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MANTRA, IDA BAGDES
POPULATION MOVEMENT IN WET RICE COMMUNITIES:
A CASE STUDY OF TND DUKUH IN YOGYAKARTA
SPECIAL REGION.

UNIVERSITY OF HAWAII, PH.D., 1978

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POPULATION MOVEMENT IN WET RICE COMMUNITIES:

A CASE STUDY OF TWO DUKUH IN

YOGYAKARTA SPECIAL REGION

A DISSERTATION SUBMITTED TO THE GRADUATE DIVISION
OF THE UNIVERSITY OF HAWAII IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE DEGREE OF

DOCTOR OF PHILOSOPHY

IN GEOGRAPHY

August 1978

by

Ida Bagoes Mantra

Dissertation Committee:

Murray Chapman, Chairman

Alice G. Dewey

Soenjono Dardjowidjojo

Donald W. Fryer

Roland J. Fuchs

ACKNOWLEDGEMENTS

During the various stages of this dissertation, many forms of assistance have been received from individuals and institutions. I am deeply indebted to the people of dukuh Kadirojo and Piring, who had no part in the decision to be the object of detailed study but who nevertheless gave up their time to be interviewed. Without their generosity and warm cooperation, this study would not have been possible. I wish to express sincere appreciation particularly to Bapak Somastiarjo, head of dukuh Piring, and to Rama Kartowiryono, head of kelurahan Margorejo, both of whom very kindly allowed me to use part of their houses as a base for field research and as places of accommodation for the research workers. In general, they offered much help to ensure that the survey of their communities was a success. I am also very grateful to all my research assistants (Amik Sri Suratmi, Hudi Iswati, Pangkat Suwarno, Puji Rahayu, Ramlan, Sartono, Sugiyanto, and Tukiran), who undertook their fieldwork with great care and were willing to reside in dukuh Kadirojo and Piring for nine months.

I am indebted to Dr. Masri Singarimbun, director of the Population Institute, Gadjah Mada University, Yogyakarta, and Professor Sajogyo, senior lecturer at the Bogor Institute of Agriculture, Bogor. Both acted as field supervisors, and gave valuable direction and advice. Through their efforts, the interim results of this dissertation research were commented upon at two seminars, one at the Population Institute in Yogyakarta and the other at the Bogor Institute of Agriculture, Bogor.

My most important debt is to Professor Sukadji Ranuwihardjo, Rector of Gadjah Mada University, Yogyakarta, and to Drs. Soengeng Martopo, dean of its Faculty of Geography, for their encouragement to undertake a doctoral program at the University of Hawaii. Grateful thanks are offered the East-West Population Institute, Honolulu, for a graduate scholarship that funded 15 months' research in Central Java, and also to the Rockefeller Foundation for supplemental help in the field and for 11 months' stipend to facilitate completion of this dissertation. Colleagues of the Faculty of Geography, particularly the Department of Population Geography, Gadjah Mada University, also provided much assistance during field research.

Special thanks are also offered to Dr. Graem Hugo, School of Social Sciences, Flinders University, Australia, who read an earlier draft, and to Dr. Sidney Goldstein, Director, Population Studies and Training Center, Brown University, both of whom provided valuable advice.

Within the East-West Population Institute, many thanks are due Mr. Gregory Chu and Clyde Kanehiro, for their excellent cartographic assistance, and to Ms. Carol Carlson and Judith Tom, data analysts who helped me overcome some difficulties with computer processing. Without their help, these data could never have been adequately analyzed. Finally, I thank all those not mentioned here who made cumulative contributions to my research.

ABSTRACT

Very little is known about the pattern and process of population mobility in Central Java or in other parts of Indonesia. Most previous studies have focused on moves that are permanent and ignored those that are impermanent. As a result, it has been concluded that the Javanese are a highly immobile people.

This study is exploratory. It aims to identify the complex of population movement in two wet rice communities in Yogyakarta Special Region. The basic proposition is that economic and social factors, in combination, explain movement away from the village as well as return to it. Two dukuh (hamlet) were chosen for detailed study: Kadirojo (de jure population 345 in 1975), Sleman Regency; and Piring (de jure population 393 in 1975), Bantul Regency. For each dukuh, the basic field data were obtained from monitoring over eight months the mobility of all de jure residents aged 15-54 years (19 May 1975-31 January 1976). Additional information was gathered from a hamlet census, retrospective movement histories, in-depth interviews, and case studies of movers. Secondary data also were utilized.

There are three kinds of population movement in dukuh Kadirojo and Piring: commuting, circulation, and migration. Commuting (nglaju) is a movement across the dukuh boundary for at least six and no more than 24 hours; in circulation (nginep or mondok), the dukuh boundary is crossed for at least one day but less than one year; and migration (pindah) is an intentional shift of residence across the dukuh boundary for one or more years. During eight months, a great number of moves

were made by adult villagers: commuting 7,405 (Kadirojo) and 8,575 (Piring); circulation 846 (Kadirojo) and 523 (Piring); migration 23 (Kadirojo) and 24 (Piring). The dominantly circular structure of this mobility reflects the strong ties to one's dukuh community. Even villagers who have migrated to another locality still regard their birthplace as home and maintain close contact with relatives and friends. This demonstrates the enduring kinship ties among dukuh people and the bi-local orientation of even the migrants.

There are two sets of forces that lead people to migrate from or remain within the dukuh: centrifugal and centripetal. Too little rice land, barely sufficient food for an adequate diet, lack of local employment opportunities, and distance from advanced education tend to draw away the economically active. Factors that encourage people to remain are the tight ties to birth place, family and kin, ownership or access to dukuh land, a basic commitment to mutual self-help and accompanying ritual, and the existence of patron/client relationships to assist the poorest households. In addition, there is little information about distant places, transport and living costs outside the dukuh are high, and reports from resettlements beyond Java often are negative. In Kadirojo and Piring, the contradictions between these centrifugal and centripetal forces are resolved by commuting and circulation, which represent a compromise between total immobility and permanent relocation.

A dramatic increase since the seventies in the volume and distance of commuting and circulation reflects the extension of rural roads and the growth of the mini-bus. Rising levels of formal education and the adoption of agricultural innovations also have increased the number of

individuals who aspire to spend longer periods in towns and cities. Despite these changes, the mobility of dukuh people remains a bi-local system, tightly anchored to the home village and various destinations. This suggests that the relationship between socioeconomic change and types of movement is complex and does not, in Java, necessarily follow the pattern characteristic of Western countries.

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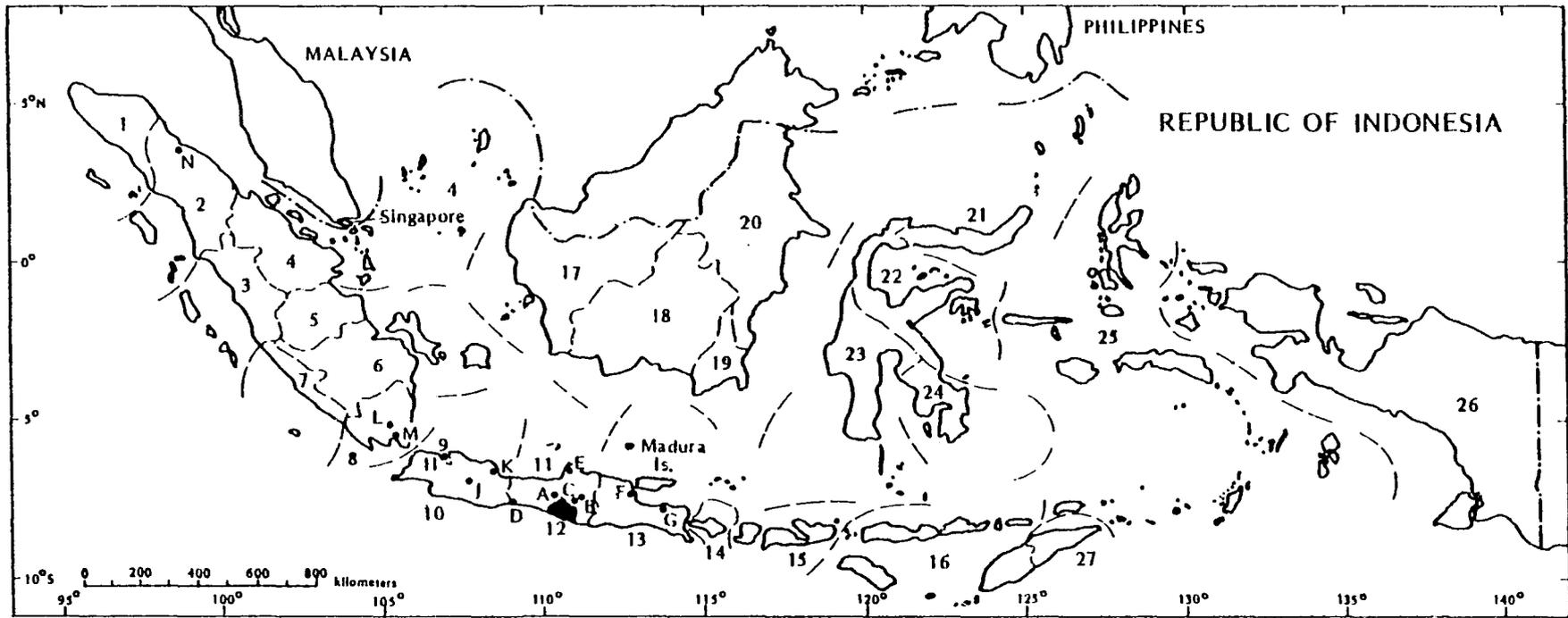
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PROVINCES

- | | |
|--------------------|-----------------------|
| 1 Aceh | 11 Jawa Tengah |
| 2 Sumatera Utara | 12 D.I. Yogyakarta |
| 3 Sumatera Barat | 13 Jawa Timur |
| 4 Riau | 14 Bali |
| 5 Jambi | 15 Nusatenggara Barat |
| 6 Sumatera Selatan | 16 Nusatenggara Timur |
| 7 Bengkulu | 17 Kalimantan Barat |
| 8 Lampung | 18 Kalimantan Tengah |
| 9 D.K.I. Jakarta | 19 Kalimantan Selatan |
| 10 Jawa Barat | 20 Kalimantan Timur |

CITIES

- | | |
|---------------------|----------------------|
| <i>Central Java</i> | <i>West Java</i> |
| A Magelang | H Jakarta |
| B Surakarta | J Bandung |
| C Delanggu | K Cirebon |
| D Cilacap | <i>South Sumatra</i> |
| E Semarang | L Metro |
| <i>East Java</i> | M Tanjungkarang |
| F Surabaya | <i>North Sumatra</i> |
| G Besuki | N Deli |

Figure 1.0

CHAPTER I
THE PROBLEM

This dissertation is a study of population mobility in Central Indonesia, specifically Daerah Istimewa Yogyakarta (Yogyakarta Special Region), with particular attention to wet rice communities. Because of a lack of research, very little is known about the pattern and nature of population mobility in Yogyakarta. Most previous studies on population mobility in Java have focused on permanent movement and ignored the study of non-permanent movement. In fact, some research on population movement in Sub-Saharan Africa (Mitchell 1961, Elkan 1967), Asia (Mukherji 1975, Hugo 1975b) and the Pacific Islands (Chapman 1970, Bedford 1974) revealed that many movements that occur in rural-rural and rural-urban directions are circular and involve no permanent change in location.

Recently, several studies on population mobility have been conducted in Java (Hugo 1975b, Koentjaraningrat 1975), and in some areas of Sumatra and Sulawesi (Suharso 1976). These have found that there are many people who move seasonally or temporarily to the cities, towns or other villages, and that these are the people who have often escaped demographic inquiry. Hugo (1975b, 2) has said:

...this phenomenon [of temporary mobility] has gone unnoticed to analysts of census data because conventional Western-designed censuses are structured so that only movers who are displaced more or less permanently are detected.

As a result of the Western emphasis upon permanent movements that Hugo mentions, scholars such as McNicoll (1968), Bryant (1973), and Naim (1972) have concluded that Javanese were highly stable.

It is hoped that this study can provide some understanding about the patterns and nature of population mobility in Yogyakarta Special Region and that its conclusions will assist planners in formulating a mobility policy as one of several solutions to the problem of overpopulation in Java.

Review of the Study of Population Mobility in Java

Most studies concerned with population mobility in Indonesia have concentrated on permanent movements. The reason for this emphasis seems to be that pioneer settlement has been closely tied to the government's effort to alleviate the population pressure that has been evident in Java since the 19th century.¹ In 1905 (Sjamsu 1952, 9), the Dutch government tried to move 155 families of landless villagers from Kedu and Yogyakarta region to south Sumatra. This resettlement program, better known as colonization (Dutch: Kolonisatie) continued until 1941. After independence, a similar program was devised by the Indonesian government, but its orientation was changed after 1966. From 1945 to 1966 the government of Indonesia tried to achieve its goal of reducing Java's population pressure primarily by resettling her peasants in

¹Kroeft wrote about overpopulation in several parts of Java in the 19th century, as follows:

In 1802 the colonial official Nederburgh reported that at that time 'Java was overcrowded with unemployed'. In 1816 Engelhard, a former director of the province of Java's North-East Coast, remarked that in his time the rice fields were cultivated in rotation, because the 'population far exceeded the cultivation' of a given village or district. In the well-known reports of the Commissioner-General Du Bus in 1827, the Javanese village is characterized in general by an excess of persons who are not employed on the fields, because of a shortage of land. (Kroeft 1956, 742.)

agricultural settlements in south Sumatra and other regions. This transmigration² program was seen as the major means to solve the over-population problem in Java.

In 1966, the new government realized that transmigration could not solve the problem of overpopulation in Java or other densely populated areas and that this might be better achieved through a Family Planning program, which was not implemented in Indonesia until 1969 (Republik Indonesia 1970, 398). Transmigration thus came to be viewed as a vehicle for enhancing the implementation of other national programs and policies. One of these policies was regional development, aimed at the integrated utilization of all existing resources in the various islands of Indonesia. Recent transmigration policy is therefore closely related to the development of regions and not to the simple relocation of excess population (Subroto 1974, 28). But whatever the current goals of the transmigration program the effort of moving people from Java to other islands still receives high government priority. Partly because of the importance of this policy, most studies of population movement in Indonesia (Pelzer 1945, Sjamsu 1952, Bhatta 1961, Sudigdo 1965, Heeren 1967) concentrate upon permanent migration, perhaps in an attempt to identify a more effective method of implementing the transmigration program.³

Another theme in the study of population movement in Indonesia is the mobility characteristics of particular ethnic groups. For example

²This type of inter-island migration is known in Indonesia by the name of Transmigration.

³The comprehensive bibliographies of population mobility research in Indonesia are those of McNicoll (1970), Singarimbun (1974a), and Hugo (1975a).

Naim (1974) has developed a typology of internal migration which is based primarily upon differences in ethnicity, while Cunningham (1958) has studied the movement of one particular group, the Toba-Bataks, to East Sumatra in the post war period. However, little attention has been paid to such ethnic groups as the Javanese, Sundanese, Madurese and Balinese. According to Hugo (1975b, 12), these people who comprise the majority of Indonesia's population have been stereotyped as immobile because of their apparent reluctance to move beyond their cultural domain.

Research on urbanization and urban growth, which is partly related to the process of rural-urban population movement, began about 1960. The large cities, such as Jakarta, Bandung, and Surabaya (Figure 1.0), have attracted some overseas scholars to undertake intensive studies. Thus Milone (1961) examined the historical evolution of Java's cities, Castles (1967) investigated the changing ethnic composition of Jakarta, and Cohen (1972) studied the political situation of low-income people in Jakarta. In his general study of internal migration, McNicoll (1968) stressed that much of the movement of people that had taken place in the post-independence period was non-recurrent in nature, such as that which accompanied rebellions, long-term secular flows of wage-earners, and urban migration.

Until 1970, most studies of migration in Indonesia therefore dealt mainly with the volume and pattern of interregional migration. They provided little information at the regional or local level and were not concerned with the process of population mobility. The first of these more intensive studies focused upon rural-urban migration. Hugo's study (1975b) in West Java for example, is concerned with the full range of population movement, permanent as well as non-permanent moves

such as commuting and circulation. He found that there are substantial numbers of people who move temporarily from the villages and small towns to urban areas to work. Even in this study, however, because of the large area surveyed (West Java) and limited time available, it was not possible to focus upon the processes that underpin the people's mobility behavior. The anthropologist Koentjaraningrat (1975), who studied the mobility of people in villages around Jakarta, found that many workers such as civil servants, fruit hawkers, and food sellers in the markets commute to Jakarta every day. He also discovered that some landless farm workers travel to neighboring villages up to 10 to 15 kilometers away to take up different kinds of farm work during periods of the agricultural cycle in which labor is in heavy demand.

In 1973, the Population Studies Center of the National Institute of Economic and Social Research (LEKNAS) in Jakarta conducted a large sample survey on rural-urban migration in Indonesia under the direction of Suharso. The sample areas included the whole of Java island; North, West and South Sumatra; and South Sulawesi. The aim of the survey was to study the characteristics, motivations and adaptations of migrants to the cities. This survey found that during the 1960s, the net movement of people in Indonesia from rural to urban areas was not very great except for Jakarta which grew very rapidly (Suharso 1976). Although for most cities net migration was either small or even negative, most also experienced a considerable total flow of people in and out. Some of this movement was a circulation of people between cities. One apparent reason for the back-and-forth movement between villages, towns and cities was the need to go to the urban centers to obtain secondary

and higher education. There was also temporary migration to the cities during slack periods in farming.

We see that since 1970 there has been a shift from research on migration patterns to more detailed studies of migration, which indicate recurrent forms of movement. However, these studies are only indicative, and the importance of people's mobility is not really understood.

Secondary Sources of Population Mobility Data

Besides specific research studies, some mobility data are available from several secondary sources in Indonesia such as population censuses, population registers, intercensal surveys, and labor force sample surveys.

Population Censuses

Since the colonial era Indonesia has conducted a population census four times, the first in 1920, followed by ones in 1930, 1961, and 1971. Of those, only the first did not collect any information about population mobility. Since the population figures for Java tabulated from the 1920 census are unreliable (Widjojo 1970, 15), the 1930 census was the first accurate enumeration of the population in the Netherlands East Indies (Hugo 1975b, 14). It was a de facto count, except for the islands outside Java where the census was conducted on a de jure basis. The topics covered in this census consisted of: name, sex, marital status, number of wives, age group, principal means of livelihood, literacy, level of education, ethnic group, district of residence, district of birth, physical disabilities, and religion (Widjojo 1970, 72). Of these questions, only two relate to population mobility, namely

the district⁴ of residence and the district of birth. By relating these two kinds of information, inferences can be drawn about the extent of internal migration, as well as about its direction and magnitude. In the plantation areas in East Sumatra, for example, out of 370,000 plantation workers, about 290,000 were Javanese and 30,000 Sundanese. Also it can be found that many migrants from Central and East Java stayed in Besuki, at the eastern tip of Java (Widjojo 1970, 86-87). Unfortunately, the complete set of mobility data from the 1930 census were not published.

The 1961 population census, the first held in the independent Republic of Indonesia, was conducted on October 31, 1961. Planning and administrative organization was assigned to the Central Bureau of Statistics and the census covered all of the Republic except for West Irian.⁵ Enumeration of the population was a combination of de jure and de facto. For those persons living in a permanent place or house, enumeration was de jure (Ueda 1964, 4). A three-month time reference was used to determine whether persons would be enumerated in their usual place of residence or in the place where they happened to be during the census. Consequently much short-term movement like commuting

⁴After 1926, in Yogyakarta Special Region, a kabupaten (regency) was subdivided into kawedanan (district) administered by Wedana. Each district was divided again into kecamatan (subdistrict) administered by a Camat, or Assiten Wedana or Penewu. Each administrator was responsible only to the one just above him and had the duty of carrying out orders from the high administration and reporting important events in his area. In 1943, the Sultan decided to abolish the Kawedanan as an administrative division and to put the Wedana and his staff to work in the office of Bupati. From that time, Camat were directly under and responsible to the Bupati (Selosoemardjan 1963, 32, 56).

⁵At the time of the census West Irian was still occupied by the Dutch, and only after May 1, 1963 did West Irian become a territory of the Republic of Indonesia (Cholil 1971, 97).

or circular migration was not captured and such individuals were recorded as non-migrants. In some cases, enumeration in the outlying regions was de facto, due to the considerable difficulties of transportation and communication or to the resistance from dissident groups.

Information collected from people of all ages consisted of name, relationship to head of household, sex, age, marital status, nationality, religion, language, place of birth, education, and school attendance. Persons aged ten years and over were also asked questions about literacy, type of economic activity, primary occupation, industry, secondary occupation, and the number of births to ever-married women (Widjojo 1970, 171-172).

In the 1961 census, the birthplaces data were tabulated by province, so that it is only possible to identify life-time migrants who shifted over relatively long distances. By contrast, the 1931 census yields far more detailed information because it used the kawedanan (district) instead of province to record birthplace, which means that more local level, inter-kawedanan movements can be detected.

Early plans for tabulation of the 1961 census data called for a ten percent sample for rural regions and complete tabulation for urban areas. As work progressed, it was realized that more than the estimated time would be required to tabulate and publish the rural data and that Government and other national institutions needed the data as soon as possible. To expedite publication, the Central Bureau of Statistics decided to tabulate a one percent sample of the rural regions by drawing a ten percent sub-sample from the original ten percent sample (Central Bureau of Statistics 1963, iii). The remaining 90 percent of rural schedules were tabulated manually in the province to produce tables on

nationality, religion, education, language spoken, and birthplace of kecamatan (subdistrict) population. Unfortunately most of the unpublished material, including the summary worksheets of manuscript tabulations, was lost during the turbulent years of the mid-1960s, although some data might be retrievable from records retained in kabupaten offices (McNicol 1973, 51; Suharto 1976, 77). Fortunately for this study, data for Yogyakarta along with those for Jakarta and East Java, were completely processed.

The fourth population census, conducted in 1971, was a combined de jure and de facto enumeration. According to Suharto and Abdulmadjid (1973, 16), the de jure method was employed for persons who lived in a permanent place or house. In contrast to 1961, the 1971 census used a time reference of six months to determine whether a person who had been away would be enumerated at his usual residence or in the place where he happened to be during census enumeration. For persons having no residence, such as homeless persons, ship crews sailing in Indonesian waters, and inhabitants of mobile or floating houses, the de facto method was used (Suharto, et al. 1976, 78). According to Hugo (1975b, 17), census taking according to the de jure/de facto principle confused the enumerators since the instructions did not clarify the exact usage of the concept of migration as intentional movement. Moreover, absences of less than six months from the village, which frequently occur in the rural areas in Java, were not detected in the census.

The census was conducted in two stages. First, a complete enumeration was conducted 6-24 September 1971, for information on sex, age group (0-4, 5-14, 15-24, 25 and over) and citizenship. Second, an independent

sample⁶ was conducted 20 September-4 October 1971 to collect information about individuals and housing. The individual form contained questions about sex, age, relationship to head of household, marital status, citizenship, religion, language, literacy, education, school attendance, place of birth, province of last former residence and length of time stayed in present province. The household form contained questions about the number of occupants in the household, type of ownership, occupancy of the building (wholly or partly), number of rooms, construction material of outer walls, construction material of roof, construction material of floor, type of lighting, type of cooking fuel, source of drinking water, source of water for other usage, toilet facilities, garbage disposal facility, method of disposing garbage (Suharto and Abdulmadjid 1973, 19-20).

The processing of the complete enumeration was done manually in stages starting with the lowest administrative unit (kelurahan) before proceeding to the province level and then finally the overall total was computed in the Central Bureau of Statistics. As information about age was grouped very broadly, net migration between provinces cannot be estimated by such indirect methods as the census survival technique (Hugo 1975b, 17).

Publication of the 1971 census results appears in a series of volumes, described by letters A through L, the first seven of which constitute

⁶ A block sampling technique was employed using 3.6 percent of the census blocks in Yogyakarta Special Region and 5.0 percent of those in Yogyakarta Municipality (Suharto and Abdulmadjid 1973, 14-15). A sample was selected, using systematic random sampling. All households within the selected block were completely enumerated by using the sample questionnaires. The smallest unit for which accurate detailed information can be obtained from the sample is that of Kabupaten (Hugo 1975b, 17).

the basic census tabulation. Tables relating to population mobility such as population by province⁷ of residence and province of birth, population 10 years of age and over by province of birth and educational attainment, and migrant population by province of previous residence and duration of residence in present province, can be found in series D and E. As in the 1961 census, from those tables it is possible to identify life-time migrants who shifted from one province to another. The movement within provinces, which frequently occurs in Java, cannot be detected by this census. Moreover, the province of birth and the province of origin of migrants are not subdivided into their urban and rural components (Hugo 1975b, 18).

Population Registers

The system of population registration was introduced in Java by Thomas Raffles in 1815 (Widjojo 1970, 25). Even so, Indonesia has no registration law (Daldjuni 1975, 327) to enforce this system and there are no sanctions against persons who do not register their demographic events. Besides that, some of the village civil servants who are in charge of this task do not fully understand the purpose and the potential use of this population register.

Village officials have the responsibility of registering all people in their areas (kelurahan). The register contains such individual characteristics as name, sex, relation to the head of the household, age, birthplace, education, and occupation. All persons aged 15 years or more should be registered as a citizen of a particular area and obtain

⁷ Before the integration of East Timor into the Republic of Indonesia in July 17, 1976 (Angkatan Bersenjata, 9 July 1976, No. 3513), Indonesia had 26 provinces.

a kartu penduduk, or identity card. Officials are also responsible for registering the ongoing changes that occur in the population as a result of births, deaths, marriage, divorce, and population movement. Summary data from this system on population by citizenship and sex have been published regularly since 1968 by the Central Bureau of Statistics (Central Bureau of Statistics 1976, 1). The smallest area for which data are available is kecamatan (subdistrict) in the 1968 and 1969 publications and kabupaten (regency) for more recent publications.

In Indonesia, if a person desires to migrate to another place then an official permit should be obtained from the local government, namely the lurah (the head of the village) and the camat (the head of the subdistrict). Within Java, the form which migrants require is different from that used for outside Java. A person wishing to move to some place within Java should obtain surat pindah tempat (a moving permit), which asks for information on name, sex, age, occupation, and both the present and the proposed address. The camat issues two copies of the form, one of which is given to the migrant and the other is sent to the camat of the subdistrict in which the new address is located. In addition to this form, the migrant also has to obtain a clearance letter certifying non-involvement in the abortive communist coup of September 30, 1965 (surat bebas G-30.S, P.K.I.).

The form used for a person who wants to migrate to places outside Java is more detailed than the surat pindah tempat. It includes the personal data about the mover, place of origin and place of destination, reason for moving, modes of transportation, and the total number of persons involved. This form is signed not only by the lurah and the camat, but also by the head of the subdistrict police. A clearance

letter of non-involvement in the 1965 attempted communist coup also must be obtained.

A person wishing to leave the village temporarily must obtain from the village head a special identification document or surat keterangan jalan, which is valid for three months. A security clearance (surat bebas G-30.S, P.K.I.) also should be obtained. As it is difficult to secure these letters, many people travel without them. Consequently data on population movement contained in the registers of the kelurahan (village) office are sometimes quite incomplete.

Notwithstanding the deficiencies that characterize these existing registers, they constitute an important source of information in Java, since these data are not available in published form. Furthermore these data are available for all villages, subdistricts, and regencies and are accessible to all who want to use them. Generally, researchers such as Hugo (1975b), McDonald and Sontosudarmo (1975), and Penny and Singarimbun (1973) have used these data as secondary sources and administration officers depend upon them for planning. In this study, these data were used to help survey the dukuh and additionally to provide the number of the dukuh residents who moved permanently or temporarily to other places.

Intercensal Surveys

Four rounds of the National Socioeconomic Survey, known commonly by its Indonesian acronym SUSENAS were carried out between December 1963 and December 1969.⁸ Each round varied in topical emphasis and, for

- ⁸
- a. December 1963-January 1964
 - b. November 1964-February 1965
 - c. September-October 1967
 - d. October-December 1969

budgetary reasons, in geographic coverage. In the first and the third rounds, the survey was limited to Java, whereas the second round included all of Indonesia except for Jakarta and the fourth covered the whole Republic.

Specific mobility questions asked in this survey included: length of time resident in the current place, the location of the previous dwelling, and the main reason for moving. Published tables provide information on the age, sex, marital status and education of migrants. As Hugo (1975b, 21) notes:

The survey defines migrants as being any of the permanent members of sampled households who were not residing in the same address five years previous to the survey.⁹ The smallest unit for which the flows of migrants can be obtained in these official tabulations is the province.

Thus, as with the 1961 population census, it is only possible to identify long-distance movements, as between provinces, from these surveys.

During the intercensal period 1971-1981, the Central Bureau of Statistics made plans to conduct five surveys (Suharto 1977, 2): on the general population (February-May 1976); the labor force (September-December 1976); vital registration (starting July 1974 for a three year period); income and expenditure (January-December 1976); and, finally, on village facilities (September 1976). Of these surveys, only the first was concerned with the study of population movement. Two of the many aims of the Population Survey, according to Suharto (1977, 2) were to provide "estimates of general demographic characteristics of the population." In the main population survey there were two questions

⁹The survey differentiated between the rural and urban places of the previous residence of migrants.

that related to mobility: regency (kabupaten) of birth, and the place of residence five years previously. Thus any permanent member of a household who was not resident at the same address five years previous to the survey was regarded as a migrant. Such questions were asked of all persons aged 5 years and over. Although fieldwork had been completed by June 1976, in December 1977 the editing, coding and processing of data were still in progress.

Labor Force Sample Survey

Beginning in 1957, a series of sample surveys of labor force characteristics was undertaken by the Department of Labor with the help of ILO advisors. These surveys provided information on population mobility over a set period of time and identified the proportion of those samples who were not residents of their current address one year prior to the survey, their previous place of residence, and their reasons for moving.

In rural areas in Java in 1958, as seen in Table 1.1, 98.7 percent of the population had been living in the same village for twelve months previously. These figures give the impression that the population in the rural areas in Java is quite immobile, which is the same conclusion reached through an evaluation of census, survey, or registration data. The previous studies on population movement in Java stressed pindah or permanent movement. For example, the 1961 and 1971 population censuses were concerned only with those moves that entailed an absence of 3 months and 6 months respectively. More frequent and repetitive forms of movement cannot be detected from these censuses. Besides, using the province as an areal unit of residence, life-time migration within

TABLE 1.1
SUMMARY OF RESULTS OF LABOR FORCE SAMPLE SURVEY
CONCERNING MIGRATION

Year	Province and survey region	Reference period (months)	Distribution of population of survey region by place of resi- dence at the start of reference period (%)		
			Same village	Different village	
			Same 2nd order region ^a	Different 2nd order region	
	<u>West Java</u>				
1957	Sukabumi municipality	12	89.6	8.1	2.3
1957	Sukabumi regency	12	99.6	0.3	0.1
1957	Bandung municipality	12	96.2	2.1	1.7
	<u>Central Java</u>				
1957	Wuryantoro district	92	96.2	3.2	0.6
		32	98.0	1.3	0.7
	<u>North Sulawesi</u>				
1957	Minahasa regency	92	95.0	2.3	2.7
		32	99.3	0.4	0.3
	<u>Java</u>				
1958	Urban areas ^b	12	96.5	1.9	1.6
	Rural areas	12	98.7	0.7	0.6

Source: McNicoll (1968, 34)

^aRegency or municipality.

^bComprising the 18 municipalities with (1958) population over 50,000.

a province is ignored in both the censuses and The Labor Force Sample Survey. As a result, most studies of population movement in Java focus upon the volume and direction of the various migration flows, together with the demographic and economic characteristics of the participants compared with the total population. The inevitable conclusion is that most people move permanently, whereas recent research (Hugo 1975b) and broad syntheses (Suharso 1976) show that most of the movement is temporary, frequent and repetitive, and most Javanese and Sundanese are anything but the immobile people they have been stereotyped to be.

Research Aims and Propositions

Considering the characteristics of existing data and of most recent research on migration, our present understanding of the nature and process of population movement in Javanese rural society is very limited. This study attempts to provide some insight into population movement in wet rice communities in Yogyakarta Special Region through a case study of two dukuh (hamlet). Specifically, this study focuses upon the contemporary pattern of population movements, the movement behavior¹⁰ of the individuals, and the processes of gathering information and making decisions that lead to the act of movement. From this study, we therefore hope to identify the forces that lead a Javanese to move from or stay within two dukuh in the wet rice area of Yogyakarta Special Region.

¹⁰Mukherji (1975, 45) developed a classification of types of mobility behavior on the basis of generically-defined movement criteria: (1) Kind of move (2) Major purpose of move (3) Distance involved in a move (4) Duration of stay at the destination (5) Direction of move between origin and destination places.

Based upon a general knowledge of the social and cultural aspects of Javanese communities and upon personal experience,¹¹ five basic propositions were stated before field research began on April 1, 1975.

1. Initially, a population movement usually occurs because of pressing economic needs in the rural village, such as lack of food, land, work, and inadequate pay for the little work available locally. However, pressing economic needs do not fully explain why some persons move from their villages whereas others in identical situations do not. Such factors as social and kinship ties, land ownership, friendship, and the perception of alternative destinations also need to be considered.
2. In situations where economic needs cannot be satisfied in the rural areas, most people move to the nearest place where employment is available. However, such workers usually return to their villages because of social obligations, kinship ties, mutual friendships, or because they cannot find suitable employment.
3. The strength of kinship ties and social attractions of the village, as well as the system of mutual self-help within the village, affects the mobility behavior of people. Some people, especially those of low economic status, prefer to stay in the village rather than move to other areas.
4. Generally village people do not make one simple decision to migrate; rather they make a series of decisions that reflect

¹¹There is an extensive literature on the social and cultural aspects of Javanese communities (e.g., Selosoemardjan 1962, C. Geertz 1971, H. Geertz 1961, Jay 1962, Koentjaraningrat 1957, Penny and Singarimbun 1973), which had been reinforced by my directing a student survey of some villages in Yogyakarta Special Region around 1970.

varying situations and eventually put them in a position tantamount to having emigrated.

5. Village people who find suitable employment outside their village tend to stay in such places and, with increasing length of residence there, develop new ties in them that serve to weaken or even replace those in the village places of residence. As this process occurs, it becomes more and more unlikely that migrants will ever return to their villages to live permanently. However, the personality of the migrant and the strength of ties with the village are relevant in considering whether strong social links are formed in the new areas and whether there is eventually a return to the village.

In turn, these basic propositions brought out seven broad questions that guided the actual field enquiry.

1. Among those people in the two study dukuh, who are movers and who are not?
2. Who wants to move from the dukuh and who does not? Why?
3. How many kinds of human movement occur into and out of rural areas like the dukuh?
4. What factors influence different types of human movement in village areas?
5. Who wants to move permanently from the dukuh as, for example, occurs with transmigration and urbanization? For what reasons?
6. What kinds of contact are still maintained with dukuh community by those who have moved to other places like towns and cities?
7. How far do migrants involve themselves in the society of the destination place where they work or stay?

It is upon these questions that this thesis will focus.

The Concept of Population Mobility

The term 'population mobility' includes all kinds of territorial movements, both permanent and temporary, that occur over various distances (Zelinsky 1971, 225). A working definition of population mobility requires that both temporal and locational criteria be more specifically defined (Kosinski and Prothero 1975, 1). Thus population mobility can be defined as a shift of residence or change in place of residence by crossing a territorial boundary for a minimum period of time. This parallels the way in which demographer Donald J. Bogue (1959, 489) defined a migration as changing of residence crossing a defined boundary. Usually this boundary is an administrative unit such as, in Java, dukuh (hamlet), kelurahan (village), or kecamatan (subdistrict). According to Mukherji (1975, 4), this boundary is defined as a matter of convenience rather than being rooted in any theory of migration. Similarly the minimum period of absence from the origin place is a matter of convention. In this study the smallest administrative unit, or dukuh, is chosen as the territorial unit, and a minimum period of six hours as the time unit.

This minimum period was chosen so as to include the daily circulation of village people and, second, because all students, civil servants, workers, and traders who together left the dukuh in the morning and returned the same afternoon were away a minimum of six hours. Therefore a movement occurs whenever a person crosses the dukuh boundary in either direction and stays inside or outside the dukuh for a minimum period of six hours.

Migration

Following Zelinsky (1971, 225), population mobility can be divided into migration and circulation. Migration refers to the movement of people to a specific place with the intention to stay permanently. In practice, how migration is defined depends upon the type of research being undertaken and the kinds of data which are available, singly or in combination (Kosinski and Prothero 1975, 1). The United Nations (1970, 2) defines migration as those movements which occur across a pre-defined boundary for a period of one year or more. Those movements which take less than one year are regarded as non-migratory. In defining migration in Indonesia, various surveys used different territorial units (village to province) and time periods (three months to five years) (see Table 1.2).

TABLE 1.2
SPACE AND TIME CRITERIA USED TO DEFINE A MIGRANT
BY VARIOUS SURVEYS IN INDONESIA

Survey or Census	Space unit	Time unit
Labor Force Sample Survey 1957 and 1958	Village	1 year
Population Census 1961	Province	3 months
National Socioeconomic Survey 1964-1969	Province	5 years
Population Census 1971	Province	6 months
Intercensal Population Survey 1976	Village	5 years

For Javanese communities, it is inappropriate to assume that long-term movement (or migration) necessarily involves a permanent shift of residence, because most if not all migrants still maintain contact with their relatives or friends back home in the village and small towns.

Thus it is necessary to adopt a time limit to differentiate between migration that involves such a permanent change of residence and circular migration. In this research, a migration involves a minimum of one year away from home (place of origin), on the assumption that this indicates an intention to stay there permanently or semi-permanently. Thus migration is defined here as an intentional shift of residence across the dukuh boundary for a period of one year or more. In Javanese and in Sundanese, the term for such a 'migration' is pindah.

Circulation

Most non-migratory moves can be termed circulation, which Zelinsky (1971, 226) defines as:

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

Cavilli-Sforza (Roseman 1971, 591) calls this type of movement reciprocal, as against the displacement (or relocation) of individuals. This reciprocal movement of individuals begins at the home or residential base, proceeds to one or more specific locations, and eventually returns to the original base (Figure 1.1).

Circulatory movements can be subdivided into several groups according to their length of cycle; such as, daily, periodic, seasonal, and long-term (Gould and Prothero 1975, 42-43). Here, only two kinds of circular mobility are recognized, namely commuting (or daily circulation) and circulation. Koentjaraningrat (1975, 108) defines a commuter as a person who travels back and forth to his job from his home within the span of 24 hours. This usual definition of commuting as involving only journeys to work is expanded to include all daily circulations,

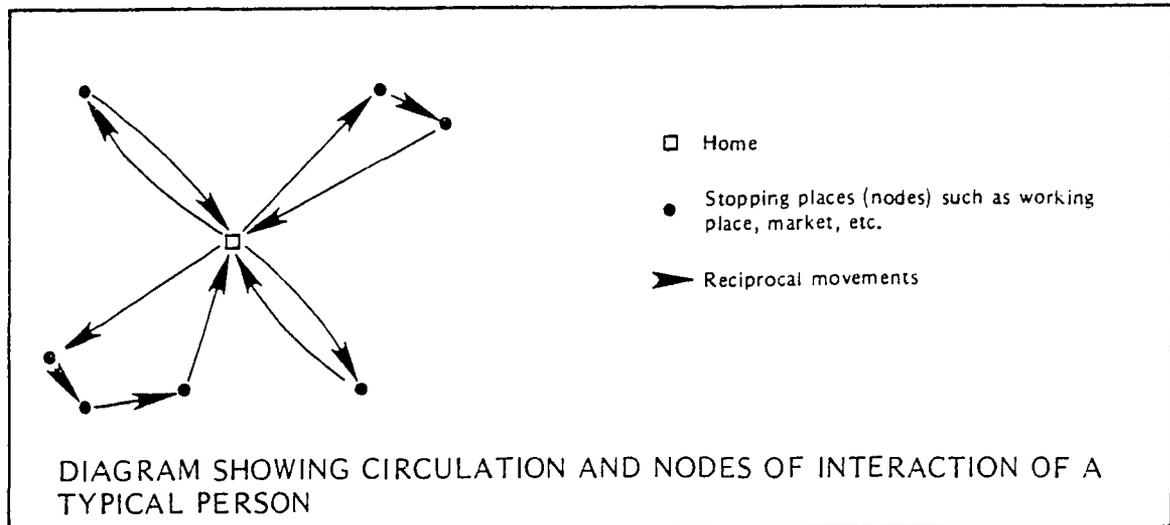


Figure 1.1

but with the constraint that it must involve a minimum time span of six hours. In Javanese, commuting is well known as nglaju. Such daily circulation can be divided again into those which are regular, non-regular, and seasonal. In this study, a regular commuter is one who regularly travels although not necessarily daily, to a place outside the dukuh to work, to trade or to go to school. A non-regular commuter is a person who travels occasionally to a place outside the dukuh as, for example, to buy clothes, agricultural tools, or to visit relatives. A seasonal commuter is someone who goes daily to other places at particular times of the year, for example, to work in the rice fields outside the dukuh boundary during the harvest season.

Circulation is any population movement in which the dukuh boundary is crossed for a period of more than one day but a return occurs within one year. Hugo (1975b, 10) has reported that in Sundanese this form of movement is called merantau. In these two dukuh, merantau means to go to another island for a relatively long period of time with the intention of returning. In Javanese, there are two words for circulation--nginep and mondok. Nginkep is used for people who go to another

place for several days to visit relatives or do business. Mondok is used for people who stay in a place for several months or years to study or work. Both movements are non-permanent; that is, the people plan to return to their dukuh after their work is completed.

As with commuting, circular moves can also be divided into those which are regular, non-regular, and seasonal. A regular circulator is one who works and boards away from the home place but regularly returns to it, for example, a civil servant from the dukuh who works and stays weekdays in Yogyakarta but returns home every Saturday. A person who occasionally moves away for several days or weeks, for example, to attend a ceremony or visit relatives engages in non-regular circulation. Seasonal circulation refers to those who work and stay away from home during certain periods, as during dry or slack seasons in the agricultural calendar.

A Typology of Population Movement

From the above examples, it is possible to construct various typologies of population movement in terms of their space and time characteristics. Usually, such a typology is good for only a certain type of community but that prepared by Gould and Prothero (1975, 42) for tropical African societies more or less fits other Third World countries (Hugo 1975b, 5; Chapman 1975, 179). Gould and Prothero have shown for tropical Africa how various types of population mobility may be clearly differentiated by locating them on a space/time matrix and a similar approach is adopted for the wet rice communities of Yogyakarta.

Space, as Gould and Prothero (1975, 39) point out, may be considered in terms of either distance and/or direction. Distance may be

measured in physical or economic terms, by cultural or administrative units. In this study, distance is measured in terms of both administrative units and absolute distance. For Yogyakarta Special Region, the lowest unit in the administrative hierarchy is dukuh (hamlet), followed by desa (village), kecamatan (subdistrict), kabupaten and kotapraja (regency and municipality), and finally propinsi (province), and the smallest administrative unit (dukuh) is selected as the basis of detailed research. The groupings of absolute distance, in kilometers, were determined from mobility data collected in the field. Nine categories were thus recognized but the class interval of the first two (0.5-2.5; 2.5-5.0 km) were smaller than the others because most people moved over short distances (see Chapter 4).

As with that of space, the dimension of time in mobility may be considered in a variety of ways. Gould and Prothero (1975, 40) write:

In historical perspective three categories may be distinguished: movements that took place in the past but which have now ceased, movements which have been continued from the past into the present, and movements that have developed in recent times (i.e., within the present).

In this study, time is approached in terms of the kind of mobility involved: that is, whether it is commuting, circulation, or migration. Upon this basis, it is possible to construct a space/time typology of population movements that provides a definitional framework for the intensive study of two wet rice communities in Yogyakarta Special Region (Table 1.3).

Research Strategy

There are three elements in the act of movement: the individual mover, the place of origin and destination, and the particular kind of mobility that reflects a specific objective.

TABLE 1.3

A SPACE/TIME TYPOLOGY OF POPULATION MOVEMENT
FOR YOGYAKARTA WET RICE COMMUNITIES

S P A C E		T I M E						
		Commuting			Circulation			Migra- tion
		Regu- lar	Non Regu- lar	Sea- sonal	Regu- lar	Non Regu- lar	Sea- sonal	
A								
Within village	Rural/ Rural							
Within sub- district	Rural/ Urban							
Within regency	Urban/ Rural							
Within province								
Outside Java								
B (in km)								
0.5-<2.5	Rural/ Rural							
2.5-<5								
5 -<11	Rural/ Urban							
11 -<15								
15 -<20	Urban/ Rural							
20 -<25								
25 -<30								
30 -<45								
45 and over								

Among these three elements, the individual mover plays the greatest role in the movement process because in most cases it is at this level that the decision to move or to stay is made. Each individual has certain personal characteristics and needs to be fulfilled. If these needs cannot be met at his place of residence, then he can remain in that place but reduces his needs, or alternatively moves to another place. Thus Mukherji (1975, 50) writes:

Each individual has certain needs, aspirations and roles, and in fulfilling those moves in certain ways within the universe of space and time, the combined result of which represents an individual's mobility.

Therefore individuals rather than households are considered the basic unit of this study population (wet rice communities) because, except for a few exceptions like transmigration and housing relocation, it is the individual and not the household that forms the decision-making unit.

Since the focus here is upon the patterns and the behavioral aspects of the movement process, all 'passive movers' (in practice, all children below the age of 15 and older people aged more than 55) were omitted unless they were also heads of households. Throughout Yogyakarta Special Region, the household head plays a crucial role in deciding whether members of the family ought to move or to stay.

In the Javanese tradition, children are taught to pay respect to their parents; parents should be trusted and obeyed (Kartohadikoesoemo 1953, 96). Based on this tradition, children are not accustomed to making independent decisions, but in recent years attitudes have changed and people are free to decide what they wish to do. In special cases however, such as getting married or moving to another area, they still would need their parents' consent. Thus Singarimbun (1974b, 16)

has found that in Mojolama (Bantul), over 90 percent of marriages occurring before the wife had turned 15 were arranged by parents, compared with 66 percent amongst women who married at 21 years or more.

The prospective approach was the main method used to collect detailed information and the mobility of people was monitored for a relatively long period of time. In the two study dukuh, this close observation covered nine months, from 19 May 1975 until 31 January 1976. Although this meant that mobility data are not available for the entire calendar year, nevertheless the nine months' period included both the wet and dry seasons,¹² as well as the major events of the agricultural cycle in the rice field. Thus it is possible to relate agricultural activities to the people's mobility behavior. The advantages of using the prospective approach were, first, that it was possible to obtain detailed information about short-term movements such as commuting and circulation; and second, that the reliability of such information is high, since most people can remember their movements over the previous week and the details they provide in answer to questions can be checked through daily observation.

Data on longer-term mobility can be collected using the retrospective approach, in which past movements are traced back through time. As the ability of people to remember short-term movements over long periods is limited, this approach is not appropriate for the study of commuting and short-term circulation. Prothero (1976, 124) has noted, that a retrospective study which recalls past experiences proves progressively

¹²In Yogyakarta Special Region, the dry season is from April to September and the wet season is from October to March.

more difficult with increasing requirements of detail. Consequently information about movement obtained from the retrospective approach is most useful for supportive and illustrative purposes rather than for detailed analysis. In the two study dukuh, each person was asked about his past movements that involved a minimum absence of one month over the past three years and this information was used to complement that obtained from prospective observation.

To understand the full meaning of people's movement needs a detailed study. Such depth can be achieved only by reducing the territorial scale under close investigation and by focusing upon a small community or population. It has already been mentioned that the smallest community throughout rural areas in Yogyakarta Special Region is the dukuh (hamlet or subvillage) and this administrative unit was chosen as the referent for this study. Naturally such a study has to be undertaken using a combination of research approaches for, as Chapman (1970, 11) says,

...to locate population research within the village or the larger group of non-literate society demands a range of techniques culled from a number of disciplines.

To this end, an attempt was made to combine demographic procedures (census taking, statistical analysis), with those normally used by other social scientists in geography (settlement mapping, cartographic analysis) and anthropology (collection of individual and/or family histories).

Depending upon the objectives of the particular mobility study, the focus can be upon either the sending or the receiving area. In an enquiry about the pattern and the process of population movement, the area of origin should be the primary focus because, first, several decisions are made in the early stages either before or at the point

people move, and the most important decisions about mobility occur at the rural end of the process; and second, the full range of people's mobility is best detected at the level of the village since more persons engage in commuting and circulation than in those permanent forms of movement normally termed "migration" (Caldwell 1969, 15; Byerlee 1972, 17; Hugo 1975b, 26).

For these reasons, the main survey was undertaken in two study dukuh, as the areas of origin, and a complementary study undertaken in Yogyakarta city as one of the main receiving areas. Within Yogyakarta city, the focus was upon those people who had moved permanently or temporarily from the study dukuh, and in particular:

- a. the process of deciding to move to Yogyakarta, especially the role of kinsmen and friends as a source of information about and means of adjustment to the city;
- b. the participation of dukuh-born movers in city societies, and the nature of their relationship with village families and dukuh society.

Yogyakarta Special Region: Location of the Study

The two study dukuh, Kadirojo in Sleman regency and Piring in Bantul regency, are both located in Yogyakarta Special Region (Daerah Istimewa Yogyakarta). The Sultanate of Yogyakarta which, during the struggle for independence and subsequently has been known as the Special Region of Yogyakarta, is located in the southern part of Central Java. It constitutes much of the heartland of Javanese culture, for Yogyakarta was the center of the pre-colonial kingdom of Mataram (Figure 1.2).

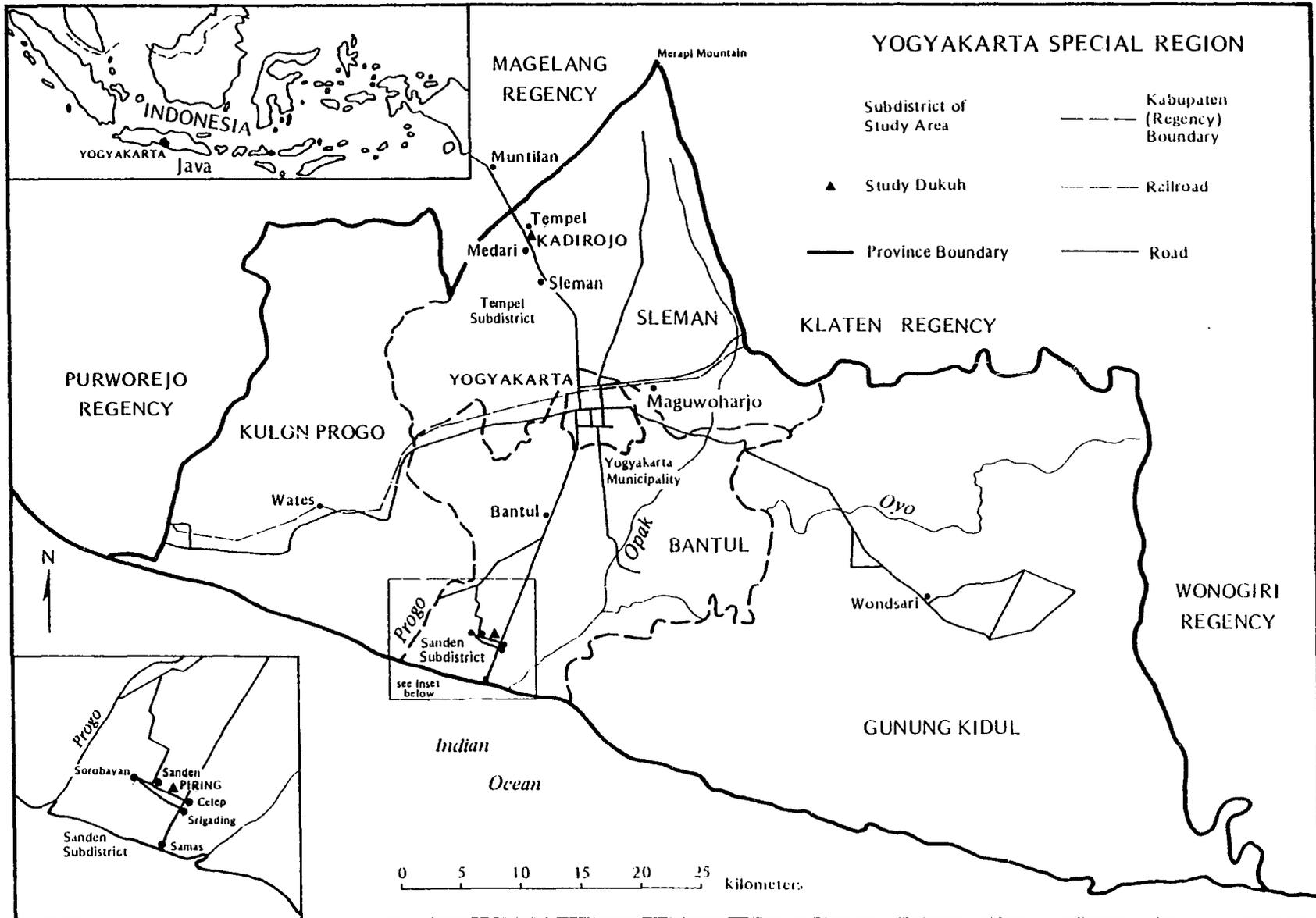


Figure 1.2

There are three reasons for choosing this area for intensive research. First, the nature of cultural change here is less complex than that experienced in West and East Java (Selosoemardjan 1962, xx); second, Yogyakarta has a large population (2,489,998 in 1971) and, with a population density in 1971 of 781.6 per square kilometer (Table 1.5), is economically one of the poorest areas in the whole island; and third, compared with West Java (Hugo, 1975b), no study has been conducted in this area about the patterns and the process of population mobility.

Yogyakarta Special Region is rather like a triangle, the apex of which is formed by Merapi volcano, which rises to 3,500 meters and is one of the most active volcanoes in Indonesia. Physiographically, Yogyakarta consists of the Merapi volcanic area, the limestone plateau of the southern mountains, the Merapi volcanic foot plains, the alluvial volcanic plain of the southern coast, and the West Progo mountains or Menoreh range. The plains surrounding Mount Merapi and the alluvial areas of the southern coast consist of fertile soil and are sufficiently well watered for irrigation. These are the areas of wet rice production. The most fertile wet areas in Yogyakarta are located in Sleman and Bantul regencies and cover 34.2 percent of the total area of Yogyakarta (Biro Statistik 1974, 17). The water from the rivers Progo and Opak irrigates approximately 90 percent of the rice fields. On the other hand, the southern part of Wonosari regency consists of a limestone plateau and both physically and economically is a very poor area. Its topography, underground water resources, soils, and level of living are therefore significantly different from the rest of Yogyakarta Special Region and of Java as a whole (Khan 1963, 48).

The climate of Yogyakarta is tropical, the wind patterns and rainfall distribution of which are dominated by the monsoon. The dry season is from April to September while the driest months are generally July, August and September. The wet monsoon lasts from October to March, with the heavy rainfall in December, January and February (Evans 1963, 27). The two main rivers, the Progo and the Opak, run parallel from north to south and are the major source of irrigation water for the rice fields (Figure 1.2).

The people of Yogyakarta belong to the Javanese ethnic group. As with other ethnic groups in Indonesia, Javanese society in the Yogyakarta area has its own subculture which is different from other parts of the island. Seloemardjan (1962, xx) writes that this has occurred because for centuries Yogyakarta remained a self-ruling principality and retained much of its old feudal structure during the period of the Dutch occupation when the rest of Java did not have the benefit of the intermediacy of indigenous kings. Thus Javanese society in Yogyakarta is homogeneous and has a court-centered culture with strong loyalties to its traditional ruler, the Sultan. The Sultan, according to Seloemardjan (1962, 22),

was to the indigenous society of Yogyakarta a monarch with absolute political, military and religious powers, who enjoyed a traditional recognition; he was further believed to be guided by heavenly wisdom and was supported and protected by the magical powers of the state pusaka (sacred artifacts with magic power).

Sultan Hamengkubuwono IX is the Governor of Yogyakarta Special Region and until 1978 was also Vice President of the Republic. The Region consists of one Municipality and four Regencies: Yogyakarta Municipality, and Bantul, Sleman, Gunung Kidul, and Kulon Progo Regencies. Subdistricts (kecamatan), villages (kelurahan) and subvillages (dukuh)

constitute the lower levels of the administrative hierarchy. In 1973, there were 556 villages and 6,686 hamlets or subvillages (Table 1.4). Between 1961 and 1971, the total population of the region grew by 11.1 percent from 2,241,517 to 2,489,998, while the population in 1971 of Yogyakarta municipality, the largest urban center, stood at 342,267 (Table 1.5).

TABLE 1.4
NUMBER OF SUBDISTRICTS, VILLAGES AND SUBVILLAGES
IN YOGYAKARTA SPECIAL REGION, 1973

No.	Regencies and Municipality	Subdistricts	Villages	Subvillages (dukuh, hamlets)
1.	Yogyakarta	14	163	2,325 ^a
2.	Bantul	18	75	947
3.	Sleman	17	86	1,175
4.	Gunung Kidul	13	144	1,325
5.	Kulon Progo	12	88	914
TOTAL		74	556	6,686

Source: Biro Statistik (1974, 34).

^aThe administrative unit of subvillage in the city is different from that in the rural areas. In the city it is more like a neighborhood unit, and on the average, one neighborhood unit consists of 30 households of 152 persons.

Within Yogyakarta, there is a marked contrast in the population density between Bantul and Sleman regencies on the one hand and Gunung Kidul and Kulon Progo on the other (Table 1.5, Figure 1.3). The basic factors in this difference are the fact that the soil of Bantul and Sleman regencies is primarily young and volcanic, while there is also a good water supply and intensive irrigation network. This positive

TABLE 1.5
POPULATION NUMBER AND DENSITY IN YOGYAKARTA
SPECIAL REGION, 1961 AND 1971

Regency or Municipality	Area in square kilometers	Total Population		Density per square kilometer	
		1961	1971	1961	1971
Yogyakarta Municipality	32.50	312,698	342,267	9,621.5	10,531.3
Bantul	506.85	499,594	568,636	985.7	1,121.9
Sleman	574.82	519,505	588,304	903.8	1,023.5
Gunung Kidul	1,485.36	572,280	620,145	385.3	417.5
Kulon Progo	586.24	337,440	370,646	575.6	632.2
Yogyakarta	3,185.77	2,241,517	2,489,998	703.6	781.6

Source: Central Bureau of Statistics, 1963
Central Bureau of Statistics, 1972b

correlation between population density and irrigation facilities has also been found for other parts of Java: along the coastal plains of north central Java, from Cirebon to Semarang; the area along the Berantas River in East Java; and the region between Cilacap, on the south coast of central Java and Surakarta (Solo) (Reksohadiprodjo 1961, 6).

The Sriharjo study in Bantul regency, conducted by Penny and Singarimbun (1973, 6), revealed that the average size of land owned by one household was 0.22 ha, whereas in that area one household ought to own at least 0.7 ha of rice fields in order to live above the subsistence level. Thus most people are at the margin of subsistence and such effects of poverty as induced malnutrition among infants and young children in Yogyakarta have been explicitly documented in a thorough study by Timmer (1961).

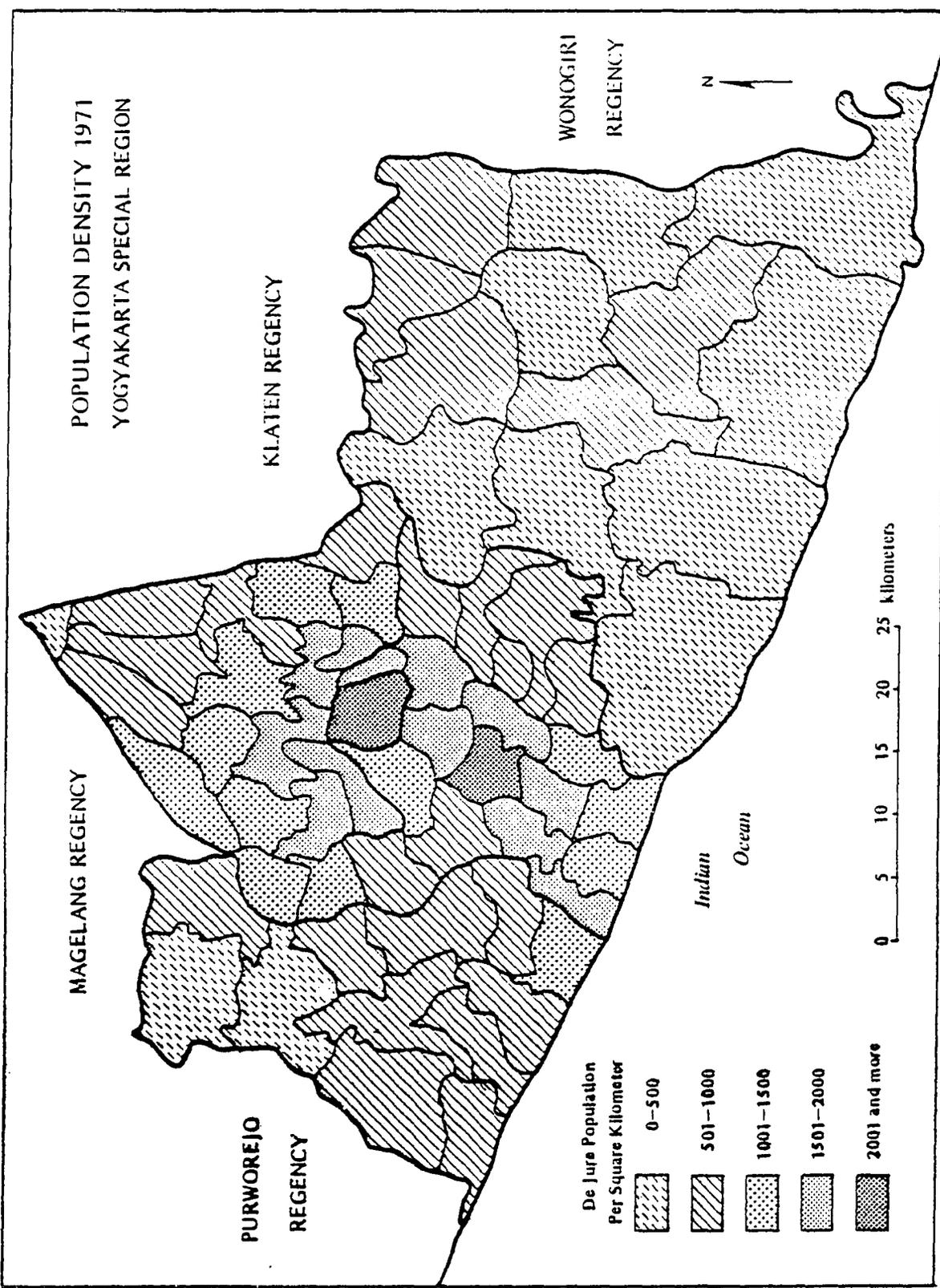


Figure 1.3

Except for Jakarta, which is entirely urban, Yogyakarta has had the highest population density of all provinces in Java since 1930 and this characteristic has intensified in recent years (Table 1.6). Conversely, the annual rate of population growth is much lower compared with other regencies in Java. Between 1961 and 1971 Yogyakarta Special Region experienced the lowest rate of population growth (1.1 percent) and both the Special Region and municipality registered the lowest total fertility rates (Table 1.7). As will be seen in Chapter 7, this low rate of population growth in Yogyakarta city is influenced more by the characteristics of birth and death than migration.

Of the four regencies, Bantul and Sleman had the highest rates of population growth between 1961-1971, followed by Kulon Progo and Gunung Kidul (Table 1.7). Thus the highest growth rates were found in those regencies which already had the densest populations. By contrast, the level of fertility as indicated by the total fertility rate was slightly higher for Gunung Kidul than for the other three regencies, which means that the low rate of population growth in Gunung Kidul during 1961-71 was not caused by low fertility. The annual rate of net migration in Yogyakarta city between 1961 and 1971 and the four regencies can be obtained by subtracting the annual rate of natural increase from the annual rate of overall growth (Table 1.8). From this calculation it can be seen that all four regencies in Yogyakarta Special Region experienced a net loss of population through migration and that the losses were greater in the poorer areas of Gunung Kidul and Kulon Progo. Thus the net rate of migration is inversely related to the intensity of land utilization. For instance, almost 60 percent of the number of

TABLE 1.6
 POPULATION NUMBER AND DENSITY AMONG
 PROVINCES IN JAVA, 1930, 1961, 1971

Province	Area in sq: km	Population (1,000)			Population Density per square kilometer		
		1930	1961	1971	1930	1961	1971
Jakarta	577	533	2,907	4,576	923.7	5,038.1	7,930.7
West Java	46,300	10,864	17,615	21,633	234.6	380.5	467.2
Central Java	34,206	13,707	18,407	21,877	400.7	538.1	639.6
Yogyakarta Special Region	3,186	1,558	2,241	2,490	489.0	703.4	781.5
East Java and Madura	47,922	15,056	21,823	25,527	314.2	455.4	532.7
Java and Madura	132,191	41,718	62,993	76,103	315.6	476.5	575.7

Source: McNicoll and Mamas (1973, 51)
 Singarimbun (1975, 179)

TABLE 1.7

RATE OF POPULATION GROWTH AND TOTAL FERTILITY RATE
IN EACH PROVINCE IN JAVA AND EACH REGENCY IN
YOGYAKARTA SPECIAL REGION, 1961-1971

Province/Regency	Rate of Population Growth (%)	Total Fertility Rate
<u>Province</u>		
Jakarta Metropolitan	4.6 ^a	5.1 ^c
West Java	2.1	5.8
Central Java	1.7	5.4
Yogyakarta Special Region	1.1	5.1
East Java	1.6	4.7

Java and Madura	1.9	5.2

<u>Regency/Municipality</u>		
Yogyakarta City	1.1 ^b	4.2 ^d
Bantul	1.3	5.0
Sleman	1.3	5.2
Gunung Kidul	0.8	5.3
Kulon Progo	1.0	5.1

Yogyakarta Special Region	1.1	5.1

Source: ^aMcNicol1 and Mamas (1973, 40)

^bMcDonald and Sontosudarmo (1976, 67)

^cCho, et al. (1976, 1)

^dCho, et al. (1976, 11)

TABLE 1.8
ANNUAL RATES OF NET MIGRATION IN FOUR REGENCIES
IN YOGYAKARTA SPECIAL REGION, 1961-1971

Regency	Rate of ^a Growth (%)	Rate of ^b Natural Increase (%)	Rate of net Migration (%)
Bantul	1.3	1.6	-0.3
Sleman	1.3	1.6	-0.3
Gunung Kidul	0.8	1.7	-0.9
Kulon Progo	1.0	1.6	-0.6

Source: ^aMcDonald and Sontosudarmo (1976, 67)

^bSoedarsono (1971, 29)

transmigrants who relocated from Yogyakarta Special Region between 1962 and 1971¹³ came from Gunung Kidul.

As previously mentioned, the 1971 national census contained questions about province of birth, province of last residence, and duration of residence in the current province. Using this information, it is possible to compute the number of lifetime migrants (Table 1.9, Figure 1.4). In 1971 there were 101,204 people, or 4.1 percent of the total population, whose place of birth was outside Yogyakarta Special

¹³The total number of out-migrants from Yogyakarta Special Region during 1962-71 were:

Yogyakarta City	=	371
Bantul Regency	=	3,092
Sleman	=	3,642
Gunung Kidul	=	12,972
Kulon Progo	=	2,569

(McDonald and Sontosudarmo 1976, 67).

TABLE 1.9
LIFETIME MIGRANTS BASED ON PROVINCE OF BIRTH,
YOGYAKARTA SPECIAL REGION, 1971

Province	Yogyakarta residents by province of birth	Yogyakarta born who now live in the province	Net migration
Aceh	841	1,557	- 716
North Sumatra	2,895	14,462	- 11,567
West Sumatra	1,955	1,362	593
Riau	484	2,896	- 2,412
Jambi	785	1,481	- 696
South Sumatra	3,948	8,491	- 4,543
Bengkulu	516	715	- 199
Lampung	1,120	87,386	- 86,266
Jakarta Metropolitan	4,415	58,717	- 54,302
West Java	7,606	11,878	- 4,272
Central Java	57,387	51,510	5,877
Yogyakarta Special Region	2,387,340	2,387,340	0
East Java	13,218	19,629	- 6,411
Bali	802	751	51
West Nusatenggara	316	186	130
East Nusatenggara	173	30	143
West Kalimantan	462	661	- 199
Central Kalimantan	32	434	- 402
South Kalimantan	575	916	- 341
East Kalimantan	197	370	- 173

TABLE 1.9 (Continued) LIFETIME MIGRANTS BASED ON PROVINCE OF BIRTH,
YOGYAKARTA SPECIAL REGION, 1971

Province	Yogyakarta residents by province of birth	Yogyakarta born who now live in the province	Net migration
North Sulawesi	130	439	- 309
Central Sulawesi	312	49	263
South Sulawesi	1,130	1,630	- 500
Southeast Sulawesi	3	36	- 33
Maluku	249	438	- 189
West Irian	231	909	- 678
Abroad	1,422	0	1,422
TOTAL	2,488,544	2,654,273	-165,729

Source: Central Bureau of Statistics, Series D, 1971 Population Census, pp. 101-102.

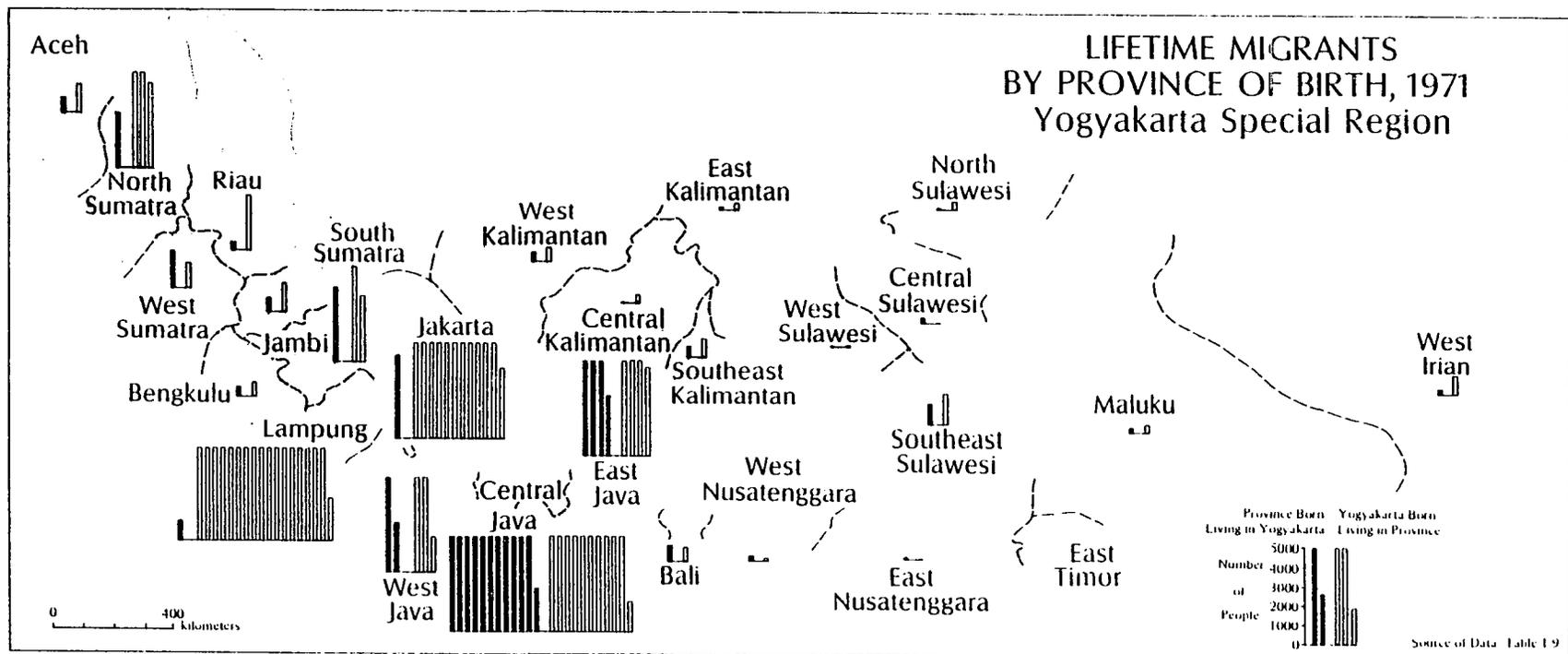


Figure 1.4

Region. These in-migrants came mainly from central and east Java, and south and north Sumatra. On the other hand, there were 266,933 people (10.73 percent) who were born in Yogyakarta Special Region but lived in other provinces. Most of these out-migrants went to Jakarta, central and east Java, Lampung, and north Sumatra (Figure 1.4). For the whole of Indonesia, Yogyakarta has the second highest rate of out-migration after west Sumatra (11.6 percent).

If the same calculations are made on the basis of province of last residence before moving to Yogyakarta rather than province of birth, then the number of in-migrants is 145,607 (6.5 percent of the total population) and that of out-migrants is 296,211, or 13.3 percent. Among the 145,607 in-migrants, 44,403 were returned migrants (Table 1.10).

From the above discussions we conclude that there is a great deal of locational fluidity in the population. In a comparative sense, migration is more important than the ratio of births to deaths in understanding the growth rates of the Yogyakarta Special Region and various other regencies. Such an extremely dynamic situation illustrates the importance of migration in the aggregate sense and of understanding the full range of population movement, including migration, "on the ground."

TABLE 1.10
LIFETIME MIGRANTS BASED ON PROVINCE OF PREVIOUS
RESIDENCE, YOGYAKARTA SPECIAL REGION, 1971

Province	Yogyakarta residence by province of previous re- sidence	Place of residence by previous residence in Yogyakarta	Net migration
Aceh	1,182	1,912	- 730
North Sumatra	5,505	14,634	- 9,129
West Sumatra	2,782	1,995	787
Riau	1,502	2,957	- 455
Jambi	1,365	1,502	- 137
South Sumatra	8,938	8,517	421
Bengkulu	950	725	225
Lampung	5,496	855,406	- 79,910
Jakarta Metropolitan	11,545	63,490	- 51,945
West Java	12,677	13,781	- 1,104
Central Java	66,289	68,024	- 1,735
Yogyakarta Special Region	2,342,937	2,342,973	0
East Java	18,082	23,923	- 5,841
Bali	879	1,035	- 156
West Nusatenggara	470	453	17
East Nusatenggara	255	393	- 138
West Kalimantan	978	753	225
Central Kalimantan	128	459	- 331
South Kalimantan	1,036	770	266
East Kalimantan	299	484	- 185

TABLE 1.10 (Continued) LIFETIME MIGRANTS BASED ON PROVINCE OF PREVIOUS RESIDENCE, YOGYAKARTA SPECIAL REGION, 1971

Province	Yogyakarta residence by province of previous residence	Place of residence by Yogyakarta of previous residence	Net migration
North Sulawesi	108	1,126	- 1,018
Central Sulawesi	449	233	216
South Sulawesi	2,002	2,210	- 208
Southeast Sulawesi	105	25	80
Maluku	403	676	- 273
West Irian	774	728	46
Abroad	1,408	0	1,408
TOTAL	2,488,544	2,639,148	-150,604

Source: Central Bureau of Statistics, Series D, 1971 Population Census, pp. 107-108.

CHAPTER II
COMMUNITY STUDY AND FIELD METHODS

The wet rice areas in Sleman and Bantul regencies are the most fertile areas and also the most densely settled in Yogyakarta Special Region. In 1971, their population density was more than 1,000 per square kilometer, which means that individuals in this population live on relatively small pieces of land and that all available land is already under cultivation. According to Geertz (1971, 141), the excess supply of labor in Java's subsistence peasant agriculture has led to an agricultural involution in which the agricultural sector absorbs more and more labor, both absolutely and relatively to other occupations. Such a situation, in the light of the great amount of in- and out-migration recorded at the provincial and national level, suggests the appropriateness of detailed research upon particular communities.

Two dukuh, Kadirojo in Sleman and Piring in Bantul, were chosen for intensive study. The latter dukuh is located on the southern coast of Bantul regency and the former in the northern mountainous area of Sleman regency (Figure 1.2). Both dukuh depend upon wet rice irrigation for their livelihood and are parallel in their land use characteristics and subsistence economies. Their basic difference lies in their site and situation. Piring is located on the alluvial plain about 24 kilometers to the south of Yogyakarta, and the nearest primary cities are Bantul (population 36,568 in 1971) and Yogyakarta (population 342,267 in 1971). Kadirojo, on the other hand, is located on the

fluviovolcanic plain at the foot of Mount Merapi, about 18 kilometers to Yogyakarta's north. This is a hilly area, relatively open in terms of road network, but is intersected by the main road from Yogyakarta to Semarang, the capital city of Central Java, which had a population of 646,590 in 1971. The nearest cities to Kadirojo are Yogyakarta, Muntilan (population 54,006 in 1971) and Magelang (population 110,308 in 1971), the second and third of which are in Magelang regency (Figure 1.2).

As has already been indicated in the preceding chapter, detailed information about population mobility is not available in Java, particularly at the village level. An integrated research design consisting of a combination of approaches used in geography, demography, and anthropology is therefore needed to obtain primary data. The research design for this fieldwork involved: first, a reconnaissance survey to identify the site and situation of two study communities; second, interviewing heads of households and other potential migrants to obtain information about the social and economic condition of the people, their mobility patterns and behavior; and, third, in-depth interviews, participant observation, general mapping, and recording the mobility history of a few individuals to both establish the study's context and probe the decisions why people move or stay.

The Community Study Method

To focus upon the mobility patterns and behavior of individuals and small groups in a village community requires a detailed examination of the entire population. Ideally, this is best achieved by residing in the community for a relatively long time, by becoming well acquainted with community members, and participating in their daily activities. Properly

executed, the advantages of such a close relationship between investigator and investigated is to provide information that is detailed, contains little bias, and is able to be constantly checked for its internal consistency.

In a formal situation, people being interviewed often give the answers that they think are expected of them. This was my experience in 1970 when conducting small surveys in several villages in Central Java. Such bias can be greatly reduced if there is a good relationship between researcher and respondent, which in turn is most easily achieved by residing in the community to be studied. If an atmosphere of trust and cooperation occurs, then formal methods of collecting information can be complemented by informal sources, such as the conversations heard while attending a birth, a marriage, or a religious ritual. Thus, as Colson (1967, 7) writes, the material obtained from a field census can be cross-checked and amplified with information obtained from both unstructured interviews and close personal observation.

In addition, residing in a study community with one's research assistants not only reduces the financial problems of living in a more distant town, but also gives an opportunity to discuss field problems as they arise. According to Valerie Hull (1975, 26), who studied the fertility, socioeconomic status, and general position of women in Maguwoharjo village (Yogyakarta), the advantages of the community approach were that:

All of us involved in the research project lived together..., which permitted continuous discussion and evaluation sessions, aided in the organization of the study, and very importantly, created an esprit de corps which greatly facilitated the entire research programme.

Continuous residence in a study community thus permits the direct observation of its members' activities. In turn, villagers gradually become less reserved in giving answers to questions that they might avoid with complete strangers. Friends and kinsmen can also be sources of information on topics that might prove embarrassing with a more direct approach--as, for example, with the question "Do you eat rice everyday throughout the year?", which is one simple attempt to measure lifestyle. Overall, the community study method provides an atmosphere of cooperation that ensures more accurate and more reliable data.

There are two ways of selecting two dukuh for intensive study: one, on the basis of a random sample; and the other, by selection according to criteria that reflect the research objectives. In 1971 Bantul Regency had 947 dukuh (average population 601) and Sleman Regency had 1,175 dukuh (average population 509; Biro Statistik 1974, 34). Theoretically it would have been possible to take a random sample of two dukuh within each of these regencies, but the results of this procedure would have no statistical validity. Thus any dukuh in each regency (Sleman and Bantul) could have been selected, provided that five criteria were satisfied: location in a wet rice area; similar culture, social organization, and lifestyle; basis of livelihood subsistence farming; about equidistant from Yogyakarta; and dissimilarities of site and situation (for example, northern mountain versus southern coast-land; good and poor irrigation system; varying accessibility in terms of road network).

The actual selection of the two study dukuh was made after intensive field reconnaissance that took two months. Both Sanden subdistrict in Bantul regency and Tempel subdistrict in Sleman regency were chosen

because their population records and administrative organization were the best among all the subdistricts. Piring was selected from all the dukuh in Sanden subdistrict, because there appeared to be a variety of population movement (commuting, circulation, and permanent movement) and of socioeconomic conditions (subsistence agriculture, cash cropping, and small-scale trading). Despite this range of activities, its irrigation system has not worked well since the breach of the major source (Kamijoro dam), so that during the dry season the rice fields do not receive sufficient water. In addition, Piring is connected by two main roads to Yogyakarta, so that every day many buses, mini-buses and pick-ups travel back and forth to Yogyakarta. In Sleman regency, Tempel subdistrict was also chosen for its similar distance from Yogyakarta; the main road between Yogyakarta and Semarang passes its southern boundary. Dukuh Kadirojo, which receives sufficient irrigation water the year round, was selected as the study community in Tempel subdistrict because of the great amount of spontaneous transmigration that had occurred to several parts of Sumatra, as well as some out-migration to Jakarta. A number of people also commute to workplaces outside the dukuh, mainly as salak sellers (Salacca edulis Reiuw, a type of fruit), carpenters, and pandanus mat makers, while some circulate between Kadirojo and Yogyakarta.

Field Research Design

Field research was concentrated in three sites: dukuh Piring and Kadirojo, as places of origin; and Yogyakarta city, as a place of primary destination for both temporary and more permanent movers. In Yogyakarta itself, activities were located in the Population Institute at Gadjah

Mada University, which served as survey headquarters; and in various places of Yogyakarta municipality, at which people from Kadirojo and Piring stayed or resided. Using the Population Institute as survey headquarters had the advantages of being near academic supervisors and other experienced professionals, and having available such facilities as calculators, duplicating machines, and typewriters. Two research assistants were hired and remained at headquarters throughout the survey: one to check the coding of field data, transfer it onto codesheets, and construct one-way tabulations, and the other to act as financial and logistics officer for the entire field program.

Three research assistants were hired to conduct fieldwork in each dukuh for nine months, and another three in Yogyakarta for three months. Of those six research assistants who worked in the two dukuh, two were high school graduates who lived in the dukuh and knew much about their communities. The research assistant from Kadirojo also happened to be head of the census section of the subdistrict office and was greatly respected by the people. The other four research assistants were graduate students in geography at Gadjah Mada University and were selected after a series of interviews from among 15 students who had had some experience in conducting surveys. Their selection was based on some familiarity with village communities, fluency in Javanese, good academic records, and a high possibility of adjustment to the relatively simple life of rural areas.

The advantages of hiring research assistants from the same areas that were to be studied lay in their familiarity with the people, their traditions, and the dukuh environment; their ability to verify different kinds of information given them; and their knowledge of previous events

that had occurred in their community. Being members of the dukuh meant, however, that they could be very subjective in their evaluation of certain situations. To avoid this possibility, two assistants from outside each study dukuh were also members of the interview team. Preliminary training in formal surveys began at Gadjah Mada University and continued in the field.

On March 1, 1976, the research team arrived in the dukuh. The first four weeks (two in Piring and another two in Kadirojo) were devoted to becoming familiar with the community and learning the names of as many people as possible. During the first days, we were introduced to village officials and community members by the dukuh head at a meeting held in his house. At this meeting, the research assistants and I were introduced to the community and the purpose of our staying in the dukuh was explained. The dukuh head also asked for the people's cooperation in our survey. To become better acquainted, we visited people in their homes or went to the village guard-house in the evening. We also participated in such village activities as attending ceremonies, cleaning village roads, and helping to repair a house. In a Javanese village, mutually reciprocal activities (gotong-royong) are a very strong part of community life, so that a visitor who never enters into such activities is not welcomed by the people nor commands any respect from them. Besides learning people's names and making a simple map of each dukuh, we gradually obtained an overall idea of residential mobility and of the people's social and economic condition. Such information was very useful in constructing questionnaires, but this period of adjustment was still proceeding while we were conducting the first of several surveys.

The field research in each dukuh community, including Yogyakarta city, proceeded in six stages. This design closely followed the multistage strategy that the Hulls (V. Hull 1975, 10; T. Hull 1975, 105) used in 1972-73 in their study of fertility and family planning in Maguwoharjo, a village located six kilometers east of Yogyakarta city. The first stage, the household census, collected de jure information on the basic characteristics of all members of every household, including those who were temporarily absent at another place (Table 2.1). From these data a synthetic cohort was constructed that consisted of all people aged between 15 and 55 years (potential migrants), including all household heads. The second stage of the field design was the mobility register which identified, over a period of nine months, the outward and inward movements of any cohort member who was absent from either dukuh for six or more hours. Visitors who visited the dukuh and were absent from their own homes for six hours or more also were recorded in this register.

The household economic survey, the third instrument, collected information about the socioeconomic condition of each household. The fourth stage was the survey on marriage and children, for which the primary concern was the marriage history of all women ever married, particularly their place of residence before and after marriage, and the distances (kms) between them. Information was also collected on children ever born and the attributes of those who were still alive. In the fifth stage, histories of movement were collected from all cohort members over the past three years, providing, however, that they remained in the new location for at least one month. The final and sixth stage of the field research, undertaken in Yogyakarta city, obtained information

TABLE 2.1

STAGES OF FIELD RESEARCH IN TWO WET RICE COMMUNITIES

Dukuh Piring and Kadirojo, 1 March 1975-25 January 1976

Stage	Type of Instrument	Dates Administered	Respondents	Information Collected
1	Household Census (<u>de jure</u>)	1-24 April 1975	Household heads Kadirojo 71 Piring 99	Basic characteristics of household head and all members, including all those temporarily in another area (<u>de jure</u>) and all visitors in household at census (<u>de facto</u>). At end of survey period (29 December 1975), all changes in household population were recorded (births, deaths, in- and out-migrants). Basic information collected: name, relation to household head, sex, age, place of birth, marital status, religion, occupation, education, present or not at the census time.
2	Prospective Mobility Register (out and in movements)	19 May 1975- 31 January 1976	Potential Migrants (age 15-54) including all household heads Kadirojo 196 Piring 244	Out and In movement of dukuh members (<u>six or more hours</u>). For each movement: destination, distance from dukuh (in kms), date of movement, period of absence, means of transportation, reason for travel, number of accompanying persons.

TABLE 2.1 (Continued) STAGES OF FIELD RESEARCH IN TWO WET RICE COMMUNITIES

Stage	Type of Instrument	Dates Administered	Respondents	Information Collected
			Visitors who visited the <u>dukuh</u> and were absent from their home for six hours or more.	In and Out Movement for Aliens (Not members of <u>dukuh</u>). Attributes: sex, age, place of origin, relation to household head, period stayed in <u>dukuh</u> , number of accompanying persons, reasons for visit, distance from home <u>dukuh</u> (kms), means of transportation.
3	Household Economic Survey	3-30 August 1975	Household heads Kadirojo 71 Piring 99	Land ownership and land operated, land use, ownership of livestock, household equipment, ownership and condition of house, type of food eaten by household members, secondary job besides farming.
4	Marriage and Children Survey ^a	2-25 September 1975	Ever-married women and children ever born to ever-married women <u>Kadirojo</u> Ever-married women 75 Children ever born 335 <u>Piring</u> Ever-married women 99	<u>Marriage Survey</u> Age at first marriage, place of residence before and after marriage, distance (kms) between husband's and wife's residence before marriage. Preferred age for marriage for males and females, number of children expected. Number of children ever born, dead, and still living. <u>Children Survey</u> Children ever born: name, sex, birth date, birthplace, whether still alive.

TABLE 2.1 (Continued) STAGES OF FIELD RESEARCH IN TWO WET RICE COMMUNITIES

Stage	Type of Instrument	Dates Administered	Respondents	Information Collected
			Children ever born 402	For living children: education, occupation, current residence, length of time there, and main reason for remaining, frequency of returning home during past year. For deceased children: date and age at death.
5	Retrospective History of Movement	28 November-29 December 1975	Potential Migrants (age 15-54), including all household heads Kadirojo 159 ^b Piring 187	Movement from place of residence for one or more months over past three years: number of moves made, farthest place ever visited, distances (kms) from <u>dukuh</u> , reasons for visiting. Current economic position of <u>dukuh</u> and of individual compared with five years ago. Attitude and aspirations to mobility. Information and barriers to mobility.
6	Yogyakarta Survey	5-25 January 1976	People from two study <u>dukuh</u> who remained in Yogyakarta for at least one year Kadirojo 9 Piring 34	Individual attributes: sex, age, type of schooling, current occupation, marital status, place of residence before marriage, husband's/wife's place of origin, distance (kms) between husband's and wife's residence before marriage. Number of children ever born, dead, and still living.

TABLE 2.1 (Continued) STAGES OF FIELD RESEARCH IN TWO WET RICE COMMUNITIES

Stage	Type of Instrument	Date Administered	Respondents	Information Collected
				Mobility history to Yogyakarta: permanent or temporary move, year of arrival, reasons of move. Relationship with persons who helped on first day of arrival. Furthest place ever visited, number of returns made to <u>dukuh</u> since last year, frequency of sending letters or money.

^aA card for each child was attached to the marriage questionnaires.

^bNinety-four out of 440 potential migrants from stage 2 could not be interviewed in stage 5, for the following reasons:

	<u>Kadirojo</u>	<u>Piring</u>
Not at home after three or more visits	13	29
Not returned home (incomplete movement)	20	16
Refused to be interviewed (too busy)	2	10
Died between stages 2 and 5	<u>2</u>	<u>2</u>
TOTAL	37	57

on the movement process and the adjustment of people from the two study dukuh who had remained there for at least one year.

Bennet and Thaiss (1967, 302) have said that the construction of questionnaires should be delayed until the cultural context of the phenomenon under study is generally known. Furthermore, they say, it ought not be assumed that all slices of social reality are identically responsive to a theoretical construct. This statement is very important as a guideline in designing survey questionnaires particularly if, as in the present study, there is a conscious aim to improve the quality of data by adapting questionnaires to the local situation. In the original research proposal, for example, mobility was defined as involving a minimum time span of one or more months. This definition was intended to include both dukuh residents and visitors who were involved in long-term circulation and permanent movement. After two months' field reconnaissance, it was found that large numbers of people commuted daily to points outside the dukuh. As a result, the minimum time period used to define a move was reduced from one month to six hours and a movement was said to have occurred whenever a person crossed the dukuh boundary in either direction and stayed inside or outside the dukuh for a minimum period of six hours. Similarly it was discovered that dukuh people have long recognized several types of movement: nglaju (commuting), nginep, mondok, and merantau (various forms of circulation), and pindah (migration or permanent movement).

Consideration of the local context and the prevailing culture in designing questionnaires explains why both the Hulls' and this field research were conducted in several stages. In both, the assumption was that information and experience gained from each previous stage would

improve the quality of the research instruments being prepared at later stages (compare Table 2.1). Each step in this enquiry thus reflected discussions with local assistants, dukuh leaders and field supervisors, and took account of one's daily experience of participating in village life. All questionnaires, checklists, and recording cards were tested in an adjacent dukuh, following reactions by research assistants to drafts of each.

In a multistage field design, each instrument raises different kinds of problems and certain information may prove to be especially difficult to obtain. It was not easy, for example, to obtain meaningful answers about people's age, the amount of land owned by adult villagers, and the kinds of food eaten by household members. In Java, vital events are supposed to be registered with the village head (lurah). As noted in the first chapter, not all people obey this regulation, since there is no sanction against those who do not. During 1959-67, by contrast, the registration rate was high because all villagers who were entered in the register had the right to buy clothes, sugar, oil, and other daily necessities from the warung koperasi (cooperative stall). Since the market prices for these items were beyond the reach of most local people, purchases were made for far less cost at the warung koperasi. In addition to the high rate of registration during this period, each new birth was scrupulously registered by the parents for it ensured an increase in the quota to buy goods at the warung koperasi.

To register a birth in Java the reporter, usually the father of the infant, prepares for the dukuh head the information required on father's name and age, mother's name and age, child's name (if it has been named),

and date of birth. The dukuh head then brings these details to the village office (kantor kelurahan) and obtains a birth certificate for the child's parents. Compared with other dukuh documents like school or marriage certificates, birth certificates are therefore more accurate because the date of birth has been recorded very close to its actual occurrence.

Many research workers who have conducted field censuses in the Pacific Islands (Firth 1955, McArthur 1961, Chapman, 1971) and South-east Asia (V. Hull 1975, Hugo 1975) have found age to be the most difficult and time-consuming question about which to obtain accurate information. For this reason, in this and also in Valerie Hull's (1975, 27) study, the age reported by each household member was checked against birth certificates and other village documents. If there was still doubt, then the apparent age was checked by associating the birth with the year of a particular event, with the aid of an age table (Table 2.2). This method, first used with Australian aborigines in 1865 (Scott and Sabagh 1970, 93), was found particularly useful to estimate the ages of those born before 1950, most of whom did not hold a birth certificate or other records. Scott and Sabagh (1970, 107) have said that, although the historical calendar method may give absurd results, it still generally produces more accurate age estimates than any other procedure. Another aid in estimating people's age was to use local methods--for example, by obtaining the date of birth according to the Javanese calendar and converting it to the Gregorian system with the use of a special almanac (V. Hull 1975, 34). In Maguwoharjo, Valerie Hull (1975, 34) also found that people write the dates of

TABLE 2.2
AGE TABLE
LIST OF IMPORTANT EVENTS IN
JAVA AND INDONESIA

Year	Age ^a if Born Before Event		Event
1971-1975	0-4	1971	Second population census after independence
1966-1970	5-9	1970	Second national general election
1961-1965	10-14	1965	Abortive Communist coup
		1963	West Irian became a territory of Indonesia
		1961	First population census after independence
1956-1960	15-19	1957	Local general election
1951-1955	20-24	1955	First national general election
		1951	Eruption of Mt. Kelud in East Java
1946-1950	25-29	1949	Second Dutch military invasion of Yogyakarta
		1948	First Dutch military invasion of Yogyakarta
		1946	The capital of Republic of Indonesia moved to Yogyakarta
1941-1945	30-34	1945	The proclamation of Indonesian independence
		1942	The Japanese invasion of Java
1936-1940	35-39	1939	Sultan Hamengkubuwono IX crowned
1926-1935	40-49	1930	World economic depression
		1930	Eruption of Mt. Merapi in Yogyakarta

TABLE 2.2 (Continued) AGE TABLE, LIST OF IMPORTANT EVENTS IN JAVA AND INDONESIA

Year	Age ^a if Born Before Event	Event
1916-1925	50-59	1918 Agricultural reform in Yogyakarta Special Region
		1915 The aboliton of the "cultural system" in Java

^aAs for 1 January 1975 calculation.

important events on the walls, the pillars, or the doors of their home, which formed a useful supplement to the age table.

In the socioeconomic survey of households (Table 2.1), it was found difficult to obtain accurate information about the amount of land owned by adult villagers because the legal aspect of land ownership in Java is complicated. Each land owner receives a government certificate (petuk) that states the dimensions of the land property for the purpose of tax assessment (Koentjaraningrat 1961, 12). Usually the father or the oldest member of the family holds the petuk, despite the fact that all other family members have the same right to that inherited land (tanah yasan). Thus the number of people who own land is far greater than those who have custody of a petuk certificate. If interviewers asked adults who did not actually hold the petuk whether they owned land or not, they would answer 'no' because the land would be registered under, say, their fathers' name. For this reason, two questions were asked about the relationship between people and land: that which individuals owned and that which they used.

A similar difficulty was experienced in attempting to find out adults' income. Unlike the West, where almost everyone knows his/her income per month, or per year, in all Third World countries such as Indonesia few people have a permanent job with a fixed income. Most people are primarily subsistence farmers who sell some of their crops and may occasionally earn wages as laborers on the farms or in town. In a Javanese village, in addition, the concept of 'income' refers to the household rather than the individual, because land and cattle (the main source of income) belong to the household, as also do such material items as the dwelling unit, vehicles, and farm equipment. In this

situation the socioeconomic position of an individual could only be specified in terms of a composite economic index of the household to which each belonged. The household index used here follows that developed by T. Hull (1975, 160) for Maguwoharjo, Yogyakarta, and summarizes several different indices for household goods, property, cattle, and land owned (see Chapter 3).

The identification of all moves at or close to the time they occurred was made more difficult by the surprisingly large number of dukuh people who were involved. Usually individuals are away for less than one day, at another village or town to visit kinsfolk, attend a ceremony, or sell their field crops. People find such movements hard to remember, because often they happen spontaneously, but it is very rare to find people who are absent from their village for longer than one month. The prospective mobility register (Table 2.1) consisted of a card for every individual, on which were recorded the details of every move made out of and into the dukuh. Research assistants visited every adult each week to record their movements over the past seven days and to collect details about their destinations, periods of absence and their reasons for travel. This register of mobility, as it practically occurred, proved valuable to identify the general patterns of movement for a village community in Java and has also been used successfully in the Solomon Islands by Chapman (1975, 131).

The reliability of field data obtained from dukuh residents not only depends upon the type of instruments used but also how they are approached. Interviewing, whether to obtain household characteristics, moves made over the previous week, or attitudes towards the local economy, were conducted whenever possible without reference to the formal

schedules or checklists. Thus the order of questions asked did not necessarily follow their printed sequence and more complicated ones were left to last. Interviewers tried to create as relaxed and informal an atmosphere as possible and only when it was difficult to remember the answers (such as for the size of rice fields or the amount of agricultural production) did they take notes. More usually, questionnaires were filled in by the research assistants after they had returned to their quarters. Following the methods used by Valerie Hull (1975, 38), every evening the interviewers would discuss their day's work and any problems encountered. Each questionnaire would be read and any remaining questions asked directly of the interviewee. Errors or omissions that could not be corrected on the spot would require a return visit to the household member.

During the off-season in the agriculture cycle, from May to August, people work near their households and repair garden fences, plait mats, paint batik, and repair their dwellings. A good time to visit them during this season was at noon, so that it was not uncommon to see a woman frying tempe (soy bean cake) while being interviewed in her kitchen. During the busy period of the agricultural cycle, from November to April, most people were rarely at home during the day. Especially in November and December, all the dukuh labor force was involved in harvesting the dry rice and preparing the ground for planting the next crop of wet rice. Farmers at this time, particularly in Piring, worked the whole day in the fields and many women who painted batik during the off-season would join their husbands to work there. Individuals with little access to land worked as farm laborers during the day and cultivated their own rice fields in the evening. During

this season, when the dukuh labor force was entirely occupied in agriculture, interviews were usually held in the evening. Since both men and women had worked hard during the day, they were very tired at this time and did not wish to spend much time talking with us. Some householders refused and others could not even be contacted in the evening because they were out in their own fields. This is the main reason why the number interviewed for the retrospective survey of residential movement (November 28 until December 29, 1975) was 37 less (Kadirojo) and 57 less (Piring) than recorded in the registers of daily mobility (Table 2.1).

Near the end of the fieldwork, all dukuh adults were asked to react to several Javanese proverbs to ascertain how people felt about them. These proverbs were: "A good child is one who remains/lives near his/her parents" (Anak yang baik harus hidup berdekatan dengan orang tua); "It is preferred to work on the inherited land, due to the prestige of ownership, rather than to leave the land for a job" (Abot cukil ditimbang hasil); and "As long as we are together, it does not matter whether we eat or not" (Mangan ora mangan waton kumpul). When asked about these, the poor and the uneducated said they agreed but could not say why. Thus it was harder than expected to find out the reasons, values, and attitudes of different socioeconomic groups towards residence and work in the dukuh. In such a situation, supplementary information from informal interviews and case studies of particular individuals was critical to elaborate and to provide a context for the people's lifestyles and orientations.

During formal interviews, individual situations were often discovered about which we wanted to know more details. In Kadirojo, for

example, 18 farmers had lost their jobs as sharecroppers, because the rice fields in which they worked had been leased for about 18 months by the land owner to a burlap factory. They stayed at home during this period to take care of the children or to cook meals while their wives worked at the market place. They did not attempt to look for another job because they hoped that once this contract expired, then these rice fields would be returned to them. They did not complain or protest to the owner and still maintained good relations with him. Information such as this could only be acquired through informal discussions and that on sensitive matters sometimes was obtained simply by observing people's actions or expressions and listening to their gossip.

In Kadirojo and Piring there lived three retired soldiers who, during their careers, had been transferred to posts in various parts of Indonesia. It was instructive to trace their movement history and eventual return on retirement back to the dukuh. Interviews with these soldiers revealed much about attitudes toward home places and the desire to live in the comfortable atmosphere of one's village. Hugo (1975b, 433), in his study of population mobility in West Java, also included the return migration of civil servants or soldiers who had moved about Indonesia during their professional careers.

Local statistics and secondary data were important as supplements to the primary data collected in each dukuh (Table 2.3). Many of these secondary data were abstracted in the village office, and some from the dukuh and other offices in Bantul and Sleman regencies. At the dukuh level, the reliability of data depends greatly upon the comprehension of the registration system by dukuh heads; when they are passive, then many events are not reported by the people. For instance, in a study of

TABLE 2.3
TYPES AND SOURCES OF SECONDARY DATA

Type	Source
Land ownership Population register	<u>Dukuh's</u> record
Number of transmigrants from the village	Village offices
Number of transmigrants from Yogyakarta Special Region	Transmigration Office, Yogyakarta
Length and class of roads Number and type of vehicles using particular roads	Transportation Office, Yogyakarta
Results of the 1961 and 1971 population census	Central Bureau of Statistics, Jakarta
Population statistics Agricultural statistics	Statistical Office, Yogyakarta

the population registration system in Yogyakarta Special Region carried out in 1974, Kasto (1974, 140) reports that parents in Gunung Kidul regency did not register the births and deaths of infants who died shortly after birth.

In summary, detailed understanding of the patterns and process of population mobility in a dukuh community can be best obtained through a combination of techniques that blend the respective strengths of the social survey and participant observation, supplemented by existing secondary data. According to Terence Hull (T. Hull 1975, 5), who followed the same field strategy in his study of fertility and value of children, this in-depth approach yields much information that is more detailed and accurate than is normally found in survey research, while

at the same time being more extensive in coverage than is usually accomplished in an anthropological field study. Staying in the dukuh community, among other things, provides the atmosphere for a high degree of cooperation that ensures more accurate, more detailed, and more reliable data. In addition, by participating in community activities, observing people's actions and expressions, and listening to their gossip, we can also learn much that might otherwise go unrecorded from formal surveys or be too sensitive if asked directly. Although this intensive study of two small communities does not aim to represent the situation for Yogyakarta Special Region as a whole, nevertheless it reports unknown information about people who, throughout Central Java, share the same history, language, culture, and system of social organization. In the next chapter as a result, a detailed discussion of Piring and Kadirojo dukuh provides the context for the people's considerable mobility.

CHAPTER III
KADIROJO AND PIRING

Kadirojo lies on the volcanic plain at the foot of Mt. Merapi, about 18 kilometers northwest of Yogyakarta (Figure 1.2). Administratively, the dukuh is part of Margorejo kelurahan (village), Tempel kecamatan (subdistrict) and Sleman kabupaten (regency). The main road between Yogyakarta and Semarang lies 500 meters to the west and to reach the dukuh one can walk, bicycle, or take a dokar (Javanese pony cart). Not far from Kadirojo dukuh there is a post office and hospital (in Sleman, 3.4 km to the southwest), a subdistrict administrative office (in Tempel, 2.5 km to the southeast), and two muslin factories (in Medari, 2.5 km to the southwest).

Kadirojo is a nucleated settlement (Figure 3.1). Within the dukuh, households whose members have close kinship ties form kindred groups (golongan; Figure 3.1). When a family member marries, the new couple usually stay for one or two years with the parents of the bride or bridegroom until they have sufficient materials to build a new house. In Kadirojo, salak fruit is a secondary source of income and house compounds are full of salak trees. When other members of the golongan marry and take up residence in the dukuh, a new unit is added to the golongan house so that the salak trees are not destroyed. Bamboo, coconut, and several kinds of trees for house timber are all found in the dukuh and the purchase for house construction of such materials as tiles and cement is kept to a minimum. For most houses, bamboo is used mainly for the outside walls and earth for the floors, but tiles

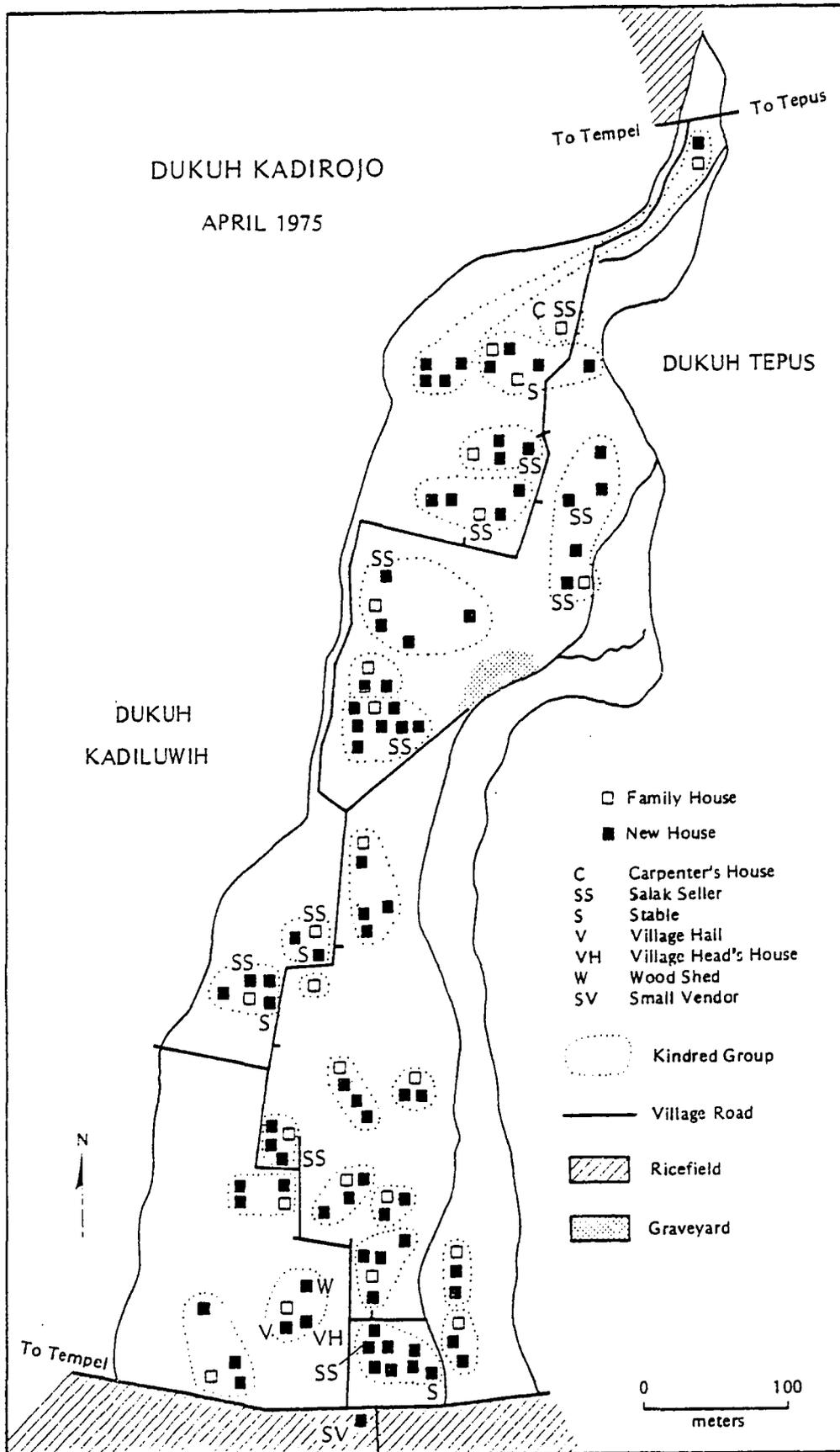


Figure 3.1

are preferred as roofing material because they do not have to be replaced as often as the local leaf (Table 3.1). In this dukuh most people use kerosene lamps for house lighting.

Piring is located on the alluvial, volcanic plain of the southern coast of Yogyakarta, about 24 km south of Yogyakarta city (Figure 1.2). It lies within Murtigading kelurahan, Sanden kecamatan and Bantul kabupaten, and is sited between two roads that connect Yogyakarta to both Sorobayan and Samas (Figure 1.2). From each of these roads it takes 15 minutes to walk to reach Piring. Compared with Kadirojo, Piring is more remote from public services, except for Sanden (about 1.25 km to the west) where there are offices of both the village and subdistrict administration.

The settlement pattern in Piring is dispersed, especially at its southern part (Figure 3.2). Households do not group together on the basis of kinship ties and so the dukuh has a more open appearance than Kadirojo. When an individual marries and remains in Piring, usually a new house is built in its own house compound (pekarangan). In Piring most of the outside walls of houses consist of bricks made from local clay (Table 3.1). In the dry season (April to September), which is the slack period in the agricultural cycle, some people make bricks in their yards both for their own use and also to sell outside the dukuh. Most house floors are made of cement and the roofs are of tiles. Unlike Kadirojo, in Piring people use the traditional lamp for house lighting (Table 3.1).

The use of bricks and bamboo for outside walls in house construction, and of cement and earth for the floors, indicates the availability of local materials rather than any differences in the prosperity of the two

TABLE 3.1
HOUSING MATERIALS AND TYPES OF LIGHTING INSTRUMENTS
KADIROJO AND PIRING, 1975

	Kadirojo		Piring	
	Total	Percent	Total	Percent
Outside walls				
Bricks	7	9.9	83	83.8
Bamboo	<u>64</u>	<u>90.1</u>	<u>16</u>	<u>16.2</u>
	71	100.0	99	100.0
Floor				
Cement	7	9.9	36	36.4
Earth	<u>64</u>	<u>90.1</u>	<u>63</u>	<u>63.6</u>
	71	100.0	99	100.0
Roof				
Tile	69	97.2	81	81.8
Leaf	<u>2</u>	<u>2.8</u>	<u>18</u>	<u>18.2</u>
	71	100.0	99	100.0
Lighting				
Kerosene lamp	45	63.4	39	39.4
Traditional lamp	<u>26</u>	<u>36.4</u>	<u>60</u>	<u>60.6</u>
	71	100.0	99	100.0

Source: Household Census

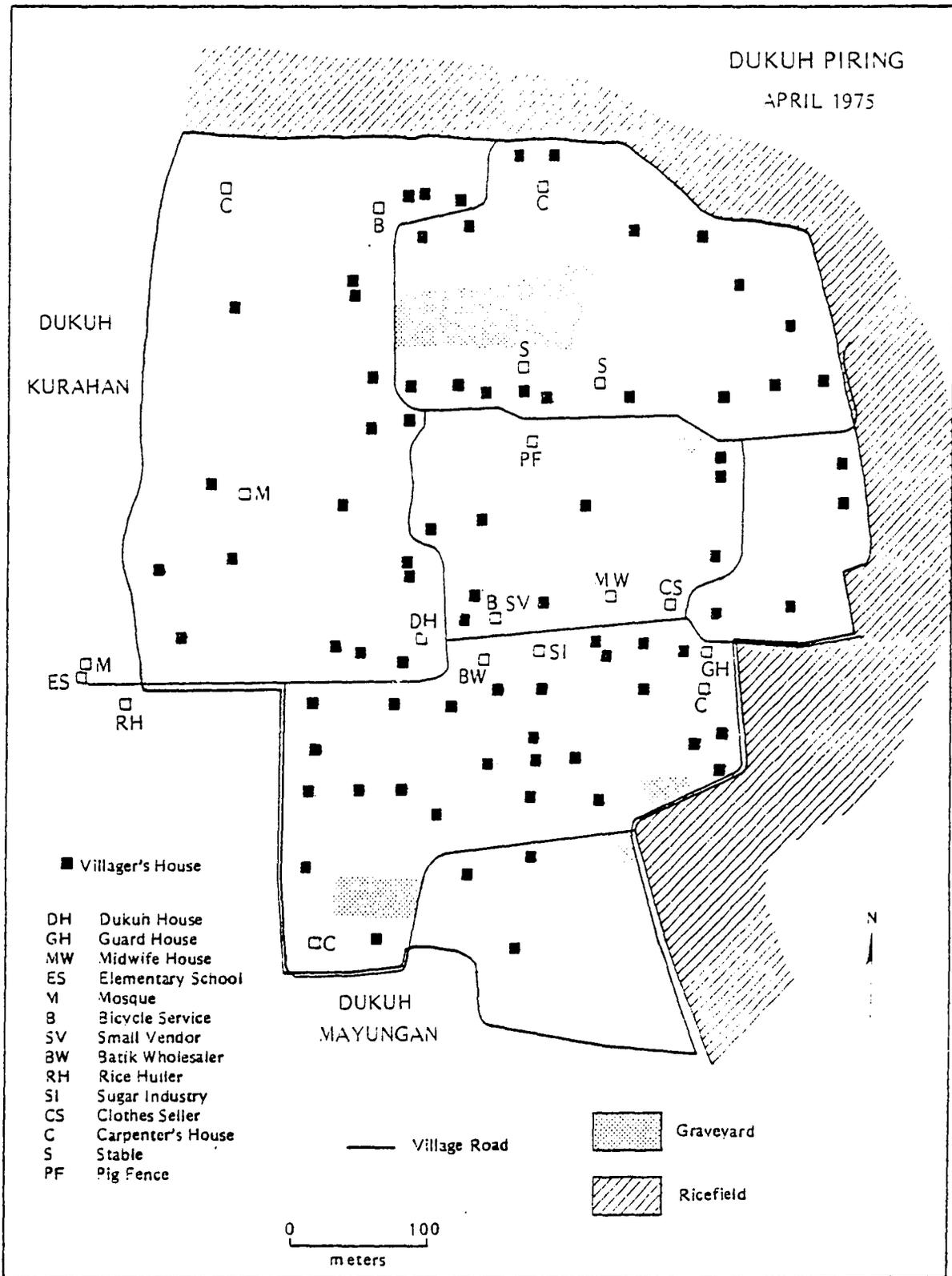


Figure 3.2

study dukuh. In Kadirojo, for example, the soil consists of clay, sand, and gravel which makes a firm floor but is not suitable for making bricks. Conversely the clay soil of Piring, makes superior bricks but a poor floor foundation. Again, there is no great economic difference between using a kerosene or a traditional lamp, since both consume approximately the same amount of fuel.

The people of Kadirojo and Piring are subsistence farmers who depend upon agriculture, particularly the rice crop, for most of their livelihood. There are three major types of land: wet rice field (sawah), house compound (pekarangan), and graveyard (kuburan). The average area of arable land (sawah and pekarangan) owned by one family in both dukuh is very small: 0.19 hectares for Kadirojo (71 families) and 0.19 hectares for Piring (99 families), and the average size of their rice fields equally miniscule (0.13 hectares for Kadirojo and 0.09 hectares for Piring; Table 3.2). Penny and Singarimbun (1973, 69), in their study of population and poverty in Sriharjo village, Bantul regency (Figure 1.1), estimated that with current technology one family needed 0.7 hectares of rice field, plus about 0.3 hectares of dry land, to achieve cukupan: that is, to have enough for their daily needs. If this criterion is applied to these two dukuh, then the average amount of land owned per family is too small to ensure their continued survival on the basis of agriculture alone.

The distribution of land among families also varies: 83.1 percent of Kadirojo families and 87.4 percent of Piring families own less than 0.2 hectares of rice field (Table 3.3). By contrast, only 2.8 percent of Kadirojo families (2 out of 71) and 1.0 percent of Piring families (1 out of 99) own more than 0.8 hectares. If the amount of land

TABLE 3.2

LAND TYPES AND LAND OWNERSHIP
KADIROJO AND PIRING, 1975

Dukuh	Rice field (hectares)			House compounds (hectares)			Rice field and house compounds (hectares)		
	Size	Average size per Hh and Standard Deviation	Average size per person	Size	Average size per Hh and Standard Deviation	Average size per person	Size	Average size per Hh and Standard Deviation	Average size per person
Kadirojo	8.8	Mean: 0.13 SD: 0.24	0.03	6.30	Mean: 0.11 SD: 0.14	0.02	15.10	Mean: 0.19 SD: 0.19	0.04
Piring	8.66	Mean: 0.09 SD: 0.14	0.02	9.80	Mean: 0.10 SD: 0.11	0.02	18.46	Mean: 0.19 SD: 0.24	0.05

Sources: Household Economic Survey
Dukuh Register

Hh = Household

TABLE 3.3

LAND OWNERSHIP BY FAMILIES
KADIROJO AND PIRING, 1975

Size (hectares)	Kadirojo			Piring		
	Rice field	House compound	Rice field and House compound	Rice field	House compound	Rice field and House compound
None	36 (50.7%)	18 (25.4%)	16 (22.5%)	51 (51.5%)	25 (25.3%)	24 (24.3%)
Under 0.19	23 (32.4%)	46 (64.8%)	37 (52.1%)	36 (36.4%)	64 (64.6%)	43 (43.4%)
0.2-0.79	10 (14.1%)	6 (8.5%)	18 (25.4%)	11 (11.1%)	10 (10.1%)	30 (30.3%)
0.8 and over	2 (2.8%)	1 (1.4%)	-	1 (1.0%)	-	2 (2.0%)
	71 (100%)	71 (100%)	71 (100%)	99 (100%)	99 (100%)	99 (100%)

Sources: Household Economic Survey
Dukuh Register

available to each household in rice fields and house compounds is combined, then 22.5 percent of all families in Kadirojo and 24.3 percent of those in Piring are completely landless. These results parallel those reported for other village studies of Yogyakarta Special Region. In Sriharjo village, Penny and Singarimbun (1973, 69) found that 84 percent of 164 families owned less than 0.2 hectares of rice field and only 2 percent of them owned at least 0.8 hectares. Stoler (1975, 4), in her study of garden use and household consumption in Kaliloro village, Kulon Progo regency (Figure 1.2), found that of the 478 households surveyed, 37 percent were landless and 40 percent had little farm land, whereas more than half of all the rice fields were owned by only 6 percent of village households.

Based upon their study of Yogyakarta Special Region, McDonald and Sontosudarmo (1976, 6) comment that the pressure of population upon land resources has produced large groups of landless agricultural workers. Since the cost of purchasing rice fields in these areas is high, there is great pressure to buy or sell land. Dukuh owners of small pieces or plots tend to sell their property to larger owners, so that gradually there is a tendency for the dukuh land to concentrate in the hands of several families. Mauier (1976, 6), in her study in four kelurahan in Bantul regency (Figure 1.2), found the ratio of landless to landowners to be generally high in such wet rice areas as Sleman and Bantul regencies.

The increasing gap between the landless and the landowning is likely to continue as long as economic pressures increase. In 1959, Duester (1971) found for Yogyakarta Special Region as a whole that 3.2 percent of all households owned at least 0.51 hectares of rice fields but by 1969 this percentage had increased to nine percent. But overall, as White (1973, 231) has pointed out, wet rice areas can support the landless

far better than can regions of dry rice agriculture, because of the high inputs of labor that the former require throughout the agricultural cycle and particularly during the harvesting season.

In both Kadirojo and Piring, such factors as the technology and manpower available, as well as the type of soil and irrigation, profoundly influence the general patterns of land use and crop rotation in the rice fields. Rice can be grown twice a year, during the wet season in both communities. In Piring, farmers cannot cultivate rice during the dry season (April-September), because of damage to the irrigation dam in Kamijoro (Bantul) which supplies water to the rice fields, but this disadvantage is offset by the use of high-yielding varieties to cultivate two crops of wet rice a year. In Kadirojo, by contrast, the system of irrigation is so efficient that there is sufficient water for rice farming during the dry season and wet rice cultivation is a year-round activity. In Kadirojo, as a result, variety in land use occurs within the same season, so that in one plot rice is being harvested while in another farmers are still ploughing or cultivating dry crops. Crops grown in Kadirojo during the dry season (April-September) consist of soybeans, cassava, corn, peanuts, and tobacco. In Piring, the dry season crops of soybeans, peanuts, and Spanish peppers are cultivated in April and harvested in August. Between September and November, at the end of the dry season and the beginning of the wet, dry rice (padi gadu) is cultivated. Padi rendengan, wet rice, is cultivated in December and harvested in March, so that during the dry season not every Piring farmer is busy in the fields.

As previously noted, the average size of rice fields owned by villagers is very small. In 1975, the combined production of both wet

and dry rice totalled 304.91 and 416.68 metric tons respectively for Kadirojo and Piring (Table 3.4). Although wet rice accounted for about two-thirds of the total production, yields per hectare were only double that of land given over to dry rice. In Kadirojo, the average yield was 88.38 kg per person (total population 345) and in Piring 106.03 kg (total population 393). These low rice yields per person are similar to the 100 kg that Penny and Singarimbun (1973, 31) reported from their survey of Sriharjo, in Bantul regency. They further estimate that one person requires about 125 kg to satisfy dietary needs. Even the recent use of new rice varieties, inorganic fertilizers and pesticides do not enable most farmers to produce sufficient rice to meet their family's needs. If, in addition, we consider that about half of all families in Kadirojo and Piring do not own any rice fields, then it can be seen that this situation is likely to deteriorate even further in the immediate future.

The lack of rice in both dukuh is reflected in the kinds of food that people eat. Throughout Java, there are usually three meals eaten each day: in the morning, at noon, and in the late afternoon. In Kadirojo and Piring, most people eat only twice a day, at noon and late in the afternoon. At midday they usually have rice and some vegetables mixed with coconut milk; sometimes they also have fried soybean cake (tempe goreng). In the afternoon, cassava and vegetables are usually eaten. Only on special occasions such as ritual feasts (selametan) are meat, fish or eggs eaten, and before the rice harvest cassava is the only food that many dukuh people have available.

In such a situation, the gardens that surround the dwelling unit of each family are critical. Root crops, vegetables, fruit and other trees

TABLE 3.4
RICE FIELD PRODUCTION
KADIROJO AND PIRING, 1975

Type of Rice	Kadirojo			Piring		
	Area (ha)	Yield per ha (100 kg)	Total yield (100 kg)	Area (ha)	Yield per ha (100 kg)	Total yield (100 kg)
Wet Rice	9.97	25	221.75	8.66	35	303.10
Dry Rice	6.65	12.5	83.16	6.49	17.5	113.58
Total	17.74	--	304.91	15.15	--	416.68

Source: Subdistrict Administrative Offices, Tempel and Sanden.

are planted in these house compounds (pekarangan), which Stoler (1975, 5) regards as a mixed garden. Pelzer (1945, 43-44) distinguishes three levels, or 'stories' in the pekarangan:

The ground story consists of low-growing plants, especially tuberous plants that tolerate shade, such as elephant yam, white arrowroot, purple arrowroot, sweet potato, taro....The middle story contains taller-growing plants, such as cassava...papaya, banana....The upper story is formed by tall fruit trees, such as coconut, jack fruit...mango, durian....

In Kadirojo, most gardens are of two 'stories', the first consisting of salak plants and the second of tall fruit trees like coconut, jack fruit, and bamboo. Ground plants cannot be grown because the salak leaves almost prevent the sun from reaching the soil, and the salak plant is also thorny. Salak fruit is an important secondary source of income for the people of Kadirojo. Between September and March, it is sold along the Medari-Tempel main road and for a few villagers as far away as Yogyakarta and Muntilan (see Chapter 4). Mixed gardens in

Piring, by contrast, consist of three stories. The lowest contains sweet potatoes, Spanish pepper, and yams; the middle story consists of cassava, papaya and banana; and the upper story has the tallest trees like coconut, jack fruit, and mango.

Stoler (1975, 27) estimates that in Kaliloro village, Kulon Progo regency (Figure 1.2), 16 percent of the food consumed annually comes from pekarangan. These mixed gardens are thus a source of food and income, the importance of which becomes relatively more important for families as farm size decreases (Penny and Singarimbun 1973, 37). As Pelzer (1945, 16) has noted, in pekarangan there is always something ready to harvest and to sell when the range of food becomes limited and money for daily household needs becomes scarce. In Kadirojo and Piring, however, the food annually available from both pekarangan and the dukuh rice fields does not meet the minimum subsistence requirements of the people.

Transport and Communication

Since 1970 transportation, as the means of shifting goods and people throughout Indonesia, has had first priority in the country's five-year development plans (1970-1974 and 1975-1979). Both five-year plans specify improvements to existing roads and bridges, the construction of new roads, and monitoring the use of existing roads in terms of both vehicle categories and traffic intensity (Republik Indonesia 1970, 276). Before 1970, the condition of roads both within the two study dukuh and connecting Yogyakarta and other villages was poor. Roads in and around Piring were much worse than for Kadirojo and this accounted for its greater isolation.

In Kadirojo, improvements in the main road between Yogyakarta and Semarang and the upgrading of several bridges built during the Dutch period have decreased its inaccessibility during the wet season. Roads both within the village and connecting other villages have been widened and surfaced with stones and gravel. Some irrigation tunnels which pass underneath these roads have been strengthened, so that vehicles like mini-buses, jeeps and dokar (pony carts) can use these roads during the wet season. Travel time to nearby villages also has been decreased.

A marked increase in the number of vehicles traveling throughout Yogyakarta Special Region has paralleled the improvement in transportation routes. For example, the number of buses and mini-buses which connect the towns of central Java increased by 8.6 percent between 1973 and 1975 (Transportation and Main Road Office Yogyakarta, 1975). Over the Yogyakarta-Semarang and Semarang-Solo-Yogyakarta-Magelang routes, there was a 38.9 percent increase in the number of scheduled services between 1973 and 1975 (86 versus 68 and 14 versus 4, respectively; see Table 3.5 and Figure 3.3). In 1975, 43 mini-buses connected Yogyakarta and Tempel whereas in 1973 the number was 22 (Transportation and Main Road Office, Yogyakarta 1975). Nowadays, mini-buses penetrate deeply into remote villages throughout Yogyakarta Special Region to transport passengers and goods between villages, towns, and cities. Since 1973, in Kadirojo dukuh itself, four motorcycles have been purchased, three of which are used by civil servants to commute daily to their offices in Tempel and Medari (Figure 1.2). Bicycles are still used mainly for travel over short distances, and in 1975 there were 62 bicycles owned by 71 households in Kadirojo. Improvements in the road network mean that, compared with the early seventies, many civil servants and students can both live

TABLE 3.5
 NUMBER OF BUSES AND MINI-BUSES TRAVERSING
 THE YOGYAKARTA-SEMARANG MAIN ROADS,
 1974 and 1975^a

Bus and Mini-bus route	Number of buses and mini-buses	
	1974	1975
Yogyakarta-Magelang	37	37
Yogyakarta-Semarang	68	86
Magelang-Yogyakarta-Solo	6	6
Ngadirejo-Magelang-Yogyakarta-Solo	-	6
Ngadirejo-Magelang-Yogyakarta	6	5
Ngadirejo-Semarang-Magelang-Yogyakarta	6	-
Parakan-Semarang-Yogyakarta	1	1
Temanggung-Semarang-Yogyakarta	3	3
Sukarejo-Temanggung-Magelang-Yogyakarta	2	-
Semarang-Solo-Yogyakarta-Magelang	4	14
Semarang-Magelang-Yogyakarta-Solo	4	-
Japara-Kudus-Semarang-Yogyakarta	3	3
Magelang-Yogyakarta-Purworejo	-	4
Sukarejo-Magelang-Yogyakarta	2	-
TOTAL	152	165

Source: Transportation and Main Road Office, Yogyakarta 1975.

^aExcluding over-night buses (Yogyakarta-Jakarta and Magelang-Surabaya-Malang).

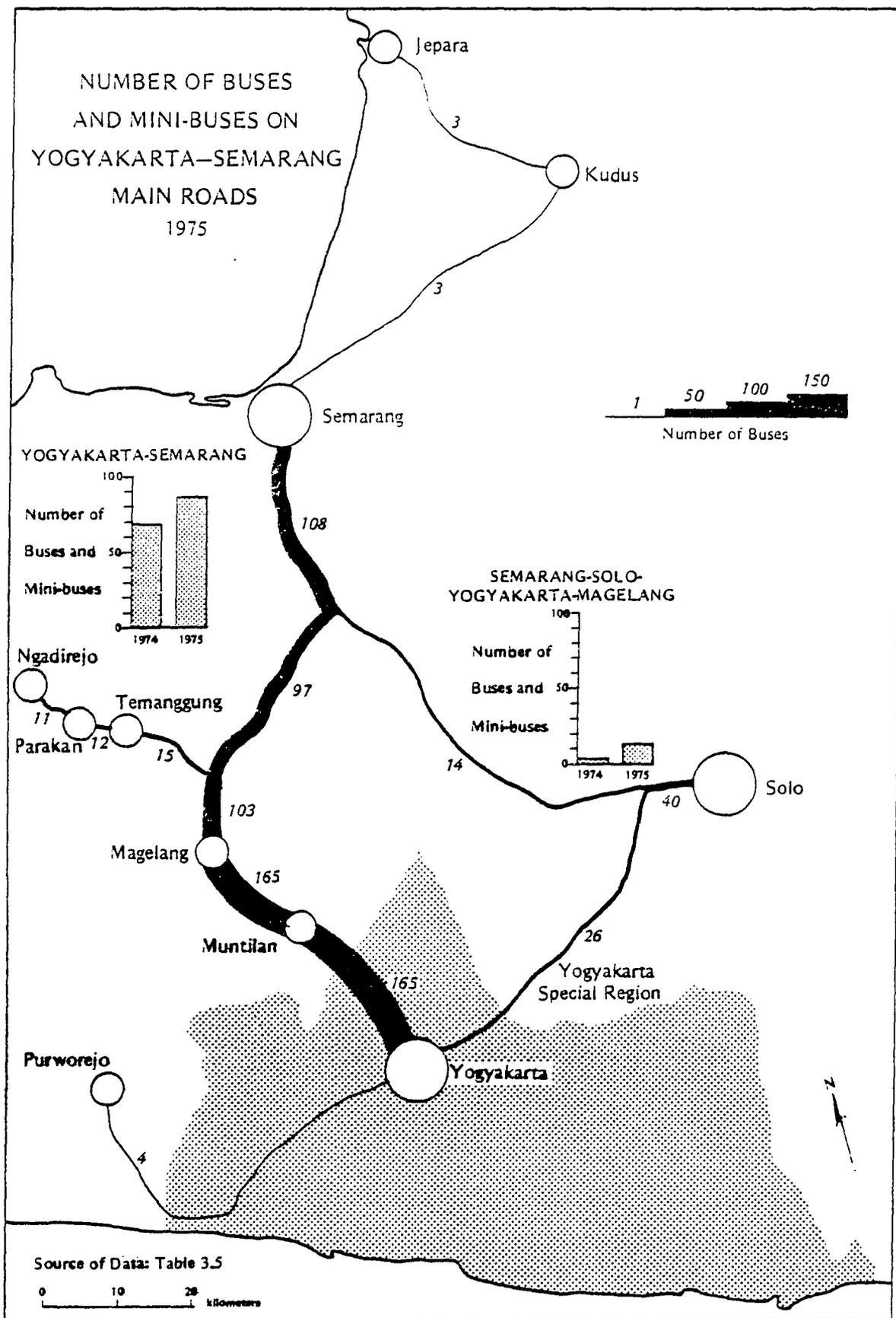


Figure 3.3

in the dukuh and commute daily to their places of work or schooling. Similarly, people who work and remain in Yogyakarta and nearby towns return more frequently to Kadirojo.

In Piring, an even greater improvement has occurred to roads both within and outside the community. Before 1970, road connections with the dukuh were poor, particularly those that linked Yogyakarta with Celep and Sorobayan (Figure 1.2). In 1965, the only bus that operated between Yogyakarta and Celep route discontinued its service because the road surface had deteriorated so much. In the early sixties, as a result, few people traveled between Piring and Yogyakarta. Students who went to school in Bantul or Yogyakarta lived there and returned home by bicycle once a month to collect food and money.

This situation was dramatically changed in 1972, when the main roads between Yogyakarta and both Celep and Sorobayan (Figure 1.2) were upgraded prior to opening the tourist area in Samas beach, and the Yogyakarta-Celep main road was extended to the coast (Figure 1.2). Since then, traffic along the Yogyakarta-Samas road has increased greatly and three bus companies offer services between Yogyakarta and Samas that the people of Piring can utilize. The Yogyakarta-Sorobayan route, which passes the western boundary of the dukuh, is also much traveled; one bus company provides regular service and some mini-buses pass by several times each day. In 1974, the local government connected these two main thoroughfares with a road built through the southern part of Sanden subdistrict (Figure 1.2), which was formerly quite isolated. As a result, some mini-buses now travel to Samas via the Yogyakarta-Sorobayan route and can be boarded by people from Piring who want to go to Samas beach (Figure 1.2).

As with Kadirojo, this considerable reduction since 1972 in Piring's isolation now means that many civil servants and students may commute daily to Bantul, and that there is a higher frequency of people who travel to and from Yogyakarta. Although there were nine motorcycles in Piring in 1976, the pedal bicycle still remains the basic form of transport and each household owned at least one (116 bicycles for 99 households).

Despite recent improvements in physical modes of transportation, the flow of information at the level of the dukuh is still erratic. Communication between the Central Government and the dukuh population passes down several steps in the administrative hierarchy, the last of which is the dukuh head (kepala dukuh). Usually official messages are given to the people when they attend ritual feasts (selamatan) or on other occasions such as when a family convenes following the birth of a child.

Newspapers are not readily available in rural areas, partly because they are very expensive and partly because of problems with their distribution. They are consequently read only by the better educated who have permanent incomes, such as civil servants, school teachers, and sometimes batik sellers. Radios, by comparison, have been available for some time; in 1975 there were 20 in Kadirojo and 23 in Piring. Villagers generally prefer such entertainment as Javanese folk drama (ketoprak) and popular traditional drama (wayang orang) to news programs. The government tries, without too much success in Kadirojo and Piring, to organize listener groups among farmers who are urged to hear educational programs on rural development, family planning, and transmigration.

In Piring, one family owns a television set, but there is none in Kadirojo or the surrounding villages. Many evenings people come to the Piring household to watch television, especially entertainment programs. There is also a television set in front of the subdistrict office at Sanden, 1.25 km to the west of Piring. When staying in the village it was noticed that no one watched this set, and when asked why people answered that they did not want to walk or bicycle as far as the sub-district office. In both dukuh the people enjoyed watching television programs but were unwilling to travel outside the village after a hard day's work in the fields. To watch television also can cut deeply into the time available for leisure, since the entertainment programs usually begin quite late (9:15 P.M.).

Demographic and Socioeconomic Characteristics

On 24 April 1975, Kadirojo had a de jure population of 345 residents in 71 households, and Piring had 393 residents in 99 households. The average number of persons per household in Kadirojo (4.85) is almost identical to the 4.9 recorded in 1972 by Valerie Hull (1975, 57) for Maguwoharjo, Sleman Regency (Figure 1.2). By contrast, Piring households are smaller in size (3.96) because of the higher ratio of single person households (Piring 21 out of 99; Kadirojo 3 out of 71; Table 3.7). About four-fifths of Piring households have between one and five members whereas in Kadirojo household size is more evenly distributed (60.6 percent consist of one to five members; Table 3.6). As a result, the average size of households in Kadirojo is closer than that of Piring to results reported in the 1971 census for the rural areas of Sleman and Bantul regencies and for Yogyakarta Special Region as a whole (4.4, 4.5, and 4.9 respectively: Biro Statistik 1974, 65-69).

TABLE 3.6
 SIZE OF HOUSEHOLD, KADIROJO
 AND PIRING, 1975

Size of Household	Kadirojo		Piring	
1	3	} 60.6%	21	} 81.7%
2	8		15	
3	12		14	
4	13		16	
5	7		15	
6	10		5	
7	8		5	
8	5		5	
9	3		2	
10	2		1	
<hr/>				
TOTAL	71		99	

Source: Household Census

Following the definition used in the 1971 census of population of Indonesia (Central Bureau of Statistics 1976a, xiii), a household consists of "a person or group of persons occupying a part of the whole building and generally eating together from one kitchen." Thus a single household is not always characterized by a separate physical dwelling but rather by having a separate kitchen. The household, as previously mentioned, is the smallest unit in Javanese society and also forms the basic economic group for production and consumption (Selosoemardjan 1962, xx,

TABLE 3.7
 TYPE OF HOUSEHOLDS, KADIROJO
 AND PIRING, 1975

Type of Household ^a	Kadirojo		Piring	
	Total	%	Total	%
Single Person	3	4.2	21	21.2
Simple or broken nuclear family	53	74.7	54	54.6
Simple or broken nuclear family with relatives	13	18.3	24	24.2
Unrelated persons	2	2.8	--	--
TOTAL	71	100.0	99	100.0

Source: Household Census

^aSimple or broken nuclear family: one or both parents with or without children;

Simple or broken nuclear family with relatives: same as above, but including persons related by blood or marriage to any household member;

Unrelated persons: those unrelated by blood who live together, for example students or wage laborers.

Koentjaraningrat 1967, 260). Usually one household consists of a single nuclear family, but may also include dependent adults and more distant blood relatives. For example, a newly-wed couple usually continues to live with one of the parents until their own household can be established. At times, married couples live permanently with their parents, especially when the latter are too old to work their rice fields.

In both Kadirojo and Piring households, nuclear families, whether simple, broken, or with additional relatives, dominate (Table 3.7). Although very few households consist of unrelated persons, in Piring about one-fifth (21 out of 99) contain only one individual. Most of these

are elderly people, aged more than 60, whose children have migrated to other areas, notably South Sumatra and Jakarta. These old people do not want to leave Piring and join their children because, when they die, they wish to be buried in their family graveyards.

In terms of age structure, the population of Kadirojo is younger than that of Piring. In Kadirojo, 40.3 percent of the population is aged less than 15 compared with 30.3 percent in Piring (Table 3.8 and Figure 3.2). Conversely only 9.6 percent of Kadirojo's population is aged more than 60 as against 15.8 percent for Piring. The low percentage of persons in Piring aged less than 15 is possibly due to the impact of formal education upon out-migration, since some children have settled in other parts of Indonesia such as Jakarta or south Sumatra following graduation from primary school. Of perhaps greater relevance, however, is the difficulty experienced with age estimation (see Chapter 2). In Piring, only 5.6 percent of the population held birth certificates compared with 37.1 percent in Kadirojo (22 out of 393 and 128 out of 345 respectively). The population pyramids for both dukuh (Figure 3.4) reveal a sharp reduction in the numbers at age 25 but for Piring, in addition, the age group 0-4 contains fewer members than that aged 5-9. The first indentation can be explained by the smaller number of people born at the time of the Second World War and the Indonesian Revolution, the great disruption of which, according to Terence Hull (1975, 180), resulted in both lower fertility and increased mortality. No such parallel events occurred in 1971-75 (see Table 2.2) to account for the small number of children aged less than five in Piring, which perhaps therefore results from age misreporting.

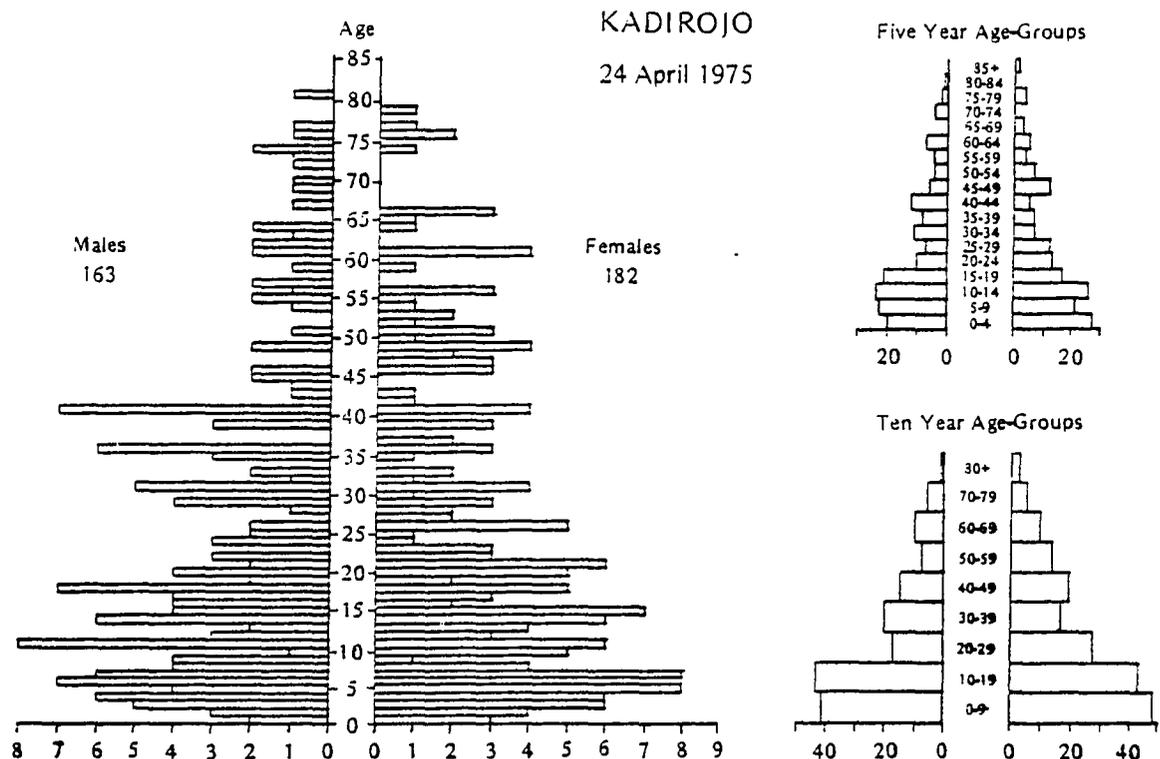
TABLE 3.8
 AGE AND SEX DISTRIBUTION OF THE DE JURE POPULATION
 KADIROJO AND PIRING
 April 1975

Age (in years)	Kadirojo			Piring		
	Male	Female	Total	Male	Female	Total
0- 4	20	27	47	13	18	31
5- 9	22	21	43	26	16	42
10-14	23	26	49	15	31	46
15-19	21	17	38	27	15	42
20-24	10	14	24	22	20	42
25-29	7	13	20	10	8	18
30-34	11	8	19	5	16	21
35-39	9	8	17	10	10	20
40-44	12	6	18	9	8	17
45-49	3	13	16	10	8	18
50-54	4	8	12	6	7	13
55-59	4	5	9	6	15	21
60-64	7	6	13	7	10	17
65-69	3	3	6	6	6	12
70-74	4	1	5	4	5	9
75-79	2	4	6	2	6	8
80-84	1	-	1	4	3	7
85+	-	2	2	3	6	9
TOTAL	163	182	345	185	208	393

Source: Household Census

AGE-SEX STRUCTURE OF *De Jure* POPULATION, 1975

KADIROJO AND PIRING



Source of Data: Table 3.8

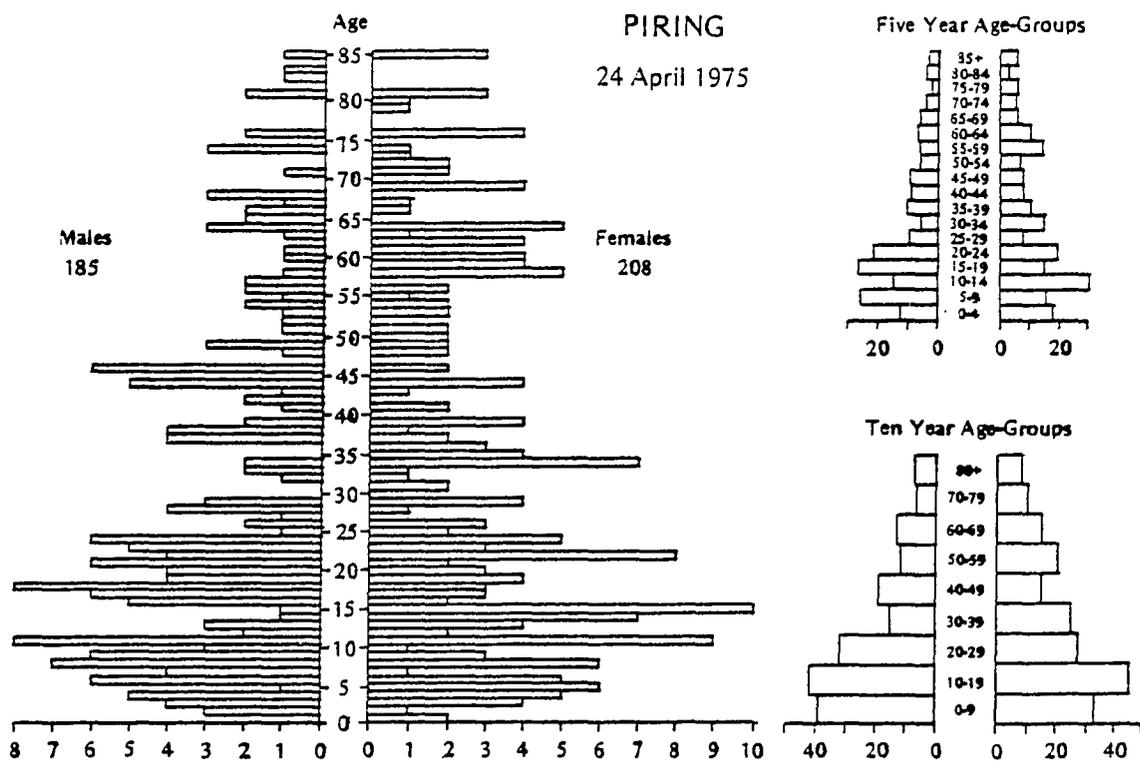


Figure 3.4

Age and sex structure, when related to wage-earning capacity, is a useful indicator of the ratio of economically dependent to independent persons in a population. Conventionally, the lower age limit for persons considered to be economically independent is 15 and the upper limit 60. Dependent persons are therefore said to consist of children aged less than 15 and elderly persons aged more than 60 (Clark 1965, 63-64; Widjojo 1970, 180; Pollard, et al. 1975, 15). However many African and Asian countries do not use an upper age limit, because of the large number of children and old people who contribute to the family income, and also adopt a lower age limit than 15 in official census and labor force surveys. Thus ten years is the youngest age in the Philippines and Singapore at which a person can be viewed as economically independent, six in Libya and Hongkong, and five in Sudan (Miura 1967, 374).

In both dukuh, ten year old children who go to school also have to work in part-time jobs to supplement the family income. After school in Piring, for example, young girls paint batik at home and some boys help their fathers in the rice fields. Two girls from Kadirojo worked as maids in Tempel (Figure 1.2). Since many persons aged between ten and fourteen work for money in Kadirojo and Piring, ten years can be regarded as the lowest age at which an individual may be a 'potential wage earner.' This parallels the decision made during preparations for the 1971 population census in Indonesia (Central Bureau of Statistics 1974, xxi), in which the age of ten was also defined as the lowest limit for a person to be considered of 'working age.'

As with many African and Asian countries, the 1971 census of Indonesia also specified no upper age limit. To have selected 60 years of age would have excluded from the 'work force,' or as 'wage earners,' some

still active as wet rice farmers. In Maguwoharjo village, T. Hull (1975, 182) similarly found that some people continue to work their rice fields or become farm laborers well into their seventies. In a village population, as Chapman (1970, 91) has commented, it is not the actual age which is important to decide the upper limit for those persons gainfully employed, but rather the physical capability and motivation that governs people's ability to earn money during any given year of their lifetime. For Kadirojo and Piring, age 65 was chosen as the upper limit to compute the dependency burden, because very few villagers work regularly beyond that age. Those potentially of working age are thus defined as between 10 and 64, and their dependents as aged 0-9 and 65 or more years.

The burden of dependency, calculated in this way, is 46.8 for Kadirojo and 42.9 for Piring. These figures are slightly lower than those reported in 1975 for Maguwoharjo village (49: T. Hull 1975, 178) and in several villages of West Java (47: G. Hugo 1975b, 493). In computing the dependency burden for Java during 1930-1960, Widjojo (1970, 161) used 15-59 years to define those of working age. If this definition is used, then the dependency burden for Kadirojo becomes 100.6 and for Piring 117.1. Both these ratios are higher than those calculated for Maguwoharjo village (98: T. Hull 1975, 178); several villages of West Java (96.1: G. Hugo 1975b, 493); and for all of Java in 1961 (80.8: Widjojo 1970, 180). In monetary terms, the dependency burden carried by Kadirojo and Piring households is consequently lower than for many other villages in Java, yet the people continue to live at the margin of subsistence because the amount of money earned to supplement food from the fields and house compounds is very small.

In both dukuh, most people marry before they reach 35. Only two persons aged more than 35 in Kadirojo and one in Piring remain unmarried (Table 3.9). A similar situation was found in Maguwoharjo by T. Hull (1975, 189), where nobody remained single beyond the age of 30. Females marry when aged between 19 and 29 and males at an average of five years older (24-34). Just as T. Hull (1975, 192) reports from Maguwoharjo village, there has been a substantial rise since the 1930s in the age at which legal marriages occur.

The rate of divorce and remarriage is high, particularly for marriages arranged by parents. The marriage survey shows that, of the 75 ever-married women in Kadirojo, 29.3 percent (22 out of 75) have been married twice, 6.7 percent (5 out of 75) three times, and 1.3 percent (1 out of 75) four times. In Piring the rate of remarriage is a little lower: among 99 ever-married women, 24.2 percent (24 out of 99) have been married twice, 4 percent (4 out of 99) three times, and 1 percent (1 out of 99) four times. Two women in Kadirojo and one in Piring, both more than 45 years old, gave similar accounts of this sequence. Their first marriage was arranged by parents, but since they were too young and refused to live with their husbands, they obtained a divorce within the same year. For the second marriage, by contrast, they themselves chose their husbands. This illustrates a recent tendency for most couples to arrange their own marriages, even though they still need their parents' consent. In both Kadirojo and Piring, more than 90 percent of all ever-married women aged 40 years or more had had their marriage arranged by their parents, whereas almost half of those aged less than 40 had arranged their own marriages (Table 3.10). After marriage, the wife usually stays in her husband's house, which accounts

TABLE 3.9
 MARITAL STATUS BY AGE AND SEX, KADIROJO AND PIRING 1975
Kadirojo, April 1975

Age Group	Single		Married		Widowed ^a		Total	
	M	F	M	F	M	F	M	F
0- 4	20	27	-	-	-	-	20	27
5- 9	22	21	-	-	-	-	22	21
10-14	23	26	-	-	-	-	23	26
15-19	21	13	-	3	-	1	21	17
20-24	8	5	2	9	-	-	10	14
25-29	3	2	4	11	-	-	7	13
30-34	2	-	9	6	-	2	11	8
35-39	-	-	9	8	-	-	9	8
40-44	-	1	11	4	-	1	11	6
45-49	1	-	3	7	-	6	4	13
50-54	-	-	4	6	-	2	4	8
55-59	-	-	4	3	-	2	4	5
60-64	-	-	6	4	1	2	7	6
65-69	-	-	3	2	-	1	3	3
70-74	-	-	4	-	-	1	4	1
75+	-	-	2	1	1	5	3	6
TOTAL	100	95	61	64	2	23	163	182

Piring, April 1975

0- 4	13	18	-	-	-	-	13	18
5- 9	26	16	-	-	-	-	26	16
10-14	15	32	-	-	-	-	15	32
15-19	25	14	2	1	-	-	27	15
20-24	19	12	3	8	-	-	22	20
25-29	1	2	9	6	-	-	10	8
30-34	2	1	3	13	-	1	5	15
35-39	-	-	10	10	-	-	10	10
40-44	-	-	9	5	-	2	9	7
45-49	-	-	10	6	-	2	10	8
50-54	1	-	5	6	-	1	6	7
55-59	-	-	5	9	1	6	6	15
60-64	-	-	5	6	2	4	7	10
65-69	-	-	6	2	-	4	6	6
70-74	-	-	2	1	2	5	4	6
75+	-	-	5	1	4	14	9	15
TOTAL	102	95	74	74	9	39	185	208

Source: Household Census

^aIncluding divorcees.

TABLE 3.10
 MARRIAGE ARRANGEMENT OF ALL EVER-MARRIED WOMEN
 KADIROJO AND PIRING, 1975

Age group	Kadirojo			Piring		
	Parents	Self	Total	Parents	Self	Total
15-19	1	1	2	-	2	2
20-24	1	6	7	-	8	8
25-29	7	3	10	2	3	5
30-34	4	3	7	8	3	11
35-39	4	3	7	7	3	10
40-44	4	1	5	9	1	10
45-49	10	1	11	7	1	8
50-54	6	-	6	5	2	7
55-59	6	-	6	9	-	9
60-64	6	-	6	11	-	11
65-69	4	-	4	5	-	5
70-74	2	-	2	5	-	5
75-79	2	-	2	4	-	4
80+	-	-	-	4	-	4
TOTAL	57	18	75	76	23	99

Source: Marriage and Children Survey

for much of the permanent in-migration into both dukuh communities (see Chapter 5). There is also a high number of widows who returned back to their natal place following the death of their husbands (Kadirojo: 23, Piring: 39).

In both Kadirojo and Piring, the level of formal education is low. About one-third (83 out of 273 in Kadirojo; 106 out of 345 in Piring) of those aged seven or more years have received no formal education (Table 3.11). For those with some formal education, most have attended only primary school and not continued their studies to higher levels (Kadirojo 50.9 percent; Piring 43.2 percent). The main reasons are the high cost of formal education and the fact that high school or university graduates of dukuh families find it extremely difficult to obtain wage employment. Every day, in Yogyakarta, people with all levels of completed education go to the employment office (Kantor Penempatan Tenaga) to look for jobs but very few are successful. Thus many children do not continue their formal education beyond elementary school, but rather stay in Kadirojo and Piring to assist their parents in the rice fields or to work as farm laborers.

Few people born before the Japanese occupation (aged 35 years or more) had any formal education and virtually no one studied beyond primary school (Table 3.11). Today the situation has changed, since many schools and universities were established in the years following Indonesian independence (1945). In Yogyakarta Special Region, almost every village has a primary school, every subdistrict at least one junior high school, and every regency has senior high schools. In Yogyakarta, in addition, there are several universities. For Kadirojo, two primary schools are located within commuting distance by bicycle

TABLE 3.11
 HIGHEST EDUCATION RECEIVED,^a BY AGE AND SEX
 KADIROJO AND PIRING 1975

Kadirojo, April 1975

Age group	None		Primary School		Junior High		Senior High		Academy/ University		Total	
	M	F	M	F	M	F	M	F	M	F	M	F
7- 9	2	1	7	9	-	-	-	-	-	-	9	10
10-14	1	-	17	25	5	1	-	-	-	-	23	26
15-19	-	2	7	11	10	3	4	1	-	-	21	17
20-24	-	1	3	8	3	4	4	-	-	1	10	14
25-29	-	3	3	8	2	1	1	1	1	-	7	13
30-34	1	3	6	3	1	1	3	-	-	1	11	8
35-39	1	5	7	3	-	-	-	-	1	-	9	8
40-44	2	3	9	3	-	-	-	-	-	-	11	6
45-49	3	10	1	3	-	-	-	-	-	-	4	13
50-54	1	8	1	-	2	-	-	-	-	-	4	8
55-59	3	5	1	-	-	-	-	-	-	-	4	5
60-64	7	6	1	-	-	-	-	-	-	-	8	6
65+	5	10	3	-	-	-	-	-	-	-	8	10
TOTAL	26	57	66	73	23	10	12	2	2	2	129	144

Piring, April 1975

7- 9	-	1	16	10	-	-	-	-	-	-	16	11
10-14	-	1	14	25	1	5	-	1	-	-	15	32
15-19	-	1	9	8	8	3	9	3	-	-	26	15
20-24	1	-	-	8	8	4	10	6	3	2	22	20
25-29	-	1	2	5	3	1	4	1	1	-	10	8
30-34	-	3	4	7	-	2	-	2	1	1	5	15
35-39	1	5	7	4	-	1	1	-	1	-	10	10
40-44	-	4	8	2	-	1	-	-	1	-	9	7
45-49	2	7	6	1	1	-	1	-	-	-	10	8
50-54	1	7	4	-	-	-	-	-	-	-	5	7
55-59	1	15	4	-	1	-	-	-	-	-	6	15
60-64	5	9	2	1	1	-	-	-	-	-	8	10
65+	14	27	2	-	2	-	-	-	-	-	18	27
TOTAL	25	81	78	71	25	17	25	13	7	3	160	185

Source: Household Census

^aFor all persons aged 7 or more years.

(Kadisono, 1 km northwest, and Medari 2.5 km southeast of Kadirojo), and five junior high schools are located within a range of four kilometers: Ngebong 2 km northwest, Tempel 2.5 km north, Morangan 3 km north, Medari 2.5 km southeast, Sleman 3.4 km southeast, and Salam 4 km southeast. There are also senior high schools in Medari and Morangan (Figure 1.2). For Piring, the primary school is at the adjacent dukuh (0.3 km to the west), and three junior high schools are within commuting distance by bicycle (Sanden 1.25 km west, Sorobayan 2.5 km southwest, and Srandakan 4 km southeast of Piring). Individuals who continue their studies at senior high school must travel each day to Bantul, 12 km north of Piring.

One result of this availability of schools is a marked rise in the number of females who have had some formal education. Whereas during the Dutch period (1750 to 1942) very few girls attended school (Widjojo 1970, 2), today there is little difference in the ratio of male to female enrollments. In Kadirojo, slightly more women than men (73 to 66) have attended primary school, but in Piring there is very little difference (71 to 78; Table 3.11). Beyond primary school, males in both Kadirojo and Piring tend to continue their formal education twice as frequently as women, although the total numbers are not high because dukuh families find it difficult to pay the school fees and related costs.

In neither Kadirojo nor Piring do the rice fields and house compounds produce sufficient food for every family and many people have to seek additional income. Since job opportunities are limited in these two dukuh and in small cities like Bantul, Tempel, and Medari, not everyone who wishes can supplement their family income. Between three-quarters (Kadirojo) and six-sevenths (Piring) of the population of both

dukuh are productively engaged in either or both primary and secondary occupations. In Kadirojo, 22.8 percent (62 out of 272) and, in Piring, 22.1 percent (75 out of 340; Table 3.12) reported more than one job. Much of this work was part-time, and involved such jobs as salak carriers, coconut pickers, and brick layer's assistants. For this reason, all jobs have been grouped into broad categories to more adequately describe how great a proportion of the total de jure work force is engaged in any particular activity (Table 3.13).

In both Kadirojo and Piring, farming is the dominant occupation. This, along with farm laborers, accounts for about 47 percent of all productive employment (Kadirojo 139 out of 272; Piring 158 out of 340). In Kadirojo, small traders are the third most important group (40 out of 272). About half (21) of those sell salak, mostly along the main road between Medari and Tempel but also as far as Yogyakarta and Muntilan (Figure 1.2). Other people sell cooked food in several places near the dukuh (7), chickens in Tempel (3), or groceries to several neighboring dukuh (4). Although fewer, traders in Piring specialize in batik, sold at regular markets (4 persons); coconut oil (6 persons) which is carried to Bantul by bicycle; shrimp chips (4 persons), groceries (4 persons), and small inn keepers (3 persons).

The far greater importance of skilled laboring in Piring than in Kadirojo (87 versus 14) is a reflection of the batik industry. In 1975, there were 85 batik laborers in Piring. This is a home industry which can be done along with household chores. White muslin is painted with wax and the finishing touches are made in the batik factories of Yogyakarta. During the harvest season, most women stop painting batik and work in the rice fields as sharecroppers. In Piring there is also one

TABLE 3.12
SINGLE AND MULTIPLE OCCUPATIONS
KADIROJO AND PIRING, 1975

Occupation	Kadirojo	Piring
Farmer ^a	45	47
Farm laborer	27	32
Small trader	16	12
Civil servant	13	11
Retired person	1	-
Unskilled laborer	24	16
Skilled laborer	7	47
Student/Trainee	77	100
Farmer and farm laborer	7	6
Farmer and small trader	15	10
Farmer and civil servant	14	4
Farmer and retired person	3	3
Farmer and unskilled laborer	4	8
Farmer and skilled laborer	4	33
Farm laborer and small trader	7	1
Farm laborer and civil servant	1	-
Farm laborer and unskilled laborer	2	3
Farm laborer and skilled laborer	3	5
Small trader and civil servant	1	-
Small trader and unskilled laborer	1	-
Small trader and skilled laborer	-	2
Total productively employed	272	340
Not employed		
Under age (less than 7)	70	46
Too old	3	7
Total not employed	73	53
TOTAL POPULATION	345	393

TABLE 3.12 (Continued) SINGLE AND MULTIPLE OCCUPATIONS

Source: Household Census

^a"Farming" includes the cultivation of one's own land, or that which is rented or sharecropped. Those who manage the cultivation of their own land, even though they themselves may not physically cultivate it are also included. By 'land' is meant not only the rice fields but also the house compound.

"Farm laborer" includes all agricultural workers, male or female who receive payment for their efforts. Male laborers are usually employed to plant, hoe, and weed, and female laborers for replanting and harvesting.

"Trading" includes a wide range of traders (small stall keepers, salak sellers) and also individuals involved in purchasing materials or in the marketing of finished products of various food items which they themselves produce for sale.

"Skilled laborer" includes all those specific vocational skills, for example, batik laborers, carpenters and brick layers.

"Unskilled laborer" includes those without any specific vocational skills, such as servants, carpenter's assistants and waiters.

"Civil servant" includes all those employed by the state or a private company as well as soldiers.

carpenter and another person who repairs bicycles in a small workshop in front of his house. In Kadirojo, ten persons skilled in carpentry and brick laying are usually employed by villagers to build house frames but sometimes also work on housing projects in Yogyakarta. In addition, three women plait pandanus mats and another makes mattresses.

The 29 civil servants of Kadirojo who are regularly employed in Tempel, Sleman, Medari and Yogyakarta commute everyday to their offices in the same way as do the 12 of Piring who work in Sanden and Bantul (Fig. 1.2). Those from Piring who work in Yogyakarta, however, remain during the week and return only on Saturdays. In both dukuh there are

TABLE 3.13
 OCCUPATIONAL CATEGORIES OF THE DE JURE WORKFORCE
 KADIROJO AND PIRING, 1975

Occupation	Kadirojo		Piring	
	Total	% ^a	Total	% ^a
Farmer	92	33.8	111	32.6
Farm laborer	47	17.3	47	13.8
Small trader	40	14.7	25	7.4
Skilled laborer	11	5.1	87	25.6
Unskilled laborer	31	11.4	27	7.9
Civil servant	29	10.7	15	4.4
Retired person	4	1.5	3	0.9
Student/Trainee	<u>77</u>	28.3	<u>100</u>	29.4
Total number of occupations	331		415	

Source: Table 3.12

^aPercentages are based upon the total de jure workforce of the respective dukuh (Kadirojo 272, Piring 340).

retired civil servants and soldiers, most of whom have bought some rice land either before or after returning to their home community.

Working as an unskilled laborer is the fourth most important activity in both Kadirojo and Piring (Table 3.13). Some work in the two muslin factories in Medari, some in the irrigation canal project near Piring, and some help batik sellers carry their cloth to market. Except for civil servants, the wages received for all such employment are low. A male agricultural laborer, for example, receives Rp:

150¹ a day and a female Rp: 120, excluding a meal at noon and a morning coffee and snack. Salak traders obtain between Rp: 100 and 300 from selling for six hours (10 A.M. until 4 P.M.) and small innkeepers a little less (Rp: 100-200 a day). Batik laborers receive very low wages, depending upon the quality of the cloth they make: Rp: 30 a day for low quality, Rp: 65 for medium, and Rp: 100 for high quality. Those who work in Yogyakarta as batik laborers or pedicab drivers are also poorly paid and receive between Rp: 200 and 300 a day. Because the wages earned are uniformly low, people staying in Yogyakarta only send money to their parents or relatives on such special occasions as Ruwah and Lebaran. Civil servants, by contrast, obtain far higher salaries, which range between Rp: 10,000 and 30,000 a month (about U.S. \$24-72), while those in Kadirojo and Piring who are retired from service may receive as much as Rp: 30,000 a month (about U.S. \$72).

Such contrasts of income are reflected in the material wealth of households. Families in both Kadirojo and Piring that are moderately well-off own a piece of rice land and their house compounds, cattle, and a substantial house. They also have a radio, furniture in their living room, a cupboard, and a bicycle. Some of them even own a sewing machine. Poor families, on the other hand, mostly own the small house compound on which their dwelling stands. Usually they have a table and chairs, some cooking utensils, and a wooden or bamboo bed covered with a mat of coarsely woven pandanus. Following T. Hull (1975, 160), these differences in the ownership of material items can be used to construct an index of the economic welfare of households. Four items

¹In 1975 the rate of U.S. \$1.00 was 415 Indonesian Rupiah.

are selected to construct this index: housing, property, cattle, and land owned (Appendix II). The relative economic status for each household can be determined by comparing its own particular index with the maximum potential value. For these two dukuh, the maximum index is 132, based upon 18 for housing, 91 for property, 6 for cattle, and 17 for land ownership (Appendix II).

In Kadirojo 65 out of 71 and in Piring 87 out of 99 households have an economic index of less than 50 (Table 3.14). The average economic index is virtually identical for both communities: Kadirojo 30.4 and Piring 30.5 (Table 3.14). T. Hull (1975, 162) used rice consumption, materials used in house construction, the condition of the dwelling unit, and the ownership of material items to construct an economic index for the households of Maguwoharjo village. Based upon a maximum index of 19, he found that 85 percent of all households (1,163 out of 1,368) have an economic index of less than 8. This ratio of poorer to richer households parallels that for Kadirojo and Piring, in which households with low economic indices are far more numerous than those with higher indices.

Without doubt, the great majority of people in these two dukuh communities are poor. They do not have enough land to cultivate or food to eat and they receive little money for the paid work they do. Only a few families are moderately well placed. The pressure of population upon land resources has produced a large group of landless agricultural workers and owners of small pieces of land tend to sell their property to larger owners. Consequently the dukuh land tends to concentrate in the hands of several families and the poor people are not only losing their property but also the whole basis of their subsistence. In

TABLE 3.14

INDEX OF THE ECONOMIC WELFARE OF HOUSEHOLDS
KADIROJO AND PIRING, 1975

Index	Kadirojo	Piring
0- 9	2	4
10-19	10	25
20-29	28	21
30-39	17	27
40-49	9	10
50-59	4	6
60-69	-	4
70-79	1	1
80-89	<u>1</u>	<u>1</u>
Total number of households	71	99
Mean	30.4	30.5
Median	28.4	29.8
Mode	36.4	33.3
Standard deviation	14.0	16.0

Source of data: Household Economic Survey

Maguwoharjo village, T. Hull (1975, 172) reports that a poor man is not only poor today but has probably been poor for years, if not for all his life. Thus the better placed families can improve their economic condition, but the position of poor families becomes even more depressed and the socioeconomic gap between these two groups continues to widen.

Life Style and Traditions

The dukuh is not only a place where people live together but also a community whose members believe that they are descended from the dukuh founder, or at least have a distant relationship with him (Selosoemardjan 1962, 77). Heredity and living together give to all villagers a feeling that they are an inseparable part of the local society, for whose security and welfare they feel responsible. When, for example, there is a death in a family, one member goes to inform the dukuh head who in turn spreads the word throughout the community. As soon as people receive news of the death, they stop whatever they are doing and go to the house where the death has occurred. Women donate money and food stuffs for the selametan (ritual), while men prepare a place for cleaning the corpse. Others simply express their condolences and wait until it is time to go to the cemetery. People offer such help spontaneously without any expectation of return (Koentjaraningrat 1961, 30).

This mutual self-help, or gotong royong, is very strong in Javanese villages. The traditional system of rice harvesting, which is extremely labor intensive and involves large numbers of women paid with a share of the harvest, is a good example of gotong royong and also of what C. Geertz (1971, 141) has called 'shared poverty.' As previously mentioned, most dukuh people are so poor that it is hard to believe they can survive,

yet it is precisely this traditional system of mutual help that enables them to survive. Participation in mutually helpful activities is thus a moral obligation for a dukuh member and any person who never enters into such activities is unwelcome and will command no respect.

There are several types of gotong royong that reflect different functions and different attitudes of the participants. Koentjaraningrat (1961, 29) lists seven types of gotong royong for two villages in Central Java, five of which were found practiced in Kadirojo and Piring. The first type of gotong royong activity, often referred to as tulung layat, means helping people in the case of a death or some other calamity (Koentjaraningrat 1961, 29). Gotong royong of the second type identifies those activities or projects which are useful for the whole village, some examples of which are to repair or widen the dukuh road, to repair the village canals which supply irrigation to the rice fields, and to rebuild the village gate as part of the celebration of Indonesian Independence Day. A third kind of gotong royong activity, which occurs during the Javanese month Ruwah, refers to the care and cleaning of ancestral graves by members of a kin group called alur-waris (Koentjaraningrat 1961, 33).

The fourth type of gotong royong, called sambatan, occurs when someone is in need of help. During the dry season, for example, work in the rice fields decreases and many people make repairs to their houses or compound fences, make bricks, or dig holes for garbage disposal. To undertake such tasks requires the assistance of fellow villagers, who receive no payment but are given meals every day they help. When a new house is built, all except the construction of the house frame by paid carpenters is done by gotong royong. Similarly, another type of gotong

royong is always connected with the peak season of agricultural activities, in return for which helpers are given meals as well as a payment of about Rp: 150 per day.

Besides gotong royong activities, there are several connected with socio-religious rituals called selamatan. The objective of selamatan, which is central to Javanese village life, is to maintain the harmony between man and nature, man and man, and man and God. It involves a communal sacred meal, which may be very simple or very elaborate (Koentjaraningrat 1967, 252) and is held on the basis of mutual help. People donate money and food stuffs for the selamatan and are also active in its preparation. During the nine months' stay in Kadirojo and Piring, 47 selamatan were held, on an average of one every week in Kadirojo and one every two weeks in Piring (Table 3.15). These sela-
metan grouped into three types: those connected with such events in the life cycle as birth, marriage and death; those connected with the yearly Moslem calendar; and selamatan, that indicated such special events as building a new house or celebrating Indonesian Independence Day.

Two selamatan, Ruwah and Sawal, are important events in the Javanese calendar and greatly influence the people's mobility. Ruwah (the eleventh month of the Javanese calendar) comes from the Arabic arwah meaning "souls of the dead." During this month, many people who live outside the dukuh but whose ancestors or parents are buried there return to clean the graves and scatter flowers on them. The dead parents will supposedly come to the selamatan to eat the odor of the food (Geertz 1976, 78). Sawal (the first month of the Javanese calendar), is the breaking of the fast, at the first of which there is the Lebaran or Islamic holiday that celebrates the completion of fasting (Koentjara-

TABLE 3.15
 TYPES OF SELAMETAN OBSERVED
 IN KADIROJO AND PIRING, 1975

Type of <u>selametan</u>	Kadirojo	Piring
Birth	8	3
Circumcision (<u>sunatan</u>)	3	1
Marriage	4	3
Death	10	7
General (building construction, brick burning, Independence Day)	5	3
TOTAL	30	17

Source: Field notes

ningrat 1957, 48). During this ceremony, children are supposed to ask forgiveness from their parents and, as a result, those living outside the dukuh return. They sit on the ground before their mother's and father's chair and then, one by one, the oldest first, kiss their mother's and father's knees. The mothers and fathers then lay their hands upon the heads of their children and bless them. In 1975, during Ruwah and Lebaran, 665 people visited Kadirojo and Piring (see Chapter 4).

As the center of village activities, gotong royong and selametan much influence the mobility of those who belong to the dukuh, irrespective of whether they are domiciled in their natal or some other place. Similarly, the way in which dukuh residents belong to different socioeconomic groups also is mirrored in different propensities to move or to stay. These relationships between population movement and both the cultural and socioeconomic contexts will be the focus of the following two chapters.

CHAPTER IV
COMMUTING AND CIRCULATION

Every day, from early in the morning, Kadirojo and Piring are alive with people on the move. Civil servants, traders, workers, and students travel to their work places, schools, or markets, most of them by bicycle but a few by motorcycle or public transport. Women go to the local markets outside the dukuh to sell fresh vegetables, coconuts, jack fruit, papaya and other pekarangan products; farmers and farm laborers walk or bicycle to the fields to cultivate their rice and other crops. In Kadirojo salak traders, after cooking their daily meal, journey to market places alongside the Medari-Tempel road, where they remain selling their salak until four in the afternoon. Every morning in Piring, sellers of coconut oil cycle to Bantul and on market days batik producers go to trade. In addition to this regular traffic, there is also some more occasional movement out from the dukuh, as for example when people visit friends or relatives, attend ritual feasts (selamatan), or go to Yogyakarta to shop. During the harvest season, in Piring, women can be seen leaving for other villages as share workers, and during Ruwah and Lebaran in both Kadirojo and Piring many people visit their ancestors' graves and the homes of their relatives or friends.

It is not only in these two dukuh that people are so mobile. From almost every village throughout the region, people travel to Yogyakarta and other places for employment, for trading, and for more specialized goods and services. Each day, many mini-buses and buses transport

people and goods from the rural areas into Yogyakarta. Along the main roads, close to nearly every village, people can be seen waiting with such regularity that every bus and mini-bus is packed, and particularly on market days. Some of the more daring passengers sit on the bus roof, while others hang out of the rear door. To any observer, these villagers could hardly be described as immobile, yet this is the impression given in the published research of mainly overseas scholars.

Most movers return home to the dukuh in the afternoon although a few, such as students who board in Yogyakarta or people visiting their relatives, may remain at their destination for several days. The frequency of return movement is therefore very great. For the nine months during which the mobility registers were maintained (19 May 1975 to 31 January 1976), there were 8,279 movements recorded in Kadirojo, of which 8,251 were complete movements (away from the dukuh and back again) and only 28 were incomplete. In Piring, the respective numbers of the complete and incomplete movements for the same period was 9,098 and 30. During these nine months, there were also 760 visitors to Kadirojo and 729 to Piring, all of whom returned to their own homes.

Given the high frequency of daily journeys, it is understandable that the number of commuters is far higher than that of circulators. During the survey period in Kadirojo, 20.4 percent (40 out of 196) of all adult villagers were involved in commuting, 17.3 percent (34 out of 196) in circulation, and 45.9 percent (90 out of 196) in both commuting and circulation. Only 32 out of 196 adult villagers (16.3 percent) did not once move out of the dukuh for six or more hours between 19 May 1975 and 31 January 1976. In Piring, the percentages of adult villagers

involved in commuting, circulation, or both commuting and circulation, are 56.6 percent (138 out of 244), 5.3 percent (13 out of 244), and 25.8 percent (63 out of 244) respectively, with the remaining 12.3 percent (30 out of 244) being totally immobile.

If the number of adult individuals involved in each type of movement rather than the frequency of its occurrence becomes the focus, then the ratio in Piring of commuters to circulators is 2.69 (205 over 76) and in Kadirojo 1.04 (130 over 124). The higher ratio of circulators in Kadirojo reflects the number of salak traders who sell their fruit in Yogyakarta, Muntilan, and Magelang (Figure 1.2), where they remain for several days until all the produce is sold. In addition, the transportation network connecting Kadirojo with various cities and villages is superior to that around Piring and permits villagers to visit their relatives frequently and at relatively little expense (Figure 3.3). Thus, in Kadirojo, the average amount of commuting and circulation undertaken over nine months is greater than in Piring: 37.8 versus 35.1 (commuting) and 4.3 versus 2.1 (circulation; Table 4.1). Compared with Piring, Kadirojo has more traders, civil servants and other workers who commute every day to their places of work. In both Kadirojo and Piring, during the period of the mobility register more than one third of the commuters moved less than 20 times, and between a fifth and a half of the circulators less than five times (Table 4.1). The less active movers consist mainly of farmers and farm laborers and it is predominantly the old who do not move at all.

The remainder of this chapter will focus upon commuting and circulation as the two types of movement that are intentionally impermanent. To capture the full range of mobility from the standpoint of the study dukuh,

TABLE 4.1
 NUMBER OF MOVES MADE BY COMMUTERS AND CIRCULATORS
 KADIROJO AND PIRING
 19 May 1975-31 January 1976

Number of moves	KADIROJO				PIRING			
	Commuters		Circulators		Commuters		Circulators	
	Total	%	Total	%	Total	%	Total	%
None	66	33.7	72	36.7	39	16.0	160	68.8
Less than 5	50	25.5	84	42.9	53	21.7	54	22.1
5- 9	7	3.6	18	9.2	25	10.3	6	2.5
10-19	10	5.1	13	6.6	28	11.5	6	2.5
20-39	9	4.6	6	3.1	34	13.9	10	4.1
40-59	6	3.0	2	1.0	12	4.9	-	-
60-79	7	3.6	1	0.5	8	3.3	-	-
80-99	6	3.0	-	-	13	5.3	-	-
100 and more	35	17.9	-	-	32	13.1	-	1
TOTAL	196	100	196	100	244	100	244	100
Mean of moves ^a	37.8		4.3		35.1		2.1	

Source: Prospective Mobility Register

^aMean number of moves is calculated as follows:

		Kadirojo		Piring	
		Commuting	Circulation	Commuting	Circulation
Number of moves	(a)	7,405	846	8,575	523
Number of adult villagers	(b)	196	196	244	244
Mean moves made by adult villagers	(a) (b)	37.8	4.3	35.1	2.1

it will focus not only upon the experience of the de jure residents but also upon visitors who move temporarily out of and back to their own communities. Migration, or movement that involves a permanent or semi-permanent shift in place of residence for a period of one year or more, will be discussed in Chapter 5.

Commuting

There are several reasons why dukuh people prefer to commute rather than to circulate, but all relate to the home community as the focus of their lives, the basis of their security, and the control point of their entire world. Village people who in the 1971 census of population comprised 82 percent of Java's population (Central Bureau of Statistics 1973, 7-8), feel secure when together with their families, but insecure and bewildered when separated from them. Mochtar Naim (1972, 36) has written that compared with other ethnic groups in Indonesia, the Javanese and the Balinese are the most reluctant to leave their village and their family. Consequently, if dukuh residents have to travel away from their homes to some destination place, they will always try to return within the same day. If they have to stay away overnight, either because the destination is far distant or because they must help relatives in the rice fields, then they will try to remain there for the shortest possible time. Such short-term and short-distance mobility anchored to the dukuh has not been noticed by such demographers as McNicoll (1968), Keyfitz and Widjojo (1964), and Heeren (1967), who have focused instead upon inter-regional changes in permanent place of residence.

Given the small incomes of villagers, there is no surplus money available to permit family members to remain in town or other areas for

any length of time. By staying in the dukuh, where the cost of living is far less, people who have permanent and temporary jobs can still manage their rice fields after working hours and thus maximize their income. Since 1972, in addition, this ability has been greatly aided by the improvement throughout Yogyakarta Special Region of the road network that connects city and village. Particularly for Piring, where before 1972 the condition of the Yogyakarta-Celep road was extremely poor, this improvement has greatly increased the flow of people and the speed at which goods are transported throughout the rural areas. Before, those from Piring who studied or worked in Bantul or Yogyakarta traveled there and returned home only at weekends. Today, by contrast, almost all students and civil servants who must go to Bantul commute every day. Thus the deep reluctance of dukuh people to stay overnight (nginep) in another place has been reinforced by the improvement in transportation facilities that usually permits them to return by nightfall. Since 1972, as a result, the number of people involved in commuting (nglaju) has increased appreciably.

The Characteristics of Commuters

In both Kadirojo and Piring, men commute more than women. In Kadirojo, the average number of moves made over nine months by male and female commuters is 62.9 and 48.8 respectively, while in Piring the average is lower: 57.1 for males and 24.5 for females (Table 4.2). Women in general are busy with household tasks and have the responsibility of maintaining good relationships with their dukuh neighbors. On the other hand males, particularly husbands, function in a broader social sphere and in general bear more of the money-earning responsibi-

TABLE 4.2--AGE-SEX CHARACTERISTICS OF COMMUTERS AND NUMBER OF MOVES MADE: KADIROJO AND PIRING,
19 May 1975-31 January 1976

Age group	K A D I R O J O						P I R I N G					
	Male			Female			Male			Female		
	Number of commut- ers ^a	Number of moves ^b made	Average moves per commuter									
15-19	20	1,101	55.2	12	540	45	24	1,725	71.9	14	668	42.7
20-24	9	744	82.7	8	269	32.6	16	810	50.6	16	236	14.7
25-29	7	742	106	6	453	76	9	592	65.8	8	136	17
30-34	9	843	93.7	3	93	31	5	344	68.8	15	425	28.3
35-39	9	743	82.6	5	281	56.2	10	651	65.1	9	134	14.9
40-44	7	361	51.4	5	57	11.4	9	587	65.2	7	240	34.3
45-49	2	45	22.5	6	283	47.7	10	694	69.4	7	342	48.9
50-54	2	9	4.5	5	383	76.6	5	330	66	4	68	17
55-59	4	113	28.3	4	288	72	6	175	29.2	5	26	5.2
60-64	4	10	2.5	1	40	40	5	124	24.8	4	53	13.3
65+	2	6	3	-	-	-	10	192	19.2	7	23	3.3
TOTAL	75	4,717	62.9	55	2,688	48.9	109	6,224	57.1	96	2,351	24.4

Sources: ^aHousehold Census

^bProspective Mobility Register

lities than women (Jay 1969, 70; Suharso, et al., 1976, 46). Because of this social and economic division of labor, men make far more short-term and short-distance moves than women. These broad patterns aside, in Kadirojo there is not a vast difference in the average number of moves made by male and female commuters, because many women sell produce, particularly salak fruit, in the market places. In Piring, on the other hand, the differential participation of men and women in commuting is considerable, because many women work at home as batik laborers and seldom move out of the dukuh, except during the rice harvest to work as shareharvesters.

In both Kadirojo and Piring, civil servants, students, and small traders are the most active commuters and averaged at least 50 moves during eight months (Table 4.3). Farmers, by contrast, commute least. In Kadirojo the skilled laborers--carpenters, bricklayers and mattress makers--moved a great deal to workplaces outside the dukuh, in contrast with those in Piring where the skilled group of batik laborers have no need to commute because they work at home. For unskilled laborers the pattern of commuting is the reverse, and in Piring unskilled laborers made about twice as many moves as their Kadirojo counterparts. This conspicuous difference reflects the number of unskilled laborers who found work at an irrigation project along Celep-Samas road, some distance from the dukuh (Figure 1.2).

In brief, the frequency of commuting is most influenced by a person's sex, type of occupation, and locality of work. Apart from a sizeable number of students aged between 15 and 19, age is not a significant factor in the number of moves made and commuting continues at a constant level until at least the age of 60 (Table 4.2). This result is

TABLE 4.3
 OCCUPATION OF COMMUTERS AND MOVES MADE
 KADIROJO AND PIRING
 19 May 1975-31 January 1976

Occupation	K A D I R O J O			P I R I N G		
	Number of commuters	Number of moves made	Average moves per commuter	Number of commuters	Number of moves made	Average moves per commuter
Farmer	29	281	9.7	35	825	23.6
Farm laborer	8	98	12	17	714	42
Small trader	8	461	57.6	9	626	69.6
Civil servant	10	1,092	109.2	9	803	89.2
Unskilled laborer	12	512	42.7	7	454	64.9
Skilled laborer	6	408	68	37	567	15.3
Farmer and Farm laborer	2	3	1.5	7	281	40.1
Farmer and Small trader	9	878	97.6	8	469	58.6
Farmer and Civil servant	14	1,424	101.7	4	328	82
Farmer and Unskilled laborer	3	136	45.3	6	591	98.5
Farmer and Skilled laborer	3	225	17.3	27	440	16.3
Farmer and Businessmen	-	-	-	1	18	18
Farm laborer and Small trader	5	454	90.8	3	33	11
Farm laborer and Civil servant	2	213	106.5	-	-	-
Farm laborer and Unskilled laborer	1	4	4	3	33	11

TABLE 4.3 (Continued) OCCUPATION OF COMMUTERS AND MOVES MADE, KADIROJO AND PIRING

Occupation	K A D I R O J O			P I R I N G		
	Number of commut- ers made	Number of moves	Average per commuter	Number of commut- ers made	Number of moves	Average per commuter
Farm laborer and Skilled laborer	2	190	95	3	45	15
Small trader and Civil servant	1	56	56	-	-	-
Small seller and Skilled laborer	-	-	-	2	62	31
Student	15	970	64.6	29	2,144	73.9
TOTAL	130	7,405		205	8,575	

Source: Prospective Mobility Register

supported from observing several civil servants and small traders in Kadirojo and Piring, who had reached their late fifties but still commuted to a considerable extent.

Although the average number of moves made by Kadirojo commuters is greater than for Piring, more adult villagers (both male and female) engage in commuting in Piring than in Kadirojo (85 versus 78 percent for males; 82 versus 55 percent for females; Table 4.4 and Figure 4.1). This is because, as previously discussed, Kadirojo people can work the whole year in their rice fields and those who are not civil servants, students, or salak sellers generally can find work there. By contrast, there is less agricultural activity in Piring during the dry season (April-September), so that people commute throughout the entire year.

Objectives of Commuting

In mobility research, it is often found that a journey has more than one objective. For example, a man who goes to his ancestors' grave during the Lebaran also visits relatives who live in that village, and a woman who travels to market to sell coconuts and vegetables also buys salt, kerosene, and sugar there. Therefore it is sometimes difficult to know how much mobility achieves or results from multiple objectives, since visits or tasks subsequent to the realization of the main objective are usually more spontaneous and unforeseen at the moment of departure from the place of origin. Upon returning from visiting his ancestors' grave, a family head may happen to meet a friend and accompany him to his house to gossip. In his study of mobility for two villages in the Solomon Islands, Chapman (1975, 139) also faced these same problems when considering the objectives of movement. He identified

TABLE 4.4

AGE-SEX CHARACTERISTICS OF COMMUTERS AND NON-COMMUTERS
KADIROJO AND PIRING
19 May 1975-31 January 1976

Age Group	K A D I R O J O						P I R I N G					
	Male			Female			Male			Female		
	Commuter	Not a Commuter	Total	Commuter	Not a Commuter	Total	Commuter	Not a Commuter	Total	Commuter	Not a Commuter	Total
15-19	20	1	21	12	5	17	24	3	27	14	1	15
20-24	9	1	10	8	6	14	16	6	22	16	4	20
25-29	7	-	7	6	7	13	9	1	10	8	-	8
30-34	9	2	11	3	5	8	5	-	5	15	1	16
35-39	9	-	9	5	3	8	10	-	10	9	1	10
40-44	7	5	12	5	1	6	9	-	9	7	1	8
45-49	2	1	3	6	7	13	10	-	10	7	1	8
50-54	2	2	4	5	3	8	5	1	6	4	3	7
55-59	4	-	4	4	-	4	6	-	6	5	-	5
60-64	4	2	6	1	1	2	5	2	7	4	-	4
65+	2	7	9	-	7	7	10	6	16	7	8	15
TOTAL	75	21	96	55	45	100	109	19	128	96	20	116
<u>Percentage of commuters</u>				Kadirojo: Male 78%; Female 55%								
				Piring: Male 85%; Female 82%								

Sources: ^aHousehold Census
^bProspective Mobility Register

AGE-SEX STRUCTURE OF COMMUTERS AND NON-COMMUTERS
KADIROJO AND PIRING, 1975

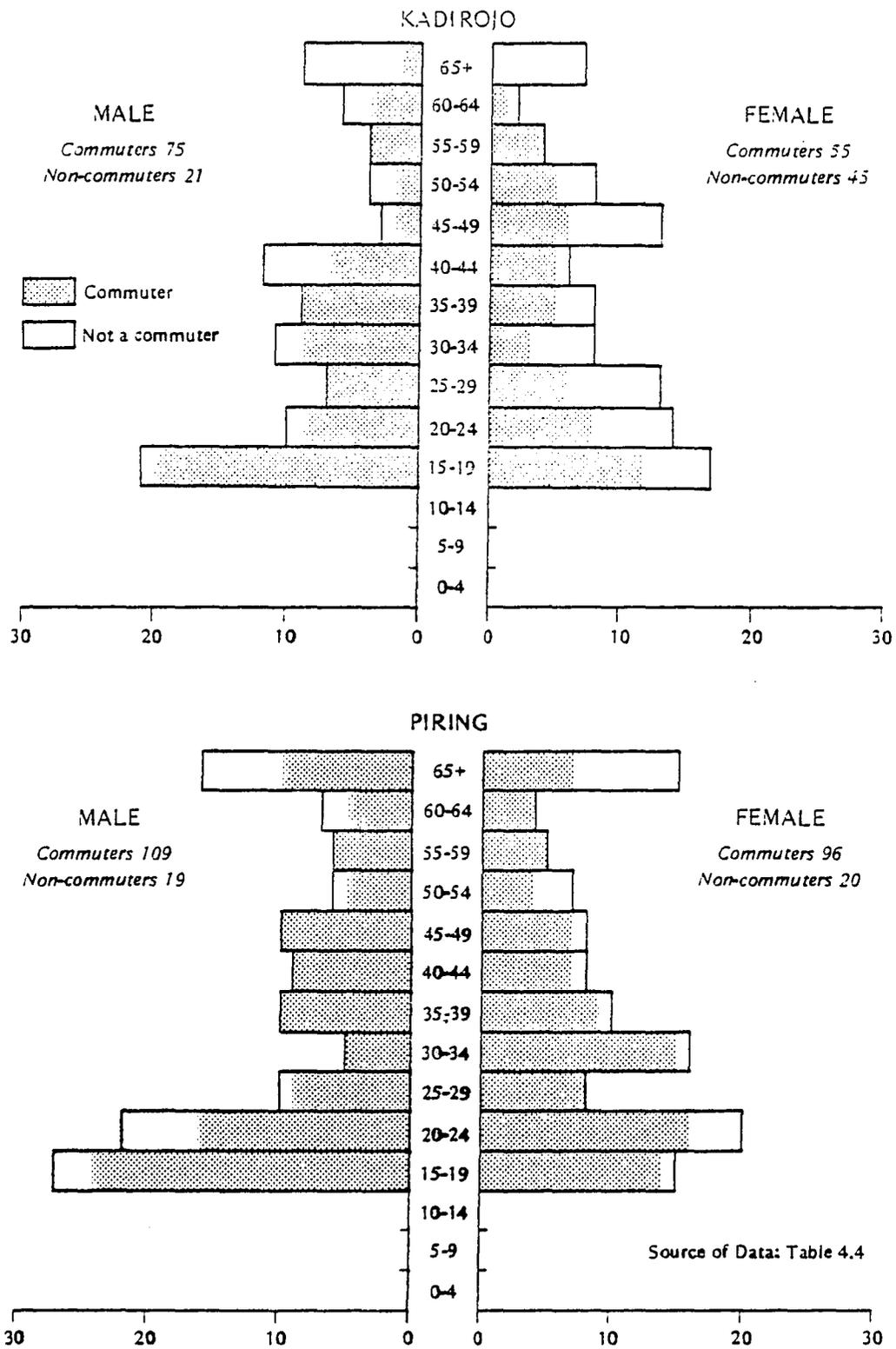


Figure 4.1

259 separate objectives for moving out of or into the villages of reference for a period of 24 hours or more. To aid coding, these many objectives were grouped into nine clusters.

Following Chapman (1975, 139) the multifarious objectives of commuting recorded in this study are reduced to eight broad groups. The reasons for movement mentioned at the time of entry into or departure from the dukuh represent a first judgment, which can be supplemented by subsequent changes or additions upon completion of the move in question. On this basis, it is possible to classify the primary objective of each move made. To take the example of the man who visited his ancestors' grave, he said he went there for nyekar (to visit the ancestors' grave) because it was Lebaran, and since during Lebaran people are supposed to ask forgiveness from their parents and relatives, he also saw them after he had gone to the graveyard. These two reasons are contiguous but they both refer to the fulfillment of a socio-cultural objective.

During the nine months, 15,980 objectives were recorded for commuting out of Kadirojo and Piring (Table 4.5). This wealth of information reduces simply to eight sets of objectives, of which wage work, school, and trading account for 13,710 or 86 percent of the total. The five other objectives, visiting, socio-cultural commitment, business or official duties, farming, and to attend meetings, account for less than 15 percent.

The greater significance in Kadirojo of commuting to earn money is a simple function of distance from places of work. Since Kadirojo lies near the offices and white muslin factories of Medari (Figure 1.2), many people who work there commute everyday. Piring, on the other hand,

TABLE 4.5
 OBJECTIVES OF COMMUTING FOR KADIROJO AND PIRING^a
 19 May 1975-31 January 1976

Objectives ^b	KADIROJO		PIRING		
	Number of moves	Percent	Number of moves	Percent	
Wage work	3,686	49.8	3,348	39.1	
School	1,005	13.6	2,293	26.7	
Trading	2,051	27.7	1,327	15.5	
Visiting	146	1.9	470	5.5	
Socio-cultural commitment	89	1.2	436	5.1	
Business or official duties	404	5.5	379	4.4	
Farming	2	0.0	285	3.3	
Attend meeting	21	0.3	37	0.4	
Lost from record	1	0.0	-	-	
	TOTAL	7,405	100	8,575	100

Source: Tables AI.1 and AI.2

^aObjectives are ordered according to their frequency for Piring which produces not only rice but also cash crop.

^bThe various objectives, in this and subsequent tables, are defined as follows:

Wage work: as farm laborer, civil servant, skilled or unskilled laborer, or sharecropper.

Schooling: all institutions of formal education from elementary school to University.

Trading: all kinds of commercial activities, including the sale of salak, coconuts, food, and batik.

Socio-cultural commitment, such as religious rituals (selametan), and activities of mutual assistance (gotong-royong).

TABLE 4.5 (Continued) OBJECTIVES OF COMMUTING FOR KADIROJO AND PIRING

Visiting: includes all kinds of family visits, recreational trips, and shopping.

Business or official duties: all kinds of business activities outside the office, such as when the village head inspects the village roads repaired in another dukuh.

Farming: all kinds of farming activities, such as work in the rice fields of another dukuh.

Attend meeting: all kinds, usually but not exclusively within the village, as for example those of women's organizations.

is situated about 12 kilometers south of Bantul, the capital of the regency of the same name, and the nearest administration offices are at Sanden, about 1.25 km away (Figure 1.2). Only one civil servant from Piring works in the Kantor Kelurahan (village office) in Sanden, and another three persons are employed in Bantul: one civil servant at the Kantor Kabupaten (regency office), and two school teachers at the Senior High School. All of these commute everyday by motorcycle.

In August and September 1975, the number who commuted from Kadirojo for wage work accounts for one seventh of the total record (1,039 moves out of 7,405; Table AI.1), because people need money for Lebaran celebration. In October the number dropped sharply (October: 330 versus September: 538), since being the month of Lebaran (October 7, 1975) people were on holiday, but rises to the previous level in November and December. In both Kadirojo and Piring, the amount of commuting for wage work is high between July and August, but for different reasons. Whereas in Kadirojo the primary objective is to earn money to celebrate the impending Lebaran, in Piring there is the additional factor that this

is the dry and slack season of their agricultural calendar. By December, the men in Piring are extremely busy in the wet rice fields to prepare them for planting after the harvest, while many of the females harvest dry rice outside the dukuh. In January, with the planting of wet rice completed, agricultural activities decrease, and the frequency of commuting for work increases again (December: 361, January: 448; Table AI.2).

The far higher percentage of those who commute from Piring to attend school (Table 4.6) reflects the higher ratio of advanced students who therefore travel longer distances. Of the 17 out of 77 students in Kadirojo who were aged more than 15, and whose movements consequently were recorded in the mobility register, two boarded (mondok) in and one commuted (nglaju) to Yogyakarta. The remaining 14 attended elementary schools located within four kilometers, which meant they were away from the dukuh less than six hours each day. In Piring 29 out of 100 students were aged 15 years or more. Of these, 13 traveled daily to Bantul, 12 kilometers to the north, and two went by motorcycle to Yogyakarta. Those who commuted to Bantul and Yogyakarta were away for six hours or more, whereas the remaining students attended schools within 2.5 kilometers. Not surprisingly, fluctuations in the rate of commuting to school follow the number of holidays (Table 4.6). Between September and December, students have many holidays and so the amount of commuting especially during the period of fasting in September and October varies.

The pattern of commuting for these two dukuh to sell trade goods is quite different. In Kadirojo, monthly variations reflect the salak season (September to March) and in Piring the dry season (April to September). From September until January, many salak owners (mainly female)

TABLE 4.6--RATIO OF SCHOOL DAYS TO HOLIDAYS FOR JUNIOR AND SENIOR HIGH IN
YOGYAKARTA SPECIAL REGION COMPARED WITH COMMUTING OF STUDENTS, KADIROJO
AND PIRING
19 May 1975-31 January 1976

Months	Number of school days ^a	Number of Holidays ^a	Ratio of Holidays to School days	Commuting to school ^b	
				Kadirojo	Piring
May 1975	26	5	0.19	95 ^c	150 ^c
June	25	5	0.20	172	353
July	27	4	0.15	166	457
August	20	11	0.55	139	285
September	5	25	5.00	85	203
October	17	14	0.82	110	229
November	25	5	0.20	110	193
December 1975	17	14	0.82	32	215
January 1976	25	6	0.24	96	208
TOTAL	187	89	0.48	1,005	2,293

Sources: ^aDepartment of Education and Culture, Yogyakarta Special Region

^bTables AI.1 and AI.2

^c19-31 May 1975

journey from Kadirojo to sell their fruit in the market places alongside the Medari-Tempel road, and even as far afield as Muntilan (5 km) and Yogyakarta (18 km). In Piring, trading increases as soon as men complete the harvest of wet rice in May. Usually they travel by bicycle to Bantul to sell garden produce, mainly coconuts, coconut products (sugar and oil), and bananas. Females usually sell food and vegetables in nearby markets, Celep and Sorobayan (Figure 1.2) and also journey to Yogyakarta to market batik.

In Piring, commuting to fulfill socio-cultural commitments is much influenced by the shortage of water in the rice fields during the dry season (April-September). At this time, as described in the previous chapter, most daily activities like making bricks or repairing houses and garden fences revolve around the house compound. Most such tasks are also achieved through the gotong royong system, as a result of which some people move from Piring to other dukuh to help friends and relatives. In Kadirojo, by contrast, there is no dry season peak in commuting for socio-cultural objectives because the cultivation of wet rice is a year-round activity.

Cultural activities connected with the Moslem calendar, especially during Ruwah, Pasa, and Sawal,¹ also markedly influence the monthly incidence in commuting. In Piring, it is during Ruwah that families visit the graves of the ancestors,² where they clean the tombs, place

¹The Moslem year has 354 days (355 in leap years) and is divided into twelve lunar months. That is: Muharram (Sura), Safar (Sapar), Rabi'ulawal (Mulud), Rabi'ulakhir (Bakdomulud), Jumadilawal (Jumadulawar), Jumadilakhir (Jumadilakir), Rajab (Rejeb), Sya'ban (Ruwah), Ramadhan (Pasa), Syawal (Sawal), Dzulka'idah (Sela), Dzulhijah (Besar) (C. Geertz 1976, 77). The popular Javanese names are in parentheses.

²The dead are supposed to return to earth during Ruwah or Lebaran.

offerings of flowers on them, and then sit in contemplation and prayer to remember the dead and ask for their blessings. This gives the family new courage to face the hardships of life during the coming year (Koentjaraningrat 1957, 49). In 1975, Ruwah coincided with the month of August, during which 19 moves were made. However, since Piring is an old dukuh, fewer people have to commute to their ancestors' graves than would be the case for a newer dukuh. People in Kadirojo usually visit their graveyards on the day of Lebaran or Sawal. In 1975, Lebaran was on October 7, but since Kadirojo is also an old dukuh, few people have to cross the dukuh boundary to attend their family's graves.

During the fasting month (Pasa or Ramadhan) there is very little commuting, for people are forbidden to eat, drink or smoke between sunrise and sunset. Nor do any social or cultural activities occur during this month. In 1975, Ramadhan coincided with the month of September, during which there was virtually no commuting for socio-cultural reasons (Kadirojo 7 out of 946; Piring 20 out of 878; Tables AI.1 and AI.2). Lebaran, which follows Ramadhan, is celebrated by Moslems throughout Indonesia with mass prayers in mosques and public parks and with a great amount of visiting between relatives. New dresses are worn for the occasion, while ear-splitting fire crackers highlight the celebrations. Traditionally, in the days of Lebaran, younger family members visited the oldest in strict order of age and seniority to ask for remission of their sins and mistakes (Koentjaraningrat 1957, 49). For old villages like Kadirojo and Piring, many younger people live in places beyond the dukuh but usually return during Lebaran, a month of reunion for all family members, as well as to visit the graves of their ancestors. During Lebaran, on October 7, 1975, 342 people who reside outside

Kadirojo returned to their natal dukuh and in Piring the number was 172. The ratio of returnees to the resident population was 0.99 for Kadirojo and 0.44 for Piring. The number of persons, on the other hand, who moved out for Lebaran was small (Kadirojo 26, Piring 10), since most people in such old communities stay at home to await the arrival of kinsmen or relatives.

Few people in either Kadirojo or Piring commute to visit kinsmen and relatives for six hours or more, mainly because of the large number of relatives who reside in the same or adjacent dukuh. Visits usually are made on such special occasions as weddings, births, and deaths, and in 1975 there was a rise in the amount of visiting two months before and one month after Lebaran (Tables AI.1 and AI.2). Also during Lebaran many people from Piring visited Samas becah, about four kilometers away, to picnic. The fact that Sekaten, one of the important Islamic festivals, is not reflected in the pattern of commuting vividly demonstrates how seasonal peaks may not be captured in a mobility register which, as in this research, was not maintained for an entire year. Festivities for Sekaten, which take place in the Sultan's palace (Keraton) in Yogyakarta, begin one week prior to, and end one day before, the birth of the Prophet Mohammad. At this time two units of gamelan (Javanese musical instruments), called Kyai Guntur Madu and Kyai Nagawilaga, play continuously in the northern public square of the royal court. The festivities end when mountain litters (gunungan), on which various kinds of food, fruits and vegetables are arranged like a cone, are taken from the Sultan's palace to the royal mosque. Since the Sekaten festival in 1975 coincided with March and the mobility register was begun in mid-May,

no data are available on the number of people who visited Yogyakarta from Kadirojo and Piring.

Commuting for business reasons, to attend meetings, or work in the rice fields is not numerous (Table 4.5) and, except for the last, not influenced by seasons or events in the social calendar. There are three persons in Piring who lease rice fields in other dukuh but in Kadirojo no one own or rents any agricultural land outside their own community. In July, during the dry season, one man twice commuted to Kadiluwih dukuh to assist his father-in-law to work his rice fields.

In Kadirojo, three civil servants commuted for official reasons: the village head, who supervises other dukuh and attends administrative meetings in the subdistrict office in Tempel; a tax collector, who goes from one place to another throughout Yogyakarta Special Region; and the head of the Census and Statistical Office in Tempel subdistrict, who travels to other villages within the subdistrict to supervise local officials responsible for the collection of statistical data. In addition, he sometimes attends meetings at the regency office in Beran (Sleman). In Piring the dukuh head (kepala dukuh) must go three times each week to the village office at Sanden on official business. Thus although the number of such commuters is small, the significance of their duties for village society is very great.

In general, the incidence of commuting from Kadirojo and Piring varies from month to month in response to social and cultural events, the agricultural cycle, and the annual calendar of formal education. Such events do not affect the mobility of civil servants and contract laborers, who have to work every day except Sundays and holidays. The incidence of commuting recorded in Kadirojo and Piring differs greatly

from month to month (Table 4.7, Figure 4.2). Whereas there is little evidence of seasonality in the former community, commuting in the latter is high during the dry season (April-September) and low during the wet (October-March). As described in Chapter 3, this marked contrast reflects the differential availability of water for the rice fields. In Kadirojo, an efficient irrigation system means that water is available in the dry season and people work their rice fields the year round. By contrast, in Piring the lack of irrigated water makes it impossible for farmers to cultivate rice during the dry season. Some householders therefore raise soybeans or sweet potatoes, others make bricks or do some repairs within their house compound, and yet others work in Bantul and other areas near the dukuh. During the dry season in 1975, for instance, a government project to improve the irrigation canal alongside the Celep-Samas road (Figure 1.2) absorbed many laborers from Piring.

Commuting Destinations and Means of Travel

Three quarters of Kadirojo commuting and seven tenths of that from Piring is between rural areas (Tables 4.8, AI.3 and AI.4). Since Kadirojo lies closer to office and factory centers, the ratio of wage workers who travel to urban areas³ is higher than that for Piring, even though rural destinations predominate (Kadirojo 38; Piring 16; Table 4.8). About 95 percent of Kadirojo traders travel to rural places for, as described in the previous chapter, much of the salak is sold along the road side.

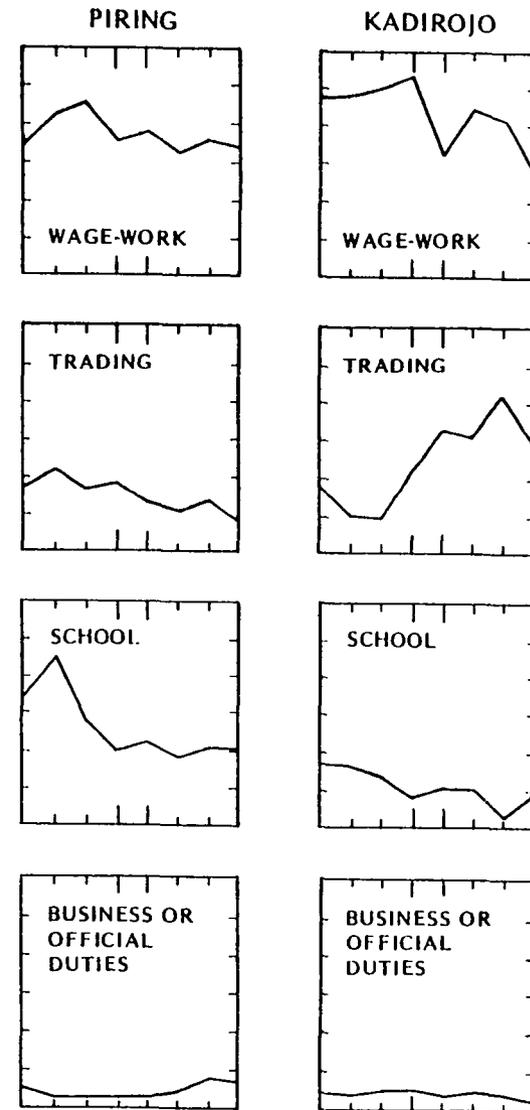
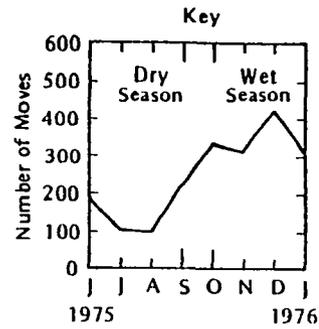
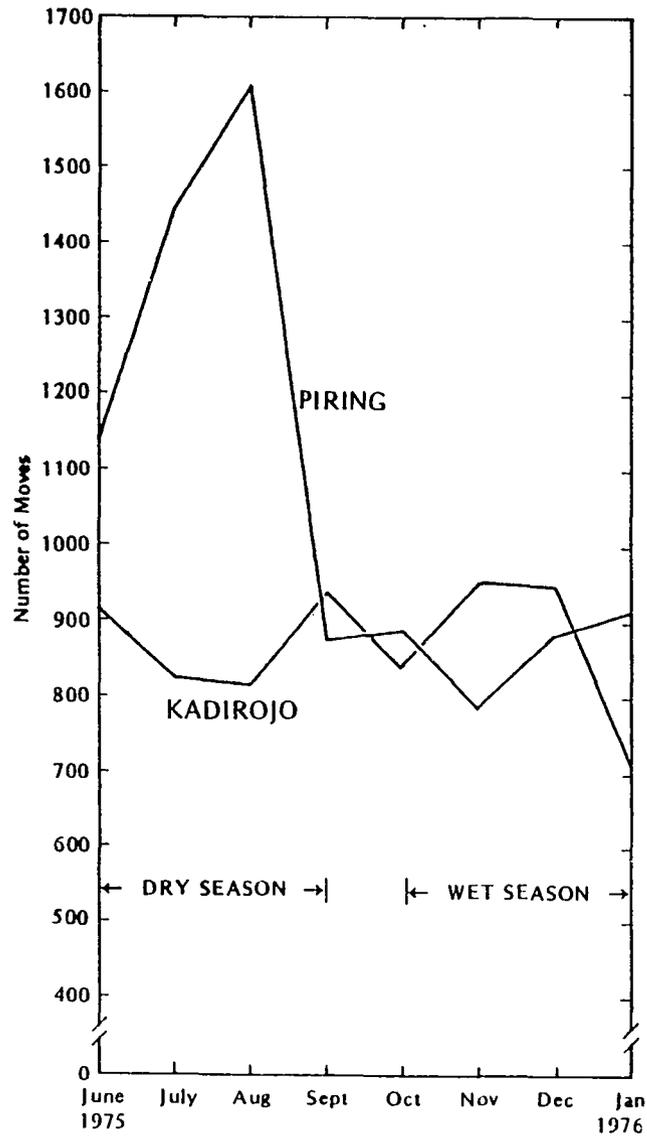
³The rural and urban classification used in this thesis is adopted from the 1961 census of population (Suharto and Abdulmadjid 1973, 7), for which a village was considered urban if: (1) most people did not work in the agricultural sector; (2) there was a hospital or clinic, high school or building of higher education in the village; and (3) the village had electricity.

TABLE 4.7
 MONTHLY VARIATION IN COMMUTING, KADIROJO AND PIRING
 19 May 1975-31 January 1976

Month, Year	KADIROJO		PIRING	
	Number of moves	%	Number of moves	%
19-31				
May 1975	435	5.9	531	5.9
June 1975	925	12.5	1,145	13.4
July 1975	823	11.1	1,440	16.8
August 1975	819	11.1	1,608	12.9
September 1975	946	12.8	878	10.2
October 1975	846	11.4	896	10.5
November 1975	955	12.9	791	9.2
December 1975	943	12.7	887	10.3
January 1976	712	9.6	917	10.7
Missing	1	0.0	-	-
TOTAL	7,405	100	8,575	100

Source: Prospective Mobility Register

MONTHLY AND SEASONAL VARIATIONS IN KADIROJO AND PIRING COMMUTING
 JUNE 1975–JANUARY 1976



Source of Data: Tables A1.1 & A1.2

Figure 4.2

TABLE 4.8

RURAL AND URBAN DESTINATIONS, BY OBJECTIVES,
FOR KADIROJO AND PIRING COMMUTERS
19 May 1975-31 January 1976

Objective of Commuting	K A D I R O J O				P I R I N G			
	Rural	Urban	Total	Ratio of Rural: Urban	Rural	Urban	Total	Ratio of Rural: Urban
Wage-work	2,278	1,408	3,686	62:38	2,829	519	3,348	84:16
School	864	142	1,006	86:14	1,040	1,253	2,293	45:55
Trading	1,947	104	2,051	95:5	557	770	1,327	42:58
Visiting	87	59	146	60:40	400	70	470	85:15
Socio-Cultural Commitment	79	10	89	89:11	424	12	436	97:3
Business or official duties	330	74	404	82:18	278	101	379	73:27
Farming	2	-	2	100:0	285	-	285	100:0
Attend Meeting	20	1	21	95:5	36	1	37	97:3
TOTAL	5,607	1,798	7,405	76:24	5,849	2,726	8,575	68:32

Source: Tables AI.3 and AI.4.

Piring traders, on the other hand, sell their wares at both urban and rural destinations, with urban markets being slightly more numerous.

Of those who commute to towns and cities from Kadirojo, 71 percent (1,277 out of 1,798) go to Medari, a new industrial center in Yogyakarta Special Region about 2.5 km southeast of Kadirojo, and only 28.2 percent (506 out of 1,798) to Yogyakarta city. From Piring, 67.2 percent (1,831 versus 2,726) of city commuters travel to Bantul, about 12 km north of Piring, and only 32.8 percent (894 out of 2,726) to Yogyakarta city (Tables AI.3 and AI.4). Apart from the fact that Yogyakarta lies beyond the travel distance for regular commuting, there is also a general lack of job opportunities for dukuh people. Should, by chance, a man obtain a part-time job as the driver of a becak (two-passenger tricycle), he will not earn enough money to satisfy his household's needs. On an average, he would earn Rp: 300 a day, out of which he would have to spend Rp: 75 for his midday meal and Rp: 150 to rent the becak. Only Rp: 75 (U.S. \$0.18) would remain to take home to his family, so that there is no monetary advantage in his traveling the long distance to Yogyakarta.

More than four fifths of all commuters from Kadirojo and Piring use a bicycle or walk to reach their destinations (Table 4.9). For short distances they usually go on foot, while the use of motorized transport over longer distances is still limited, especially for regular commuters. Piring commuters use wheeled means of transport far more, simply because this dukuh has more bicycles and motorcycles than Kadirojo. Conversely, the percentage of daily travelers in Kadirojo who use mini-buses and buses is higher because the frequency of public transportation along the Yogyakarta-Semarang road is greater than along the Yogyakarta-Celep

TABLE 4.9

MODES OF TRANSPORT USED BY KADIROJO AND PIRING COMMUTERS
TO RURAL AND URBAN DESTINATIONS
19 May 1975-31 January 1976

Modes of Transport	K A D I R O J O			P I R I N G		
	Amount of Commuting	%	Ratio of Rural: Urban Destinations	Amount of Commuting	%	Ratio of Rural: Urban Destinations
Walking	2,856	38.6	93:7	1,828	21.3	99:1
Bicycle	3,698	49.9	75:25	5,794	67.6	61:39
Motorcycle	399	5.4	28:72	834	9.7	58:42
Taxi	3	0.0	100:0	-	-	- -
Mini-bus	109	1.5	16:84	39	0.5	23:77
Bus	340	4.6	12:88	80	0.9	3:97
TOTAL	7,405	100		8,575	100	

Source: Tables AI.7 and AI.8.

road (Figures 1.2 and 3.3). In addition, the bus fare for a one-way trip from Yogyakarta to Celep is higher than that from Yogyakarta to Medari (Rp: 75 versus Rp: 50).

As previously discussed, improvements in transportation facilities since 1972 have made it possible for commuters to travel longer distances. The average distance for motorized commuters from Kadirojo is greater than from Piring (Kadirojo: 14.61 km; Piring: 10.31 km), as might be expected from the more frequent public service along the Yogyakarta-Semarang road. Nevertheless the fact that, by definition, commuting is mainly limited to return travel each day means that the distances able to be traversed are still limited. For Kadirojo, the average distance for commuters on foot is 2.4 kilometers and for Piring 1.85 kilometers. Those traveling by bicycle from Piring average 8.23 kilometers or considerably more than those from Kadirojo (5.47 kilometers). These average distances traveled again reflect contrasts in public transportation and the number of privately-owned motorcycles. Even though the bicycle is the primary form of transport, in general the modes used by commuters are a function of the distance traveled to places of destination.

In summary, commuting constitutes more than 85 percent of all impermanent moves made from Kadirojo and Piring. It allows people to supplement and thereby maximize the household incomes gained from working in the rice fields. The rate of commuting has increased steadily since 1972, following the improvement of roads and the greater number of vehicles that now connect towns and cities with Yogyakarta villages. Economic pressures that result from the high cost of living in cities like Yogyakarta, together with low wages, influence the decision in favor of

commuting each day from the village rather than being closer to one's place of work.

There are both regular and non-regular commuters. The first, which represent the majority of those from Kadirojo and Piring, consist of people such as students, civil servants, traders, and wage workers who have regular jobs outside the home community. Non-regular commuters consist mainly of farmers and farm laborers who visit kinsmen and relatives in neighboring dukuh. Commuting is mainly by bicycle to rural areas, because most of the schools, offices and markets to which regular commuters go are located there, and job opportunities in the small towns of the regencies are very limited. Since the ties of dukuh people with their family and home communities are very close, movers try to leave them for as short a time as possible. Consequently the incidence of commuting from Kadirojo and Piring is far higher than that of circular movement.

Circulation

Commuting, or daily circulation, does not account for all forms of circular mobility. There are also longer-term circulations, which in this study are defined as all moves that entail an absence of more than one day from a place of origin but to which there is a return within one year. As with commuting most information on circulation was obtained from the mobility register, supplemented by the retrospective collection of movement histories. The retrospective approach, in which a person's past movements are traced back through time, suffers from the difficulties that individuals have in recalling short-term mobility over long periods. Bedford (1975, 29-30) mentions that there are two limitations

in this historical approach to collecting migration data; first, there is a strong possibility that some moves will not be remembered; and secondly, some motives for past moves may be deliberately hidden, especially if they refer to sad or dramatic events in one's lifetime.

For this reason, the people of Kadirojo and Piring were asked only to describe absences of one or more months during the previous three years (1972-1975). On this basis, about 90 percent of the de jure population of both dukuh have not been continuously away from their homes for one or more months (Kadirojo 145 out of 159; Piring 167 out of 187; Table 4.10). Only 14 persons in Kadirojo and 18 in Piring have circulated once during the past three years and only two in Piring more than that (Table 4.10). These results, when compared with the conclusions about commuting, suggest that most dukuh-based movement is of short duration.

It has already been established from the mobility register that most dukuh residents prefer to commute rather than to circulate. If a potential destination is beyond commuting distance and there are compelling reasons why people from Kadirojo and Piring ought to stay in that place, then they will try to remain there for as brief a time as possible. As a result, the frequency of circulation decreases with increased periods of absence from the dukuh (Table 4.11). This pattern thus complements the results from the mobility histories; namely that most people circulate between one day and one month and far fewer for one or more months (Table 4.11). If a comparison is made of the moves of one or more month's absence that were identified by the retrospective movement histories and the mobility registers, then we find that the number obtained from the former method is smaller than from the latter. This probably results from some

TABLE 4.10

MOVES MADE FROM KADIROJO AND PIRING DURING THE
PAST THREE YEARS (1972-1975) FOR AN ABSENCE
OF ONE OR MORE MONTHS

Number of Moves	KADIROJO		PIRING	
	Number of Individuals	%	Number of Individuals	%
0	145	91.2	167	89.3
1	14	8.8	18	9.6
2	-	-	-	-
3	-	-	2	1.1
	TOTAL		159	100
			187	100

Source: Retrospective History of Movement

moves not being reported during the collection of movement histories. For this reason, the following discussion about circulation will be based mainly on the prospective mobility register (see Chapter 2).

The Characteristics of Circulators

In the period 19 May 1975 to 31 January 1976, the number of circulators in Kadirojo is higher than for Piring (124 out of 196 versus 76 out of 244; Table 4.12), mainly because of the more effective transport network that connects Kadirojo with other areas of Yogyakarta Special Region. Females from Kadirojo circulate more than males (69:55), because they are predominantly the sellers of salak in Yogyakarta and Muntilan. The reverse is true for Piring (males 44, females 32; Table 4.12), since most females are always busy painting batik in their homes. Circulators from both Kadirojo and Piring usually move alone, even if

TABLE 4.11

NUMBER OF CIRCULATIONS BY PERIOD OF
ABSENCE FROM KADIROJO AND PIRING
19 May 1975-31 January 1976

Period of Absence	KADIROJO		PIRING	
	Number of moves	Percent	Number of moves	Percent
1 day - <1 week	717	84.8	416	79.5
1 week - <1 month	109	12.9	89	17
1 month - <1 year ^a	18	2.1	16	3.1
1 year or more ^a	2	0.2	2	0.4
TOTAL	846	100	523	100

Source: Prospective Mobility Register

^aThe long-term circulations--longer than the registration period for mobility--consist of persons who had been absent from the dukuh before the recording period began but who returned while the register was being maintained.

married. Very seldom are they accompanied by their spouses, which reflects the basic lack of family involvement in circulation. A common pattern is for a wage worker to stay and work in the city for one or more weeks but for his wife to remain in the village.

As with commuting, the number of circular moves made by students, civil servants and small traders is highest and averages more than 7.5 over nine months as against between 1 and 6.7 for all other occupations (Table 4.13). One man in Kadirojo works as a becak driver in Yogyakarta, from which he returns home every two or three days, and his circulations alone account for 63 out of 89 recorded for unskilled laborer.

TABLE 4.12

AGE-SEX CHARACTERISTICS OF CIRCULATORS AND NON-CIRCULATORS
 KADIROJO AND PIRING
 19 May 1975-31 January 1976

Age Group	K A D I R O J O						P I R I N G					
	Male			Female			Male			Female		
	Circu- lator	Not a Circu- lator	Total									
15-19	15	6	21	12	5	17	11	16	27	5	10	15
20-24	4	6	10	12	2	14	13	9	22	11	9	20
25-29	7	-	7	9	4	13	6	4	10	1	7	8
30-34	10	1	11	5	3	8	2	3	5	2	14	16
35-39	6	3	9	5	3	8	2	8	10	3	7	10
40-44	3	9	12	5	1	6	2	7	9	1	7	8
45-49	2	1	3	8	5	13	1	9	10	1	7	8
50-54	-	4	4	4	4	8	2	4	6	-	7	7
55-59	3	1	4	4	-	4	-	6	6	2	3	5
60-64	1	5	6	1	1	2	2	5	7	2	2	4
65+	4	5	9	4	3	7	3	13	16	4	11	15
TOTAL	55	41	96	69	31	100	44	84	128	32	84	116

Sources: ^aHousehold Census
^bProspective Mobility Register

TABLE 4.13

OCCUPATION OF CIRCULATORS AND MOVES MADE,
KADIROJO AND PIRING
19 May 1975-31 January 1976

Occupation	K A D I R O J O			P I R I N G		
	Number of circulators ^a	Number of moves made ^b	Average moves per circulator	Number of circulators ^a	Number of moves made ^b	Average moves per circulator
Farmer	23	132	5.7	10	64	6.4
Farm laborer	13	59	4.5	8	50	6.3
Small trader	9	73	8.1	2	26	13
Civil servant	10	89	8.9	5	39	7.8
Unskilled laborer	14	89	6.4	5	14	2.8
Skilled laborer	7	39	5.6	13	31	2.4
Farmer and Farm laborer	3	8	2.7	3	7	2.3
Farmer and Small trader	11	74	6.7	-	-	-
Farmer and Civil servant	9	40	4.4	3	5	1.7
Farmer and Unskilled laborer	2	68	34	2	15	7.5
Farmer and skilled laborer	3	11	3.7	5	5	1
Farm laborer and Small trader	3	35	11.7	1	2	2
Farm laborer and Unskilled laborer	1	1	1	-	-	-
Farm laborer and Skilled laborer	3	10	3.3	-	-	-
Small trader and Civil servant	1	1	1	-	-	-
Small trader and Skilled laborer	-	-	-	1	2	2
Student/Trainee	12	117	9.8	18	263	14.5
TOTAL	124	846	6.8	76	523	6.9

Sources: ^a Household Census ^b Prospective Mobility Register

In terms of age, 35 percent of Kadirojo circulators consist of those aged between 15 and 24, most of whom were students, civil servants and wage workers (Table 4.14, Figure 4.3). In this dukuh, males in their forties circulate mainly to visit relatives and to attend ritual feasts (selametan). Even in their fifties, females are still active selling salak both in the markets alongside the Medari-Tempel road (Figure 1.2) and as far afield as Yogyakarta and Muntilan. In Piring, 52.6 percent of the circulators are aged between 15 and 24 (Table 4.14, Figure 4.3), where primary objectives are to attend school, to work or look for a job, to visit family and relatives. Some of these circulations take them as far as Jakarta and south Sumatra, particularly Lampung and Tanjungkarang (Figure 1.0), but mainly to places where relatives or friends reside. In both Kadirojo and Piring, old people, particularly female, regularly visit their children, especially if their daughters are pregnant, in which case they usually will stay until the baby is born.

Primary Objectives and Destinations of Circulation

As with commuting, it is often found that a circular movement has more than one objective and the same procedure has been used to group these various objectives. During the nine months of the mobility register, 1,370 objectives were recorded for circulators from Kadirojo and Piring (Table 4.15) and can be divided into six groups: visiting, school, wage-work, socio-cultural commitment, business, and trading. Unlike commuters, most circulators, except students and some wage workers, are involved in non-regular movement (see Chapter 1). Of the six objectives for circulation, visiting relatives and kinsmen ranks highest and accounts for almost two fifths of the total (508 out of 1,370;

TABLE 4.14

AGE-SEX CHARACTERISTICS OF CIRCULATORS AND NUMBER OF MOVES MADE
KADIROJO AND PIRING
19 May 1975-31 January 1976

Age Group	K A D I R O J O						P I R I N G					
	Male			Female			Male			Female		
	No. of circu- lators ^a	No. of moves ^b made	Average moves per circu- lator	No. of circu- lators ^a	No. of moves ^b made	Average moves per circu- lator	No. of circu- lators ^a	No. of moves ^b made	Average moves per circu- lator	No. of circu- lators ^a	No. of moves ^b made	Average moves per circu- lator
15-19	15	117	7.8	12	73	6.1	11	119	10.8	5	29	5.8
20-24	4	57	14.3	12	53	4.4	13	177	13.6	11	40	3.6
25-29	7	37	5.3	9	19	2.1	6	71	11.8	1	1	1
30-34	10	109	10.9	5	8	1.6	2	9	4.5	2	3	1.5
35-39	6	79	13.2	5	28	5.6	2	6	3	3	4	1.3
40-44	3	11	3.7	5	26	5.2	2	33	16.5	1	1	1
45-49	2	18	9	8	81	10.1	1	2	2	1	3	3
50-54	-	-	-	4	11	2.8	2	3	1.5	-	-	-
55-59	3	38	12.7	4	46	11.5	-	-	-	2	2	1
60-64	1	12	12	1	1	1	2	2	3	2	3	1.5
65+	4	12	3	4	10	2.5	3	4	1.3	4	11	2.8
TOTAL	55	490	8.9	69	356	5.2	44	426	9.7	32	97	3

Sources: ^a Household Census ^b Prospective Mobility Register

AGE-SEX STRUCTURE OF CIRCULATORS AND NON-CIRCULATORS

KADIROJO AND PIRING, 1975

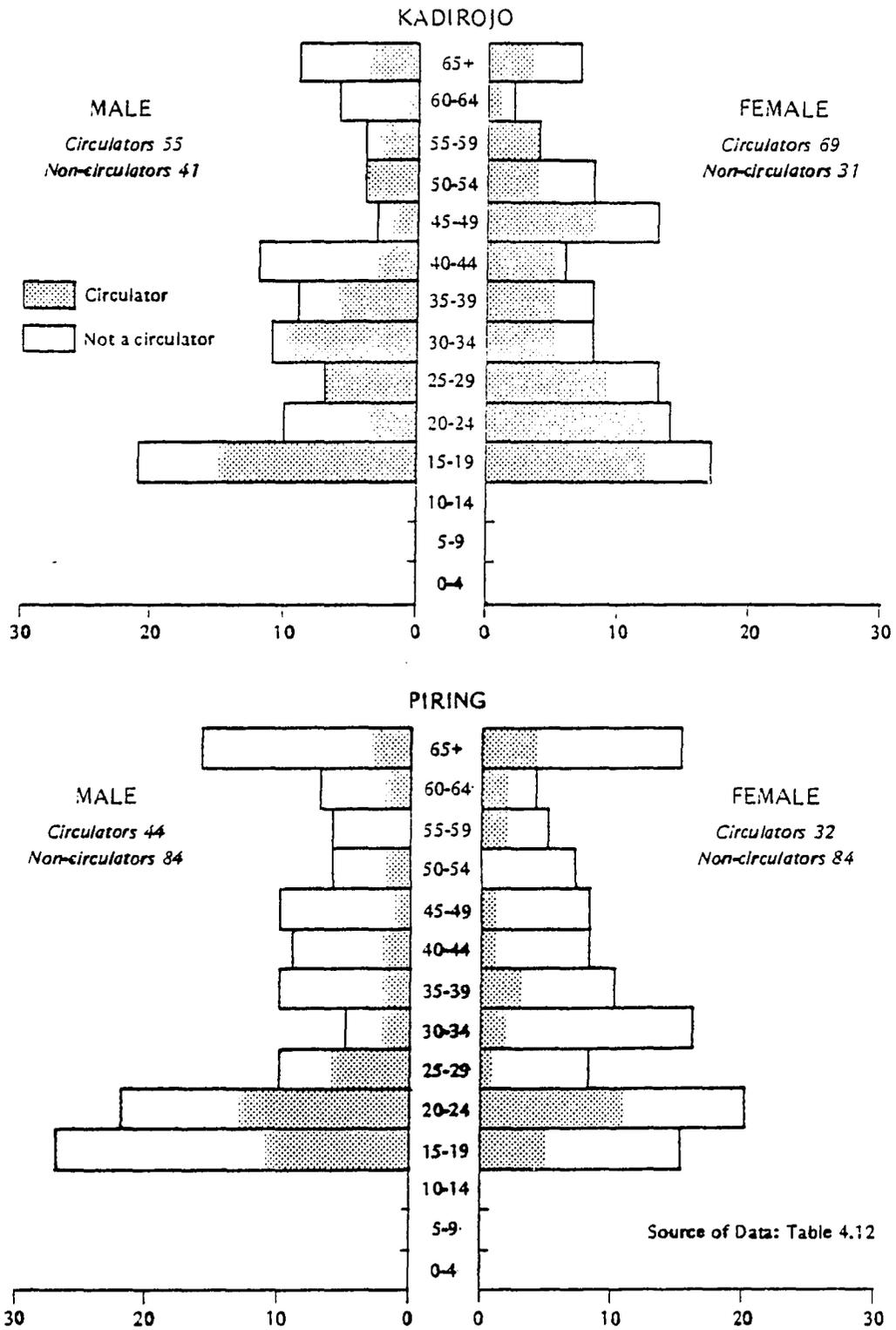


Figure 4.3

TABLE 4.15

NUMBER OF CIRCULATIONS MADE FOR DIFFERENT OBJECTIVES
 KADIROJO AND PIRING
 19 May 1975-31 January 1976

Objective ^a	KADIROJO		PIRING	
	Number of moves	%	Number of moves	%
Visiting	305	36.0	203	38.8
School	80	9.5	159	30.4
Wage-work	257	30.3	135	25.8
Socio-Cultural Commitment	77	9.1	24	4.6
Business	10	1.2	2	0.4
Trading	117	13.8	-	-
Lost from record	1	0.1	-	-
TOTAL	847 ^b	100	523	100

Sources: Tables AI.9 and AI.10.

^aAs with the tables on commuting, objectives in this table are ordered according to the frequencies of Piring.

^bThe total number of moves for Kadirojo is not the same as in Table 4.11 because it does not include the one missing circulation.

Table 4.15). Most visiting occurs within the same regency (Figure 1.2) and for farther-distant areas both within and beyond Java, the frequency of circular movements decreases (Tables AI.9, AI.10). Except for Piring, the number of moves between destinations within the same village and sub-district is low because these are places to which visits can be made in a day. One person in Piring takes care of his aged mother-in-law, who resides in another dukuh. Most of his time is spent there, but his occasional returns to Piring account for the high incidence of short-distance circulation (Table AI.10).

The far greater importance for Piring of circulation to school reflects the fact that the junior and senior high schools for Kadirojo are within commuting distance (Piring: 30.4 percent; Kadirojo: 9.5 percent; Table 4.15). Thus it is only the University students from Kadirojo who attend institutions located in Yogyakarta and who board (mondok) in the city. Both high school and university students from Piring usually board away from home particularly during the exam periods, and only return at weekends. The senior high school closest to Piring is at Bantul (Figure 1.2), 12 kilometers away, while those at university mainly circulate to and from Yogyakarta.

Between 25 and 30 percent of all circulations from Kadirojo and Piring (392 out of 1,370) are for wage-work, and mainly to Yogyakarta (235 out of 392; Tables AI.9, AI.10). From Kadirojo, there are carpenters and brick layers employed in the construction projects of Yogyakarta and other towns, while several females work as servants to Yogyakarta families. Laborers from Piring work in Yogyakarta's batik factories, two people are employed in retailing, and one civil servant who holds a

permanent position in one of the state offices is a rare example of a regular circulator.

Trading of salak is found only in circulation out of Kadirojo and the fruit is sold on the sidewalks of Yogyakarta and other small cities. Traders remain overnight (nginep) at the market places, since some shoppers buy salak in the evening and take them home for making dessert. Traders from Piring, on the other hand, sell their coconut, coconut oil, and coconut sugar in Bantul's market, where they stop selling when the market is over and return home the same day. Moves to meet socio-cultural commitments are not greatly important in Kadirojo and Piring, mainly because more relatives and kinsmen live within these communities than outside them (Tables AI.9, AI.10). Of those who circulated over the period 19 May 1975 to 31 January 1976, most left to help their relatives prepare ceremonies (selametan).

In his survey of population mobility in West Java, Hugo (1975b, 40), reported that more than two thirds of the circular migrants from the survey villages moved to urban destinations, especially to the metropolitan city of Jakarta. There they find many job opportunities and there are many sources of entertainment. Thus the flow of rural people to Jakarta is primarily motivated by the expectation of better living, the desire for a different lifestyle and an improvement in employment opportunities. The situation in the small cities of Yogyakarta Special Region, such as Bantul, Sleman and Medari (Figure 1.2) is quite different from Jakarta and job opportunities are very limited. In Kadirojo, 13.6 percent (35 out of 257) of wage earners work in the nearby city of Medari and in Piring only 2.2 percent (3 out of 135) are employed in Bantul. Only high school students

circulate regularly to these cities, because this is where the educational facilities are located.

The ratio of adult villagers who circulate to rural areas is consequently greater than that to urban areas (Kadirojo: 0.56 versus 0.44; Piring: 0.51 versus 0.49) and those for visiting, socio-cultural commitments, and business overwhelmingly so (Table 4.16). Among the dukuh residents who circulate to the cities for schooling and wage work, about 95 percent go to cities within Yogyakarta Special Region (Table AI.9, AI.10). As a result, the circulation field of people in Kadirojo and Piring lies almost entirely within Yogyakarta Special Region (Table AI.9, AI.10).

Beyond this, the average distance circulated from each dukuh is not the same, given that it summarizes variations in the primary reason for travel and their differential destinations (Tables AI.11, AI.12). In Piring, circular movement for schooling, wage-work, and socio-cultural commitments involves traveling over a greater average distance than in the case of Kadirojo (Table 4.17). Only for visiting is this pattern reversed. The average distance traveled by Kadirojo and Piring circulators (14.7 and 12.8 km respectively) reflects their primary destinations. About 38 percent of the circulators from each dukuh go to Yogyakarta, which lies 18 km south of Kadirojo but 24 km north of Piring.

As would be expected, the average distance traveled in circulation is greater than that traversed in daily commuting, although there are two reasons why both types of movement can be just as spatially constrained. First, dukuh people are reluctant to be far from their families. By circulating mainly to nearby places, and rarely farther than Yogyakarta

TABLE 4.16

RURAL/URBAN DESTINATIONS BY OBJECTIVES, FOR
KADIROJO AND PIRING CIRCULATORS
19 May 1975-31 January 1976

Objectives of Circulation	K A D I R O J O				P I R I N G			
	Rural	Urban	Total	Ratio of Rural: Urban	Rural	Urban	Total	Ratio of Rural: Urban
Visiting	262	43	305	86:14	190	13	203	94:6
School	36	44	80	45:55	1	158	159	1:99
Wage-work	57	200	257	22:78	54	81	135	40:60
Socio-Cultural Commitment	72	5	77	94:6	22	2	24	92:8
Business	10	-	10	100:0	-	2	2	0:100
Trading	37	80	117	32:68	-	-	-	-
Lost from record	1	-	1	100:0	-	-	-	-
	<hr/>							
TOTAL	475	372	847	56:44	267	256	523	51:49

Source: Tables AI.9 and AI.10.

TABLE 4.17

OBJECTIVES AND AVERAGE DISTANCE OF CIRCULATION
KADIROJO AND PIRING
19 May 1975-31 January 1976

Objectives	Average distance of circulation (km)	
	Kadirojo	Piring
Visiting	10.3	8
School	12.8	20.8
Wage-work	15.6	17.9
Socio-Cultural Commitment	9.9	12.5
Trading	12.5	-
Overall Average	12.8	14.7

Source: Computed from Tables AI.11 and AI.12.

Special Region, they are able to see their families whenever convenient. Thus on most weeks wage workers, school children, and civil servants return home on Saturdays. Second, although travel costs are low, nevertheless dukuh residents have no surplus money to spend on journeys to distant locations. Consequently they circulate no farther than absolutely necessary to fulfill a particular objective.

Modes of Transport

The comparative isolation of Piring, until very recently, is reflected in contrasting modes of transportation used by circulators from the two study dukuh. In Piring, the bicycle predominates over all forms of motorized transport (motorcycle, mini-bus, bus) and accounts for two-thirds of all journeys (360 out of 523; Table 4.18). Since before the Second World War, Bantul regency has been well-known as a 'bicycle

TABLE 4.18
 MODES OF TRANSPORT USED BY CIRCULAR MOVERS
 KADIROJO AND PIRING
 19 May 1975-31 January 1976

Mode of Transport	KADIROJO		PIRING	
	Number of moves	Percent	Number of moves	Percent
On foot	170	20.1	33	6.3
Wheeled (bicycle, <u>dokar</u> or pony cart, <u>becak</u> or pedicab)	280	33.1	360	68.8
Motorized (motorcycle, bus, ^a train)	395	46.7	130	24.9
Other	1	0.1	-	-
TOTAL	846	100	523	100

Source: Tables AI.13 and AI.14.

^aIncludes both privately-owned mini-buses and public buses.

area.' As a result of the relative lack of roads, the people have always used the bicycle to travel to other places. They still continue this practice today since, compared with Tempel subdistrict in which Kadirojo is located, the service frequency of public vehicles is still low. Kadirojo, by contrast, lies near the main road from Yogyakarta to Semarang, over which the flow of public transport is high. Thus, besides bicycles, circular movers from Kadirojo also have available public services and motorized forms of transport account for almost half the moves made between 19 May 1975 and 31 January 1976 (Kadirojo: 46.7 percent; Piring: 24.9 percent; Table 4.18). Yet in Kadirojo, 20.1 percent (170 out of 846) of all circulators travel on foot (cf. Piring: 33 out of 523)

because they cannot afford the cost of public transportation nor do they own a bicycle.

Not surprisingly, the different modes of transport used vary with distance. In Kadirojo, people usually go on foot for short distances of less than 2.5 km, for distances of less than 11 km most people use a bicycle, for distances of less than 20 km the motorcycle or bus is the main means of travel, and for distances greater than 45 km public buses or trains are used. Over short distances, circulators from Piring also walk. Both bicycles and motorcycles are used over distances of up to 25 km and motorized transport prevails only for distances greater than 45 km. There is a similar pattern when means of transport is related to the administrative units within which circulators travel. If a move is within the same village, then Kadirojo people usually go on foot, by bicycle if within the same local region, by motorcycle or buses if within Yogyakarta Special Region, and if the destination is beyond Yogyakarta Special Region then the bus or train prevails. The same hierarchy of transport use also holds for Piring, except that a higher proportion of people use the bicycle to travel within Yogyakarta Special Region (112 out of 523 versus 42 out of 846; Tables AI.13 and AI.14).

Timing of Circulation

In Piring, shortage of water during the dry season (April to September) influences the pattern of circulation as much as it does that of commuting. During these months, the incidence of circulation from Piring is high, as some adult villagers go to work in Yogyakarta and other towns while others remain behind to help manage the rice fields or repair their houses (Table 4.19, Figure 4.4). In September,

TABLE 4.19
 MONTHLY CIRCULATIONS FROM
 KADIROJO AND PIRING
 19 May 1975-31 January 1976

Date	KADIROJO		PIRING			
	Number of moves	Percent	Number of moves	Percent		
19-31 May 1975	32	3.8	39	7.5		
June 1975	89	10.5	89	17.0		
July 1975	111	13.1	71	13.6		
August 1975	74	8.7	65	12.4		
September 1975	102	12.1	52	9.9		
October 1975	101	11.9	57	10.9		
November 1975	121	14.3	42	8.0		
December 1975	139	16.4	48	9.2		
January 1976	78	9.2	60	11.5		
	TOTAL		847	100	523	100

Source: Prospective Mobility Register

CIRCULAR MOBILITY OF RESIDENTS AND VISITORS IN KADIROJO AND PIRING, JUNE 1975 – JANUARY 1976

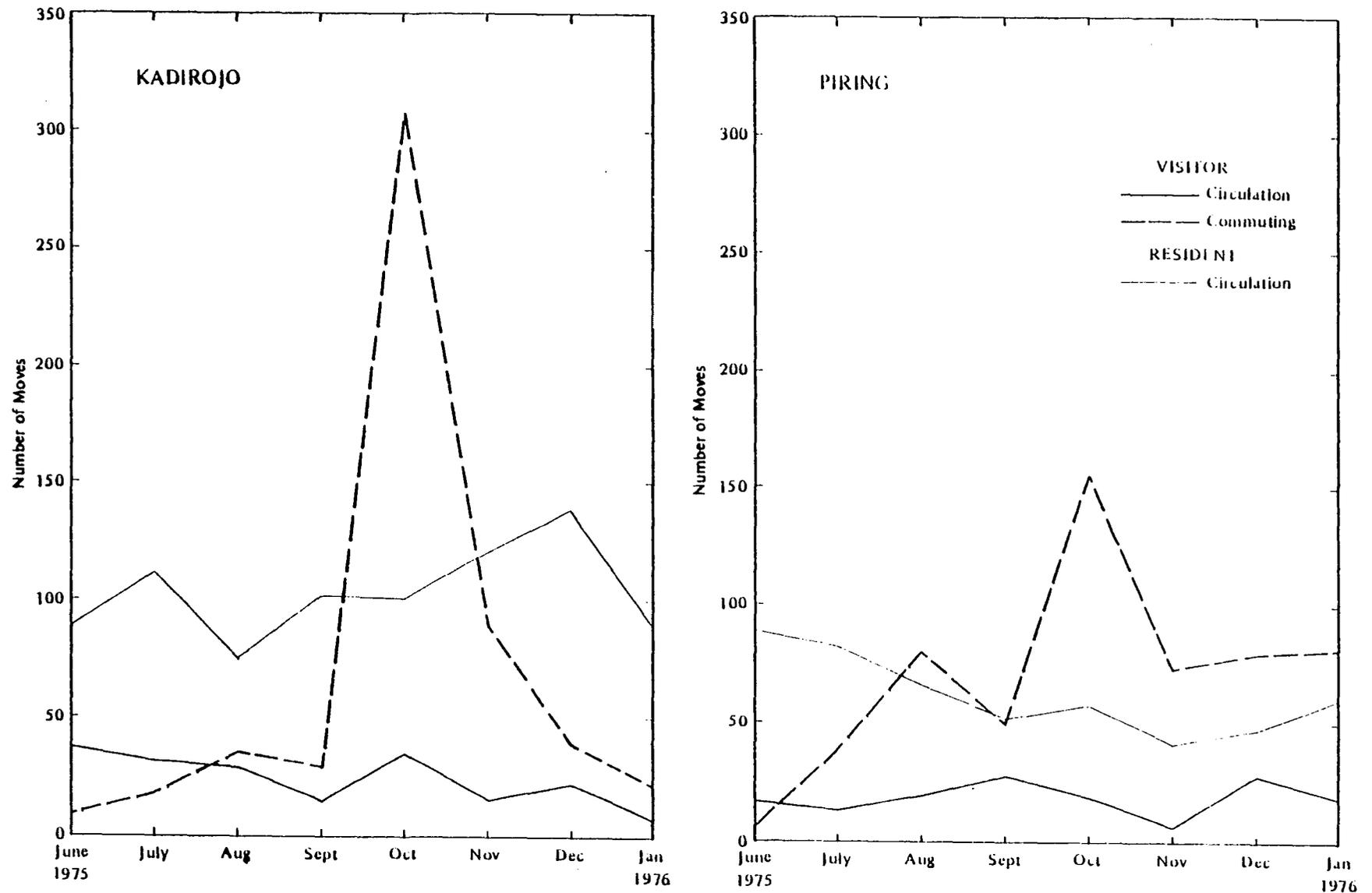


Figure 4.4

Source of Data: Prospective Mobility Register

the fasting month in the Moslem calendar, the amount of circulation begins to decline and a lower rate of mobility continues until December. Since farmers are busy in their rice fields throughout the wet season (October-March), some family members who had part-time jobs during the dry season return home, especially at the outset of planting and harvesting. At Lebaran (7 October 1975) the rate of circulating increases a little, as family members who reside outside the dukuh are visited. The break in the irrigation dam in early 1970 and an inability to cultivate rice the year round has had a marked impact upon the rate of circulation for Piring, as many people now travel to Jakarta for temporary wage employment. In Bojonggede village, West Java, Hugo (1975b, 419) found the same relationship between dry season circulation and a local shortage of water for rice cultivation.

In Kadirojo, by contrast, the availability of water throughout the agricultural cycle means that the frequency of circulation is little influenced by the wet or dry seasons. Peaks of circular movement for July, November and December 1975 reflect the influence of social and cultural events (Table 4.19). In December 1975 for example, many people attended wedding ceremonies in another village, which also happened to coincide with the month of Besar, the third month of the Moslem calendar and a propitious one for Moslems to schedule such ceremonies as weddings and circumcision.

In summary, dukuh people are frequent movers. Since they are strongly tied to their families and anchored to their village communities, the dominant pattern of movement is impermanent. People who move out from Kadirojo and Piring try to return as soon as possible; therefore it is not surprising that the number of commuters is higher than

that of circulators. The incidence of commuting has risen greatly during the Seventies, particularly following the development of roads that connect Yogyakarta with village communities and facilitate the flow of buses and mini-buses. In both dukuh, the most frequent commuters are civil servants, students, and traders, most of whom hold permanent positions outside the village. Farmers and farm laborers commute less, except for the dry season in Piring, when many work on the irrigation project along the Celep-Samas road.

Unlike commuting, the dominant reasons for circular movement are to attend socio-cultural events and to visit relatives or friends. Most circulation is therefore non-regular in nature and most commuting, regular. The modes of transport used by both commuters and circulators depend upon the distance of the dukuh from their destinations. Within the subdistrict, the bicycle is still the primary means of transport for both commuters and circulators. For Kadirojo, which is located close to the main road between Yogyakarta and Semarang, a higher number of circulators use motorized transport than is the case for Piring.

Movement of Visitors to and from the Dukuhs

Thus far, the description of circular mobility has focused upon the two dukuh of Kadirojo and Piring. Even in a village society, not all movement originates from one's home community and its full complexity can only be captured if the mobility experience of visitors is considered along with residents. For, as Hägerstrand (1963, 65) noted, "an area having a rather stable number of inhabitants can be looked upon as being a fixed system of stations [here communities] which is run through by a flow of individuals, single or in groups." The total of visitors to Kadirojo and

Piring over nine months is 760 and 729 respectively (Table 4.20) and the ratio of completed moves for visitors compared with adult residents 0.09 and 0.08 (Kadirojo 760 out of 8,251, Piring 729 out of 9,098).

Many people who were born in or originally came from Kadirojo and Piring now live in neighboring or distant places yet still maintain contact with their relatives. During the months of Ruwah or Lebaran, as previously noted, people feel a spiritual and moral obligation to visit their ancestors' grave. Since both Kadirojo and Piring are old dukuh wherein many ancestor graves are located, every year there is a discernible flow of people into Kadirojo and Piring. The ancestors' graves therefore can be regarded as a means of uniting all people descended from one common ancestor, and Ruwah and Lebaran a time of reunion for everyone who feels they belong to a particular dukuh community. Between 19 May 1975 and 31 January 1976, as a result, 84.9 percent of all circular moves originating outside Kadirojo (645 out of 760) and 82.2 percent of those into Piring (643 out of 729) were to fulfill socio-cultural commitments or to visit relatives and friends.

Of the six other objectives recorded in the register, to work for wages was the only one of any importance and accounted for 142 out of 1,489 circular moves (Table 4.20). Most of these visitors are jute workers who came to Kadirojo for eight months as temporary employees in the burlap factory (Chapter 2). This factory tried to recruit laborers from the dukuh but few were willing because of the low wages (Rp: 150 each day without meals). There were also some harvest laborers who came into Kadirojo and Piring to increase the local work force during rice harvest.

TABLE 4.20
 OBJECTIVES OF MOVES MADE BY VISITORS TO
 KADIROJO AND PIRING
 19 May 1975-31 January 1976

Objectives	K A D I R O J O			P I R I N G		
	Com- muting	Circu- lation	Total	Com- muting	Circu- lation	Total
Visiting	160 (19.1)	178 (84.8)	338 (44.5)	275 (48.7)	126 (76.8)	401 (55.0)
Socio-cultural Commitment	289 (52.5)	18 (8.6)	307 (40.4)	220 (39.0)	22 (13.4)	242 (33.2)
Wage-work	85 (15.5)	9 (4.3)	94 (12.4)	42 (7.4)	6 (3.7)	48 (6.6)
Attend Meeting	13 (2.4)	4 (1.9)	17 (2.2)	- -	- -	- -
Trading	2 (0.4)	- -	2 (0.3)	3 (0.5)	- -	3 (0.4)
School	1 (0.2)	1 (0.5)	2 (0.3)	7 (1.2)	10 (6.1)	17 (2.3)
Business	- -	- -	- -	6 (1.1)	- -	6 (0.8)
Farming	- -	- -	- -	12 (2.1)	- -	12 (1.7)
TOTAL	550 (100)	210 (100)	760 (100)	565 (100)	164 (100)	729 (100)

Source: Prospective Mobility Register

Since moves into the dukuh mainly reflect kinship ties, their timing and frequency is much influenced by socio-cultural events in the Javanese calendar. In 1975, Ruwah was from August 9 until September 6; during Puasa, from September 7 to October 6, there were no cultural events; the Lebaran (the first of Sawal) festival was on October 7; and Besar, a good time to initiate local ceremonies, was from December 5, 1975 until January 2, 1976. During the month of Ruwah, visitors to Piring spread their daily visits to ancestor graves throughout August and October, whereas in Kadirojo most such visits occurred during Lebaran (Table 4.21, Figure 4.4). The amount of circular mobility into Kadirojo and Piring declined in September during Puasa, when there were no special ceremonies and only in the last week did there begin a flow of people who wanted to celebrate the Lebaran festival with their families and relatives and who lived in such distant places as Jakarta and South Sumatra (Table 4.21).

Several days before the Lebaran, buses, mini-buses, and trains throughout Java are extremely crowded. At any bus or railway station, people can be seen hurrying about with the sole intention of boarding whatever public vehicle will take them to their ancestral place, no matter how unpleasant the conditions of travel. Increased fares do not prevent this massive mobility and people clinging to and blocking the entrance and exit of buses are a common sight. Some hardy passengers even climb up and sit on the place normally reserved for carrying baggage. Trains are similarly overcrowded, and as soon as one comes to a stop, more anxious passengers swarm on. Physical fitness counts for much when wishing to travel in this way and, once inside, up to ten hours may have to be spent standing, with a hand stretched up to a rack and a bag squeezed between the legs.

TABLE 4.21
TIMING OF CIRCULAR MOBILITY OF VISITORS INTO
KADIROJO AND PIRING
19 May 1975-31 January 1976

Month	K A D I R O J O			P I R I N G		
	Com- muting	Circu- lation	Total	Com- muting	Circu- lation	Total
19-31 May 1975 ^a	4 (0.7)	19 (9.1)	23 (3.0)	3 (0.5)	19 (11.6)	22 (3.0)
June 1975	9 (1.6)	37 (17.6)	46 (6.1)	7 (1.2)	16 (9.8)	23 (3.1)
July 1975	18 (3.3)	31 (14.8)	49 (6.4)	39 (6.9)	13 (7.9)	52 (7.1)
August 1975	35 (6.4)	29 (13.8)	64 (8.4)	80 (14.2)	18 (10.9)	98 (13.5)
September 1975	29 (5.3)	15 (7.1)	44 (5.8)	49 (8.7)	28 (17.1)	77 (10.6)
October 1975	307 (55.8)	35 (16.7)	342 (45.0)	154 (27.3)	18 (10.9)	172 (23.6)
November 1975	89 (16.2)	15 (7.1)	104 (13.7)	73 (12.9)	8 (4.9)	81 (11.1)
December 1975	38 (6.9)	22 (10.5)	60 (7.9)	79 (14.0)	27 (16.5)	106 (14.5)
January 1976	21 (3.8)	7 (3.3)	28 (3.7)	81 (14.3)	17 (10.4)	98 (13.4)
TOTAL	550 (100)	210 (100)	760 (100)	565 (100)	164 (100)	729 (100)

Source: Prospective Mobility Register

^aIn 1975: Ruwah August 9-September 6; Puasa September 7-October 6; Lebaran (the first of Sawal) October 7, Besar December 5, 1975-January 2, 1976.

During the Lebaran, visitors, once arrived in the dukuh, see their relatives between mass prayers at the mosque in the morning and in the afternoon. In particular, the village (lurah) and dukuh heads (kepala dukuh) receive many guests. During the Lebaran, in 1975, there were 336 visitors to Kadirojo, 301 of whom returned home the same day (nglaju) and 35 of whom stayed for two or more days (nginep). In Piring there was a smaller number of visitors (167), 150 of whom returned home the same day and 17 of whom remained longer.

Two months after the Lebaran, in the month of Besar, is considered a propitious time to schedule such life events as a wedding or circumcision rites. In the Besar of 1975, two families in Piring held a wedding ceremony, some of the guests to which traveled from as far away as Bantul (Figure 1.2). December was also the month when farm laborers from adjacent dukuh arrived, particularly in Piring, to harvest the dry rice and to prepare the fields for the cultivation of wet rice (compare Table 4.20 and 4.18). From May until July, there are no social cultural events in the dukuh and so the number of visitors is comparatively low.

Places of Origin, Periods of Stay, and Modes of Transport

The majority of visitors to Kadirojo and Piring come from villages, towns and cities within Yogyakarta Special Region (1,297 out of 1,489), and most of the remainder from Central Java (108 out of 191; Table 4.22). Since, if people travel by bus, these places of origin are within commuting distance, three quarters of all visitors return to their homes the same day (Table 4.23). Some visitors, who live in East or West Java and on other islands, are beyond commuting distance, and consequently remain in the dukuh for at least two or three days. In brief, the ratio

TABLE 4.22

PLACES OF ORIGIN OF VISITORS TO
KADIROJO AND PIRING
19 May 1975-31 January 1976

Place of Origin	K A D I R O J O			P I R I N G		
	Com- muting	Circu- lation	Total	Com- muting	Circu- lation	Total
Within same village	129 (23.5)	30 (14.3)	159 (20.9)	86 (15.2)	3 (1.8)	89 (12.2)
Within same subdistrict	86 (15.6)	14 (6.7)	100 (13.2)	220 (38.9)	10 (6.1)	230 (31.6)
Within same region	252 (45.8)	80 (38.1)	331 (43.7)	149 (26.4)	30 (18.3)	179 (24.6)
Within Yogyakarta Special Region	26 (4.7)	26 (12.4)	52 (6.8)	81 (14.3)	76 (46.3)	157 (21.5)
Within Central Java	48 (8.7)	41 (19.5)	89 (11.7)	7 (1.2)	12 (7.3)	19 (2.6)
Within West Java	2 ^a (0.4)	7 (3.3)	9 (1.2)	11 ^a (1.9)	21 (12.8)	32 (4.4)
Within East Java	- -	- -	- -	- -	3 (1.8)	3 (0.4)
Other islands	7 ^a (1.3)	12 (5.7)	19 (2.5)	7 ^a (1.2)	9 (5.5)	16 (2.2)
Not Stated	- -	- -	- -	4 (0.7)	- -	4 (0.6)
TOTAL	550 (100)	210 (100)	760 (100)	565 (100)	164 (100)	729 (100)

Source: Prospective Mobility Register

^aThese people, after visiting their ancestors' graves and kinsfolk within Kadirojo and Piring, stayed with relatives outside these two dukuh.

TABLE 4.23
 PERIOD OF STAY FOR VISITORS TO
 KADIROJO AND PIRING
 19 May 1975-31 January 1976

Period of Stay	KADIROJO		PIRING	
	Number of moves	Percent	Number of moves	Percent
6 hours - <1 day	550	72.4	565	77.5
1 day - <1 week	180	23.7	114	15.6
1 week - <1 month	26	3.4	35	4.8
1 month - <1 year	4	0.5	15	2.1
TOTAL	760	100	729	100

Source: Prospective Mobility Register

of circulators to commuters among all visitors increases the greater the distance of their places of origin from Kadirojo and Piring.

All visitors between 19 May 1975 and 31 January 1976 returned to their places of origin. This demonstrates once again the reluctance of village people to leave their family and their local community. Again, the means of transport used by visitors parallels that already described for adult residents of Kadirojo and Piring. Most visitors use bicycles if traveling within either Sleman or Bantul regency, and very few motorcycles or buses. The recent linking of villages to Yogyakarta by mini-buses and buses has displaced such traditional vehicles as the dokar (pony cart with two wheels) and andong (pony cart with four wheels), which before the Seventies were practically the only way to travel between Yogyakarta and Celep. Motorized vehicles, which take less time

and generally have lower fares, thus provide the main means of transportation from Yogyakarta and places beyond.

When the mobility of visitors is compared with that of dukuh residents, then the similarity in movement systems becomes even more apparent. All travelers try to return home the same day (nglaju) and if the destination is beyond commuting distance, then they will stay (nginep) no more days than absolutely necessary. Consequently the incidence of commuting, however defined, is higher than that of circulation. Most movers return to their places of origin, for villagers are extremely reluctant to leave their family and their local community. The movement field of both visitors and dukuh residents lies almost entirely within Yogyakarta Special Region, the villages and towns of which are reached mainly on foot, bicycle or motorcycle. Most visitors come to see kinsfolk and pay homage to their ancestors' grave, whereas dukuh residents commute and circulate for a wider range of objectives: wage work, trading, and school. Thus the number of visitors is greatest during Ruwah, Lebaran, and other socio-cultural events whereas the mobility of dukuh residents reflects not only these but also the location of jobs and school facilities, and the agricultural cycle.

In short, the characteristics of visitors almost entirely replicate those commuters and circulators whose homes are Kadirojo and Piring. To look at the dukuh as either place of origin or destination consequently makes little difference: all hamlets and villages are part of the same, basically rural system of intensive movement. Although most such mobility is intentionally impermanent, certain forces such as the need for agricultural land, permanent employment, and advanced education can

lead to permanent relocation; to shift one's permanent residence to another island (transmigration) or to move to such large cities as Jakarta and Surabaya. Since regional and island-level statistics have shown that permanent relocations do occur (Chapter 1), the next chapter will focus upon migration from Kadirojo and Piring.

CHAPTER V

MIGRATION

The previous discussion of national statistics and regional surveys showed that, following West Sumatra, Yogyakarta has the second highest rate of out-migration of all provinces in Indonesia (Chapter 1). This means that, from the standpoint of the dukuh, people not only commute and circulate but also migrate--defined here as an intentional shift of residence across their dukuh boundary for a period of one year or more. Those who return to their dukuh of origin and/or of birth after staying in another place for one or more years can be regarded as return migrants.

Some people from Kadirojo and Piring work and stay in Jakarta, some families have migrated to South Sumatra, and some school teachers from Piring work in Madura. Several days before Lebaran many of them return to Kadirojo and Piring, which makes these dukuh far more crowded than usual during the period of festivity. Accurate figures about such out-migration are not available in either the dukuh or village offices, especially when the departure of the family or individual is spontaneous, but some idea of its magnitude for Kadirojo and Piring can be obtained from several complementary sources. From the Marriage and Children Survey (Chapter 2), information was obtained about the present place of residence of all children born to dukuh women (Table 2.1) and of all women both before and after their current or any previous marriage. In addition, the retrospective histories of movement included questions of all household heads and those aged 15-54 who had migrated to other places.

The retrospective histories of movement reveal that 94.3 percent of those interviewed in Kadirojo and 90.9 percent in Piring have children, relatives, or siblings resident in areas outside Java: Kadirojo: 150 out of 159; Piring: 170 out of 187. A similarly high proportion in both communities say that they have relatives, children, or siblings who live in other parts of Java (Kadirojo: 92.5 percent; Piring: 81.3 percent). Despite these high proportions and the wide dispersion of kinsfolk, most household members in Kadirojo and Piring maintain close contact.

According to the survey of marriage and children, 27.8 percent of the children of Kadirojo parents and 39.4 percent of Piring parents live outside the dukuh (Kadirojo: 72 out of 259; Piring: 129 out of 327; Table 5.1). One third (18 out of 72) of these from Kadirojo and one quarter (25 out of 104) from Piring reside on other islands, mainly south Sumatra and Madura. Most migrants remain in rural areas and the ratio of rural to urban destinations is 74:26 for Kadirojo and 71:30 for Piring (Table 5.1). There are two reasons for this rural concentration: first, the lack of job opportunities in such small cities as Medari, Bantul and Sleman; and secondly, upon marriage, almost one third of dukuh-born children follow their spouses to live in other rural communities.

The prospective mobility register records that about one tenth of all people aged between 15 and 55 years, including household heads, had migrated from either Kadirojo or Piring (Kadirojo: 23 out of 196, Piring: 24 out of 244; Table 5.2). As with all children born to dukuh women, their destination places can be divided into three: within Yogyakarta Special Region; the two large cities of Yogyakarta and Jakarta; and other areas outside Java, particularly south Sumatra and Madura. About 60 percent of the migrants went to other islands and the big cities.

TABLE 5.1
 PLACE OF RESIDENCE OF CHILDREN OF
 KADIROJO AND PIRING PARENTS,
 25 September 1975

Place of residence	KADIROJO		PIRING	
	Total	Percent	Total	Percent
<u>AREAS</u>				
In the <u>dukuh</u>	187	72.2	198	60.6
Within same village	4	1.5	18	5.5
Within same subdistrict	7	2.7	14	4.3
Within same region	19	7.3	14	4.3
Within Yogyakarta Special Region	9	3.5	15	4.6
Within Central Java	6	2.3	9	2.7
Within West Java	6	2.3	23	7
Within East Java	2	0.8	9	2.8
Other Island	18	6.9	25	7.6
Not Stated	1	0.4	2	0.6
Total number of children	259	99.9	327	100
<u>TOWNS</u> (Percentage of total number of children)				
		<u>7.3%</u>		<u>11.6%</u>
Medari	3	15.8	-	-
Bantul	-	-	2	5.3
Yogyakarta	9	47.4	11	28.9
Surakarta	-	-	1	2.6
Surabaya	1	5.2	2	5.3
Jakarta	6	31.6	22	57.9
	TOTAL	19	38	100

Source: Marriage and Children Survey

TABLE 5.2

PLACE OF DESTINATION OF MIGRANTS FROM
KADIROJO AND PIRING
21 May 1975-31 January 1976

Place of Destination	KADIROJO		PIRING	
	Total	Percent	Total	Percent
Migrants as percent of total number of synthetic cohort: Kadirojo 196, Piring 244.	23	11.7	24	9.8
Within same village	2	8.7	6	25
Within same subdistrict	4	17.4	1	4.2
Within same region	1	4.3	2	8.3
Within Yogyakarta Special Region, excluding Yogyakarta city	2	8.7	-	-
Yogyakarta City	1	4.3	3	12.5
Surabaya	1	4.3	-	-
Jakarta	4	17.4	3	12.5
Sumatra	7	30.4	4	16.7
Madura	-	-	4	16.7
Kalimantan	1	4.3	1	4.2
Total number of migrants	23	99.8	24	100

Sources: Prospective Mobility Register and field notes.

Objectives of Migration

In his pioneering study of population mobility in West Java, Hugo (1975b, 423), divides the objectives of migration into two: for marriage and divorce, or for other reasons such as trading, contract labor, government employment, and the army. If this distinction is followed for Kadirojo and Piring, then about a third of all out-migration of dukuh-born children occurs as a result of marriage (73 out of 201; Table 5.3). Of the remaining objectives, wage-work, following relatives, and transmigration each account for more than a quarter of the combined total of migrants from both communities.

Marriage Migration

The position of marriage as the single most important reason why children of Kadirojo and Piring parents permanently leave the dukuh also has been found in West Java (Hugo 1975b, 424). Connell et al. (1976, 49) have come to a parallel conclusion in reporting that, on the basis of an extensive survey of studies of rural population movement in the Third World, marriage is perhaps the most general cause of out-migration from the village.

Until recently, most first marriages in Kadirojo and Piring were arranged by parents of the bride and groom. When a male has decided which girl he would prefer to marry, he then tries to convince his parents of the wisdom of his choice. In both communities there is a definite preference to marry someone within the extended family, so that the household land will not be inherited by outsiders. Hugo (1975b, 425) has similarly found that the Sundanese of West Java prefer to marry near relatives, usually cousins.

TABLE 5.3
OBJECTIVES OF MIGRATION FOR CHILDREN OF
KADIROJO AND PIRING PARENTS

Objective ^a	KADIROJO Frequency	PIRING Frequency
Total number of children ever-born to Kadirojo/Piring parents	259	327
Total number of children migrated	72 (27.8%)	129 (39.4%)
<u>Marriage</u>		
Following husband	17	37
Following wife	6	13
Total	23 (31.9%)	50 (38.8%)
<u>Non-marriage</u>		
Wage-work	19	35
Following relative	13	12
Transmigration	12	10
Teaching	-	6
Taking care of inherited land	1	4
School	2	4
Trading	1	3
Following parents-in-law	-	2
Buying land	-	1
Not Stated	1	2
Total	49 (68.1%)	79 (61.2%)

Source: Marriage and Children Survey

^aThis table is ordered according to the frequency of Piring, which produces not only rice but also cash crops.

Marriage ceremonies in Java are usually held at the home of the bride. According to Koentjaraningrat (1957, 62), the couple is supposed to stay in the bride's home for the night and sleep in the wedding room. The couple remains there for five days and neither is allowed to leave except to go out and work. If the newly-married couple does not have a dwelling of their own, then they live in a room in the house of either the wife's or the husband's parents. Thus there is no regular or prescribed pattern of residence for newly-married couples before they construct a dwelling of their own.

In both Kadirojo and Piring, most wives stay in their husband's house. The marriage and children survey shows that 76.3 percent of Kadirojo brides (29 out of 38) and 77.1 percent of Piring brides (54 out of 70) leave the dukuh after marriage. The percentage is lower for bridegrooms: 52.2 percent (24 out of 46) for Kadirojo and 59.7 (43 out of 72) for Piring (Table 5.4). For Kadirojo males, the ratio of newly-married people who stay outside versus within the dukuh after marriage is 1.09 (22:24) and for Kadirojo females 3.11 (9:29). For Piring, the ratio for males is 1.48 (29:43) and for females 3.37 (16:54). These ratios indicate that for women, marriage is three times as likely to cause permanent removal from the home community as for men. Husbands, unlike wives, may stay in a house given as an inheritance by parents or a new house may be constructed near that of the parents'. Consequently, in one house compound there may be a number of houses owned by members of one extended family, a situation which is especially clear in the settlement pattern of Kadirojo (Figure 3.1).

The high frequency of female mobility for marriage is confirmed by information about the place of residence of dukuh inhabitants before

TABLE 5.4
PLACE OF RESIDENCE AFTER MARRIAGE OF
KADIROJO AND PIRING SPOUSES

Place of residence	KADIROJO		PIRING	
	Male	Female	Male	Female
Within <u>dukuh</u>	22 (47.8%)	9 (23.7%)	29 (40.3%)	16 (22.9%)
Outside <u>dukuh</u>	24 (52.2%)	29 (76.3%)	43 (59.7%)	54 (77.1%)
TOTAL	46 (100%)	38 (100%)	72 (100%)	70 (100%)

Source: Marriage and Children Survey

marriage. Almost three quarters of the Kadirojo and half the Piring women now or once married previously lived in different dukuh communities (Table 5.5). This considerable difference in the ratios for each community may reflect contrasts in the site and situation, which in turn influence the interaction among potential marriage partners. Kadirojo, as noted in Chapter 3, is more accessible by road to neighboring areas than is Piring and its population includes a higher proportion of civil servants, traders, and laborers who work outside the community. In Kadirojo, about four fifths of all marriages to outsiders (47 out of 53) were with persons resident within Sleman regency (Table 5.6), whereas for Piring more than nine tenths (49 out of 54) were with people resident within the same subdistrict (Table 5.7). Similarly, in Kadirojo 92.3 percent (36 out of 39) of all ever-married women with local husbands were themselves born in other communities, whereas in Piring only half (30 out of 59) fall into this category. As revealed by marriage, the interaction space of people from Kadirojo is therefore considerably larger than that from Piring.

TABLE 5.5

PLACE OF RESIDENCE BEFORE MARRIAGE OF
EVER-MARRIED WOMEN IN
KADIROJO AND PIRING

<u>Dukuh</u>	<u>Within dukuh</u>		<u>Outside dukuh</u>		<u>Total</u>	
	Number	Percent	Number	Percent	Number	Percent
Kadirojo	20	26.7	55	73.7	75	100
Piring	53	53.5	46	46.5	99	100

Source: Marriage and Children Survey

Wage-Labor and Kinship Migration

In addition to marriage, about one tenth of all children born to Kadirojo and Piring parents have migrated for wage labor, to accompany kin, and as part of the transmigration program (Table 5.3). By contrast, the amount of migration for such other objectives as formal education, trading, and to take care of inherited land is very small. Those who migrate for wage labor usually work in the non-agricultural sector and try to obtain permanent employment upon graduation from general or vocational school (see Chapter 3). Since the number of job opportunities available locally is very limited, many migrants choose a place where relatives or friends live and can be a source of information about likely openings. Thus four people from Piring, who graduated from Teachers' Training School and were seeking employment, went to Madura (Figure 1.0) where one kinsman worked as a school teacher at the primary school and another was a School Inspector. Another four from Kadirojo and three from Piring went to Jakarta in search of a job and there is even one individual from Kadirojo and another from Piring who left to work in

TABLE 5.6

PLACE OF RESIDENCE OF WIFE AND HUSBAND BEFORE
MARRIAGE, KADIROJO
25 September 1975

Place of Residence of Husband	Within <u>Dukuh</u>	Within Village	Within Sub- district	Within Regency	Within Yogyakarta Special Region	Within Central Java	Within East Java	Within West Java	Other Islands	Total
Place of Residence of Wife										
Within <u>Dukuh</u>	3	3	5	4	-	5	-	-	-	20
Within Village	12	1	2	1	-	-	-	-	-	16
Within subdistrict	4	2	-	-	-	-	-	-	-	6
Within Regency	19	-	-	8	-	1	-	-	-	28
Within Yogyakarta Special Region	-	-	-	-	-	-	-	-	-	-
Within Central Java	1	-	-	-	-	2	-	-	-	3
Within East Java	-	-	-	-	-	-	-	-	-	-
Within West Java	-	-	-	-	-	-	-	1	-	1
Other Islands	-	-	-	-	-	-	-	-	1	1
TOTAL	39	6	7	13	-	8	-	1	1	75

Source: Marriage and Children Survey

TABLE 5.7

PLACE OF RESIDENCE OF WIFE AND HUSBAND BEFORE
MARRIAGE, PIRING
25 September 1975

Place of Residence of Husband	Within <u>Dukuh</u>	Within Village	Within Sub- district	Within Regency	Within Yogyakar- ta Spec. Region	Within Central Java	Within East Java	Within West Java	Total
Place of Residence of Wife									
Within <u>Dukuh</u>	29	7	14	-	2	-	1	-	53
Within Village	8	1	3	-	-	-	-	-	12
Within Subdistrict	20	4	6	-	1	-	-	-	31
Within Regency	-	-	-	-	-	-	-	-	-
Within Yogyakarta Special Region	1	-	-	-	1	-	-	-	2
Within Central Java	-	-	-	-	-	-	-	-	-
Within East Java	-	-	-	-	-	-	-	-	-
Within West Java	1	-	-	-	-	-	-	-	1
TOTAL	59	12	23	-	4	-	1	-	99

Source: Marriage and Children Survey

Kalimantan (Figure 1.0). All those who migrated to Jakarta and Kalimantan followed relatives who had been successful in securing jobs. Such relatives thus became sources of information about the availability of employment and also helped to cushion the first few days or weeks until more independent housing could be found.

In both Kadirojo and Piring, several people employed by the government or the army have been transferred to various parts of Indonesia throughout their careers. Four army personnel who have served for some time in other provinces, and even in other countries, returned to their home dukuh upon retirement. Hugo (1975b, 433) also found this form of career mobility in West Java. One retired policeman, to take an example, was born in Kadirojo in 1921. He graduated in 1934 from the Elementary School at Morangan, about 3 kilometers southwest of Kadirojo. In 1940, he worked in Sleman as an assistant policeman and in 1941 moved to Jakarta. During the Japanese occupation (1942-1945) he worked with the Japanese Navy and served for two years in Singapore. After independence, he was a policeman in Yogyakarta and from 1950 until he retired in 1969 worked in several areas of Yogyakarta Special Region. He returned with his family to Kadirojo upon retirement (Figure 5.1). Just as Hugo (1975b, 434) found in West Java, most people who hold permanent positions outside the dukuh eventually return because, first, their retirement allowance is too small to live permanently in the city, and secondly, the atmosphere of the village is more comfortable than the city and reinforces a strong desire to spend their last years in their ancestral place. Thus most people purchase a piece of land in the village before actual retirement.

MIGRATION HISTORY OF A RETIRED POLICEMAN AGED 54 YEARS
KADIROJO

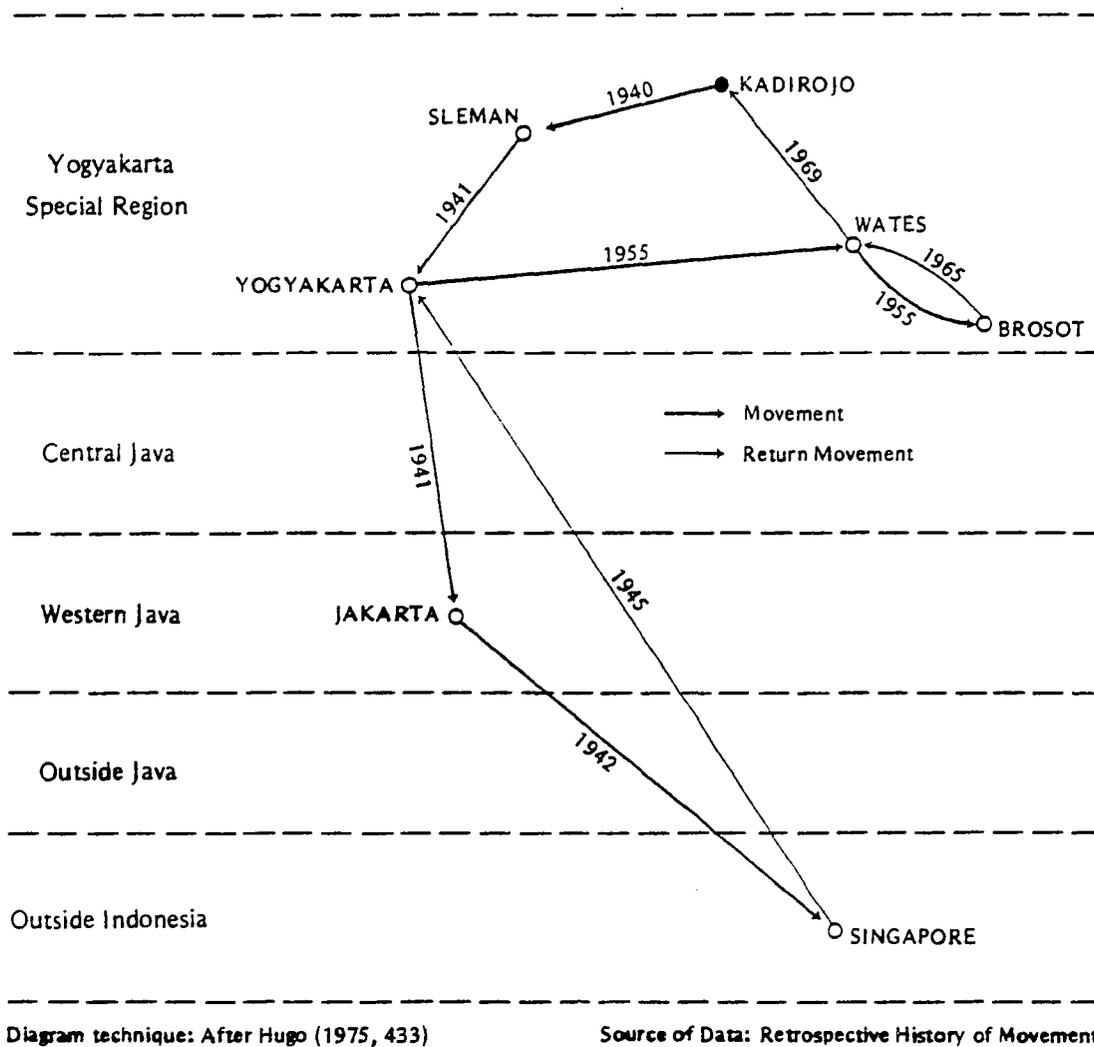


Figure 5.1

Characteristics of Migrants

The characteristics of migrants are much influenced by their demographic, social, and economic backgrounds. The marriage migration differential between the sexes is obvious, since most married women in Kadirojo and Piring moved in to their husband's place of residence. Conversely, males rather than females seek wage employment. In Kadirojo, according to the marriage and children survey, 13 out of 18 who migrated to obtain jobs were males, and in Piring 23 out of 35. Similarly, in the survey of rural-urban migration in ten provinces of Indonesia, Suharso (1976, 40) and his associates found that more men than women migrated to urban areas and also that the majority of females who came to cities for work or advanced education were aged between 15 and 19. Except for marriage, migrants from both Kadirojo and Piring are therefore dominantly male, but the high frequency of marriage migration means that overall there are more female than male migrants (Kadirojo: 40 versus 32; Piring: 64 versus 59; Table 5.8).

Most migrants are young, because their greater independence at this age makes it easier for them to move around. According to the lurah (village head) of Murtingading, in Java the official minimum age for marriage is 16 years for females and 19 years for males, which therefore represents the earliest age at which migration can occur in response to an impending marriage. Migration for wage employment usually takes place after graduation from Junior High or Teacher's Training School, when students are aged 16 years or more. Consequently, the population of both Kadirojo and Piring may be divided into children aged less than 16, virtually all of whom stay with their parents, and those aged more than 16 who constitute potential migrants. The marriage and children survey

TABLE 5.8

PRESENT RESIDENCE OF KADIROJO AND PIRING CHILDREN,
BY AGE AND SEX, 25 September 1975

Kadirojo

Age (in years)	Resident Within Dukuh			Resident Outside Dukuh			Total no. of children
	Male	Female	Total	Male	Female	Total	
0- 4	15	25	40	-	-	-	40
5- 9	20	23	43	2	2	4	47
10-14	14	17	31	1	1	2	33
14-19	15	12	27	3	6	9	36
20-24	6	3	9	3	5	8	17
25-29	6	5	11	4	6	10)	21
30-34	8	3	11	5	9	14)	25
35-39	3	3	6	7	5	12)	18
40-44	5	1	6	2	3	5	12
45-49	1	2	3	2	4	4	7
50-54	-	-	-	2	-	2	2
55-59	-	-	-	1	-	1	1
Not Stated	-	-	-	-	1	1	1
TOTAL	93	94	187	32	40	72	259

Piring

0- 4	13	17	30	-	-	-	30
5- 9	18	15	33	-	1	1	34
10-14	14	23	36	-	2	2	39
15-19	17	14	31	6	3	9	40
20-24	20	7	27	7	11	18	45
25-29	6	7	13	11	11	22)	35
30-34	4	-	4	9	12	21)	25
35-39	6	5	11	13	13	26)	37
40-44	3	1	4	8	10	18	22
45-49	4	-	4	3	4	7	11
50-54	1	2	3	2	1	3	6
55-59	2	-	2	-	-	-	2
Not Stated	-	-	-	-	1	1	1
TOTAL	108	91	199	59	69	128	327

Source: Marriage and Children Survey

clearly demonstrates that migration begins with the 15-19 age group and the ratio of those who live outside their birthplace rises with increasing years until the age of 40 is reached (Figure 5.2). Of all dukuh-born children aged between 25 and 39, 50.7 percent (Kadirojo) and 53.5 percent (Piring) reside beyond their natal place (Table 5.8 and Figure 5.2).

Most people who migrate to town for the purpose of wage-work or schooling are single. Between 21 May 1975 and 31 January 1976, the six persons from Kadirojo and the eight from Piring who left for paid employment were all single. The Suharso (1976, 42) study of rural-urban migration in ten provinces in Java also found that more than half the urban migrants were not married. Failure of one's marriage often leads to a return to the natal community, especially of females. In Kadirojo, there are three divorced women and in Piring another two who now live with their children in the homes of their parents.

In general, migrants have little formal education and most have not progressed beyond elementary school (Table 5.9). This mirrors the overall situation in both Kadirojo and Piring, in which only those children born since the 1940s have some experience of formal education. Students who graduate from general and vocational schools usually try to obtain a job in town or rural areas (Figure 5.3). As previously noted, very few are successful and the prospect for those who attended general schools is far smaller than those who graduated from vocational schools. Of the 31 children in Piring who successfully completed Teachers' Training School, 20 (64.5 percent) secured gainful employment outside the dukuh, compared with only 39 percent (25 out of 64) who graduated from junior and senior high schools (Table 5.9). In Kadirojo, virtually no one has

AGE, SEX AND PRESENT RESIDENCE OF ALL CHILDREN BORN IN KADIROJO AND PIRING

25 SEPTEMBER 1975

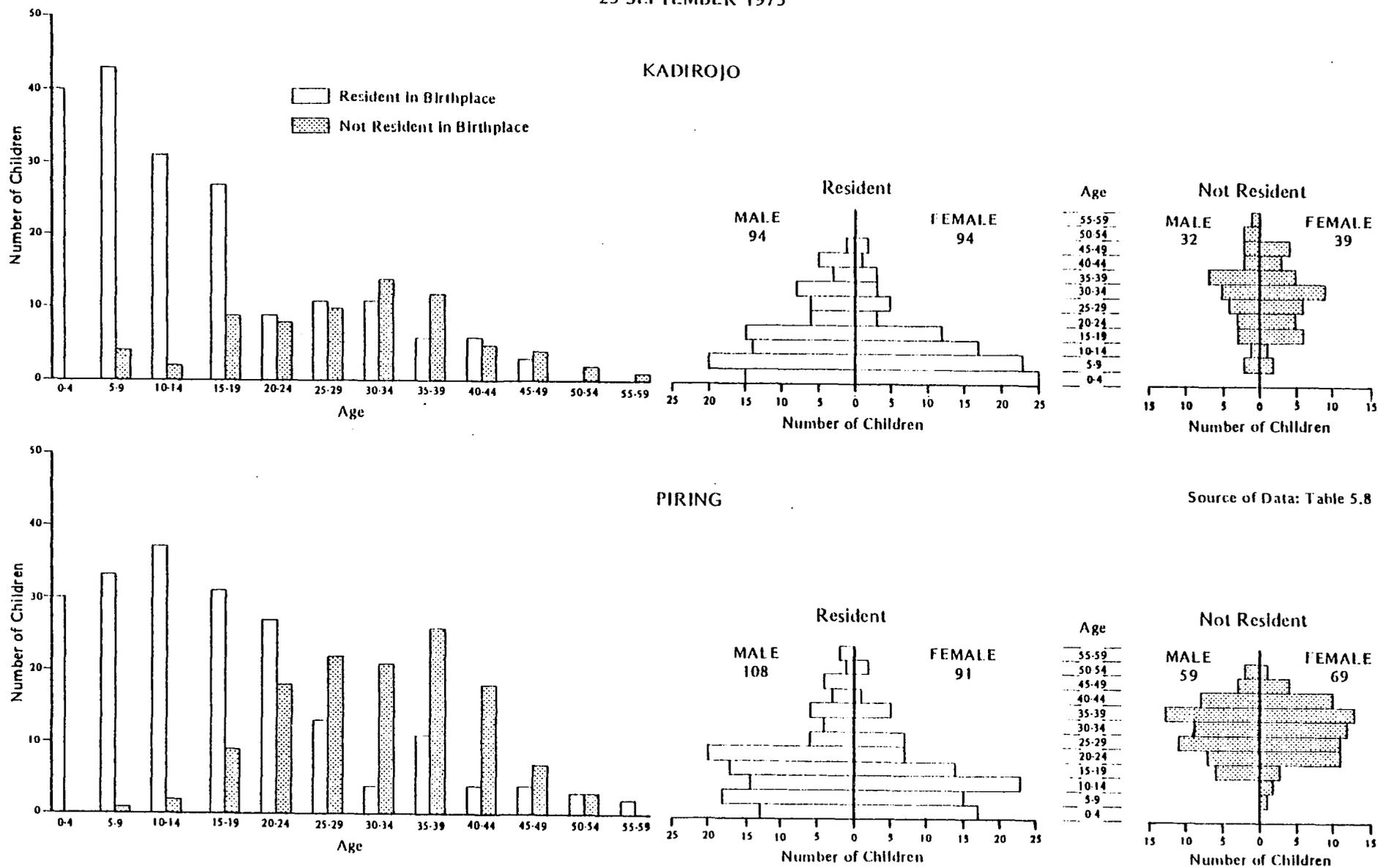


Figure 5.2

TABLE 5.9

PRESENT RESIDENCE OF CHILDREN COMPARED WITH CURRENT
AND COMPETENCE SCHOOLING
KADIROJO AND PIRING
25 September 1975

Educational Status	KADIROJO			PIRING		
	Within dukuh	Outside dukuh	Total	Within dukuh	Outside dukuh	Total
Under age (0-6 years old)	76	12	88	49	21	70
Educated	111	60	171	150	107	257
Total number of children	187	72	259	199	128	327
<u>Type of Schooling:</u>						
Literacy course	-	-	-	1	1	2
Primary School	84	38	122	91	49	140
Junior High	16	15	31	28	15	43
Senior High	9	3	12	11	10	21
Teacher Training School	1	1	2	11	20	31
Teacher Training Institute						
Undergraduate	1	2	3	5	10	15
Graduate	-	-	-	1	1	2
University						
Undergraduate	-	1	1	2	1	3
Total Educated Children	111	60	171	150	107	257

Source: Marriage and Children Survey

RESIDENTIAL STATUS OF DIFFERENT LEVELS OF STUDENTS IN KADIROJO AND PIRING

25 September 1975

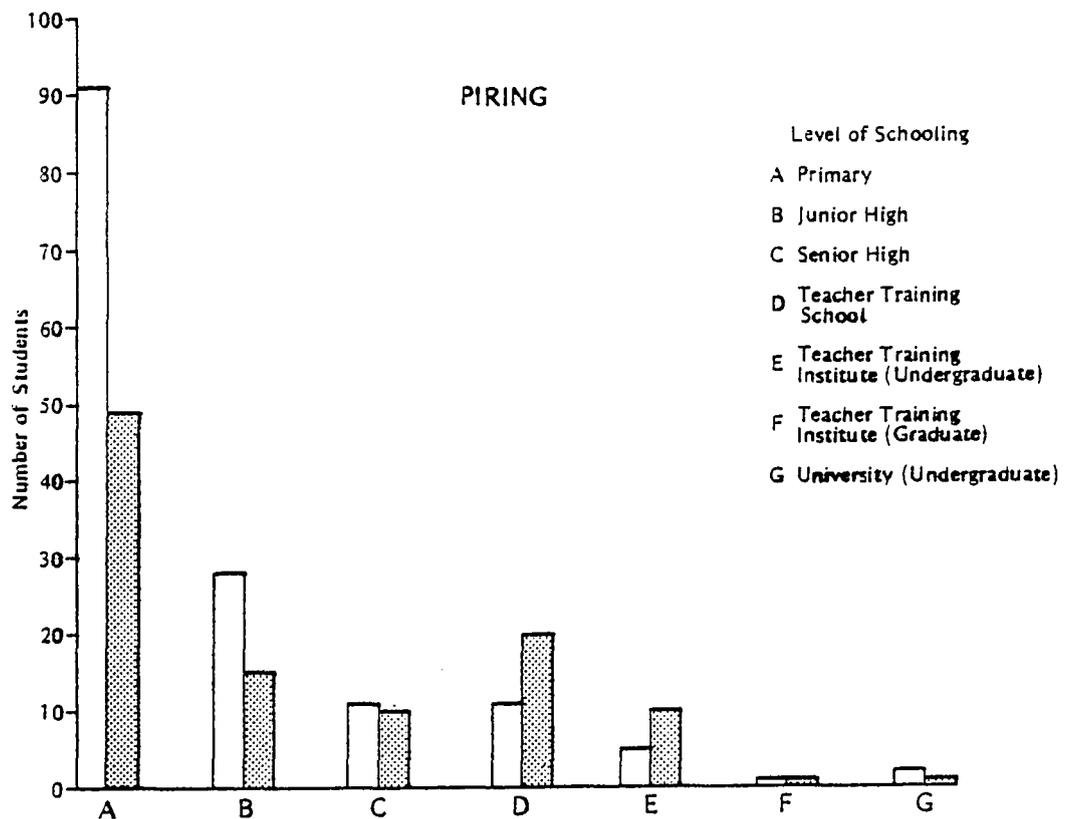
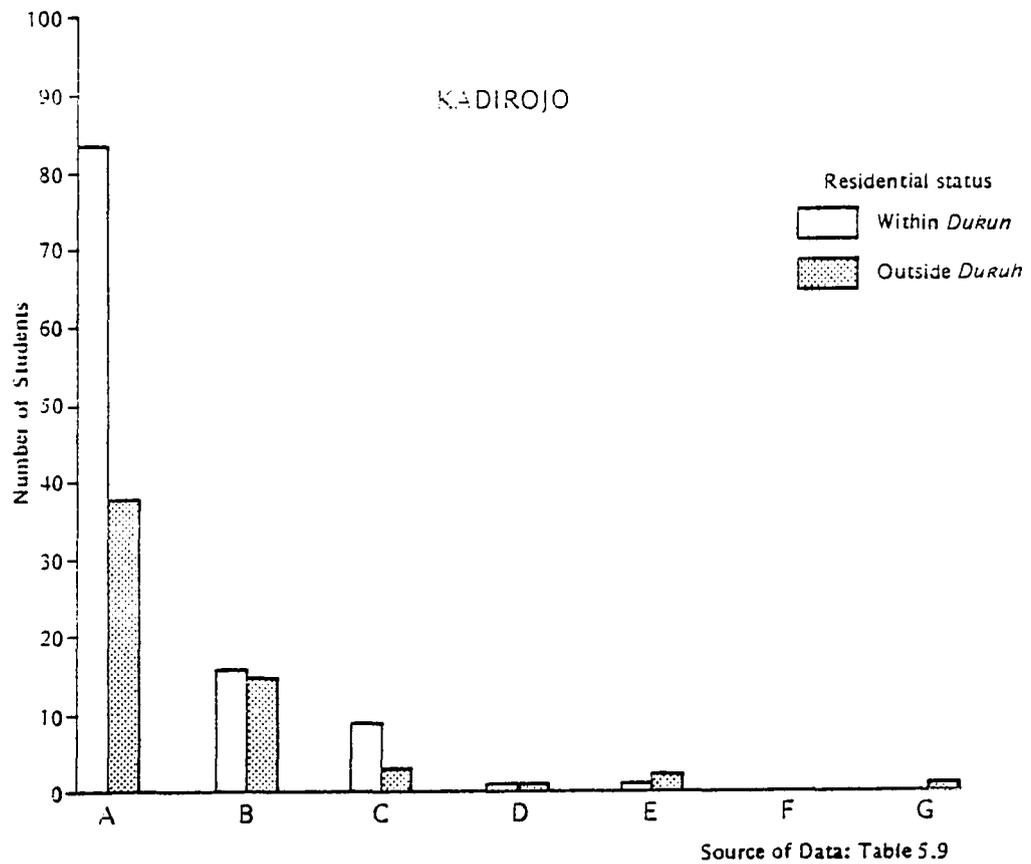


Figure 5.3

graduated from Teachers' Training School and only 18 out of 43 (42 percent) high school graduates obtained a job outside their home community. This imbalance reflects the general situation throughout Indonesia, for which the number of General Schools (not including Primary Schools) in 1974 was double that of Vocational Schools (6,744 versus 3,912; Central Bureau of Statistics 1976c, 58-59). Unemployment amongst school graduates thus increases every year and it is mostly the highest educated who reside permanently outside their home community (Figure 5.3).

Transmigration

Throughout Indonesia, inter-island migration is termed "transmigration." The movement of people from Java to Sumatra, as noted in the first chapter, dates from the nineteenth century and was in response to the demand in Deli, north Sumatra (Figure 1.0), for labor on tobacco plantations (Bryant 1973, 319). Some of the old people in Kadirojo and Piring still remember men who left their dukuh for Deli to work as contract laborers. Apart from the needs of the plantation industry, the Indonesian government also has supported inter-island migration to Sumatra in an effort to solve the problems of population pressure throughout Java (Widjojo 1970, 89; Sjamsu 1952, 9).

In general, there are five types of transmigration that reflect different sponsors. In Government Sponsored Transmigration, or General Transmigration, all expenses are paid either wholly by the government, or in association with another agency like the local government. In Spontaneous Transmigration, the government may cover the total cost of transportation of about Rp: 40,000 (U.S. \$95), or all expenses may be entirely subsidized by the President ('Banpres': Bantuan Presiden) or be met by the migrants themselves (Lembaga Pembangunan Masyarakat 1976, 5).

Since the transmigration program first began in 1905 (see Chapter 1), successive administrations have encountered many difficulties. The main problems are organizational rather than financial, since transmigration ranks high on the current list of national priorities. Poor coordination with various agencies responsible for the program means delays in the construction of roads and irrigation works in new areas of settlement. The schedule for the departure of transmigrants from their homes is not fixed ahead of time and delays may be as great as several weeks. During the period of waiting for transportation, people may have little to eat because all of their rice fields have been sold. Transportation facilities are not only insufficient between Java and the outer islands to which transmigrants relocate, but also locally within the island of resettlement (Widjojo 1970, 129-130). Such organization deficiencies have resulted in bottlenecks and wasteful duplication of effort.

In Kadirojo and Piring, more people migrate to south Sumatra at their own expense than are officially sponsored. Between 19 May 1975 to 31 January 1976, 11 people left for Sumatra but only two were part of the General Transmigration program (Table 5.2). How many families have spontaneously migrated in previous years is unknown, since information on those settlers is not often available at the village or subdistrict office. From interviews it is clear that most people initially went to south Sumatra to visit relatives and had no intention of staying permanently. After visiting for a few weeks, some decided to remain in the resettlement area without notifying the local government, such as the lurah, back home. Many people resident in Lampung, south Sumatra (Figure 1.0), a location favored by Javanese, are not entered in official records of their previous lurah (village head) and camat (subdistrict head). One

reporter of the Kedaultan Rakyat newspaper (K.R., December 3, 1975), who visited Lampung in 1975, reported the average annual rate of population increase to be 5.5 percent, of which 2.5 percent reflected natural increase, 1 percent was from government-sponsored migration, and 2 percent from spontaneous transmigrants, both legal and illegal. Between 1973 and 1974, the population of central Lampung increased by 25,000, only 6,000 of which were legal transmigrants whereas the number of illegal transmigrants totalled 19,000. In central Lampung, illegal transmigrants thus outnumber the legal ones by two to one (K.R. December 3, 1975).

In transmigration we found that there were more male migrants than female migrants. In this case, females migrated primarily as dependents, following their husbands or parents. Most transmigrants are married, and their average age is higher than that of other married migrants.

People who join the Government Sponsored Transmigration program should be married. Only a few of the spontaneous transmigrants from Java are not married. They first go to a transmigration area to visit their relatives who have previously settled there. After staying for a few months working as farm laborers or traders, some of them are able to buy a piece of land. Thus, spontaneous transmigrants do not follow the 'ten commandments',¹ often they do not change their resident status from the dukuh to the new settlement, so they can leave the place whenever they like.

¹People who apply for the Government Sponsored Transmigration program will be selected on the basis of the 'ten commandments': a person should be a peasant, physically strong, young, with a family but recently married. He should not have many children nor a pregnant wife, and he should not be a former plantation worker (Widjojo 1970, 90).

Many of the migrants from one dukuh community to Sumatra consistently go to the same area, despite the high probability that other regions might offer better opportunities for employment as well as lower transportation costs. For example, the survey of migration in the three Javanese regencies Besuki, Surakarta, and Kedu (Figure 1.0), conducted in 1959 by the Faculty of Economics at the University of Indonesia, found that in Kedungpoh village, Kedu, most people migrated to Jambi, south Sumatra (Mulyana 1959, 6). Some people from Kedungpoh village had settled in Jambi in 1955, many of whom managed to buy a plot of land and to cultivate rubber. Thus, they were all well established and following a visit to their home community, returned to Jambi accompanied by several relatives. Migrants from Krejo-Lor, Surakarta Regency, usually settle in Lampung, where many kin have resided for more than a generation, and are often encouraged by money sent to them by sons or relatives. Similarly, most people from Kadirojo go to Tanjungkarang (Figure 1.0), and most from Piring to Lampung, both of which are in southern Sumatra. All of these examples confirm the conclusions of Hägerstrand (1963, 82), Wolpert (1975, 191) and Mabogunje (1975, 210) that 'migration streams follow information streams'.

People from Java prefer south Sumatra among all the transmigration areas, because places such as Lampung, Metro and Tanjungkarang (Figure 1.0) have been opened to resettlement since 1905 and thus contain many people from their home island. The relatively short distance from the western tip of Java to Metro and Lampung (Figure 1.0) also encourages many Javanese to migrate at their own expense (Bryant 1973, 322). In addition, there is frequent transportation to south Sumatra, so that settlers are able to visit their relatives in Java whenever they desire

and at the relatively low cost of Rp: 12,000 a return trip (U.S. \$28.90).

As previously mentioned, the number of spontaneous transmigrants from Kadirojo and Piring is far greater than those that relocate under Government Sponsorship. Many village people are reluctant to join the official program, partly because the procedures are so complicated and partly because they prefer to migrate to areas where relatives or friends are already settled. Such clusters of kinsfolk in transmigration areas can be regarded as preferred residential destinations and demonstrate that the greater the number of related people who stay in a residential area, then the greater the flow of transmigrants to that destination. To expand the range of places to which transmigrants are willing to go, new residential destinations ought to be created by using volunteers amongst friends or relatives who are willing to act as a pioneer group in new settlements. This would counter the resistance to official attempts to open up new settlement areas in islands outside Java and respond to the desire of potential settlers to live among people from their home areas. In general, villagers are disinterested in resettling in new places, about which they do not know anything and where they have no friends or relatives. If they do not know anything and where they have no friends or relatives, if they do resettle, they fear they may be cheated by 'brokers' or other persons while enroute. They feel unsure that they will receive some land upon arrival and how they will be received by the local people already living there. In addition, some new settlement areas are so far away from their present dukuh that it would cost large sums of money to visit relatives and friends.

The negative experience of villagers in transmigration areas filters back to the communities they have left and consequently makes people most reluctant to join the government program. One family from Kadirojo, for example, was officially sponsored to an area in north Sumatra. Arriving there they found the land still covered with deep roots, in which it was impossible to cultivate crops. They wrote about the poor condition of the land to their parents and asked them to send money so that they could return to Kadirojo. Such negative information has spread out from many resettlement areas to villagers in the origin communities and greatly discouraged them from joining the official transmigration schemes. Such facts need to be understood by administrators before this official policy of resettlement can become more successful. What is first needed in pioneer areas is therefore a small nucleus of 'successful' migrants, reinforced by better logistics and improved transportation, that in turn will stimulate the flow of spontaneous migrants from the dukuh communities of Java.

Summary

In Kadirojo and Piring, the rate of migration is low, and much less than that of commuting and circulation. This fact does not simply reflect the definitional differences between migration, commuting and circulation. Far more important, it indicates the strong kinship and social ties of the dukuh, the durability of its system of mutual self-help, and an extreme reluctance of people permanently to leave the home dukuh. Those of low economic status prefer to remain because they cannot afford the cost of transport or the expense of living in new places before obtaining a job, nor are they even certain whether a job can be found if they

do migrate. This reluctance to migrate is reinforced by negative information that filters back about the unhappy experience of relatives and friends who in previous years had been willing to resettle on islands outside Java.

Although migrants have resided outside their birthplaces for one or more years, nevertheless they are like commuters and circulators in that their orientation is still towards their community of origin. They maintain close contact with their families and relatives and even plan to return to the natal dukuh upon retirement or in old age. Over several years, a series of migratory moves may be just as circular as the short-term journeys of commuters and circulators. Perhaps, therefore, some common factors underline the recurrent nature of population movement from the standpoint of the dukuh, and it is upon these that the next chapter will focus.

CHAPTER VI

THE DECISION TO MOVE OR TO STAY

It has been established in Kadirojo and Piring that commuting, circulation and migration are facts of everyday life. The question now arises of what primary factors influence the pattern and nature of population mobility within these two communities. Following Hugo's (1975b, 441) research in West Java and that of Mukherji (1975, 49) in Northern India, the focus in this chapter is upon the decision-making process of potential movers and the factors which influence them to move or to stay. Since dukuh residents constitute potential migrants, they were asked their opinions of village life and of their personal circumstances as a means to identify reasons which encourage or discourage people to migrate from their present place of residence.

Theory of the Decision to Move

Many geographers concerned with migration have concluded that the movement of people is best seen as a reaction to stress (Wolpert 1966, 72; Mabogunje 1970, 30; Hugo 1975b, 441; Mukherji 1975, 6). As mentioned in Chapter 1, each individual has certain needs to be satisfied and certain aspirations to be realized. If the needs or aspirations¹ cannot be primarily fulfilled within the present place of residence, then stress will occur. Following Engel, Langner (quoted in Wolpert 1966, 93) notes a useful definition of stress as

¹Needs or aspirations may refer to income, job opportunity, education, social status, and position in the family life-cycle (Mukherji 1975, 59).

...any influence, whether it arises from the internal environment or the external environment, which interferes with the satisfaction of basic needs or which disturbs or threatens to disturb the stable equilibrium.

In general, in the two dukuh of Kadirojo and Piring, stress can be divided into either economic or social-psychological. Economic stress results from either local problems of livelihood or from an overall dissatisfaction with various aspects of being a villager. Social-psychological stress derives from the existence of various types of obligations incurred within the family, dukuh society, or through being a member of the Indonesian republic. As discussed in the fourth chapter, participating in gotong-royong (mutual self-help) activities and attending religious rituals are examples of socio-cultural obligations; taking care of aged parents, visiting family or relatives during the Lebaran, and overseeing family property are instances of family obligations; and the transfer of a civil servant to a new post indicates an institutional obligation.

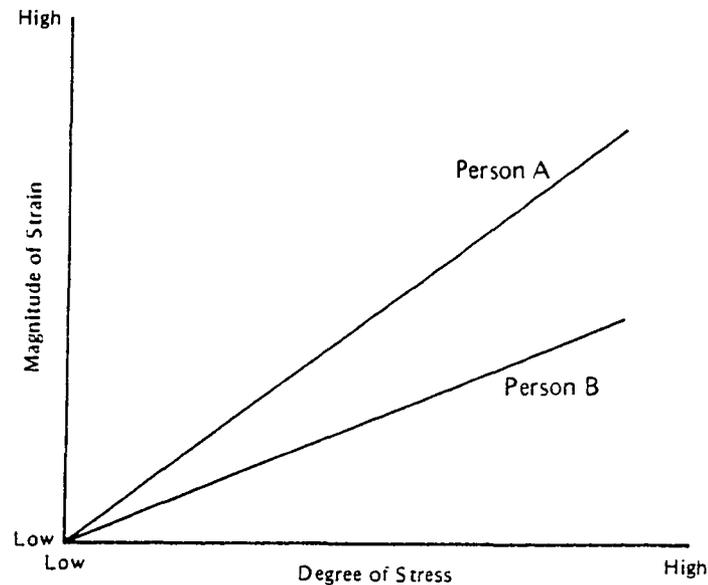
The intensity of stress experienced by a particular individual, either in general or as a result of fulfilling such obligations, depends upon the degree to which personal needs cannot be fulfilled. Individual stress thus results in strain and, according to Langner (quoted in Wolpert 1966, 93), personality factors mediate between stress and strain. Since there is a difference in the physical, emotional and social experience of individuals, so there is considerable variation in the amount of strain that individuals experience in response to stress. Khan et al. (1964, 229) have formally described this relationship between stress and strain in a stress-tolerance model. In linear form, strain is a function of stress, with the slope parameters describing

the degree of stress tolerance and the intercept a minimal threshold (Figure 6.1).

In these terms, there is a positive relationship between stress and strain and this relationship much depends upon the degree of tolerance that an individual has towards stress. Person A, in this diagram, is obviously more sensitive to stress than person B, so that the intensity of strain resulting from environmental stress is not the same for all people. During the dry season, for example, residents of the limestone areas of south Yogyakarta do not complain greatly about the reduced amount of food available or the lack of water. People from Piring, by contrast, who have experienced a conspicuous shortage of water since the Kamijoro dam was breached, feel this lack far more keenly during the dry season. While such a simple stress-tolerance model is not sufficient to explain the complexities of stress and strain that derive from social structure, nevertheless it is useful to indicate that the intensity of strain resulting from environmental stress is not the same amongst individuals. For individuals who experience the same amount of stress in the same place of residence, there are two possible responses: move to another location where their needs can perhaps be met, or stay in their present place and adjust to their needs (Figure 6.2).

People who wish to move permanently from the dukuh still have to consider to which place they will go. In this case, knowledge about other locations is very important, for it is the basis upon which people judge between their present and prospective places of residence. According to Roseman (1971, 593), knowledge of potential destination areas is generally gathered and assimilated through the direct and indirect contact spaces that an individual has. Direct contact occurs through

THE FORMAL RELATIONSHIP BETWEEN STRESS AND STRAIN



Source : Khan, 1964

Figure 6.1

daily activities. Individuals may have larger or smaller direct contact spaces depending upon their roles, social status, and activities within a particular society. For example, a person who holds a high position such as a teacher may move to another village yet still maintain the same activity space as in the former community. Indirect contact space develops from exposure to mass media (radio, television, newspapers) or through differently-located relatives. For Javanese villagers, indirect contacts through friends or relatives is far more important than information obtained through the mass media. In his study of population mobility in West Java, Hugo (1975b, 487) found that most first-time migrants to the city learnt about urban life from relatives and friends who already resided there. Thus relatives and friends play a crucial role in the migratory process and can, for instance, be an important source of job information.

DECISION-MAKING PROCESS TO STAY IN OR TO MOVE FROM A
DUKUH COMMUNITY

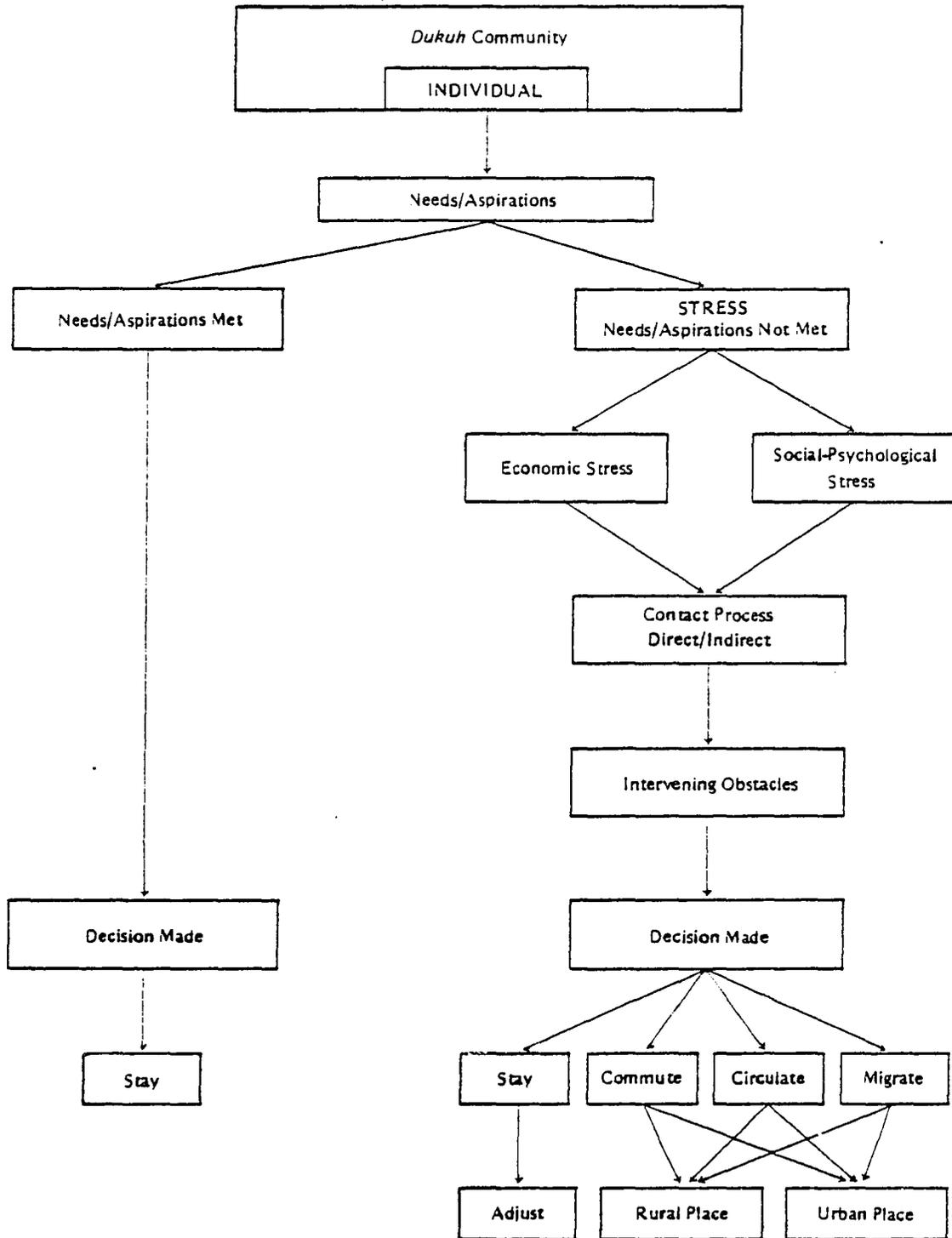


Figure 6.2

Usually people move to a place which has more positive qualities than the one left. Wolpert (1966, 162) summarizes this idea in what he terms "place utility," defined

...as a positive or negative quality, expressing respectively the individual's satisfaction or dissatisfaction with respect to the place.

"Place utility" thus refers to the net composite of qualities which are derived from the individual's integration at some position in space. For people in Kadirojo and Piring, the value of a place is greatly determined by the presence of relatives or friends in a potential destination and counts for as much as, if not more than, the value of economic opportunity. Space, as Sonnenfeld (1970, 73) argues, also has abstract value, which can also influence the decision to move or stay. In the rural areas of Java, where people firmly believe in the mystical, the abstract value of space plays a great role in the decision-making process.

According to Lee (1970, 291), the decision either to move from or to stay in one's place of residence depends not only upon differences in the place utility between points of origin and destination, but also upon the magnitude of intervening obstacles or barriers. In Kadirojo and Piring, the cost of transportation is high and people walk or cycle distances of more than 10 kilometers (see Chapter 4). The strong ties to land and family, and the generally low level of formal education, also act as barriers to migration to other areas, about which there is limited knowledge anyway.

It is often found that after staying in a new place of residence for several months or years, individuals or families have been unable to meet the needs and aspirations that caused them to migrate in the first

instance. In such a situation, they may return back to their birth or origin place (return migration), or move to yet another place (step, or chain migration), or adjust to their current position by changing their needs and aspirations. This entire process of decision-making is summarized in Figure 6.2.

Perceived Advantages and Disadvantages of the Dukuh

Lee (1970, 290) states that, in every area, there are countless characteristics which act to hold or attract people (positive factors) and there are others which tend to repel them (negative factors). He also mentions the existence of zero factors to which people are essentially indifferent. Thus the degree of stress that individuals experience in an area depends upon the tension between these positive and negative characteristics, or factors. Adult residents in Kadirojo and Piring were asked about the advantages and disadvantages of life in a dukuh community to identify which were the positive and which the negative aspects and to establish their relationship with environment stress (Appendix 3). Many people gave more than one answer, but what was felt to be the most important reason is the only one used here.

The statements that Kadirojo and Piring residents made about the advantages of dukuh life reflect two main factors: closeness to family and the relationship with birth place and land. Together, these accounted for more than 70 percent of the replies in each community, to which the nature of the social structure in the local community added a further 25 percent (Table 6.1). The strength of kinship ties among family and relatives is illustrated by the popular Javanese proverb: Mangan ora mangan waton kumpul (It does not matter whether we are able

TABLE 6.1
 ADVANTAGES AND DISADVANTAGES OF DUKUH LIFE
 KADIROJO AND PIRING
 29 December 1975

Advantages and Disadvantages	KADIROJO		PIRING	
	Number of adult residents	Percent	Number of adult residents	Percent
<u>Advantages</u>				
Close to family	64	40.3	76	40.6
Strongly tied with birthplace and land	50	31.4	59	31.6
Social structure of the local community	40	25.2	44	23.5
Other	<u>5</u>	<u>3.1</u>	<u>8</u>	<u>4.3</u>
TOTAL	159	100	187	100
<u>Disadvantages</u>				
Agricultural problems	42	26.4	95	50.8
Local economic problems	106	66.7	87	46.5
Other	<u>11</u>	<u>6.9</u>	<u>5</u>	<u>2.6</u>
TOTAL	159	100	187	100

Source: Retrospective History of Mobility

to eat or not, as long as all of us can be together with our own relatives and our friends, then everything will be fine). People feel peaceful and secure when they live close to their family. Ties are also maintained with a wider kindred group of relatives (golongan), with whom they have mutual obligations (Hugo 1975, 450).

People are very attached to their birth place, which usually is where their father, grandfather, or some other blood relative, was born. At this place are also located the ancestors' graves which are visited by family members every Ruwah or Lebaran. The dukuh community is thus viewed as home and the place where their ancestors formerly lived. Besides this attachment to birth place, people have a parallel attachment to their land. Prior to 1918, in Yogyakarta Special Region, all lands belonged to the Sultan (Selosoemardjan 1962, 221). After 1918, any individual could own land and have inheritable rights to it. Being almost entirely dependent upon land for their livelihood, people are very tightly tied to it and have hardly any enduring interest in matters outside agriculture.

Village communities draw a distinction between landed proprietors and landless peasants. Koentjaraningrat (1957, 3) has written that, in Central Java, villagers can be divided into three categories on the basis of land ownership: kuli kenceng, indung, and wong numpang. Kuli kenceng includes those who own a piece of sawah (wet rice field) and a house surrounded by a yard, with coconut and other fruit trees, where vegetables, banana and papaya are cultivated. Indung refers to people who do not own a piece of wet rice field but have only a house and a yard, and wong numpang to those who do not even own a house compound and have had to build their dwelling in the yard of someone else. For

landholders, the situation changes with the succeeding generation since their land is divided among heirs,² some of whom may sell their portion to the highest bidder. Consequently the land continues to be splintered into smaller and smaller parts, thereby causing the number of landless people to increase or, following Koentjaraningrat (1957, 3), for many kuli kenceng to become indung or wong numpang. In both Kadirojo and Piring, less than half the householders have both sawah and a compound (kuli kenceng), whereas about a quarter have neither (wong numpang; Table 6.2).

Each dukuh, as previously mentioned, consists of individuals who are involved in mutually-reciprocal sets of relationships, or gotong-royong. Living together in such a community may thus be likened to being part of a large extended family and means that everyone participates in village activities. Besides this, people have developed ways of sharing with one another what little they do have. There is, in both Kadirojo and Piring, a very strong patron-client relationship which welds bonds of mutual responsibility between rich and poor. This system also has been described for the Sundanese communities of West Java (Hugo 1975b, 466). One example of this is harvesting, which is undertaken by a large number of people who use a small, blade-like instrument (ani-ani) to cut the rice stalk by stalk. Each harvester receives a share, but close relatives usually are given more than others. Large shares are also given to women from neighboring households, who fall within the

²According to customary and Islamic law, a male heir receives twice as large a share as a female heir. It happens very often in a matrilineal society like Java that a female heir does not inherit arable land but instead receives the house with or without the compound (Selosoemardjan 1962, 224).

TABLE 6.2
 NUMBER OF KULI KENCENG, INDUNG, AND WONG NUMPANG
 IN KADIROJO AND PIRING
 30 August 1975

Land Status	KADIROJO		PIRING	
	Number of Householders	Percent	Number of Householders	Percent
<u>Kuli kenceng</u>	35	49.3	48	48.5
<u>Indung</u>	20	28.2	27	27.3
<u>Wong numpang</u>	16	22.5	24	24.2
TOTAL	71	100	99	100

Source: Household Economic Survey

social sphere of this reciprocal exchange of labor, which in turn is one form of gotong royong (see Chapter 3).

In Kadirojo, the shares received by close relatives and women account for one-quarter of the total harvest; in Piring they are less and range from one-fifteenth to one-tenth. Other harvesters in Kadirojo generally receive between one-eighth and one-tenth the total harvest, or in Piring one-fifteenth to one-twentieth. The share given to any woman therefore depends upon the intensity of her ties to the patron household rather than on the share that her fellow-harvesters receive. This system of harvesting is especially significant in being entirely performed, managed and controlled by women, and illustrates only too clearly that this poverty is only 'shared' among the already impoverished members of village society. Landless and poor are therefore much dependent upon the rich, defined in the case of Kadirojo and Piring as landholders, and strive to maintain good relationships with them.

In the middle of 1975 for example, the rice crop of Kadirojo was destroyed by rats. To minimize the risk from not receiving any return from their land, owners who had more than 0.5 hectares of rice field leased them to a burlap factory in Delanggu, Klaten Regency (Table 1.0) for the cultivation of jute (see Chapter 2). Eighteen sharecroppers who worked these rice fields lost their jobs, but remained on good terms with the land owners in the hope that they would be rehired once the jute contract was completed. Strout (1974, 133) has suggested that the 'social power' which supports the relationship between patron and client in sharing poverty must be retained at all costs, otherwise the poor will have no means of maintaining subsistence. Many people in Kadirojo and Piring view this kind of social structure, with its mutually-reciprocal sets of relationships, to be a primary advantage to living in the dukuh. As long as they remain near to their home community, then there is no need to worry about starvation.

Apart from family ties, attachment to place, and a social structure anchored in reciprocal relationships, other advantages mentioned for staying in the dukuh revolved around life being easier and goods and services being much cheaper than in the city. Most of a family's food of rice, vegetables and coconut is grown on its land. If someone wants to build a house, then the bamboo and the lumber come from the house compounds and only materials bought are those such as cement, nails, and glass that are not locally available. Some people also commented that by living in the dukuh they were able to work the land.

Adult householders in Kadirojo and Piring were also asked what they perceived to be the disadvantages of dukuh living. Most reactions

focussed upon agricultural problems or local economic conditions, which accounted for more than 90 percent of the total reactions obtained from either community (Table 4.1). As farmers or farm laborers, they see the primary disadvantage of agriculture to lie in levels of productivity. In general, residents of Kadirojo mention agricultural problems only half as frequently as those in Piring (50.8 percent versus 26.4 percent; Table 6.1). Compared with Piring, farmers in Kadirojo have experienced relatively few problems. Although, in recent years, rice fields in Kadirojo have been destroyed by rats and local rice production has declined, many households were able to substitute cassava for their usual staple of rice. In Piring, the major difficulty stems from a critical shortage of water during the dry season. Limited agricultural activities in the rice fields during this time mean that many people have had to leave the dukuh to seek wage employment. The shortage of water is therefore perceived by the people of Piring to be a serious problem, which will not be alleviated until the government has repaired the Kamijoro dam damaged in 1970 (see Chapter 3).

The adoption of new innovations has caused fundamental changes in both methods of rice production and the availability of farm jobs. Since 1972 farmers in both Kadirojo and Piring have used fertilizer and high-yielding varieties of rice (IR5, IR8, Pelita 1, Pelita 2)³ and have improved their methods of irrigation, pest and disease control. As a result, rice production per hectare has increased. According to

³IR5 and IR8 were developed at the International Rice Research Institute in the Philippines. Pelita 1 and Pelita 2 were recently produced at the Central Agricultural Research Station in Bogor (Collier and Sajogyo 1972, 1).

official subdistrict records, in Kadirojo the average yield per hectare rose from 1,900 to 2,500 kilograms in response to the adoption of high-yielding varieties. In Piring the land is more fertile and the increase in average yield since 1972 was from 2,800 to 3,500 kilograms. Based upon research in Java, Sumatra, Bali, and South Sulawesi, Collier and Sajogyo (1972, 1) conclude that the adoption of high-yielding varieties not only improves per capita yields compared with the national improved varieties but also absorbs greater amounts of labor. In their survey in 37 villages, they found that hired labor averaged 195.7 man/days per hectare for local varieties of rice, 228.2 man/days per hectare for the national improved varieties, and 250.3 for the international varieties (Collier and Sajogyo 1972, 6).

Another characteristic of these new varieties is that they have shorter stalks and scatter easily (Sajogyo 1973, 41). As a result farmers now favor sickles, rather than stalk-by-stalk harvesting with the ani-ani. Collier et al. (1973, 43) have estimated that the sickle reduces the number of hours required to harvest one hectare of rice from more than 200 to about 75. In addition, the payment system has changed from bawon (shares) to wages and it is usually the men who are hired rather than the women, as in the traditional system. With the sickle, the rice stalks are cut approximately 10 centimeters from the ground, the heads threshed in the fields, the unhusked rice dried on mats, and the harvest carried in sacks to the patron's house.

In Kadirojo, most people still use the ani-ani and only one or two have bought sickles but in Piring harvesting by sickle has been more widely adopted. Along the Celep-Piring road, between March-April

and November-December, people can be seen threshing their rice and drying it by the roadside. For this each laborer usually receives Rp: 150 per day without a meal. Adoption of this new system thus means that many dukuh women are not employed in the rice fields, and for poor households the harvesting of rice by women is by far the major source of income. Landowners on the other hand, stand to greatly reduce their costs by hiring men as sickle harvesters, and according to Collier et al. (1973, 43) by as much as 40 percent.

Over the past five years, some farmers of Central Java have started to sell their rice to middlemen (penebas) a few days to a week before harvest. As reported in several studies, this contractual system (tebasan) is spreading throughout Java (Collier et al. 1973, 39; Utami and Ihalauw 1973, 53; Hugo 1975b, 471). The penebas can hire labor from within or outside the dukuh and, because they are outsiders can limit the number of people participating in the harvest, and also are able to pay workers less than the traditionally determined share of the total yield. The land owner thus obtains a higher net income from the tebasan system because first, the cost of harvest is not paid with different weightings of shares, and second, he can limit losses from uncut stalks, shattered rice heads, and in transport from field to house, a loss which, according to Sajogyo (1973, 43), usually accounts for 26 percent of the total yield. Farmers in both Kadirojo and Piring who have 0.5 hectares or more in rice fields usually sell their crop to penebas, and even those with larger holdings may do so if they need money for, say, their land tax.

The mechanized rice huller is a second example of an innovation that has displaced female labor and the reduction of such income, in

money or in kind, is most felt by the poorer households of Kadirojo and Piring. Rice hullers were first introduced into Kadirojo in 1976 and into Piring in 1972. Since then, according to the Kelurahan record, the number of rice hullers has increased rapidly to six in Margorejo Village and three in Murtigading Village. Nowadays, most dukuh people use rice hullers for milling and only the very poor still pound their rice by hand. According to Collier (1974, 11) and Sajogyo (1973, 44), the advantages of using mechanized hullers are, first, the rice is better polished, less broken, and hence fetches a better price; second, it can be stored longer than hand-pounded rice; and third, the yield from mechanized hulling is about one-tenth greater than that obtained from hand pounding. Before the adoption of the rice huller, hand pounding was done by family members if the amount of rice to be hulled was small, and by female laborers if the amount was large, as on such special occasions as a wedding or sunatan (circumcision).

From these examples, it can be seen that on the one hand the adoption of innovations within the agricultural sector has meant a marked increase in the production of rice per hectare of land and the absorption of greater amounts of labor, whereas yet other innovations such as the replacement in harvesting of the ani-ani by the sickle, using the rice huller to pound rice, and selling rice to middlemen, have greatly reduced the need for female farm labor. The net result of these various factors has led Birowo (1973, 13) to state that modernization in the agricultural sector will intensify the unemployment problems experienced by the Javanese village, while McDonald and Sontosudarmo (1976, 87) have concluded that the system of agricultural production is in critical balance and is developing in the opposite direction

from that of the process of agricultural involution postulated by Geertz.

The second main disadvantage that dukuh people cited, a shortage of food to meet the minimum requirements of subsistence and local lack of employment opportunities, already has been elaborated in the third chapter. Even though agriculture dominates the economic base of Kadirojo and Piring, there is insufficient food to provide a minimal diet. Technical innovations in agriculture may have increased the average yield of rice per hectare, but the per capita output annually still averages 88.38 kg (Kadirojo) and 106.03 kg (Piring) against a basic dietary need of 120 kg per capita per year.

As a result, many people seek additional income by working as traders, farm laborers, batik painters, carpenters, and brick layers. These part-time activities are insufficient to meet the local demand for jobs. In addition, as Hugo (1975b, 483) notes, such part-time employment offers little attraction to educated villagers who are unwilling to work in agriculture and other rural occupations. During the peak seasons of planting and harvesting, many laborers can be absorbed into agricultural activities. During the remainder of the year little wage employment is available, especially in Piring where dry-season rice cannot be cultivated because of problems with irrigation water. Over the past five years, this lack of local job opportunities has been compounded by the displacement of women from rice milling and from their reduced use in harvesting. Thus the lack of village employment and especially the greatly reduced need for female farm labor, and the shortage of food for adequate subsistence, mean that most people in Kadirojo and Piring are under constant economic stress.

The Desire to Move From or to Stay in the Dukuh

As part of the investigation of retrospective movement, all adults in Kadirojo and Piring were asked whether, as a result of the difficult economic conditions of their home dukuh, they would like to migrate (Appendix 4). Despite being at the margin of subsistence, at least three quarters said they had no desire to leave (Kadirojo: 137 out of 157; Piring: 147 out of 187). A great many of those who prefer to remain feel that this is their destiny (narimo: Kadirojo 59.1 percent; Piring 32.7 percent; Table 6.3). Being old accounts for another fifth of the answers from each community and is usually given by those aged 30 or more years who think it impossible for them to start a new life in another place. The obligations that an individual must fulfill as a member of a closely-knit society are reflected in the wish to stay and take care of aged parents or inherited land and to provide a place for children and grandchildren when they come to visit. Similarly, wanting to remain and be buried in the dukuh reflects the tight kinship ties. Whether alive or dead, villagers want to be together, buried in their family's grave, and to have family members take care of and visit their graves during Ruwah or Lebaran.

Those reasons for not wanting to leave Kadirojo or Piring complement the advantages and disadvantages perceived by dukuh members and identify the broad set of influences to which individuals respond. First, village people do not want to be separated permanently from their family or their land. Naim (1972, 36) has commented that Javanese are quite immobile, in the sense that they are reluctant to leave their kampung halaman (birth place). Many villagers, unable to satisfy their modest needs and faced with the local unavailability of paid work

TABLE 6.3

REASONS WHY KADIROJO AND PIRING ADULTS
DO NOT WANT TO MIGRATE
29 December 1975

Primary Reason ^a	KADIROJO		PIRING	
	Total	Percent	Total	Percent
' <u>Narimo</u> ' to live in <u>dukuh</u>	81	59.1	48	32.7
Already old	28	20.4	32	21.8
Taking care of inherited land	1	0.7	24	16.3
Taking care of aged parents	16	11.7	21	14.3
Want to be buried in the <u>dukuh</u>	1	0.7	13	8.8
Provide a place for children and grandchildren when they come visiting	-	-	3	2.1
Not stated	6	4.4	3	2.1
	TOTAL		137	100
			147	100

Source: Retrospective History of Movement

^aThis table is ordered according to the frequency of Piring, which produces not only rice but also cash crops.

throughout the year, are forced to look beyond the dukuh. Just as Hugo (1975b, 458) found for West Java, their temporary mobility represents a spontaneous response to needs that cannot be fulfilled within their permanent place of residence. The growth of inexpensive transportation, like bicycles and mini-buses, together with the improvement of the road network that connects city and village, has resulted in a dramatic rise in the number of people who commute or circulate (see Chapter 4). Taylor (1969, 120) refers to this type of movement as 'resultant migration,' which is typically determined by such situational factors as day-by-day employment opportunities, lack of school facilities, and absence of local entertainment.

A second factor which makes people so tolerant of the stress of dukuh living is their strong ties with each other and their ability to alleviate a somewhat marginal existence by sharing what little they do have. As a result, Kadirojo and Piring residents are afraid to take the risk of migrating and leaving their land, especially when they are unsure if they will secure permanent employment in another place.

Further examination of the villagers' reluctance to migrate indicates that many barriers also would have to be overcome. In general, first, they are poor and to leave for another place costs much money for transportation and to survive before obtaining a job. Second, since their level of education usually is low, they lack experience of staying in other places, have little knowledge about alternative destinations (that is, their place utility), and are thus fearful of migrating. A third factor is that villagers rarely have relatives or friends who live more or less permanently in other places and, as previously discussed for transmigration, they will rarely migrate if

this is not the case. These barriers are seen to be so great that villagers remain in the dukuh in the belief that man's destiny is in the hand of God. Thus they have become narimo, resigned to the fate destined for them, and comment that wherever they live their condition always will be the same.

Some people, however, refuse to feel so resigned to their fate and an improvement in their living standards is the dominant reason for the minority who would prefer to migrate (Kadirojo: 59.1 percent; Piring: 72.5 percent; Table 6.4). Five percent mention the wish to broaden their personal horizons, so that in total four fifths of those desirous of leaving aspire to improve their present situation. In Taylor's term (Taylor 1969, 121), these are 'aspirees,' generally characterized by dissatisfaction with various aspects of life, in this case in a dukuh community. Thus, even in a closely-knit society, some members who feel their needs and aspirations are not being met would prefer to migrate.

Characteristics of Potential Movers and Stayers

It has been argued that the amount of strain different individuals experience in reaction to stress is not the same and much depends upon personality factors. For this reason, it is necessary to examine whether those who prefer to move or to stay differ significantly, in terms of age, sex, education, and occupation.

Significantly more males than females want to migrate from the dukuh, whereas there is virtually no difference in the ratio of males to females who prefer to stay (Table 6.5). Married women, in particular, do not want to leave their local community especially since, as Jay

TABLE 6.4

REASONS WHY KADIROJO AND PIRING
ADULTS WANT TO MIGRATE
29 December 1975

Primary Reasons	KADIROJO		PIRING	
	Total	Percent	Total	Percent
Look for another job to improve living standard	13	59.1	29	72.5
Broaden personal horizon	1	4.5	4	10
Join family	4	18.2	3	7.5
Now own less land	2	9.1	2	5
Lack of permanent job	2	9.1	2	5
	TOTAL		TOTAL	
	22	100	40	100

Source: Retrospective History of Movement

TABLE 6.5

DESIRE TO MOVE OR TO STAY, BY SEX,
KADIROJO AND PIRING
24 December 1975

Sex	KADIROJO				PIRING			
	Want to move		Want to stay		Want to move		Want to stay	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Male	14	63.6	68	49.6	27	67.5	71	49.3
Female	8	36.4	69	50.4	13	32.5	76	51.7
TOTAL	22	100	137	100	40	100	147	100

Source: Retrospective History of Movement

(1969, 90) observes, their attention is generally focussed upon the hearth, the children, close kin, and proximate neighbors.

In terms of age, it is the young rather than the old who would consider moving (Table 6.6). At least two thirds of the potential migrants are aged 15-24 and their number as a ratio of potential stayers declines precipitously from age 29 (Table 6.6). In Kadirojo, no one aged 55 years or more wishes to move away, and in Piring only two out of 42. The reluctance of the middle-aged and old-aged to consider a permanent change of residence simply reflects their perception of belonging to a particular dukuh: they are too old to begin life in a new place, they desire to be buried in their family's grave and to be able to house their children and grandchildren when they come to visit.

Considering the fact that of those who wish to leave Kadirojo and Piring, more are male than female and more young than old, it might be expected that those with higher education form the largest group of potential migrants. Although this is certainly the case, nevertheless their numbers are so small that stayers predominate among those individuals who have attended primary, junior, and secondary high schools, and the mover/stayer ratio for Kadirojo is 22:78 and for Piring 24:76 (Table 6.7). In Piring, five out of six people with university education want to migrate but they constitute a small minority of the community. Even so, persons with advanced education in teacher training institutions or universities do wish to broaden their horizons. This is especially true of those who board away at school in town, for their way of life and behavior is much influenced by the city. In the clothes they wear, their hairstyles, and their behavior, they are more like city than village people. Generally they are not satisfied with

TABLE 6.6

DESIRE TO MOVE OR STAY, BY AGE
KADIROJO AND PIRING
29 December 1975

Age (in years)	KADIROJO				PIRING			
	Want to move		Want to stay		Want to move		Want to stay	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
15-19	14	63.5	17	12.3	15	37.5	16	10.9
20-24	-	-	15	11	12	30	12	8.2
25-29	3	13.5	16	11.7	3	7.5	12	8.2
30-34	1	4.6	14	10.2	2	5	14	9.5
35-39	1	4.6	13	9.5	1	2.5	14	9.5
40-44	1	4.6	11	8	2	5	15	10.2
45-49	1	4.6	12	8.8	2	5	13	8.9
50-54	1	4.6	12	8.8	1	2.5	9	6.1
55-59	-	-	8	5.8	-	-	8	5.4
60-64	-	-	6	4.4	1	2.5	9	6.1
65-69	-	-	5	3.7	-	-	8	5.4
70-74	-	-	4	2.9	1	2.5	4	2.7
75 and over	-	-	4	2.9	-	-	13	8.9
TOTAL	22	100	137	100	40	100	147	100

Source: Retrospective History of Movement

TABLE 6.7

DESIRE TO MOVE OR STAY, BY EDUCATION
KADIROJO AND PIRING
29 December 1975

Educa- tion ^a	KADIROJO				PIRING			
	Want to move ^b		Want to stay ^b		Want to move ^b		Want to stay ^b	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Never been to school ^c	1	4.5	52	38	2	5	53	36
Primary school	9	41	59	43.1	12	30	58	39.5
Junior high	7	31.8	16	11.7	8	20	16	10.9
Senior high	4	18.2	5	3.6	6	15	5	3.4
Teacher Training School	-	-	3	2.2	7	17.5	14	9.5
Teacher Training Institute	1	4.5	1	0.7	3	7.5	1	0.7
University	-	-	1	0.7	2	5	-	-
TOTAL	22	100	137	100	40	100	147	100

Sources: ^aHousehold Census

^bRetrospective History of Movement

^cDoes not include those under age.

economic conditions in the dukuh, have a strong desire to work in the city, and regard white-collar and army rather than agricultural occupations as more honorable.

The differences between potential migrants and stayers suggested by levels of achieved education become far more evident when occupational characteristics are examined (Table 6.8). Students are the only group for which there are more potential movers than stayers; among laborers there is a considerable number but not a majority of likely migrants (Table 6.8). By contrast, almost all farmers and farm laborers, small traders, civil servants, and housewives want to remain in the dukuh. Among the students, two wish to leave the dukuh for every one that does not. Most want to obtain a job, and preferably in the city. Just as Hugo (1975b, 483) reports for West Java, the young and the educated of Kadirojo and Piring generally do not want to work in agriculture.

Both farmers and farm laborers are very reluctant to leave the village, because of their association with the land, together with the prestige and social status that derives from the amount of land a family has. As a result of economic hardship some have sold the little land that they owned, but wherever possible to close relatives or friends resident in their own dukuh. Often, in addition, land is sold on condition that they can still work it as sharecroppers. Even though their occupational status may change from farmers to farm laborers, they are still active in agricultural activities. This is but one example of the very close relationship between patron and client, which most farm laborers strive to maintain, so that to migrate from Kadirojo

TABLE 6.8
 DESIRE TO MOVE OR STAY, BY OCCUPATION
 KADIROJO AND PIRING
 29 December 1975

Primary Occupation ^a	KADIROJO			PIRING		
	Want to move ^b	Want to stay ^b	Ratio: Movers/Stayers	Want to move ^b	Want to stay ^b	Ratio: Movers/Stayers
Farmer	3	39	7:93	5	58	8:92
Laborer	7	19	27:73	6	41	13:87
Housewife	1	11	8:92	4	13	24:76
Small Trader	-	18	0:100	-	11	0:100
Student	8	5	62:38	15	9	63:37
Civil Servant	1	24	4:96	3	7	30:70
Farm Laborer	-	12	0:100	1	4	20:80
Looking for a job	-	-	-	5	2	71:29
Retired	1	4	20:80	-	2	0:100
Soldier	-	2	0:100	1	-	100:0
Servant	1	3	25:75	-	-	-
TOTAL	22	137	14:86	40	147	21:79

Sources: ^aHousehold Census

^bRetrospective History of Movement

or Piring would be very risky with no assurance of a job at the place of destination. Small traders in both dukuh are as resistant as farmers and farm laborers to the prospect of migration. Even though the proceeds from their efforts may be small, nevertheless their local business is constant. In Kadirojo, as previously discussed, most income derives from the sale of salak and in Piring from batik, coconut oil, and itinerant hawking.

For civil servants, soldiers and laborers, the desire to move or stay much depends upon the location of their work place. In Kadirojo, most are located within commuting distance, so that those with permanent positions can continue to live in the dukuh and cultivate their rice fields. The greater isolation of Piring is reflected in the fact that as many civil servants, who work as far away as Yogyakarta, would prefer to migrate as do not (Table 6.8); one stated that he was weary of this constant circulation. The relationship in Kadirojo and Piring between different accessibility of transportation and local jobs is also reflected in the reaction of laborers. In Kadirojo, most work is outside the village community and a higher ratio (27:73) wish to leave; in Piring the batik industry consumes much labor, especially of women, and the ratio of potential migrants is quite low (13:87). Wherever possible, therefore, civil servants, soldiers, and laborers maximize their economic position by remaining in the dukuh.

As might be expected, housewives and retired persons prefer to remain. If a housewife migrates then it is passively to follow her husband and assist him in implementing his decision. Similarly retired persons, who have bought land and constructed houses, wish to live the rest of their days in the dukuh.

In sum, most of the adult villagers in Kadirojo and Piring do not want to move permanently from the dukuh. Only students, particularly those who attend schools in the city, want to migrate. This overwhelming preference to remain in the local community is yet another manifestation of the strong ties people have to their birth places, their land, families, and relatives. The gotong royong system, in which people help each other and share whatever they have, however small, means that in general dukuh residents are afraid to risk a migration from their lands and their natal communities.

Information Sources and the Link Between Home and Other Places

Knowledge of other places is an important factor in the decision to migrate or to stay. In Kadirojo or Piring, information about other areas can be obtained from mass media (television, radios, and newspapers), from government sources, particularly the Department of Cooperation and Transmigration, and from friends or relatives who have traveled or lived outside the dukuh.

As discussed in Chapter 3, newspapers are not much read in rural areas, and mainly by civil servants or school teachers. The content of Kedaulatan Rakyat, the newspaper published in Yogyakarta that is available in the village, consists mostly of local news and serials. Since space is limited, there is very little news of national or international events. In addition, it is very expensive for dukuh people to buy it and it cost Rp: 700 per month (U.S. \$1.69) in 1975. Sometimes the government sends official newspapers or official bulletins to Kadirojo and Piring, but they are not much read, even though 55.1 percent of the people of Kadirojo (190 out of 345) and

60.8 percent of those in Piring (239 out of 393) can read or write (Table 3.1). Unlike newspapers, radios have been available in rural areas since 1967 and in 1975 there were 20 in Kadirojo and 23 in Piring. However it is very rare, as previously discussed in Chapter 3, for dukuh people to listen to news programs.

When asked, between 60 and 70 percent in both communities said that during the previous month they had not read a newspaper nor listened to the radio (Kadirojo: 212 out of 318; Piring: 242 out of 374). Although more people listened to a radio than had read a newspaper, no more than 14 people in both communities had done either during October 1975 (Table 6.9). Consequently it is unlikely that potential village migrants obtain much if any information about other places from the mass media.

Information about government sponsorship of transmigration usually is given by the Kepala dukuh (dukuh head) when people are attending ceremonies such as a wedding. The Kepala dukuh tells guests about the possibility of villagers joining this government-sponsored program but he does not engage in propaganda on its behalf. In fact, even though many persons are present, few pay attention to the information being conveyed by the dukuh head on behalf of the central government.

For Javanese villagers, friends or relatives are far more important sources of information than the mass media or the government. Consequently they play a crucial role in the migratory process and are the primary vehicle for hearing about available jobs in other areas. As previously discussed, dukuh people tend to migrate only to those places where there are friends and relatives. Thus Hugo (1975b, 461)

TABLE 6.9
 FREQUENCY OF READING NEWSPAPERS AND LISTENING TO
 THE RADIO, KADIROJO AND PIRING
 OCTOBER 1975

Frequency of Reading or Listening	KADIROJO				PIRING			
	Newspaper		Radio		Newspaper		Radio	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Never	112	70.4	100	62.9	128	69	114	61
Sometimes	25	15.7	45	28.3	35	18.7	42	22.5
Several times a week	10	6.3	7	4.4	11	5.9	17	9.1
Every day	12	7.5	7	4.4	12	6.4	14	7.5
TOTAL	159	99.9	159	100	187	100	187	100

Source: Retrospective History of Movement

has reported for 14 villages in West Java that it is friends who cushion the adaptation of newcomers by providing migrants with accommodation and identifying likely sources of employment (see Chapter 7). As a result, in the Sundanese society of West Java, chain migration was very important and there were strong linkages between places of destination and origin. Simkins and Wernstedt (1971, 65) similarly found, in their study of Philippine migrants, that information about new settlement in the Digos-Padada valley, Davao Province, was obtained mainly when successful migrants visited their former homes or wrote letters to families or friends.

Before World War II, the Dutch government issued postcards that featured printed pictures of prosperous areas of colonization in Sumatra

and contained the slogan Tanah kolonisatie loh-djinawi ("Colonization land is fertile"; Pelzer 1943, 84). Migrants were asked to use these cards when writing to their families and relatives. In addition, the government encouraged those migrants who were successfully settled in Sumatra to return to rural communities like Kadirojo and Piring and tell their kinsfolk about the recent improvement in their economic position. Over the years, the impact of such personal testimony has been very great and a number of families followed their relatives and friends to the areas of colonization.

The existence of personal networks of communication is reflected in the kinds of places to which potential migrants would prefer to go. In both Kadirojo and Piring, two thirds would choose places where friends and relatives already resided, which were known to people in their own community, and which were not too distant from it (Kadirojo: 15 out of 22; Piring: 27 out of 40; Table 6.10). These three preferences, in combination, demonstrate that the presence of friends at potential destinations and their role as sources of information are crucial in deciding whether to move or to stay. In a study of population and poverty in Sriharjo village, Bantul regency, Singarimbun (1972, 66) also found that people are reluctant to migrate to places about which they lack information. To overcome this problem, he proposed that the Department of Agrarian Affairs should initiate a policy of declaring whenever areas suitable for agriculture had been opened for resettlement or colonization, just as has been done in the Philippines and the United States.

It has been mentioned many times that the link between the home dukuh and other places is very important. Even when people have

TABLE 6.10
 PLACES PREFERRED BY POTENTIAL MIGRANTS,
 KADIROJO AND PIRING
 29 December 1975

Characteristic of places preferred	KADIROJO		PIRING	
	Number	Percent	Number	Percent
Relatives or friends present	12	54.6	19	47.5
Job opportunities exist	5	22.7	7	17.5
Sufficient land for farming	2	9.1	6	15
Place known to <u>dukuh</u>	1	4.6	4	10
Not too distant from <u>dukuh</u>	2	9.1	4	10
TOTAL	22	100	40	100

Source: Retrospective History of Mobility

migrated from Kadirojo and Piring, they still consider themselves as belonging to their original and natal place, as the following example of one family who migrated from Piring to Lampung (Figure 1.0) makes clear.

In 1964 a villager, accompanied by his wife and mother, migrated to Lampung in south Sumatra. During the days before he had bought a piece of land or built a house, all the emigrants stayed with his sister's family, who in 1962 had themselves migrated to Lampung. In 1966, his elder brother visited their new property. During his stay, he helped repair their house and gradually learned of the possibility of improving his standard of living. After remaining two months in Lampung, the brother returned to Piring with the thought of becoming a migrant. The mother, after living nine years in Lampung, subsequently

returned to Piring because she felt, first, that being so old she would soon become too much of a burden to her son, and secondly, that when she died she wanted to be certain of being buried in the family's graveyard. This meant that the brother and his family who remained in Piring now had to take care of the mother. For the time being, therefore, the brother and his family have postponed their plans to migrate to Lampung as a means to improve their current socioeconomic position.

From this literature it can be suggested that people who have migrated to resettlement areas, but have enduring ties with their natal dukuh, may be regarded as bi-local populations. Migration from the standpoint of the local community must be viewed as essentially impermanent in nature, due to the preference for bi-local residence. Such a situation is not exclusive to Javanese society but has been found in many Third World societies and has led Chapman (1977, 3) to postulate that:

Third World societies may be increasingly characterized as "bi-local populations," relatively stable in their demographic composition, but composed nowadays of individuals in constant motion between village and non-village places.

The Sequence of the Decision to Move

Following Taylor (1969, 120-121), dukuh migrants can be divided into those which are "resultant" and those which are "aspirant." Resultant migration is in response to local economic problems, such as insufficient jobs or school facilities. The act of movement thus occurs in order to meet some basic need for the family; in the case of wage labor, by engaging in any type of work which may be available like collecting stones for building, the itinerant sale of small goods, or

acting as a carrier for batik. Such movement is "resultant" in the sense that it is a spontaneous response to daily needs in the dukuh.

For the aspirant migrant, the decision to move is not spontaneous but a gradual and cumulative process, as illustrated by one Kadirojo family who migrated to Tanjungkarang, in southern Sumatra (Figure 1.0). In 1953 Wiryodikromo, the head of the family who was born in Kadirojo in 1934, married a girl from the same dukuh. From that marriage he has two children, one a boy (Sugiman) born in 1954 and the other a girl (Wartinem) born in 1956. In 1963 his elder brother Mitrosuwarno migrated to Tanjungkarang, from which time much information about this resettlement area became available to the people of Kadirojo from his frequent letters. In 1967, the elder brother revisited Kadirojo and, as is usual when a kinsman returns from a distant place, many dukuh people asked him about conditions in Tanjungkarang. From such discussions, much information was obtained about a colonization place: the nature of its land holding, the people, and the local systems of transportation. Mitrosuwarno, the elder brother, asked Wiryodikromo to accompany him to Tanjungkarang and help work his rice fields; three months later both brothers left Kadirojo.

In Tanjungkarang, Wiryodikromo found that the price of a rice field was low and about one third that in his home community of Kadirojo. In addition, the resettlement area was not far from the main road and the people were very friendly. While in Tanjungkarang, Wiryodikromo not only helped his brother cultivate his rice fields but also worked as a farm laborer, from which wages he paid his transportation to return in 1968 to Kadirojo. At home, he told his wife all about Tanjungkarang, the price of farm land and the kind of community that

the settlers had formed. He explained he wanted to migrate to Tanjungkarang and asked her opinion. Wiryodikromo's wife agreed in principle with his idea, provided that two conditions were met: first, that their home should be located in the same area as Mitrosuwarno's family; and secondly, that they wait until their daughter Wartinem had graduated from primary school, which was expected in December 1969.

Wiryodikromo agreed to his wife's conditions and while waiting decided to return to Tanjungkarang to seek land and build a semi-permanent dwelling. To this end he sold part of his land in Kadirojo to meet the cost of transportation and land purchase. In November 1968 Wiryodikromo and his son left for Tanjungkarang, where they obtained a plot of land and lived with Mitrosuwarno's family. In December 1969, when his daughter had graduated from elementary school, he returned to Kadirojo for his wife and daughter and in the same month they all departed for their new home. In Kadirojo, they asked the youngest brother, Sutrisno, to take care of their remaining possessions. Schematically, this sequence of the decision by one family to migrate is depicted in Figure 6.3.

From this example, it can be seen that a sequence of events occurred before the whole family departed to live in Tanjungkarang and that although these events were separate, they were also contingent and cumulative. This conclusion parallels what Harre (1968, 285) has reported from his study of Pitcairn Island migrants to New Zealand. According to him: "...generally people do not make a simple decision to emigrate, rather they make a series of decisions related to varying situations, which eventually put them in a position tantamount to having migrated."

THE SEQUENCE OF MOVEMENT OF ONE KADIROJO FAMILY
TO TANJUNGPANGKARANG 1967-69

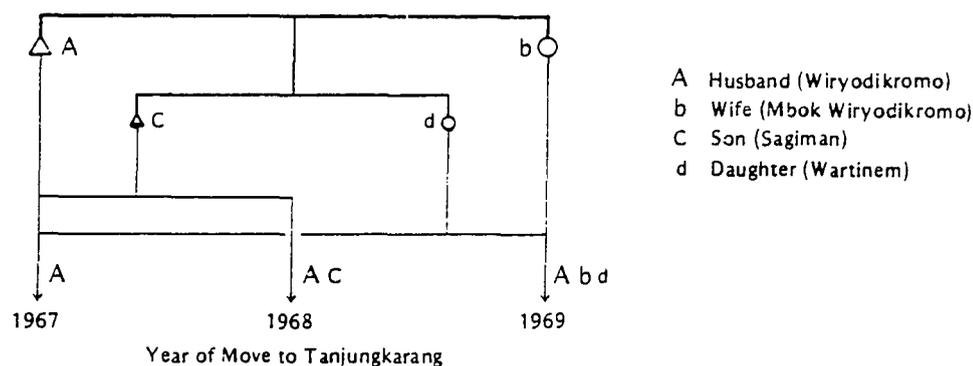


Figure 6.3

The movement of Mitrosuwarno and his family to Tanjungkarang has created a new residential base, not only for them but also his relatives and friends in Kadirojo. Since 1963, there has been a close link between one settlement in South Sumatra and another in Yogyakarta Special Region, particularly between the Mitrosuwarno and Wiryodikromo families. Letters from Tanjungkarang to Kadirojo contain much information about the fate of the two brothers and Mitrosuwarno sometimes sends money to his mother, which gives the impression that the relocation of his family already is successful. Such a positive impression may stimulate yet other people to migrate from Kadirojo to Tanjungkarang--an act that, as with both Mitrosuwarno and Wiryodikromo, will be preceded by several visits to South Sumatra to ensure that sufficient land is still available at reasonable cost for farming.

Summary

People in Kadirojo and Piring perceive several advantages to residing permanently in the dukuh. First, kinship ties are very close and so they are unwilling to be separated for very long from their family, relatives and friends. In both communities, the system of mutual self help (gotong royong) and the relationship between patron and peasant clients is both strong and durable. Secondly, villagers are very attached to their birth place which, being usually that of previous generations, gives them ownership of or access to land upon which they are almost entirely dependent for a living. Finally, life in the dukuh is more predictable and everything is much less expensive than in other areas, notably towns and cities.

The disadvantages of dukuh living result mainly from dissatisfaction with such local conditions as shortage of food to meet the minimum requirement for a subsistence diet and an overall lack of employment opportunities to supplement their meager livelihoods. Another cause of dissatisfaction was the adoption of new methods of harvesting and the use of mechanized hullers for milling rice, which has led to fewer local employment opportunities and the displacement, in particular, of females from part-time employment. Also mentioned was a lack of educational, medical, and retail facilities within both Kadirojo and Piring.

Although dukuh people may feel stress from their current situation, they will not migrate unless they can overcome such considerable barriers as limited knowledge about other places, lack of money, and a low level of formal education. Consequently many become resigned to the fate (narimo) and believe that their destiny lies in the hand of God.

In both Kadirojo and Piring, information about other places comes usually from relatives and friends who are also important sources about likely jobs outside the village. Since dukuh people who have migrated still consider themselves to belong to their natal place, they maintain intensive contacts with it. At any moment in time, some members of a village may be in permanent residence and some not. Consequently the population of a dukuh community may be regarded as bi-local (Chapman 1977, 2).

Following Taylor (1969, 120-121), there are two types of migrants. "Resultant migrants" move because of local circumstances like lack of employment or school facilities and their act of relocation results from an attempt to provide for the basic needs of their family. "Aspirant migrants" usually have an overall dissatisfaction within various aspects of local life. Their decision to move is therefore not usually spontaneous but is the final outcome of a sequence of related events.

In short, most adult villagers in Kadirojo and Piring do not want to move permanently from the dukuh. Since they are poor, it is too risky to sell their land and move to another place when they are unsure whether they would obtain a better job or generally improve their socioeconomic position. To most, migration is too great a gamble and very few want to leave for other places to improve their standard of living. It remains now to focus upon those few who have lived in Yogyakarta City for one or more years. How such persons came to leave Kadirojo or Piring, the role that friends and relatives played as important sources of job information prior to their departure, and the means by which they have adjusted to the city will be the focus of the next chapter.

CHAPTER VII

DUKUH MIGRANTS IN YOGYAKARTA CITY

In Southeast Asian countries, much research states that the largest movement of people is from rural to urban areas (McGee 1975, 97; Goldstein 1978, 1). In all regions of Indonesia, according to Suharso (1976, 16), the proportion of urban born is far less than that of lifetime in-migrants who currently reside in urban areas. Since Yogyakarta is the largest city in Yogyakarta Special Region, it was expected that many people from the two dukuh under study would migrate or circulate to it.

In fact, the number of people who have stayed in Yogyakarta for one or more years is very small, nine from Kadirojo and 34 from Piring. This is surprising given the fact that Yogyakarta, the capital of the Special Region, is respectively only 18 and 24 kilometers distant from Kadirojo and Piring. This is contrary to expectation and contradicts Western theories on population mobility, which state that village people tend to migrate to the nearest town (Kammeyer 1971, 81).

Yogyakarta City

The city of Yogyakarta is located at the center of the Special Region of the same name (Figure 1.2), is a municipality (kotamadya), and is the administrative center of the whole region. Yogyakarta kotamadya covers about 32.50 square kilometers and includes 14 subdistricts (kecamatan), which mostly consist of town quarters, or kampung-kampung (Figure 7.1). These kampung physically and socially resemble rural Java

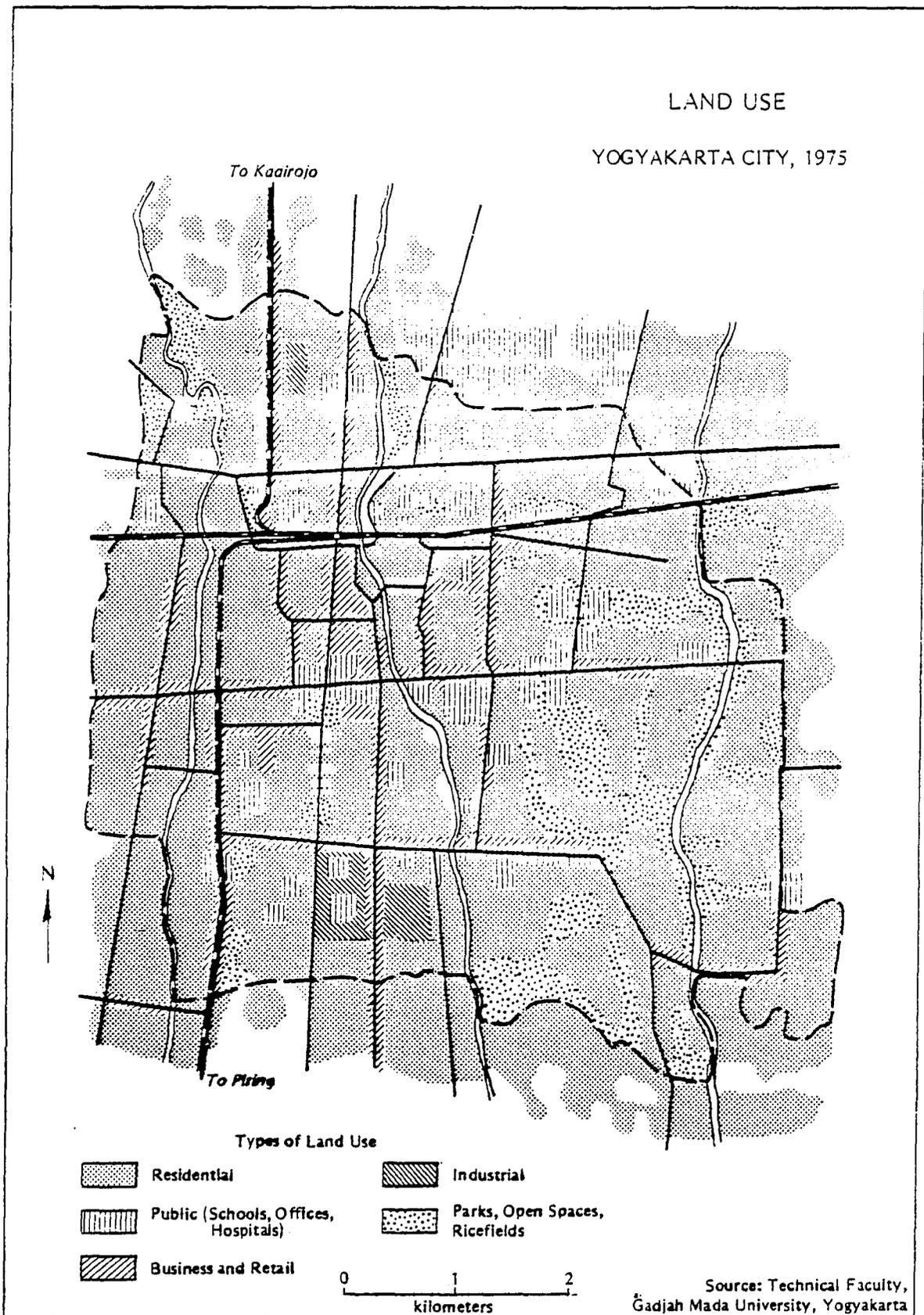


Figure 7.1

in both their way of life and the characteristics of their residents. Shopping centers are found only along the main streets, such as Malioboro and Solo Streets (Figure 7.1). Only one large market place, Beringharjo, is located at the city center but smaller markets exist in several other places (Figure 7.1). There is little large-scale industry in Yogyakarta City. Most is of the cottage type and dominated by the batik industry, which is concentrated in Mantrijeron and Mergangsang subdistricts (Figure 7.1 and 7.3). In the north of the city there are two industries, beef canning and textiles, but both of them are small in terms of plant and production.

Many of the batik firms in Yogyakarta are run by families, a number of which have remained in the same family for several generations. The Bureau of Economic Research of the Faculty of Economics, Gadjah Mada University (Yogyakarta), which in October 1956 undertook a study of the batik industry in Central Java, identified 648 batik firms in Yogyakarta City. Among these were five or six large batik cooperatives, which included many smaller enterprises and one of which had 150 members (Hawkins 1961, 48). Although there were no formal ties between these various family firms, the larger batik cooperatives assisted each other and were especially helpful when new members of the families wished to enter the industry.

If a distinction is made in the economic structure of any town between firm-centered and bazaar activities (Armstrong and McGee 1968, 355), then Yogyakarta City is dominantly of the bazaar type. With this kind of economy, the possibilities for employment are much greater than in a firm-centered city, but the monetary returns to the individual are much smaller and the overall situation of the work force and their

families is frequently one of "shared poverty" (Wertheim 1964). Within Yogyakarta City, this condition of urban involution can be seen in government offices where every room is crowded with employees, many of whom share the same table. Since the number of people resident in the city is already high and the absorptive capacity of offices and family industries limited, job opportunities are mainly limited to such low-paid pursuits are becak (pedicab) drivers, house servants, itinerant traders, goods carriers, and vehicle guards.

As mentioned previously, administratively Yogyakarta kotamadya is divided into 14 kecamatan (Figures 7.2 and 7.3) which vary in size from 0.64 to 7.58 kilometers (Table 7.1). In 1973, the population density of this kotamadya was 10,949 persons per square kilometer and therefore appreciably higher than that of Jakarta, which in 1971 was 7,944 persons per square kilometer (Central Bureau of Statistics 1972a, 1). Except for Tegalrejo, Umbulharjo, and Kotagede (Table 7.1), the population densities of all kotamadya are greater than 10,000 per square kilometer, while four of them (Ngampilan, Gedongtengen, Danurejan, and Pakualaman) have double the average population density for Yogyakarta municipality as a whole.

Because of this great density of people, the average rate of growth for Yogyakarta City between 1961 and 1971 was only 1.1 percent per year (McDonald 1976, 70), which is lower than such Central Javanese cities as Semarang (2.5 percent), Magelang (1.4 percent), and Surakarta (1.2 percent; McNicoll and Mamas 1973, 47). This low rate of growth implies that inward and outward migration to Yogyakarta City was at least in balance for several years and in fact McDonald (1976, 70) has concluded that the city was a place of net out-migration during the Sixties. In

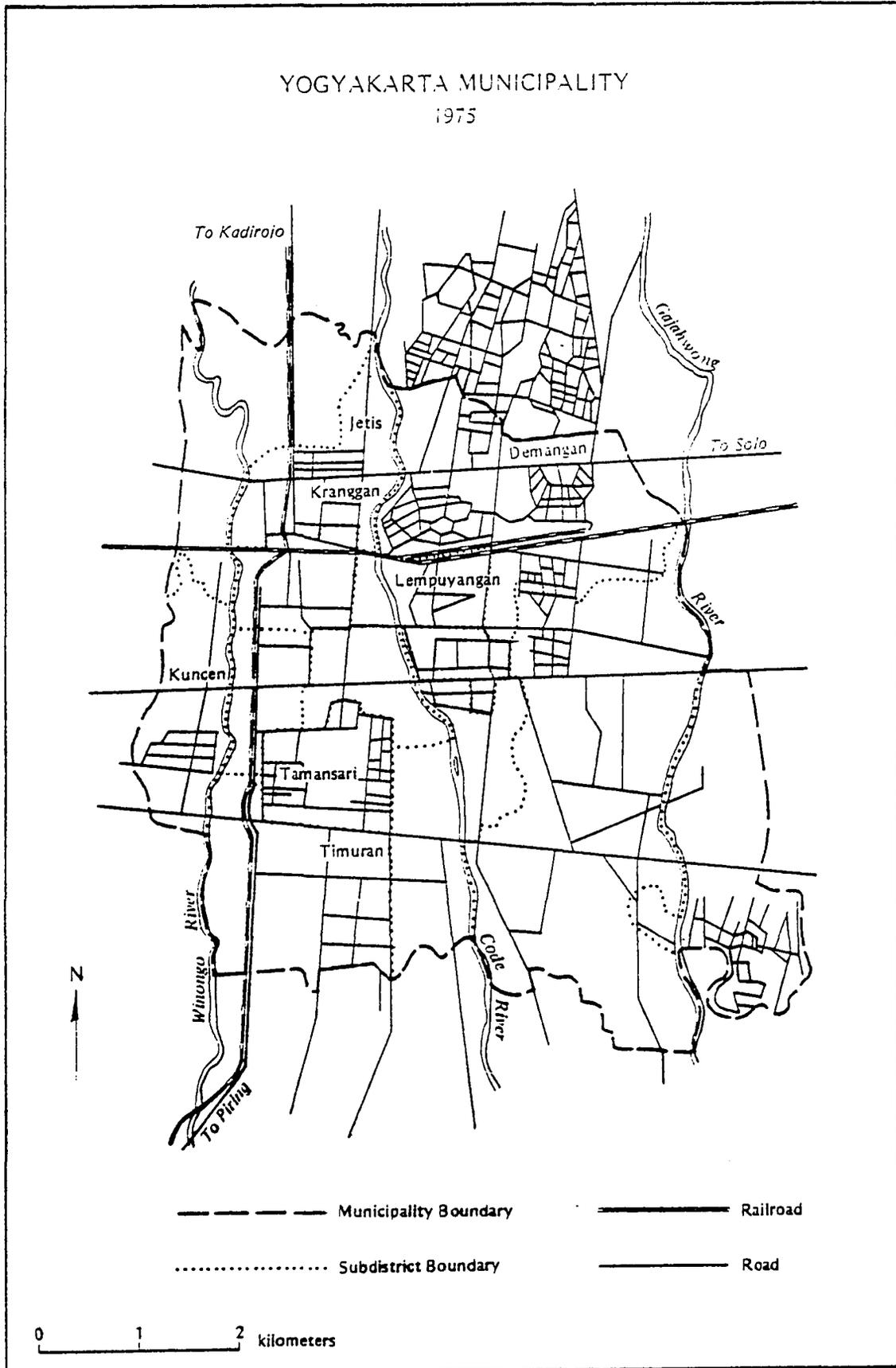


Figure 7.2

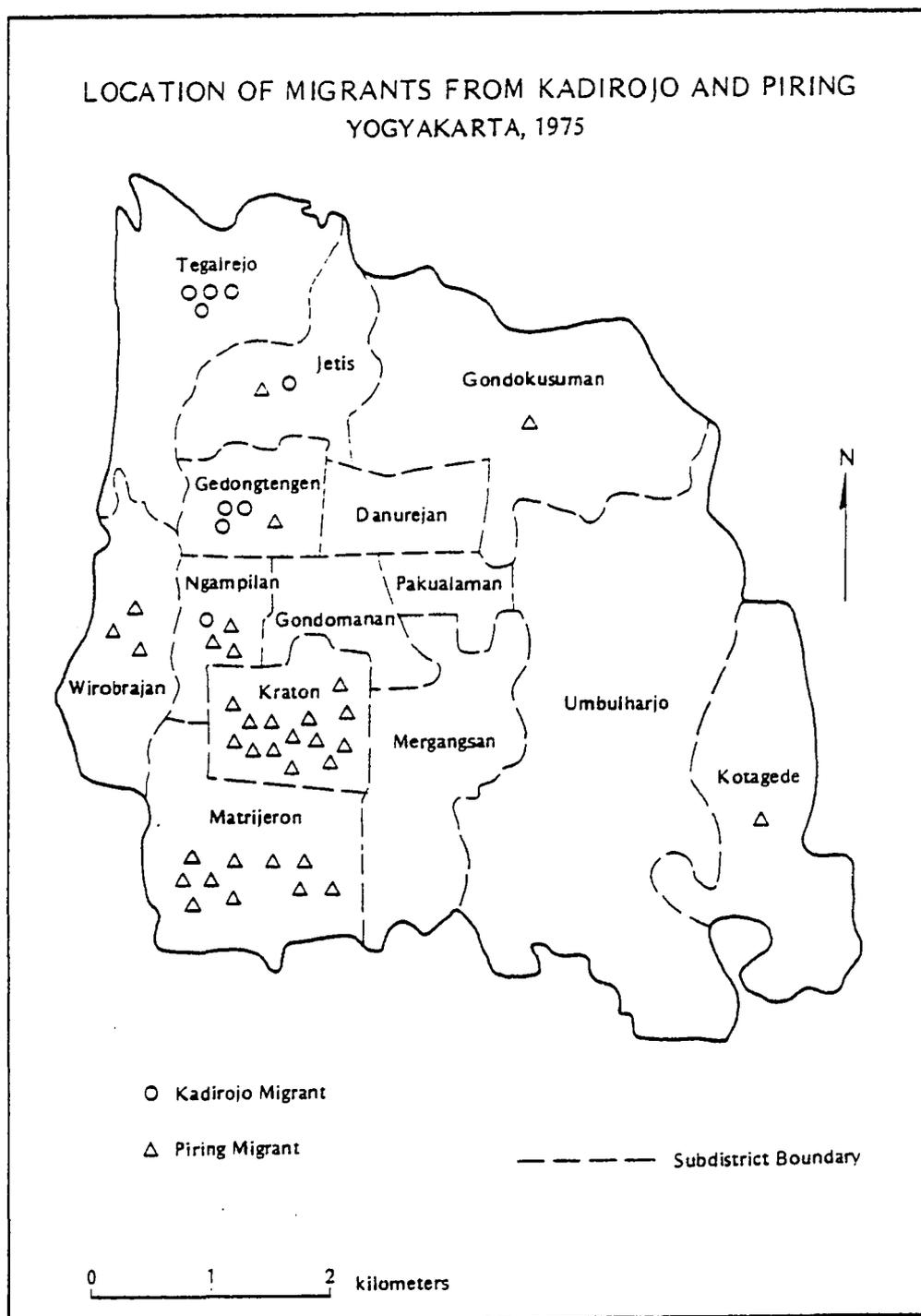


Figure 7.3

TABLE 7.1
 SIZE AND POPULATION DENSITIES BY KECAMATAN IN
 YOGYAKARTA KOTAMADYA, 1973

<u>Kecamatan</u> (Subdistrict)	Area (in km)	Population	Population per square kilometer
Tegalrejo	2.93	21,095	7,199
Jetis	1.72	32,330	18,796
Gondokusuman	4.04	46,663	11,550
Danurejan	1.10	26,035	23,668
Gedongtengen	0.99	25,332	25,587
Wirobrajan	1.80	20,548	11,415
Ngampilan	0.86	22,792	26,502
Gondomanan	1.13	21,069	18,645
Pakualaman	0.64	14,444	22,568
Mergangsan	2.33	28,083	12,052
Kraton	1.37	26,262	18,169
Mantrijeron	2.58	27,876	10,804
Umbulharjo	7.58	27,743	3,660
Kotagede	3.43	13,585	3,960
Yogyakarta <u>Kotamadya</u>	32.50	355,857	10,949

Source: Biro Statistik 1974.

1969, 1970 and 1971, according to records in the Statistical Office of Yogyakarta Special Region (1972, 76), the rate of net out-migration was 3.5, 0.5, and 1.5 percent respectively. In general, as a result, population change in Yogyakarta Kotamadya mainly reflects the ratio of births to deaths and is depressed, rather than increased, by the annual balance of in- to out-migration.

Whether or not the rate of urbanization has been increasing can also be examined by comparing the percentage of people in each province who resided in cities during 1961 and 1971 (Kasto 1976, 70). Over this period, the percentage of urban population in each of Java's five provinces has remained remarkably stable, but Yogyakarta Special Region is the only province for which the ratios are virtually identical (Table 7.2).

In short, Yogyakarta is an overpopulated city in the sense that the number of people per square kilometer is high (10,494) and even greater than the Metropolitan City of Jakarta. Job opportunities are very limited and there is great difficulty in finding housing accommodation. As a result, few people move into the city and there is a strong tendency for the number of out-migrants to be higher than that of in-migrants. Given this context, it is not surprising that the number of Kadirojo and Piring migrants resident in Yogyakarta City on 25 January 1976 is very small.

Dukuh Migrants in Yogyakarta City

Kadirojo and Piring migrants are found mainly in areas of Yogyakarta City that are least distant from their dukuh of origin. Those from Kadirojo tend to reside in the north and those from Piring in the

TABLE 7.2
 PERCENTAGE OF POPULATION RESIDENT IN THE
 CAPITAL CITIES OF FIVE JAVANESE PROVINCES,
 1961 and 1971

Province	1961 ^a	1971 ^b
Jakarta	87.2	100.0 ^c
West Java	11.9	12.4
Central Java	10.2	10.7
Yogyakarta Special Region	16.4	16.3
East Java	12.8	14.5
Java and Madura	16.1	18.1

Sources: ^aMilone 1966, 158-159

^bCentral Bureau of Statistics 1974

^cIn 1971, Jakarta was entirely a metropolitan province.

south (Figure 7.3); the former are concentrated in the subdistricts of Tegalrejo and Gedongtengen, and the latter in Tamansari and in Timuran (Figure 7.2). Few migrant households live in a subdistrict by themselves (Kadirojo: 2 out of 9; Piring: 4 out of 34; Figure 7.3), and those that do have been in Yogyakarta for very many years.

The concentration in Tamansari of people from Piring has existed since colonial times. According to Mbah Mangun, a woman aged 85 years who currently lives in Tamansari, in the colonial period (1750-1942) some people left Piring to become abdidalem (servants) in the Sultan's palace. They were housed in Tamansari and since that time migrants from Piring who work and study in Yogyakarta have usually stayed in this

locality. In 1975, seven families and four single persons from Piring resided in Tamansari. Timuran contains another cluster, nine out of ten of whom are batik laborers. All these work in the same batik plant and this concentration reflects ties, familial and affinal, with those who either previously worked there or continue to do so. Kadirojo migrants also reside near their different places of work as laborers, housemaids, and small stall keepers.

Eight of the nine migrants from Kadirojo were aged between 25 and 44 and only one was older than 55. This reflects the absence both of young people moving to the city and of past migration. The good transportation links between Yogyakarta and Kadirojo, together with the short distance of less than 20 km, make all civil servants, students, and some traders who work in the kotamadya able to commute and to live more economically in the dukuh. Since all the Kadirojo migrants were women, it seems that only the previously single who have to follow their spouses remain in Yogyakarta City, and there was no case of a Kadirojo family having relocated its entire household from the dukuh.

More than half of the Piring migrants, by contrast, were aged less than 30 (19 out of 34) and about two thirds of them female (21 out of 34; Table 7.3). Most were batik laborers in two family businesses located in Timuran and Tamansari (Figure 7.2), and the remainder students and civil servants. Eleven out of 13 batik laborers were single and lived in the rooming house provided by the factory owner. Most other female migrants from Piring followed their husbands upon marriage. Three widows, all aged more than 60, have lived in Yogyakarta for many years and remained after the deaths of their spouses; one has resided there since 1901.

TABLE 7.3

AGE/SEX STRUCTURE OF KADIROJO AND PIRING MIGRANTS
IN YOGYAKARTA
25 January 1976

Age (in years)	Kadirojo		Piring		
	Male	Female	Male	Female	
15-19	-	-	1	6)
20-24	-	-	2	4) 55.9%
25-29	-	3	4	2)
30-34	-	1	3	1	
35-39	-	3	-	2	
40-44	-	1	1	-	
45-49	-	-	1	-	
50-54	-	-	-	1	
55-59	-	1	1	1	
60-64	-	-	-	2)
65-69	-	-	-	1) 11.8%
70 and over	-	-	-	1)
<hr/>					
TOTAL		-	9	13	21

Source: Yogyakarta Survey

All Kadirojo migrants were engaged in such low paid and quasi-wage employment as small-scale trading and the itinerant hawking of cooked food. One, in addition, was a farmer, who lived with her family on the border between Yogyakarta City and Sleman regency (Figure 7.3). Piring migrants were engaged in various occupations; apart from the one third who were batik laborers, there were five civil servants, five small traders, four laborers, three students, one batik employer, and one servant (Table 7.4). Except for the civil servants and batik employer, the wages they earned were uniformly low.

The characteristics of age, marital status and occupation among Kadirojo and Piring migrants also indicate why so few people from these two dukuh are willing to live in Yogyakarta City for one or more years. When asked about such unwillingness, approximately half the adult villagers stated that it was because of the difficulty of finding a job (Kadirojo: 87 out of 159; Piring: 85 out of 187; Table 7.5). Some also mentioned that even if they could obtain paid employment, they would not earn a sufficient amount to allow them to live in the city as well as they do in the village. This would be true even if they received twice as much from wages as they normally earned in the dukuh, since the prices of daily necessities and of housing in Yogyakarta were so much higher. Confronted by all these constraints, between 16 (Kadirojo) and 23 (Piring) percent of all adult villagers said that they were narimo (resigned) to remain in their local community. A further one sixth mentioned they were too old to begin a new life in the city and about one tenth noted their responsibility to take care of parents or children.

TABLE 7.4
 OCCUPATION OF PIRING MIGRANTS
 IN YOGYAKARTA CITY
 25 January 1976

Occupation	Number	Percent
Batik laborer	13	38.3
Civil servants:		
Government official	1	
Gas company employee	2	
School teacher	1	
Soldier	<u>1</u>	
	5	14.7
Small trader	5	14.7
Unskilled Laborers:		
<u>Becak</u> driver	1	
Bicycle repair	1	
Laundry worker	1	
Laborer	<u>1</u>	
	4	11.8
Student	3	8.8
Batik employer	1	2.9
Servant	1	2.9
Housewife	1	2.9
Unemployed	1	2.9

TOTAL	34	99.9

Source: Yogyakarta Survey.

TABLE 7.5

REASONS WHY KADIROJO AND PIRING ADULTS DO NOT
WISH TO MIGRATE TO YOGYAKARTA
29 December 1975

Reason	KADIROJO		PIRING	
	Total	Percent	Total	Percent
Difficult to find job in city	87	54.7	85	45.4
" <u>Narimo</u> " to stay in <u>dukuh</u>	25	15.7	44	23.5
Too old to start new life in city	23	14.5	34	18.2
Need to take care of parents or children	15	9.4	19	10.2
City wages too low	9	5.7	5	2.7
TOTAL	159	100	187	100

Source: Retrospective History of Movement

The Process of Movement to the City

Information about job vacancies for the few dukuh migrants who overcame these considerable disadvantages usually was obtained through relatives or friends who already worked in a company, an office, or a factory. People from Kadirojo and Piring who have migrated to cities or other places also maintain contact with relatives and friends in their village of origin. Most migrants return to the local community for such important events as Ruwah, Lebaran, and selametan, and are in turn visited in the city by their village relatives. Consequently the situation in Central Java does not parallel those parts of the West where urbanization is often associated with the diminution and even the termination of contacts with the friends and relatives in one's original

community. Relatives or friends of dukuh residents who live in the city not only provide information regarding job vacancies but also function as intermediaries to obtain paid employment.

Six of the nine Kadirojo migrants followed their husbands to Yogyakarta and thus were passive movers. The rest consisted of two laborers at Kranggan market (Figure 7.2) and a housemaid in Tegalrejo, each of whom had been assisted by their relatives to obtain their employment. Among the Piring migrants, more of the permanent residents (those who had changed their community of registration from the dukuh to the city) had been helped by relatives than by friends (8 versus 2); conversely, twice as many friends as relatives (14 versus 7; Table 7.6) aided the temporary residents (those who had not changed their community of registration from the dukuh). Three-fifths (8 out of 13) of the batik laborers obtained their job through the efforts of friends and the rest through relatives. Thus it is customary for the dukuh-born, who have a city position in an industry or office, to help village kin and friends to find wage employment. This is particularly so if the city migrant holds an influential position, in which case he will ensure that many dukuh people are able to be hired at the same work place. A parallel situation has been reported in West Java by Hugo (1975b, 514), where a medical doctor from Cikande village who works in one of Jakarta's major hospitals has used his position to recruit fellow villagers. Similarly, four small traders and one batik employer from Piring, who now reside permanently in Yogyakarta, were assisted by dukuh-born relatives to establish their own businesses (Table 7.7).

Once arrived in the city, the house or room in which a migrant stays may be owned or rented, supplied by the employers, or provided

TABLE 7.6
 JOB ASSISTANCE RECEIVED BY PIRING MIGRANTS
 25 January 1976

Resident Status	Assistance				Total
	Relatives	Friends	Government	Self	
Permanent (Have changed their community status)	8	2	1	1	12
Temporary (Have not changed their community status)	7	14	1	-	22
TOTAL	15	16	2	1	34

Source: Yogyakarta Survey

TABLE 7.7
 OCCUPATION AND SOURCE OF JOB ASSISTANCE
 FOR PIRING MIGRANTS
 25 January 1976

Occupation	Assistance				Total
	Relatives	Friends	Government	Self	
Batik laborers	5	8	-	-	13
Small traders	4	1	-	-	5
Laborers	2	2	-	-	4
Civil servants	1	2	1	-	4
Students	1	2	-	-	3
Batik employer	1	-	-	-	1
Servant	-	1	-	-	1
Army	-	-	1	-	1
Housewife	-	-	-	1	1
Unemployed	-	-	-	1	1
TOTAL	14	16	2	2	34

Source: Yogyakarta Survey

without payment by a friend or relative. Dukuh migrants who live in their own houses normally have been in Yogyakarta sufficiently long to have changed their registered residence to the city, whereas those who rent houses or have accommodation supplied usually have not and therefore view their stay as more temporary. Of the nine Kadirojo migrants, four are permanent and have bought their own house. Of the 12 permanent migrants from Piring, eight live in their own houses, three in rented dwellings, and one with relatives. Out of 22 temporary residents, 16 are in accommodation supplied by their employers, while three reside in their own and three in rented houses.

Out of all living accommodation, the quality of houses or rooms provided by batik employers generally is the highest. Those in Timuran and Tamansari, for example, are of brick construction, contain both bathroom and kitchen, and have cement floors and electric lights. In these, workers could live comfortably and also cook their own food; in the evenings, they could watch television in the manager's house. With such facilities, it is not surprising that the rate of return of batik laborers back to the dukuh is small. Dwellings owned by Piring migrants are superior to those from Kadirojo, as reflected in the ratio of those of brick construction (Kadirojo, one out of four, Piring, five out of 11); with cement floors (Kadirojo, one out of four, Piring, seven out of 11); and with electricity connected (Kadirojo, none out of four, Piring, three out of 11; Table 7.8).

Adjustment to City Environment

Migration from the dukuh of Kadirojo or Piring to Yogyakarta Kotamadya means a shift from rural to urban society and from a village

TABLE 7.8

DESCRIPTION OF DWELLINGS OF KADIROJO
AND PIRING MIGRANTS
25 January 1976

Materials	K A D I R O J O				P I R I N G			
	Owned	Rented	Provided	Total	Owned	Rented	Provided	Total
<u>Outside walls</u>								
Brick	1	-	-	1	5	2	15	22
Wood	1	-	-	1	-	-	-	-
Bamboo	<u>2</u>	<u>5</u>	<u>-</u>	<u>7</u>	<u>6</u>	<u>2</u>	<u>4</u>	<u>12</u>
	4	5	-	9	11	4	19	34
<u>Floors</u>								
Cement	-	1	-	1	7	3	16	26
Earth	<u>4</u>	<u>4</u>	<u>-</u>	<u>8</u>	<u>4</u>	<u>1</u>	<u>3</u>	<u>8</u>
	4	5	-	9	11	4	19	34
<u>Roof</u>								
Tile	4	5	-	9	11	4	19	34
<u>Lighting</u>								
Electric	-	-	-	-	3	2	13	18
Pump gas lamp	-	-	-	-	4	1	4	9
Kerosene lamp	4	5	-	9	3	1	2	5
Traditional lamp	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>1</u>	<u>1</u>	<u>-</u>	<u>2</u>
	4	5	-	9	11	4	19	34

Source: Yogyakarta Survey

to city environment. Upon arrival at their city destination, migrants therefore are faced with the need to adjust to their new environment. In her study of migrant adjustment to city life in Cairo, Abu-Lughod (1961, 22-23) mentions that there are four factors of adjustment: physical, economic, social, and cultural. Furthermore, she argues:

Physically, [the new environment] is envisioned as drastically altering the dwelling, changing the accoutrements within the home as well as the neighborhood surrounding it, transforming the appearance and dress of the migrant himself. Economically, the migrant is seen as adjusting to changed occupations and rhythms of work, to a new division of labor within the family, and to different relationships between work associates. Socially, it is hypothesized that the migrant weans himself from the intimacy of the village to the harsh superficial relationships inherent in urban life, adapts himself from the homogeneous peer group to the diversified reference groups of the city, and suffers a reduction in proximity-centered social life and neighboring. Culturally, he is assumed to undergo a revolution in motivation, values, and ideology.

In fact, the process of adaptation for Kadirojo and Piring migrants in Yogyakarta City is not nearly as difficult as Abu-Lughod reports for Cairo. This is because, first, the relatively short distance between Yogyakarta and these two dukuh (Kadirojo: 18 kilometers, Piring: 24 kilometers) means that every migrant had visited Yogyakarta City at least once before taking up more lengthy residence (Table 7.9). Second, dukuh people are aware of many aspects of city life, which they learn from relatives or friends resident in Yogyakarta who visit them during Ruwah, Lebaran, and selamatan, and from advanced students and civil servants who spend their holidays in their natal villages. For these reasons, adults from Kadirojo and Piring who decide to migrate to Yogyakarta carry with them some comprehension of urban life and do not experience great culture shock. Nevertheless, to move from the dukuh to the city does require a period of adjustment to the very different environment and life styles.

TABLE 7.9

VISITS MADE BY KADIROJO AND PIRING MIGRANTS BEFORE RESIDENCE
 IN YOGYAKARTA CITY FOR ONE OR MORE YEARS
 25 January 1976

Number of visits	Kadirojo migrants	Piring migrants
0	-	-
1	2	12
2	-	7
3	1	6
4	-	2
5	1	2
6	-	1
7	-	1
8	-	-
9	-	-
10 or more	5	3
TOTAL		34

Source: Yogyakarta Survey

Those who migrate to the city from Kadirojo and Piring initially stay with relatives or friends who already reside there. Migrants from the same dukuh thus tend to concentrate within the same area, as Piring migrants do in Tamansari, and to maintain some continuity of lifestyle with the village milieu. This repeats Hugo's (1975b, 524) conclusion that migrants from West Java congregate in certain areas of Jakarta and Bandung. Gradually the recent migrants relocate to other areas in Yogyakarta, once they feel themselves to be somewhat adjusted to city life and to have some of their own friends. Others try to remain in places that are nearest to their place of work or because of strong kinship ties to certain relatives. Those who are fortunate enough to buy a house or obtain a long-term rental agreement often ask family members who have remained in the dukuh to join them.

In 1970, Hadriyanto (22) of Piring completed his Junior High School in Bantul (Figure 1.2). His father suggested that he continue his studies in Yogyakarta, at the Senior High School, so Hadriyanto journeyed to the regional capital to register in the S.M.A. Teladan (Model Senior High School) at Kuncen (Figure 7.2). Since he passed the entrance test, he was accepted by this model high school and during his first months there lived with the Parjiyo family in Tamansari. Although the Parjiyos did not have a spare room, they felt obliged to help relatives or friends from Piring and so they gave their son's room to Hadriyanto. After residing in Yogyakarta for six months, Hadriyanto became used to city life and had made many friends. As the school was located about three kilometers from Tamansari, he decided to look for more convenient accommodation and, with the help of a friend, managed to find a room in Wirobrajan (Figure 7.2) which is within walking distance of the school.

In June 1971, he moved to this new place but still frequently visits the Parjiyo household.

Jasir came from Piring to Yogyakarta in 1949 to study at the Sekolah Teknik Menengah (Secondary Technical School). Over two years, while studying he shifted residence three times: to Tamansari, to Lempuyangan, and to Jetis (Figure 7.2). He graduated in 1959 and moved to Demangan to work in a civilian post with the Indonesian Air Force. In 1952 he married a girl from Pajangan, Bantul (Figure 1.2), after which his wife lived in Piring until he could obtain housing. With the help of a friend in Tamansari, Jasir bought a house in this locality, and his wife then left Piring for Yogyakarta.

It is clear from these two examples how important to the new migrant is the role of those dukuh-born who live in Yogyakarta to help find jobs, identify schools, and to provide a place to stay during the early period of adjustment. People who obtain a permanent position in Yogyakarta and plan to remain for at least one year usually change their community status. In particular, those who are married and live with their families become a warga kota, or member of city society. An individual, as a warga kota, must participate in a number of gotong royong activities, such as to repair and clean the road of the kampung (town quarter) and help with preparations for a funeral or other sela-metan. By contrast, temporary migrants who maintain their status as dukuh members are not obliged to be part of city projects, although sometimes they may help in funeral ceremonies and with communal security. City residents who have become warga kota and are closely involved in the socio-cultural activities of urban society are exempt from similar expectations by their dukuh of origin. Despite this, they still continue

to retain close links with relatives and friends in Kadirojo and Piring. Some return to attend a selamatan or help upgrade the village road, while others make contributions to such dukuh projects as construction of a guard house.

Dukuh people who remain permanently in Yogyakarta usually return to their natal place during Ruwah and Lebaran, or for a funeral that involves a close relative. Few return home for planting or harvesting during the agricultural cycle, because most are busy with their city jobs. Temporary migrants who, by definition, have not remained as long in Yogyakarta, usually return for the planting and harvesting of rice as well as for Ruwah, Lebaran, or other social and cultural activities (Table 7.10). Thus the longer people reside in Yogyakarta City, the weaker their visible commitment to special events in their dukuh community of origin. However, these gradual changes are not paralleled by any decrease in the maintenance of ties to relatives or kin in the natal place.

Some Yogyakarta residents send money back to the dukuh for parents or relatives but this, again, is more a practice among the temporary rather than the permanent migrants (Piring migrants: 13 versus 4). The amount of money remitted depends upon how much the migrant earns each month and the cost of city living. Also influential is whether migrants are single and so have surplus earnings like the temporary migrants from Piring; or married, as in the case of the Kadirojo families who had sent no money during the previous year. Thus one batik trader from Piring, who each month earns around Rp: 50,000 (U.S. \$120.50), sends about a tenth of this income back to his parents. The small traders from Kadirojo, by contrast, earn only a small income (between Rp: 3,000

TABLE 7.10

SPECIAL DUKUH EVENTS FOR WHICH
KADIROJO AND PIRING MIGRANTS RETURN
25 January 1976

Special event for which returns	K A D I R O J O		P I R I N G	
	Permanent migrant	Temporary migrant	Permanent migrant	Temporary migrant
<u>Planting Crops</u>				
Yes	1	2	-	4
No	$\frac{3}{4}$	$\frac{3}{5}$	$\frac{12}{12}$	$\frac{18}{22}$
<u>Harvest Season</u>				
Yes	1	2	2	7
No	$\frac{3}{4}$	$\frac{3}{5}$	$\frac{10}{12}$	$\frac{15}{22}$
<u>Socio-Cultural commitment</u>				
Yes ^a	4	5	4	22
No	$\frac{-}{4}$	$\frac{-}{5}$	$\frac{8}{12}$	$\frac{-}{22}$
<u>Funeral</u>				
Yes ^a	2	3	9	22
No	$\frac{2}{4}$	$\frac{2}{5}$	$\frac{3}{12}$	$\frac{-}{22}$
<u>Ruwah</u>				
Yes	2	4	12	21
No	$\frac{2}{4}$	$\frac{1}{5}$	$\frac{-}{12}$	$\frac{1}{22}$
<u>Lebaran</u>				
Yes	3	5	8	21
No	$\frac{1}{4}$	$\frac{-}{5}$	$\frac{4}{12}$	$\frac{1}{22}$
<u>New Year</u>				
Yes	-	1	3	4
No	$\frac{4}{4}$	$\frac{4}{5}$	$\frac{9}{12}$	$\frac{18}{22}$

Source: Yogyakarta Survey

^aOnly involves a close relative.

and 15,000), which is by itself insufficient to meet the living expenses for their families. Most money is therefore sent to the village at particular times of the year, like Ruwah and Lebaran. Batik laborers, who receive between Rp: 2,000 and 6,000 a month, remit from Rp: 500 to 2,500 twice a year, as do civil servants and traders, whose single contributions total between Rp: 5,000 and 7,500. Often this money is brought during a visit to their parents or relatives at times of Ruwah and Lebaran.

There are two basic reasons why few dukuh people remain in Yogyakarta City for one or more years. First, paid employment in the city is limited in its availability and, even if a job can be found, wages are very low. It is therefore extremely difficult for migrants to live in the city with their families. Secondly, not only is it much cheaper to remain in the dukuh, but also Kadirojo and Piring are located no more than 24 km from Yogyakarta City. Dukuh people who are employed or have the need to transact business in the city are thus able to commute or circulate rather than to live there for long periods of time. Marriage is the major reason for migration from Kadirojo and Piring and accounts for 23 out of those 43 who resided in Yogyakarta City on 25 January 1976. Skilled laborers in the batik industry are the only occupational group for whom steady employment is a possibility and these number a further 13 out of 43 migrants from the two dukuh studied.

Movement to the city generally occurs through a well-defined network of contacts. These may be personal and informal, as with relatives and friends who already live there, or they may be organizational, as when a villager migrates to take up a position with the government or the army. Bruner (1972), for example, has demonstrated the crucial

role of kinship ties in the adjustment of the Toba Batak migrants from north Sumatra who went to live in Medan, Jakarta, and Bandung. In Yogyakarta, the role of relatives and friends in helping dukuh migrants to adjust was similarly great. Wherever possible, those who migrate from Kadirojo and Piring go to places where relatives or friends already live, which in turn explains the distinct clustering of village migrants in the northern and southern parts of Yogyakarta City.

CHAPTER VIII

CONCLUSION

Commuting, circulation, and migration were all found in the two study dukuh of Kadirojo and Piring. These three types of population movement have been acknowledged by the people for centuries and are reflected in several terms in Javanese. Thus nglaju is used for those who travel to a place but return back to their home within the same day, nginep for people who stay in another place for several days before returning, and mondok for those who lodge in a destination community for several months or years. Merantau refers to those who go to another island for a relatively long period but eventually return back to the origin community. The term pindah is used for residents who migrate to another place.

Of these three types of population movement, commuting and circulation are a common occurrence and are not viewed as unusual actions. In the eight months (19 May 1975 until 31 January 1976) during which the two dukuh were monitored, the number of moves made by adult villagers were: commuting 7,405 (Kadirojo) and 8,575 (Piring); circulation 846 (Kadirojo) and 523 (Piring); migration 23 (Kadirojo) and 24 (Piring). More than 90 percent of all recorded moves therefore consist of commuting and circulation, or those which are comparatively short-term and short-distance and which also reflect the strong ties to one's home village. Even people who have migrated to another place still regard the natal community as their home and maintain close contact with relatives who continue to reside there. This situation has been found outside Java, in other Third World

societies, and has led Chapman (1977, 3) to characterize such societies as "bi-local populations, relatively stable in their demographic composition, but composed nowadays of individuals in constant motion between village and non-village places."

As would be expected from the definitions adopted throughout this study, the number of commuters is higher than that of circulators and the ratio between the two in Piring is 7.73 and in Kadirojo 1.58. This result is not, however, simply an artefact of definitions adopted to collect field data. Most persons who travel to another place try to return to their dukuh the same day. If it is necessary to remain longer in another village, town or city, then they will still remain away for the shortest possible time. The basic reason for this attitude is that dukuh people feel far more secure when they are with their family and conversely, they feel confused when separated from their family and confronted by different situations. The small monetary incomes earned by villagers also make it difficult for them to find the fare to travel great distances and, even if they do, impossible to stay for long in town or other areas where the cost of living is high. As members of a dukuh community, they are able to live more cheaply, to work their rice fields, and to maximize whatever income they might gain from short-term and outside employment.

The rate of migration to other localities was 23 (Kadirojo) and 24 (Piring) persons during the eight months of the survey. The main objectives of migration are marriage, and such non-marital reasons as wage work, accompanying relatives, schooling, and transmigration. In both Kadirojo and Piring, the percentage of married migrants is high, since upon marriage most women move to their husband's community. Those

who migrate for wage work usually work as civil servants, traders, and laborers. There is little migration to small cities like Bantul, Sleman and Medari, and very few remain in the capital city of Yogyakarta for one or more years. This reflects the limited job opportunities available in these towns or cities; the low wages earned even if dukuh people are successful in finding a job; and the fact that these urban destinations are within commuting distance. The role of village relatives or friends who reside more or less permanently in Yogyakarta City is especially crucial for those few families and individuals who migrate, since it was these longer-term residents who helped identify jobs, arrange housing, and provide a sense of security in an unfamiliar environment. Thus, as Goldstein (1978, 55) has pointed out for Southeast Asia in general, "...moving into the city is made easier through the various sub-communities in the city which are characterized by village-based relationships." In Yogyakarta, this explains both the residential and the occupational clustering of Piring migrants. Only a small number have transmigrated from Kadirojo and Piring to islands outside Java, mainly Sumatra, and most have been spontaneous rather than Government-sponsored relocations. Usually people want to migrate to localities where relatives or friends already live, or alternatively to communities which are not far distant from their natal place. This again demonstrates the enduring kinship ties among dukuh people and the bi-local orientation of even the migrants.

Why do Dukuhs People Move or Stay?

Various forces lead people to move from, or to stay within, a dukuh community like Kadirojo and Piring. Mitchell (1961, 263) has grouped such forces into the centrifugal and the centripetal. The first set

induces individuals or small groups to leave the home place and the second set leads people to resist such action. Whether mobility is present or absent in a certain place, in this case Kadirojo and Piring, thus depends upon the balance between these two conflicting sets of forces.

Centrifugal forces identified in the two study dukuh reflect the agricultural economy, formal education, and social obligations, of which dissatisfaction with the local wet rice economy is the most important. The average amount of land owned by one family is 0.187 (Kadirojo) and 0.197 hectares (Piring), and their average size of rice fields even smaller: 0.126 (Kadirojo) and 0.086 hectares (Piring). The miniature size of a family's rice field means that not even the use of agricultural innovations enables farmers to produce sufficient food to meet the basic needs of their households. In addition, job opportunities available outside the agricultural sector are very few and all are poorly paid.

There is in each dukuh, secondly, a lack of educational facilities. Both Kadirojo and Piring have an elementary school but those who wish to continue their studies must go to another village or small town. For Kadirojo, the junior and senior high schools are within commuting distance by pedal bicycle and only those who study at university in Yogyakarta must take lodging in the city. For Piring, both the junior high and senior high schools are within commuting distance, at Sanden (1.25 km), Sorobayan (2.5 km), and Bantul (12 km), but some students nevertheless board in Bantul rather than commute every day by bicycle. Those who desire to continue their studies at university must live during the week in Yogyakarta, 24 kilometers distant. Dukuh people, thirdly, have an obligation to visit relatives who live outside their birth places,

and this is especially important during the months of Lebaran or to help prepare for such ceremonies as weddings, births, or ritual circumcision.

There are five sets of centripetal forces that encourage people to remain within Kadirojo and Piring. First, and paramount, is the close kinship ties among village inhabitants. The popular Javanese proverb, Mangan ora mangan waton kumpul, "as long as we are together, it does not matter whether we eat or not," reflects the enduring links that bind both families and relatives. Ties are also maintained with wider kindred, or group of relatives, among whom there exist reciprocal obligations.

Second, dukuh communities are founded upon and practice the principle of gotong royong, or mutual self-help. Living together in such a society means to be a member of a corporate family, where bonds are close, where individuals always must help one another, and where everyone must collectively participate in community life and its various activities. Ways of sharing have evolved to redistribute what little dukuh households have, while there are strong relationships between patron and client that weld tight bonds of mutual responsibility between rich and poor. As members of a dukuh community, individuals need not worry about starvation as long as they remain with their fellows. Consequently it would be a great risk to leave the dukuh for long periods, because of the uncertainty of whether paid employment could be secured at the destination place. The majority, whose socioeconomic status is low, thus prefer to remain in the dukuh and work as farm laborers or as sharecroppers, rather than to move to another area. Even though the

income earned within the village is low, nevertheless the people of Kadirojo and Piring feel far more secure by staying rather than migrating.

Third, dukuh people depend almost entirely upon the land for their livelihood, view it as intimately related to their local status, and have hardly any interest in the matters outside agriculture. Fourth, the inhabitants of Kadirojo and Piring also regard the dukuh as their birth right. Usually it is where their ancestors' graves are located and where every Ruwah or Lebaran, family members come to make offerings. Thus the dukuh is home, because it is the place where all their ancestors lived. Fifth, there are barriers which hinder people from moving away from Kadirojo and Piring even if they had decided to do so. Transportation costs are high when compared with their available income, there is no certainty of obtaining a job in another village or town, they have no savings to support the family while the household head seeks paid employment, and in general dukuh people lack the experience of and have limited knowledge about outside places.

If these two sets of centrifugal and centripetal circumstances are viewed from the standpoint of a dukuh community, then it can be seen that the situation is highly contradictory. Village people face a basic dilemma of whether to remain in the dukuh and endure both a hard economic life and the lack of educational facilities; or to move away, to leave one's land and birth right, and to separate from family, kin, and relatives. This dilemma is resolved in Kadirojo and Piring by adopting an alternative strategy; by commuting or circulation, which is essentially a compromise between total immobility and permanent relocation. These two sets of centrifugal and centripetal forces, always in potential

conflict, also have been documented by Hugo (1975b, 629) for 14 villages in West Java. There, the resultant movements, which mainly occur in rural-urban and rural-rural directions, are circular and do not involve village people in any permanent changes of location.

It is clear, from the above discussion, that economic needs in Kadirojo and Piring underlie population movement but do not fully explain it. Social and kinship ties, the desire for continued education, and the perception of opportunities at other destinations are often an integral part of the decision-making process whether to move or to stay. This proved the basic proposition that economic and social factors, in combination, explain movement away from the village as well as return to it.

Links Between Migrants and Their Home Communities

A few people have migrated from Kadirojo and Piring for one or more years to continue advanced education, to obtain paid employment, to take care of inherited land and, more passively, to accompany their spouse. For those who migrate with the objective of improvement in their standard of living, the decision to migrate usually is not spontaneous but rather occurs gradually over a long period. Since most people in Kadirojo and Piring are poor, they are especially careful about deciding to migrate. Usually they make several visits to the intended place of relocation before actually moving there, for they cannot afford to gamble or to experiment. In other words, they wish to make absolutely sure before moving that in fact they will have the prospect of a better life. This contrasts with Melanesia, where Bedford (1973, 1) reports that most people are well-off, live in a condition of

"subsistence affluence," and where consequently, to move to another place involves little appreciable risk. Thus a household in Kadirojo and Piring usually makes a series of decisions before it finally leaves the village, perhaps sells its wet rice land, and transfers some possessions to the custody of relatives or friends.

Persons who migrate from Kadirojo or Piring to another village or city usually change their residential status for, as members of a new society, it is necessary for them to participate in socio-cultural activities, like repairing and cleaning roads, helping with the preparations for selametan or funerals, and assisting with public defense. Those few who become permanent residents in their place of destination are exempted from comparable tasks in their former dukuh, yet they still maintain close links with relatives, friends, and the community in general.

Permanent migrants (those who have changed their community status) return to their natal place far less frequently than do temporary migrants (those who still retain their village community status). Visits most commonly occur during Lebaran and Ruwah, or when a family member or close kin dies. Often migrants will contribute money to the village community to help build a guard house or to upgrade the dukuh roads. Migrants generally do not, however, return to their birth places for the planting, cultivation, or harvesting associated with the agricultural cycle. This pattern is true not only for the dukuh-born who live in Yogyakarta City but also those who have resettled in Sumatra, Kalimantan, and other parts of Java. Thus the longer people born in Kadirojo and Piring reside outside their natal community, the greater the number of ties developed with their new place of residence and the less

intense their linkages with their former dukuh. This is not to say, however, that strong ties are not maintained with relatives and friends in the natal community. In this sense, the places of both origin and destination for migrants constitute a single field of socio-cultural interaction.

Even those who follow a profession or vocation outside the dukuh for all their working lives eventually return upon retirement. This pattern of return migration reflects the reduced income that follows retirement, the close social ties with the village that have been maintained during a vocation or professional career, and the strong desire to live out their remaining years and to die in their ancestral home.

Mobility and Modernization

Field research conducted in Java and other parts of Indonesia demonstrates that population mobility is a complex and dynamic process. The movement of people never results from a single factor yet, as the sociologist Mitchell (1961, 263) has argued, to list multiple factors results in no greater understanding unless they are related to each other in some logical framework. Consequently Mitchell groups factors that aid or impede mobility into the centrifugal and the centripetal, which in turn vary among places over time. Whether mobility exists, and of what kinds, therefore depends upon the nature of the balance between these two contradictory sets of factors.

The geographer Wilbur Zelinsky (1971, 221-2) has proposed a 'Hypothesis of the Mobility Transition,' in which he argues that the form of individual mobility is influenced by the process of modernization. These changing relationships over time he sees as following five

phases, termed a "mobility transition"; that is, pre-modern traditional, early transitional, late transitional, advanced society, and a final phase, or future super-modern society.

Chapman (1970, 241) another geographer, describes the structure of population mobility for three ideal kinds of society: tribal, peasant, and Euro-American, on the basis of two communities studied in Guadalcanal, Solomon Islands. The movements found in these three types of society are arrayed along a continuum, from circular to linear. From the diagram presented (Chapman 1970, Figure 30), it can be inferred that the more developed the society, then the more linear the structure of the people's mobility. Conversely, the less developed the society, the more circular will be the structure of its mobility. From these two examples it can be seen that the modernization process is viewed as influencing the form of population mobility to be found in different kinds of societies.

Distinctive socioeconomic changes have been a feature of Kadirojo and Piring, as well as other parts of Java, since the Second World War. Advances in the agricultural sector have resulted from the adoption of various innovations. By using high-yielding varieties, the average production of rice per hectare in Piring rose from 2,800 to 3,500 kilograms. Since these new varieties have a shorter stalk and the seeds come loose very easily, people have changed their prevalent method of harvesting from the traditional stalk-by-stalk method with the ani-ani to the use of sickles. As a result, the number of hours required to harvest one hectare of rice has been reduced from more than 200 to around 75 and dukuh women, formerly the major source of harvest labor, have been displaced. The tebasan system of contracting the rice harvest to

outsiders is beginning to spread throughout Java and the use of female labor in rice milling is being reduced through mechanization. Innovations in the agricultural sector consequently have reduced not only the amount of employment locally available in the dukuh but also the chance for the landless and the small holders to work as sharecroppers during the harvest season. In time, this can lead only to a weakened relationship between patron and client in Kadirojo and Piring.

Rising levels of educational aspiration mean that a greater number of children travel to the towns to continue more advanced education, there to be influenced by city ways of living. Dukuh people who have received such education have had their horizons broadened and acquired a wider knowledge of places outside Kadirojo and Piring. Great improvements in the transportation system have further facilitated the movement of rural people. Within the dukuh, roads have been upgraded and an increasing number of mini-buses and buses connect rural communities with other rural or urban localities. Such changes have modified the patterns of population movement for Kadirojo and Piring. There has been a dramatic increase in commuting, often over great distances, partly because of the physical improvement of the roads and partly through the availability of inexpensive modes of transport like the motorcycle and the mini-bus. Before 1972, most people from Piring who studied or worked in Bantul stayed there at least during the week, but now most commute every day. Others who remain in Yogyakarta or other places for longer periods are now able to return home far more frequently than before.

Some people from Kadirojo and Piring who received more formal education than most now desire to migrate from the dukuh and improve their standard of living. Some have moved to large cities like Jakarta and

Surabaya; others to the regional city of Yogyakarta. Not only has their field of movement enlarged, but also their pattern of movement has changed from commuting to circulation or migration. This parallels Hugo's (1975b, 627) general conclusion about population movement in West Java, namely that the broad patterns of population mobility have been modified over time. In pre-colonial times, he argues, most inhabitants of West Java were involved in shifting agriculture and had highly-localized forms of circulation. Following the change to wet rice cultivation and more sedentary life styles, some people temporarily moved outside the village to harvest crops or to trade. During colonial rule many people from West Java left their villages to work in cities or in plantation areas, some to remain permanently and others to stay only temporarily.

Consequently in both Kadirojo and Piring, as also in West Java, patterns of population movement have changed over time. Yet despite this there has been no basic modification in the nature of mobility, which can be viewed as part of a closed system between one's home village and various alternative places of destination. Wherever dukuh people go, and in whatever types of mobility they engage, they still retain strong ties with their home place despite the greatly increased level of movement. Thus the ties that individuals have with their home communities endure. This suggests that the relationship between modernization and types of movement is complex and does not, in Java, necessarily follow some pre-determined path already blazed by Western countries.

Population Mobility and Policy Implications

Circuits of population movement occur not only in Kadirojo and Piring but also in other parts of Java (Hugo 1975b, 630) and Indonesia (Suharso 1976, 92). Similarly, field research has documented the continual ebb and flow of people to be characteristic of such areas as Africa (Mitchell 1961, 259; Elkan 1967, 583; Prothero 1978, 5) and the Pacific Islands (Bedford 1973, 131; Chapman 1976, 128). Although few detailed studies have been undertaken in Southeast Asia of the full complex of people's movements, nevertheless they reveal the importance of circular mobility (Chapman 1977; Goldstein 1978).

In an early study in Thailand, Textor (1956) found that most of the 12,000 pedicab drivers who worked in Bangkok were circular migrants from Northeast Thailand. Most of these drivers traveled together to Bangkok and once resident in the city derived social and psychological security through maintaining friendship ties among themselves. Some sent money to their families and others returned to the Northeast with agricultural tools and clothes. Although engaged as pedicab drivers these movers continued to think of themselves in Bangkok as farmers and planned to resume this occupation upon their return. More recently, Anchalee Singhanetra-Renard (1977) studied circular mobility in villages located within the vicinity of Chiang Mai in Northern Thailand. She found that commuting and circulation were far more significant than migration for the people of Mae Sa Village and that, as with Kadirojo and Piring, improvements in rural roads and increased access to inexpensive modes of transport like bicycles and mini-buses have increased the incidence of commuting greatly.

Nagata's (1974) study in West Malaysia also demonstrates the importance of impermanent forms of population movement. Thus many school teachers who taught in rural areas continued to maintain their urban residence and returned there frequently while many village-born, who moved to urban areas and became, for example, civil servants, planned to return to their villages upon retirement. Nagata also demonstrated that circulation is closely related to events associated with the life cycle, as well as other social and cultural practices. People often returned to their origin place at times of sickness or festival and women to have their babies in the natal community.

This study has suggested that circular movement is not new in Indonesia and has intensified considerably since independence. This is mainly because of improvements in public transportation which link villages to each other and to cities, increasing rural pressure on agricultural resources, a shortage of jobs in villages, and above all the desire of villagers to supplement their income and raise their standard of living by working in cities and other places outside their own communities.

Circular movement is a form of linkage between rural and urban areas and is important in achieving a closer interaction between rural and urban people. Through commuting and circulation, villagers become more familiar with different work and residential environments, and with the different social environments that make up a city. Thus circular forms of movement, far more than permanent migration, have the potential of spreading new ideas, attitudes and knowledge to rural areas and of contributing greatly to the processes of social change. By itself,

circular movement creates its own momentum, as more and more village people experience the benefits of a wider range of contacts and work experience but without the costs of permanent residence in towns and cities.

The effect of circular movement ought not be viewed as a one-way flow of information and benefits from urban to rural areas. City people, through interaction with village movers, can learn much about rural areas as well as the attitudes, values, and problems of their populations. In fact, rural circulators and migrants may transport their communities to the cities and thereby create new social environments within them. This creation of such associations, along with the maintenance from an urban base of a wide network of kinship ties, has been reported for those Toba Batak who reside in Medan, North Sumatra (Bruner 1961), and is found on a smaller scale among Piring migrants who live in Yogyakarta.

Although the migration of people to cities creates urban problems, circular movement exerts less pressure on available city resources. If more people commute daily and weekly from villages to work in cities, then there is comparatively less demand on housing and other urban facilities. On this basis, it is circular rather than permanent forms of movement that ought to be encouraged in national planning. An increase in low cost and efficient means of transportation between villages, towns and cities is the simplest means to achieve this objective and, in turn, would increase even more the present incidence of commuting and circulation. In the case of Piring, for example, it has been shown that the improvement of rural roads in 1972 and the

subsequent availability of inexpensive forms of transport resulted in a dramatic increase in those villagers who commuted to Bantul and Yogyakarta.

To avoid the concentration of movement circuits into a particular city, both urban and industrial development ought to be decentralized through the creation of a few growth centers that are within commuting distance of village sources of labor supply. Such a policy also would help relieve the shortage of housing in urban centers. In Java, this strategy of urban development already has been implemented in several smaller cities. In Yogyakarta Special Region, there is an area of batik industry in Yogyakarta City, a new industrial center at Medari, and a silver and craft industry in Kotagede. This policy of decentralized growth centers also has been adopted in Eastern Europe, where high levels of urban growth created by rapid industrialization and large-scale migration have forced the government to disperse to smaller cities a greater proportion of the capital invested in industry. This planning strategy, in addition, has the benefit of reducing regional differences in levels of development and industrialization.

In terms of regional development within Indonesia, the resettlement of people from the most populated areas of Java and Bali to the outer islands of Sumatra, Kalimantan, and Sulawesi is of greatest importance. Yet, as this study has shown, spontaneous transmigration is far more successful than programs officially sponsored by the government. Village people are reluctant to settle in places where there are no friends or relatives and about which they have little information. Their fears are especially heightened when they are coerced. Besides this, they

prefer to migrate to areas that are not too far distant from Java and from which they can maintain easy contact with families or relatives and return to visit their natal communities at least once a year during such celebrations as Lebaran and Ruwah. In implementing its regional migration program the government of Indonesia ought to pay special attention to the linkages that exist and may develop between new settlements and the places from which potential settlers originate. The government ought to reinstitute the method that the Dutch used by which migrants successfully settled in Sumatra were encouraged to visit their natal communities and explain to kin the recent improvement in their economic position. In addition, as already has been proposed by Singarimbun (1972, 66), the Department of Agrarian Affairs should open up new lands for agricultural resettlement. By way of encouragement to voluntary migrants, the government also should meet transport fares and subsidize other resettlement costs.

The creation of growth centers and the establishment of agricultural resettlements, as well as the provision of low cost and efficient means of transportation, would make these newly-developed areas far more attractive to landless villagers. There would be a greater flow of people not only between growth centers and nearby villages, but also between urban concentrations and growth centers. Some movers, in fact, might decide to remain permanently in the growth centers and agricultural resettlement areas, which in turn would help relieve the population pressure in both urban centers and village communities. More importantly, the circular movement of people from village communities to these various growth centers would alleviate the problem of even more over-crowding in urban centers.

In terms of inter-island movements, at present the net flow is mainly from the Outer Islands to Java but implementation of the above policy should lead to a better balance in this ebb and flow of people. The creation of growth centers and resettlement areas throughout the Outer Islands would encourage more circular movements within them, rather than a heavy transmigration to Java and Bali, and eventually might attract more people to leave Java and Bali. For official migration programs to be successful, both resettlement projects and the encouragement of circular movements consequently must go hand in hand. Properly executed, development programs could ensure that people move to improve their socioeconomic position while the encouragement of circular forms of movement could relieve problems of both rural unemployment and urban over-crowding.

GLOSSARY OF JAVANESE OR INDONESIAN TERMS

abdi dalem	- male servant in the Sultan's Palace
ABRI	- <u>Angkatan Bersenjata Republik Indonesia</u> , Armed Forces of the Republic of Indonesia
andong	- pony cart with four wheels
ani-ani	- small blade-like cutter used for harvesting rice
are	- 0.01 hectare = 100 m ²
Assisten Wedana	- head of subdistrict; same as <u>Camat</u> , and <u>Penewu</u>
batik	- dyed material based upon the wax outlining of a pattern on white muslin
batik tulis	- hand-printed <u>batik</u>
bawon	- one's share in the rice harvest by way of payment for labor
becak	- pedicab, or tricycle that can carry two passengers
Bupati	- head of a Regency
Camat	- head of subdistrict; same as <u>Assisten Wedana</u> , and <u>Penewu</u>
Daerah Istimewa Yogyakarta	- Yogyakarta Special Region, equivalent to a Province throughout the rest of Indonesia
dokar	- pony cart with two wheels
dukuh	- hamlet, subvillage
gamelan	- percussion orchestra, which may consist of as many as fifty instruments in a very large ensemble at court
golongan	- group of kindred, or wider family circle
gotong royong	- reciprocal activities of mutual self-help

kabupaten	- Regency
kantor kelurahan	- village office
kartu penduduk	- identity card
kawedanan	- district
kecamatan	- subdistrict
kepala dukuh	- <u>dukuh</u> head
Keraton [Yogyakarta]	- Sultan's palace, in Yogyakarta City
ketoprak	- Javanese folk drama, depicting a particular theme based on either a legend or the biography of a hero
kolonisasi	- Government resettlement program during the Dutch period, aimed at lessening Java's population pressure by relocating Javanese in agricultural settlements in South Sumatra and other regions
lebaran	- Moslem festival that follows the month of fasting
LEKNAS	- National Institute of Economic and Social Research of Indonesia, Jakarta
merantau	- travel to another island to stay for a relatively long period, but eventually return back to the origin community
mondok	- to remain in a destination community for several months or years
musim paceklik	- season when staple food not available, as for example several weeks before rice harvest
nginep	- to stay in another place for several days before returning to the origin community
nglaju	- commuting; travel to and from a place within the same day
padi-gadu	- dry rice
padi-rendengan	- wet rice
pekarangan	- house compound

petuk	- Government land certificate that states the dimensions of the property
pindah	- permanent movement, as in migration
pekerjaan pokok	- primary occupation
Penewu	- head of a subdistrict; same as <u>Camat</u> , and <u>Assisten Wedana</u>
pusaka	- sacred artifact with magic power
REPELITA	- <u>Rencana Pembangunan Lima Tahun</u> : Five-year development plan for Indonesia, for example, REPELITA I, 1969/1970-1973/1974
Rupiah (Rp)	- Indonesian currency. In 1975, Rp: 415 - US\$ 1
ruwah	- in Java, the month before <u>pasa</u> (fasting month)
salak	- <u>Salacca edulis Reiuw</u> , a type of fruit
sawah	- rice field
selamatan	- ceremonial or religious ritual, for example, circumcision, marriage, funeral
surat bebas G-30S, PKI	- official letter of clearance certifying non-involvement in the abortive communist coup of September 30, 1965
surat pindah tempat	- official permit to migrate to another place, issued by subdistrict head
surat keterangan jalan	- special identification document to permit travel outside village issued by village head
SUSENAS	- <u>Survey Sosial Ekonomi Nasional</u> , National Socio-Economic Survey, an intercensal survey (1961-1971) carried out by the Central Bureau of Statistics, Jakarta
tanah yasan	- inherited land, legally owned by nominated descendant
tebasan	- system of contracting rice harvest to outsiders
tempe	- soybean cake

- transmigrasi - migration from Java to other islands of Indonesia
- transmigrasi Banpres - transmigration sponsored by President of the Republic of Indonesia
- warga kota - member of city society
- warung koperasi - cooperative stall selling such primary needs for daily life as rice, salt, kerosene, and sugar
- wayang orang - Javanese popular traditional drama depicting a theme based on stories Ramayana or Bharatayuda
- wedana - head of administrative district

APPENDIX I

TABLE AI.1

OBJECTIVES OF COMMUTING, BY MONTH, KADIROJO
19 May 1975-31 January 1976

Objectives	19-31 May 1975	June 1975	July 1975	August 1975	September 1975	October 1975	November 1975	December 1975	January 1976	Total
Wage-work	209 (43.0)	478 (51.7)	480 (58.3)	501 (61.2)	538 (56.9)	330 (39.0)	453 (47.4)	423 (44.9)	274 (38.5)	3,686 (49.8)
School	95 (21.8)	172 (18.6)	166 (20.2)	139 (17.0)	85 (9.0)	110 (13.0)	110 (11.5)	32 (3.4)	96 (13.5)	1,005 (13.6)
Trading	76 (17.5)	181 (19.6)	103 (12.5)	101 (12.3)	226 (23.9)	330 (39.0)	314 (32.9)	419 (44.4)	301 (42.3)	2,051 (27.7)
Visiting	5 (1.1)	22 (2.4)	15 (1.8)	22 (2.7)	34 (3.6)	10 (1.2)	20 (2.1)	9 (1.0)	9 (1.3)	146 (1.9)
Socio-cultural commitment	3 (0.7)	15 (1.6)	12 (1.5)	4 (0.4)	7 (0.1)	26 (3.1)	4 (0.4)	14 (1.5)	4 (0.6)	89 (1.2)
Business or official duties	47 (10.8)	53 (5.7)	43 (5.2)	49 (6.0)	55 (5.8)	37 (4.4)	48 (5.0)	45 (4.8)	27 (3.8)	404 (5.5)
Farming	- -	- -	2 (0.2)	- -	- -	- -	- -	- -	- -	2 (0.0)
Attend Meeting	- -	4 (0.4)	2 (0.2)	3 (0.4)	1 (0.1)	3 (0.4)	6 (0.6)	1 (0.1)	1 (0.1)	21 (0.3)
Lost from record	- -	1 (0.0)								
TOTAL	435 (100)	925 (100)	823 (100)	819 (100)	946 (100)	846 (100)	955 (100)	943 (100)	712 (100)	7,405 (100)

Source: Prospective Mobility Register

TABLE AI.2

OBJECTIVES OF COMMUTING, BY MONTH, PIRING
19 May 1975-31 January 1976

Objectives	19-31 May 1975	June 1975	July 1975	August 1975	September 1975	October 1975	November 1975	December 1975	January 1976	Total
Wage-work	225 (43.9)	356 (31.1)	426 (29.6)	454 (41.0)	364 (41.5)	383 (42.7)	331 (41.8)	361 (40.7)	448 (48.9)	3,348 (39.1)
School	150 (29.2)	353 (30.8)	457 (31.7)	285 (25.7)	203 (23.1)	229 (25.6)	193 (24.4)	215 (24.2)	208 (22.7)	2,293 (26.7)
Trading	49 (9.6)	188 (16.4)	221 (15.3)	175 (15.8)	191 (21.8)	141 (15.7)	121 (15.3)	142 (16.0)	99 (10.8)	1,327 (15.5)
Visiting	15 (2.9)	46 (4.0)	51 (3.5)	68 (6.1)	44 (5.0)	59 (6.6)	79 (10.0)	70 (7.9)	38 (4.1)	470 (5.5)
Socio-cultural commitment	11 (2.1)	103 (9.0)	179 (12.4)	61 (5.6)	20 (2.3)	10 (1.1)	11 (1.4)	18 (2.0)	23 (2.5)	436 (5.1)
Business or official duties	27 (5.3)	47 (4.1)	22 (1.5)	28 (2.5)	28 (3.2)	28 (3.1)	48 (6.1)	77 (8.7)	74 (8.1)	379 (4.4)
Farming	36 (7.0)	50 (4.4)	77 (5.3)	32 (2.9)	19 (2.2)	39 (4.4)	5 (0.6)	3 (0.3)	24 (2.6)	285 (3.3)
Attend meeting	- -	2 (0.2)	7 (0.5)	5 (0.5)	9 (1.0)	7 (0.8)	3 (0.4)	1 (0.1)	3 (0.3)	37 (0.4)
TOTAL	513 (100)	1,145 (100)	1,440 (100)	1,108 (100)	878 (100)	896 (100)	791 (100)	887 (100)	917 (100)	8,575 (100)

Source: Prospective Mobility Register

TABLE AI.3

PLACES OF DESTINATION AND OBJECTIVES OF COMMUTING, KADIROJO
19 May 1975-31 January 1976

Place of Destination	O B J E C T I V E O F C O M M U T I N G								Total
	Wage	School	Trading	Visiting	Socio-cultural commitment	Business of official duties	Farming	Attend Meeting	
<u>A R E A S</u>									
Within same village	489 (13.3)	465 (46.2)	58 (2.8)	10 (6.8)	35 (39.3)	2 (0.5)	-	10 (47.6)	1,069 (14.4)
Within same subdistrict	295 (8.0)	293 (29.1)	132 (6.4)	13 (8.9)	9 (10.1)	322 (79.7)	-	6 (28.6)	1,070 (14.5)
Within same region	2,164 (58.7)	201 (19.9)	1,757 (85.7)	52 (35.6)	31 (34.8)	37 (9.2)	2 (100)	2 (100)	4,246 (57.3)
Within Yogyakarta Special Region	308 (8.4)	47 (4.7)	104 (5.0)	57 (39.1)	9 (10.1)	43 (10.6)	-	-	568 (7.7)
Within Central Java	430 (11.7)	-	-	14 (9.6)	5 (5.6)	-	-	3 (14.3)	452 (6.1)
TOTAL	3,686 (100)	1,006 (100)	2,051 (100)	146 (100)	89 (100)	404 (100)	2 (100)	21 (100)	7,405 (100)
<u>T O W N S</u>									
Bantul	6 (0.4)	-	-	-	-	-	-	-	6 (0.3)
Medari	1,148 (18.5)	95 (66.9)	-	2 (3.4)	1 (10.0)	31 (41.9)	-	-	1,277 (71.0)

TABLE AI.3 (Continued) PLACES OF DESTINATION AND OBJECTIVES OF COMMUTING, KADIROJO
19 May 1975-31 January 1976

Place of Destination	O B J E C T I V E O F C O M M U T I N G								Total
	Wage work	School	Trading	Visiting	Socio-cultural commitment	Business or official duties	Farming	Attend Meeting	
Yogyakarta	247 (17.5)	47 (33.1)	104 (100)	56 (94.9)	9 (90,0)	43 (58,1)	-	-	506 (28.2)
Surakarta	7 (0.5)	-	-	-	-	-	-	1 (100)	8 (0.5)
Semarang	-	-	-	1 (1.7)	-	-	-	-	1 (0.0)
TOTAL	1,408 (100)	142 (100)	104 (100)	59 (100)	10 (100)	74 (100)	-	1 (100)	1,798 (100)

Source: Prospective Mobility Register

TABLE AI.4

PLACES OF DESTINATION AND OBJECTIVES OF COMMUTING, PIRING
19 May 1975-31 January 1976

Place of Destination	O B J E C T I V E O F C O M M U T I N G								Total
	Wage work	School	Trading	Visiting	Socio-cultural commitment	Business or official duties	Farming	Attend Meeting	
<u>A R E A S</u>									
Within same village	1,985 (59.3)	754 (32.9)	199 (15.0)	154 (32.8)	271 (62.2)	169 (44.6)	185 (64.9)	3 (8.1)	3,720 (43.4)
Within same subdistrict	491 (14.7)	27 (1.2)	118 (8.9)	151 (32.1)	82 (18.8)	99 (26.1)	63 (22.1)	30 (81.1)	1,061 (12.4)
Within same region	685 (20.4)	1,376 (60.0)	475 (35.8)	118 (25.1)	75 (17.2)	102 (26.9)	36 (12.6)	3 (8.1)	2,870 (33.5)
Within Yogyakarta Special Region	187 (5.6)	136 (5.9)	525 (39.6)	43 (9.1)	6 (1.4)	9 (2.4)	1 (0.4)	1 (2.7)	908 (10.6)
Within Central Java	-	-	10 (0.7)	4 (0.9)	2 (0.5)	-	-	-	16 (0.2)
TOTAL	3,348 (100)	2,293 (100)	1,327 (100)	470 (100)	436 (100)	379 (100)	285 (100)	37 (100)	8,575 (100)
<u>T O W N S</u>									
Bantul	333 (64.2)	1,117 (89.2)	253 (32.0)	30 (42.9)	6 (50.0)	92 (91.1)	-	-	1,831 (67.2)

TABLE AI.4 (Continued) PLACES OF DESTINATION AND OBJECTIVES OF COMMUTING, PIRING
19 May 1975-31 January 1976

Place of Destination	O B J E C T I V E O F C O M M U T I N G							Attend Meeting	Total
	Wage work	School	Trading	Visiting	Socio- cultural commit- ment	Business or offi- cial duties	Farming		
Muntilan	-	-	-	1	-	-	-	-	1
	-	-	-	(1.4)	-	-	-	-	(0.0)
Yogyakarta	186	136	517	39	6	9	-	1	894
	(35.8)	(10.8)	(67.1)	(55.7)	(50.0)	(8.9)	-	(100)	(32.8)
TOTAL	519	1,253	770	70	12	101	-	1	2,726
	(100)	(100)	(100)	(100)	(100)	(100)	-	(100)	(100)

Source: Prospective Mobility Register

TABLE AI.5

DISTANCE TRAVELED AND
MEANS OF TRANSPORT IN COMMUTING, KADIROJO
19 May 1975-31 January 1976

Distance (km)	Mode of Transport						Total
	Walking	Bicycle	Motor- cycle	Taxi	Mini-bus	Bus	
0.5 - < 2.5	2,232 (78.2)	682 (18.4)	16 (4.0)	- -	- -	1 (0.3)	2,931 (39.5)
2.5 - < 5	601 (21.1)	1,905 (51.6)	239 (60.0)	- -	- -	8 (2.3)	2,753 (37.1)
5 - < 11	20 (0.7)	792 (21.4)	6 (1.5)	3 (100)	15 (13.8)	12 (3.5)	848 (11.5)
11 - < 15	1 (0.0)	29 (0.8)	14 (3.5)	- -	- -	- -	44 (0.6)
15 - < 20	1 (0.0)	243 (6.6)	78 (19.5)	- -	92 (84.4)	293 (86.2)	707 (9.6)
20 - < 25	1 (0.0)	45 (1.2)	- -	- -	1 (0.9)	3 (0.9)	50 (0.7)
25 - < 30	- -	1 (0.0)	5 (1.2)	- -	- -	8 (2.4)	14 (0.2)
30 - < 45	- -	1 (0.0)	23 (5.8)	- -	- -	2 (0.6)	26 (0.4)
45 and over	- -	- -	18 (4.5)	- -	1 (0.9)	13 (3.8)	32 (0.4)
TOTAL	2,856 (100)	3,698 (100)	399 (100)	3 (100)	109 (100)	340 (100)	7,405 (100)

Source: Prospective Mobility Register

TABLE AI.6

DISTANCE TRAVELED AND
MEANS OF TRANSPORT IN COMMUTING, PIRING
19 May 1975-31 January 1976

Distance (km)	Mode of Transport					Total
	Walking	Bicycle	Motor- cycle	Mini-bus	Bus	
0.5 - < 2.5	1,654 (90.5)	2,275 (39.3)	10 (1.2)	- -	- -	3,939 (45.9)
2.5 - < 5	134 (7.4)	996 (17.2)	406 (48.7)	- -	1 (1.2)	1,537 (17.9)
5 - < 11	25 (1.4)	167 (2.9)	63 (7.6)	6 (15.4)	1 (1.2)	262 (3.1)
11 - < 15	15 (0.8)	1,451 (25)	286 (34.3)	19 (48.7)	1 (1.2)	1,772 (20.7)
15 - < 20	- -	106 (1.8)	- -	- -	- -	106 (1.2)
20 - < 25	- -	772 (13.3)	63 (7.6)	11 (28.2)	77 (96.4)	923 (10.8)
25 - < 30	- -	8 (0.1)	3 (0.4)	- -	- -	11 (0.1)
30 - < 45	- -	- -	1 (0.1)	- -	- -	1 (0.0)
45 and over	- -	19 (0.3)	2 (0.2)	3 (7.7)	- -	24 (0.3)
TOTAL	1,828 (100)	5,794 (100)	834 (100)	39 (100)	80 (100)	8,575 (100)

Source: Prospective Mobility Register

TABLE AI.7
 DESTINATION PLACES AND
 MODES OF TRANSPORT FOR COMMUTING, KADIROJO
 19 May 1975-31 January 1976

Place of Destination	M O D E S O F T R A N S P O R T						Total
	Walking	Bicycle	Motor- cycle	Taxi	Mini- bus	Bus	
<u>A R E A S</u>							
Within same village	541 (18.9)	516 (13.9)	11 (2.8)	- -	- -	1 (0.3)	1,069 (14.4)
Within same subdistrict	274 (9.6)	610 (16.5)	13 (3.3)	- -	- -	- -	897 (12.1)
Within same region	1,975 (69.2)	1,992 (53.9)	241 (60.4)	3 (100)	15 (13.8)	20 (5.8)	4,246 (57.4)
Within Yogyakarta Special Region	- -	52 (1.4)	127 (31.8)	- -	93 (85.3)	296 (87.1)	568 (7.7)
Within Central Java	66 (2.3)	528 (14.3)	7 (1.7)	- -	1 (0.9)	23 (6.8)	625 (8.4)
TOTAL	2,856 (100)	3,698 (100)	399 (100)	3 (100)	109 (100)	340 (100)	7,405 (100)
<u>T O W N S</u>							
Medari	196 (100)	879 (96.7)	192 (66.7)	- -	- -	- -	1,267 (71)
Bantul	- -	- -	6 (2.1)	- -	- -	- -	6 (0.3)
Yogyakarta	- -	29 (3.2)	89 (30.9)	- -	92 (100)	292 (97.7)	502 (28.1)
Surakarta	- -	1 (0.1)	1 (0.3)	- -	- -	6 (2.0)	8 (0.5)
Semarang	- -	- -	- -	- -	- -	1 (0.3)	1 (0.1)
TOTAL	196 (100)	909 (100)	288 (100)	- -	92 (100)	299 (100)	1,784 (100)

Source: Prospective Mobility Register

TABLE AI.8
DESTINATION PLACES AND
MODES OF TRANSPORT FOR COMMUTING, PIRING
19 May 1975-31 January 1976

Place of Destination	M O D E S O F T R A N S P O R T					Total
	Walking	Bicycle	Motor- cycle	Mini- bus	Bus	
<u>A R E A S</u>						
Within same village	1,605 (87.8)	2,110 (36.4)	5 (0.6)	- -	- -	3,720 (43.3)
Within same subdistrict	135 (7.4)	633 (10.9)	293 (35.1)	- -	- -	1,061 (12.4)
Within same region	88 (4.8)	2,288 (39.5)	466 (55.9)	25 (64.1)	3 (3.8)	2,870 (33.5)
Within Yogyakarta Special Region	- -	752 (13.0)	68 (8.2)	11 (28.2)	77 (96.2)	908 (10.6)
Within Central Java	- -	11 (0.2)	2 (0.2)	3 (7.7)	- -	16 (0.2)
TOTAL	1,828 (100)	5,794 (100)	834 (100)	39 (100)	80 (100)	8,575 (100)
<u>T O W N S</u>						
Bantul	15 (100)	1,511 (67.1)	285 (81)	19 (63.3)	1 (1.3)	1,831 (67.2)
Muntilan	- -	- -	1 (0.3)	- -	- -	1 (0.0)
Yogyakarta	- -	741 (32.9)	66 (18.7)	11 (36.7)	77 (98.7)	895 (32.8)
TOTAL	15 (100)	2,252 (100)	352 (100)	30 (100)	78 (100)	2,727 (100)

Source: Prospective Mobility Register

TABLE AI.9
 OBJECTIVES AND DESTINATION PLACES OF CIRCULATION
 KADIROJO
 19 May 1975-31 January 1976

Place of Destination	O B J E C T I V E O F T R A V E L						Total
	Visiting	School	Wage- work	Socio- cultural commit- ment	Business	Trading	
<u>A R E A S</u>							
Within same village	28 (9.2)	5 (6.2)	1 (0.4)	19 (24.7)	-	7 (5.9)	60 (7.1)
Within same subdistrict	28 (9.2)	18 (22.5)	11 (4.3)	4 (5.2)	8 (80)	5 (4.3)	74 (8.7)
Within same region	190 (62.3)	10 (12.5)	61 (23.7)	40 (52.0)	1 (10)	23 (19.7)	325 (38.4)
Within Yogyakarta Special Region	31 (10.2)	42 (52.5)	164 (63.8)	4 (5.2)	-	80 (68.4)	321 (38)
Within Central Java	25 (8.2)	4 (5)	14 (5.5)	9 (11.7)	1 (10)	2 (1.7)	5 (6.5)
Within West Java	1 (0.3)	1 (1.3)	4 (1.6)	1 (1.3)	-	-	7 (0.8)
Within East Java	1 (0.3)	-	1 (0.4)	-	-	-	2 (0.2)
Other islands	1 (0.3)	-	1 (0.4)	-	-	-	2 (0.2)
Lost from record	-	-	-	-	-	-	1 (0.1)
TOTAL	305 (100)	80 (100)	257 (100)	77 (100)	10 (100)	117 (100)	847 (100)
<u>T O W N S</u>							
Medari	11 (25.6)	2 (4.6)	35 (17.5)	1 (20)	-	-	49 (13)
Yogyakarta	30 (69.8)	42 (95.4)	160 (80)	4 (80)	-	80 (100)	316 (85)
Surabaya	1 (2.3)	0 (0.0)	1 (0.5)	-	-	-	2 (0.5)

TABLE AI.9 (Continued) OBJECTIVES AND DESTINATION PLACES OF CIRCULATION,
KADIROJO, 19 May 1975-31 January 1976

Place of Destination	OBJECTIVE OF TRAVEL						Total
	Visiting	School	Wage	Socio- cultural commit- ment	Business	Trading	
Jakarta	1 (2.3)	0 (0.0)	4 (2.0)	- -	- -	- -	5 (1.3)
TOTAL	43 (100)	44 (100)	200 (100)	5 (100)	- -	80 (100)	372 (100)

Source: Prospective Mobility Register

TABLE AI.10
OBJECTIVES AND DESTINATION PLACES OF CIRCULATION
PIRING
19 May 1975-31 January 1976

Place of Destination	O B J E C T I V E O F T R A V E L					Total
	Visiting	School	Wage- work	Socio- cultural commit- ment	Business	
<u>A R E A S</u>						
Within same village	74 (36.5)	-	1 (0.7)	12 (50)	-	87 (16.6)
Within same district	41 (20.2)	-	3 (2.2)	1 (4.2)	-	45 (8.6)
Within same region	63 (31.0)	39 (24.5)	48 (35.6)	5 (20.8)	-	155 (89.6)
Within Yogyakarta Special Region	9 (4.4)	118 (74.2)	75 (55.6)	1 (4.2)	2 (100)	205 (39.2)
Within Central Java	7 (3.5)	2 (1.3)	1 (0.7)	2 (8.3)	0	12 (2.3)
Within West Java	5 (2.5)	-	3 (2.2)	1 (4.2)	-	9 (1.7)
Within East Java	2 (1.0)	-	-	2 (8.3)	-	4 (0.8)
Other islands	2 (1.0)	-	4 (3.0)	-	-	6 (1.2)
TOTAL	203 (100)	159 (100)	135 (100)	24 (100)	2 (100)	523 (100)
<u>T O W N S</u>						
Bantul	-	38 (24.1)	3 (3.7)	-	2 (100)	43 (16.8)
Yogyakarta	6 (46.1)	118 (74.7)	75 (92.6)	1 (50)	-	200 (78.1)
Magelang	-	-	-	1 (50)	-	1 (0.4)

TABLE AI.10 (Continued) OBJECTIVES AND DESTINATION PLACES OF CIRCULATION,
 PIRING 19 May 1975-31 January 1976

Place of Destination	O B J E C T I V E O F T R A V E L					Total
	Visiting	School	Wage- work	Socio- cultural commit- ment	Business	
Surakarta	2 (15.4)	2 (1.2)	- -	- -	- -	4 (1.6)
Jakarta	5 (38.5)	- -	3 (3.7)	- -	- -	8 (3.1)
TOTAL	13 (100)	158 (100)	81 (100)	2 (100)	2 (100)	256 (100)

Source: Prospective Mobility Register

TABLE AI.11
 OBJECTIVES AND DISTANCE OF CIRCULATION,
 KADIROJO
 19 May 1975-31 January 1976

Distance (km)	O B J E C T I V E O F T R A V E L						Total
	Visiting School	Wage- work	Socio- cultural commit- ment	Business	Trading		
0.5 - <2.5	113 (37.0)	8 (10.0)	10 (3.9)	26 (33.8)	-	6 (5.1)	163 (19.3)
2.5 - <5	47 (15.4)	17 (21.2)	45 (17.5)	15 (19.5)	8 (80.0)	.6 (5.1)	138 (16.3)
5 - <11	58 (19)	8 (10)	20 (7.8)	18 (23.3)	-	19 (16.2)	123 (14.5)
11 - <15	7 (2.3)	-	-	1 (1.3)	-	4 (3.4)	12 (1.4)
15 - <20	47 (15.4)	42 (52.5)	166 (64.6)	8 (10.4)	-	80 (68.4)	343 (40.5)
20 - <25	3 (1.0)	-	-	-	-	1 (0.9)	4 (0.5)
25 - <30	2 (0.7)	-	-	-	-	-	2 (0.2)
30 - <45	2 (0.7)	-	1 (0.4)	5 (6.5)	-	-	8 (1.0)
45 and over	26 (8.5)	5 (6.3)	15 (5.8)	4 (5.2)	2 (20.0)	1 (0.9)	53 (6.3)
TOTAL	305 (100)	80 (100)	257 (100)	77 (100)	10 (100)	117 (100)	846 (100)

Source: Prospective Mobility Register

TABLE AI.12
OBJECTIVES AND DISTANCE OF CIRCULATION
PIRING
19 May 1975-31 January 1976

Distance (km)	O B J E C T I V E O F T R A V E L					Total
	Visiting	School	Wage- work	Socio- cultural commit- ment	Business	
0.5 - <2.5	101 (49.8)	- -	1 (0.7)	12 (50.0)	- -	114 (21.8)
2.5 - <5	60 (29.6)	- -	17 (12.6)	6 (25.0)	- -	83 (15.9)
5 - <11	15 (7.4)	- -	31 (23.0)	- -	- -	46 (8.8)
11 - <15	1 (0.5)	38 (23.9)	3 (2.2)	- -	2 (100)	44 (8.4)
15 - <20	- -	- -	- -	- -	- -	- -
20 - <25	5 (2.5)	110 (69.2)	75 (55.6)	1 (4.2)	- -	191 (36.5)
25 - <30	- -	9 (5.7)	- -	- -	- -	9 (1.7)
30 - <45	- -	- -	- -	- -	- -	- -
45 and over	21 (10.3)	2 (1.3)	8 (5.9)	5 (20.8)	- -	36 (6.9)
TOTAL	203 (100)	159 (100)	135 (100)	24 (100)	2 (100)	523 (100)

Source: Prospective Mobility Register

TABLE AI.13

DESTINATION PLACES AND
 MODES OF TRANSPORT FOR CIRCULATION, KADIROJO
 19 May 1975-31 January 1976

Place of Destination	M O D E S O F T R A N S P O R T								Total
	On foot	Bike	Dokar	Motor-cycle	Mini-bus	Bus	Train	Other	
<u>A R E A S</u>									
Within same village	36 (21.2)	13 (4.7)	-	11 (16.7)	-	-	-	-	60 (7.1)
Within same subdistrict	19 (11.2)	46 (16.5)	-	6 (9.1)	1 (1.0)	2 (0.9)	-	-	74 (8.8)
Within same region	111 (65.3)	170 (61.2)	2 (100)	5 (7.6)	16 (15.2)	21 (9.5)	-	-	325 (38.4)
Within Yogyakarta Special Region	-	37 (13.3)	-	42 (63.6)	84 (80.0)	158 (71.5)	-	-	321 (37.9)
Within Central Java	4 (2.3)	12 (4.3)	-	2 (3.0)	4 (3.8)	3 (14.9)	-	-	55 (6.5)
Within West Java	-	-	-	-	-	5 (2.3)	2 (66.7)	-	7 (0.8)
Within East Java	-	-	-	-	-	1 (0.5)	1 (33.3)	-	2 (0.2)
Other island	-	-	-	-	-	1 (0.5)	-	1 (100)	2 (0.2)
TOTAL	170 (100)	278 (100)	2 (100)	66 (100)	105 (100)	221 (100)	3 (100)	1 (100)	846 (100)

TABLE AI.13(Continued) DESTINATION PLACES AND MODES OF TRANSPORT FOR CIRCULATION, KADIROJO
19 May 1975-31 January 1976

Place of Destination	M O D E S O F T R A N S P O R T								Total
	On foot	Bike	Dokar	Motor- cycle	Mini- bus	Bus	Train	Other	
<u>T O W N S</u>									
Medari	4 (100)	4 (54.3)	-	-	-	1 (0.6)	-	-	49 (13.2)
Yogyakarta	-	37 (45.7)	-	39 (100)	84 (100)	156 (96.9)	-	-	316 (85.0)
Surabaya	-	-	-	-	-	1 (0.6)	1 (33.3)	-	2 (0.5)
Jakarta	-	-	-	-	-	3 (1.9)	2 (66.7)	-	5 (1.3)

TOTAL	4 (100)	81 (100)	-	39 (100)	84 (100)	161 (100)	3 (100)	-	372 (100)

Source: Prospective Mobility Register

TABLE AI.14

DESTINATION PLACES AND MODES OF TRANSPORT FOR CIRCULATION
PIRING
19 May 1975-31 January 1976

Place of Destination	M O D E S O F T R A N S P O R T						Total
	On foot	Bike	Motor- cycle	Mini- bus	Bus	Train	
<u>A R E A S</u>							
Within same village	23 (69.7)	64 (17.8)	-	-	-	-	87 (16.6)
Within same district	10 (30.3)	33 (9.2)	2 (2.1)	-	-	-	45 (8.6)
Within same region	-	150 (41.7)	5 (5.3)	2 (50)	-	-	157 (30.0)
Within Yogyakarta Special Region	-	112 (31.1)	83 (87.3)	2 (50)	6 (28.5)	-	203 (38.8)
Within Central Java	-	1 (0.3)	3 (3.1)	-	4 (19.1)	4 (40)	12 (2.3)
Within West Java	-	-	-	-	5 (14.3)	-	3 (0.6)
Within East Java	-	-	1 (1.1)	-	3 (14.3)	-	4 (0.8)
Other island	-	-	1 (1.1)	-	5 (23.8)	6 (60)	12 (2.3)
TOTAL	33 (100)	360 (100)	95 (100)	4 (100)	21 (100)	10 (100)	523 (100)
<u>T O W N S</u>							
Bantul	-	39 (26.0)	3 (3.4)	1 (33.3)	-	-	43 (16.8)
Yogyakarta	-	111 (74)	83 (93.2)	2 (66.7)	4 (50)	-	200 (78.1)
Magelang	-	-	1 (1.1)	-	-	-	1 (0.4)
Surakarta	-	-	2 (2.3)	-	2 (25)	-	4 (1.6)
Jakarta	-	-	-	-	2 (25)	6 (100)	8 (3.1)
TOTAL	-	150 (100)	89 (100)	3 (100)	8 (100)	6 (100)	256 (100)

Source: Prospective Mobility Register

APPENDIX II

INDEX OF THE ECONOMIC WELFARE OF A HOUSEHOLD

The index of the economic welfare of a dukuh household is constructed by cumulating index scores for housing, property, cattle, and land owned. Each index score is obtained by adding the scores for individual items. The various scores for those items follow.

<u>Housing Index</u>	<u>Score</u>
1. Housing arrangement	
a. Good	3
b. Moderate	2
c. Poor	1
2. Number of houses owned	
One	1
Two...etc.	2
3. Outside walls of the house	
a. Brick	5
b. Half bamboo and half brick	4
c. Wood	3
d. Bamboo	2
e. Coconut or <u>salak</u> leaves	1
4. Floor of the house	
a. Floor tiles	5
b. Cement	4
c. Brick	3
d. Soil	2

	<u>Score</u>
5. Roof of the house	
a. Tiles	4
b. Zinc	3
c. Straw	2
d. Coconut or <u>salak</u> leaves	1
6. Lighting	
a. Pumped-gas lamp	4
b. Kerosene lamp	3
c. Traditional lamp	2

Property Index

1. Radio	1
2. Pumped-gas lamp	2
3. Living room tables and chairs	3
4. Cupboard	4
5. Sideboard	5
6. Loud-speaker	6
7. Bicycle	7
8. Sewing machine	8
9. Cart (<u>Keseran</u>)	9
10. Ox-cart	10
11. Pony-cart (<u>Dokar</u>)	11
12. Television	12
13. Motor bicycle	13

Cattle index

1. Sheep	1
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	<u>Score</u>
2. Horse	2
3. Cow/Buffalo	3
<u>Land ownership index</u>	
Land area (100 m ²)	
Less than 2	1
2- 3	2
4- 5	3
6- 7	4
8- 9	5
10- 24	6
25- 49	7
50- 74	8
75- 99	9
100-149	10
150-199	11
200-299	12
300-399	13
400-499	14
500-599	15
600-699	16
700 and more	17

APPENDIX III

HOUSEHOLD CENSUS (de jure)

STAGE: 1

Respondent: Head of Household

Confidential

No.	Name	Relation to head of Household	Male/ Female	Age Years	Docu- ment	Place of birth: <u>Dukuh/Out- side dukuh</u>	Marital Status	Reli- gion	Occupation Primary	Second- ary	Education Type of School	Length of Education (years)	Present or not during the census taking
1	2	3	4	5	6	7	8	9	10	11	12	13	14

No. Questionnaire	Household Number	Date of Interview	Length of Interview (minutes)	Checked	Edited	Coded	Interviewer
1	2	3	4	5	6	7	8

MEMBERS OF HOUSEHOLD WHO ARE NOT PRESENT DURING THE CENSUS

No	Name	Present place of staying	Distance from the <u>dukuh</u>	Date of leaving	Plan of return home	Reasons of traveling
1	2	3	4	5	6	7

VISITOR(S) WHO STAY TEMPORARILY IN THIS HOUSEHOLD (de facto)

No	Name	Relation to head of House- hold	Sex: Male/ Female	Age		Home address	Date of arrival	Date of leaving	Reasons of visiting
				Year	Document				
1	2	3	4	5	6	7	8	9	10

THE MEMBER OF THE HOUSEHOLD CHANGE DURING THE SURVEY PERIOD
(APRIL 24, 1975-DECEMBER 29, 1975)

No.	Name	Code	Event		Explanations
			Day	Date	
1	2	3	4	5	6

COMMENTS:

PROSPECTIVE MOBILITY REGISTER (OUT MOVEMENT)

STAGE: 2

Confidential

Questionnaire Number _____

Dukuh Number _____

Card Number _____

Date _____

Respondent:

Interviewer _____

- Potential Migrants (15-54)
- Head of Household

Number of movement	Place of Origin	Place of Destination	Distances in kilometers	Date of leaving	Date of return	Period of absence years/months/days/hours	Means of transportation	Reasons for travel	Number of accompanying persons
1	2	3	4	5	6	7	8	9	10

Name _____ Place of birth _____ Marital Status _____ Occupation: _____

Age _____ Sex _____ Length of staying in _____ Type of education _____ Primary _____

Relationship to head of household _____ the dukuh _____ Length of education _____ Secondary _____

Religion _____

VISITORS (IN MOVEMENT)

Confidential

Questionnaire Number _____

Dukuh Number _____

Card Number _____

Date _____

Interviewer _____

No. of guests	Name	Relation to head of household	Age (yrs)	Sex	Place of origin	Distance from the dukuh (km)	Date of arrival		Period of stay	No. of accompanying persons	Means of transportation	Reason of visit
1	2	3	4	5	6	7	8	9	10	11	12	13

HOUSEHOLD ECONOMIC SURVEY

STAGE: 3

Respondent: Head of Household

Confidential

- 1 Card Number _____ Dukuh Number _____
Household Number _____
- 2 Name _____ Individual Number _____
- 3 Housing orderliness:
Good _____ Moderate _____ Poor _____
- 4 Number of houses owned _____
- 5 Location of the houses:
In the dukuh _____, number of houses _____
Outside the dukuh _____, number of houses _____
- 6 Status of the house where respondent lives:
Own _____ Lease _____ Living without lease _____
- 7 Building owned by respondent:
Inherited _____ Built _____ Bought _____
- 8 Outside walls of the house are made of _____
- 9 Floor of the house _____
- 10 Roof of the house _____
- 11 Lighting _____
- 12 Age of the house _____ years
- 13 Number of families living in the same house _____
- 14 Properties (quantity):
Radio _____ Pumped gas lamp _____ Living room table
and chairs _____

- Cupboard _____ Sideboard _____ Sewing machine _____
- Keseran (cart) _____ Ox-cart _____ T.V. _____
- Dokar (horse drawn carriage) _____ Motorbike _____
- 15 Cattle (quantity):
- Sheep _____ Horse _____ Cow/Buffalo _____
- 16 Land ownership (in are¹):
- Irrigation rice fields _____ House yard _____
- 17 Rice field operated in the previous wet season (in are):
- Own _____ Lease _____ Bengkok² _____ Pengarem-arem³ _____
- 18 Rice field operated in the previous dry season (in are):
- Own _____ Lease _____ Bengkok _____ Pengarem-arem _____
- 19 The rice field production in the previous wet season (in kilogram):
- Wet rice _____ Dry rice _____
- Dry crops (specify) _____, _____
- _____ , _____
- _____ , _____
- 20 The rice field production in the previous dry season (in kilogram):
- Wet rice _____ Dry rice _____
- Dry crops (specify) _____, _____
- _____ , _____
- _____ , _____

¹Are is a metric unit of area equal to 100 square meters.

²Bengkok is government land which members of the village administration are permitted to use during their term of office.

³Pengarem-arem is government land which retired members of the village administration are permitted to use.

- 21 Who owns the house yard (of the house where you stay now)? _____
- 22 Do you eat rice the whole year?
Yes _____ No _____
- 23 How many meals (rice) do you have each day before the harvest season?
_____ time(s)
- 24 Sorts of dishes you usually have every day:
Morning _____ Afternoon _____
Evening _____
- 25 On the average, how many times in a week does the family eat meat or
fish? _____ times/week
- 26 Do you have additional jobs besides farming?
Yes, specify _____ No _____

- 27 Whether your income, sufficient or not for living one whole year
Sufficient _____ Not sufficient _____

Interviewer _____ Checked _____

Date of interview _____ Edited _____

Length of interview _____ Coded _____

COMMENTS:

MARRIAGE AND CHILDREN SURVEY

STAGE: 4

Confidential

Respondent: Ever-married Women

- 1 Card Number _____ Dukuh Number _____
Household Number _____
- 2 Name _____ Individual Number _____
- 3 Age _____ years
- 4 Marital Status _____
- 5 First marriage _____ Second marriage _____ Third marriage _____
Fourth marriage _____
- 6 Who chose spouse (for the first marriage)? _____
- 7 Place of residence before marriage:
Dukuh (hamlet) _____ Kelurahan (village) _____
Kecamatan (subdistrict) _____ Kabupaten (regency) _____
- 8 Living companions before marriage:
Name _____ Family relationship _____
- 9 Place of residence of husband before marriage:
Dukuh _____ Kelurahan _____
Kecamatan _____ Kabupaten _____
- 10 Living companions of husband before marriage:
Name _____ Family relationship _____
- 11 Distance between husband's and wife's residence before marriage (for
the first marriage): _____ kilometers
- 12 Place of wedding ceremony: Dukuh _____

Kelurahan _____ Kecamatan _____ Kabupaten _____

13 After the wedding ceremony, did you live with your husband?

Yes _____ No _____

IF YES

14 Did you and your husband stay with other members of the family or did you stay in your own house?

With other members of the family _____

In own house _____

FOR PEOPLE WHO LIVED WITH MEMBERS OF THE FAMILY AFTER MARRIAGE

15 Name of the head of household _____

16 Relation to the head of household _____

17 Living arrangement _____

18 Reasons for staying there _____

19 Location:

Dukuh _____ Kelurahan _____

Kecamatan _____ Kabupaten _____

20 Length of stay _____ years

FOR PEOPLE WHO LIVED IN THEIR OWN HOUSE AFTER MARRIAGE

21 Status of house:

Own property _____ Inheritance _____ Government house _____

22 Location of the place:

Dukuh _____ Kelurahan _____

Kecamatan _____ Kabupaten _____

IF NO

23 Reason for not staying together _____

24 How long were you separated from your husband? _____ years

25 Where did you stay during that time?

Dukuh _____ Kelurahan _____

Kecamatan _____ Kabupaten _____

26 With whom did you stay there? _____

27 Your relationship to the head of the household: _____

28 Where did your husband stay?

Dukuh _____ Kelurahan _____

Kecamatan _____ Kabupaten _____

29 Relation of your husband and the head of the household _____

30 Where did you spend most of your time after marriage (first marriage)?

Dukuh _____ Kelurahan _____

Kecamatan _____ Kabupaten _____

31 Ever given birth to a baby or babies?

Yes _____ No _____

IF YES

32 Number of live births _____

Number of still births _____

Number of live births but are dead now _____

Number of the living _____

PLEASE FILL IN THE FOLLOWING TABLE (FOR LIVE BIRTH CHILDREN ONLY)

No.	Name	Male/ Female	Age ^a	Still alive	Dead	Present place of residence ^b
1	2	3	4	5	6	7

^aFor the dead children, please mention the age when they died.

^bLeave it blank for the dead children.

Interviewer: _____ Checked _____
Date of interview _____ Edited _____
Length of interview _____ Coded _____

COMMENTS:

SUPPLEMENTARY CARD FOR
CHILDREN EVER BORN

1 Card Number _____ Dukuh Number _____
Household Number _____ Individual Number of the mother _____

FOR THE LIVE BIRTH CHILDREN

2 Name _____
3 Sex: Male _____ Female _____
4 Age _____ years (Date of birth _____)
5 Place of birth:
Within the dukuh _____ Outside the dukuh _____
6 Birth order _____
7 From first _____, second _____, third _____, fourth _____ marriage.
8 Are all of the children still living?
Yes _____ No _____

FOR CHILDREN WHO ARE STILL LIVING

9 Educational status (e.g., in school, drop-out, graduate, never been to school, pre-school age) _____
10 Type of school _____
11 Length of education _____
12 Marital Status _____
13 Occupation _____
14 Present residence:
Dukuh _____ Kelurahan _____
Kecamatan _____ Kabupaten _____
15 Length of time at present residence _____ years (Since _____)

- 16 Main reason for staying there _____
- 17 Frequency of returning home during the last year _____ times
- 18 Has he/she ever stayed in other places?
Yes _____ No _____
- 19 If yes, how many places?
_____ places

FOR THE DECEASED CHILDREN

- 20 When did he/she die? 19____
- 21 Age when he/she died: _____ years

COMMENTS:

RETROSPECTIVE HISTORY OF MOVEMENT

STAGE: 5

Confidential

Respondent

- Potential migrants (15-54)
- Head of Households

- 1 Card Number _____ Dukuh Number _____
 Household Number _____
- 2 Name _____ Individual Number _____
- 3 Age _____ years

MOVEMENT HISTORY

- 4 How long have you stayed in the dukuh? _____ years
- 5 The last residence before moving to the dukuh:
- | | |
|------------------------|---|
| <u>Village</u> _____ | <u>Town</u> _____ |
| <u>Dukuh</u> _____ | Name of the town _____ |
| <u>Kelurahan</u> _____ | Distance from the <u>dukuh</u> _____ (km) |
| <u>Kecamatan</u> _____ | |
| <u>Kabupaten</u> _____ | |
- Distance from the dukuh _____ (km)
- 6 Reasons of moving to this dukuh: _____
 (For persons who lived in other areas before living in this dukuh)
- 7 Number of previous places of residence including the present
dukuh _____
- 8 Number of movements of one month or longer in the past three years:
 _____ times

PLEASE FILL IN THE FOLLOWING TABLE

No.	Place	Distance (km)	Rural/ Urban	Length of stay		Reasons of movement
				From	Until	
1	2	3	4	5	6	7

9 The farthest place ever visited:

Name _____

Location:

Dukuh _____ Kelurahan _____

Kecamatan _____ Kabupaten _____

10 Distance from the dukuh _____ kilometers

11 Reasons of visit _____

12 The frequency of visiting towns mentioned below in the last year:

Yogyakarta _____ Surakarta _____

Bantul _____ Surabaya _____

Magelang _____ Semarang _____

Wates _____ Bandung _____

Wonosari _____ Jakarta _____

ECONOMIC CONDITIONS

13 What is your opinion concerning the recent economic conditions in the dukuh compared to that of five years ago?

Better _____, reasons _____

The same _____, reasons _____

Worse _____, reasons _____

- 14 What is your opinion concerning your recent economic condition as compared to that of five years ago?

Better _____, reasons _____

The same _____, reasons _____

Worse _____, reasons _____

- 15 Do you think that there are opportunities to increase income in the dukuh?

Yes _____, reasons _____

No _____, reasons _____

ATTITUDES AND ASPIRATIONS

- 16 Do you quite agree, agree or not agree with the statements below:

- A. Anak yang baik harus hidup berdekatan dengan orang tua walaupun di Kabupaten lain ada kesempatan kerja yang lebih baik (A good child is one who remains/lives near his/her parents although there are better job opportunities in other Kabupaten.)

Quite agree _____, reasons _____

Agree _____, reasons _____

Do not agree _____, reasons _____

- B. Abot cukil ditimbang hasil (Preference to working the inherited land--due to greater returns as well as prestige of ownership--to leaving the land for other jobs.)

Quite agree _____, reasons _____

Agree _____, reasons _____

Do not agree _____, reasons _____

- C. Mangan ora mangan watch ngumpul (As long as we are together, it does not matter whether we eat or not)

Quite agree _____, reasons _____

Agree _____, reasons _____

Do not agree _____, reasons _____

- 17 What are the advantages and disadvantages of life in the dukuh community?

Advantages: _____

Disadvantages: _____

- 18 Given the poor economic condition, do you want to migrate to other areas?

Yes _____, reasons _____

No _____, reasons _____

- 19 Who decides if a member of the family wants to move?

Father _____, reasons _____

Mother _____, reasons _____

The individual concerned _____, reasons _____

The individual proposes, but parents decide _____, reasons _____

INFORMATION

- 20 Do you read newspapers?

Every day _____ Several times a week _____ Rarely _____

Never _____

- 21 Do you read magazines?

Every day _____ Several times a week _____ Rarely _____

Never _____

- 22 Do you listen to news programs on the radio?

Every day _____ Several times a week _____ Rarely _____

Never _____

23 Has any information on transmigration ever been given in this dukuh?

Yes _____ Never _____

24 If yes, how many meetings did you attend? _____

25 Number of families, parents, relatives, and siblings who stay in other regencies in Java and outside Java.

None _____ persons (PLEASE FILL IN THE FOLLOWING TABLE)

No.	Name	Age (yrs)	Sex: Male/ Female	Relation to res- pondent	Place of residence	Since (yrs)	Length of staying there	Reason to stay
1	2	3	4	5	6	7	8	9

26 Number of those that you have contacted: _____

PLEASE FILL IN THE FOLLOWING TABLE

No.	Name	Contact through				
		letters	he/she visited me	I visited him/her	souvenir	others (specify)
1	2	3	4	5	6	7

27 Do you wish to move to another place?

Yes _____, reasons _____

No _____, reasons _____

28 If yes, which place do you want to move and why?

Name of the place _____

Reasons _____

29 Do you think that it is hard to get a job in Yogyakarta city?

Yes _____, reasons _____

No _____, reasons _____

30 Do you think that it is hard to get a job in other regencies?

Yes _____, reasons _____

No _____, reasons _____

31 Are you happy if your children live in other regencies?

Yes _____, reasons _____

No _____, reasons _____

FOR FARMER OR FARM LABORER

32 Why don't you work in Yogyakarta to add to income from the agricultural sector? Reasons _____

33 Why don't you move to other areas to increase income?

Reasons _____

FOR PEOPLE WHO HAVE EVER BEEN IN OTHER AREAS

34 Reasons for returning to the dukuh. Reasons _____

Interviewer _____ Checked _____

Date of interview _____ Edited _____

Length of interview _____ Coded _____

YOGYAKARTA SURVEY

STAGE: 6

Confidential

Respondent

-Dukuh people who now stay in Yogyakarta

- 1 Card Number _____ 2 Number of questionnaire _____
- 3 Name _____ 4 Sex: Male _____ Female _____
- 5 Religion _____ 6 Dukuh origin _____
- 7 Type of school _____ 8 Length of education _____ years
- 8 Occupation:
- Primary _____ Secondary _____
- 9 Marital status: _____

FOR EVER-MARRIED PERSON

- 10 Place of residence before marriage
- Dukuh _____ Kelurahan _____
- Kecamatan _____ Kabupaten _____
- 11 Husband's/Wife's place of origin
- Dukuh _____ Kelurahan _____
- Kecamatan _____ Kabupaten _____
- 12 Distance between husband's and wife's residence before marriage
- _____ kilometers
- 13 Relation between husband and wife before marriage: _____
- 14 Children ever born
- Number of live births _____ Number of live births but are dead
now _____
- Number of living _____

15 Children who are living

Male _____ Female _____

16 Current place of residence of the living children

PLEASE FILL IN THE FOLLOWING TABLE

No.	Name	Sex: Male/ Female	Age (yrs)	Educa- tion	Occupa- tion	Current place of residence	Since	Reason for living there
1	2	3	4	5	6	7	8	9

17 Closest relatives who still live in the dukuh

Name _____

Household and individual number _____

Relation to respondent _____

MOVEMENT HISTORY

18 Do you stay in Yogyakarta permanently or temporarily? _____

19 Year of arrival in Yogyakarta: 19____

20 Who helped you on your first day of arrival?

Name _____ Relation to that person _____

21 Reasons for leaving the place of origin _____

22 Reasons for selecting this area as a place of residence _____

INFORMATION

23 Were there any relatives in this place before you came?

Yes _____ No _____

IF YES, PLEASE FILL IN THE FOLLOWING TABLE

No.	Name	Age (yrs)	Sex: Male/ Female	Relation to respondent	Staying in this area since	Reason for staying here
1	2	3	4	5	6	7

24 Name of a person who told you about this place _____

25 What did he/she tell you about the place? _____

26 Did you find out that what he/she said was true?

Yes _____ No _____

27 How many times did you visit this place before deciding to live
here? _____ time(s)

28 Number of returning back since last year. _____ time(s)

29 Do you usually go back home during:

Planting time Yes _____ No _____

Harvest season Yes _____ No _____

Social, cultural
commitment Yes _____ No _____

Funeral Yes _____ No _____

Ruwah¹ Yes _____ No _____

Lebaran² Yes _____ No _____

New Year Yes _____ No _____

Others (specify)

_____ Yes _____ No _____

_____ Yes _____ No _____

¹Ruwah is the Moslem lunar month, one month preceding Ramadhan (Pasa).

²Lebaran is the Moslem's festival after the fasting month.

- 30 Frequency of sending letters to your parents/relatives back home during last year. _____ times
- 31 Frequency of sending money home during last year. _____ times
- 32 Do you intend to go back home to live in the old age?
 Yes _____, reasons _____
 No _____, reasons _____

ECONOMIC STATUS

- 33 Status of the house where respondent lives: _____
- 34 If you own this building, how did you get it?
 Inherited _____ Built _____ Bought _____
 Others (specify) _____
- 35 If leasing, how much is the monthly rent? Rp: _____._____/month
- 36 Condition of the house where respondent lives:
 Outside walls of the house made of _____
 Floor of the house: _____
 Roof of the house _____
 Lighting _____
- 37 Number of families living in the same house _____
- 38 Properties (quantity):
 Radio/tape recorder _____ Refrigerator _____
 Pumped gas lamp _____ Piano _____
 Living room table and chairs _____ Car _____
 Cupboard _____
 Bike _____
 T.V. _____
 Motorbike _____

- 39 Your activities a year before coming to this place: _____
- 40 Did you have a permanent job a year before coming to this place?
 Yes _____, specify _____
 No _____
- 41 What is your current occupation? _____
- 42 How much is your salary per month in Rupiah? Rp: _____._____/month
- 43 Earning per year is sufficient or not?
 Yes _____ No _____
- 44 Present economic situation compared to that in the place of origin:
 Better _____, reasons _____
 The same _____, reasons _____
 Worse _____, reasons _____
- 45 Whether the present life is expected?
 Yes _____ No _____
- 46 Did you plan to live in other places before settling down in
 Yogyakarta?
 Yes _____, where _____
 No _____
- 47 If you get the same income and face the same problems as in the
dukuh, which place would you choose to live?
 Yogyakarta city _____, reasons _____
 In the dukuh _____, reasons _____

Interviewer _____ Checked _____

Date of Interview _____ Edited _____

Length of Interview _____ Coded _____

COMMENTS:

REFERENCES

- Abu-Lughod, Janet. 1961. Migrant Adjustment to City Life: The Egyptian Case. American Journal of Sociology 67: 22-32.
- Angkatan Bersenjata. 19 July 1961, Sumatra and Kalimantan edition.
- Armstrong, W. R. and T. G. McGee. 1968. Revolutionary Change and the Third World City: A Theory of Urban Involution. Civilizations 18: 353-378.
- Babbie, Earl R. and Robert E. Huitt. 1975. Practicing Social Research. Guided Activities to Accompany the Practice of Social Research. Belmont: Wadsworth Publishing Company, Inc.
- Bedford, R. D. 1974. Models and Migration in a Melanesian Archipelago. New Zealand Geographer 30: 129-150.
- _____. 1975. The Questions to be Asked of Migrants. in Robin J. Pryor, ed. The Motivation of Migration. Australia, 28-32.
- Bennet, J. W. and G. Thaiss. 1967. Survey Research and Sociocultural Anthropology. in C. Y. Glock, ed. Survey Research in the Social Sciences. Russell Sage Foundation, New York, 271-313.
- Bhatta, Jitandra Nath. 1961. Regarding Internal Migration in Indonesia (with Special Reference to South Sumatra). Djakarta: Topographical Service of the Army, Institute of Geography.
- Biro Statistik. 1972. Statistik Daerah Istimewa Yogyakarta Tahun 1971. Yogyakarta: Biro Statistik Daerah Istimewa Yogyakarta.
- _____. 1974. Statistik Daerah Istimewa Yogyakarta, Bagian 1, Tahun 1973. Yogyakarta: Biro Statistik Daerah Istimewa Yogyakarta.
- Birowo, Achmad T. 1973. Aspek Kesempatan Kerja dalam Pembangunan Pertanian di Pedesaan. Prisma 4: 3-15.
- Bogue, Donald J. 1966. Internal Migration. in P. M. Hauser and O. D. Duncan, eds. The Study of Population. The University of Chicago Press, Chicago, 486-509.
- Bruner, E. M. 1961. Urbanization and Ethnic Identity in North Sumatra. American Anthropologist 63: 508-21.
- _____. 1972. Batak Ethnic Associations in Three Indonesian Cities. Mimeograph.

- Bryant, Nevin Arthur. 1973. Population Pressure and Agricultural Resources in Central Java: The Dynamic of Change. Unpublished Ph.D. dissertation. University of Michigan.
- Byerlee, Derek. 1972. African Rural Employment Study. Research on Migration in Africa. Past, Present and Future. Michigan: Michigan State University.
- Caldwell, John C. 1969. African Rural-Urban Migration. The Movement to Ghana's Towns. New York: Columbia University Press.
- Castles, L. 1967. An Ethnic Profile of Djakarta. Indonesia 3: 153-204.
- Central Bureau of Statistics. 1963. Population Census 1961. Republic of Indonesia. Preliminary Figures. Series: S, P.-1. Djakarta: Biro Pusat Statistik.
- _____. 1972a. 1971 Population Census Series B, 1. Jakarta: Biro Pusat Statistik.
- _____. 1972b. 1971 Population Census Series B, 9. Jakarta: Biro Pusat Statistik.
- _____. 1973. 1971 Population Census Series D. Jakarta: Biro Pusat Statistik.
- _____. 1974. 1971 Population Census Series E. Jakarta: Biro Pusat Statistik.
- _____. 1976a. 1971 Population Census Series G. Jakarta: Biro Pusat Statistik.
- _____. 1976b. Analysis and Evaluation of the First Year Result of the Sample Vital Registration Project: Monograph No. 2. Jakarta: Biro Pusat Statistik.
- _____. 1976c. Statistical Pocketbook of Indonesia, 1976. Jakarta: Biro Pusat Statistik.
- Chapman, Murray. 1970. Population Movement in Tribal Society: The Case of Duidui and Pichahila, British Solomon Islands. Unpublished Ph.D. dissertation. Department of Geography, University of Washington.
- _____. 1971. Population Research in the Pacific Islands: A Case Study and some Reflections. East-West Population Institute, East-West Center. Honolulu, Hawaii, 1-42.
- _____. 1975. Mobility in a Non-Literate Society: Method and Analysis for Two Guadalcanal Communities. in L. A. Kosinski and R. M. Prothero, eds. People on the Move. Methuen & Co. Ltd., London. 129-145.

- _____. 1976. Tribal Mobility as Circulation: A Solomon Islands Example of Micro/Macro Linkages. in Leszek A. Kosinski et al., eds. Population at Microscale. New Zealand Geographical Society, New Zealand, 127-142.
- _____. 1977. Circulation Studies at the East-West Population Institute, Honolulu. The Indonesian Journal of Geography 33: 1-4.
- Cho, Lee-Jay, et al. 1976. Estimates of Fertility and Mortality in Indonesia Based on the 1971 Population Census. Jakarta: Central Bureau of Statistics.
- Cholil, M. 1971. Sedjarah Operasi-Operasi Pembebasan Irian-Barat. Djakarta: Departemen Pertahanan Keamanan Pusat Sedjarah ABRI.
- Clarke, John I. 1965. Population Geography. Oxford: Pergamon Press.
- Cohen, Dennis J. 1972. Keadaan Politik Kelompok Masyarakat Berpendidikan Rendah di Jakarta. Prisma 7: 54-64.
- Collier, William L. and Sajogyo. 1972. Employment Opportunities Created by the High Yielding Rice Varieties in Several Areas on Java. Research Notes No. 8. Bogor: Agro Economic Survey Indonesia.
- Collier, W. L., Gunawan Wiradi, and Suntoro. 1973. Recent Changes in Rice Harvesting Methods (Some Serious Social Implications). Bulletin of Indonesia Economic Studies 2: 36-45.
- Collier, William L. 1974. Choice of Technique in Rice Milling on Java: A Comment. reprint, Research and Training Network. The Agricultural Development Council, New York, 11-18.
- Colson, Elizabeth. 1967. The Intensive Study of Small Sample Communities. in Epstein, A. L., ed. The Craft of Anthropology. Tavistock, London, 3-15.
- Connell, J., B. Dasgupta, R. Laishely, and M. Lipton. 1976. Migration from Rural Areas: The Evidence from Village Studies. Delhi: Oxford University Press.
- Cunningham, C. E. 1958. The Postwar Migration of the Toba Bataks to East Sumatra. New Haven: Yale University.
- Daldjuni, N. 1975. Masalah Registrasi Penduduk Indonesia. Ekonomi dan Keuangan Indonesia 4: 305-404.
- Deuster, Paul. 1971. Rural Consequences of Indonesia Inflation: A Case Study of the Yogyakarta Region. Unpublished Ph.D. dissertation. University of Wisconsin.
- East-West Center. 1975. Summary Report of Workshop--Conference on Intercensal Demographic Measurement 19-23 May 1975. Honolulu.

- Elkan, Walter. 1967. Circular Migration and the Growth of Towns in East Africa. International Labour Review 6: 581-589.
- Evans, W. Buell. 1963. Climatic Resume for Jogjakarta. Indonesian Journal of Geography 4-6: 15-28.
- Firth, R. W. 1955. Census and Sociology in a Primitive Island Community (Tikopis). in United Nations, Proceedings of the World Population Conference 1954, Vol. 6, United Nations, New York, 117-125.
- Geertz, Clifford. 1963. Peddlers and Princes. Social Change and Economic Modernization in Two Indonesian Towns. Chicago: The University of Chicago Press.
- _____. 1971. Agricultural Involution. The Process of Ecological Change in Indonesia. Berkeley: University of California Press.
- _____. 1976. The Religion of Java. Chicago: The University of Chicago Press.
- Geertz, Hildred. 1961. The Javanese Family: A Study of Kinship and Socialization. New York: Free Press.
- Goldstein, Sidney. 1978. Circulation in the Context of Total Mobility in Southeast Asia. Invited paper prepared for the International Seminar on Cross-Cultural Study of Circulation, 3-8 April, at East-West Center, Honolulu.
- Gould, W. T. S. and R. M. Prothero. 1975. Space and Time in African Population Mobility. L. A. Kosinski and R. M. Prothero, eds. People on the Move. Methuen & Co. Ltd., London, 39-49.
- Hägerstrand, T. 1957. Migration and Area: Survey of a Sample of Swedish Migration Fields and Hypothetical Considerations on Their Genesis. in D. Hannerberg, T. Hägerstrand, and B. Odeving, eds. Lund Studies in Geography, Series B, Human Geography 13. Gleerup, Lund.
- _____. 1963. Geographic Measurements of Migration: Swedish Data. in J. Sutter, ed. Human Displacements: Measurement, Methodological Aspects. Centre Int. Etude Problems Humaine, Monaco, 61-83.
- Harré, J. 1968. A Model for the Analysis of Island Emigration. Journal of the Polynesian Society 77: 177-190.
- Hauser, Philip M. and Otis Dudley Duncan, eds. 1959. The Study of Population: An Inventory and Appraisal. The University of Chicago Press, Chicago.
- Hawkins, Everett D. 1961. The Batik Industry: The Role of the Javanese Entrepreneur. A Symposium. Monograph Series No. 1. New Haven: Yale University Southeast Asia Studies.

- Heeren, H. J. 1967. Internal Migration in Indonesia. Contributed paper to International Union for the Scientific Study of Population Conference, 21-25 August 1967, at Sydney.
- Higgings, Benjamin. 1956. The 'Dualistic Theory' of Underdeveloped Asia. Economic Development and Cultural Change. 2: 99-115.
- Hugo, G. J. 1975a. Demographic Research in Indonesia. ANU Working Papers in Demography No. 1. Canberra.
- _____. 1975b. Population Mobility in West Java, Indonesia. Unpublished Ph.D. dissertation. Australian National University.
- Hull, Terence H. 1975. Each Child Brings its own Fortune: An Inquiry into the Value of Children in a Javanese Village. Unpublished Ph.D. dissertation. Australian National University.
- Hull, Valerie J. 1975. Fertility, Socioeconomic Status and the Position of Women in a Javanese Village. Unpublished Ph.D. dissertation. Department of Demography, Australian National University.
- Jay, R. 1969. Javanese Villagers, Social Relations Rural Modjokuto. Cambridge: MIT Press.
- Kammeyer, Kenneth C. W. 1971. An Introduction to Population. San Francisco: Chander Publishing Company.
- Kartohadikoesoemo, Sutardjo. 1953. Desa. Jogjakarta: [n.p.].
- Kasto. 1974. Registrasi Penduduk di Daerah Istimewa Yogyakarta. Majalah Demografi Indonesia 1: 134-136.
- _____. 1976. Pertambahan Penduduk Kotamadya Yogyakarta. Seri laporan no. 8. Yogyakarta: Lembaga Kependudukan, Universitas Gadjah Mada.
- Kedaulatan Rakyat, 3 December 1975, Yogyakarta.
- Keyfitz, Nathan and Widjojo Nitisastro. 1961. Soal Penduduk dan Pembangunan Indonesia. Djakarta: P. T. Pembangunan.
- Khan, M. Halim. 1963. Gunung Kidul (An introduction to problem area in Java). Indonesian Journal of Geography 4-6: 47-60.
- Khan, R. L., et al. 1964. Organizational Stress: Studies in Role Conflict and Ambiguity. New York: John Wiley.
- Koentjaraningrat, R. M. 1957. A Preliminary Description of the Javanese Kinship System. Cultural report series. Yale: Yale University.
- _____. 1961. Some Social-Anthropological Observations on Gotong Rojong Practices in Two Villages of Central Java. Ithaca, New York: Cornell University.

- _____. 1967. Tjelapar: A Village in South Central Java. in Koentjaraningrat, ed. Villages in Indonesia. Cornell University Press, Ithaca, 244-280.
- _____. 1975. Population Mobility in Villages Around Jakarta. Bulletin of Indonesian Economic Studies 2: 108-119.
- Kosinski, L. A. and R. Mansell Prothero, eds. 1975. People on the Move. London: Methuen & Co. Ltd.
- Kroëft, J. M. Van der. 1956. Population Pressure and Economic Development in Indonesia. in J. J. Spengler and O. D. Duncan, eds. Demographic Analysis. Glencoe, 739-54.
- Lee, Everett. 1970. A Theory of Migration. Population Geography: A Reader, by G. J. Demko, et al. McGraw-Hill, New York, 288-298.
- Lembaga Pembangunan Masyarakat, U. G. M. 1976. Hubungan Transmigrasi dengan Keadaan Daerah Asal. Yogyakarta: Direktorat Jendral Transmigrasi.
- Mabogunje, A. L. 1975. Systems Approach to a Theory of Rural-Urban Migration. in Emrys Jones, ed. Readings in Social Geography. Oxford University Press, London, 210-223.
- Maurer, Jean-Luc. 1973. Some Consequences of Land Shortage in Four Kalurahan of the Kabupaten Bantul. Mimeograph, Yogyakarta.
- Milone, P. D. 1961. Queen City of the East. Unpublished Ph.D. dissertation. University of California.
- _____. 1966. Urban Areas in Indonesia Administrative and Census Concepts. Berkeley: University of California Press.
- Mitchell, J. Clyde. 1961. The Causes of Labour Migration. in Migrant Labour in Africa South of the Sahara, Abidjan: C.C.T.A., 259-280.
- Miura, Yuki. 1967. A Comparative Analysis of Operational Definition of the Economically Active Population in African and Asian Statistics. World Population Conference, 1965 4: 372-379.
- Mukherji, Shekhar. 1975. The Mobility Field Theory of Human Spatial Behavior: A Behavioral Approach to Migration and Circulation in the Indian Situation. Unpublished Ph.D. dissertation, Department of Geography, University of Hawaii.
- Mulyana, B. S. 1959. Pengaruh Transmigrasi Terhadap Daerah Pemberi. Djakarta: Lembaga Penyelidikan Ekonomi dan Masyarakat, Fakultas Ekonomi, U.I.
- McArthur, Norma. 1961. Introducing Population Statistics. Melbourne: Oxford University Press.

- McGee, T. G. 1975. The Urbanization Process in the Third World. London: G. Bell and Sons, Ltd.
- McDonald, Peter F. and Alip Sontosudarmo. 1976. Response to Population Pressure: The Case of the Special Region of Yogyakarta. Yogyakarta: Gadjah Mada University Press.
- McNicoll, Geoffrey. 1968. Internal Migration in Indonesia: Descriptive Notes. Indonesia 29-92.
- _____. 1970. Research in Indonesian Demography: A Bibliographic Essay. East-West Population Institute, East-West Center, Paper No. 6, Honolulu, Hawaii.
- McNicoll, G. and S. G. M. Mamas. 1973. The Demographic Situation in Indonesia. East-West Population Institute, East-West Center, Working Paper No. 28, Honolulu, Hawaii, 1-60.
- Nagata, Judith A. 1974. Urban Interlude: Some Aspects of Internal Migration in West Malaysia. International Migration Review 8: 301-324.
- Naim, Mochtar. 1972. Merantau dan Pengaruhnya Terhadap Pembangunan Daerah. Prisma 4: 36-41.
- _____. 1974. Voluntary Migration in Indonesia. Institute of Southeast Asian Studies. Working Paper No. 26. Singapore, 1-41.
- Nie, Norman H., et al. 1975. SPSS Statistical Package for the Social Sciences. New York: McGraw-Hill Book Company.
- Pelzer, Karl J. 1945. Pioneer Settlement in the Asiatic Tropics. Studies in Land Utilization and Agricultural Colonization in Southeastern Asia. New York: International Secretariat Institute of Pacific Relation.
- Penny, D. H. and Masri Singarimbun. 1973. Population and Poverty in Rural Java: Some Economic Arithmetic from Sriharjo. New York: Department of Agricultural Economics, Cornell University.
- Pollard, A. H., et al. 1974. Demographic Techniques. Australia: Pergamon Press Australia.
- Prothero, R. Mansell. 1976. Microscale Studies of Population Mobility in Tropical Africa: Some Problems and Possibilities. in L. A. Kosinski and John W. Webb, eds. Population at Microscale. New Zealand, 121-126.
- _____. 1978. Circulation in the Context of Total Mobility in Tropical Africa. Invited paper prepared for the International Seminar on Cross-Cultural Study of Circulation, 3-8 April, at East-West Center, Honolulu.

- Reksohadiprodjo, Iso and Arifin Mukhadad. 1961. Population Density and Swamp Paddy Cultivation with Irrigation Facilities in the Asian Monsoon-Tropics, with Special Reference to Java (Indonesia). Madjalah Ilmu Bumi Indonesia 2-3: 5-10.
- Republik Indonesia. 1970. Repelita 1969/1970-1973/1974. Bandung: Doa Restu.
- Roseman, Curtis. 1971. Migration as a Spatial and Temporal Process. Annals, Association of American Geographer 61: 589-598.
- Sajogyo. 1973. Modernization without Development in Rural Java. Mimeograph. Bogor Agricultural University.
- Scott, C. and G. Sabagh. 1970. The Historical Calendar as a Method of Estimating Age: The Experience of the Moroccan Multi-Purpose Sample Survey of 1961-63. Population Studies 1: 93-109.
- Selosoemardjan, R. M. 1962. Social Changes in Jogjakarta. New York: Cornell University Press.
- Simkins, P. D. and Wernstedt, P. T. 1971. The Philippine Migration: The Digos Padada Valley, Mindanao Philippines. New Haven: Yale University, Southeast Asia Studies Monograph, Series 26.
- Singarimbun, Masri. 1974. The Population of Indonesia: A Bibliography (1930-1972). Yogyakarta: Institute of Population Studies, Gadjah Mada University.
- _____. 1975. Some Consequences of Population Growth in Java. in John F. Kantner and Lee McCaffrey, Population and Development in Southeast Asia. Mass.: Lexington Books, 179-195.
- Singarimbun, Masri and Chris Maning. 1974. Fertility and Family Planning in Mojolama. Yogyakarta: Institute of Population Studies, Gadjah Mada University.
- Singhanetra-Renard, Anchalee. 1977. Circular Mobility in the Northern Thai Village. Unpublished field report.
- Sjamsu, A. M. 1952. Dari Kolonisasi ke Transmigrasi. Djakarta: Djambatan.
- Soedarsono. 1971. Tinjauan Data Demografi Yang Berpengaruh Pada Tingkat Pertambahan Penduduk Daerah Istimewa Yogyakarta. Course paper. Lembaga Demografi, Universitas Indonesia, Jakarta, 1-69.
- Soedigdo, H. 1965. Kebidjaksanaan Transmigrasi dalam Rangka Pembangunan Masyarakat Desa di Indonesia. Djakarta: Shratara.
- Stoler, Anne. 1975. Garden Use and Household Consumption Patterns in a Javanese Village. Mimeograph, Department of Anthropology, Columbia University.

- Strout, Alan M. 1974. Review Articles on Population and Poverty in Rural Java. Bulletin of Indonesian Economic Studies 2: 125-135.
- Subroto. 1974. Kebijakan di Bidang Kesempatan Kerja & Transmigrasi dalam Repelita II. Prisma 2: 18-29.
- Suharso, et al. 1976. Rural-Urban Migration in Indonesia. Jakarta: National Institute of Economic and Social Research.
- Suharto, Sam and M. Abdulmadjid. 1973. Progress Report on 1971 Population Census of Indonesia. Jakarta: Central Bureau of Statistics.
- Suharto, Sam, et al. 1976. Indonesia. The 1971 Population Census. in Lee-Jay Cho, ed. Introduction to Censuses of Asia and the Pacific 1970-1974. East-West Population Institute, Honolulu, 77-83.
- Suharto, Sam. 1977. Indonesia Conducts Intercensal Population Survey. Paper prepared for the Fifth Population Census conference at the East-West Center, Honolulu, 31 January-5 February 1977, 1-9.
- Taylor, R. C. 1969. Migration and Motivation: A Study of Determinants and Types. in J. A. Jackson, ed. Migration. Sociological Studies. Cambridge University Press, 99-133.
- Textor, Robert B. 1956. The Northeast Siam Driver in Bangkok. The Social Implications of Industrialization and Urbanization. New York: United Nations.
- Timmer, Maarten. 1961. Child Mortality and Population Pressure in the D.I. Jogjakarta, Java, Indonesia: A Social-Medical Study. Ph.D. dissertation. Free University of Amsterdam. Rotterdam: Bronder Offset.
- Ueda, K. 1964. Analysis of Results of the One Percent Sample Tabulation of the Population Census of Indonesia. Jakarta: Biro Pusat Statistik.
- United Nations. 1970. Methods of Measuring Internal Migration. Manual VI. New York: United Nations.
- Utami, Widya and John Thalauw. 1973. Some Consequences of Small Farm Size. Bulletin of Indonesian Economic Studies 2: 46-56.
- Wertheim, W. F. 1964. East-West Parallels; Sociological Approaches to Modern Asia. The Hague: W. van Hoeve.
- White, Benjamin. 1973. Demand for Labor and Population Growth in Colonial Java. Human Ecology 3: 217-236.
- Widjojo Nitisastro. 1970. Population Trends in Indonesia. Ithaca: Cornell University Press.

Wolpert, Julian. 1966. Migration as an Adjustment to Environmental Stress. Journal of Social Issues 22: 92-102.

_____. 1975. Behavioral Aspect of the Decision to Migrate. in Emrys Jones, ed. Readings in Social Geography. Oxford University Press, London, 191-199.

Zelinsky, Wilbur. 1971. The Hypothesis of Mobility Transition. Geographical Review 61: 221-249.