

# Migration in Indonesian Regions by Education and Employment Factors

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*Abstract. In the last two decades, Indonesia has witnessed a surplus growth in the young and educated labor force. A significant proportion of educated people tend to move to other regions in search of jobs. Data from the 1995 Intercensal Population Survey (SUPAS) clearly documented this phenomenon and that many people who migrated belong to younger age groups. The improvements in socioeconomic development across various regions have exerted a tremendous impact on the flow of people as well as goods across the regional and ethnic boundaries within Indonesia. This paper mainly focuses on the region-to-region migration in Indonesia and the influence of major determinants, specifically education and employment. For the analysis, logistic regression models are confined to explain the differentials in migration by selected explanatory variables.*

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**Keywords:** Regional migration; education; employment; and Indonesia.

## 1. Introduction

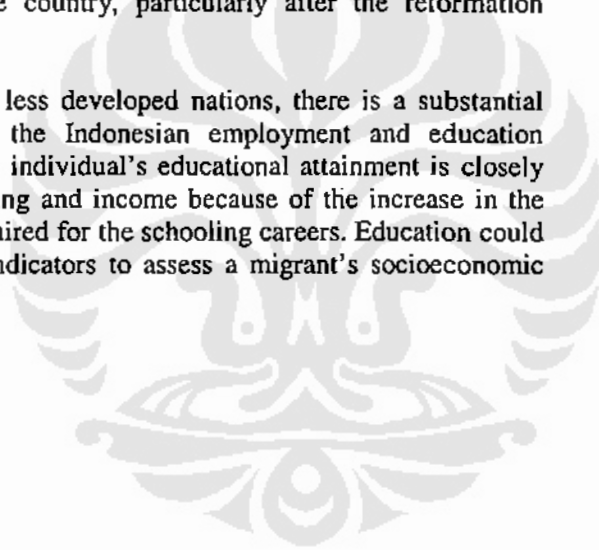
Most of the migration studies done for Indonesia (Sundrum 1976, Alatas 1995, and Hugo 1981, 1999) has shown that Indonesians' mobility on a permanent and temporary basis have had accelerated significantly both in terms of within and inter regional mobility. Tirtosudarmo (1997) pointed out that the increase in the volume of population mobility in Indonesia is essentially the logical consequence of three factors. First is the surplus of labor force; second is the improvement of transportation means and networks; and third is the opening up of economic activities, particularly in urban areas where the informal sector economy provides job access elasticity for migrants.

The statistics from censuses and surveys in Indonesia have supported this phenomenon by showing the facts that the proportion of Indonesian labor

force (population aged 15 years or above) has been increasing during the last three decades. The labor force profile of Indonesia between 1971 to 1995 showed that the number of Indonesian workers doubled to more than twice in size from 39.2 to 80.2 million (Table 1). The number of workers with formal education increased compared with those without formal education. Similarly, the number of people who worked as professional, managerial, and clerical workers increased annually. In the 1970s, a large number of people worked in agriculture sector and they were concentrated in the rural areas of Java. In the 1990s, the foregoing condition however changed. The nation's manpower shifted from agriculture to non-agriculture sectors, particularly towards the industrial and service sectors. People who worked have become less Java centric, less rural, and better educated. Moreover, there has been a tendency for female proportion of the labor force to rise, as a result of rising female labor force participation rate.

Regarding the education of population aged 15 years or above, proportion completing secondary school level or above shows a considerable increase between 1971 and 1995. This is found irrespective of any differences in sex although the proportion, however, is found in favor of males. In other words, there has been a significant rise in the education levels among Indonesian population irrespective of their working status. This situation however is expected to improve in the near future thereby upgrading human resources development of the country, particularly after the reformation period.

As observed in many less developed nations, there is a substantial inequality of opportunity in the Indonesian employment and education sectors. On the other hand, an individual's educational attainment is closely tied to his or her social standing and income because of the increase in the costs of fees and materials required for the schooling careers. Education could be possibly one of the best indicators to assess a migrant's socioeconomic status.



**Table 1**  
**LABOR FORCE AND EDUCATION PROFILES IN INDONESIA, 1971-1995**

| Profile                                      | 1971        | 1980        | 1985        | 1990        | 1995        |
|--|-------------|-------------|-------------|-------------|-------------|
| <b>Number of employed persons (million)</b>  | <b>39.2</b> | <b>51.6</b> | <b>62.5</b> | <b>70.0</b> | <b>80.2</b> |
|  | %           | %           | %           | %           | %           |
| <b>Education</b>                             |             |             |             |             |             |
| No Education                                 | 42.7        | 29.6        | 21.7        | 17.5        | 12.2        |
| Primary School                               | 28.8        | 32.8        | 44.4        | 54.5        | 57.8        |
| Completed Junior high+                       | 7.0         | 11.5        | 16.8        | 23.0        | 30.0        |
| In professional, managerial and clerical     | 5.7         | 6.5         | 7.5         | 8.8         | 10.3        |
| <b>In agriculture</b>                        | <b>65.9</b> | <b>55.9</b> | <b>54.7</b> | <b>49.2</b> | <b>43.9</b> |
| Rural  | 85.2        | 81.1        | 78.4        | 73.3        | 67.6        |
| In Java                                      | 65.7        | 64.1        | 62.4        | 61.6        | 59.7        |
| Female                                       | 33.2        | 32.8        | 36.0        | 35.8        | 34.3        |
| Aged 15-29                                   | 34.4        | 38.5        | 35.9        | 36.7        | 33.7        |
| <b>Persons aged 15+ by sex and education</b> |             |             |             |             |             |
| <b>Male</b>                                  |             |             |             |             |             |
| No schooling                                 | 32.4        | n.a         | n.a         | 12.2        | 8.2         |
| Incomplete Primary School                    | 29.4        | n.a         | n.a         | 14.3        | 20.8        |
| Completed Primary School                     | 27.1        | n.a         | n.a         | 32.2        | 33.0        |
| Completed Secondary School                   | 10.4        | n.a         | n.a         | 29.2        | 34.4        |
| Academy/University                           | 0.7         | n.a         | n.a         | 2.1         | 3.6         |
| <b>Female</b>                                |             |             |             |             |             |
| No schooling                                 | 57.0        | n.a         | n.a         | 25.4        | 18.6        |
| Incomplete Primary School                    | 21.2        | n.a         | n.a         | 24.9        | 22.0        |
| Completed Primary School                     | 16.5        | n.a         | n.a         | 28.1        | 31.2        |
| Completed Secondary School                   | 5.1         | n.a         | n.a         | 20.6        | 26.1        |
| Academy/University                           | 0.2         | n.a         | n.a         | 1.0         | 2.2         |

Note : n.a = not available.

Sources: Jones (1994) and calculated from the CBS (1982, 1987, 1997).

Furthermore, regional demographic indicators may be worth considering while studying the migration dynamics in Indonesia and the associated factors. Table 2 provides an overview of the demographic and economic indicators in Indonesia by six (6) main regions. Java-Bali region has a low population growth rate but is very densely populated. While, Kalimantan and Eastern Indonesia (Maluku and Irian Jaya) regions have recorded high growths rate with a low density of population.

In terms of income per capita (excluding oil source), except for Kalimantan, all regions in Indonesia are below Java-Bali. Nusa Tenggara regions are the poorest regions in Indonesia. Income per capita, however, can be a misleading indicator as it does not represent the actual welfare conditions

of the population (Tirtosudarmo 1997). Kalimantan and Eastern Indonesia regions provide a good example. The high income per capita in those regions with comparatively small populations, even after oil revenue has been excluded, is likely to be heavily influenced by the revenue from copper and gold mining, timber industries, and fisheries. Nusa Tenggara regions, however, are affected by their poor natural resources. Poverty and economic hardship in these regions have become a strong push factor for people to migrate to other regions in Indonesia.

Table 2  
REGIONAL, DEMOGRAPHIC AND ECONOMIC INDICATORS IN INDONESIA, 1995

| Region            | Population<br>(000) | Annual<br>Pop. Growth<br>1971-1995<br>(%) | Populatio<br>Density<br>per sq.km | GRP per Capita<br>(constant 1983 price) |              | Labor Force<br>Participatio<br>Rate (%) | Daily<br>Minimum<br>Wage, 1994<br>(Rp) |
|-------------------|---------------------|---|-----------------------------------|---|--------------|---|--|
|                   |                     |   |                                   | Excl.<br>Oil                            | Incl.<br>Oil |   |  |
| Sumatera          | 40,830              | 3.85                                      | 86                                | 538                                     | 914          | 57.6                                    | 2,958                                  |
| Java-Bali         | 117,629             | 2.02                                      | 854                               | 622                                     | 657          | 58.5                                    | 3,275                                  |
| Nusa Tenggara*    | 8,063               | 3.17                                      | 97                                | 246                                     | -            | 64.7                                    | 2,875                                  |
| Kalimantan        | 10,471              | 4.13                                      | 19                                | 728                                     | 1,128        | 59.9                                    | 3,083                                  |
| Sulawesi          | 13,732              | 2.44                                      | 73                                | 429                                     | -            | 54.0                                    | 2,467                                  |
| Eastern Indonesia | 4,029               | 4.01                                      | 9                                 | 603                                     | 653          | 57.2                                    | 3,100                                  |
| Indonesia         | 194,755             | 2.53                                      | 101                               | 588                                     | 711          | 57.3                                    | 2,945                                  |

Note : \* Nusa Tenggara, including East Timor.

Source: Tirtosudarmo (1997), and calculated from the 1995 SUPAS (Intercensal Population Survey).

In the light of the above fact and figures, the purpose of this paper is to revisit the regional dimension patterns of migration in Indonesia and associated determinants, specifically education and employment at the individual level. The research question that is addressed here is whether the developments in employment and education in Indonesia have significant effects on individual's tendency to migrate within different regions in Indonesia. The study utilizes the 1995 Intercensal Population Survey (SUPAS), which provides recent migration data on the basis of place of current residence and residence 5 years preceding the survey. This information provides us an indication whether a person has changed his or her residence or not. In case of a change in the residence, information on reasons to change residence vis-à-vis occupation, job search, education, marriage, family reunion, and housing were gathered. The next section discusses various triggers of migration with respect to personal and professional reasons. This is continued by a brief description of the data and the methods used, major findings, and conclusion and discussion.

## 2. Migration Triggers: Personal and Professional

The human capital model formulated by Sjaastad (1962) situates migration with respect to individual behavior with an emphasis on the income-maximization that occurs at the individual level. Sjaastad stated that an individual migrates with an expectation for personal wellbeing, because his or her expected lifetime benefits are higher than his or her perceived migration costs. People will only migrate over a longer distance if the relative advantage of the new relocation exceeds the cost of leaving the previous location. In other words, the existence of a trigger to migrate is a necessary but not a sufficient condition for a migration to take place. A theoretical approach to study triggers of migration is discussed below.

Actual behavior will depend on the situation that conditions the action of the person involved. One should distinguish between a micro context and a social or macro context. The first one is open to change or influenced by an individual's action, the latter may or may not be influenced by an individual's action (Willekens, 1991). These contexts can enable or inhibit individual action. Motivations to migrate arise from one of the various life domains that develop in parallel to the domain of relocations; parallel life course trajectories or career. Mulder and Hooimeijer (1999) distinguished four parallel careers with regard to triggers in migration. The four parallel careers are education, work or labor, housing, and family careers. In this paper, these triggers will be classified into two groups: professional and personal triggers. Those who migrated because of professional reasons are motivated by labor market and education, whereas personal reasons are motivated by marriage, family matters, and housing reasons. These parallel careers may influence a person's decisions to migrate in two different ways. The progression in one parallel career triggers a move, while others condition the actual relocation through their effect on the choices that individuals have. The conditioning reasons either generate resources or impose restrictions on the move.

Data from the 1995 SUPAS show that the proportion migrated because of professional reasons is less than that for personal reasons. On average, at national level, it is about 34.4 percent out-migrated because of professional reasons, while 62.9 percent out-migrated for personal reasons. Table 3 presents the proportion of out-migration by professional and personal reasons by sex of individuals. In terms of the number of out-migrants, migration is more or less the same for both males and females. Meanwhile, in terms of its triggers, most Indonesian females migrated for personal reasons

(73.5 percent). While, for male it is only 52.3 percent. Comparing all these triggers, the proportion of out-migrants motivated for family matters is high in any regions in Indonesia, especially for female. It is due to the fact that a married woman and her children are likely to follow the migrant husband/father. In addition, a typical of Indonesian society is the economical dependency of family members to the head of a household and/or elder sons. Nonetheless, the social security schemes that are prevalent in the Western societies do not, unfortunately, exist in Indonesia. Family reunion is mostly likely to occur if the earning member of the family or household head migrates. In other words, most of the migration in Indonesia is influenced by personal reasons, especially family reunion. This phenomenon, however, is different in the case of international migration. Spaan (1999) concluded in his case study that international migration in Indonesia did not result much in family reunions but in remittances.



Table 3  
PROPORTION OF REGIONAL OUT-MIGRATION BY SEX AND TRIGGER OF MIGRATION IN INDONESIA, 1995 SUPAS

| Sex           | Origin            | Trigger/Reason to Migrate |            |            |             |             |            |  | Total<br>(%) | Total<br>(N)      |
|---------------|-------------------|---------------------------|------------|------------|-------------|-------------|------------|--|--------------|-------------------|
|               |                   | Professional              |            |            | Personal    |             |            |  |              |                   |
|               |                   | Labour<br>Market          | Education  | Marrriage  | Family      | Housing     | Other      |  |              |                   |
| Male          | Sumatera          | 33.0                      | 10.2       | 4.8        | 37.1        | 10.4        | 4.5        |  | 100.0        | 1,718,851         |
|               | Java-Bali         | 35.4                      | 7.3        | 7.0        | 35.4        | 12.3        | 2.7        |  | 100.0        | 4,079,812         |
|               | Nusa Tenggara     | 34.6                      | 21.0       | 2.4        | 30.3        | 5.5         | 6.2        |  | 100.0        | 237,088           |
|               | Kalimantan        | 37.5                      | 12.4       | 3.7        | 34.7        | 7.7         | 4.0        |  | 100.0        | 433,410           |
|               | Sulawesi          | 35.9                      | 14.4       | 4.0        | 34.8        | 7.5         | 3.5        |  | 100.0        | 513,920           |
|               | Eastern Indonesia | 30.1                      | 17.3       | 2.0        | 37.6        | 7.3         | 5.6        |  | 100.0        | 126,437           |
|               | <b>Total</b>      | <b>34.8</b>               | <b>9.5</b> | <b>5.8</b> | <b>35.6</b> | <b>10.9</b> | <b>3.4</b> |  | <b>100.0</b> | <b>7,109,518</b>  |
| Female        | Sumatera          | 10.2                      | 9.0        | 3.9        | 71.1        | 3.4         | 2.4        |  | 100.0        | 1,690,156         |
|               | Java-Bali         | 20.8                      | 5.9        | 4.3        | 63.0        | 4.0         | 1.9        |  | 100.0        | 4,162,700         |
|               | Nusa Tenggara     | 12.3                      | 17.3       | 8.0        | 55.5        | 2.0         | 5.0        |  | 100.0        | 220,649           |
|               | Kalimantan        | 10.8                      | 9.5        | 3.4        | 70.2        | 4.2         | 1.9        |  | 100.0        | 395,457           |
|               | Sulawesi          | 11.5                      | 13.0       | 3.1        | 67.5        | 3.3         | 1.5        |  | 100.0        | 525,319           |
|               | Eastern Indonesia | 9.8                       | 12.5       | 1.8        | 69.8        | 2.8         | 3.3        |  | 100.0        | 115,247           |
|               | <b>Total</b>      | <b>16.6</b>               | <b>7.8</b> | <b>4.2</b> | <b>65.6</b> | <b>3.8</b>  | <b>2.1</b> |  | <b>100.0</b> | <b>7,109,528</b>  |
| Male & Female | Sumatera          | 21.7                      | 9.6        | 4.3        | 54.0        | 6.9         | 3.5        |  | 100.0        | 3,409,007         |
|               | Java-Bali         | 28.0                      | 6.6        | 5.6        | 49.3        | 8.1         | 2.3        |  | 100.0        | 8,242,512         |
|               | Nusa Tenggara     | 23.8                      | 19.2       | 5.1        | 42.4        | 3.8         | 5.6        |  | 100.0        | 457,737           |
|               | Kalimantan        | 24.8                      | 11.0       | 3.6        | 51.6        | 6.1         | 3.0        |  | 100.0        | 828,867           |
|               | Sulawesi          | 23.6                      | 13.7       | 3.5        | 51.4        | 5.4         | 2.5        |  | 100.0        | 1,039,239         |
|               | Eastern Indonesia | 20.4                      | 15.0       | 1.9        | 53.0        | 5.2         | 4.5        |  | 100.0        | 241,684           |
|               | <b>Total</b>      | <b>25.7</b>               | <b>8.6</b> | <b>5.0</b> | <b>50.6</b> | <b>7.3</b>  | <b>2.8</b> |  | <b>100.0</b> | <b>14,214,046</b> |

Source: Calculated from the 1995 SUPAS (Intercensal Population Survey).

In terms of professional triggers (education and labor market), the proportion of male migrants is higher than the female migrants: 44.3 percent and 24.4 percent respectively. This is especially observed among the working age population in search of jobs and educational purposes; females constitute to 16.6 percent and 7.8 per cent whereas males constitute 34.8 percent and 9.5 percent respectively. Female migrants from Java-Bali were highly motivated for labor markets whereas migrants from Nusa Tenggara were motivated because of education purposes.

Regional patterns of migration because of professional triggers are shown in Figures 1 and Figure 2. The patterns show that regarding these triggers, individuals tends to migrate at younger age in Indonesia, which can be seen from the peak age of the migration patterns. The peak age of these patterns is at age between 15 and 19 years for those migrants motivated for education, whereas those for labor market reasons varied between 20-29 years in different regions. Education triggered migration tends to decline at earlier ages around 30 years. This is different in the case of labor market triggered migration: individuals are more likely to stay longer of being migrants.

Figure 1  
MIGRATION SCHEDULES BY EDUCATION TRIGGER IN INDONESIA, 1995 SUPAS

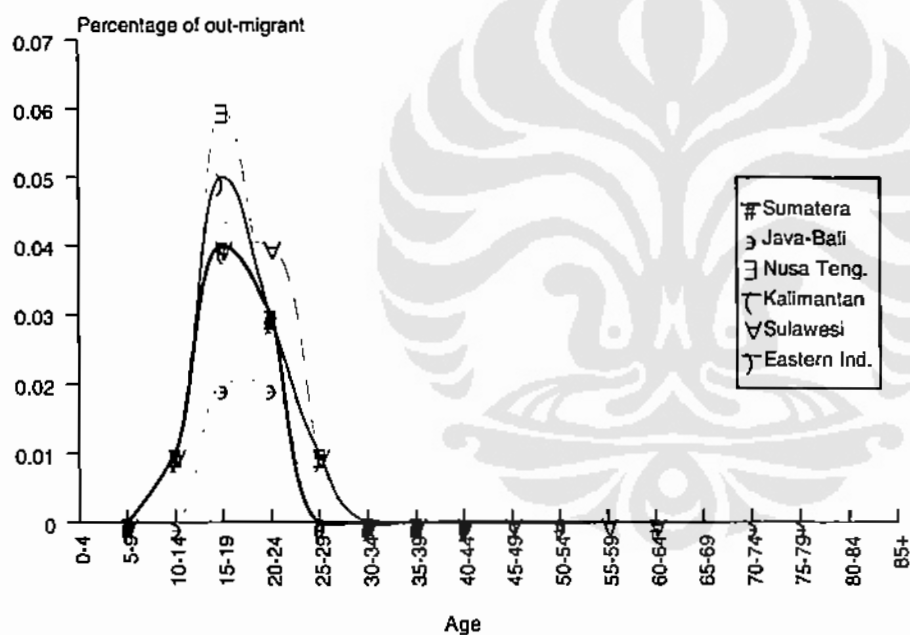
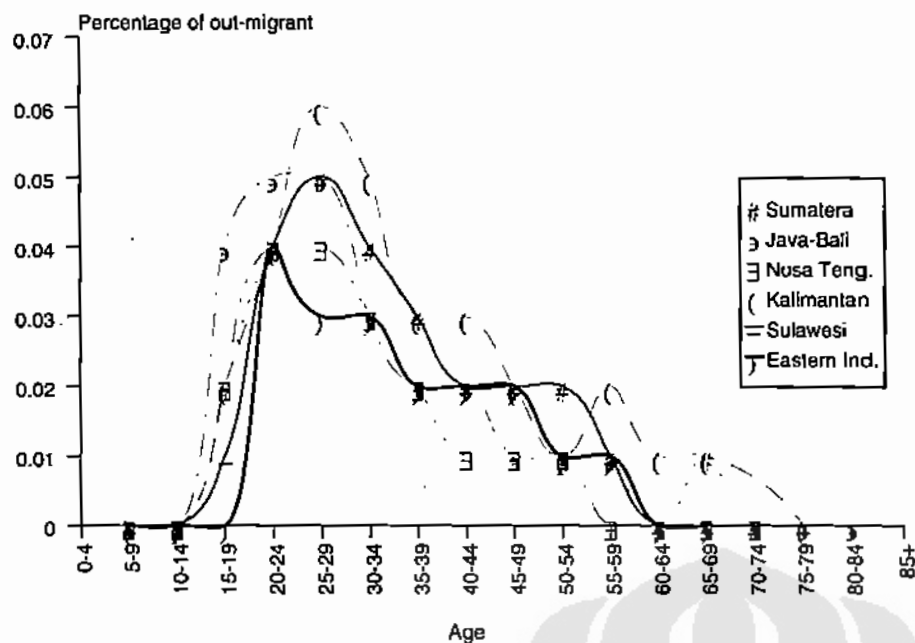




Figure 2  
MIGRATION SCHEDULES BY LABOR MARKET TRIGGER IN INDONESIA, 1995



Since the data providing reasons to migrate were not available in the previous censuses, we could not, however, compare this phenomenon for the last three decades. Comparing between female and male migrations, recent phenomenon has shown that female population will become as mobile as male, not only because of personal reasons but also for education and employment reasons. Previous censuses indicated that female labor force participation rate has improved substantially. It was 33.1 percent in 1971, decreased to 32.7 percent in 1980, and increased slowly to 38.8 percent in 1990 (Nachrowi et al. 1995). Much of the increase is attributable to women of childbearing ages (i.e. aged 15-49 years). At the same time, data from the Indonesia Demographic and Health Survey (IDHS) have shown that median age at first marriage among women in Indonesia has increased, which eventually influenced female labor force participation. The increase in the age at first marriage in urban areas has been greater than in rural areas. In urban areas, the figure was 18.8 years in 1987 and 20.4 in 1997, whereas for rural areas, the figure was 16.6 in 1987 and 17.9 in 1997 (CBS et al. 1998). One of

many factors that explain an increase in the age at first marriage is the improvement in female education.

At the regional level, professionally triggered out-migration because of labor market and education are still relatively low. The proportions of migrants motivated for personal and professional reasons vary considerably. Table 4 shows the proportion of out-migration by origin-destination and by various triggers associated with migration. It can be observed that the labor market trigger is relatively high for people in Java-Bali than in other regions. Out-migration because of education is higher in the regions outside of Java-Bali, which might be attributed to higher prevalence of education in Java-Bali than in the rest of Indonesia. The proportion of out-migrants from Java-Bali and the rest of Indonesia have more or less similar levels of education, irrespective of any age differences.

Out-migration because of housing reasons is higher within Java-Bali, which might be attributed to sub-urbanization processes occurring fast in Java-Bali regions. Jakarta, for example, as urban and metropolitan region has attracted many people to migrate. Jakarta has spilled over the limits of the special capital district into the surrounding province of West Java in order to compensate for the high density of population and settlements. This has resulted in the emergence of an extended metropolitan region, which continued to grow rapidly. This resulted in spatial relocations of settlements towards the peripheries. In some other regions, spatial relocations were made through the resettlement programs (i.e. transmigration in southern parts of Sumatera) or new development of industrial sectors (i.e. mining in East and Central Kalimantan, and Irian Jaya; industries in Riau; and trading or agriculture in Sulawesi).

As developmental activities expanded and brought about changes in people's socio-economic circumstances, opportunities widened. Increasingly, numerous positive and negative incentives affected the push and pull factors inducing regional migration. Oey and Suleman (1997) stated that economic factors, rather than social or cultural factors, are strong operators as incentives including incentives to leave familiar surrounding to the unfamiliar. Most of the in-migrants are attracted to move to or within Java-Bali region (about 58.6 percent) and are motivated by personal and professional triggers (Table 4). Sumatera region seems to be the second favorable place for people to move. The Eastern Indonesian regions have still less in-migrant for any given reasons.

**Table 4**  
**PROPORTION OF REGIONAL MIGRATION BY ORIGIN-DESTINATION**  
**IN INDONESIA, 1995 SUPAS**

| Origin        | Destination       | Trigger/Motivation to migrate |           |          |        |         |       | Total |           |
|---------------|-------------------|-------------------------------|-----------|----------|--------|---------|-------|-------|-----------|
|               |                   | Labour Market                 | Education | Marriage | Family | Housing | Other | (%)   | (N)       |
| Sumatra       | Sumatera          | 20.1                          | 9.4       | 4.9      | 54.7   | 7.9     | 3.1   | 100.0 | 2,890,449 |
|               | Java-Bali         | 30.4                          | 11.2      | 1.4      | 49.6   | 2.0     | 5.5   | 100.0 | 484,874   |
|               | Nusa Tenggara     | 26.5                          | 0.0       | 0.0      | 60.4   | 1.7     | 11.3  | 100.0 | 4,232     |
|               | Kalimantan        | 37.5                          | 11.8      | 0.4      | 47.6   | 0.0     | 2.7   | 100.0 | 15,380    |
|               | Sulawesi          | 27.0                          | 6.5       | 0.0      | 60.2   | 1.6     | 4.7   | 100.0 | 10,977    |
|               | Eastern Indonesia | 29.4                          | 0.0       | 0.0      | 70.6   | 0.0     | 0.0   | 100.0 | 3,122     |
|               | Total             | 21.7                          | 9.6       | 4.3      | 54.0   | 6.9     | 3.5   | 100.0 | 3,409,007 |
| Java-Bali     | Sumatera          | 30.2                          | 4.4       | 1.4      | 57.1   | 1.0     | 6.0   | 100.0 | 314,260   |
|               | Java-Bali         | 27.4                          | 6.8       | 6.0      | 49.0   | 8.8     | 2.0   | 100.0 | 7,609,633 |
|               | Nusa Tenggara     | 38.3                          | 4.8       | 2.5      | 50.2   | 0.5     | 3.7   | 100.0 | 40,817    |
|               | Kalimantan        | 42.2                          | 2.8       | 1.6      | 48.1   | 0.4     | 5.0   | 100.0 | 166,538   |
|               | Sulawesi          | 32.7                          | 4.6       | 0.4      | 52.6   | 0.0     | 9.7   | 100.0 | 83,874    |
|               | Eastern Indonesia | 42.7                          | 1.2       | 0.1      | 50.7   | 0.0     | 5.3   | 100.0 | 27,390    |
|               | Total             | 28.0                          | 6.6       | 5.6      | 49.3   | 8.1     | 2.3   | 100.0 | 8,242,512 |
| Nusa Tenggara | Sumatera          | 47.5                          | 17.9      | 0.0      | 33.4   | 0.0     | 1.3   | 100.0 | 1,810     |
|               | Java-Bali         | 36.0                          | 19.2      | 1.4      | 40.1   | 0.2     | 3.1   | 100.0 | 43,778    |
|               | Nusa Tenggara     | 21.8                          | 19.6      | 5.9      | 42.8   | 4.5     | 5.4   | 100.0 | 381,549   |
|               | Kalimantan        | 25.1                          | 1.8       | 0.0      | 57.1   | 0.0     | 16.0  | 100.0 | 9,958     |
|               | Sulawesi          | 30.3                          | 20.1      | 0.2      | 36.3   | 2.3     | 10.8  | 100.0 | 19,519    |
|               | Eastern Indonesia | 86.4                          | 7.7       | 0.0      | 5.9    | 0.0     | 0.0   | 100.0 | 1,123     |
|               | Total             | 23.8                          | 19.2      | 5.1      | 42.4   | 3.8     | 5.6   | 100.0 | 457,737   |
| Kalimantan    | Sumatera          | 26.5                          | 0.0       | 8.4      | 62.9   | 0.0     | 2.1   | 100.0 | 4,689     |
|               | Java-Bali         | 23.3                          | 14.5      | 0.6      | 51.4   | 3.0     | 7.2   | 100.0 | 115,830   |
|               | Nusa Tenggara     | 26.9                          | 1.4       | 3.8      | 58.8   | 0.0     | 9.1   | 100.0 | 9,370     |
|               | Kalimantan        | 24.9                          | 10.7      | 4.1      | 51.3   | 6.9     | 2.0   | 100.0 | 675,149   |
|               | Sulawesi          | 25.6                          | 8.1       | 2.0      | 54.1   | 1.6     | 8.6   | 100.0 | 21,905    |
|               | Eastern Indonesia | 24.3                          | 0.0       | 0.0      | 75.7   | 0.0     | 0.0   | 100.0 | 1,924     |
|               | Total             | 24.8                          | 11.0      | 3.6      | 51.6   | 6.1     | 3.0   | 100.0 | 828,867   |
| Sulawesi      | Sumatera          | 32.0                          | 4.7       | 0.0      | 63.1   | 0.0     | 0.2   | 100.0 | 9,594     |
|               | Java-Bali         | 24.7                          | 17.9      | 1.1      | 53.5   | 0.4     | 2.4   | 100.0 | 57,916    |
|               | Nusa Tenggara     | 21.6                          | 0.3       | 0.0      | 63.8   | 0.6     | 13.8  | 100.0 | 13,284    |
|               | Kalimantan        | 41.1                          | 4.3       | 1.4      | 52.7   | 0.0     | 0.5   | 100.0 | 40,198    |
|               | Sulawesi          | 22.0                          | 14.7      | 4.0      | 50.5   | 6.3     | 2.5   | 100.0 | 878,257   |
|               | Eastern Indonesia | 37.5                          | 1.3       | 0.1      | 58.8   | 0.0     | 2.4   | 100.0 | 39,990    |
|               | Total             | 23.6                          | 13.7      | 3.5      | 51.4   | 5.4     | 2.5   | 100.0 | 1,039,239 |

(To be continued)

(Continuation – Table 4)

| Origin    | Destination       | Trigger/Motivation to migrate |           |          |        |         |       | Total |         |
|-----------|-------------------|-------------------------------|-----------|----------|--------|---------|-------|-------|---------|
|           |                   | Labour Market                 | Education | Marriage | Family | Housing | Other | (%)   | (N)     |
| Eastern   | Sumatera          | 18.0                          | 0.0       | 1.9      | 56.9   | 0.0     | 23.2  | 100.0 | 2,333   |
| Indonesia | Java-Bali         | 24.5                          | 17.2      | 2.2      | 47.7   | 1.6     | 6.8   | 100.0 | 33,714  |
|           | Nusa Tenggara     | 19.0                          | 0.0       | 2.4      | 78.6   | 0.0     | 0.0   | 100.0 | 2,337   |
|           | Kalimantan        | 48.3                          | 0.0       | 0.0      | 51.7   | 0.0     | 0.0   | 100.0 | 2,837   |
|           | Sulawesi          | 17.7                          | 16.9      | 1.5      | 50.0   | 3.1     | 10.8  | 100.0 | 28,677  |
|           | Eastern Indonesia | 19.7                          | 14.9      | 2.0      | 54.1   | 6.4     | 2.9   | 100.0 | 171,786 |
|           | Total             | 20.4                          | 15.0      | 1.9      | 53.0   | 5.2     | 4.5   | 100.0 | 241,684 |

Source: Calculated from the 1995 SUPAS (Intercensal Population Survey).

### 3. Data and Methods

The primary data source on migration used in this paper is the 1995 Intercensal Population Survey (SUPAS). The survey probed individuals of their current and previous place of residence 5 years before the survey. It compares the address or place of residence of people at the time of census or survey with the location 5 years ago. A change in the place of residence is defined as a person who had been absent from home for six months or longer, or had left home for the purpose of moving away even when the six months limit had not been reached. On the other hand, one who stayed for six months or more in a particular place or even for less than six months but intended to move was recorded as a non-migrant. For individual aged below 5 years (i.e. children aged 0-4), who have not started their living 5 years ago, migration is considered by comparing the place of residence at the time of survey with the place of birth. Table 5 provides a description of migrant data used in this study.

**Table 5**  
**CHARACTERISTICS OF MIGRANT AND NON-MIGRANT DATA IN INDONESIAN CENSUS**

| Age Classifications | Type of Data        | Residence   |     |   |
|---------------------|---------------------|-------------|-----|---|
|                     |                     | Birth place | t-5 | t |
| Aged 0-4            | Migrant             | x           |     | z |
|                     | Non Migrant         | x           |     | x |
| Aged 5+             | Migrant             |             |     |   |
|                     | - Lifetime*         | x           | y   | x |
|                     | - Recent Native     | x           | x   | z |
|                     | - Recent Non Native | x           | y   | z |
|                     | Non Migrant         |             |     |   |
| - Native            | x                   | x           | x   |   |
| - Non Native        | x                   | y           | y   |   |

Notes: - \*Lifetime migrants are defined as persons who were enumerated at the time of census or survey in a place different from the place where they were born.  
 - x, y, and z are the symbols of different regions.

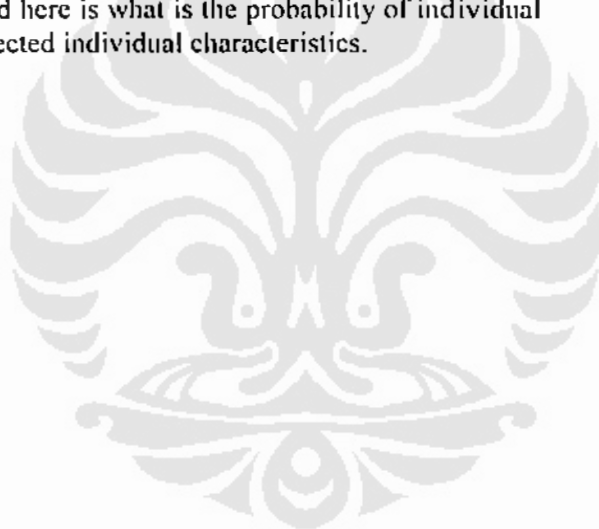
The weighted data from the 1995 SUPAS indicated that there are 14,214 thousand migrants among the 194,755 thousands of Indonesian population. Information related to age, sex, origin-destination regions, education and employment status, and the triggers or reasons to migrate are provided in the survey. Data from surveys, however, allow a possible analysis of characteristics of migrants only after migration takes place, and in many cases, a considerable time period had been elapsed between act of migration and the time it is enumerated at survey. Many of the characteristics of migrants will undergo substantial change during and especially after migration took place: such as employment and education status of the migrants. Meanwhile, few characteristics may unchangeable (apart from sex), or follow a specific immutable course (apart from age). The longer the duration of residence of the migrant the more likely that the characteristics may change from those at the time of migration.

Moreover, such data sources do not provide information on when the person changed residence and on whether the residence 5 years ago was also the last residence before moving to the current place of residence (e.g., previous place of residence). It is likely that some migrants have migrated more than twice within a period of 5 years and might have had a return migration. In such cases, it is difficult to model multiple migrations. An analysis of multiple migrations is beyond the scope of this paper.

Therefore, we assume those as migrants who had moved once within 5 years. Data on migrants are obtained by comparing the place of residence of a person at the beginning and at the end of a fixed length interval, say 5 years (for e.g., see Rees and Willekens, 1986).

Since there is not much information on migration at regional and individual level for single-year age groups in the 1995 surveys, we measure migration proportion by using the migrant data for five-year age groups instead of single-year. Moreover, our attention is limited to the migration at provincial level<sup>1</sup> in Indonesia and it is clustered into 6 (six) wide different regions: (1) Sumatra, (2) Java-Bali, (3) Nusa Tenggara, (4) Kalimantan, (5) Sulawesi, and (6) Eastern Indonesia.

For the analysis, we used logistic regression models to explain the differentials in regional migration profiles. The analysis is controlled mainly for the education and employment differentials with regard to the status of migrant. Several factors may influence the decision to migrate. We focus on individual characteristics such as age, sex, education, employment status, and recent regions of migrant. The selection of the dependent and independent variables as shown in Tables 6 are based on an extensive review of literature (see for example studies done by Sundrum 1976, Alatas 1995; Hugo 1999). The research question formulated here is what is the probability of individual migration with respect to the selected individual characteristics.



**Table 6**  
**OPERATIONAL DEFINITION OF VARIABLES CONSIDERED FOR THE ANALYSIS OF THE**  
**EFFECT OF INDIVIDUAL CHARACTERISTICS WITH AN EMPHASIS ON EDUCATION AND**  
**EMPLOYMENT VARIABLES IN INDONESIA, 1995 SUPAS**

| Dependent      | Variables                      | Migrant          | (%)            | Non-migrant        |
|----------------|--------------------------------|------------------|----------------|--------------------|
|                | Status migrant                 | Coded with 1     |                | Coded with 0       |
| Age            | 0-19                           | 1,611,882        | (1.87)         | 84,616,034         |
|                | 20-29                          | 1,678,405        | (5.02)         | 31,780,562         |
|                | 30-39                          | 747,435          | (2.57)         | 28,353,126         |
|                | 40+                            | 468,886          | (1.02)         | 45,498,478         |
| Sex            | Male = 0                       | 7,109,518        | (7.33)         | 89,820,413         |
|                | Female = 1                     | 7,109,528        | (7.27)         | 90,715,349         |
| Education      | No schooling = 0               | 682,274          | (2.83)         | 23,430,063         |
|                | Not completed primary educ.= 1 | 2,700,669        | (4.67)         | 55,188,652         |
|                | Completed primary = 2          | 3,510,869        | (7.08)         | 46,076,110         |
|                | Completed secondary=3          | 6,296,822        | (16.15)        | 32,693,650         |
|                | Completed tertiary =4          | 1,009,197        | (27.10)        | 2,714,971          |
| Employment     | Not working = 0                | 6,481,605        | (7.34)         | 81,879,409         |
|                | Agriculture = 1                | 1,250,836        | (3.29)         | 36,791,692         |
|                | Industry = 2                   | 2,032,609        | (12.97)        | 13,633,611         |
|                | Service = 3                    | 4,463,210        | (13.85)        | 27,770,305         |
| Current region | Java-Bali = 0                  | 8,242,512        | (7.01)         | 109,386,623        |
|                | Sumatera = 1                   | 3,409,007        | (8.35)         | 37,421,327         |
|                | Nusa Tenggara = 2              | 457,737          | (5.68)         | 7,605,167          |
|                | Kalimantan = 3                 | 828,867          | (7.92)         | 9,641,976          |
|                | Sulawesi = 4                   | 1,039,239        | (7.57)         | 12,693,210         |
|                | Eastern Indonesia = 5          | 241,684          | (6.00)         | 3,787,459          |
| <b>Total</b>   |                                | <b>4,506,608</b> | <b>(10.48)</b> | <b>190,248,200</b> |

Note: Those coded as zero belongs to reference category of the independent variables in the models applied.

#### 4. Results

The results of logistic regression models with the proportion of migrants as the dependent variable is shown in Table 7. In order to see the contribution of education and employment to migration status, we distinguished three separate models. In Model 1, education variable is defined as a main control variable whereas employment variable is the main control variable in Model 2 and both education and employment are controlled for along with other characteristics in Model 3. In Model 3, we also tried to study the interaction between education and employment variables and their influence on migration status.

Table 7  
RESULTS FROM LOGISTIC REGRESSION MODELS SHOWING THE EFFECTS OF  
EDUCATION AND EMPLOYMENT STATUS ALONG WITH SELECTED INDIVIDUAL  
CHARACTERISTICS ON MIGRATION STATUS IN DIFFERENT  
REGIONS WITHIN INDONESIA, 1995 SUPAS

| Variables                      | Model 1 |               | Model 2 |               | Model 3 |               |
|--------------------------------|---------|---------------|---------|---------------|---------|---------------|
|                                | $\beta$ | SE( $\beta$ ) | $\beta$ | SE( $\beta$ ) | $\beta$ | SE( $\beta$ ) |
| <b>Sex</b>                     |         |               |         |               |         |               |
| Male                           | 0.000   |               | 0.000   |               | 0.000   |               |
| Female                         | 0.013   | 0.001 ***     | -0.040  | 0.001 ***     | 0.042   | 0.001 ***     |
| <b>Age</b>                     |         |               |         |               |         |               |
| 0-19                           | -0.526  | 0.001 ***     | -0.883  | 0.001 ***     | -0.464  | 0.001 ***     |
| 20-29                          | 0.000   |               | 0.000   |               | 0.000   |               |
| 30-39                          | -0.505  | 0.001 ***     | -0.699  | 0.001 ***     | -0.550  | 0.001 ***     |
| 40+                            | -1.202  | 0.002 ***     | -1.544  | 0.002 ***     | -1.214  | 0.002 ***     |
| <b>Education</b>               |         |               |         |               |         |               |
| No schooling = 0               | 0.000   |               |         |               | 0.000   |               |
| Not completed primary educ.= 1 | 0.291   | 0.003 ***     |         |               | 0.190   | 0.003 ***     |
| Completed primary = 2          | 0.596   | 0.003 ***     |         |               | 0.424   | 0.003 ***     |
| Completed secondary=3          | 1.335   | 0.002 ***     |         |               | 1.262   | 0.003 ***     |
| Completed tertiary =4          | 1.951   | 0.003 ***     |         |               | 1.826   | 0.005 ***     |
| <b>Employment</b>              |         |               |         |               |         |               |
| No working                     |         |               | 0.000   |               | 0.000   |               |
| Agriculture                    |         |               | -0.792  | 0.002 ***     | -0.538  | 0.006 ***     |
| Industry                       |         |               | 0.410   | 0.002 ***     | 0.240   | 0.009 ***     |
| Service                        |         |               | 0.577   | 0.001 ***     | 0.611   | 0.006 ***     |
| <b>Region</b>                  |         |               |         |               |         |               |
| Java-Bali                      | 0.000   |               | 0.000   |               | 0.000   |               |
| Sumatera                       | -0.197  | 0.001 ***     | -0.039  | 0.001 ***     | -0.075  | 0.001 ***     |
| Nusa Tenggara                  | -0.442  | 0.003 ***     | -0.413  | 0.003 ***     | -0.307  | 0.005 ***     |
| Kalimantan                     | 0.206   | 0.002 ***     | 0.290   | 0.002 ***     | 0.296   | 0.002 ***     |
| Sulawesi                       | -0.120  | 0.002 ***     | 0.013   | 0.002 ***     | -0.014  | 0.002 ***     |
| Eastern Indonesia              | -0.137  | 0.004 ***     | 0.028   | 0.004 ***     | 0.022   | 0.004 ***     |
| <b>Interaction</b>             |         |               |         |               |         |               |
| No Sch*No working              |         |               |         |               | 0.000   |               |
| No PS*Agric                    |         |               |         |               | 0.185   | 0.007 ***     |
| No PS*Industry                 |         |               |         |               | -0.059  | 0.010 ***     |
| No compl. PS*Service           |         |               |         |               | 0.132   | 0.007 ***     |
| PS*Agriculture                 |         |               |         |               | -0.031  | 0.007 ***     |
| PS*Industry                    |         |               |         |               | 0.043   | 0.009 ***     |
| PS*Service                     |         |               |         |               | 0.297   | 0.006 ***     |
| SS.*Agric                      |         |               |         |               | -0.195  | 0.007 ***     |

(To be continued)



(Continuation - Table 4)

| Variables         | Model 1  |               | Model 2  |               | Model 3  |               |
|-------------------|----------|---------------|----------|---------------|----------|---------------|
|                   | $\beta$  | SE( $\beta$ ) | $\beta$  | SE( $\beta$ ) | $\beta$  | SE( $\beta$ ) |
| SS.*Industry      |          |               |          |               | 0.209    | 0.009 ***     |
| SS.*Service       |          |               |          |               | -0.463   | 0.006 ***     |
| TS.*Agric         |          |               |          |               | 0.406    | 0.015 ***     |
| TS.*Industry      |          |               |          |               | 0.213    | 0.011 ***     |
| TS.*Service       |          |               |          |               | -0.462   | 0.008 ***     |
| Constant          | -3.908   | 0.003 ***     | -3.020   | 0.001 ***     | -3.958   | 0.003 ***     |
| -2 Log likelihood | 37674661 |               | 37969746 |               | 37199618 |               |
| degree of freedom | 13       |               | 12       |               | 28       |               |

Note: Stepwise forward conditional method was used for the logistic regression analysis, \*\*\*p < 0.001

Model 1 in Table 7 shows that females are more likely to migrate than males. This is contrary with Model 2 where female are less likely to migrate than males when controlled for employment. Meanwhile, when employment and education factors have been added in Model 3, the results hold that females have higher chance to migrate than males. The difference is not large although the results are highly significant. Regarding the age factor, all the three models show that there is a selectivity of migration with respect to the age. Young adults in their early twenties generally show the highest migration tendencies when compared with their counterparts. This pattern resembles to the migration schedules proposed by Rogers and Castro (1981; 1986). The curve begins with relatively high levels during the early childhood, then decreased to the teenage group and then increased until they reach a high peak at age 20-24, later on decrease again to the age of retirement.

Both Model 1 without employment factor and Model 3 with interactions between education and employment show similar phenomenon that highly educated people are more likely to migrate than their other education counterparts. Higher educated people are about 7 times higher to migrate than those with no schooling experiences. In comparison with the unemployed, people who had worked in the agriculture sector are less likely to migrate than those in the non-agriculture sector, particularly in service sector. This is quite evident from Model 2 and 3. Because of the interaction effects, the main effects of Sulawesi in Model 3 changed reasonably. When education and employment interacts, people are less likely to migrate to Sumatera, Nusa Tenggara, and Sulawesi than to Java-Bali. This clearly highlights the professional inflow of migrants to Java-Bali regions. Relative to

people without education and employment. highly educated are less likely to migrate to service sectors. Nevertheless, less educated people are less likely to migrate to agriculture sectors. In other words, education is then said to facilitate migration because it increases employment opportunities.

Considering regional variations within Indonesia, we have also applied the same models into different regions. The investigations show that for Java-Bali and Sumatera regions, all the explanatory variables highlight significant effects on the migrant status of the people. The results are not shown individually for each province. While in other regions, regional destinations hardly exhibit any significance on people's tendency to migrate, irrespective of any interaction effects. However, the results are significant for those who had experienced migration within regions. This could be attributed to the less number of migrants to different regions.

## **5. Discussion and Conclusion**

Indonesia is a geographically fragmented country with wide demographic and economic disparities. Java-Bali region is the most attractive destination for many Indonesians, particularly because of high job and higher education opportunities. The heterogeneity of the currently existing developments in various regions of Indonesia and the corresponding changes observed in the demographic parameters especially migration supports the significance of the present study.

Migration profiles in the 1990s show that more than 50 per cent of migrants are motivated for personal reasons, i.e. marriage, family reunion, and housing, 35 percent for professional reasons: 26 per cent for labor market reasons, and 9 percent for education. At regional levels, the proportion varied considerably. Logistic regression models controlled for education and employment and their interactions showed that higher educated people are likely to migrate than their other education counterparts. Less educated people, however, migrated mostly because of family reunion and marriage. This result was more or less uniformly observed in different regions of Indonesia.

Migration for education could have been resulted from either lack of proper institutional infrastructure or because of poor quality of education systems in the origin regions. Data from the 1995 Intercensal Population Survey reported that there is hardly any difference in the proportions completing primary and secondary schools in various regions in Indonesia.

This might be attributed to the fact that primary and secondary schools are relatively accessible in almost all regions in Indonesia, particularly the provincial and districts capital cities. For higher education, many migrate to provincial capital cities or to other regions where there is adequate scope for university or higher education. This is commonly observed among individuals from many affluent families in Indonesia (Tirtosudarmo, 1997). It is worth mentioning here that Java-Bali has highest representation of international migration for education. For example, in the Netherlands, among 404 students registered for higher studies, 361 are from Java-Bali and about two fifth of 361 are self-funded. Yet another interesting factor for education related migration is the perception of individuals related to prestige and status of universities, particularly in Java, where the universities are much popular than in other regions of Indonesia (Muhidin, 2000).

With regard to labor market triggered migration, migrants work mostly in the service and informal sectors, where there is myriad scope for easy entries and easy exits. Industry and manufacturing sector workers are 30 per cent more likely to migrate compared with non-working groups; the tendency to migrate is more than three fourth for those in the service sectors. This phenomenon was especially observed in Java-Bali regions. The survey also documented that the proportion of non-migrants employed in agriculture is substantially larger than migrants in all regions. Long-term residence in a particular location might explain the larger reliance on agriculture. Regional differences with regard to education and labor market triggered migration were also observed in our investigations.

This study documented that young and educated individuals tend to migrate within different regions of Indonesia with wide education and employment differentials across regions. In the context of inter-provincial migration, less educated people tended to stay within their localities. The development of educational and labor market systems contributed to the changes of migration patterns in Indonesia. As a result of the modernization processes and enhancement in economic opportunities, educational systems in Indonesia are likely to grow in the near future. Consequently, there would be a high demand for a mobile workforce in the country with considerable shifts from the predominantly followed agrarian to an industrial or modern society.

## Note

1. Prior to September 1999, Indonesia had 27 provinces. East Timor has been considered an independent nation after the referendum and general election. In this paper those 27 provinces are clustered into 6 regions based on their geographical position.

## References

- Alatas, S. 1995. "Studi Migrasi Penduduk Indonesia (Migration Study of Indonesian Population)." *Migrasi dan Distribusi Penduduk di Indonesia (Migration and Distribution of Population in Indonesia)*, ed. S. Alatas: 7-86. Jakarta: Indonesian Ministry of Population.
- Hugo, G.J. 1981. "Pattern of Interprovincial Migration." *Migration, Urbanization, and Development in Southeast Asia*, ed. Graeme J. Hugo: 81-110. ESCAP. Kuala Lumpur: Oxford University Press.
- Hugo, G.J. 1999. "Changing Pattern of Internal and International Population Mobility in Indonesia." Paper presented in one-day seminar on *the Challenges of Population Mobility in Indonesia toward Globalization Era*. Jakarta, October 19, 1999.
- Central Bureau of Statistics (CBS) [Indonesia] and State Ministry of Population/National Family Planning Coordinating Board (NFPCB) and Ministry of Health (MOH) and Macro International Inc. (MI). 1998. *Indonesia Demographic and Health Survey 1997*. Calverton, Maryland: CBS and MI.
- Jones, G.W. 1994. "Demographic Perspectives: Labor Force and Education." *Indonesia's New order: The Dynamics of Socioeconomic Transformation*, ed. Hal Hill: 145-178. Allen and Unwin, Pty Ltd.
- Muhidin, S. 2000. "Belajar di Belanda Semakin Diminati (Does study in the Netherlands tend to be preferred)?" *Kabar Indonesia Newspaper*, 9 (1): 24. September 2000.
- Mulder, C. and Hooimeijer, P. 1999. "Residential Relocations in the Life Course." *Population Issues: an Interdisciplinary Focus*, ed. L. J. G. Van Wissen and P. A. Dykstra: 159-186. The Plenum Series on Demographic Methods and Population Analysis. London: Kluwer Academic.
- Nachrowi, N.D., Muhidin, S. S. and Fontana, A. 1995. "Labor Market Structure: The Indonesia Case." *Singapore Economic Review* 40(2): 185-206.
- Oey-Gardiner, M. and Suleeman, E. 1997. "Gender Differentials in Schooling and Labor Market Implications." Report prepared for the *Asian Development Bank*. Jakarta: Insan Harapan Sejahtera.

- Rees, P.H. and Willekens, F.J. 1986. "Data and Accounts." *Migration and Settlement: a Multiregional Comparative Study*, ed. Andrei Rogers and F. Willekens: 19-60. Reidel Publishing, Holands.
- Rogers, A., and Castro, L.J. 1981. "Age Pattern of Migration: Cause Specific Profiles." *Advances in Multiregional Demography*, ed. A. Rogers. *Research Report RR-81-6*. Austria: International Institute for Applied System Analysis (IIASA).
- Rogers, A., and Castro, L.J. 1986. "Migration." *Migration and Settlement: a Multiregional Comparative Study*, ed. A. Rogers and F.J. Willekens: 157-210. Holands, Reidel Publishing.
- Sjaastad, L. A. 1962. "The Cost of Human Migration." *Journal of Political Economy* 70: 80-93.
- Spaan, E. 1999. *Labour Circulation and Socio-economic Transformation: the Case of East Java, Indonesia*. Ph.D. Dissertation, University of Groningen, the Netherlands.
- Sundrum, R.P. 1976. "Interprovincial Migration." *Bulletin of Indonesian Economic Studies* 12(1): 70-92.
- Tirtosudarmo, R. 1997. "Economic Development, Migration, and Ethnic Conflict in Indonesia: A Preliminary Observation." *Sojourn, Journal of Social Issues in Southeast Asia* 12 (2): 293-329.
- Willekens, F.J. 1991. "Understanding the Interdependence Between Parallel Careers." *Female Labour Market Behavioural and Fertility: A Rational-Choice Approach*, ed. J. J. Siegers, J. De Jong Gierveld, and E. Van Imhoff. Berlin: Springer.

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