdings, but controlled over 44 percent of farmland. Those below 5 ha. constituted 73 percent of the farm units, but controlled only 7 percent of the land (Table 3). These disparities were more pronounced in the Sierra than in the Costa, medium-sized farms (5-50 ha.) being more common in the latter.

With regard to tenancy systems, three of the five types of landholdings recognized by Odell and Preston (1978) are pertinent to this study: estates, industrial plantations, and the smallest farms. These are discussed below.<sup>6</sup>

Estates, or *haciendas*, are very large farms producing domestic crops with traditional agricultural methods. Until mid-1960s, they were characterized by feudalistic tenancy systems, such as the *huasipungo*. Under this scheme, peasants worked four to six days a week on *hacienda* land and performed non-agricultural jobs, such as road construction and fence repairs, during the slack season. Female members of the *huasipunguero* family were often used as servants in the landlord's house. In return, peasants received small plots, were given the right to gather wood and graze cattle on *hacienda* land, and were assisted by the landowner in cases of extreme need such as bad harvest or illness. In this manner, laborers were freed from severe deprivation, but at the same time were kept dependent on the landowner. This tenancy

<sup>&</sup>lt;sup>6</sup> Freeholding rural communities and family farms, the remaining types, are not relevant to this study. The former are relatively rare in Ecuador, representing only 1.7% of units and 0.4% of farmland; and the latter do not generally use wage labor, thus having little impact on circulation.

Table 5: Land Distribution by Farm Size,	1954
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<u>Farm Size</u>	Farm	<u>Units</u>	Area
(hectares)	Ň	%	Hectares % (1,000)
Less than 1.0	92,387	26.8	46.0 0.8
1.0 - 4.9	159,299	46.3	386.2 6.4
5.0 - 9.9	36,250	10.5	271.5 4.5
10.0 - 19.9	21,400	6.2	294.3 4.9
20.0 - 49.9	19,415	5.6	591.5 9.9
50.0 - 99.9	8,327	2.4	547.2 9.1
100.0 - 499.9	5,787	1.7	1,156.3 19.3
500.0 - 999.99	664	0.2	464.7 7.7
1,000.0 and more	705	0.2	2,242.0 37.4
TOTAL	344,234	100.0	5,999.7 100.0

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Source: First Agrarian Census, 1954, Table .

Source: World Bank Country Study, 1979.

system was particularly common throughout the Sierra.

In addition to *huasipungo* arrangements, peasants often rented *hacienda* land for cash, *arrendamiento*, or payments in kind, *aparceria*. The latter form sometimes required a certain number of work days per week, either without payment or for wages much below those paid hired persons. In this respect, *aparceros* did not differ significantly from *huasipungueros* (Arias Bazantes, 1969).

The second type of landholding, industrial plantations, differs from the *hacienda* in several ways. Units are smaller in size and almost invariably located in the Costa. Because production is for export, cash products such as bananas, cacao and coffee occupy most cropland. Agricultural methods are relatively modern; accordingly, use of pesticides and fertilizers is common. Wage labor is the norm. Workers are seldom tied to the employer by obligations other than their agricultural work, but are liable to be dismissed during slack periods. Consequently, plantation employment is largely temporary, thereby affecting labor circulation.

*Minifundios* are the third type of landholding. Mostly located in the Sierra, these farms grow domestic crops using traditional cultivation methods. Owing to their small size and increasing population pressure, they have been subjected to intensive land use which has accelerated soil erosion and reduced productivity. The *minifundio* problem is aggravated by partible inheritance, a system whereby land is subdivided between each of the heirs. As a result, these units have become increasingly small, often too small to support a family. Off-farm employment, frequently involving permanent or temporary migration, thus becomes a necessity.

#### **4.2 AGRARIAN STRUCTURE AFTER 1964**

Agrarian reform laws were first promulgated in 1964. That these measures had little impact on land distribution is evident from Table 4. In 1954, farms of less than 5 ha. represented 73 percent of all holdings and occupied 7 percent of farmland; by 1974, these percentages were 66 and 6.7, respectively.

These figures reflect the influence of large landholders and industrialists who were able to shift the agrarian reform's emphasis on output and equity in favor of the former. Accordingly, expropriation was not required from landowners who improved production techniques, cultivated more land, and abolished feudalistic tenancy systems. Also, some landowners avoided expropriation by simply dividing their land among family members (Blankstein and Zuvekas, 1973).

As a result, land distribution was virtually unchanged, but the structure of production was significantly modified. For example, many *hacienda* owners began to cultivate larger portions of their land to avoid expropriation and use capital-intensive techniques more effectively; thus, the area of cultivated land and pastures on farms larger than 5 ha. more than doubled during 1954-1974 (Table 5).

Also contributing to this transformation was a significant increase in agricultural credit.<sup>7</sup> Much of this money was invested on large holdings to expand livestock and dairy farming, and on medium-sized units to modernize crop cultivation.

These changes were accompanied by the expulsion of most agricultural laborers from the *haciendas*, with the number of *huasipungueros* decreasing from an estimated 100,000 in the 1950s to about 2,600 in 1974 (Commander and Peek, 1983). The

<sup>&</sup>lt;sup>7</sup> Between 1960 and 1975, agricultural credit rose nearly seven times in real terms, and its share of total credit increased from 9 to 25 percent (Peek and Antolinez, 1980).

<u>Farm_Size</u>	Farm	Units	Агеа	Area			
(hectares)	N	%	Hectares (1,000)	× ~~			
Less than 1.0	206,273	32.6	93.0	1.3			
1.0 - 4.9	264,074	41.7	615.6	8.9			
5.0 - 9.9	68,527	10.8	466.3	6.7			
10.0 - 19.9	36,228	5.7	485.6	7.0			
20.0 - 49.9	32,746	5.2	1,018.3	14.7			
50.0 - 99.9	15,555	2.5	976.7	14.1			
100.0 - 499.9	8,467	1.3	1,647.9	23.8			
500.0 - 999.99	922	0.1	634.6	9.1			
1,000.0 and more	426	0.1	999.6	14.4			
TOTAL	633,218	100.0	6,937.5	100.0			

Table 4: Land Distribution by Farm Size, 1968

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Source: National Agrarian Survey, 1968, Table 1.

Table 5: Land Use by F	m Size, Sierra, 1954∙	74
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Farm <u>size</u>		Crop <u>area</u>	Pasture (improved) (percenta	Pasture <u>(natural)</u> ages)	Unsued <sup>1</sup> <u>land</u>
0 - 1	1954	91.6	3.7	0.3	5.0
	1974	90.4	1.3	3.2	2.4
1 - 5	1954	75.2	3.9	9.7	16.3
	1974	71.1	2.8	15.2	7.0
5 - 10	1954	56.8	19.3	1.6	36.2
	1974	48.8	6.7	22.0	15.3
10 - 20	1954	43.7	2.8	21.3	47.2
	1974	39.1	8.6	22.7	24.1
20 - 50	1954	25.6	7.7	22.1	61.2
	1974	27.7	16.9	16.8	30.6
50 - 100	1954	17.3	7.6	13.7	70.9
	1974	21.7	16.8	18.7	35.8
100 and	1954	9.0	3.8	40.5	88.0
above	1974	10.8	15.9	26.4	45.5

<sup>1</sup> Includes land that is not available for production, e.g. bushes, steephills, lakes, etc.

Source: Commander and Peek, 1983, Oil Exports, Agrarian Change and The Rural\_Labour Process: The Ecuadorian Sierra in the 1970's, page 14. ,

majority of these laborers became landowners. However, the size of plots received averaged 3.5 ha., below the minimum 5 ha. established by the 1964 law (Blankstein and Zuvekas, 1973). The problem of the *minifundio* was, thus, exacerbated.

# Agrarian Change and Circulation

Agrarian reform worsened the position of many agricultural workers in several ways. First, with abolition of the *huasipungo*, peasants lost their right to gather wood and graze cattle on *haciendas*, and landowners were no longer compelled to assist in time of need. Second, many peasants were not given the land they previously cultivated, but other, less fertile plots. Third, *minifundios* became even smaller, decreasing on average from 1.61 ha. in 1954 to 1.45 ha. in 1974. Fourth, productivity of small farms stagnated or declined, largely because of increasing population pressure, deteriorating soil quality, and macroeconomic conditions that adversely affected the agrarian sector (see Chapter III).

Under these conditions, peasants became increasingly dependent on employment outside their farms. In fact, of the total available labor-time on farms less than 5 ha., only 26.6% is accounted for by on-farm labor (MAG, 1978). Traditionally, much labor surplus was absorbed by large farms, but recent modifications in the mode of production reduced the number of permanent jobs relative to rural population growth. This occurred in several ways. First, modernization of *haciendas* increased seasonal variation in labor demand by replacing many agricultural workers with machines and hiring wage laborers during peak seasons. This variation became more pronounced with production expansion, since seasonal workers must now be hired on a much larger scale than before. Second, many large landholdings, particularly those near urban centers, shifted towards dairy farming which requires a relatively small amount of labor. Finally, to the extent that permanent and temporary laborers are substitutable, landowners favor the latter who generally receive lower wages. Accordingly, temporary laborers now represent most of the labor input on farms over 50 ha. (Table 6). This shift in labor use increases the incidence of circulation.

Urban centers have also been traditional absorbers of surplus labor. During the 1970s, there was a major upturn in labor demand as a result of the oil-related economic boom. Consequently, a substantial number of *minifundistas* migrated to towns. However, most job opportunities were of a temporary nature in construction and services. In addition, although total urban employment expanded and open unemployment declined, under-employment increased as industry and manufacturing grew more slowly than the urban labor force.<sup>8</sup> Data also indicate that the number of urban workers with earnings below minimum wage increased and, for the poorest 18 percent of the urban labor force, real earnings declined (Peek, 1979). Thus, uncertain economic conditions in urban areas render permanent migration too risky, and an increasing number of peasants opt for circulation.

The significance of temporary migration among *minifundistas* is indicated in Table 7 which shows that, on average, non-agricultural wage earnings for small farmers accounted for 52 percent of the total. Since non-agricultural employment in rural areas is limited, much of these wages must have been earned in cities. Furthermore, Commander and Peek (1983) noted that the number of landless households has not been increasing, suggesting that small farmers use circulation to supplement their income while retaining their plots. The importance of circulation is expected to increase as small farms become even smaller through partible inheritance,

<sup>&</sup>lt;sup>8</sup> The urban labor force increased at an average annual rate of 6 percent, while employment in high and medium-wage sectors grew at an average annual rate of 3 percent (Peek, 1979).

Table 6:	Hired-in	Labor	by	Farm	Size,	Sierra,	1974
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<u>Farm Size</u> (hectares)	<u>Hired-in Labor as Percentage</u> <u>Permanent</u>	of Total On-Farm Labor Input Temporary
0 - 1	0.2	2.1
1 · 2	0.6	5.1
2 · 5	0.8	11.7
5 - 10	0.8	22.0
10 - 20	1.5	31.7
20 - 50	5.3	41.7
50 - 100	18.6	53.6
100 and above	27.1	60.8

Source: Ministerio de Agricultura y Ganaderia (NAG) and Office de Recherche Scientifique et Technique (ORSTOM): Diagnostico Socioeconomico del Medio Rural Ecuatoriano, No. 3 (Poblacion y Empleo), Quito, 1978. -

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<u>Farm Size</u> (hectares)	Agricultural wages	Non-agricultural Wages	Total <u>wages</u>
0 - 1	38	62	100
1 - 2	51	49	100
2 - 5	55	45	100

Table 7: Wage Earnings of Small Farm Households by Sector, Sierra, 1974

Source: MAG-ORSTOM, 1978, op. cit., No. 7 (Ingresos).

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and a greater number of farms are modernized.

# **4.3 DIMENSIONS OF THE AGRARIAN STRUCTURE**

To summarize Ecuador's agrarian structure and obtain contextual measures to be used in subsequent statistical analysis, 12 canton-specific variables, taken from the 1974 Census of Agriculture, were subject to factor analysis. Table 8 lists variable definitions, means and standard deviations, as well as factor loadings. Mean values indicate the inequality of land distribution, 12 percent of the farm area is occupied by holdings averaging 1.8 hectares, while units with an average size of 1528 hectares take up 25 percent of the area. In general, more land is used for domestic crops such as corn, wheat, rice, and potatoes, than for the agricultural exports cacao, coffee, and bananas. The majority of farm area, 71 percent, is owned, and little was received through agrarian reform, 6.7 percent. Rural population pressure has a mean of 44 persons per cultivated hectare, but its large standard deviation indicates a broad variation among cantones.

These variables are summarized by three factors which account for 64.4 percent of the total variance. The first factor pertains to a long standing versus recent agricultural settlement dichotomy, both small scale. Loading positively are percent farm area owned with title, percent farm area in small holdings, and rural population pressure. Loading negatively are percent farm area owned without title, percent farm area owned through agrarian reform and colonization, and mean size of medium farms. Hence, positive loadings are associated with old areas of settlement where most land is owned, and small farms and rural population pressure are common. Negative loadings, on the other hand, are associated with areas where peasants settled Table 8: Factor Analysis of Agrarian Contextual Variables

Variables Name	Mean	Standard <u>Deviation</u>	Factor	Factor	Factor	<u>Communality</u>
Percent of farm area in small holdings (less than 5 ha.)	11.960	14.230	.476	.700	202	.757
Percent of farm area in medium-sized holdings (5-50 ha.)	29.600	13.540	.225	596	561	.720
Percent of farm area in very large holdings (more than 500 ha.)	24.580	18.540	.225	.079	.902	.870
Mean size of small farms (ha.)	1.811	0.473	·.113	845	060	.731
Mean size of medium farms (ha.)	15.596	4.917	822	273	147	.771
Mean size of very large farms (ha.)	1527.663	1030.438	.112	. 153	.725	.562
Proportion of area under domestic crops (domestic crops/domestic + export crops)	0.633	0.315	.127	.750	.210	.622
Percent of farm area owned with title	71.080	25.090	.913	·.017	026	.835
Percent of farm area owned through Agrarian Reform or Colonization	6.730	9.390	•.522	298	.095	.370
Percent of farm are rented (cash or sharecropping)	3.020	3.090	. 164	.125	479	.272
Percent of farm area held without title	11.110	19.570	856	038	109	.746
Rural population pressure (rural population/cultivated land)	43.690	431.182	-444	.475	217	.470
X variance explained - by each factor - cumulative			33.1 33.1	18.4 51.5	12.9 64.4	

n = 111

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spontaneously or received land through agrarian reform or colonization. This is confirmed by examining the spatial pattern of factor scores (Figure 6) which shows cantones loading positively located in the Sierra, and those loading negatively in the Oriente and northern Costa.

The second factor depicts domestic versus export agricultural production. Loading positively are percent domestic crops, percent farm area in small holdings, and rural population pressure. Loading negatively are percent farm area in mediumsized holdings and mean size of small farms. Cantones with high positive scores are mostly located in the Sierra where small farms grow domestic crops. By contrast, cantones with high negative scores are in the Costa, where most agricultural exports are produced (Figure 7).

The third factor represents a very large versus medium sized farms dichotomy. Loading positively are percent farm area in very large holdings and mean size of very large farms. Loading negatively are percent farm area in medium-sized holding and percent farm area rented with cash and sharecropping. The location of cantones on the positive side of the factor shows that very large farms, increasingly used for cattle and dairy farming, are mostly in the Sierra; whereas cantones on the negative side show no well-defined pattern (Figure 8).



Figure 6: Long Standing-Recent Agricultural Settlement



Figure 7: Domestic-Export Agriculture

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Figure 8: Very Large-Medium Sized Farms

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#### SUMMARY OF THE CHAPTER

This chapter discussed rural conditions in Ecuador before and after the 1964 agrarian reform laws and the impact of those conditions on labor circulation. It was pointed out that a highly unequal land distribution and feudalistic tenancy systems characterized the agrarian structure prior to 1964. Agrarian reform laws did not significantly changed the distribution of farmland, but they greatly modified the mode of production and also eliminated serf-like tenancy systems such as the *huasi-pungo*. It was also argued that changes in agrarian structure actually worsened the position of many peasants, thereby increasing the incidence of circulation. Thus, a genuine agrarian reform, designed to provide peasants with a larger share of the land and credit, is as pressing now as it was before 1964. However, as large farms are mechanized and area under cultivation is expanded, the probability of land redistribution diminishes. Hence, labor circulation and proletarianization of agricultural workers are expected to increase in importance.

The chapter concludes with a factor analysis of 12 variables pertaining to agrarian structure. Three independent factors were obtained: long standing versus recent agricultural settlement, domestic versus export agricultural production, and very large versus medium sized farms. These factors will be used as independent variables on subsequent statistical analyses.

# CHAPTER V

# INDIVIDUAL AND PLACE ATTRIBUTES OF MIGRANTS AND CIRCULATORS

As stated in Chapter I, this dissertation is based on the hypothesis that population mobility is a function of both structural conditions and attributes of individuals responding to those conditions. As an initial step in assessing this balance, the present chapter examines individual attributes of migrants, circulators, and stayers, as well as characteristics of their origins and destinations.<sup>9</sup> This is accomplished in two steps.

First, migrants, circulators, and stayers are compared in terms of personal attributes and characteristics of their residence cantones. Personal attributes include age, gender, educational attainment, occupational status, marital status, and branch of economic activity in which the person is employed.<sup>10</sup> To compare migrants, circulators, and stayers in terms of place characteristics, each individual was assigned structural indices representing his/her cantones of birth, previous, usual, and present residence. Data on personal attributes were taken from the CELADE sample, described in Chapter III. Data on structural indices are the principal component scores derived from analyses reported in Chapters III and IV.

<sup>9</sup> Migrants are here defined as persons whose present place of residence differs from their previous place of residence, and circulators as those whose present place of residence differs from their usual place of residence.

<sup>10</sup> Occupational status was determined according to Treiman's international scale (Treiman, 1977).

Whereas the first section of this chapter deals with individuals, the second focuses on places linked together as origin-destination for either migrants or circulators. This provides a clear picture of the kinds of places people leave and subsequently move to. In general, migration streams flow from places with few job and/ or educational opportunities to those with many. In Ecuador, for example, migratory movements historically have been from the traditional agricultural regions of the Sierra to the more progressive Costa and to cities. This phase of the analysis will more clearly reveal such linkages.

# 5.1 COMPARISON OF MIGRANTS, CIRCULATORS, AND STAYERS

This section consists of two parts. In the first migrants, circulators, and stayers are compared in terms of personal attributes; in the second, migrants and circulators are compared in terms of characteristics of their origins and destinations.

# Personal Attributes

There is ample empirical evidence that migration is selective; that is, individual characteristics of movers differ from those of stayers. One of the first and most consistent findings of studies on migration selectivity is the role of **age**. The statistics reported in Table 9 show that, in Ecuador, stayers (mean age 34.1 years) are significantly older than both migrants (mean age 31.3 years) and circulators (mean age 30.9 years); but the difference between the last two groups is not significant. This is consistent with previous research which found migration propensity to be greatest for adults between the ages of 15 and 30, when decisions about education, employment, and family are made (Connell, et. al., 1976).

	Migrants	<u>Circulators</u>	<u>Stayers</u>	<u>Migrants vers</u>	us <u>Circulators</u>	Migrants vers	us Stayers	<u>Circulators</u> v	erus Stayers	
Variables	x (S.D.)	x (S.D.)	x (S.D.)	Difference	<u>t-Value</u>	Difference	<u>t-Value</u>	Difference	<u>t-Value</u>	
Age	31.318 (12.684)	30.946 (13.258)	34.089 (15.235)	0.372	1.88	-2.771	-36.72*	-3.143	- 13.57*	
Gender 1=male 2=female	1.200 (0.400)	1.143 (0.350)	1.198 (0.398)	0.057	9.34*	0.002	1.30	-0.055	-9.05*	
Years of Education	6.090 (4.303)	6.210 (4.728)	5.392 (4.385)	-0.120	-1.80	0.698	29.59*	0.818	11.85*	
Occupational Status range=8-82	35.408 (11.928)	35.641 (12.018)	35.396 (10.032)	-0.233	-1.25	0.012	0.21	0.245	1.58	

Table 9: Comparison of Migrants, Circulators, and Stayers Using t-Test

\* Significant at the 0.01 level.

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Migration selectivity by gender is culture specific, depending largely on the societal roles of men and women. In African and Asian contexts male migration predominates, while in Latin America this relationship is ambiguous. In Ecuador, for example, gender differentials between migrants and stayers are not significant (Table 9). Other research suggests, however, that males and females differ in destination patterns (Arias Buenano, 1985). Females predominate in migration streams to cities, where they tend to find employment in services, particularly domestic services, and commerce. Males are more numerous in flows towards dynamic agricultural areas.<sup>11</sup>

Unlike migration, circulation is selective of males. In Ecuador, for example, males comprise 80.3 percent of the overall sample, 80.2 percent of the stayers, 80.0 percent of the migrants, but 85.7 percent of the circulators. Accordingly, as Table 5.1 indicates, gender differences between circulators and migrants, and between circulators and stayers are significant. Male dominance among circulators is readily understood. Females are generally responsible for household obligations making circulation a difficult undertaking. In addition, Ecuador's economic expansion of the 1970s, discussed in Chapter III, created a number of jobs but in sectors employing primarily males, such as mining and construction. Hence, females take on additional responsibilities in agricultural activities during the males' absence. Circulation selectivity of males was also noted by Farrell (1985) in her study of temporary migrants to Quito, and by Arias Buenano (1985) in her analysis of migration to Guayaquil.

**Educational attainment,** by broadening an individual's sociocultural horizon and increasing awareness of opportunities elsewhere, promotes both migration and circulation. That this generalization is applicable to Ecuador is demonstrated by Table 9.

<sup>&</sup>lt;sup>11</sup> The often stated generalization that in Latin America most migrants are female probably stems from the emphasis of past research on rural-urban flows.

While migrants and circulators, with mean educational levels of 6.1 and 6.2 years, respectively, show no significant difference when compared, both are significantly better educated than stayers whose mean educational level is 5.4 years. The direct relationship between educational attainment and migration in Ecuador was noted also by Preston, Traveras, and Preston (1979) who in a study of five Sierra communities found that among persons with five or six years od education, 62% were migrants, while this figure was only 15% for those with no schooling.

Since the more educated migrate for employment commensurate with their training (Brown and Lawson, 1986), a direct relationship between migration propensity and occupational status also was expected. Indeed, occupational status is highest for circulators and lowest for stayers. The difference between their means, however, is not significant (Table 9).

With regard to marital status, single persons, maintaining fewer ties to home and community, tend to be more mobile. In Ecuador, for example, the highest percentage of single persons, 45.6, is found among circulators, and the lowest, 33.9, among stayers (Table 10). T-tests performed on the single and married groups only, which represent 95% of the sample, showed that marital status differentials among migrants, circulators, and stayers are all significant.

**Branch of economic activity** also may distinguish circulators, migrants, and stayers. One basis for this is the temporary nature of jobs in certain sectors. In mining, construction, and transportation, for example, the percentage of circulators is considerably larger than the percentages of migrants or stayers. In services and commerce, by contrast, migrants dominate other groups (Table 10). It should nevertheless be noted that much of the employment in services and commerce consists of marginal jobs, such as porters, peddlers, and shoeblacks.

# Table 10: Attributes of Higrants, Circulators, and Stayers

	Marital Status				Branch of Economic Activity (Percentages of employed consistion)							
	<u>X Single</u>	<u>X Harried</u> <sup>1</sup>	Widowed or Divorced	<u>Agriculture</u>	Nining	<u>Manuf.</u>	<u>Utilities</u>	<u>Construction</u>	Connerce	Iransport	<u>finances</u> 2	Services <sup>3</sup>
Nigrants	40.3	55.9	3.8	37.4	1.3	9.9	0.7	9.5	10.3	3.6	1.1	26.2
Circulators	45.6	50.4	4.0	31.7	6.1	8.1	1.0	13.4	9.7	7.8	0.9	21.3
Stayers	33.9	61.2	4.9	49.7	D.4	11.4	0.5	5.8	8.8	3.9	1.4	18.1
Total sample	34.3	60.8	4.8	43.2	1.0	10.5	0.6	7.1	10.1	4.2	1.3	21.9

<sup>1</sup> Including consensually married.

2 Including insurance and services rendered to institutions.

3 Including professional, administrative as well as personal and domestic services.

59

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In summary, consistent with previous studies, this analysis finds Ecuador's migrants compared with stayers to be significantly younger, better educated, and more likely to be single; gender, however, is not a significant differential between them. Migrants and circulators are similar in age, education, and occupational status; but differ significantly in gender and marital status. The most dissimilar groups are circulators and stayers, which differ significantly in age, gender, education, and marital status. Of the three groups, circulators are the most likely to be male and single.

Male dominance among circulators has important implications for the rural family's division of labor. As males take temporary jobs away from home the importance of female agricultural labor increases. Male circulation also represents a departure from established patterns throughout Latin America whereby a large percentage of females migrate to urban areas, particularly for jobs in services, while males tend to remain in agriculture. Although male circulation is of fundamental importance as a survival strategy for rural families, it also carries social costs by disrupting family life and increasing apathy for community affairs (Rodas, 1985).

# **Place Characteristics**

In addition to personal attributes, migrants and circulators differ in characteristics of their origins and destinations (Table 11). Some areas, for example, because of the temporary nature of jobs found therein, attract primarily circulators.

Concerning origins, both migrants and circulators, but particularly the latter, are more likely to come from urban rather than rural locales. This is consistent with the finding that mobility correlates with educational attainment, which is higher in urban areas. Manufacturing tends to spawn a significant number of circulators, but not migrants. The reason for this is unclear.

able 11: Migrants and Circulator	Compared by Origins and Destinations
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		Place of	<u>Origin</u>		PI	ace of Preser	it Residence	
	Migrants	<u>Circulators</u>	Difference	t-Value	<u>Migrants</u>	<u>Circulators</u>	<u>Difference</u>	<u>t-Value</u>
Indices Pertaining to Agrarian Structure <sup>(a)</sup>	(S.D.)	x (S.D.)			x (\$.D.)	(\$.D.)		
Long Standing (pos.)- Recent Agricultural Settl <del>eme</del> nt (neg.)	0.058 (0.802)	0.198 (0.614)	-0.14	-10.78*	-1.045 (1.436)	-0.600 (1.227)	-0.445	- 19.21*
Domestic (pos.)- Export Agriculture Production (neg.)	·0.039 (0.758)	0.181 (0.677)	-0.220	-17.74*	0.092 (0.676)	0.045 (0.714)	0.047	4.27*
Very large (pos.)- Medium Sized	0.168 (0.858)	0.412 (0.891)	-0.244	-17.11*	0.262 (0.910)	0.348 (0.890)	-0.086	-5.80*
Farmas (neg.)								
Indices Pertaining to Socioeconomic Structure <sup>(a)</sup>								
Urban (pos.)- Rural (neg.)	0.544 (1.430)	0.702 (1.694)	-0.158	·6.84*	1.260 (1.743)	1.226 (1.674)	0.034	1.24
Manufacturing (pos.)- Agricultural Frontier (neg.)	0.249 (1.015)	0.608 (1.016)	-0.359	-22.24*	-0.256 (0.974)	-0.060 (0.917)	-0.196	-12.75*
Mineral Extraction (pos.)- Economic Recession (neg.)	-0.014 (0.838)	0.011 (0.673)	-0.025	-1.89	1.128 (1.993)	0.545	0.583	18.79*

(a) Structural indices were obtained by assigning to each individual those principal components scores (derived from the factor analyses reported in previous chapters) representing his/her place of residence.

\* Significant at the 0.01 level.

With regard to agrarian structure of origins, areas with very large farms, often containing small farms as well, are likely to emit circulators rather than migrants. Since historically migration has been important in these areas, this finding provides support to the hypothesis that agrarian reform led many peasants to opt for circulation rather than migration. In this way, they can keep a plot of land, which provides a small but secure income, and do temporary work elsewhere (Peek, 1978; Peek and Standing, 1979). Thus, circulation may retard the processes of *descampesinizacion* and proletarianization of agricultural workers which characterize many Latin American countries.<sup>12</sup>

Concerning destinations, urban locales, where employment and educational opportunities are concentrated, attract both migrants and circulators. Existence of recent agricultural settlement is also an important draw, particularly for migrants, as pioneer settlement tends to be permanent; the presence of mining operates similarly. Circulators to mining areas may be attracted by jobs in mining and construction which often are temporary, whereas many migrants possibly become engaged in agriculture along the newly opened roads where permanent settlers obtained plots. Finally, large farms attract circulators, but not migrants. As mentioned in Chapter IV, agriculture on large farms has become increasingly mechanized, and employs most of its hired labor on a temporary basis (Table 6), thus attracting circulators.

In summary, urban locales send both migrants and circulators, while manufacturing and the existence of very large farms emit circulators only. Urban areas also attract migrants and circulators. Whereas mining and recent agricultural settlement draw migrants rather than circulators, the reverse is true for areas with very large

<sup>&</sup>lt;sup>12</sup> For a detailed discussion of the proletarianization of Latin American agricultural workers see Balan (1981).

farms.

# 5.2 COMPARISON OF ORIGINS AND DESTINATION

The influence of place characteristics on population mobility has been noted many times in previous research (Brown and Sanders, 1981; Connell, DasGupta, Laishley, and Lipton, 1976). In general, out-migration has been from areas of high rural population pressure with few non-farm job opportunities to areas of commercial agriculture and cities. Thus, structural characteristics of origins are expected to differ from those of destinations. Furthermore, socioeconomic structures that promote out-migration may differ from those that generate circulation, as noted by Peek (1982), Balan (1981), and the present study. This section examines structural differences between origins and destinations as they are linked together by migrants and circulators. This is accomplished by assigning to each migrant/circulator the principal component scores associated with cantones of previous/usual and present residence, thus showing origindestination linkages (Table 12).

Concerning migrants, the first observation is that mean differences between origins and destinations indices are all significant. With regard to linkages, signs and magnitudes of the means for the urban-rural index indicate that migrants tend to flow from slightly to markedly urban locales. Two additional linkages are from diverse origins either to mining regions or to areas of recent agricultural settlement.

Concerning circulators, it is noted that all mean differences between origins and destinations also are significant. As with migrants, the urban-rural index indicates a flow from smaller to larger urban centers. The linkages from diverse origins to mining regions, or to areas of recent agricultural settlement also are evident. But for

### Table 12: Characteristics of Places of Origin and Destination

		<u>Migrants</u>				<u>Circulators</u>		
	<u>Place of Origin</u>	Place of Present Destination	Difference	<u>t-Value</u>	<u>Place of Origin</u>	Place of Present 	Difference	<u>t-Value</u>
	x (S.D.)	x (S.D.)			x (S.D.)	x (S.D.)		
Indices Pertaining to								
<u>Agrarian Structure</u> (a)								
Long Stancing (pos.) Recent Agricultural Settlement (neg.)	0.058 (0.802)	-1.045 (1.436)	1.103	150.93*	0.198 (0.614)	-0.600 (1.227)	0.798	36.67*
Domestic (pos.)- Export Agricultural Production (neg.)	-0.039 (0.758)	0.092 (0.676)	•0.131	-29.30*	0.181 (0.677)	0.045 (0.714)	0.136	8.75*
Very Large (pos.) Medium Sized Farms (neg.)	0.168 (0.859)	0.262 (0.910)	-0.094	-17.03*	0.412 (0.891)	0.348 (0.890)	0.064	3.22*
Indices Pertaining to Socioeconomic Structure <sup>(a)</sup>								
Urban (pos.)- Rural (neg.)	0.544 (1.430)	1.260 (1.743)	-0.716	-7.41*	0.702 (1.694)	1.226 (1.674)	-0.524	- 14.38*
Manufacturing (pos.) Agricultural Frontier (neg.)	0.249 (1.015)	-0.256 (0.974)	0.505	83.82*	0.608 (1.016)	-0.060 (0.917)	0.668	31.90*
Mineral Extraction (pos.) Economic Recession (neg.)	) -0.014 ) (0.838)	1.128 (1.993)	-1.142	-122.91*	0.011 (0.673)	0.545 (1.415)	-0.534	-22.24*

(a) Structural indices were obtained by assigning to each individual those principal component scores (derived from the factor analyses reported in previous chapters) representing his/her place of residence.

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\* Significant at the 0.01 level.

circulators, two new linkages emerge – one from manufacturing areas to diverse destinations; another from regions with very large farms to other regions with very large farms, i.e. a rural-rural linkage.

The flows of migrants and circulators from smaller to larger urban centers are easily explained. Large urban centers offer most of the educational and job opportunities, and communications and transportation systems link them to other urban locales, facilitating thereby the flows between them. Also, residents of small and medium-sized towns, by virtue of their own urban environment, may be more responsive to the pull of large urban centers than rural persons. The attraction of mining areas and regions of recent agricultural settlement reflects employment opportunities found therein. The former offer not only jobs in mining, but also in related construction (roads, pipelines); the latter provide agricultural opportunities under low population density conditions. These two regimes overlap in the Oriente, a region where in-migrants represented forty percent of the 1982 population. Finally, that a rural-rural linkage emerged for circulators reflects the need for part-time, but experienced, wage labor as traditional *haciendas* modernize.

In summary, this section noted significant differences between origins and destinations of both migrants and circulators. Linkages from smaller to larger urban locales were indentified for both migrants and circulators, but rural-rural flows are evident for circulators only. The importance of rural origins for circulators, but not for migrants, lends support to the hypothesis that peasants are increasingly opting for circulation rather than migration as a survival strategy.

It was also noted that the mining and recent agricultural settlement indices are important in destinations of both migrants and circulators. But manufacturing is significant in origins of circulators only.

#### SUMMARY OF THE CHAPTER

This chapter examined individual and place attributes of migrants and circulators. Differences and similarities among migrants, circulators, and stayers were identified. Migrants compared with stayers are significantly younger, better educated, and more likely to be single. Circulators differ from migrants only in gender and marital status, having a greater probability of being male and single. Circulators and stayers, the most dissimilar groups, differ in age, gender, education, and marital status.

Structural differences between origins and destinations also were found to be significant. Linkages from smaller to larger urban centers are important for both migrants and circulators, while rural-rural linkages are evident for circulators only. Mining areas and regions of recent agricultural settlement attract both migrants and circulators.

In conclusion, the young, the better educated, and those persons with fewer ties or obligations to the home and/or community are more likely to respond to structural differentials and take advantage of opportunities offered elsewhere. These findings indicate that individual as well as structural factors play important roles in migration and circulation. Thus, aggregate (structuralist) and individual (functionalist) approaches should be combined to attain a better understanding of population mobility. This will be done formally in the next chapter through logistic regression analysis.

# CHAPTER VI

# INDIVIDUAL ATTRIBUTES, PLACE STRUCTURE, AND LABOR MOBILITY

The previous chapter examined differences among migrants, circulators, and stayers in terms of individual attributes and structural or place characteristics of their origins and destinations. The roles that these types of factors play on population mobility have been investigated by many authors using either of two approaches — the functionalist, which sees migration primarily as the result of individual decisions, (Elkan, 1959; Harris and Todaro, 1970; Fan and Stretton, 1985); or the structuralist, which emphasizes historical, political, and socioeconomic contexts (Roberts, 1978; Balan, 1980; Forbes, 1980).

The present chapter examines migration and circulation in Ecuador as a function of both place and individual attributes, and the interactions between them, thus combining the aggregate (structuralist) and individual (functionalist) perspectives. Although an interactional approach has been suggested by several writers (Chapman and Prothero, 1983; Forbes, 1984; Hugo 1982, 1985), it rarely has been implemented empirically.<sup>13</sup>

<sup>&</sup>lt;sup>13</sup> Recent studies linking contextual and individual variables include Findley (1986) and Brown and Goetz (1986).

After presenting the analytical method and model (section 6.1), the chapter focuses on **direct effects** of individual and structural attributes on migration and circulation at the national, or macro, level (section 6.2), a study of macro scale contextual effects. Attention then turns to regional influences on each variable (section 6.3), termed meso scale contextual effects, and to **interaction effects** of structural and individual factors combined (section 6.4), a study of micro or local scale contextual effects.

# 6.1 METHOD OF ANALYSIS AND MODEL SPECIFICATION

The analytical method employed is logistic regression.<sup>14</sup> This approach is similar to regression analysis with a dichotomous dependent variable indicating whether each sampled individual is an out-migrant/out-circulator (1) or a stayer (0). In fact, however, the dependent variable is a ratio of the probability of moving (Pmov-i) to the probability of staying (1-Pmov-i), logarithmically transformed; i.e., ln (Pmovi/(1-Pmov-i)).

The independent variables represent personal attributes of migrants/circulators and structural characteristics of their origins. Personal attributes include gender (GENDER-i), age (AGE-i), marital status (MARITAL-i), and educational attainment (EDUC-i). These variables and their means were discussed in Chapter V.<sup>15</sup> Place characteristics are the principal component scores discussed in detail in Chapters III and IV. These represent the following structural scales: long standing-recent agri-

<sup>&</sup>lt;sup>14</sup> For a discussion of logistic regression see Aldrich and Nelson (1984).

<sup>15</sup> Occupational status and branch of economic activity, although discussed in Chapter V, were excluded from regression analyses; the former because it covaries strongly with educational attainment, the latter because it was measured as a nominal variable.

cultural settlement (AGPC1-i), domestic-export agriculture (AGPC2-i), very largemedium sized farms (AGPC3-i), urban-rural continuum (GPC1-i), manufacturingagricultural frontier (GPC2-i), and mineral extraction-economic recession (GPC3-i).

The first model to be estimated is:

ln (Pmov-i/(1-Pmov-i)) = a + b-1 \* GENDER-i + b-2 \* AGE-i + b-3 \* MARITAL-i + b-4 \* EDUC-i + b-5 \* AGPC1-i + b-6 \* AGPC2-i + b-7 \* AGPC3-i + b-8 \* GPC1-i + b-9 \* GPC2-i + b-10 \* GPC3-i(1)

This model was estimated for migration and circulation at the national level. Zero order relationships between each independent variable by itself and the dependent variable also are reported.

National analyses provide a general picture of out-migration and out-circulation from Ecuador's cantones. However, the roles of explanatory variables are expected to vary across the country's regions, given their different cultural and socioeconomic traditions. To detect this regional, or macro scale, contextual effect the initial model (1) was augmented with Costa and Oriente dummy variables, the Sierra remaining as base region. To accomplish this, each independent variable is expanded into three. For example,

AGE-i captures the age effect on person i in the Sierra;

AGE-I \* COSDUM captures the change of that effect in the Costa, and

AGE-i \* ORTDUM captures change in the Oriente,

where COSDUM equals 1 for the Costa, otherwise 0; and ORTDUM equals 1 for the Oriente, otherwise 0.

Hence, the second model to be estimated is: In (Pmov-i/(1-Pmov-i)) = a + b-1 \* GENDER-i + b-2 \* AGE-i + b-3 \* MARITAL-i + b-4 \* EDUC-i + b-5 \* AGPC1-i + b-6 \* AGPC2-i + b-7 \* AGPC3-i + b-8 \* GPC1-i + b-9 \* GPC2-i + b-10 \* GPC3-i + b-11 \* CGENDER-i + b-12 \* RGENDER-i + b-13 \* CAGE-i + b-14 \* RAGE-i + b-15 \* CMARITAL-i + b-16 \* RMARITAL-i + b-17 \* CEDUC-i + b-18 \* REDUC-i + b-19 \* CAGPC1-i + b-20 \* RAGPC1-i + b-21 \* CAGPC2-i + b-22 \* RAGPC2-i + b-23 \* CAGPC3-i + b-24 \* RAGPC3-i + b-25 \* CGPC1-i + b-26 \* RGPC1-i + b-27 \* CGPC2-i + b-28 \* RGPC2-i + b-29 \* CGPC3-i+ b-30 \* RGPC3-i (2)

where CGENDER-i equals GENDER-i \* COSDUM, and RGENDER-i equals GENDER-i \* ORTDUM, and similarly for other variables.

Regional effects are then detected as follows. Considering AGE-i from (2) as an example, its effect in the Sierra is b-2, the modification of this effect in the Costa is b-13, so that the effect of age in the Costa is given by the summed b-coefficients b-2 + b-13. Similarly in the Oriente, the regional modification is b-14, and the effect of age is b-2 + b-14.

Model (2) was estimated for migration and circulation. Zero order relationships between each independent variable by itself and the dependent variable also are reported. While the approach of (2) reveals regional, or meso scale, contextual effects, the final section of the analysis examines micro or local scale contextual effects. To

accomplish this the initial model (1) is estimated for both direct effects and interactions of each structural variable with variables pertaining to personal attributes. For example, to interact with GPC1, the urban-rural continuum, the following variables are computed and b-coefficients estimated for each: GENDER-i \* GPC1, AGE-i \* GPC-1, MARITAL-i \* GPC1, and EDUC-i \* GPC1.

Hence, the third model to be estimated is:

ln (Pmov-i/(1-Pmov-i)) =
a + b-1 \* GENDER-i + b-2 \* AGE-i + b-3 \* MARITAL-i

+ b-4 \* EDUC-i + b-5 \* AGPC1-i + b-6 \* AGPC2-i + b-7 \* AGPC3-i + b-8 \* GPC1-i + b-9 \* GPC2-i + b-10 \* GPC3-i + b-11 \* GENDER-i \* GPC1-i + b-12 \* AGE-i \* GPC1-i + b-13 \* MARITAL-i \* GPC1-i + b-14 \* EDUC-i \* GPC1-i (3)

These models were estimated for migration and circulation at the national level.

To interpret the interaction effects, the concepts embodied in Casetti's (1972, 1986) expansion method were drawn upon. The expansion method involves generating a terminal model from an initial one. To this effect, parameters of the latter are redefined into functions of relevant variables by expansion equations. For instance, the initial model

$$y = m + nx \tag{4}$$

can be expanded using an expansion equation

$$n = n - 0 + n - 1z$$
 (5)

into the terminal model

$$y = m + n - 0x + n - 1xz$$
 (6)

The terminal model is obtained by replacing coefficient(s) in the initial model by the expression(s) appearing on the right hand side of the equality sign in the expansion equations. The expansion method clearly allows interpreting interaction terms. For instance, the interaction term in terminal model (6) can be interpreted as an expansion of the n-coefficient of the initial model in terms of the z variable. In the analysis that follows the interaction between personal and contextual variables can be easily conceptualized as specifying the contextual variation of coefficients associated with the personal determinants of migration.

For example, to determine the effect of age and how it is modified by ruralurban context, the AGE-i coefficient is expanded in terms of principal component one, GPC1:

b-2 \* AGE-i + b-12 \* AGE-i \* GPC1-i, or

(b-2 + b-12 \* GPC1-i) \* AGE-i

where b-2 is the direct effect coefficient and b-12 the GPC1-i \* AGE-i interaction term coefficient. However, since GPC1-i values are component scores, an hypothetical urban place with score +1.0 versus an hypothetical rural place with score -1.0 can be assumed. Then, term (7) becomes either

(7)

$$(b-2 + b-12) * AGE-i$$
 (8)

for the urban case, or

for the rural, with b-2 indicating the direct effect and b-12 indicating how this is modified by either urban or rural context.<sup>16</sup> The resulting net values are known as the summed b-coefficients. The same approach is employed for other structural

<sup>16</sup> This approach was suggested by Kavita Pandit of the Ohio State University Geography Department, and used by Brown and Goetz (1986) in a study of Venezuelan migration.

variables.

# **6.2 NATIONAL ANALYSES**

Table 13 presents logistic regression results for migration and circulation analyses at the national level, estimating only for direct effects as in (1). Regarding migration, coefficients of all variables but gender are significantly different from zero, both in the zero order and multiple variable analyses. The likelihood of out-migration is greater for young, single, and better educated persons; varies directly with the presence of long standing agricultural settlement and manufacturing; and varies inversely with urbanness, very large farms, and domestic agriculture. Mineral extraction, considered singly, is inversely related to out-migration, but its sign changes in the multiple variable analysis; collinearity with other variables may account for this. Betas from the multiple variable analysis indicate that long standing-recent agricultural settlement and urban-rural continuum are the most important contextual variables determining out-migration, and education the most important personal attribute.

Regarding out-circulation, its likelihood is greater for males, young, single, and better educated persons; varies directly with the presence of long standing agricultural settlement, domestic agriculture, very large farms, and manufacturing; and varies inversely with urbanness. In the multiple variable analysis domestic-export agriculture and very large-medium sized farms are not significant, and mineral extraction is positively related to out-circulation. Betas from multiple variable analysis indicate that long standing-recent agricultural settlement and urban-rural continuum are the most important contextual variables determining out-circulation, and education the most important personal attribute.

#### Table 13: Logistic Regressions Results for National Analyses

		Mi	gration <sup>(</sup>	a)			Ci	rculatio	n <sup>(a)</sup>	
	1 Ze <u>Rela</u>	ero Order ationships	<u>Muit</u>	iple Reg	ression	1 Ze Rela	ro Order tionships	Mul	tiple Re	gression
Variables	<u>b</u>	<u>t-value</u> (b)	<u>b</u>	<u>Beta</u>	<u>t·value</u> (b)	b	<u>t·value</u> (b)	b	<u>Beta</u>	<u>t-value</u> (b)
Gender (1=male;2=f <i>e</i> male)	0.009	0.696**	-0.015	-0.012	-1.123**	-0.208	-6.023	-0.331	-0.654	-9.213
Age	-0.007	-20.059	-0.006	-0.180	-14.257	-0.008	-9.007	-0.006	-0.456	-6.001
Marital Status (1=single;2≈widowed/divorced; 3=married)	-0.068	-13.225	·0.017	-0.034	-2.878	-0.122	-9.974	-0.085	-0.401	-5.963
Educational Level (years of schooling completed)	0.018	16.630	0.030	0.277	23.196	0.022	8.686	0.033	0.740	11.227
Long Standing (pos.)- Recent Agricultural Settlement (neg.)	0.168	27.637	0.207	0.390	20.523	0.340	17.811	0.338	1.580	11.689
Domestic (pos.)- Export Agriculture (neg.)	-0.082	-12.294	-0.118	-0.182	-10.257	0.130	7.759	-0.014	-0.051	-0.451**
Very Large (pos.)- Medium Sized Farms (neg.)	-0.120	-21.337	-0.110	-0.206	- 16.956	0.031	2.356*	0.016	0.073	1.099**
Urban (pos.)-Rural (neg.)	·0.076	-24.353	-0.098	-0.340	-25.247	·0.050	·6. <b>7</b> 56	-0.108	-0.949	-12.439
Manufacturing (pos.)- Agricultural Frontier (neg.)	0.020	3.862	0.050	0.100	4.616	0.219	18.804	0.141	0.684	5.829
Mineral Extraction (pos.) Economic Recession (neg.)	-0.040	-7.443	0.108	0.209	14.056	-0.010	-0.808**	0.132	0.620	5.600
		n of mig n of non	rants = migrants	16,158 = 29,52	20		n of circ n of nonc	ulators irculato	= 1,835 ors = 42,	624
		1Zero Order RelationshipsMultiple Regression1Zero Order RelationshipsMultip $b$ t-value(b) $b$ Betat-value(b) $b$ $b$ $Relationships$ Multip0.0090.696**-0.015-0.012-1.123**-0.208-6.023-0.331-0-0.007-20.059-0.006-0.180-14.257-0.008-9.007-0.006-0-0.068-13.225-0.017-0.034-2.878-0.122-9.974-0.085-00.01816.6300.0300.27723.1960.0228.6860.03300.16827.6370.2070.39020.5230.34017.8110.3381-0.082-12.294-0.118-0.182-10.2570.1307.759-0.014-0-0.120-21.337-0.110-0.206-16.9560.0312.356*0.0160-0.040-7.4430.1080.20914.056-0.010-0.808**0.1320-0.040-7.4430.1080.20914.056-0.010-0.808**0.1320-0.040-7.4430.1080.20914.056-0.010-0.808**0.1320-0.040-7.4430.1080.20914.056-0.010-0.808**0.1320-0.040-7.4430.1080.20914.056-0.010-0.808**0.1320-0.040-7.4430.1080.20914.056-0							tio <sup>(c)</sup> =	1,117.2

(a) Analyses done with SPSSX21 Program Probit.

(b) t-values estimated as b- coefficient divided by standard error of b- coefficient; Beta estimated as b- coefficient multiplied by the ratio of the standard deviations of the independent and dependent variables.

(c) For method of computation, see Aldrich and Nelson (1984:55-56).

\* indicates not significant at 0.01 level; \*\* indicates not significant at 0.05 level.

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Migration and circulation are thus similar in several respects. In terms of individual attributes, the young, single, and better educated are more prone to out-migrate and out-circulate. This is because young persons are at a life cycle stage when educational, economic, and family decisions, often involving a move, are made; the better educated tend to have greater awareness of opportunities elsewhere; and the single fewer ties to the home community. In terms of place characteristics, rural locales, long standing agricultural regions, and manufacturing areas emit both migrants and circulators. Lack of economic opportunities in rural areas and population pressure in regions of long standing agriculture explain this. The reason for mobility from manufacturing areas remains unclear.

Migration and circulation differ, however, in the roles of gender and two structural indices – domestic-export agriculture and very large-medium sized farms. Concerning gender, its role is not significant in out-migration, but is so in out-circulation, males having a greater probability of out-circulating than females. Gender selectivity in circulation is explained by the availability of temporary jobs for males in sectors such as mining and construction. In addition, household responsibilities retard female circulation. Regarding the structural indices, domestic agriculture is directly related to out-circulation, but inversely related to out-migration. This indicates that peasants are opting for circulation rather than migration to cope with partial labor displacement in large farms and shrinking individual plots following agrarian reform (see Chapter IV). Likewise, the very large-medium sized farms component is directly related to out-circulation, but inversely related to out-migration, an indication of the increasing reliance on part time labor by large farms as a result of mechanization (see Chapters IV and V).

#### **6.3 REGIONAL MODIFICATIONS**

Having discussed the effect of individual and place attributes at the national level, attention now turns to regional analyses which show how each variable shifts importance across the Sierra, Costa, and Oriente. Given the large amount of information derived from these analyses only the most important relationships will be considered. Migration results are discussed first, then circulation.

With regard to out-migration (Table 14), its incidence is greater for better educated persons in all regions, but particularly in the Oriente; greater for the young in the Sierra and Costa, and not affected by gender anywhere. These relationships for the Sierra and Costa are thus consistent with national findings reported in section 6.2. Oriente out-migration, however, differs from that of other regions in gender and age, being selective of males and somewhat selective of older persons. This is indicated by the summed b-coefficients of -0.163 for gender and 0.007 for age.

In terms of structural variables, out-migration is greater in areas of mineral extraction and recent agricultural settlement in the Costa and Oriente, domestic agriculture in the Oriente, and economic recession in the Sierra. On the other hand, domestic agriculture in the Sierra and Costa, and manufacturing in the Costa, deter out-migration.

The above findings suggest the following observations. First, the Oriente appears to be characterized by chronic population mobility. This region has experienced rapid growth during the 1970s as a result of the discovery and exploitation of petroleum, and related construction activities. These attracted a large number of in-migrants, most of them males. But, after the completion of roads and pipelines, and during Table 14: Regional Modifications for Migration Analyses

					Sierr	(a)				<u>Costa</u> (	a)			Q	<u>riente</u> (a	0
		1 Zero ( <u>Relatio</u>	Order nships(d)	Multj	ple Reg	ression	<sup>1</sup> Zero Relatio	Order Inships	Multi	<u>ple Regr</u>	ession	<sup>1</sup> Zer <u>Relati</u>	o Order(d) onships	Multi	ple Regr	ession
<u>Variables</u>		<u>b</u> t	value <sup>(b)</sup>	<u>b</u>	<u>Beta</u>	t-value <sup>(b)</sup>	<u>b</u> t	value <sup>(b)</sup>	<u>b</u>	Beta	<u>t·value</u> (b)	_ <u>b</u>	<u>t-value</u> (b)	_ <u>b</u>	Beta	t-value <sup>(b)</sup>
Gender (1=male;2=female)	D(4 R	e) •1.133	·11.561	0.014	0.011	0.550**	0.186	13.801	0.014	0.011	0.550**	0.008	0.370**	0,014 -0,177	0.011 -0.172	0.550** -2.936
Age	D R	0.011	-32.866	·0.008	·0.243	9.823	·0.007	18.712	-0.008 -0.001	·0.243 ·0.032	-9.823 -0.648**	0.001	1.758**	-0.008 0.015	·0.243 0.418	-9.823 7.532
Marital Status (1=single; 2=widowed/divorced; 3=married)	D R	·0.082	-16.464	0.045	0.090	3.699	-0.056	- 10.452	0.045 •0.081	0.090 0.195	3.699 -4.192	•0.022	-2.391*	0.045 •0.072	0.090 -0.143	3.699 ·2.409*
Educational Level (years of schooling completed)	D R	0.011	10.245	0.031	0.289	12.070	0.012	10.742	0.031 -0.013	0.289 -0.103	12.070 -3.015	0.050	21.128	0.031 0.021	0.289 0.099	12.070 3.063
Long Standing (pos.)- Recent Agricultural Settlement (neg.)	D R	0.332	34.233	0.063	0.118	1.712**	·0.250	-23.405	0.063	0.118 0.219	1.712**	-0.090	8.423	0.063 0.312	0.118 0.458	1.712** 3.414
Domestic (pos.)- Export Agricul- ture (neg.)	D R	·0.329	· <b>39.7</b> 22	·0.468	-0.723	- 12.797	·0.391	-34,630	-0.468 0.174	-0.723 0.138	·12.797 3.340	0.079	7.400	-0.468 0.711	-0.723 0.482	-12.797 9.475
Very Large (pos.)- Nedium Sized Farms (neg.)	D R	•0.169	·25.469	0.056	0.104	3.010	·0.139	-28.925	0.056 -0.212	0.104 -0.294	3.010 •7.688	-0.213	5 - 18. 176	0.056 -0.240	0.104 -0.154	3.010
Urben (pos.)- Rural (neg.)	D R	-0.131	-43.126	0.020	0.071	1.454**	·0.072	-24.679	0.020	0.071	0.454**	0.499	12.831	0.020 -0,087	0.071 •0.016	1.454** -0.77 <b>3*</b> *
Manufactur-	D			0.195	0.390	6.895			0.195	0.390	6.895			0,195	0.390	6.895
Agricultural Frontier (neg.)	R	-0.204	·33.177				-0.298	-32,184	-0.250	-0.185	-3.523	0.206	5.347	0.304	0.231	2.324*
Mineral Extrac-	D			-0.616	-1.185	-11.470			-0.616	-1.185	-11.470			-0.616	-1.185	-11,470
Economic Recess-	R	·0.517	·52.064				0.080	10.431	0.784	0.825	13.378	0.110	20.167	0.851	1.055	14.378
ton (neg.)									n of migr	ants = 6	5,966					

n of nonmigrants = 12,592

Log Likelihood Ratio<sup>(C)</sup> = 2,532.4

(a) Analyses done with SPSSX21 Program Probit.

(b) t-values estimated as b- coefficient divided by standard error of b- coefficient; Beta estimated as b- coefficient multiplied by the ratio of the standard deviations of the independent and dependent variables.

(c) For method of computation, see Aldrich and Nelson (1984:55-56).

(d) Direct effects of each independent variable by itself estimated separately for each region.

(e) D indicates direct effects of each independent variable in the multiple regression estimated for the national sample, with the Sierra as base region. R indicates regional modifications of the direct effects.

\* indicates not significant at 0.01 level; \*\* indicates not significant at 0.05 level.

the economic recession of the late 1970s and early 1980s, job opportunites declined; out-migration of those males, now older, is thus observed. This is manifested in the personal attributes of Oriente out-migrants who are predominantly male and relatively older persons.

Second, certain activities seem to stimulate both in and out migration. For example, mineral extraction and recent agricultural settlement attract in-migrants to the Costa and Oriente, but simultaneously emit migrants. Economic decline or unsuccessful settlement may account for this trend, as well as the dynamism associated with growing areas.

Third, the direct relationship between domestic agriculture and out-migration in the Oriente indicates that, despite colonization and development efforts, agriculture in this region remains hindered by low soil fertility, difficult terrain, and poor roads.

Finally, manufacturing activities, concentrated in and around Quito and Guayaquil, retain population in the Sierra and Costa.

Regarding out-circulation (Table 15), its likelihood is greater for male, young, single, and better educated persons in all regions. Although the b-coefficient for age in the Oriente is positive (0.015), it does not represent a significant change (t-value=1.890) from the negative and significant b-coefficient for age in the Sierra (b-coefficient=-0.008; t-value=-4.469). Furthermore, zero order analyses indicate a negative relationship between age and out-circulation in the Oriente (b-coefficient=-0.010; t-value=-2.994). Thus, regional variation is minimal. This is consistent with national analyses reported in section 6.2.

Table 15: Regional Modifications for Circulation Analyses

			Sie	<u>erra</u> (a)			<u>Costa</u> (a)					<u>Oriente</u> (a)				
		<sup>1</sup> Zero <u>Relati</u>	Order onships(d)	Multi	iple Reg	ression	l Zero Relati	o Order ionships(d)	Multi	iple Regr	ession	<sup>1</sup> Zer <u>Relati</u>	o Order(d) <u>onships</u> (d)	Mult	iple Reg	ession
Variables		b	t·value <sup>(b)</sup>	<u>b</u>	<u>Beta</u>	<u>t-value</u> (b)	ь	<u>t·value</u> (b)	<u> </u>	<u>Beta</u>	<u>t-value</u> (b	) <u> </u>	<u>t·value</u> (b)	<u> </u>	<u>Beta</u>	t-value <sup>(b)</sup>
Gender (1=male;2≈female)	D <sup>(e</sup> R	e) ∙0.352	·11.834	0.309	-0.614	-5.210	0.044	0.993**	0.309	-0.614 -0.242	-5.210 -0.856**	·0.177	-1.511**	·0.309 ·0.271	-0.614 -0.687	-5.210 -0.992**
Age	D R	-0.013	- 16.799	-0.008	-0.619	-4.469	·0.007	-5.725	0.008	-0.619 0.608	4.469 2.034*	-0.010	-2.994	·0.008 0.015	0.619 1.052	-4.469 1.890**
Marital Status (1=single; 2=widowed/divorced; 3=married)	D R	·0.125	-11.675	·0.048	-0.230	-1.822**	•0.125	-7.686	0.048 0.139	-0.230 -0.817	-1.822** -2.950	-0.143	-3.581	·0.048 ·0.287	-0.230 -1.499	-1.822** -2.651
Educational Level (years of schooling completed)	D R	0.001	0.260**	0.027	0.612	4.939	0.042	13.630	0.027 0.031	0.612 0.592	4.939 3.156	0.051	4.832	0.027 0.020	0.612 0.231	4.939 0.795**
Long Standing (pos.) Recent Agricultural Settlement (neg.)	D R	0.412	18.415	0.018	-0.085	·0.214**	•0.107	-2.968	-0.018 -0.178	-0.085 -0.253	-0.214** -1.543**	·0. <b>003</b>	·0.062**	·0.018 0.094	-0.085 0.358	·0.214** 0.290**
Domestic (pos.) Agriculture (neg.)	D R	·0.011	·0.521**	-0.210	·0.763	·2.777	-0.049	·1.448**	-0.210 -0.131	-0.763 -0.238	-2.777 -1.123**	0.017	0.343	·0.210 0.202	·0.763 0.377	·2.777 0.792**
Very Large (pos.)- Medium Sized Farms (neg.)	D R	0.008	0.520**	0.112	0.517	3.388	0.006	0.456**	0.112 -0.274	0.517 -0.992	3.388 -4.356	-0.176	-3.268	0.112 0.221	0.517 -0.372	3.388 -1.268**
Urban (pos.) <sup>,</sup> Rural (neg.)	D R	-0.133	-20.014	-0.038	·0.338	-1.309**	0.007	0.931**	0.038	0.338	-1.309** -1.419**	0,077	0.360**	0.038	0.338 0.108	1.309** 0.569**
Manufactur-	D			0.269	1.305	4.908			0.269	1.305	4.908			0.269	1.305	4.908
Agricultural Frontier (neg.)	R	0.055	3.917				0.061	2.415*	0.376	0.695	2.490*	0.046	0.254**	0.235	0.468	0.489**
Nineral Extrac-	D			0.526	-2.477	-4.822			·0.526	·2.477	-4.822			·0.526	-2.477	-4.822
Economic Recess	R	·0.367	17.706				0.214	8.411	0.796	1.929	6.271	0.010	0.335**	0.510	1.581	3.365
TOT (neg./								л	of circ	ulators :	= 794					

n of noncirculators = 18,632

Log Likelihood Ratio<sup>(c)</sup> = 604.3

(a) Analyses done with SPSSX21 Program Probit.

(b) t-values estimated as b- coefficient divided by standard error of b- coefficient; Beta estimated as b- coefficient multiplied by the ratio of the standard deviations of the independent and dependent variables.

(c) For method of computation, see Aldrich and Nelson (1984:55-56).

(d) Direct effects of each independent variable by itself estimated separately for each region.

(e) D indicates direct effects of each independent variable in the multiple regression estimated for the national sample, with the Sierra as base region. R indicates regional modifications of the direct effects.

\* indicates not significant at 0.01 level; \*\* indicates not significant at 0.05 level.

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In terms of structural variables, out-circulation is greater in areas with very large farms and economic recession in the Sierra, mineral extraction and medium-sized farms in the Costa, and manufacturing in all regions. By contrast, domestic agriculture in the Sierra and Costa deter out-circulation.

These findings evidence the impact of agrarian structure on labor circulation. The positive relationships between out-circulation and very large farms in the Sierra, and between out-circulation and medium-sized farms in the Costa reflect two agrarian systems and their implications for labor mobility. In the Sierra, where the *latifundio* still prevails, abolition of the *huasipungo* and mechanization of agriculture greatly decreased the number of full-time farm workers. In the Costa, commercial agriculture, practiced mostly on medium to large farms, hires the majority of its laborers during the peak season only (Chapter IV). Thus, both systems, by increasingly providing part-time wage employment, stimulate circulation.

Consistent with migration, circulation shows chronic mobility associated with mining activities, as well as the importance of economic recession, as a push factor in the Sierra.

# **6.4 INTERACTION EFFECTS**

The previous section demonstrated how the effect of variables is modified by regional context, where regional context represents a composite of structural characteristics. This section, on the other hand, examines the effect of each structural characteristic interacting with personal attributes, as in terminal model (3).

Attending first to migration (Tables 16 and 17), direct effects show that the young, single, and better educated are more migratory than others, gender playing no significant role. This is consistent with previous analyses. Interaction effects, however, indicate that the influence of personal attributes varies with structural context. Considering gender, for example, although overall not significant, interactions show that males have a higher probability of out-migrating than do females in urban centers, and in areas of recent agricultural settlement, domestic agriculture, manufacturing, and mineral extraction. Also, age and marital status reverse signs in some contexts; the former in areas of recent agricultural and frontier settlement, the latter in areas of long standing agriculture, medium-sized farms, and rural locales. By contrast, educational level is directly related to out-migration in all contexts, showing only slight variation.

Finally, interaction effects also reveal chronic mobility for certain contexts. This explains the selectivity of males in areas of recent agricultural settlement, and mineral extraction, and also the selectivity of older persons in areas of recent agricultural and frontier settlement. This is consistent with results of regional analyses (section 6.3) which found out-migrants from the Oriente, where these structural conditions exist, to be predominantly male and relatively older.

With regard to out-circulation (Tables 18 and 19), selectivity of males, young, single, and better educated persons is well evidenced by both direct and interaction effects. Sign reversal occurs only in age. The magnitudes of summed b-coefficients, however, show some variation in personal attribute effects across structural settings. For example, selectivity of males is particularly strong in areas of recent agricultural settlement, mineral extraction, domestic agriculture, manufacturing, and urban centers.

Table 16: Direct and Interaction Effects on National Migration

	Long St Recent Settlem	anding Agricyltural <u>ent</u>	Domesti Export Agricul	c- ture <sup>(a)</sup>	Very La Medium <u>Farms</u> (a	rge- Sized	Urbania <u>Rural</u> ia	)	Manufac Agricul <u>Frontie</u>	turing- turgl r	Nineral Economic	Extraction(a) Recession
Variables	<u>b</u>	<u>t-value</u> (b)	<u>b</u>	t-value <sup>(b)</sup>	<u>b</u>	<u>t·value</u> (b)	b	t-value <sup>(b)</sup>	<u> </u>	t-value <sup>(b)</sup>	b	t-value <sup>(b)</sup>
G <b>ende</b> r (1∺male;2=female)	·0.019	-1.247**	·0.007	-0.481**	-0.029	-1.789**	0.023	1.304**	0.018	1.155**	-0.012	-0.802**
Age	·0.005	-11.897	-0.006	-11.949	-0.006	·11.999	-0.006	- 10, 791	·0.004	-8.700	·0.006	-12.255
Marital Status (l=single;2=widowed/divorced; 3=married)	-0.018	-2.696	-0.020	·2.978	-0.011	·1.628**	-0.006	-0.768**	-0.025	·3.641	·0.017	-2.586
Educational Level (vears of schooling completed)	0.030	20.555	0.029	19,891	0.032	20.452	0.044	25.256	0.034	22.077	0.029	20.042
Long Standing (pos.)- Recent Agricultural Settlement (neg.)	0.320	9.414	0.211	18.655	0.214	18.895	0.209	18.405	0.207	18.191	0.211	18.691
Damestic (pos.). Export Agriculture (neg.)	-0.119	-9.176	0.076	2.047*	·0,120	-9.317	·0,138	-10.606	•0.121	·9.298	-0.121	-9.379
Very Large (pos.)- Medium Sized Farms (neg.)	-0.110	- 14,950	-0.109	- 14.915	·0.047	-1.541*	-0.103	- 14.045	-0,108	- 14 . 835	-0.113	- 15.436
Urban (pos.)-Rural (neg.)	-0.099	-22.628	-0.098	-22.464	-0.094	-21.241	0.048	2.836	-0.094	-21.386	-0.095	-21.699
Manufactu ing (pos.) Agricul ural Frontier (neg.)	0.046	3.813	0.054	4.501	0.049	4.045	0.062	5.098	0.411	13.576	0.052	4.320
Mineral Extraction (pos.)- Economic Recession (neg.)	0.111	12.663	0.111	12.878	0.109	12.563	0.113	13.025	0.113	12.995	0.232	7.594
Interactions with												
Gender	0.057	3.021	-0.124	-5.984	0.013	0.740**	0.043	-4.765	·0.125	-8.187	·0.143	-7.631
Age	·0.007	12.922	-0.002	·3.722	0.000	0.830**	0.001	1.854**	0.005	·9.786	0.003	4.859
Marital Status	0.042	5.230	0.009	1.049**	·0.024	-3.241	-0,010	-2.481*	0.005	0.760**	·0.013	-1.772**
Educational Level	·0.007	-3.914	0.000	0.003**	-0.006	-4.175	-0.013	- 15.399	·0.013	8.841	·0.002	-1.339**
n of migrants= n of nonmigrants= Log Likelihood Ratio <sup>(C)</sup> =		12,988 23,558 2,794,4		12,988 23,558 2,673.6		12,988 23,558 2,650.9	:	12,988 23,558 2,940.5		12,988 23,558 2,861.9		12,988 23,558 2,723,2

(a) Analyses done with SPSSX21 Program Probit.

(b) t-values estimated as b- coefficient divided by standard error of b- coefficient; Beta estimated as b- coefficient multiplied by the ratio of the standard deviations of the independent and dependent variables.

(c) For method of computation, see Aldrich and Welson (1984:55-56).

\* indicates not significant at 0.01 level; \*\* indicates not significant at 0.05 level.

82

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Table	17:	Summed	Ь-	coefficients	for	Hypothetical	Contextual	Settings

Migration	Long Sta Recent i Settlem	anding- Agricultural ent	Domes Expor Agric	Domestic- Export Agricultural		Large- n Sized	Urban-Rural		Manuf Agric Front	acturing- ultural ier	Mineral Extraction- Economic Recession	
Gender	0.038	-0.076	-0.131	0.117			·0.020	0.066	·0.107	0.143	•0.155	0.131
Age	-0.012	0.002	·0.008	-0.004	-0.006	-0.006	-0.005	-0.007	·0.009	0.001	0.003	-0.009
Marital Status	0.024	-0.060	-0.011	-0.029	-0.035	0.013	-0.016	0.004	-0.020	·0.030	-0.030	-0.004
Educational Level	0.023	0.037	0.029	0.029	0.026	0.038	0.031	0.057	0.021	0.047	0.027	0.031

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(1) Only those variables with significant direct and/or interaction effects were included.

Age is positively related to out-circulation in two settings; export agriculture and agricultural frontier. The magnitudes of the summed b-coefficients, however, are small (0.004). Marital status reveals selectivity of single persons in all settings, but particularly in areas of recent agricultural settlement, export agriculture, agricultural frontier, and economic recession. Lastly, the direct relationship between educational level and out-circulation is consistent across structural settings, variations being minimal.

These results provide additional evidence for observations already stated; chronic mobility under certain structural conditions and retention of females in urban and manufacturing areas. Strong selectivity of males in areas of domestic agriculture and very large farms also should be emphasized. These are the structural settings which, as a result of agrarian reform entailing abolition of the *huasipungo* and mechanization, emit a significant number of circulators. This also is consistent with regional analyses (section 6.3) which found a positive relationship between very large farms and and out-circulation in the Sierra.

Table 18: Direct and Interaction Effects on National Circulation

	Long Sta Recent A Settlem	andi <i>n</i> g- Igrįcyltural ent	Domestii Export Agricul	c: <u>ture</u> (a)	Very La Nedium Farms	rge- Sized	Urban- <u>Rural</u>		Manufac Agricul <u>Frontie</u>	turing- turgi tr	Nineral Economic	Extraction(a)
<u>Veriebles</u>	b	t value <sup>(b)</sup>	b	t-value <sup>(b)</sup>	_ <u>b</u>	t·value <sup>(b)</sup>	Ь	<u>t value</u> (b)	<u>b</u>	t-value <sup>(b)</sup>	<u>b</u>	t:velue(b)
Gender (1=male;2=female)	0.312	7.813	0.281	7.041	·0.298	-6.948	•0.227	-5.401	0.215	4.892	0.291	-7.590
Age	0.005	4 345	0.005	4.115	·0.007	-5.537	0.008	6.479	0.002	-1.985*	·0.006	-5.665
Merital Status (1=single;2=windowed/divorced; 3=married)	-0.085	- 5. 356	·0.098	-6.184	·0,0 <b>8</b> 0	•4.760	•0.086	-5.047	0.107	-6, 198	·0.084	-5.468
Educational Level (years of schooling completed)	0.038	11.477	0.039	11.666	0.032	9.126	0.024	6.228	0.048	12.939	0.033	10.306
Long Standing (pos.)- Recent Agricultural Settlement (neg.)	0.568	5.685	0.344	11.191	0.350	11.290	0.362	11.621	0.351	11.329	0.347	11.154
Damestic (pos.) Export Agriculture (neg.)	0.020	0.615**	0.426	5.010	0.013	0.395**	0.041	1.229**	0.028	0.846**	0.013	0.397**
Very Large (pos.)- Redium Sized Farms (neg.)	0.024	1.581**	0.020	1.291**	0.003	0.045**	0.011	0.705**	0.024	1.556**	0.018	1.158**
Urban (pos.)-Rural (neg.)	0.110	-11.711	0.112	-11.897	·0.109	-11.331	·0.136	3.663	0.103	10.941	0.107	-11.372
Manufacturing (pos.) Agricultural frontier (neg.)	0,103	3.901	0.111	4.264	0.109	4.158	0.089	3.357	0.518	8.277	0.116	4.430
Mineral Extraction (pos.) Economic Recession (neg.)	0.127	4.961	0.148	5.969	0.142	5.622	0.139	5.511	0.148	5.908	0.354	4.373
Interactions with												
Gender	0.029	0.448**	•0.154	-2.860	·0.028	·0.642**	·0.086	-3.938	-0.161	4.292	0.262	-4.774
Age	0.005	- 3.003	·0.009	-5.722	0.001	0.698**	0.002	3.032	0.006	-5.798	-0.001	-0.833**
Marital Status	0.017	0.687**	0.080	3.780	-0.003	-0.199**	0.003	0.297**	0.039	2.581	0.052	2.631
Educational Level	0.020	4.127	0.025	-5.738	0.005	1.419**	0.009	5.165	0.023	-7.171	0.000	0.093**
n of circulators= n of noncirculators= log Likelihood Natio(c)=		1,582 36,689 939,2		1,582 36,689 991.9		1,582 36,689 919,8		1,582 36,689 967,3		1,582 36,689 1018,6		1,582 36,689 950.0

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(a) Analyses done with SPSSX21 Program Probit.

(b) t-values estimated as b- coefficient divided by standard error of b- coefficient;
Beta estimated as b- coefficient aultiplied by the ratio of the standard deviations of the independent and dependent variables.

(c) For method of computation, see Aldrich and Nelson (1984:55-56).

\* indicates not significant at 0.01 level; \*\* indicates not significant at 0.05 level.

85

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Table	19:	Summed	b٠	coefficients	for	Hypothetical	Contextual	Settings

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<u>Circulation</u>	Long Sta Recent A Settlem	anding Agricultural ent	Domestic- Export <u>Agriculture</u>		Very Large Medium Sized Farms		<u>Urban-Rural</u>		Manufact Agricult <u>Frontier</u>	uring- ural	Mineral Extraction Economic Recession		
Gender	-0.283	-0.341	-0.435	·0.127	-0.326	-0.270	-0.313	-0.141	-0.376	0.054	-0.553	-0.029	
Age	-0.010	0.000	-0.014	0.004	-0.006	-0.008	-0.006	-0.010	-0.008	0.004	-0.007	-0.005	
Marital Status	-0.068	·0.102	-0.018	-0.178	-0.083	0.077	-0.083	-0.089	-0.068	-0.146	-0.032	-0.136	
Educational Level	0.018	0.058	0.014	0.064	0.037	0.027	0.033	0.015	0.025	0.071	0.033	0.033	

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(1) Only those variables with significant direct and/or interaction effects were included.

## SUMMARY OF THE CHAPTER

This chapter examined out-migration and out-circulation in Ecuador as a function of both personal attributes and place characteristics. The latter were derived by principal component analyses of socioeconomic and agrarian variables for cantones. Personal attributes include gender, age, marital status, and educational attainment.

These variables were employed in three logistic regression models. The first was estimated at the national level for direct effects only. The second includes dummy variables to detect regional effects. The third was estimated at the national level for both direct effects and interactions of each structural variable with personal attributes. The following conclusions are derived from the analyses.

First, analyses of direct effects at the national level show that long standingrecent agricultural settlement and urban-rural continuum are the most important structural variables determining both out-migration and out-circulation. In terms of personal attributes, young, single, and better educated persons are more likely to outmigrate or out-circulate. However, migration and circulation differ in the role of gender; whereas males and females are equally migratory, the former have greater probability of circulating. An important finding of this analysis is the indication that peasants, in areas of domestic agriculture, choose circulation over migration as a strategy to complement their income. This supports the hypothesis that structural changes introduced by agrarian reform has increased the incidence of circulation.

Second, regional effects on the role of explanatory variables also exist. In migration analyses, for example, gender was significant in the Oriente only, where males have a greater probability of out-migrating than females. Oriente out-migration was found also to be positively related with age; chronic mobility was suggested as a reason for both findings. Regional variations in the role of structural indices indicate that, in the Sierra, economic recession is an important push factor, but in the Costa and Oriente population mobility is more associated with recent agricultural settlement and mineral extraction.

Third, interaction effects support three fundamental observations. First, there is chronic mobility in areas of mineral extraction, recent agricultural settlement, and agricultural frontiers. Economic decline, or unsuccessful settlement, as well as dynamism associated with growing areas were suggested as reasons. Second, there is retention of females in urban and manufacturing areas, where most jobs in the secondary and tertiary sectors are found. Third, circulation is most important in areas of very large farms and domestic agriculture, as a result of agrarian reform measures.

Finally, the methodology employed in this chapter represents one way of combining functionalist and structuralist perspectives to enhance the understanding of the complex phenomenon of population mobility.

# CHAPTER VII

# SUMMARY AND CONCLUSIONS

This chapter summarizes the main points of the dissertation. First, the problem and conceptual framework are briefly stated. A summary of research procedures and findings from the various analyses follows. The chapter concludes with a discussion of theoretical and policy implications.

This study examined labor mobility in Ecuador as a function of individual attributes and place characteristics. The problem of population redistribution, and the imbalances it produces, has been a matter of concern to governments and academics. Considerable attention has been given to rural-urban movements and their impact on urban growth, unemployment, and rural depopulation; while other forms of mobility, such as circulation, have been relatively neglected. To correct this research bias, the present study focussed on circulation as well as on migration.

Population mobility is intrinsically related to socioeconomic and political processes. To account for these relationships, the study considered migration and circulation in the context of macrostructures which reflect those processes. Furthermore, as in Latin America the nature and patterns of human mobility are greatly influenced by rural conditions (Balan, 1979), special attention was given to agrarian structure.

In addition to structural context, individual attributes such as age, gender, and education also were considered relevant. Personal characteristics of movers are impor-

- 89 -

tant because they impact upon communities of origin and destination. Also the household is affected, as the roles of some, or all, of its members are altered by the absence of others.

Conceptually, this study combined functionalist and structuralist approaches to the analysis of population mobility. This was based on the notion that individuals and society constitute a two-way relationship in which they transform and reproduce one another. Therefore, in addition to assessing the relative roles of individual and place attributes in labor mobility, this research explored the interactions between them.

## **RESEARCH PROCEDURES AND FINDINGS**

The research was carried out in four steps. First, a qualitative discussion of Ecuador's geographic regions and socioeconomic structure provided the background needed for a sound interpretation of the results. To supplement the discussion and obtain a set of contextual indices for use in subsequent statistical analyses, twenty-one canton-specific socioeconomic variables taken from the 1974 Census of Population were factor analyzed (Chapter III). Second, Ecuador's agrarian structure before and after the implementation of the Agrarian Reform laws was discussed. The qualitative discussion was also supplemented by a factor analysis of twelve canton-specific agrarian variables taken from the 1974 Census of Agriculture. This provided contextual indices which were used in statistical analyses (Chapter IV). Third, migrants, circulators, and stayers were compared in terms of individual attributes and structural characteristics of their places of origin and present residence. Origin-destination linkages also were identified (Chapter V). Fourth, migration and circulation were examined as functions of individual and place attributes, and the interactions between them, thus

combining individual and aggregate perspectives. To this end, individual and place variables were employed in three logistic regression models. The first was estimated at the national level for direct effects only, the second included dummy variables to detect regional effects, and the third was estimated at the national level for both direct effects and interactions of each structural variable with the individual variables.

Findings regarding personal attributes revealed that migrants are younger, better educated, and more likely to be single than stayers. Circulators differ from migrants in gender and marital status, being predominantly male and single. In terms of origin-destination linkages, movement from smaller to larger urban places was detected for both migrants and circulators, but rural-rural flows were evident for circulators only.

Results from regression analyses at the national level showed that long standingrecent agricultural settlement and urban-rural continuum are the most important structural variables influencing both out-migration and out-circulation, whereas domestic agriculture and very large farms promote circulation rather than migration. Analyses at the regional level indicated that in the Sierra economic recession is an important push factor, but in the Costa and Oriente much population mobility is associated with recent agricultural settlement and mineral extraction. Finally, interaction effects substantiated three observations. The first is chronic mobility in areas of mineral extraction, recent agricultural settlement, and agricultural frontier. The second is retention of females in urban and manufacturing locales. The third is the importance of circulation in regions of very large farms and domestic agriculture.

#### FINAL REMARKS

Findings of the study corroborate the underlying hypothesis that agrarian structure largely influences patterns of labor mobility in Ecuador. Of theoretical interest, as well as relevant to policy, are the differences between migration and circulation. These are manifested in two ways. First, areas of domestic agriculture and very large farms emit circulators rather than migrants; second, origin-destination linkages revealed rural-rural flows for circulators, but not for migrants. These results support the hypothesis that peasants are opting for circulation rather than migration. The reason for this lies in the recent structural transformation that affected the modes of production. These include abolition of the *huasipungo*, increased mechanization, and expansion of dairy farming, in the Sierra; and expansion of commercial agriculture in the Costa. These developments reduced the need for full-time farm workers, while increasing the demand for temporary wage laborers. By engaging in circulation peasants are able to retain their plots and, at the same time, augment their income with temporary work elsewhere.

The impact of circulation on rural Ecuador is expected to be significant. It should be recalled that circulators are predominantly males. This affects family organization. The role of females may be notably altered. With male absenteeism, the importance of female agricultural labor increases. Furthermore, women may be called upon more often to make decisions concerning family and/or community affairs, and they may be also compelled to increase their educational level.

Another important effect of circulation relates to the processes of *descampesinizacion* and proletarianization. As capitalist agriculture expands throughout developing countries, peasants, as a class and mode of production, are expected to disappear. Instead, a rural proletariat consisting of wage laborers would emerge. The development of this process in Latin America was discussed at considerable length by Balan (1981) and by Goodman and Redclift (1977). However, it seems that this is not happening in Ecuador. Rather, circulation of males allows the household to retain their own land retarding depeasantization and proletarianization processes. Thus, the individual-society interrelationship works as follows. Structural transformation impacts the behavior of individuals who respond by opting for circulation, and, in turn, circulation impacts upon the structure by preserving a given mode of production. A different response would have another effect, and hence the importance of human agency. In this manner, circulation could bring about land consolidation, provided that a portion of the income earned by circulators were invested in land purchases. However, given the low incomes of most rural families, this is unlikely to happen without supporting policies.

Thus, this analysis seems to be consistent with the argument that circulation is one of several forces which conserve pre-capitalist modes of production in developing countries (Bettelheim, 1972). By contrast, permanent migration accelerates its dissolution. For this reason Forbes (1981, 1984) draws a sharp theoretical distinction between the two forms of movement.

A note on policy concludes this chapter. Governments and policy-makers have often focused on the negative outcomes of population mobility, particularly its effects on urban areas. It is here that the distinction between migration and circulation becomes practically relevant. Circulation, unlike migration, does not produce lasting population imbalances. It also deters depopulation of rural areas and proletarianization of agricultural workers. Furthermore, it is the only way for many families to earn

a subsistence income. For these reasons, it should not be discouraged. On the other hand, it should be kept in mind that circulation is a far from satisfying means of earning a living, and represents a form of labor exploitation (Matos Mar and Mejia, 1982). Therefore, policies should neither encourage nor discourage mobility, rather they should address its cause, i.e., the appalling poverty affecting much of the Third World rural population.

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