Wildan Syafitri

International Labor Migration 12
/// Series edited by Béatrice Knerr ///

# Determinants of Labour Migration Decisions

## The case of East Java, Indonesia

kassel university press

# International Labor Migration

Vol. 12

Editor: Prof. Dr. Béatrice Knerr

Wildan Syafitri

# Determinants of Labour Migration Decisions

## The case of East Java, Indonesia

kassel university press

This work has been accepted by the faculty of Economics and the faculty of Organic Agricultural Sciences of the University of Kassel as a thesis for acquiring the academic degree Doktor der Agrarwissenschaften (Dr. agr.).

1st Supervisor: Prof. Dr. Béatrice Knerr
2nd Supervisor: Prof. Dr. Brigitta Hauser Schäublin

Day of disputation 23. April 2012

Bibliographic information published by Deutsche Nationalbibliothek
The Deutsche Nationalbibliothek lists this publication in the Deutsche Nationalbibliografie; detailed bibliographic data is available in the Internet at http://dnb.d-nb.de.

Zugl.: Kassel, Univ., Diss. 2012
ISBN print: 978-3-86219-314-1
ISBN online: 978-3-86219-315-8
URN: urn:nbn:de:0002-33155

2012, kassel university press GmbH, Kassel
www.uni-kassel.de/upress

Cover illustration: Tomasz Henning
Cover layout: Bettina Brand Grafikdesign, München
Printed in Germany by Unidruckerei, University of Kassel

**ABSTRACT**

Labour migration, both internal and international, represents a process by which labour withdraws from one sector to meet the manpower demand in another. In East Java, migration is a rural household strategy used to allocate labour resources among different areas to reduce risk and to increase income. This study aims to identify and analyze the determinants of migration decisions for rural-to-urban and international migration in the Malang district, East Java province. It helps to identify factors which are essential to the design of policies and programmes that aim to promote rural development. Labour migration is understood as movement outside the locality of residence lasting for more than six months; the destination effectively becomes the person's new country of usual residence. Migration, when considered a component of a social group's--family or household strategy can be largely explained by the theory of New Economics Labour Migration (NELM). The NELM conceptualizes a useful analytical tool that provides an understanding about how migration transforms the economies of families with migrants. According to theories of migration, such as theories of human capital, network theory and mobility transition theory, wage gap, income risk, education, gender, family, infrastructure, land access and credit access affect the migrant's decision whether to migrate to cities, abroad or stay in their original region. These theories also explain that a migrant's decision depends on human, social, and physical capital, networks, and government policy. External factors constitute socioeconomic and infrastructure factors, market access, water resources and land for agriculture, among others. The household allocates its resources to activities subject to external factors in order to generate the outcome that best suits its objectives. A survey was used as the main tool for primary data collection. It was carried out in the Malang district, East Java, Indonesia. Primary data was collected using a questionnaire as a means to interview several sampled observations. Hence, there is a disproportionate *stratified sampling* of 360 respondents across all 12 villages in the *kecamatan* (sub-district) Wagir, Malang District. The study also used secondary data which were collected from government institutions, particularly those possessing information regarding migration activities and the socio-economic status of villages in the region. The study used the Countryside Potency Data of East Java Province for 2006 which was issued by the Central Bureau of Statistics (7,677 villages). Probit and Tobit's estimation were employed for providing evidence that several variables affect the decision of labour migration.

The data analysis of migration is divided into a descriptive analysis and an econometric analysis. By using the Probit estimation in econometric analysis, results show that educational background, sex and age have a positive and significant association on the decision to migrate abroad. Meanwhile, the variables of social relations significantly discourage migration. The results also illustrate that land ownership, credit access, being a woman and age have a negative and significant influence on the decision to migrate to cities (rural-urban migration), while government aid has a negative influence. At the village level using Tobit estimation, share of non-agriculture land, education facilities, share of farmer households in the village, and share of poverty variable have a positive and significant impact on migration abroad. Water resources, health insurance, share of land for non-agricultural activities (non-irrigated), and market access have a negative impact on migration. The research shows that growth in industry in *kecamatan* Wagir has kept citizens in the rural area but it has not been successful in hindering them from migrating abroad. The education variable provides a positive and significant coefficient for the propensity to migrate, which means the higher the education of individual in rural areas in East Java, the more likely they are to migrate abroad. Poverty is also a positive and significant coefficient for migration. This means that the more poor people there are in a village, the more likely villagers are to migrate to other countries. With the increasing number of educational institutions, the levels of knowledge increases and is used as preparation for working elsewhere, especially overseas. Increasing levels of education expand villagers options for migration, not only to countries that have higher wage levels, but also to countries that ensure their rights as domestic workers.. The development of villages, which aims to improve the situation by increasing credit access and market access, would lower the chance of migration, hence improving agricultural productivity and income of rural households. Non-agricultural land variable has a positive and significant effect, indicating that the larger the part of the village land used for non-agricultural activities, the greater the tendency is to migrate. The local or provincial government needs to focus more attention on villages which have non-irrigated land areas or areas disadvantaged by scarcity of land and water resources. The policy implications for the labour sending countries are that governments should regulate and select the types of workers needed by the economy. Rural development also needs programs that encourage self-reliance rather than heightening the rural village's dependency on the government, which could gradually reduce the government's role in the future.

**ACKNOWL.EGMENTS**

First of all, I would like to thank God for his blessing from the first until the last step of the writing process. I am grateful to Prof. Beatrice Knerr, for his supervision, guidance and support. I would like to thank for his valuable advice, constructive criticism throughout the various steps from the preparation until the final version. I also would like to thank my second supervisor, Prof. Dr. Brigitta Hauser-Schaublin, Professor at the Institute of Ethnology of the University of Goettingen.

In this regard, I am also grateful to our Indonesian students, who conducted the interviews: Nugroho, Khusnul, Wahyu, Aziza, Athoillah, Fendik, Yusuf (Secretary of Pandanrejo Village), and head of Pandanrejo Village. Furthermore, I am grateful to Muizzudin for supporting my work as student assistants. I would like to thank to Triyoko and Maizir Ahmadin who give access to secondary data. Special thanks are due to Ahmad Maryudi for his helpful evaluation of this dissertation and also Janine, Marry, Mangku Purnomo, Nurlely, Tinus, M Bahi, Arpani Harun and Genita Cansrina. I appreciated the collaboration with my colleagues at the DEMAP, particularly Baromey Neth, Robert Sibarani, Cho cho San, Christian Vasco, Ranjita Nepal, Agnes Pohle and Alber Hanna, Zhao Xi, Justu Ochieng, Sabah Salim, Muhammad Qasim, Penny Polner and Angela Doring for her kind assistance and support. I owe my deepest thanks and appreciation to the Ministry of Education Indonesia and Brawijaya University that provided me with scholarships. I also thank for Prof Harry Susanto, Prof Chandra Fajri Ananda, Prof. Erani Yustika, Nurahman Joko, for supporting scholarships, ideas and spirit for coming to Germany. Special thanks to all of my teachers: Mohammad the Prophet, Kusbandi, and M Anwar.

Importantly, I would like to thank to my beloved wife Mimin Nurfadillah, my sweet daughters Anna Abdilla and Diah Martina Saidah, are always raised to pray for my success. I have lost those years and precious. Because, I was less helpful in tutoring their daily lessons; providing advice, guidance and participate in their youthful experiences. I would also like to thank my large family in Indonesia for their patience and support, particularly. I dedicated this thesis to my late parent, Yusuf and Roefiah.

**Content**

**Chapter 1 Introduction ..... 10**
**Chapter 2 Theoretical Framework ..... 13**
2.1. Theory of internal migration (Todaro model) ..... 13
2.2. New Economics of Labour Migration ..... 16
2.3. The impact of form capital on migration decision ..... 17
2.4. Theories of human capital ..... 19
2.5. Network theory approach on migration decision ..... 20
**Chapter 3 : State of Research and Hypotheses ..... 23**
3.1. Definitions of migration and migrants ..... 23
3.2. Empirical evidence regarding the decision to migrate ..... 24
3.3. Migration in and from Indonesia ..... 30
3.4. Hypotheses ..... 33
**Chapter 4 Methodology ..... 36**
4.1. Conceptual framework ..... 36
4.2. Sampling frames and the selection of respondents ..... 38
4.3. Data collection ..... 39
4.3.1. Primary data ..... 39
4.3.2. Secondary data ..... 40
4.4. Methods of data analysis ..... 40
4.5. Model estimation and definition of variables ..... 42
4.5.1. Individual level analysis ..... 42
4.5.2. Village level analysis ..... 44
4.6. Methodology applied in data analysis ..... 47
4.6.1. Individual level analysis ..... 47
4.6.2. Village level analysis ..... 49
4.6.3. Result of model estimation ..... 50
**Chapter 5 Research Area ..... 52**
5.1. Indonesia ..... 52
5.1.1. Geographic and natural conditions ..... 52
5.1.2. Population ..... 52
5.1.3. Economic conditions ..... 53
5.1.4. Labour migration in Indonesia ..... 54
5.1.5. Remittances contribution to Indonesian ..... 57

5.2. East Java ..... 58
5.2.1. Geographic and natural conditions ..... 58
5.2.2. Administration ..... 61
5.2.3. Population ..... 61
5.2.4. Economic conditions ..... 62
5.2.5. Migration in East Java ..... 66
5.3. Malang District ..... 72
5.3.1. Geographic and natural conditions ..... 72
5.3.2. Population ..... 73
5.3.3. Economic conditions ..... 73
5.3.4. Migration of labour in Malang, East Java ..... 76
**Chapter 6 Data Analysis ..... 79**
6.1. Descriptive analysis ..... 79
6.1.1. Migrant's destinations ..... 79
6.1.2. Socio-economic characteristic of migrants and non-migrants ..... 85
6.2. Econometric analysis ..... 93
6.2.1. Individual level Analysis ..... 93
6.2.2. Village level analysis ..... 101
6.3. Discussion ..... 107
**Chapter 7 Summary, Conclusions and Recommendations ..... 110**
7.1. Summary ..... 110
7.2. Conclusions ..... 112
7.3. Recommendations ..... 114
**References ..... 117**
**Abbreviations and Acronyms ..... 132**
**Appendices ..... 133**

## List of Tables

**Table 4.4.1** Data Analysis of Determinants of Migration Decisions..... 41
**Table 4.5.1** Characteristics of Migrants and non-Migrants ..... 43
**Table 4.5.2** Characteristics of Village Level Analysis ..... 46
**Table 5.2.1** Population, Poverty, Employment, and Migration East Java, 2002-2008..... 62
**Table 5.2.2** Main Occupation East Java by sector, 2001-2009 ..... 63
**Table 5.2.3** Distribution of East Java Gross Domestic Regional Product in %, 2001-2009 ... 64
**Table 5.2.4** Annual Growth of Gross Domestic Regional Product, East Java, Constant Price (2000), 2001– 2009 ..... 64
**Table 5.2.5** Land Use in East Java, 2003 and 2009..... 66
**Table 5.2.6.** Official Labour Migration to Overseas from East Java , 2001-2008 ..... 67
**Table 5.2.7** Remittances to Indonesia and East Java (USD/Billion), 2002-2010..... 71
**Table 5.2.8 Number of Sent Labour Migrants by District of Origin in East Java, 2003-2008**..... 72
**Table 5.3.1** Main Occupations of Malang District**,** 2007 and 2008 ..... 73
**Table 5.3.2** Gross Regional Domestic Product of Malang District ..... 74
Table 5.3.3 Sectoral Distribution of Malang District GDRP, 2000 and 2010 ..... 75
**Table 5.3.4** Land Use in Malang Districts , 2000 and 2010..... 76
**Table 5.3.5** Population, Poverty, Employment, and Labour Migration Overseas (in thousands), Malang District, 2006-2008..... 77
**Table 5.3.6** Labour Migrants from Malang District to Overseas, 2007-2010 ..... 78
**Table 6.1.1** Villages and Numbers of Migrants and non-migrants in Sub-District of Wagir . 80
**Table 6.1.2** Country Destinations of International Labour Migrants ..... 81
**Table 6.1.3** Wages of Female Migrant Workers in Major Destination Countries, 2006..... 82
**Table 6.1.4** City Destinations of Rural-urban Migrants ..... 84
**Table 6.1.5** Occupations of migrants and non-migrants..... 86
**Table 6.1.6** Completed Education Level of migrants and non-migrants. ..... 87
**Table 6.1.7** Economic Situation of Migrants and non-Migrants ..... 89
**Table 6.1.8** Marital Status of migrant and non-migrant ..... 91
**Table 6.1.9** Individuals Receiving Aids from Government..... 92
**Table 6.1.10** Migrant and non-migrant receiving Government Health Insurance..... 93
**Table 6.2.1** Descriptive Statistic of the Dependent Variables**.** ..... 94

**Table 6.2.2** Determinants of Individual's Decision on Migrating Abroad. ..... 95
**Table 6.2.3** Determinants of Decision of the Rural-urban Migration. ..... 97
**Table 6.2.4** Determinants of Decisions of Non-Migrants. ..... 99
**Table 6.2.5** Descriptive Statistic of Variables for Migration Overseas in Village Level Analysis**.** ..... 102
**Table 6.2.6** Determinants of the Decision to Migraten Overseas at the Village Level**.** ..... 104

## List of Figures

**Figure 2.2.1**. The Todaro Migration Model ..... 14
**Figure 4.1 .1**.Conceptual Framework of Migration Decision ..... 37
**Figure 5.1.1** Number of Indonesian workers abroad by destination countries, 2009..... 56
**Figure 5.1.2.** Deployment of Indonesian workers abroad by sex, 1999-2009 ..... 57
**Figure 5.1.3**. Remittances to Indonesia, 2003-2010 (US$/billion) ..... 58
**Figure 5.2.1**. Map of East Java..... 60
**Figure 5.2.2**. Numbers of Labour Migrant and Country Destination of International Migration in East Java..... 68
**Figure 5.2.3.** Transfer of Remittances to East Java (IDR/Billion)..... 69
**Figure 5.2.4**. Remittances transfer by district of East Java, 2005-2006..... 70

# Chapter 1 Introduction

Rural households in poorer countries increasingly use migration strategies to secure their livelihood and to adapt to a rapidly changing economic environment. Migrants' remittances allow families to increase their expenditures on basic needs in order to improve their standard of living or to start a small business. At the same time, they bring valuable foreign exchange into the country, improve the national development prospects, maintain macroeconomic stability, help to mitigate the impact of adverse shocks, and reduce poverty (IMF, 2005).

Since the late 1970s, Indonesia has experienced significant structural changes in the composition of its economy. It has occurred in terms of employment, structural change, productivity, and output levels, and has triggered significant changes in employment patterns, and migration in particular for those from rural regions. These transformations have an impact on many aspects of labour supply and demand, such as educational levels or the role and the status of women. Population mobility in Indonesia has increased over the decades in terms of short and long distance, permanent and temporary, and urban and international migration.

Although real economic growth was quite high at 5.24 percent between 2000 and 2010, the labour force could not be absorbed by the labour market. Therefore, a large share of open unemployment of 8.6 percent was also present during the same period (BPS-Statistics, 2000-2010). In 2010, 32.02 million Indonesians, 13.3 percent of the total population, were living below the poverty line,[1] while 64 percent of them were living in rural areas (BPS-Statistics Indonesia, 2010). Therefore, people look for opportunities to move to another place in order to improve their lives. At the same time, population pressures associated with greater land use results in rural-urban migration. Over one million Indonesian workers migrated abroad as per legal contracts, most of whom are employed as domestic servants (William, 2008). This rapid increase in overseas migration of unskilled migrants led to a magnitude of cases of

[1] The Indonesian government defines the poverty line based on a basic need approach, which is an average consumption (in Rupiahs) of basic essentials contained in a food bundle (52 items) and non-food bundle (51 items in urban and 47 in rural), which is typically consumed by a reference group as calories per day. The food poverty line is defined as the total expenditure required to purchase food needed to satisfy the 2100 calories energy required in Rupiahs per capita per day (BPS-Statistics Indonesia, 2009).

illegal migration, deportation, and violence towards migrants in the receiving countries. The formation of migration networks as well as the involvement of a migration 'industry', such as agents who support migration and the labour market, has accelerated the flow of international migrants from Indonesia. Most of the labour migrants are recruited by local agents and are subject to fees which are charged to the migrants. The family plays a role in the migrant's decision to work abroad (Firdausy, 2005).

In East Java, the population living in urban areas has doubled since the 1980s. As one of the growth centres in East Indonesia, East Java has increasingly attracted attention as an important economic region with its own dynamic and as a counterweight to the established economic dominance of the region Jakarta-West Java. Surabaya and other cities, for example Pasuruan Sidoarjo, Gresik and Malang, have become major destinations for rural-urban migrants in East Java. East Java's contribution to labour migration is a process by which labour withdraws from the rural sector to meet manpower needs in the urban sector or in other countries.

With regard to available alternatives, the migrant decision-making process is essentially determined by real wage differences, human capital, social capital, access to capital, market access, and government intervention as Todaro (1997), Hoerder (2004), Bahns (2005) and Zaqqa and Knerr (2006) emphasize. This research investigates household level and provincial level factors which influence international and rural-urban migration from rural areas in East Java. This study aims to identify and analyse the determinants of migration decisions with regard to rural-urban migration and international migration in rural areas from East Java. This study also generates a comparison of rural-urban and international migration in terms of decision making and migration.

The analysis is divided into an individual-characteristics level and a village-level analysis. The first illustrates the characteristics and individual factors influencing migration while the second considers development indicators, infrastructure and government policies in villages in the province. Both levels are essential for the design of policies and programmes that aim to support rural development in East Java and therefore, the guiding principles for supporting policy recommendations with regard to development programmes have been identified. This study illustrates that human, physical and social capital, government aids, credit access, demographic and socioeconomics characteristics influence the decision to migrate abroad and

rural-urban migration on an individual level. The study also tests the hypothesis that education facilities, poverty, water resources, farm characteristic (e.g. share of farmer, land for agriculture), institutional characteristics (e.g. market access and credit access) in a village influence a household's decision to migrate.

This thesis is organized in seven chapters. The first chapter presents the introduction and the relevance of the research. It gives an overview of issues investigated and explains the research questions and hypotheses. The second chapter starts with theories pertaining to migration decisions, presenting the basis for the conceptual framework which is used to analyse migrant's decisions to migrate. Chapter two concludes by presenting the hypothesis purported by the thesis. The third chapter highlights the state of research with regards to decision to migrate. It provides a definition of migration and reviews empirical evidence about factors affecting migration decisions and presents, at the end, specific evidence about Indonesia.

The methodology employed for data collection (primary and secondary), as well as a survey for econometric estimation, is presented in the fourth chapter. It describes the sampling frame and the selection of individuals. Following this, the methods applied to measure statistical inferences are described and an overview of econometric analysis is provided. Chapter five offers an overview about the characteristics of the economic situation in the research area, major trends in migration and socioeconomic development, and the change in economic indicators in Indonesia, East Java and the Malang district.

Chapter six presents the results of the descriptive and econometric analysis employed for this research. It explores the detailed results obtained from the descriptive analysis of respondent's characteristic as well as the econometric results using primary and secondary data at an individual- and village-level analysis. Finally, chapter seven discusses conclusions and recommendations, explaining the policy implications derived from the descriptive analysis and the explicit econometric model. It also presents a discussion of the results and their implications both for policy development and future research.

# Chapter 2 Theoretical Framework

Decisions whether to migrate are driven by both internal factors (individuals and families), and external circumstances which directly and indirectly determine a person's quality of life. This section discusses the appropriate theories relevant to the decision making process for migration. For this purpose, internal factors will be explained using New Economics Labour Migration (NELM) theory (Stark, 1991; Massey et.al ,1998; Zanker; 2008). Accordingly, the Todaro model of Human Capital theory (Todaro, 1997; Keely, 2000; Taylor, 2001, 2006; Ehrenberg and Smith, 2003; Pedersen, 2008) will be employed to explain and to analyse the surrounding circumstances affecting the migrant's decisions.

## 2.1. Theory of internal migration (Todaro model)

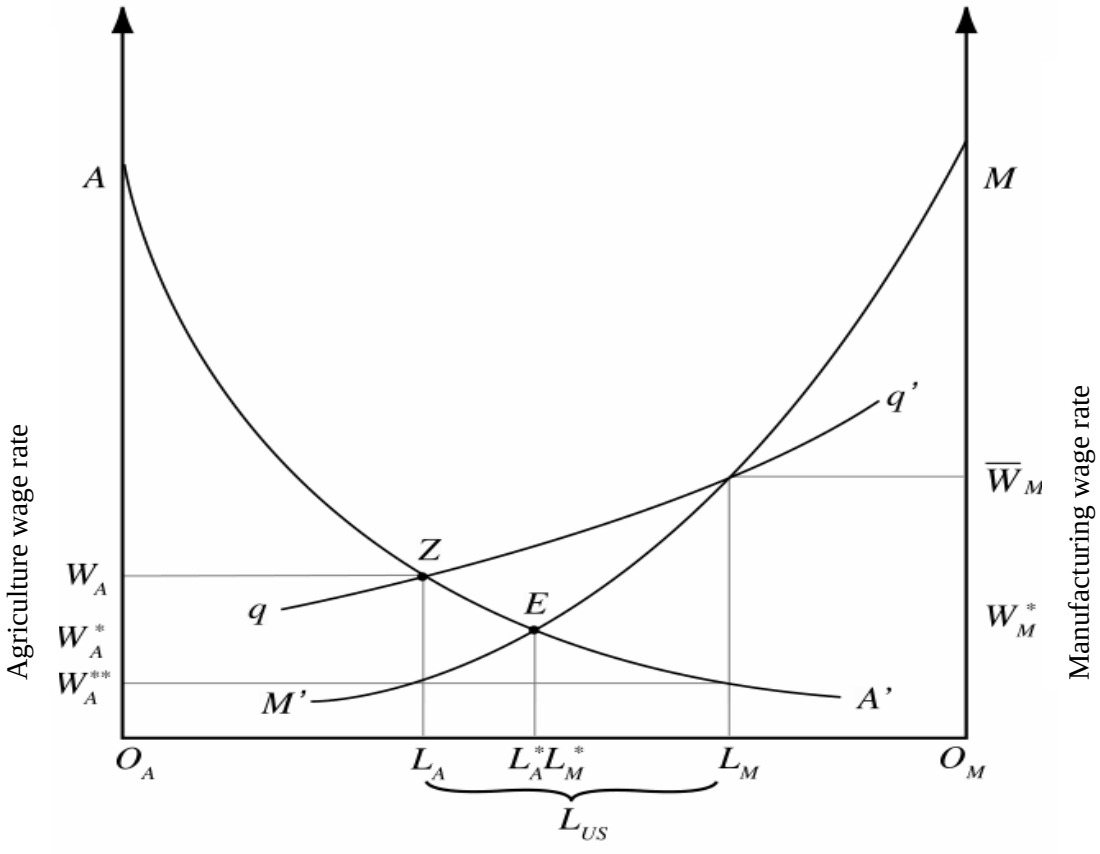
In Todaro's model, rural-urban migration is triggered by various economic rational considerations directly related to utility maximization. The model assumes that migration is mainly an economic phenomenon, which can be a rational decision made by an individual migrant despite the existence of urban unemployment. This model proposes that rural-urban migration is a response to differences in expected income rather than actual earnings. Individuals will decide to migrate when the net income (income minus tax) in the destination is more than the net income in the village, weighted by the possibility to get a job.

The Todaro migration model (1997) was built based upon economic dualism of a country, characterized by the modern sector, urban capital-intensive modes of production, and large economies of scale. On the other hand, the traditional sector also exists, characterized by the presence of rural subsistence with a low production. Although expected earnings (income expectation) in cities during the initial period are lower than the income earned in rural areas, as long as the present value of the expected net income in the city exceeds the the decision to migrate is economically justified (Todaro, 1997).

Figure 2.1.1 illustrates rural-urban migration as a process of the equalization of rural and urban wages. This model assumes that there are only two sectors, rural agriculture and manufacturing. The demand for labour (the marginal productivity of labour curve) in

agriculture is denoted by the negatively sloped line *AA*' and demand of labour in the manufacturing sector is denoted by *MM*'. The total labour force is represented by $\overline{O_A O_M}$ According to the neoclassical term, if the wage is flexible and the market is in full-employment condition, the equilibrium wage would be established at $W_M^* = W_A^*$ , with $\overline{O_A L_A}$ for workers in agriculture and $\overline{O_M L_M}$ for workers employed in urban manufacturing. In these circumstances, workers are in a full employment condition. If urban wages are institutionally determined by the government at a level $\overline{W}_M$ , which is at a considerable distance above $W_A^*$, assuming that there is no unemployment, $\overline{O_M L_M}$ workers would obtain urban jobs, and the rest, $\overline{O_A L_M}$ , would have to settle for rural employment at $\overline{O_A W_A}^{**}$ wages.

**Figure 2.1.1.** The Todaro Migration Model




Source: Todaro, (1997)

Urban–rural real wage gap is $\overline{W}_M - W_A^{**}$. If there is no barrier to migrate for rural workers, then despite the availability of only $O_M L_M$ jobs, they are willing to take their chances in the urban job market. Their chance (probability) of securing one of these jobs is expressed by the

ratio of employment in manufacturing, $L_M$, to the total urban labour pool, $L_{US}$, and then the expression is formulated as follows:

$$W_A = \frac{L_M}{L_{US}}(\overline{W}_M)$$

The equation expresses the probability of urban job success necessary to equate agricultural income $W_A$ with the expected urban income ($L_M/L_{US}$) ( $\overline{W}_M$ ), thus causing a potential migrant to be indifferent to job locations. The probability to migrate is given by the indifference curve *qq*' with point *Z* as the new unemployment equilibrium. If the actual urban–rural wage gap is $\overline{W}_M$ -$W_A$ , $\overline{O_A L_A}$ , workers remain in the agricultural sector, and $\overline{O_M L_M}$ of these workers have modern (formal)-sector jobs paying $\overline{W}_M$ wages.

Furthermore, rural-urban migration could continue even though unemployment in urban areas is quite high as income differences still exist. This has a rational foundation; under these circumstances the urban migrants reach higher wage levels. Thus, the fluctuations of unemployment in urban areas are not avoided regardless of inequalities in job opportunities that are very severe between urban and rural areas, such as the wage gap.

Building upon the Todaro Model, Bahn (2005) argues the most common reason for rural-urban migration is the disparity of real wage rates between rural and urban sectors. Decisions about whether to return to work in the rural or agricultural sectors or to work in urban/manufacturing and service sectors are considered according for such inequalities. The increasing wage disparity between rural and urban areas motivates rural workers to migrate to cities. Despite a lack of job assurance in the cities, rural people migrate due to their perceived assumption of the expected wage and the expected probability to find job. The theory of economic geography explains what influences where people settle and where industry develops, including infrastructures, geographical locations, and personal contacts (Bahns, 2005). Economies of scale affect industry allocation and labour location.

Zanker (2008) emphasises the factors which drive demand for migrant labour forces. Due to inflation, the permanent wages rise in both sectors, but the rise in primary sectors becomes proportionally higher. Consequently, lower pay in the secondary sector becomes less-attractive to wage employment seekers. Migrants are more encouraged to return to rural areas since they do not consider themselves to be part of the community in the destination country.

Additionally, employment in the sector fluctuates according to economic instability, creating uncertainties regarding work and thereby it is no longer attractive to origin workers. As a consequence, women and young workers who are sources of labour in the sector are no longer available due to demographic changes, creating a strong demand for temporary labour, fulfilled largely by migration.

## 2.2. New Economics of Labour Migration

According to the NELM, migration decisions are made jointly by both the migrant and the migrant's family and thus analyses migration as a household decision rather than as an individual decision. They share the costs and the returns, according to an implicit contractual arrangement between both parties (Stark and Blomm, 1985). McDebitt and Gadalla (1985) also assert that decisions about migration are associated with the characteristics of the spouse (husband or wife). Households facing imperfect capital markets represent one hypothesis associated with the theory. In particular, the household makes decisions regarding its present labour allocations and other inputs that affect its short-term production and investment in household resources that affect its long-term production (Taylor et al. 2003).

The problem of defining a supra-individual decision-making unit is partly remedied by the NELM, whose theorists do not prejudge the sole social unit of decision-making to be an individual actor but try to aggregate the utilities of the individuals involved especially in the case of rural economies (Stark, 1991). Basically, The decision is a portfolio strategy of potential migrant households who try to diversify their sources of income (Stark, 1991). Migration is a family strategy aimed to diversify income in order to minimize risks such as unemployment, loss of income or crop failure, and removing the constraints which could cause market failure in sending countries (Arango, 2000). Stark asserts that migration decisions can be understood as derived from family preferences for stable income levels, achieved through a diversified portfolio of labourers, and the need to jointly ensure the family's welfare. Therefore, the family, rather than the individual, is the critical decision-making entity that determines migration patterns and remittance flows.

In more detail, Zanker (2008) describes NELM as follows:

> *"The NELM extends the migration decision to also include risk and insurance considerations, household decision making and links the migration causes to the consequences. Therefore it is a more realistic and useful theory, even though it is still quite abstract and stylized and has some strong assumptions, like rationality. Unlike the sustainable livelihoods literature it is also quite vague on the combination of different types of activities. Like most theories of migration it is also vague about how migrants choose where to go specifically".*

Capital market failures can initiate disequilibria in labour markets. However, international migration still exists even if there are no differences in international wages. A low level of capital in rural areas can lead to a low marginal product of labour; for example, low wages in rural areas leads to high migration to urban areas. Potential migrants who decide to migrate have to pay for both travel costs and fees for proper documentation with his/her own, or must borrow money from family members, or has access to the capital market where funds can be borrowed commercially. Households attempt to overcome risk resulting from market failures in their economies, for instance missing or incomplete credit markets. Due to limited social protection or social insurance, the household does not have enough income to consume in difficult times and much less to invest. This means that migration is an attempt to overcome these market failures (Zanker, 2008). Nevertheless, most migrants do not make decisions to migrate in i and their family is likely to have some influence on the decision making process at the household level.

Demir (2003) emphasizes that in the interest of diversifying risk, families choose to gain different training for each worker in the family unit. Therefore, these workers may be sent abroad to search for opportunities in the country of destination before advising the rest of the family to join or not. Thus, a key in this approach is that migration decisions are not made by individual actors, but by family units or households, in which people act collectively to maximize expected income and minimize risks. This means that according to the NELM theory, insurance, capital and credit markets are important elements in the decision to migrate.

### 2.3. The impact of form capital on migration decision

One important starting point for the decision whether to migrate or not, involves looking beyond the traditional concepts of capital, such as distinction of land, labour and produced

capital. Beebington (1999), Nee and Sanders (2001) and Gallerani et al. (2005) suggests that the basic distinction rests between the following different forms of capital:

1. Natural capital
2. Physical capital
3. Human capital
4. Cultural capital.
5. Social capital

Natural capital comprises the access of rural household to land, water, and forests, which can all be used for generating income and improving livelihood (Carney et al. 1999; Brocklesby and Fisher, 2003). For rural people who depend on the agriculture sector, degradation of natural capital can lead to reduced agriculture productivity and, in the long term, could encourage people to leave their village (Morse, et al. 2009). Physical capital includes basic infrastructure and the production equipment necessary to support livelihood strategies, while human capital comprises the skills, knowledge, and ability to obtain to various livelihood pursuits (Carney, et al, 1999). In many cases, good physical infrastructure can lead to the improvement in quality of life, and can in turn lower the motivation to migrate (Oberg, 1995; Morse et al. 2009). Through education, human capital encourages skill and knowledge development and thus persuades people to migrate (Ramcharan, 2002; Talylor, 2001; Gallerani et al. 2005)

Cultural capital is often associated with the intrinsic values of an individual or a community. It is an important factor for human development as it empowers the individual to adapt to the surrounding environment (Bourdieu, 1986; Beebington, 2000). With this capital, an individual is expected to be able to generate strategies and improve his or her access to a better livelihood, either by staying in the village or moving to other places. Social capital allows people to collectively take part in effective local decision making, and to secure informal insurance from friends, family, neighbours, and the community. Unlike physical and human capital, social capital can be generated or produced through relationships among individuals within a community (Grootaert et al. 2004.) In this case, connections with those have already migrated can encourage others in the village to employ a similar strategy. On the other hand, the strong social bond can serve as a motivation to remain in the village. For poor people, even though migration is often used as a strategy to diversify the sources of their livelihood or

to escape poverty, it involves transfer costs (in terms of financial, human, physical and social capital) that could eventually reduce the ability to migrate (Waddington and Sheeler, 2003).

## 2.4. Theories of human capital

Human capital theory purports the view that migration is an individual investment closely related to experience, skill and education. Each individual will calculate profits he/she obtained from migration which he/she planned. The human capital embodied in the migrants also influences migration decision (Keely, 2000); the higher the migrant's education level, the greater the access to information about destinations, which thereby reduces the risk of migration. The probability of investment in human capital by individuals depends on the social characteristics of each individuạl (Sell and DeJong, 1978; Bauer and Zimmermann, 1995; Massey et al. 2003).

Based on human capital theory, Taylor (2001) describes hypotheses to explain the influence of human capital on migration. First, migration is dynamic and younger persons are more mobile than older persons. Younger migrants have more freedom to choose their destination. Their migration is not only intended to seek income but also to seek experience. Therefore, a younger working age has a positive effect on rural-urban migration and international migration. Secondly, migration is negatively correlated with migration costs, which can be explained by the distance between the country of destination and information access. The existence of migration networks leads to lower costs for migration, and thus encourages migration to the country or regional destinations. Better-educated migrants have easier access to information to determine migration procedures, reducing the cost of migration. Third, economic growth in a country, which has an impact on improving growth in a village or town, will enhance rural-urban migration. Increased economic growth will increase demand for commodities which are produced by manufacturing sectors in the urban areas. The demand encourages increased investment needs for both capital and labour in urban areas and lastly, human capital variables are positively correlated with migration. Migrants from the countryside who have experience, skills and education are encouraged to migrate to seek better income. Furthermore, wage differentials between rural and urban areas will be reduced and balanced in the long term.

According to Ehrenberg and Smith (2003)**,** human capital theory predicts that migration will flow from areas of relatively poor earning possibilities to better places. Migration is much higher among the young and better-educated. Age is the single most important factor in determining who migrates. Education is the best predictor to determine who will migrate within an age group. More general education leads to growth in human, social and cultural capital which results in the enhancement of economic and social structure. Education and information transfer requires trust and reputation and, consequently, training is not just the transmission of information but part of a process creating a shared culture (Gallerani et al. 2005).

### 2.5. Network theory approach on migration decision

In network theory approach**,** a network among potential migrants and previous migrants is a significant factor to facilitate migration. Migrants and household members maintain connection and cooperation over long distances through a combination of familial loyalty, exchange of transfers and parental asset pooling (Stark and Levhari, 1982). As a result, a decision to migrate is determined by the complex social relationships within the community and between prospective migrants and migrants at the destination. Boyd (1989) employs network theory and reports that interpersonal ties, such as kinship, friendship and shared community origin among migrants, former migrants and non-migrants in the place of origin and destination areas, are likely to increase the likelihood to migrate, at both the individual and household level. Although networks are not the main factor that influences migration patterns, Geis et al. (2008) indicate that wages and immigrant networks still have a positive effect.

Networks represent accessible resources creating social relationships at the destination. A person with strong social capital has connections have more job information throughout the occupational hierarchy, it enhances they opportunities to gain a good position (Lin and Erickson, 2008). Migration networks can be viewed as a form of social capital from the creation of social relationships. It leads to economic access such as employment or higher wages. Social capital is created when the relationship between persons change in ways that facilitate action; it is embodied in the relationships among persons (Coleman 1990; Arango, 2000). The rational actor uses social capital as a resource to maximize utility. Networks can lead to chain migration and stimulate the migration process.

According to Massey et al. (1998), migrant networks refer to sets of interpersonal ties that link migrants, former migrants and non-migrants at origin and destination areas through ties of kinship, friendship, and shared society origin. They increase the likelihood of international migration because the expectation of lower costs and risks motivate people to migrate. Network connections are a form of social capital that enable people to gain access to credit, higher wages, better jobs, and to obtain the possibility to accumulate savings and send remittances. Through the network, pre-information of working conditions and relevant skills spread to the prospective migrants in the area of origin making the initial description of the future adaptation easier. Networks can reduce the costs and risks of migration. Initially, migrants who have no social ties will bear a larger cost because of the lack of information about the job market they earn in a new place. Migrants may create a group on the arrival at their destination which help them to find a job, housing, education, and social security (Massey et al. 1993). Furthermore, the new migrants find it easier to gain access to jobs and other information which then encourages more migrants to come to the area. The network also reduces the risk and uncertainty of migration. Migration networks that have developed well provide information and better access, thus reducing the uncertainty of jobs and income. This improves their competitiveness in the local labour market in the destination country.

Taylor (2006) also outlines that decisions of international migration depend on migration networks or contact with family members and may also include contact with a neighbour who previously migrated. This is because previous migrants not only provide money to persons in the homeland, they also provide information about how they should migrate, where to search for a job, which agents are to be trusted, how much the expected wages are, the costs of migration, and how to solve problems in the destination area. Accordingly, migration networks reduce the economic costs and risks of international migration while also providing other benefits such as integration in a foreign country.

In addition, Mckenzie, David and Rapoport, Hille (2007) found that the impact of migrant networks on the decision to migrate depends upon the composition of the networks. In particular, the closer the kinship bond, the more important the impact on networks. At the same time, the impact of migration networks is found to be non-linear but may be increasing or decreasing at the margin depending on the type of migration asset and choice of destination. Based on evidence from OEDC countries, Pedersen et al. (2008) mentioned that

network effects on the migration process are strong but vary between different groups of welfare states and between countries according to the type of immigration policy applied. Moreover, the authors illustrate that network effects seem to be less important in Nordic countries, which also seem to attract immigrants from the lowest income level source countries.

Decisions to migrate are not only made within specific economic, political, demographic, and cultural backgrounds but are also determined by opportunity structures, reflected in the household, neighbourhood, working place, and community. Social capital as a resource is inherent in patterned social ties that can be represented as macro and micro connections. First, migration is a balanced and negotiating process which redistributes people according to their own choices subject to social norms and economic constraints in both sending and receiving societies. Second, intercontinental migration systems and global economic structures, or *macro* systems, interact with *micro* level individual and family-related decisions. Individual decisions are part of information and relationship networks at the *micro* level. The chapter concludes that income risk, education, gender, family, infrastructure, land access, and credit access affect migrants' attitudes towards migration and affects whether they migrate to cities, abroad or stay in their original region.

# Chapter 3 : State of Research and Hypotheses

This chapter outlines the definition of the migration, hypothesis and relevant empirical studies regarding factors that influence the decision making process for both rural-urban and international migration. It is divided into three sections. First, the concept of migration is explained, followed by theories about migration decisions. The research hypotheses are also presented in this chapter. The third section presents empirical evidence regarding the factors that influence migration decisions. The chapter concludes by outlining the empirical evidence about migration from Indonesia.

## 3.1. Definitions of migration and migrants

International and internal migrant workers refer to as person who migrates from one area or country to another with the perception of finding employment, and includes any person who is either officially or unofficially admitted as a migrant for employment (ILO, 2008). Migrant is also defined as a person who was born overseas and has obtained permanent resident (US Census Bureau, 2008). The United Nations (1998) distinguishes migration into short and long-term international migrants. The short-term migrant is a person who moves from his/her country of origin to another country and remains there for a period of at least three but less than 12 months but does not include cases of recreation, visits to friends and relatives, businesses, medical treatments, or religious trips. On the other hand, a long-term migrant is defined as a person who resides in another country for at least 12 months and the destination country effectively becomes his or her new country of usual residence[2]. IOM (2008) delineates international migration as temporary and permanent migration. A temporary migrant is a worker who remains in the receiving country for a definite period as determined by a work contract with an individual worker or a service contract concluded with an enterprise. A permanent migrant represents legally admitted immigrants who are accepted to settle in the destination country, including persons admitted for the reason of family

[2] Taken from United Nations, 1998, *Recommendations on Statistics of International Migration Revision 1*, Department of Economic and Social Affairs Statistics Division, Statistical Papers Series M, No. 58, New York. The definition is also available from: http://unstats.un.org/unsd/demographic/sconcerns/migration/migrmethods.htm#B

reunification. In the case of rural-urban migration, IOM defines it as movement of people from rural area of a country to an urban area for the purpose of establishing a new residence, as is the case for international migration, this rural-urban migration can be temporary or permanent.

In the context of Indonesia, BPS-Indonesia (1995) defined migration as a process of movement of population from one place to another, crossing certain boundaries, and lasting more than six months. The Indonesian statistics further distinguishes outgoing migration rate and net migration rate. Outgoing migration is defined as the migrants moving out for every 1,000 people while net migration is the total incoming migrants minus the total outgoing migrants per 1,000 people (BPS-Statistics, 2008). Knerr (1994) defines a migrant in an active sense as a person who is on the move from one region to another region and, in a static sense, to explain the situation of a person who has moved from one region to another region. In this study, labour migration is defined as movement outside the locality of residence lasting for more than six months (BPS-Statistic Indonesia; Deb and Sec, 2009). In addition, it categorizes migrants into two types: international migrants and rural-urban migrant.

### 3.2. Empirical evidence regarding the decision to migrate

Migration is an integrated part of the production function of many smallholder farm households in low- and middle-income countries (Schrieder and Knerr, 2000). At the same time, rural and non-rural areas are connected by a globalization process taking place through the opening of markets and increasing mobility of goods, people, and financial resources (Gallerani *et al.* 2005).

Contemporary migration factors were moved beyond the traditional assumption that the marginal condition of local economic resources is a determinant factor of out-migration. Based on the case on rural out-migration in the Southern Ecuadorian Andes, Gray (2008) found that the effects of land ownership and other factors differ strongly across migration streams. At the same time, negative environmental conditions and landlessness do not consistently increase out-migration as commonly assumed by scholarly literature. Therefore, analyzing determinant factors of migration must include the social as well as cultural factors along with the economic benefit of migration. The majority of studies contest that the motivation to improve economic status and the lack of potential economic sources which can

be accessed by migrant in the place origin is the determinant factor. In fact, the determinant factor of migration not only results from disparities in economic development but also relates to political and social reasons.

Using data from Turkish population censuses between 1990 and 2000, Gökhan (2008) illustrates that both economic factors, such as income differentials and unemployment rates, and social factors, such as the presence of social networks have a significant impact on migration. Accordingly, Bhugra (2004) reports that the loss of social support along with difficulties establishing new social networks at the destination results in feelings of loss and loneliness and may also exacerbate the negative impact of stress migrants. Using a literature review, the study explains that the benefits created by the network are not limited to households with relatives abroad as network access time is in fact extended to all households in the migrant's place of origin. Households in a village which have migrants are more likely to encourage migration abroad. Munshi and Rosenzweig (2005) argue that social networks have an important role by spreading of new ideas and practices from multiple labour agents and influential persons within the villages. The former migrant or migrant located at the prospective destination is often the opinion leader and plays a major role in spurring the adoption of innovations. Neighbourhood relationships have been facilitated by recent modern communication technology such as internet and cellular technology, making it easy for prospective migrants to obtain relevant information (Munshi and Rosenzweig, 2005).

A case from Sub-Saharan African (SSA) Countries shows that armed conflict and lack of job opportunities are significant determinants of migration in that region (Naude, 2010). This differs from other cases in which demographic and environmental pressures are the most determinant factor as the factors have a lower direct impact in SSA countries. However, demographic and environmental pressure have an indirect impact on migration through conflict and job opportunities, further demonstrating that determinants of internal migration stem from the region's political situation, not only from economic dimensions.

Kennan and James (2009) examine the relationship between income and the decision to migrate by using panel data from the US National Longitudinal Survey of Youth on white males with a high school education. The study concludes that the migration decision is partly determined by the negative effect of income at the current location. Workers who earn a good income at their current location tend to stay while those who earn less tend to leave. This

means that the link between income and migration decisions is driven both by geographic differences in mean wages and by probability to move in search of a better location when the current income level is unfavourable. Moreover, Cebula (2005) investigates economic and non-economic determinant of internal migration in the US using logit regression from 1999 to 2002. The result shows that expected income and actual income are statistically significant. Living costs also play a significant role in that decision; the unemployment rate does not. In addition, this study shows that a variety of quality-of-life factors have significantly impacted gross migration during this short study period.

Migration research, drawing primarily on the experiences of capitalist economic theory, has shown that population movement is strongly related to regional economic development. Fan's (2005) study of China suggests that the relationship between migration and regional development is bidirectional, especially in rural areas. Using interprovincial migration data from the 1990 and 2000 censuses, the study outlines two themes; first, migration is a more effective factor for population redistribution, and second it illustrates a strengthening of the relationship between migration and regional development. By using a correlation method, the results suggest that gainers gained more and losers lost more population from net migration; thus migration plays an important role in redistributing population among provinces (Fan, 2005).

The study by Arenas *et al.* (2008) explains that the decision to migrate or not is a household's (family) decision made to maximize income and to spread income risks through remittances sent back by family members who migrate to another country. They estimated this premise using a logistic regression on a panel data set of the Mexican Family Life Survey (MxFLS) in 2005. The study explains that the household decision making is associated with socio-demographic characteristics such as age, assets, education, gender, marital status and access to credit (Arena et.al, 2008). Cox and Ureta (2003) found in El Salvador that the decision regarding international migration is influenced by households characteristics, namely family income, parental schooling, and the number of school-age children. Carletto *et al.* (2004) concludes that in Albania household characteristics such as assets, land holdings, and demographic composition reflect the household's exposure to risk and ability to respond to risk. In both rural and urban areas, migrations are related to the degree to which family members can generate income to meet their reproductive needs, including the cost of bearing and raising children (Hoerder, 2004).

Using multivariate regression techniques in the case of internal migration in Ethiopia, Uchenna (2006) finds that migrations are primarily encouraged by the drive to improve the living condition and are also facilitated by the education and the low income from non agricultural sector[3]. He further illustrates shows that being a permanent migrant, an urban resident, earning income from non-farm activities, level of education, higher education, gender, variation of income sources, age and region of residence are positively correlated with living conditions. However, return migrants show a negative association with living conditions comparative to non-migrants, although none of the outcomes are statistically significant (Uchenna, 2006).

Konseiga (2007) examines the relationship between seasonal migration decisions and sources of income in the case of migration from Burkina Faso to Ivory Coast. The study shows that migration is an important survival mechanism in regions dealing with a scarcity of natural resources because of a high population density. The enhanced migration leads to higher liquidity that enables households to overcome credit and insurance market failures. Using the Heckman regression model, the results indicate that the earnings of seasonal migrant households is a positive function of the land area cultivated in the village for the main crop (millet) and labour force. Lower rainfall areas also have lower income, potentially indicating that water resources were influenced factors to increase crop yields. Other factors explain seasonal migration decisions positively through the relation to the (short-growing-season) agriculturalist ethnic group, the accessibility of extra-labour force, education, population density, and negatively through age.

Van Wey (2005) in his study of international migration in Mexico and internal migration in Thailand shows that the land ownership negatively affects migration for members of the majority of households. It indicates that land is an investment opportunity and provides employment for rural households. In Thailand, rural residents access capital through

[3] Uchenna(2006) uses the living condition index consisting of physical qualities such as of the roof and the floor, as well as the main source of light for the household, the nature of bathing and toilet facilities, and the number of rooms in the house and ownership of various means of personal transportation and other household durables such as a car, bicycle, television, sofa, radio, electric fan, electric iron, electric stove, electric mitad, clock, insecticide sprayer, cassette recorder, cylinder, telephone, refrigerator, cart and plough.

migration, allowing them to invest in the purchase and improvement of land. Migration by household members can be raised by sale, mortgage, rent or products of land. Land ownership is an important factor for increasing agricultural production, population growth leads to partition of agricultural land resulting in inefficiencies in agricultural activities and a lack of credit. Moreover, the structural transformation from agriculture to manufacturing and service sectors entailed migration to urban centres and abroad. Alternatively, landholdings can provide employment and livelihood for rural residents, enabling them to avoid migration (Van Wey, 2005). Shortage of agricultural land and surplus labour in rural area also encourages internal migration. Access to land in the aggregate and at the individual level is linked to the process of rural-urban migration. However, migration rates are not uniform across the rural population. Individuals living in rural areas respond to the opportunities and constraints inherent in the characteristics of their households and themselves. Indicators for these opportunities and constraint are often viewed from household landholdings (Gallerani et al. 2005).

The research of Zhao (1999) examines migration decision of households in rural China by employing logit model for the years 1994 and 1995. It concludes that the scarcity of farmland and abundance of labour is often major determinant of labour migration. The research finds that the households experienced with a reduction of their income from the agriculture sector so that they decided to leave the sector, that eventually resulted the decline of labour supply in the sector. A decrease in land holding size by farmers, increased the probability of migration and that rural taxation has a positive effect on the decision to migrate..

Additionally, Somwaru (2001) emphasizes that internal migration in his study where he tested rural labour migration in China, its characteristic, possible restraints, and potential for migration using more than 4 million observations from the national agricultural census. The study predicts the likelihood of migration from farming to non-farming work, which is reflected in rural-urban migration. The study shows that land size, education level and age are the most important factors with regards to labour migration.

In addition, by applying a dynamic model to rural labour migration data in China, Zhao (2004) shows that a migration network and an expected income increase represent incentives to migrate. The network of the migrant with the origin household not only influenced destination but also influence migrant investment patterns. Massey *et al.* (2007) report that

migrant decision-making in four Mexican communities is strongly and consistently determined by social capital and community membership, with other variables playing ancillary roles in different decision-making processes. Therefore, ties to the community of origin play an important role in to determining patterns of saving and investment of remittances. They further note that the propensities to save, remit, and invest productively generally rose as ties to the United States increased and were generally higher in communities with well-developed local economies.

According to Oishi (2002), if there is a large demand for women migrants and if the immigration policy is more open for unskilled female labour, then a larger number of migrant women will enter the destination country. Most employers in Southeast Asia and Europe prefer to hire Filipinas as domestic helpers due to their high-level of education, language ability, and sociability. Nevertheless, the level of demand and selectivity from the employer's side cannot completely explain the patterns of female migration. Particular family circumstances can also be decisive factors for migration. Migration decision is not only viewed as a strategic family decision as a whole but is viewed from a gender perspective, particularly the important role women can play in improving economic conditions in the family (Loveband, 2003; Taylor, 2006; Arena et.al; 2008). In addition, Berthelemy *et al* (2009) state that migration decisions are also influence by foreign aid. By using data of 187 sending countries, which are developing, emerging, and transition economies, and 22 OECD member countries, this study found that total aid correlates with migration through increased expenditure financing and wages in countries of origin.

The decision to migrate is based on not only made specific economic, political, demographic, and cultural background but is also determined by social structures, reflected in the household, neighbourhood, working place and community. Social capital as a resource is inherent in patterned social ties and can be represented as a macro and micro connection. First, migration is a balanced and negotiating process which redistributes people according to their own choices subject to social norms and economic constraints in both sending and receiving societies. Second, intercontinental migration systems and global economic structures or *macro* systems interact with *micro* level individual and family-related decisions. Individual decisions are part of information and relationship networks at the *micro* level. This chapter concludes that income risk, education, gender, family, infrastructure, land

access and credit access affects migrants' attitude to decide whether they migrate to cities, abroad or stay in their original region.

### 3.3. Migration in and from Indonesia

Indonesia is currently undergoing a demographic transition, demonstrated by the massive rural-urban migration with large cities activities as the major destinations. Most migrants converge on the peripheral urban area, leading to the emergence of larger cities and a decline in rural population growth (Rogers, 2004). The seasonal migration prevalent is circular in nature with agricultural labour migrants migrating from urban to rural and from rural-urban areas, as well as across borders during harvest seasons (Haque, 2005). Surplus labour increases due to reduced agricultural land, inequality of land distribution, low agricultural productivity, high population density, and the rural economic concentration almost exclusively in agriculture, commonly leading to an enlargement of out-migration (Deshingkar and Grimm, 2005)

Cebula (2005) mentions that expected income and actual income play an important role with regards to the decision to migrate. Additionally, the cost of living also plays a significant role in that decision, although unemployment rate per se does not. In the past, wage differentials between sending and receiving provinces and the presence of an urban primate in the shape of Jakarta were the most important determinants of migration in Indonesia. Development of new industrial areas such as Surabaya, Medan, and Makassar provides more alternatives for those who wish to earn money outside of agriculture but still want to maintain their relationship with their family through monthly or weekly visits. Therefore, a more tangible prospect of economic betterment in a nearby city and increased accessibility due to an improved transportation system have attracted migrants in the last ten years.

By assessing changes in rural labour markets, Hyung-Jun (2002) indicates that in East Java villages crop intensification, expanding work opportunities in non-farm sectors, longer phases of education and the formation of a stricter boundary between agricultural and non-agricultural work have helped to reduce uncertainty in rural labour markets. Additionally, a study by Nasikh (2003) that used logit estimation in East Java, shows that the probability of labour to move from agriculture to the industrial sectors of the city is determined by levels of income and education. This study also illustrates that the amount of land owned and the

number of dependents also encourage family members to find employment in industrial sectors.

Safrida (2008) examines impact of migration on labour market in Indonesia, illustrating that Java continues to be the primary destination in terms of internal migration. With regard to international migration, Saudi Arabia is the main destination for labour migrants from Java, while workers from outside Java concentrate in Malaysia. Using time-series data from Indonesia between 1986 and 2006, Safrida (2008) explains that migration to Java is influenced by the zone of origin and number of migrants in the previous years. Meanwhile, migration out of Java is determined by low wages in Java and demand for manpower in the target zone. At the same time, international migration is influenced by wages and job opportunities (as a proxy of labour demand) in the country of destination.

Muhidin *et al.* (2004) emphasize that some ethnic groups are well known as highly mobile social groups, such as the Minangkabaus and the Bataks in Sumatra, the Bugis and Makassar in Sulawesi, the Banjarese in Kalimantan, and the Madurese in Java. During transmigration policy, many Indonesian families who resided in high-density regions (in particular Java and Bali) were relocated to islands with lower population density (i.e. islands of Sumatra, Kalimantan, Sulawesi, Papua and others). This policy of migration has spanned nearly a century since colonial and post-colonial eras[4]. Another study by Muhidin (2004), intercensal survey data in Indonesia captures factors that are required in the model of family migration system, including family pressure, family structures, family socio-economic resources, and family mobility experience. Other factors, such as family size, and a low level of agricultural land ownership have increased the probability of family (both members or entirely) to migrate.

Comola and Mello (2010) found that in case of Indonesia when supply and demand determinants of urban population growth are controlled. By using a simulation, if the minimum wage rises by an additional IDR 81.5 thousand (25 per cent of its initial mean

[4] The transmigration programme in Indonesia is an attempt to correct the population imbalance and regional development between Java and the Outer Islands. This aims to move people from the core area (Java, Bali) to new farming areas set up by government. Since the inception of the programme under the Dutch in 1904 through mid-1986 over 4 million people have moved (Leinbach, 1989).

value), the urban population would rise by an additional 0.4 per cent from its initial level. This indicates that increasing wages difference could attract rural people to migrate to Indonesian cities. This coheres with Cebula (2005) who found out that in the US, a variety of quality-of-life that indicated by wage difference factors have significantly impacted gross immigration.

According to Firdausy (2005), decision factors regarding overseas migration include high wages and unemployment in Indonesia. His findings supports the Harris-Todaro migration model in which wage differences have been pointed out as the determinant factor for labour migration from one place to another. Other factors such as looking for more experience and family or relatives abroad are also important in determining Indonesian labourers decision to work abroad.

The network of migrants with households at the origin influence the propensities of migrants to save, remit, and invest productively so that it would have an impact on the local economy both directly and indirectly. Pariduri and Thangavelu (2008) argue that in Indonesia remittances seem to change household consumption patterns. Nonetheless, they do not find strong evidence that indicates remittances improve these households' living standard, such as better education or healthcare. Moreover, remittances tend to be used for non-productive consumption and have no important role in improving economic development.

Taylor (2006) further asserted that the value of networks is perhaps higher for women than men because women seem to be more vulnerable at border crossings, have higher job uncertainty abroad, and worry more about individual security. In the context of Indonesia, female migrants’ low asset ownership and the fact that they choose low-risk destination as a priority, supports that a network illuminates the risk that occurred during the migration process.

A study by Schwarze (2004) about the Lore Lindu Park, Central Sulawesi, Indonesia explains that access to roads, wealth status of the household, education, and access to financial markets have a positive impact on migration. Migration is an investment that allows the household to remain, in the rural community. Households primarily mainly use remittance from migration to overcome the lack of access to credit that could be used to purchase and improve land implying good aspects for development in these regions. Grimm and Klasen (2008), using the

*three stage* ordinary least square estimation for data survey in 80 villages in the same area, assert that migration is driven by the condition of agricultural land (slope of land, drought and accessibility). This influence is also associated with population growth, which in turn intensifies land pressure in these areas. Therefore, land scarcity encourages people to seek land rights, which in turn enhance incentives to invest in agricultural technology resulting in a reduction in migration.

### 3.4. Hypotheses

Considering the theoretical background and the state of research, the study will examine the following working hypotheses:

The probability to migrate is expected to be higher when migrants have attended school for a longer period. Migration is an individual investment closely related to experience, skill, and education. The human capital embodied in migrants also influences migration decision (Keely, 2000). The greater a migrant's level of education, the greater access the migrant has to information about destinations (Sell and DeJong,1978; Bauer and Zimmermann, 1995; Massey *et al.* 2003; Nasikh, 2003; Gallerani *et al*. 2005). In order to address this premise for the study areas the following hypothesis will be tested:

**$H_1$** : Education has a positive effect on the probability to migrate.

**$H_2$** : Education facilities in the villages will increase the likelihood of the rural to urban migration.

Household decision making is associated with socio-demographic characteristics such as age, assets, gender, marital status, number of school age-children, and access to credit (Oishi, 2002; Cox and Ureta, 2003; Ehrenberg and Smith, 2003; Uchena, 2006; Arena *et al*. 2008; Loveband, 2003; Taylor, 2006). McDebitt and Gadalla (1985) further assert that decisions about migration are associated with spousal characteristics (husband or wife). This research proposes the following hypotheses:

**$H_3$** : Being married has a negative effect on the probability to migrate.

**$H_4$** : Being a woman has a positive effect on the probability to migrate.

**$H_5$** : Probability of migration increases with age.

**$H_6$** : Number of children has a negative effect on the probability to migrate.

**$H_7$** : Value of house has a negative effect on the probability to migrate.

The decrease in land possession ownership by farmers increases the probability of migration. Land ownership leads to the increase in production, provides both employment and livelihood for rural residents. Population growth leads to the partition of agricultural lands resulting in inefficiencies in agricultural activities, which tends to encourage migration. (Zhao, 1999; Hoerder, 2004; Van Wey, 2005; Gallerni et al.2005; Gray, 2008). In this sense, the research hypothesizes:

**$H_8$** : Land ownership has a negative effect on the probability to migrate.

**$H_9$** : Land for agriculture in villages have a negative effect on the decision to migrate.

The higher the share of ties in village, the lower the probability of migration. Increased social ties may reduce the probability of out-migration due to emotional or opportunity costs associated with reduced contact with social networks (Vidal. Sergi and Kley, Stefanie, 2010; Belot, Michèle and Ermisch John, 2009). The research will examine whether :

**$H_{10}$** : Social relations have a negative effect on the probability to migrate.

Share of farmers household is expected to increase agriculture productivity and thus reduce migration. Migration is an integrated part of the production function of many smallholder farm households in low- and middle-income countries (Schrieder and Knerr, 2000; Somwaru, 2001; Hyung-Jun, 2002). Accordingly, the following hypothesis is proposed:

**$H_{11}$** : Share of farmer households in villages has a negative effect on the probability to migrate.

Migration is expected to increase as a result of a lack in water resources for drinking water. Lower occurrences of rainfall reduce water resources driving people to migrate (Konseiga, 2007). In the case of this research work, the following hypothesis is proposed:

**$H_{12}$** : Water resources in villages have a negative effect on the decision to migrate.

Market access and credit access are expected to provide capital to establish businesses resulting in lower level of migration. The relationship between migration and regional development is bidirectional, especially in rural areas (Fan, 2005). Access road, wealth status and financial market have a positive impact on migration (Schawrze, 2004). To validate whether this premise applies to the research area, the following hypotheses will be tested:

**$H_{13}$** : Market access in villages has a negative effect on the decision to migrate.

**$H_{14}$** : Increased numbers of credit institutions in villages will reduce the number of migrant in the village.

**$H_{15}$** : Government credit programmes have a negative effect on the decision to migrate.

Migration is expected to increase under impoverished conditions and with limited health insurance. Limited social protection or social insurance and poverty encourage people in rural areas to migrate (Skeldon, 2003; Waddington and Sheeler, 2003; Zanker, 2008 ; Black, Richard and Sward, Jon (2009). For this research, the following hypotheses are proposed:

**$H_{16}$** : The probability of migration increases with number of the impoverished households in villages.

**$H_{17}$** : Health insurance has a negative effect on the decision to migrate in villages.

# Chapter 4 Methodology

This chapter presents the methodology and research setting which cover data sourcing for a two-tier analysis at both the individual and village levels including the conceptual framework. At the individual level, the research focuses on the use of primary data for micro-analysis. Village analysis at a regional level was based on the use of secondary data, which include, among others, rural statistics on the development of agricultural economic activities, rural industries, rural services and demography. The number and share of poor households was also employed to describe the current socio-economic conditions in the study area. Finally, this chapter presents the data analysis and the model estimation.

## 4.1. Conceptual framework

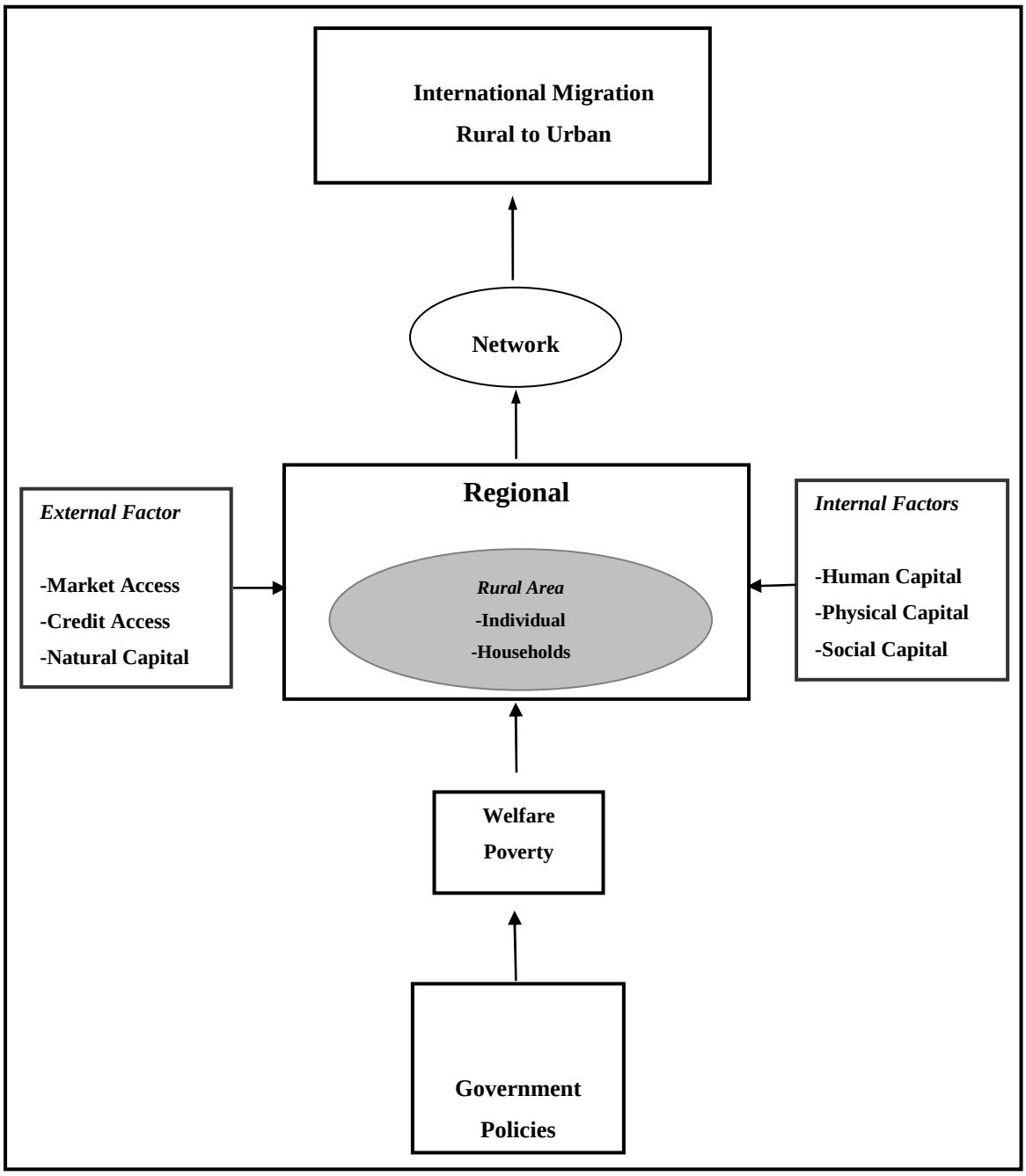
The conceptual framework illustrates internal and external factors that influence migration. Internal factors illustrate the decision-making process of the household. The household's resources consist of human capital (education, age, sex), physical capital (ownership of house and land), and social capital (Gallerani *et al*. 2005). The analysis concept of the determinants of migration decisions in East Java is presented in Figure 4.4.1.

The individuals obtain information about wages elsewhere through electronic media, from government offices, and their relatives who might eventually encourage them to migrate either to a city or abroad. The individual or family will be influenced by the condition of the individual's family or the level of human capital they possess (Keely, 2000; Taylor, 2001). Similarly, the physical capital possessed by individuals and the household -such house, land and vehicles- is also relevant for migration. By migrating, individuals may wish to accumulate such capital, which would reflect their improved social status. The limited possession of production factors also encourage individuals to migrate, either to access working capital in the form of money or land for trade or agriculture.

Social bonds between individuals allow them to access to better information, such as on private loans, as well as direct aids and loans from the government. Conversely, a lack of production factors and low access to social facilities encourages individuals to move to obtain

a better job, whether in the city or in another country (Jennissen, 2007). Migration decisions are also determined by external factors such as socio-economic concerns, infrastructure, and market, credit, and road access. Such access will increase opportunities in rural areas. Environmental factors include infrastructure, credit facilities, and the availability of land resources at rural level. Furthermore, government policies and social facilities, such as rural credit, health, education and community empowerment programs, that are geared toward rural development also influence a person's decision to migrate (Hoerder, 2004).

**Figure 4.1 .1.**Conceptual Framework of Migration Decision




Source: Adapted from Byerlee (1974), Todaro (1997)

The factors identified above act together to determine the decision to migrate at the individual, household and rural level. Following the discovery of determining factors in both areas, vital and determining factors for rural-urban migration and international migration can also be identified.

### 4.2. Sampling frames and the selection of respondents

The survey used to obtain primary data was conducted in the Malang District, East Java, Indonesia. The research location is characterized by agricultural farming on *sawah* (irrigated land) and *tegalan* (non-irrigated land) neighbouring suburban regions which are primarily characterized by industry. The district remains one of the manufacturing centres for agricultural products, especially for tobacco industries, small and micro enterprises, sugar cane industries, and other agriculturally-based manufacturing industries. Between 2004 and 2008, Malang was the biggest sending region for international labour migrants in East Java.. Additionally, Malang was also the highest remittance receiver in East Java, amounting to IDR 76000 million in 2006. Malang is also a representative region of the East Java Province. For example, the total number of migrants in East Java in 2007 was 58,965 or 0.15 percent of the population (37,378,737). At the same time, the total number of migrants in the district of Malang was 4,137 or 0.17 percent from population (2,401,624).

Although percentages of migrants with regard to the total population at both district and provincial levels are available, such figures remain difficult to obtain at the village level and thus the use of proportional stratification sampling is inappropriate To mitigate the problem Newman (1997) and Bickman and Rog (2009) suggest the use of disproportionate stratification sampling to focus on issues relevant to sub-population, which is this case represent issues related to migrant. Therefore, increasing the number of samples is rational method and it also improves the reliability of data. Migration, as one of strategies of a household or its members to cope with economic uncertainties or other economic exposure, was relatively rare in the village area. Therefore, non-proportionate stratification of the true population represents a viable method to analyze such conditions and will be used for this research.

### 4.3. Data collection

Two surveys, a household and governmental village survey, were used as the main instruments for this research. The former provides information about access to human, physical, and social capital, about income sources, government aid, credit, and information. Primary data indicate the household's economic status and identify behaviours which influence the migration decision. The village survey employs secondary data covering a larger area and is concerned with the regional level of economic activities such as governmental policy, unemployment, sex, poverty, availability of agricultural land, market access and credit access in the villages. BPS-Statistics, Indonesia, provided the secondary data used in this study.

#### 4.3.1. Primary data

Primary data was collected through interviews from 360 respondents, both migrants and non-migrants in the selected villages using a structured questionnaire. A pre-test was completed by a group of six trained enumerators before conducting the actual survey. The questionnaires were pre-tested in Pandanrejo village for the 2007 household survey. This stage started with a field visit and interviews with the local communities and their authorities as well as contacting government staff in the area to obtain village data sources. The local communities guided the interviewer, enabling more people to be interviewed. Whenever a family unit was found to have at least one migrant member, the family was selected to participate in an interview session. Interviews were completed either with migrants themselves or with a member of the migrant's family who had a close relationship with the migrants, such as their spouses or parents. Interviewees were also asked whether any of the migrants still lived in destination country, or city for cases of rural-urban migration.

In processing the data, less-reliable and inconsistent data, such as missing values and extreme values were eliminated. Dealing with such data, the completed questionnaires were checked and discussed with the respective enumerators on the same day the interviews had been conducted. When non-clarity cases occurred, the enumerators were sent back to the associated respondents to obtain clarifications. Cross-checking data as a part of data cleaning was necessary to obtain reliable and valid data. For such purposes, interviews with the official in

the sub-district were conducted to complement the collection of the village statistics. Information from officials provided clearer guidance for the researchers, enabling them to focus on important issues providing the foundation for answering the study's research questions. Furthermore, the village officers, local communities and hamlets were also the key sources for validating data.

### 4.3.2. Secondary data

Secondary data for regional analysis were obtained from government institutions, particularly from those possessing information about migration activities and the social-economic status of the region. The main data sources of the research were obtained from the Countryside Potency Data Indonesia (PODES) issued by the Central Bureau of Statistics Indonesia in 2006. The data was collected from rural areas in East Java (7,677 villages). The data included the number of migrants, number of households, infrastructure, governmental policy, facilities, poverty, and agricultural land, market access and credit access in Javanese villages. In addition, other secondary data sources such as population, the number of migrants, and Product Domestic Regional Bruto (PDRB) were obtained from different government institutions at the district and provincial level.

## 4.4. Methods of data analysis

This section outlines the method for quantitative, descriptive and econometric analysis. Descriptive analysis was used to summarize data sets for the village survey i.e. social capital, market access, credit access, and socioeconomic characteristics. To analyse determinants of migration decisions, this study employed econometric methods to explain the determinants of migration decisions.

Descriptive statistics methods were used to present information about variables, such as: (1) the frequency distribution as a summary tabulation of data figuring the percentage of frequency in each class; (2) measures of central tendency which consist of minimum, maximum, and mean values of observation; and (3) Measures of variability. Standard deviation, as defined as the positive square root of the variance, was used for measurements

of variability. The results are presented by frequency, mean (averages) and standard deviations.

For the quantitative analysis the Probit and Tobit model of migration was employed. This method is used to investigate the factors that are associated with the probability of a household to decide to engage in the migration process. Descriptive and econometric analyses were carried out using the STATA software package[5]. The data analysis of determinants of migration decisions is presented in Table 4.4.1.

**Table 4.4.1** Data Analysis of Determinants of Migration Decisions

| | **International Migration** | **Rural to urban Migration** | **Non Migrant** |
|---|---|---|---|
| Sample size | -130 households and<br>- 7677 villages | -111 households | -119 households |
| Type of data | -Primary data<br>-Secondary data | -Primary data | -Primary data |
| Unit Analysis | -Household and Village levels | -Household level | -Household level |
| Estimated Method | - Econometrics analysis (Probit and Tobit model) | - Econometrics analysis (Probit model) | -Econometrics analysis (Probit Model) |
| Sources | Field Survey(2008)<br>-Countryside Potency Data, Labour Office Statistics, 2006 | -Field Survey (2008) | -Field Survey(2008) |

[5] STATA Data analysis and Statistical software, version 10.

## 4.5. Model estimation and definition of variables

The model estimation employed was based on the works of Horder (2004), Stark (1991), and Zhanker (2008). Referring to the availability of primary and secondary data, the study divided its analysis into two levels--household and regional (for villages in the province of East Java). At the household level, the model will estimate determinants of international migration and rural-to-urban migration, while the regional analysis only estimates determinants of the decision to migrate abroad.

### 4.5.1. Individual level analysis

This study estimates that the determinants of migration decisions for rural-urban and international migration at the individual level. Bearing in mind the hypotheses as described in Chapter 3, as a dependent variable migration is influenced by education, credit access, market access, and is an indicator for social capital, physical capital, and the socioeconomic characteristics of migrant households. This research employs the following model for data estimation:

$$D = f(X_1, X_2, X_3, X_4, X_5, ,X_6, X_7, X_8, X_9, X_{10} , X_{11}) \quad (4.1)$$

For the equation of (4.1) data used are the result of individual surveys. The description of independent variables is indicated in Table 4.5.1.

**Table 4.5.1** Characteristics of Migrants and non-Migrants

| Dependent Variables | Description | Unit of measurement |
|---|---|---|
| D | Migrant's decision (binary variable) | Dummy variable of the decision |
| **Independent Variables** | | |
| $X_1$ | Education (1= if years of schooling >= 6 years , 0=others) | Years of schooling for migrants and non-migrants |
| $X_2$ | Being married (1=being married, 0=not married, including divorce, widow etc.) | Marital Status of migrant and non-migrants |
| $X_3$ | Being a woman (1=female,0=male) | Sex of migrant and non-migrants |
| $X_4$ | Age of migrant and non-migrants | Year |
| $X_5$ | Number of Children in the household of migrants and non-migrants | Numbers of Children in the households of migrants and non-migrants |
| $X_6$ | Value of house in rupiah (IDR) | IDR (Indonesian Rupiah) |
| $X_7$ | Land ownership of households for migrant and non-migrants (1>0,5 ha, 0=others). | Amount of land owned for agriculture by households of migrant and non-migrants[6] |
| $X_8$ | Membership of migrant and non-migrants in village social institutions (1=member, 0=not member) | Memberships in village social institutions before migration (for migrants) |
| $X_9$ | Subsidies or direct aid from government to the households of migrants and non-migrants (1=got governmental aid, 0= no subsidies from government) | Governmental aid received by household of migrants and non-migrants |
| $X_{10}$ | Access to credit from bank, government, family, neighbours (1=had access, 0=others) | Loans accepted by households of migrants and non–migrants |

The explanatory variables consist of six categories: human, physical, social and human capital, government transfers and credit access. Education ($X_1$), marital status ($X_2$), gender ($X_3$), age of the migrants and non-migrants ($X_4$), and the number of children ($X_5$) are

[6] Land ownership derived from terms of subsistence household's farm. Subsistence farming is self-sufficient farming in which the farmers focus on growing enough food to feed their families and less on profit. Taylor and Dyer (2009) appraise subsistence and infra-subsistence household farms (peasant) at less than two hectares in Mexico. BPS-Statistics Indonesia (2005) define peasant or *petani gurem* as farmers who possess less than 0.5 ha of farmland.

indicators of human capital. The education of migrants and non-migrants was measured in years of schooling. Migrant and non-migrants with higher levels of education have a higher probability to migrate. Marital status represents the family ties of the migrant and non-migrants. Age of the migrants and non-migrants was measures in number of years and indicate the experience of the migrant and non-migrants. Furthermore, the number of children represents family burden. The value of the house ($X_6$) and land ownership ($X_7$) represent physical capital. The greater the value of the house and land ownership, the more interested the migrant and non-migrants are in remaining in the villages. The value of the house is measured in IDR (Indonesian Rupiah).

Social relationship ($X_8$) is an indicator of social capital and is measured by migrant and non-migrant membership in local organizations such as religious groups, economic groups, or local government institutions. Government aid ($X_9$) is an indicator of the government transfer programme which is received by migrants and non-migrants. Almost every year the government distributes funds to overcome poverty in the villages around Wagir. This programme may be proided by the state, province, or the Malang District itself. The transfers to the poor may be given in form of money, or poverty guards such as the Integrated Program of Poverty Alleviation (*Gardu Taskin, program Terpadu Pengentasan Kemiskinan*) programme. The programme that has been the most productive is the Kecamatan Development Program (PPK, *Program Pengembangan Kecamatan*) which is financed by a loan from the World Bank.

Credit access ($X_{10}$) illustrates if the household has received loan in the form of either informal or formal loans, which are received by migrants and non-migrants or members of the household. There are four different types of formal credit institutions, including: (a) the *Bank Rakyat Indonesia*, located in every sub-district; b) government credit programmes such as KUT (Kredit Usaha Tani) which specializes in supporting agricultural activities; c) private rural banking (Bank Perkreditan Rakyat, BPR); and (d) microfinance institutions (MFI) such as cooperatives. Informal loans include loans from merchant/trader, pure moneylender, and relatives. Credit is measured in IDR (rupiah)

### 4.5.2. Village level analysis

At village level, this study concentrates on the determinants of migration abroad as reported in the Countryside Potency Data, Indonesia, as reported by Statistics Indonesia. It emphasizes the analysis of the influence of education, occupation, resources, socio-economic indicators, agricultural land, market access, access to credit, and government subsidies on the share of migration in the villages, according to the following equation:

$$Y = F(X_1, X_2, X_3, X_4, X_5, ,X_6, X_7, X_8, X_9, X_{10} , X_{11}) \quad (4.2)$$

The model is calculated from secondary data obtained from the 2005 Countryside Potency Data from East Java. The description of independent variables is indicated in table 4.5.2

**Table 4.5.2** Characteristics of Village Level Analysis

| **Dependent Variables** | **Description** | **Unit of Measurement** |
|---|---|---|
| Y | Dependent variable, percentage of village population going abroad | Migration (%) |
| **Independent Variables** | | |
| $X_1$ | total number of school buildings (elementary, high school, informal school) divided by village population | Education as shared by the village population (%) |
| $X_2$ | Share of farmer families who work in agriculture | Farmer families as a share of the village population (%) |
| $X_3$ | Share of land used for non-agricultural purposes in the village | Land used for non-agricultural as a share of total land in the village |
| $X_4$ | Share of land that is used for agricultural purposes with irrigation in the village | Land for used for agriculture (irrigated) as a share of total land in the village |
| $X_5$ | Share of land that is used for agriculture without irrigation in the village | Land used for agriculture (non-irrigated) as a share of total land in the village |
| $X_6$ | Village that has problems with water for both agricultural purposes and for drinking water. Dummy variable (1=did not have problems with water, 0= otherwise). A village has a problem with water if the majority of the population still uses water from river. | Water Resources |
| $X_7$ | Distance to the nearest market from the village | Market Access (km) |
| $X_8$ | Number of credit institution (banks and cooperatives) in the village. | Credit Institution |
| $X_9$ | Credit Programs available from the government in the village (1=if available, o= otherwise) | Credit Program |
| $X_{10}$ | Percentage of *Surat Miskin* or poor people (who are officially confirmed as living under the poverty line) to the total population. Government decision for poor household refers to Indonesia Central Biro Statistic Indonesia[7]. | Shared of the village population (%) |
| $X_{11}$ | Percentage of village population who receive a health insurance card from government. | Health Insurance as a share of the village population (%) |

Variables used for the econometric process are divided into five categories. The first variable includes human capital, including education where the number of schools in the village (X*1*) and farmer families ($X_2$) are used as a proxy. Most villages in East Java have two types of schools, general and Islamic schools. Islamic schools mix general schooling with additional religious curriculum content. The second group is an indicator of physical capital that is a factor of agricultural production i.e. the share of land ownership ($X_3$,$X_4$,$X_5$). The third variable includes water resources as indicator of natural capital ($X_6$). The water variable is measured by the availability of water both for agriculture and for drinking, i.e. the availability of drinking water from wells or the installation of running water. By using dummy variables, the villagers who generally have better water availability will have a value of 1. The fourth variable represents an indicator of financial market, i.e. number of credit institution and credit from government programme($X_8$,$X_9$). Credit programs provided by the government are distributed through the PPK program which was launched by the central government in 2007. Generally, villages with a large number of poor people are selected as the target for the programme, and include such provisions as access to market, government transfers for poor people($X_{10}$), and health insurance($X_{11}$). All data were obtained from the Countryside Potency Data Indonesia which was issued by the Central Bureau of Statistics Indonesia in 2006.

### 4.6. Methodology applied in data analysis

#### 4.6.1. Individual level analysis

The Probit estimation was used to explain the determinants of both rural-urban and international migration for the individual level analysis, where the dependent variable is set to a 0-1 dummy variable. 1 refers to international migrants (or rural-urban migrants) and 0 represents other members of the village. The predicted values for the dependent variables fall within the interval between 0 and 1; therefore, they can be interpreted as the probability of an individual to opt for migration. The independent variables used for individual and village analyses reflect human, social and physical capital and the socio-economic characteristics of migrants and non-migrants. Due to the nature of the dichotomous dependent variables, the Probit model was chosen as an appropriate model to explain these phenomena. In this study, an ordered version of the Probit model is applied to the determinants of migration (equation (4.1)) . The ordered Probit model can be formulated in accordance to Borooah (2002), as illustrated below:

Suppose that there are *N* person (indexed i=1,…,*N*), which can be represent by the value of variable $D_i$, such that higher values of $D_i$ represent a higher tendency of migration. Suppose that migration, *D* is a linear function of K factor (determining variable) the value of which, for *I*, are $X_{ik}$, *k=1, …K*. This means that the probability to migrate can be represented as

$$D_1 = \sum_{k=1}^{K} \beta_k X_{ik} + \varepsilon_i = Z_i + \varepsilon_i \qquad (4.3)$$

where $ß_k$ is the coefficient associated with the $k^h$ variable (k= 1,…,K) and $Z= \sum_{k=1}^{K} \beta_k X_{ik}$. An increase in the value of the $k^h$ factor for a particular person will result in a higher probability to migrate. Due to values of $D_i$, is not possible to observe. Equation 4.1 is latent regression which as it stands cannot be estimated. However, it is possible to observe these values by categorizing the sample, such that *Yi*= 1 if the person migrates abroad, *Yi*=2 if the individual migrates to another district, and *Y*=0 if the person does not migrate. The categorization of the person in the sample in terms of three levels of migration is implicitly based on the values of the latent variable $D_i$, in conjunction with threshold values $\delta_1$ and $\delta_2$, such that:

$$\begin{aligned} &Yi=1, \text{ if } D_1 \leq \delta_1 \\ &Yi=2, \text{ if } D_1 \leq D_1 \leq \delta_2 \\ &Yi=3, \text{ if } D_1 \geq \delta_3. \end{aligned} \qquad (4.4)$$

The $\delta_1, \delta_2 \geq 0$ of equation (4.4) are unknown parameters ($\delta_1 < \delta_2$) to be estimated along with the $ß_k$ of equation (4.3). $D_{1,}$ crosses a threshold. The probability of *Yi* taking value 1,2, 3 are given by:

$$\begin{aligned} &Pr(Y_i=1)=Pr(Zi+ \varepsilon_i \leq \delta_1)=Pr(\varepsilon_i \leq \delta_1- Zi) \\ &\qquad Pr(Y_i=2)=Pr(\delta_1 \leq Zi+\varepsilon_i \leq \delta_2)=Pr(\delta_1- Zi< \varepsilon_i \leq \delta_2- Zi) \\ &Pr(Y_i=3)=Pr(Zi+ \varepsilon_i \geq \delta_2)=Pr(\varepsilon_i \geq \delta_3- Zi) \end{aligned} \qquad (4.5)$$

Each of the N observations is treated as a single draw from a multinomial distribution, and in this case the multinomial distribution has three outcomes, migration abroad, rural-urban migration, and non-migration. Suppose that of *N* persons, $N_1$ migrate abroad, $N_2$ migrate from

rural-urban and $N_3$ do not migrate, then the likelihood of observing the sample, which is simply the result of the probability of individual observation, is

$$\begin{aligned} L &= [Pr(Y_i=1)]^{N1}\,[Pr(Y_i=2)]^{N2}\,[Pr(Y_i=3)]^{N3} \\ &= [F(\delta_1 - Zi)]^{N1}\,[F(\delta_2 - Zi) - F(\delta_1 - Zi)]^{N2} \\ &\quad x[1-F(\delta_1 - Zi)]^{N3} \end{aligned} \qquad (4.6)$$

Where $F(x) = Pr(\varepsilon_i - x)$ is the cumulative probability distribution of the error term. Due to lack of knowledge about whether the probability distribution of the error term is known or unknown, it is assumed that the error term followed a particular probability distribution (Borroah, 2002).

### 4.6.2. Village level analysis

The Tobit model was employed to determine factors that influence the migration decision at the village level. The model is used when the dependent variable is limited (or censored) from above or below (Greene, 2000; Woodrige, 2002; Gujarati, 2003). Maddala (1986) calls the model a "limited dependent variable" model, as a result of the restriction put on the values taken by the regressand. Censored data arises when the value of the data are clustered around some threshold, either lower or upper. Both dependent variables measuring migration as share of migrants) are continuous variables but with a limited range between zero and 100. There is also a considerable share of observations with zero values meaning that some of the villages do not participate in international migration. Ordinary Least Square method is biased to estimate limited values of dependent variables. The Tobit regression is useful in that it allows a prediction of censored data that account for clustered distribution. It does this by using probabilities formulated through a maximum likelihood for estimating the regression coefficients (Wooldridge, 2002). In equation (4.2) the dependent variable represents a continuous component and for this reason it is censored at zero.

$$y_i = y_i^* = x_i'\beta + \sigma\varepsilon_i \ , \ \text{if } y_i^* \rangle 0 \text{ and } \quad y_i = 0 \ , \ \text{if } y_i^* \le 0 \qquad (4.7)$$

Where $y_i$ is the number of people who migrate abroad from the village,

*B* represents vector exogenous variables, while σ represents scale parameter and ε has a known symmetric density function.

### 4.6.3. Result of model estimation

According to Woodridge (2002) and Bruin (2006), the result of model estimation will contain the following features:

1. *Coefficient* is the expected response variable predicted by the model score changes by coefficient for each unit increase in the corresponding predictor.
2. *Standard errors* of the individual regression coefficients. They are used in both the calculation of the *t* test statistic and the confidence interval of the regression coefficient.
3. Test statistic *z* is the ratio of the coefficient to the *standard error* of the respective predictor. The z value follows a standard normal distribution used to test against a two-sided alternative hypothesis that the coefficient is not equal to zero (Probit regression).
4. Test statistic *t* is the ratio of the coefficient to the *standard error* of the respective predictor. The *t* value is used to test against a two-sided alternative hypothesis that the coefficient is not equal to zero (Tobit regression).
5. *P-value,* is the probability that the *t* test statistic (or z test statistic) would be observed under the null hypothesis that a particular predictor's regression coefficient is zero, given that the rest of the predictors are in the model. For a given alpha level, *P-value* determines whether the null hypothesis can be rejected. If P-value is less than alpha, then the null hypothesis can be rejected and the parameter estimate is considered statistically significant at that alpha level.
6. *Number of observation* in the dataset for which all of the response and predictor variables are available.
7. *Log likelihood* of the fitted model is used in the Likelihood Ratio Chi-Square test of whether all predictors' regression coefficients in the model are simultaneously zero.
8. *LR chi$^2$ (d.f.)* is the Likelihood Ratio (LR) Chi-Square test that at least one of the predictors' regression coefficient is not equal to zero. The number in the parentheses indicates the degree of freedom of the Chi-Square distribution used to test the LR Chi-Square statistic and is defined by the number of predictors in the model.

9. *P- value* is the probability of obtaining a LR test statistic as an extreme, or more than the observed statistic under the null hypothesis. This p-value is compared to a specified alpha level and is typically set at 0.1, 0.05 or 0.01.
10. *Pseudo* $R^2$ is McFadden's pseudo R-squared. A likelihood falls between 0 and 1, so the log of a likelihood is less than or equal to zero. For a very low likelihood the log of the likelihood will have a larger magnitude than the log of a more likely model. The small ratio of log likelihoods denotes that the full model is a far better fit than the intercept model. For OLS and probit estimation, *Pseudo R-squared* can be used to measure the strength of the association between the dependent variable and the predictor variables. But for Tobit estimation the pseudo-$R^2$ has no real meaning (Sribney, 1997).
11. *Sigma* (Tobit regression) is analogous to the square root of the residual variance. The result value can be compared to the standard deviation of academic aptitude. The output also contains an estimate of the standard error of sigma, as well as the 95% confidence interval.

# Chapter 5 Research Area

This chapter provides an overview on the geographic, natural and socio-economic conditions of Indonesia, particularly in East Java and the research area around the Malang District. In addition, it focuses on employment and labour migration by presenting several development indicators.

## 5.1. Indonesia

### 5.1.1. Geographic and natural conditions

Indonesia is the world's largest archipelago country extending 5,120 kilometers from west to east and 1,760 kilometers from north to south. It consists of 17,508 islands, of which only 6,000 are inhabited. There are five main islands (Sumatra, Java, Kalimantan, Sulawesi, and Papua), two major archipelagos (Nusa Tenggara and the Maluku Islands), and sixty smaller archipelagos. Indonesia's total land area is 1,811,569 square kilometers (BPS, 2009). Indonesia's climate is rainy, with high temperatures and high air pressure. The archipelago is almost entirely tropical in climate, with the coastal plains averaging 28$^{o}$ C, the inland and mountain areas averaging 26$^{o}$C, and the higher mountain regions with 23$^{o}$C. The area's relative humidity ranges between 70 and 90 percent. The geography of Indonesia is dominated by volcanoes that are formed due to the zones between the Eurasian plate and the Indo-Australian plate. Therefore, Indonesia has 129 active volcanoes and 271 eruption points as a consequence of interactions and collisions among several continental plates (Abidin and Kunaefi, 2009).

### 5.1.2. Population

Indonesia is the fourth largest populated country in the world, with a population of approximately 237.5 million, of which 119.5 million are male and 118 million female. The major ethnic groups are dominated by Javanese (41.7%), and then Sundanese (15.4%),

Malays (4.1%), Chinese (3.7 %), Madurese (3.3%), Batak (3.0%) and others (28.8%) (BPS, 2009).

Between 2000-2010, the annual population growth was 1.49 percent (2.8 million). This population growth increase was mainly due to an increase in life expectancy of its citizens. Life expectancy of Indonesians has increased dramatically, rising from 56 to 69 years in the period between 1980 and 2010 (UNDP, 2011). The current population density is 124 people per $km^2$, an increase of 17 people per $km^2$ from the 2000 figure. Consequently, there now exists an unequal population distribution among islands in Indonesia. Most of the population (52%) is concentrated on the island of Java, with a population density of 1,000 persons per square kilometer. This earns Java the distinction of being the island with the largest population density in the world (BPS, 2010). The islands of Java, Madura, and Bali, which comprises 5.5 percent of the nation's land area, are home to 63.6 percent of Indonesia's population (BPS, 2010).

### 5.1.3. Economic conditions

Indonesia's economic real growth rate from 2009 to 2010, measured by the increase in Gross Domestic Product (GDP), was 6.1 percent. There was growth in all economic sectors, with the transportation and communication sector experiencing the highest growth rate at 13.5 percent and the agricultural sector experiencing the lowest, at 2.9 percent. In terms of spatial distribution, provinces in Java and Sumatra still dominate the economy. The provinces of Java contributed 57.8 percent of the country's GDP. The secondary and tertiary sectors are also concentrated in these provinces. On the other hand, the other island areas (outside Java) still depend on the primary economic sector (Mentranskernas, 2010).

The service sector had the highest growth rate. As a result, the employment rate in the agricultural sector fell by 5.6 percent, from 45.3 percent in 2000 to 39.7 percent in 2009. In the manufacturing sector, unemployment fell 0.8 percent during this period; not very significant compared with the decrease seen within the agriculture sector. The shift towards the service sector has two important implications for the Indonesian labour market. The first is the fact that this sector requires higher skills on the part of the workers. The second is the growing demand for women workers in this sector, which has closed the gender gap in the

labour market. On average, the demand for women workers in the trade, hotel and restaurant sectors grew by 4.7 percent per year between 2004 and 2009 (BPS, 2010).

In 2010, the labour force numbered 116 million people, an increase of 2.26 million from the previous year, while the number of employed people was 107.41 million, an increase of 2.92 million from 2009. As the rapid growth of the labour force has not been balanced by the creation of job opportunities, open unemployment has increased and under employment has remained high. The unemployment rate in 1980 was 1.7 percent, rising to 6.08 percent in 2000 and 10.3 percent in 2005. The rate of open unemployment in Indonesia in 2010 was 7.41 percent, which is slightly lower than the 2009 figure of 8.14 percent (BPS Statistics, 2010). According to the Minister of Manpower and Transmigration (2010), open unemployment is usually an urban phenomenon, and mainly involves young people, both school graduates and drop-outs. Whereas the unemployment rate in 2005 was 10.26 percent, the percentage of unemployed people aged 15-29 and 20-24 reached 34.88 percent and 25.24 percent, respectively. The unemployment rate in urban areas (13.51 percent) was nearly twice as high as in rural areas (7.98 percent) (Mentranskernas, 2010).

In regards to gender, open unemployment rate of females declined by more than 6 percentage points, from 14.71 percent in 2005 to 8.47 percent in 2009, while the open unemployment rate for males declined by only 1.6 percent, from 9.29 percent to 7.51 percent during the same period. While the rate of labour participation of women increased by around 50 percent, the increase was lower than that of men, which increased by an average of 84 percent during the same period. Furthermore, progress in employment was also shown by the increase in the share of women in wage employment in the non-agricultural sectors. The share of women in wage employment in the non-agricultural sectors has increased from 29.02 percent in 2004 to 33.45 percent in 2009 (Bappenas, 2010). In addition, according to BPS Statistics in 2010, the poverty rate in Indonesia reached 31.02 million (13.33), of which 64.23 percent live in rural areas (BPS, 2010). However, almost half of Indonesia's population live below the poverty line according the World Bank‘s indicator of poverty, with incomes below USD 2 per day (World Bank, 2011).

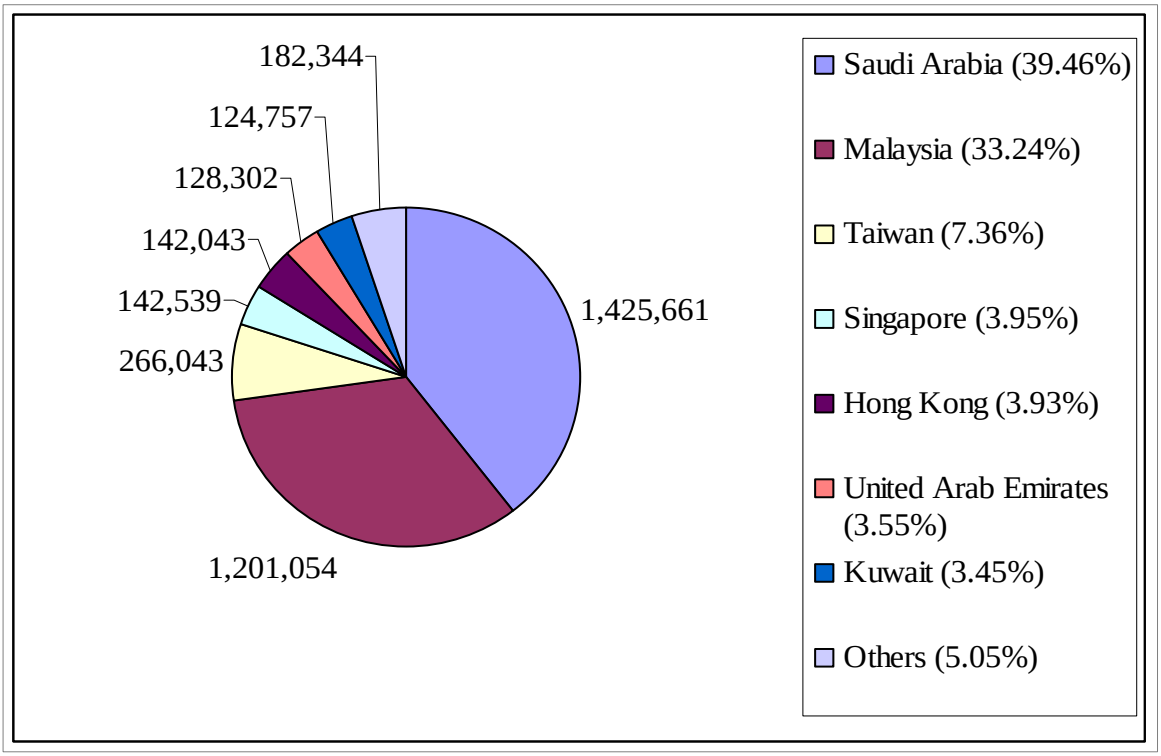
### 5.1.4. Labour migration in Indonesia

During the Dutch colonial period, which began in 1875, many workers from the island of Java were sent to the other colonies such as Suriname, Caledonia, or the Netherlands itself, and

many more were moved to the trading port of Malacca (in Malaysia) in order to fill jobs (Lockard , 1971). They worked as a *kuli kontrak* (contract labour) or within an indentured system for the development of large-scale plantation or mining industries. During World War II, 200,000 people from Java were employed as forced labour around Southeast Asia and as many as 6 million people were required to be internally displaced during the revolution. Although transmigration programs during the colonial and post-colonial periods has relocated hundreds of thousands of Javanese to other islands, many movements of people to the island of Java has led it to still have a high population density (IOM, 2008). Officially, the numbers of overseas contract workers has grown rapidly since the late 1970s, with the greatest demand from the Middle East for construction and domestic workers. Most migrant workers from Indonesia have low education levels and work in jobs that require minimal or no skills. The men generally work in agriculture, construction or production, while most women work as domestic workers or nurses (IOM, 2008). In response to out migration, the government of Indonesia, in cooperation with private recruitment agencies, has allowed the deployment of Indonesian workers overseas as a way of reducing domestic unemployment and underemployment (IOM, 2010).

Hence, the increasing population alongside current economic recovery efforts has put pressure on the Employment Management. From 1995 to 2005 the total workforce increased by 1.3 percent, an average increase of 1.2 million people per year, but due to the economic crisis, the increase can not be absorbed effectively and the official unemployment figures rose from 9.5 million in 2003 to 10.8 million in 2005 (IOM, 2008). The growth of labour, which is higher than the growth of job vacancies, will cause a decrease in the employment rate. Therefore, the number of employed individuals does not always reflect the number of job opportunities. This is a consequence of a common mismatch in the labour market (BPS Statistics, 2010). Figure 5.1.1 shows that around 1.6 million legal Indonesian migrants were working in the Middle East and 0.4 million in East Asia in 2009, with about 1.3 million in Malaysia and Singapore.

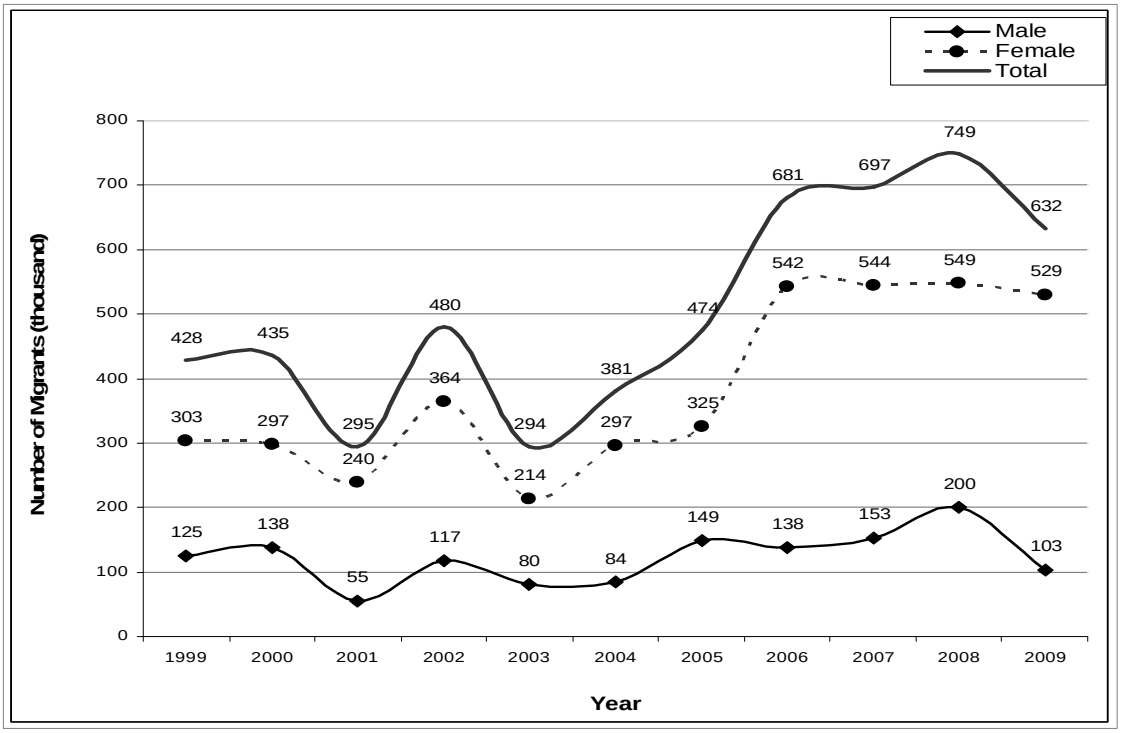
**Figure 5.1.1** Number of Indonesian workers abroad by destination countries, 2009




Source: IOM, 2010; BNP2TKI, Disnakernas 2011

Figure 5.1.2 presents the shares of overseas labour migrants by sex. The majority of migrant labour is dominated by women who take work in the domestic sector. In 2007, women migrants worked in the informal sector (69% of total number of workers) mainly as domestic workers, while men, making up 22% of total migrants, mainly migrated to work as construction and plantation workers, with only 13% of them working in the informal sector (BNP2TKI, 2007). Since 1999, the trend for women has increased significantly while for men it has remained stagnant.

**Figure 5.1.2.** Deployment of Indonesian workers abroad by sex, 1999-2009



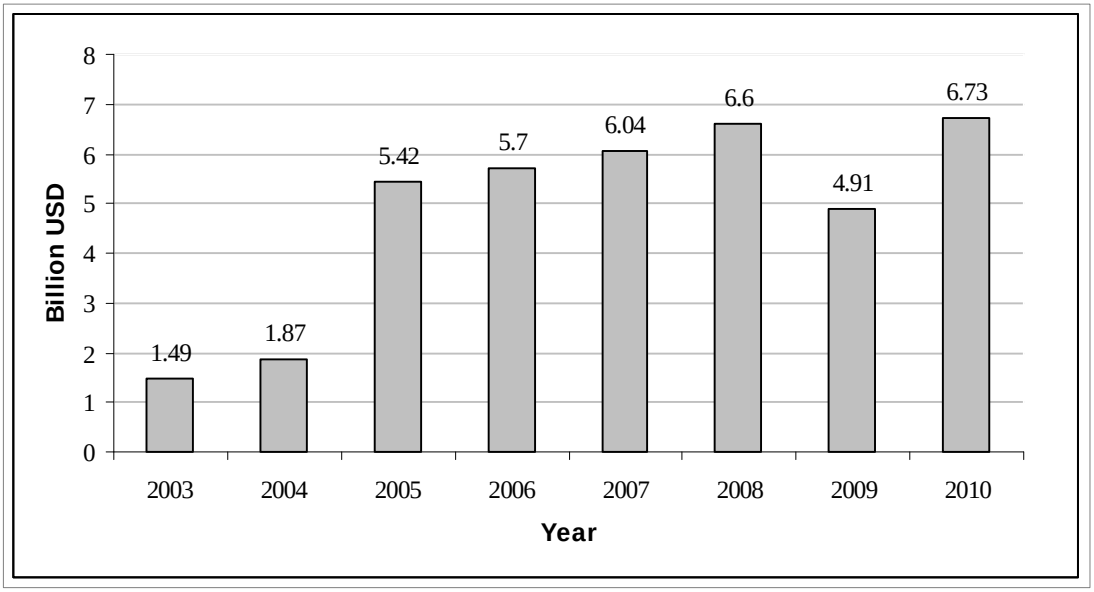

Source : BP2TKI , Disnakertrans, 2010

### 5.1.5. Remittances contribution to Indonesian

According to the World Bank (2011), Indonesia is the fourth top remittance recipient in 2010 (USD7.1billion) after China (USD 51.0 billion), Philippines (USD 21.3 billion), and Vietnam (USD 7.2 billion). Indonesian migrants remitted approximately USD 1.49 billion in 2003, up to USD 5.42 billion in 2005. In 2010, the amount of remittances stood at USD 6.73 billion (Figure 5.1.3). The fall of remittances witnessed from 2009 to 2010 was caused by a migration moratorium to three countries (Kuwait, Malaysia, and Jordan). The reason for moratorium policy for Kuwait is due to the lack of protection of migrant workers, while in Jordan and Malaysia it is not only a matter of protecting workers but also the relatively low salaries received by workers, at around USD 100 per month (Bank Indonesia, 2010). Compared to other origin countries of migrant workers, such as the Philippines, the total amount of remittances received by Indonesia is relatively small. The Philippines, with a population size of less than half of Indonesia's, received USD 16.43 billion remittances in 2008, almost USD 10 billion more than Indonesia (IOM, 2010).

In East Flores and Eastern Java, remittance inflows far exceed regional government budgets (Hugo 2007), and in 2004, for example, the contribution of remittances to Gross Regional Domestic Product in the East Javanese regions of Malang, Tulungagung and Blitar were 42 percent, 23 percent and 13 percent, respectively. In the key migrant sending areas of Kalimantan, West Sumatra, West Java, East Java and Lombok, remittance inflows are more significant than in other areas (Barnes, 2010.) The more concentrated financial impact of remittances within specific areas can be seen in the province of East Java, in which the present study is focused.

**Figure 5.1.3.** Remittances to Indonesia, 2003-2010 (US$/billion)




Source: BPNP2TKI, Department of Labour and Migration, Indonesia, 2008, IOM, 2010

## 5.2. East Java

### 5.2.1. Geographic and natural conditions

The Province of East Java is bordered by the Java Sea in the north, the Bali Sea and Bali straits in the east, the Middle Java Province in the west and the Indian Ocean in the south. The East Java region can be divided into two major parts: the mainland East Java and the Madura Islands. East Java covers nearly 90 % of the total area of the East Java province, while the broad Madura Islands contribute to the remaining10 % (figure 5.2.1).

The region of East Java is bordered by the South Kalimantan Province (Borneo) to the North, the island of Bali to the East and Central Java Province to the West. The province shares a

maritime border to the south with the open waters of the Indonesian Ocean. Geographically, East Java Province can be divided into three land-types: the highlands, the plains and the lowlands. The highlands are a region with an average altitude of 100 metres above sea level. This area includes Trenggalek District, Blitar District, Blitar City, Bondowoso District and Magetan District. The plains is an area with a height of 45 to 100 metres above sea level. This area includes Ponorogo District, Tulungagung, Lumajang, Jember, Ngawi, Madiun, Nganjuk, Kediri, and Bangkalan District while other counties and cities lie in the lowlands, with an altitude below 45 metres above sea level.

Physiographically, East Java possesses a fertile soil condition with average temperatures extending between 23°C and 37°C, and annual precipitation rates around 1,639mm per year(2008). The higher rainfall periods occur between the months of September and April. Volcanoes and large rivers serve as a means of spreading nutrient-rich substances resulting from volcanic eruptions and thus contribute to increased soil fertility. Several volcanoes which are still active include Mount Kelud, Mount Merapi and Mount Raung. In addition, the Bengawan Solo River, the Brantas River, the Solo River, the Madiun River, and the Konto River are all responsible for the translocation of fertile soil.

Based on general physical characteristics, East Java is divided into four characteristic territories, namely:

- Territory I: the middle upland region with fertile soil.
- Territory II: the northern lowland with average soil fertility. Territory III: the southern lime mountain region, a largely infertile soil territory.
- Territory IV: archipelago territory which is largely unidentified in regards to soil fertility.

**Figure 5.2.1.** Map of East Java



### 5.2.2. Administration

East Java province is one of six provinces in Java, Indonesia. The East Java Province is divided into 37 administrative parts and contains 29 districts and 8 cities. The administrative centre of the province is located in Surabaya, the second largest city in Indonesia and a major industrial centre and port. It is second to the capital, Jakarta, in size, population and commerce.

### 5.2.3. Population

According to the results of the National Socio-Economic Survey 2006, the number of households in East Java in 2006 was 10,490,640 with a population of 37,378,737. Thus the average number of residents per household was 3.57 people. The population density of East Java is 807 inhabitants per $km^2$ (BPS, 2006).

Poverty is also still a problem in East Java. The number and percentage of poor people in the period of 2001-2008 fluctuated from year to year, although between 2001 and 2004 the number of poor people declined from 7.26 million to 6.98 million. Represented in terms of percent of population, the decrease in poor people went from 20.7 % in 2001 to 19.10 % in 2004. However, in 2005 and 2006, there was a drastic increase in the number of poor people, from 19.95 % in 2005 to 21.09 % in 2006 (BPS, East Java, 2006)[8]. Following this increase in impoverished individuals, the East Java Government took efforts to handle the problems of poverty and unemployment in the years 2007 and 2008. In response, the number of poor in East Java gradually decreased again from 6.65 million people (18.51 %) to 7.15 million (20 %)(BPS East Java, 2008). In general, the percentage of poor population between urban and rural areas has not changed much. In March 2007, most of the poor people lived in rural areas (64 %), while in March 2008 this percentage had increased to 65.3 % (BPS East Java, 2008).

Continued population increases, resulting in increased labour force, can lead to economic

[8] According to Indonesian Statistics bureau, the number of poor population is defined by basic need approach. The value of rupiah for 2,100 calories equivalent energy requirement is computed from 52 selected commodities, by taking into account different province. During 2005 level of poverty lines is Rp.129.108, - per capita per month . In 2008 the level poverty lines changed to Rp 182.636 ,-per capita per month ( 2100 Kcal per capita per day).

instability. The total population of East Java has increased with the average rate of 1 % per year since the beginning of 2002 until the year 2008, from 35.633 million individuals to 37.797 million. This increase in population is also accompanied by an increasing number of labour forces of 17.857 million in 2002 to 20.117 million in 2008, i.e. 2.4% per year. Labour force growth is apparently not accompanied with a growing labour force which can be absorbed by economic activity. Thus, the open unemployment rate continued to increase between the years 2002 and 2008, as indicated in table 5.2.1.

**Table 5.2.1** Population, Poverty, Employment, and Migration East Java, 2002-2008.

| NO. | Detail | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 |
|---|---|---|---|---|---|---|---|---|
| 1 | Population | 35,633 | 35,930 | 36,668 | 37,070 | 37,378 | 37,134 | 37,797 |
| 2 | Poverty Rate (% of population) | 22.34 | 20.34 | 19.52 | 19.10 | 22.51 | 19.89 | 18.51 |
| 3 | Working Age Population | 26,527 | 26,903 | 27,402 | 27,973 | 28,572 | 28,328 | 28,866 |
| 4 | Non-Working Age Population | 9,105 | 9,026 | 9,265 | 9,097 | 8,806 | 8,806 | 8,931 |
| 5 | Labour Force | 17,857 | 17,395 | 18,386 | 18,591 | 18,720 | 19,521 | 20,117 |
| 6 | Employed persons) | 17,011 | 16,525 | 17,374 | 17,509 | 17,669 | 18,067 | 18,861 |
| 7 | Unemployed persons | 846 | 870 | 1,011 | 1,082 | 1,051 | 1,454 | 1,256 |
| 8 | Open Unemployment Rates (%) | 4.74 | 5.00 | 5.50 | 5.82 | 5.62 | 6.79 | 6.24 |
| 9 | Labour Force Participation Rates (%) | 67.32 | 64.66 | 67.10 | 66.46 | 65.52 | 68.99 | 69.69 |
| 10 | Employment Rate | 95.26 | 95.00 | 94.50 | 94.18 | 94.38 | 92.55 | 93.75 |
| 11 | Regional Minimum Wages (USD)[9] | 35.65 | 40.98 | 43.48 | 47.39 | 57.72 | 63.04 | 68.80 |
| 12 | Overseas Labour Migration | 41.768 | 36.674 | 30.747 | 11.372 | 58.965 | 54.949 | 59.525 |

Source: Author's own calculations with data from BPS-Statistics, East Java Province, 2002-2008

Table 5.2.1 also shows that the total number of employed increased from 17,011 million in 2002, to 18.861 million in 2008, with the average employment growth of 1.77 % p.a. In contrast, the unemployment rate shows an increase from 846,296 in 2002 to 1,256.564 in the year 2008, with average growth rate of 8%. An increasing number of unemployed will inevitably result in efforts to seek jobs.

### 5.2.4. Economic conditions

[9] 1USD=IDR9,200 (Bank Indonesia, 2002-2010)

Since the 1940s, East Java has been Indonesia's second major centre of industrial development after Jakarta/West-Java. East Java's industry is also the main contributor to the Indonesian economy (Heru and McMichael, 2004). On a national scale, East Java has become the prime supplier of processed agricultural products. Agricultural activities play a vital role in the economic structure and other business activities such as trade, hotel, restaurant, and manufacturing industries also contribute to the economic development. East Java has the strongest economic activities for developing industry, services, and agriculture. The data in table 5.2.2 depicts that, for the years 2001-2009, most of the labour force in East Java is working in the agricultural sector. In 2001, more than half of the population worked in the agricultural sector, followed by services and manufacturing sectors. However, the proportion of people working in agriculture to the total labour force has steadily decreased over the last ten years.

**Table 5.2.2** Main Occupation East Java by sector, 2001-2009

| No | Main Occupation | 2001 | 2009 |
|---|---|---|---|
| 1 | Agriculture | 54.76 | 42.93 |
| 2 | Manufacture | 14.38 | 12.36 |
| 3 | Construction | 4.36 | 5.05 |
| 4 | Trade | 7.53 | 20.37 |
| 5 | Transportation | 5.41 | 5.15 |
| 6 | Services | 11.55 | 12.16 |
| 7 | Others | 2.00 | 1.98 |

Source: BPS-Statistics, East Java , 2001-2009
Note: Not available data at 2006.

Overall, the contribution of agriculture to regional output has shown a tendency to decrease, as shown by the share of the agriculture sector in the GDRP from 2001-2009 (table 5.2.3).

**Table 5.2.3** Distribution of East Java Gross Domestic Regional Product in %, 2001-2009

| | Sectors | Shares of GDRP | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
| 1 | Agriculture | 19.26 | 18.93 | 18.41 | 17.89 | 17.44 | 17.14 | 16.87 | 16.57 | 15.65 |
| 2 | Mining | 2.04 | 2.02 | 1.97 | 1.9 | 1.96 | 3.01 | 2.1 | 2.17 | 2.21 |
| 3 | Manufacture | 29.39 | 28.11 | 28.02 | 27.87 | 27.55 | 26.83 | 28.51 | 28.49 | 25.96 |
| 4 | Electric, Gas, and Water Resources | 1.57 | 1.44 | 1.59 | 1.72 | 1.73 | 1.7 | 1.93 | 1.91 | 1.36 |
| 5 | Construction | 3.9 | 3.8 | 3.69 | 3.55 | 3.47 | 3.33 | 3.35 | 3.34 | 3.21 |
| 6 | Trade, Hotel, and Restaurant | 25.41 | 26.52 | 27.31 | 28.19 | 29.08 | 30.13 | 28.99 | 29.36 | 29.91 |
| 7 | Distribution and Communication | 5.15 | 5.61 | 5.66 | 5.71 | 5.66 | 5.72 | 5.52 | 5.32 | 7.10 |
| 8 | Finance and Rent | 4.7 | 4.99 | 4.86 | 4.86 | 4.94 | 5.02 | 4.57 | 4.68 | 5.42 |
| 9 | Services | 8.59 | 8.6 | 8.49 | 8.3 | 8.17 | 8.13 | 8.15 | 8.15 | 9.17 |
| | **Total** | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |

Sources: BPS-Statistics, East Java Province, 2001-2010

The share of agriculture decreased from almost 20 % in 2001 to 16 % in 2008. In contrast, the trade, hotel and restaurant sector increased from 25.41 % in 2001 to 29.91 % in 2009. Meanwhile, the manufacturing industry has decreased its contributions to the GDRP from almost 29,39 % in 2001 to 25,96 % in 2009. The decline of the share of agriculture (which was accompanied by increasing in the industry and service sector) shows a rapid structural transformation during 2002 to 2008. Although the contribution of the agricultural sector in the formation of GDRP continually decreases, agriculture still grows positively in other ways (table 5.2.4).

**Table 5.2.4** Annual Growth of Gross Domestic Regional Product, East Java, Constant Price (2000), 2001– 2009

| No | Sector | Growth Rates | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
| 1 | Agriculture | 1.26 | 2.02 | 1.91 | 2.82 | 3.16 | 3.99 | 3.13 | 3.12 | 3.92 |
| 2 | Mining | 2.68 | 2.76 | 2.21 | 1.84 | 9.32 | 8.58 | 10.44 | 9.26 | 6.92 |
| 3 | Manufacture | 2.35 | 0.73 | 4.46 | 5.28 | 4.61 | 3.05 | 4.64 | 4.39 | 2.80 |
| 4 | Electric, Gas, and Water Resources | -14.63 | 18.64 | 15.52 | 14.86 | 6.18 | 4.07 | 11.81 | 3.11 | 2.72 |
| 5 | Construction | 0.89 | 1.10 | 1.86 | 1.85 | 3.48 | 1.42 | 1.21 | 2.71 | 4.25 |
| 6 | Trade, Hotels, and Restaurants | 8.08 | 8.32 | 7.92 | 9.25 | 9.15 | 9.62 | 8.39 | 8.27 | 5.58 |
| 7 | Distribution and Communication | 2.03 | 13.03 | 5.78 | 6.77 | 5.00 | 6.77 | 7.77 | 7.20 | 12.98 |
| 8 | Finance, Rent , and Finance Services | 14.01 | 3.39 | 2.12 | 5.94 | 7.49 | 7.46 | 8.47 | 8.05 | 5.30 |
| 9 | Services | 3.11 | 3.95 | 3.41 | 3.44 | 4.23 | 5.27 | 5.88 | 6.27 | 5.76 |
| | **GDRP** | 3.76 | 3.80 | 4.78 | 5.83 | 5.84 | 5.80 | 6.11 | 5.90 | 5.01 |

Source: Author's own calculations with data from BPS of East Java 2001-2010

In East Java, the agricultural sector is an important player in regional development because the majority of poor people in East Java live in rural areas. This means that development of agriculture based in rural areas is required to reduce poverty. Secondly, the agricultural sector is the main pillar of food security, hence development of the agricultural sector becomes the major strategy in preventing a food crisis (RPJM, East Java, 2005-2010).

However, the agricultural sector has begun to deteriorate in a sense, mainly because agricultural land is increasingly being converted into housing and industrial land. Although hard data on this subject is not yet sufficient, in general, conversion of agricultural land in East Java has been predicted. During the period 2000-2004, the average annual conversion of farmland for construction reached 2501.3 ha (East Java Department of Agriculture, 2005). In addition, the contribution of the agricultural sector to GRDP of East Java is decreasing, as seen in table 5.2.4. And as already explained, growth of agriculture is not as fast as the growth of that of other sectors.

The most important aspects of the agricultural sector are irrigation and roads. As a result, damage of irrigation channels (both due to technical factors or natural disasters) and the stagnancy of irrigation development means that irrigation is not sufficient enough to improve agricultural production. This condition is also worsened by the decrease in land that receives irrigation, especially rice fields. Particularly, for the years 2003 to 2004, the area of technical and semi-technical fields decreased by 0.6% and 2.3%, respectively (RPJM, East Java, 2005). Land for farming, electrification, credit, roads, markets and agricultural extension are essential conditions for the modernization of the agricultural sector in rural and regional development. For East Java's economic and political strategy, maintaining agriculture has become a priority for the government.

Table 5.2.5 shows that in 2009 most of the land in East Java was used for crop land (46,84%) and forests (28.89%). Compared to 2001, the share of crop land is lower with rice being the main crop in the area. The forest area has increased due to diversion of crop land for forest industry, such as teak or pine plantations. In 2009, land use for housing was higher at 12.28 percent compared to 2001. The increase of land for housing will in turn reduce land for farming.

**Table 5.2.5** Land Use in East Java, 2003 and 2009

| No | Land use | 2001 | | 2009 | |
|---|---|---|---|---|---|
| | | **ha** | **%** | **ha** | **%** |
| 1 | Crop Land | 2,433,488 | 51.63 | 2,207,726 | 46.84 |
| 2 | Plantation | 158,194 | 3.36 | 158,194 | 3.36 |
| 3 | Forest | 1,226,164 | 26.02 | 1,361,573 | 28.89 |
| 4 | Infertile land/savannah | 153,229 | 3.25 | 239213 | 5.08 |
| 5 | Swamp/Lake | 9,584 | 0.20 | 9,584 | 0.20 |
| 6 | Fishpond/Pond | 73,761 | 1.57 | 73,761 | 1.57 |
| 7 | Housing | 571,901 | 12.13 | 578,742 | 12.28 |
| 8 | Others | 86,693 | 1.84 | 84,221 | 1.79 |
| | **Total** | **4,713,015** | 100.00 | **4,713,015** | 100.00 |

Source: Author's own calculations with data from BPS -Statistics of East Java Province 2003, 2010

### 5.2.5. Migration in East Java

One strategy for an individual to increase incomes and improve job opportunities is to migrate abroad. In 2002, 41,768, or 4.7 % of East Java's total labour force worked abroad. This number has since increased to 59,525 in 2008 (table 5.2.6).

Since early 2004, the number of East Java's labour migrants sent out abroad has shown a tendency to decrease, as a result of hard to obtain working licenses for foreigners in some destination countries. At the end of 2006, there were 58,965 persons from East Java working abroad (BPS-East Java, 2007).

**Table 5.2.6.** Official Labour Migration to Overseas from East Java , 2001-2008

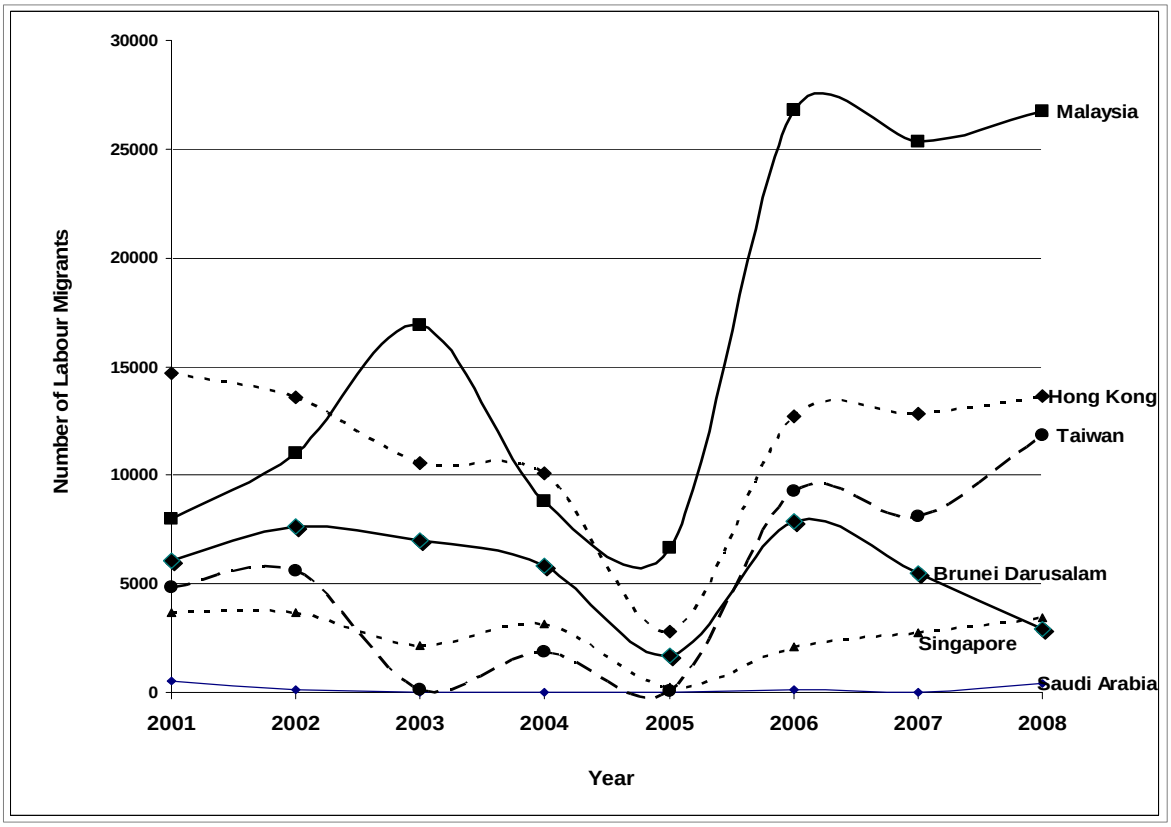
| Countries Destination | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 |
|---|---|---|---|---|---|---|---|---|
| 1 Saudi Arabia | 526 | 121 | 0 | 0 | 0 | 130 | 27 | 403 |
| 2 Malaysia | 8,005 | 11,038 | 16,918 | 8,783 | 6,621 | 26,785 | 25,348 | 26,746 |
| 3 Singapore | 3,672 | 3,650 | 2,136 | 3,125 | 226 | 2,091 | 2,727 | 3,454 |
| 4 Hong Kong | 14,686 | 13,555 | 10,543 | 10,095 | 2,771 | 12,719 | 12,788 | 13,616 |
| 5 Uni Emirate Arab | 114 | 150 | 0 | 1,027 | 0 | 1 | 76 | 35 |
| 6 Taiwan | 4,831 | 5,604 | 89 | 1,885 | 72 | 9,277 | 8,097 | 11,842 |
| 7 Brunei Darussalam | 6,031 | 7,618 | 6,986 | 5,832 | 1,682 | 7,892 | 5,468 | 2,898 |
| 8 Others | 23 | 32 | 2 | n.a | n.a | 70 | 418 | 531 |
| | **37,888** | **41,768** | **36,674** | **30,747** | **11,372** | **58,965** | **54,949** | **59,525** |

Sources: BPS-Statistics of East Java, BNP2TKI 2005- 2008.
n.a=not available

As shown in table 5.2.6, the main destination countries for labour-seekers from East Java until 2008 were Malaysia (26,746 persons), Hong Kong (13,616 persons), and Taiwan (11,842 persons). Compared to 2001, the number of labour migrants increased, but only migration to Brunei Darussalam with 71.42% of those labour migrants being female (Department of Labour and Transmigration, East Java, 2008).

A significant decrease occurred between 2003 to 2005 because of a temporary ban on placements in the Middle East and in Taiwan, stricter requirements for dispatching migrant workers, the spread of the SARS epidemic in a number of destination countries in the Asia and Pacific region, and the war in the Middle East (for details see Figure 5.2.2). In 2003, the government of Taiwan stopped allowing foreign workers due to high fees being charged by local agents. As a result, a large number of female migrant workers escaped from their employers, leading to many cases of data deception in documents. The permission to work in the Middle East countries was banned by the Indonesian government in March 2004 in anticipation of the impact of the Gulf War. Then, on March, 2005 the permission was released again by tightening the placement system (World Bank, 2008).

**Figure 5.2.2.** Numbers of Labour Migrant and Country Destination of International Migration in East Java

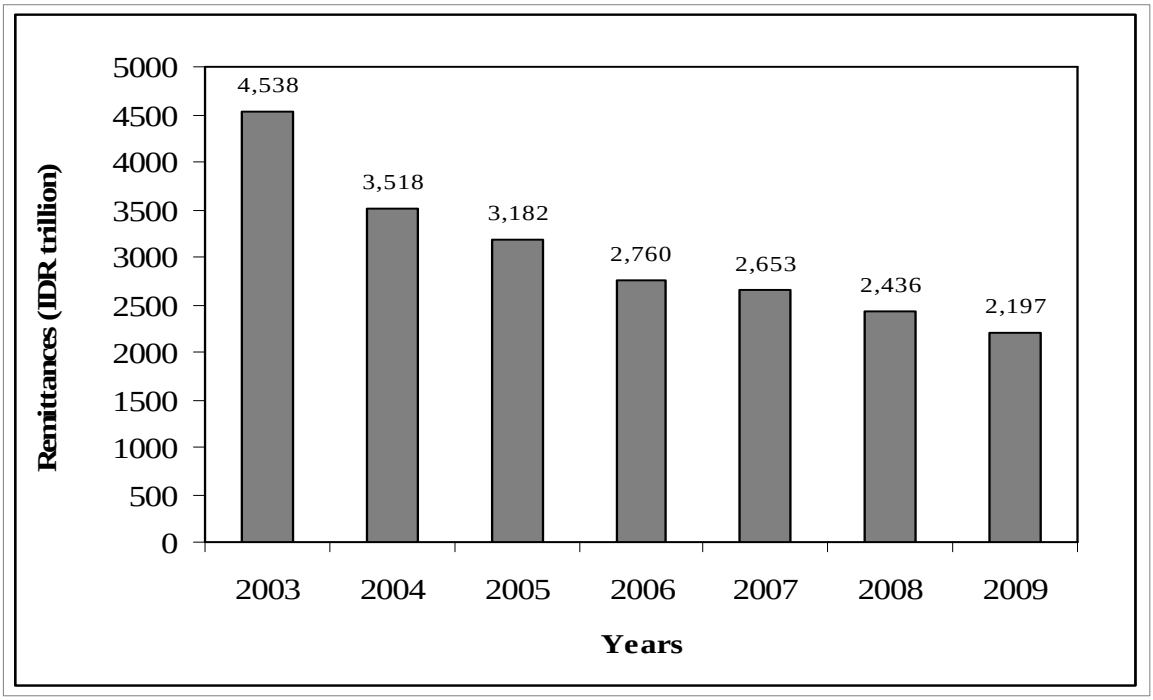



Source: Author's own calculation with data from BPS Statistic and Department of Labour East Java Province, 2001-2008

In Malaysia, the number of female migrant workers is less than the number of male, while in Saudi Arabia it is the reverse situation. In 2004, the percentage of female migrant workers in Malaysia was 49%, and in Saudi Arabia, it was 94% of the total registered Indonesian migrant workers. It should also be noted that Malaysia is also the favourite choice as a destination country for illegal migrant workers (World Bank, 2008).

In 2009, IDR 2.197 trillion were transferred by migrant workers to banks in East Java. This represents a decrease by almost 10 % from the previous year. On average, over the 6 year period from 2003-2009, the remittances decreased at 11% p.a (Figure 5.2.3).

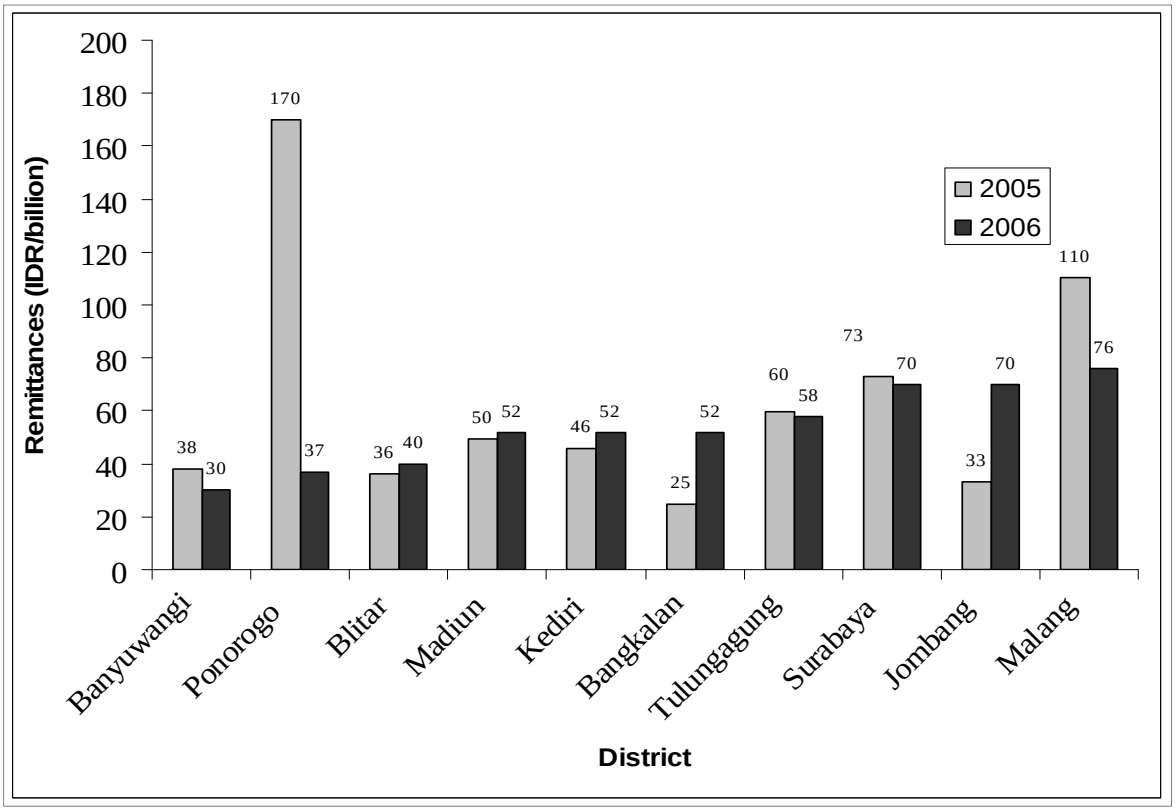
**Figure 5.2.3.** Transfer of Remittances to East Java (IDR/Billion)




Source: BPS-Statistic and Department of Labour and Transmigration Migration, East Java, 2003-2010

The regions of Malang and Ponorogo are the major remittance receivers. Figure 5.2.4 shows that at the end of 2005, Ponorogo had the highest influx of remittances of IDR 170 billions, while in 2006, the Malang district had the highest, totalling IDR 76 billion. Other districts that contributed large amounts of remittances to the East Java province were Tulungagung, Jombang and Surabaya. As capital of East Java, Surabaya, with its well structured banking facilities, receives many remittances being sent from migrants from other regions, such as Bangkalan.

**Figure 5.2.4.** Remittances transfer by district of East Java, 2005-2006




Source: Bank Indonesia, East Java 2006

Data in Table 5.2.7 shows that in 2003 labour migrants from East Java have contributed 12 % of the remittances of Indonesia which has continued to decline due to increase in sending workers abroad from other provinces.

**Table 5.2.7** Remittances to Indonesia and East Java (USD/Billion), 2002-2010

| Year | East Java | Indonesia (USD) | % |
|---|---|---|---|
| 2002 | 0.275 | na. | n.a. |
| 2003 | 0.221 | 1.87 | 14.82 |
| 2004 | 0.143 | 5.42 | 7.67 |
| 2005 | 0.354 | 5.7 | 6.52 |
| 2006 | 0.307 | 6.04 | 5.38 |
| 2007 | 0.257 | 6.6 | 4.26 |
| 2008 | 0.321 | 4.91 | 4.86 |
| 2009 | 0.270 | 6.73 | 5.50 |
| 2010 | n.a | 1.49 | n.a |

Source: BNP2TKI, 2008, Bank Indonesia 2010.
Note: n.a.=not available

Furthermore, as seen from the number of workers per district from 2003 to 2006 (except 2005) in Table 5.2.8, Malang District is the largest contributor of remittances in East Java. In 2008, East Javanese migrants were mainly from the southern regions, such as Malang (7183), Blitar (6082) and Tulungagung (4396). These areas are known to have relatively less fertile soils than the middle or western regions.

**Table 5.2.8 Number of Sent Labour Migrants by District of Origin in East Java, 2003-2008**

| No | Districts | 2003 | 2004 | 2006 | 2007 | 2008 |
|---|---|---|---|---|---|---|
| 1. | Gresik | 1603 | 352 | 1899 | 2156 | 2180 |
| 2. | Malang | 2686 | 4249 | 9693 | 6860 | 7183 |
| 3. | Kediri | 3083 | 1139 | 4126 | 2994 | 3414 |
| 4. | Madiun | 803 | 592 | 2398 | 2523 | 2979 |
| 5. | Blitar | 2780 | 2329 | 5358 | 5103 | 6082 |
| 6. | Tulungagung | 6788 | 2669 | 4886 | 4810 | 4396 |
| 7. | Ponorogo | 1708 | 1179 | 3275 | 3993 | 3974 |
| 8. | Banyuwangi | 1519 | 1190 | 3698 | 4085 | 3885 |
| 9. | Lamongan | 647 | 234 | 2942 | 2809 | 3181 |
| 10. | Bangkalan | 572 | 183 | 2232 | 1009 | 1123 |
| 11. | Pamekasan | 3153 | 2858 | 612 | 536 | 541 |
| 12. | Others | 10513 | 8827 | 17845 | 22170 | 20587 |
| **Number of Labour Migrant** | | **35855** | **25801** | **58964** | **59048** | **59525** |

Note: data not available in 2005
Source: BPS Statistic of East Java 2003-2008

## 5.3. Malang District

### 5.3.1. Geographic and natural conditions

The Malang District is located in the south-central region of East Java Province and borders seven districts, including the Indonesian Ocean. Considering the size, Malang is the second largest district after Banyuwangi District with of 3,534.86 $km^2$, with 50% of its agricultural land under rice paddies, fields and plantations (BPS-Statistics, East Java, 2004). Topographically, the Malang District consists of mountains and hills, and such topographic conditions indicate a large forest potential. Forests pose agricultural potential as they are source of sufficient water, which flows throughout the year and can be used for irrigation of farmland. Due to volcanoes and volcanic eruptions, the Malang region is quite fertile for farming. Additionally, it is unique and has beautiful scenery that makes it an important tourist destination (BPS-Statistics, Malang District, 2008).

### 5.3.2. Population

Administratively, the Malang district consists of 33 sub-districts, which are subdivided into 273 *desa* (rural) and 117 *kelurahan* (urban). The government centre is located in the sub-district of Kepanjen, although previously, it was located in the city of Malang. Malang district has the largest population among the 29 districts (rural) in East Java Province. According to the BPS Statistic, Malang, Malang District had 1,477,200 and 2,451,325 inhabitants in 2002 and 2008, respectively. The population density in 2002 reached 782 people/$km^2$ and 693 people/$km^2$ in 2008.

### 5.3.3. Economic conditions

Agriculture is the main occupation of the Malang district labour force. As shown in Table 5.3.1, in 2008, 38.51 % of the population worked in agriculture, while18.25 % worked in the manufacturing sector.

**Table 5.3.1** Main Occupations of Malang District**,** 2007 and 2008

| | **Main Occupation** | **2007** | | **2008** | |
|---|---|---|---|---|---|
| | | **Number of Workers** | **%** | **Number of Workers** | **%** |
| 1. | Agriculture | 464,171 | 39.06 | 462,658 | 38.51 |
| 2. | Mining | 4,489 | 0.38 | 4,445 | 0.37 |
| 3. | Manufacture | 206,585 | 17.39 | 219,255 | 18.25 |
| 4. | Services | 129,221 | 10.87 | 133,103 | 11.08 |
| 5. | Others | 383,813 | 32.30 | 381,934 | 31.79 |
| | **Total** | **1,188,279** | **100.00** | **1,201,395** | **100.00** |

Source: Statistics Office in Malang District

By using constant 2000 prices, economic growth in the district of Malang was 5.11% and 5.23% in 2007 and 2008, respectively. Per capita income for residents of the Malang District

in the year 2007 amounted to IDR 4,966,399 and increased to IDR 5,393,881 in 2008 (table 5.3.2)

**Table 5.3.2** Gross Regional Domestic Product of Malang District

| No. | Description | 2006 | 2007 | 2008 |
|---|---|---|---|---|
| 1. | Gross Regional Domestic Product (Million Rp) | 4,882,713 | 5,132,030 | 5,400,282 |
| 2. | Growth | - | 5.11 | 5.23 |
| 3. | Per Capita Gross Regional Domestic Product | 4,966,399 | 5,155,125 | 5,393,881 |
| 4. | Regional Income (Million Rp) | 10,567,414 | 11,210,731 | 11,856,423 |
| 5. | per Capita Regional Income | 4,441,206 | 4,667,979 | 4,911,975 |

Source : Statistics Office of Malang District 2008

Table 5.3.3 shows that, in general, the economic structure of Malang District during the year 2010 was supported mainly by the tertiary sectors (45 %), primary sector (30 %) and secondary sector (25%). Every sector has a mainstay sector, which is in this case the agricultural sector (for the primary sector), the industrial sector (for the secondary sector) and the commercial sector, restaurants and hotels (for the tertiary sector). During the period 2000-2010, the contribution of the primary sector tended to decrease while the secondary sector has increased. Additionally, the tertiary sector tended to increase. The decrease of the contribution from the primary sector in the year 2010 represents degradation on part of the agricultural sector.

**Table 5.3.3** Sectoral Distribution of Malang District GDRP, 2000 and 2010

| No. | Shares of GDRP | 2000 | 2010 |
|---|---|---|---|
| 1. | Agriculture | 37.7 | 28.2 |
| 2. | Mining & Quarrying | 0.7 | 2.2 |
| 3. | Manufacturing Industry | 14.9 | 20.6 |
| 4. | Electricity & Water Supply | 1.5 | 1.8 |
| 5. | Construction | 1.7 | 2.0 |
| 6. | Trade, Hotels & Restaurants | 22.9 | 23.6 |
| 7. | Transport and Communication | 7.5 | 4.5 |
| 8. | Financial, Ownership & Business Services | 4.35 | 3.9 |
| 9. | Services | 13.8 | 12.8 |
| | **GRDP** | **100.00** | **100.00** |

Source: Statistics Office in Malang District, 2000, 2010

Malang has a an ideal climate appropriate for certain fruits and vegetables. Areas in the North and East are responsible for apple and assorted vegetable production. Mountain areas in the West, on the other hand are becoming one of the major vegetable resources in East Java. The southern regions are widely used to cultivate sugarcane and other horticulture products, such as snake fruit and watermelon. In addition to tea plantations, the Malang District also has a coffee and cacao plantation in the sub-Tirtoyudo mountainous areas. And in the limestone mountain area of the south, there are also teak forests plantations on the rise. Supported by suitable weather and land conditions, agro-industries in this region are generally on the increase. Furthermore, these same climatic conditions that favour diverse agricultural production also give rise to diverse plant variations along with beautiful scenery that attracts domestic tourists to the area.

**Table 5.3.4** Land Use in Malang Districts , 2000 and 2010

| No | Land Use | 2000 | | 2010 | |
|---|---|---|---|---|---|
| | | ha | % | ha | % |
| 1 | House, Compound, and Surroundings | 41,491 | 11.75 | 80,169 | 22.68 |
| 2 | Wet land | 49,882 | 14.13 | 46,448 | 13.14 |
| 3 | Dryland | 111,279 | 31.52 | 84,076 | 23.79 |
| 4 | Plantation | 25,925 | 7.34 | 22,042 | 6.24 |
| 5 | Forest | 100,502 | 28.47 | 101,062 | 28.59 |
| 6 | Fish and Pound | 876 | 0.25 | 849 | 0.24 |
| 7 | Others | 23,109 | 6.55 | 18,832 | 5.33 |
| 8 | Total | 353,064 | 100 | 353,478 | 100 |

Source: Land Agency Malang District, 2000-2010

### 5.3.4. Migration of labour in Malang, East Java

In 2007 the number of poor in Malang district reached 555.971 (23.15%), increasing in 2008 to 568.591 (23.20%) individuals (table 5.3.4). In addition, the labour force also continued to increase due to increase of working age. This, in turn, led to increased labour force participation. The high levels of unemployment due to the decrease of job opportunities lead job seekers to find employment outside the district of Malang in East Java province, whether at home or abroad. The high wage level offered in some foreign countries also encourages them to find jobs away from home. As explained in the previous section, Malang is a major supplier of labourers to foreign countries, especially for women workers. The number of migrant workers from 2006 to 2008 continued to increase from 3.390 to 5.534 percent, overall.

**Table 5.3.5** Population, Poverty, Employment, and Labour Migration Overseas (in thousands), Malang District, 2006-2008

| No | Detail | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|---|---|---|---|---|---|---|---|
| 1. | Population | 2,393 | 2,379 | 2,401 | 2, 451 | 2,419 | 2,446 |
| 2. | Poverty Rate (% of population) | 17.19 | 22.98 | 23.15 | 23.56 | 14.7 | 14.23 |
| 3. | Population working-age | 2,020 | 2,044 | 2,031 | 1,487 | 1,495 | 1,570 |
| 4. | Non Labour Force | 853 | 900 | 729 | 675 | 354 | 350, |
| 5. | Labour Force | 1,166 | 1,143 | 1,301 | 1,210 | 1,347 | 1,366 |
| 6. | Unemployed | 223 | 157 | 83 | 47 | 47 | 49 |
| 7. | Labour Force Participation Rate (%) | 57.75 | 55.94 | 64.07 | 81.38 | 90.09 | 87.04 |
| 8. | Unemployed Rate (%) | 19.13 | 13.81 | 6.44 | 3.93 | 3.51 | 3.62 |
| 9. | Minimum Regional Wages ( USD) | 62.50 | 74.02 | 80.76 | 87.17 | 103.75 | 109.24 |
| 10. | Labour Migration Overseas | n.a | 3,390 | 4,529 | 5,584 | 4,957 | 4,533 |
| | *Male* | n.a | n.a | 107 | 238 | 338 | 395 |
| | *Female* | n.a | n.a | 4,422 | 5,389 | 4,619 | 4,138 |
| 11. | Remittances(IDR/billion) | 76 | 110 | 107,8 | 95 | 84.1 | 75,6 |
| 12. | Local Own Revenue (IDR/billion) | 54.2 | 69.6 | 84.3 | 100.3 | 154 | 133.6 |

Source: BPS-Statistic, Malang District 2005-2010.

In East Java, especially in the Malang District, many people, mostly women, moved away from the rural areas, to the nearest possible urban location, in search of new work.

Based on existing data (table 5.3.5), the number of Malang workers working overseas in 2010 reached 4,533, increasing by about 33.77 % compared to 2010 (BPS-Statistics, Malang District, 2008). Table 5.3.6 shows that the most popular destination was Saudi Arabia, with about 1,827 people (32.82 %), and Hong Kong, with about 1,720 people (31.06%) in 2008. The majority of workers came from the southern region of Malang. The table also shows the number of migrants from Malang, separated by sex, from 2007-2010. During these years, migrant workers have been predominately female (98%).

**Table 5.3.6** Labour Migrants from Malang District to Overseas, 2007-2010

| | **Destination** | **2007** | **2008** | **2009** | **2010** |
|---|---|---|---|---|---|
| 1 | Saudi Arabia | 1295 | 1827 | 831 | 435 |
| | *Male* | | *41* | *19* | *8* |
| | *Female* | | *1786* | *812* | *427* |
| 2 | Hong Kong | 1294 | 1720 | 1600 | 376 |
| | *Male* | | *1* | *0* | *0* |
| | *Female* | | *1719* | *1600* | *376* |
| 3 | China Taipei | 732 | 909 | 207 | 154 |
| | *Male* | | *39* | *7* | *6* |
| | *Female* | | *870* | *200* | *148* |
| 4 | Singapore | 453 | 572 | 157 | 108 |
| | *Male* | | *0* | *0* | *0* |
| | *Female* | | *572* | *157* | *108* |
| 5 | Malaysia | 363 | 519 | 67 | 26 |
| | *Male* | | *109* | *12* | *2* |
| | *Female* | | *410* | *55* | *24* |
| | *Total Male* | | 190 | 38 | 16 |
| | *Total Female* | | 5,357 | 2,824 | 1,083 |
| | Other | 392 | 37 | 2,095 | 3,434 |
| | Total | **4,529** | **5,584** | **4,957** | **4,533** |

Source: BPS-Statistics, Malang District, 2007-2010

# Chapter 6 Data Analysis

This chapter presents the descriptive and econometric analysis. Descriptive analysis shows characteristics of migrants and non-migrants, including the dependent and independent variables which are employed in the econometric models. The analysis covers occupation, destination, and assets owned, as well as the demographic structures of migrant and non-migrants and their educational backgrounds. After evaluating the income and expenditure, the last section in this chapter briefly explains governmental aids to households. This section also provides the characteristics or conditions of villages in East Java. Some of these variables will then be analysed with an econometric approach. Also analysed are the determinants of the migration decision, as illustrated in the conceptual framework on rural-urban and international migration.

## 6.1. Descriptive analysis

### 6.1.1. Migrant's destinations

The survey reveals that international migrants constitute the majority of overall migrants with 130 persons followed by 118 and 112 non-migrant and rural-urban migrants, respectively. Concerning the migration destinations, international migrants were more common than rural-urban migrant in several villages, such as Sumberejo, Sitirejo, and Sidorahayu and Gondowangi. It is known that migrations, particularly international, became the most common phenomenon of recent rural economic development in the research area. The composition of migrants and non-migrants, according to the type of migration, is presented in table 6.1.1.:

**Table 6.1.7** Villages and Numbers of Migrants and non-migrants in Sub-District of Wagir

| No | Village | International Migrants | Rural-urban Migrants | Non-migrants | Total |
|---|---|---|---|---|---|
| 1. | Dalisodo | 8 | 7 | 11 | 26 |
| 2. | Gondowangi | 10 | 7 | 11 | 28 |
| 3. | Jedong | 3 | 4 | 3 | 10 |
| 4. | Mendalanwangi | 11 | 12 | 11 | 34 |
| 5. | Pandanglandung | 5 | 5 | 7 | 17 |
| 6. | Pandanrejo | 5 | 5 | 8 | 18 |
| 7. | Parangrejo | 20 | 22 | 19 | 61 |
| 8. | Petungsewu | 4 | 4 | 4 | 12 |
| 9. | Sidorahayu | 11 | 8 | 7 | 26 |
| 10. | Sitirejo | 17 | 10 | 4 | 31 |
| 11. | Sukodadi | 0 | 6 | 9 | 15 |
| 12. | Sumberejo | 36 | 22 | 24 | 82 |
| **Total Observations** | | **130** | **112** | **118** | **360** |
| **Percentage** | | **36%** | **31%** | **32%** | **100** |

Source: Own survey, 2007

From the 130 international migrants surveyed, a large share chose Hong Kong as the main destination to work (Table 6.1.2), followed by Malaysia and Singapore. 13 individuals surveyed, on the other hand, chose to migrate to the Middle East, specifically Saudi Arabia.. The rest chose other Arabian and East Asia countries (e.g. Japan and South Korea). Hong Kong, which is currently in demand for female housekeepers, has become the most desired work destination (47.7%) since the majority of international migrants from Kecamatan Wagir (Wagir sub-district) are women.

**Table 6.1.8** Country Destinations of International Labour Migrants

| No | Country | Frequency | % |
|---|---|---|---|
| 1. | Hong Kong | 62 | 47.69 |
| 2. | Malaysia | 21 | 16.15 |
| 3. | Singapore | 14 | 10.77 |
| 4. | China Taipei | 11 | 8.46 |
| 5. | Saudi Arabia | 13 | 10.00 |
| 6. | South Korea | 2 | 1.54 |
| 7. | Brunei Darussalam | 2 | 1.54 |
| 8. | Oman | 1 | 0.77 |
| 9. | Japan | 1 | 0.77 |
| 10. | Abu Dhabi | 1 | 0.77 |
| 11. | Syria | 1 | 0.77 |
| 12. | France | 1 | 0.77 |
| | **Number of observations** | **130** | **100** |

Source: Own survey, 2008

The reason to choose Hong Kong is also heavily influenced by networks among labour migrants. Usually, labour migrants working in Hong Kong encourage their relatives or neighbours to follow them and to work in the same country. The preference for working in Hong Kong is also explained by good standards of living (i.e. security and better salaries) when compared to other countries like those in Middle East, Malaysia, Singapore and Taiwan. In addition, in Hong Kong, the employers prefer to select those who can speak Cantonese or other Chinese dialects especially in job positions that require care of elderly and handicapped individuals. In response to this demand, prospective employees from Indonesia undergo language training by agents or at language schools before their arrival Hong Kong. Table 6.1.3 presents the wages of Indonesian female workers in destination countries.

**Table 6.1.9** Wages of Female Migrant Workers in Major Destination Countries, 2006

| Destination Country | Monthly wages (USD)[10] | Monthly Wages in Rupiah (exchage rate 2006) | Wage Differences (wage overseas/ domestic wage) |
|---|---|---|---|
| Saudi Arabia | 145.89 | 1,342,200 | 3.36 |
| Jordan | 138.03 | 1,269,900 | 3.17 |
| Kuwait | 123.06 | 1,132,178 | 2.83 |
| United Arab Emirates | 225.51 | 2,074,717 | 5.19 |
| Qatar | 139.04 | 1,279,203 | 3.20 |
| Malaysia | 82.78 | 761,600 | 1.90 |
| Singapore | 134.76 | 1,239,750 | 3.10 |
| Hong Kong | 427.24 | 3,930,570 | 9.83 |
| Taiwan | 405.98 | 3,735,000 | 9.34 |
| Indonesia | 43.48 | 400,000[11] | 1.00 |

Source: World Bank, 2006, ILO, 2004

Malaysia was the second favourite destination, despite lower salaries, due in part to lower transportation costs. In addition, the similarity of culture and language contribute to its desirableness as a foreign destination (World Bank, 2008). In comparison to other destination countries, poor prior experiences that from Indonesian labour migrants in Saudi Arabia create some hesitance among the migrant community to work in the country. It has created an unfavourable image and only a few people chose Saudi Arabia as a destination country for working. Those who chose Saudi Arabia usually have religious motives. For instance, it creates the possibility to do *hajj*, a religious pilgrim to Mecca and *Kaaba*, with little expense (Silvey, 2006). Also, In Malaysia, when the working place is not comfortable for them, migrants have ample opportunity to return to Indonesia via the sea route where the immigration checks are relatively low.

[10] Exchange rate mid-July 2006, USD 1 = IDR 9,200

[11] Estimation of housemaid salary in Jakarta. According to survey by ILO (2004) the range of housemaid in East Jakarta is from IDR 50.000-500.000 ( 5,.32USD -53.2USD) with average IDR 170.000 or USD 18 per month.

In some cases, migrants were deported after arriving in the destination country due to insufficient documentation. According to the Indonesian Law, before going abroad, an individual must obtain a certificate from the village where they originated from, and accordingly at the sub-district level, district, and provincial levels. In the district and provincial levels, the documents are usually maintained by their agents. In some instances, individuals do choose to go abroad without proceeding through formal procedures (although not common), especially those who work close to the Malaysian-Indonesia border.

A network of private, licensed agents plays a major role in processing these labour contracts. According to the interviews with some migrants, the migration process is channelled through direct contacts with overseas employers. It costs around IDR 20 million to 30 million (USD 2,131) to obtain the documents needed for working abroad[12]. In this case, migrants opt to 'fly first, pay later' schemes where costs of transportation, boarding and lodging and profits are covered by agents by appropriating the worker's wages over 3-6 months.

For domestic migration, Surabaya became the main destination of rural-to-urban migrants. As the centre of development in East Java, Surabaya offers various employment possibilities in the industrial and service sectors. It also offers higher wages as compared to other cities around Malang (see Table.6.1.4). The average wage was IDR 35,000(USD 3.73) for a bricklayer and IDR 40,000 (USD 4.2 ) IDR 50,000(USD 5.3 ) for an artisan. Other reasons for migration were the relationships created between foreman and labour migrant before work began, as well as the fact that the distance between Malang and Surabaya is not too far (90km).

[12] Exchange rate , 1 USD=IDR 9000 (March, 2008)

**Table 6.1.10** City Destinations of Rural-urban Migrants

| City | Frequency | % |
|---|---|---|
| Surabaya | 46 | 41.44 |
| Singaraja, Bali | 21 | 18.92 |
| Samarinda, East Kalimantan | 12 | 10.81 |
| Merauke, Papua | 6 | 5.41 |
| Sidoarjo | 5 | 4.50 |
| Jakarta | 3 | 2.70 |
| Gresik | 3 | 2.70 |
| Solo | 3 | 2.70 |
| Kediri | 2 | 1.80 |
| Pontianak, West Kalimantan | 2 | 1.80 |
| Others[13] | 8 | 7.20 |
| **Number of observations** | **111** | **100** |

Source: Own survey, 2008

Domestic migrants in this research area consist of long term migrants as well as temporary migrants. Long term migrants are usually skilled workers employed in the formal sector such as industry, government, and services which offer fixed and regular salary (usually monthly). Temporary migrants are often the migrants that work in the informal sector. They usually possess jobs such as housekeepers, building labourers, and service workers[14]. In that case, kinship among labour migrants plays an important role to shape destination preferences as well. Family members at a certain destination, for instance, can accommodate them temporarily before getting a job and permanent shelter. Temporary migrants who work in the construction sector also often typically form bonds and friendships in which they help assist each other or other migrants.

**13** Sumatera, Banjarmasin, Malang, Mojokerto, Centre of Java, Jember, Madura, Flores.

**14** Temporary migrant is skilled, semi-skilled or untrained workers who remain in the urban area for definite periods as determined in a work contract with an individual worker or a service contract concluded with an enterprise. Permanent migrant is those who are accepted to settle in the urban (IOM,2004).

### 6.1.2. Socio-economic characteristic of migrants and non-migrants

In this section, the socio-economic characteristics of migrants and non-migrants in the study area are explained. A vast majority of the international migrants work as housemaids (72.32%), followed by babysitters (10%) and then bricklayers (6.15%). In stark contrast, the majority of urban migrants worked as bricklayers, i.e. more than 67%, and only 6.31% as factory workers, and 9.91% as housemaids. The high number of bricklayers can be explained by the increased demand for labour in the construction and informal sector. Domestic migrants normally go to cities in groups of around ten persons to work in the same location in typically por living conditions. The young workers with limited working experience are often guided by senior members of the group. Most of the non-migrants work as farmers or merchants and some of them work in factories around the village such as cigarette, and/or bamboo-based handicraft and utensil factories. The solidarity within these migrant groups helps to build social capital which can then provide protection to the new members and provide stability in times of uncertainty.

**Table 6.1.11** Occupations of migrants and non-migrants

| | International Migration | | Rural-urban Migration | | Non-migrant | |
|---|---|---|---|---|---|---|
| | **Number of observations** | **%** | **Number of observations** | **%** | **Number of observations** | **%** |
| Housemaid | 94 | 72.31 | 11 | 9.91 | 1 | 0.84 |
| Factory Labour | 1 | 0.77 | 7 | 6.31 | 9 | 7.56 |
| Babysitter | 13 | 10.00 | - | - | 1 | 0.84 |
| Bricklayer | 8 | 6.15 | 75 | 67.57 | 8 | 6.72 |
| Technician | 2 | 1.54 | - | - | - | - |
| Driver | 4 | 3.08 | 1 | 0.90 | 4 | 3.36 |
| Mechanic | 1 | 0.77 | 4 | 3.60 | 2 | 1.68 |
| Shopkeeper | 3 | 2.31 | 1 | 0.90 | 8 | 6.72 |
| Farmer | - | - | 5 | 4.50 | 36 | 30.25 |
| Security | - | - | - | - | 1 | 0.84 |
| Coal mining | - | - | 3 | 2.70 | - | - |
| Merchant | - | - | - | - | 16 | 13.45 |
| Village staff | - | - | - | - | 5 | 4.20 |
| Small shopper | - | - | - | - | 7 | 5.88 |
| Public servant | - | - | - | - | 1 | 0.84 |
| Seller/broker | 1 | 0.77 | 1 | 0.90 | 5 | 4.20 |
| Factory owner | 0 | 0.00 | - | - | 3 | 2.52 |
| Services | 2 | 1.54 | 1 | 0.90 | 7 | 5.88 |
| Teacher | - | - | - | - | 2 | 1.68 |
| *Gamelan* Maker | - | - | - | - | 1 | 0.84 |
| Officer | 1 | 0.77 | 1 | 0.90 | 2 | 1.68 |
| Former army | - | - | 1 | 0.90 | - | - |
| **Number of Observation** | **130** | **100** | **111** | **100.00** | **119** | **100.00** |

Source: Own survey, 2008

Educational background, as another representation of a human asset, became an important variable in migration. Table 6.1.6 shows that most of the international labour migrants in the area surveyed had a low educational background (less than 12 years), i.e. elementary school and junior secondary school graduate. Labour migrants who had graduated from senior high

school and who nevertheless worked abroad represented 6.1%, with those who worked in big cities represented 3.9 %, while those who remained working in their villages represented 5.0%. The low education level clearly defines the kind of job the migrants can obtain, which is mostly a low-skilled job such as housemaid or bricklayer.

**Table 6.1.12** Completed Education Level of migrants and non-migrants.

| **Type of Migrant an non-migrant** | **Years of Schooling[15]** | **Number of observations** | **%** |
|---|---|---|---|
| International Migration | less than 6 | 1 | 0.3 |
| | 6-9 | 59 | 16.4 |
| | 9-12 | 49 | 13.6 |
| | more than 12 | 22 | 6.1 |
| Rural-urban Migration | less than 6 | 2 | 0.6 |
| | 6-9 | 63 | 17.5 |
| | 9-12 | 32 | 8.9 |
| | more than 12 | 14 | 3.9 |
| Non-migrant | less than 6 | 1 | 0.3 |
| | 6-9 | 78 | 21.7 |
| | 9-12 | 21 | 5.8 |
| | more than 12 | 18 | 5.0 |
| **Total** | | **360** | **100.0** |

Source: Own survey, 2008

There was no significant difference between the age of migrants and non-migrants when they started working (see table 6.1.7). One particular migrant reported starting to work in a village when she was 11 years old, while another one went to work abroad when she was 13. On the other side, there was a migrant who started working at 36.. According to survey data, the

[15] Note: 6-9 years schooling is graduated primary schools, 9-12 years schooling is graduated junior secondary schools.

average age of international migrants (32 years) is lower compared to rural-to-urban and non-migrant of 35 and 42 years respectively. The majority of migrants are below 40 years old and older workers remaining behind to support village production. In the study area, some of young people chose stay in the village due to limited opportunities to go to the city or other countries. Working in the urban area as a housemaid or brick layer does not require skill and experience. It is beneficial for young workers to have experiences and accumulate some cash for their next migration. Some of them chose the city just as a transition working before they go abroad. Although they could loan from an agent, money is still needed by working in the city for preparation before working to overseas.

Better living conditions of former migrants, expectation of promotion and minimal barriers increase the attraction to migrate. Success stories of migration from experienced individuals in the village also motivated people to go overseas.

**Table 6.1.13** Economic Situation of Migrants and non-Migrants

| Characteristics | Mean | Standard deviation |
|---|---|---|
| **Age when starting to work** | | |
| International Migration | 20 | 4.11 |
| Rural-urban Migration | 18 | 3.28 |
| Non-migrant | 19 | 5.26 |
| **Current age** | | |
| International Migration | 32 | 7.34 |
| Rural-urban Migration | 35 | 10.34 |
| Non-migrant | 42 | 12.55 |
| **Income before work migration (in IDR)** | | |
| International Migration | 356,135 | 290023.7 |
| Rural-urban Migration | 397,241 | 272844 |
| **Remittances (in IDR)** | | |
| International Migration | 3,320,000 | 2.005.902 |
| Rural-urban Migration | 1,147,991 | 513.189.751 |
| **Total Income (in IDR)** | | |
| International Migration | 3,719,057 | 2298016.9 |
| Rural-urban Migration | 1,438,616 | 1193941.6 |
| Non-migrant | 140,508 | 1374755 |
| **Expenditure for Basic Needs (in IDR )** | | |
| International Migration | 563,45 | 342825.8 |
| Rural-urban Migration | 478,59 | 153102 |
| Non-migrant | 609,90 | 440798 |
| **Value of House (in IDR)** | | |
| International Migration | 7,716 | 617.825 |
| Rural-urban Migration | 6,598 | 4.228.2547 |
| Non-migrant | 7,884 | 7.997.921 |
| **Landownership ($M^2$)** | | |
| International Migration | 873 | 3020 |
| Rural-urban Migration | 607 | 1924 |
| Non-migrant | 3,278 | 8488 |

Number of observations =360
Note: Exchange rate, 1 USD=IDR 9,000 (Bank Indonesia, March, 2008)
Source: Own survey, 2008

The ultimate factor that attracted workers to other places was higher wages in the destination. Before moving abroad, the average income one might earn as a farm worker or as *ojek* (motorcycle taxi) was IDR 356,135 per month. For workers who migrated to other cities, their

average salary was IDR 397,241 per month. This lower wage rate motivated them to go to work in foreign countries where higher wage and salary are expected. The average total income workers received while working abroad was IDR 3,719,057 per month, more than double that which urban migrants and non-migrants earned, IDR 1,498,616 per month and IDR 1,401,508, respectively.

Table 6.1.7 also shows the level of expenditures for basic needs. Non-migrant families on average spent more money for basic needs (IDR 609.909) than international migrants (IDR 563.454) and rural-to-urban migrants (IDR 478.598). Through further interviews, the author gained information that some migrant families saved more of their income to buy other assets such as motor vehicles, land or build houses so that their expenses on buying basic commodities were lower. The presumption that a person will be more successful (i.e. earn more money) when migrating encourages families to reduce basic need spending to buy other items that typically symbolize success, such as motorcycles, automobiles, television and others.

Due to higher prices of basic commodities caused by the rise of fuel prices in Indonesia during the year 2006-2007, migration was a strategy used to reduce the risk of decline in household income (World Bank, 2008). Before migrating, some of the migrants worked in the agricultural sector. But the decline of agricultural prices and the shift of agricultural production from *palawija* (food crops) to sugar cane, which is more capital intensive, have created a shortage of labour in the sector. Aside from this, those people who have a good income are more interested in staying in the village they live in, rather than working in or migrating to the city. This conforms to other findings that income is the main reason for someone deciding to leave home for work in the city (Todaro, 1997; Munshi, Kaivan and Rosenzweig, 2005; Bahn, 2005).

On average, the value of a non-migrant's house was higher than that of a migrant. The average non-migrant has a house valued at 7.88 million rupiah. International migrants, on the other hand, have a house valued at 6.59 million rupiah and rural-urban migrants, 6.59 million rupiah. However, large standard deviations indicate inequality or very high variation among non-migrants, in which some of them have a high value of their house while others have very

low value. Migration is also a matter of survival and a last resort measure for some villagers. Before working abroad, the majority of migrants have low social status, therefore they were willing to work as a housemaid or housekeeper in the destination country, jobs which are also considered to be of low rank and class. This can also be explained by the conditions of their house, poorer than that of a non-migrant.

Table 6.1.8 shows marital status differences among the three categories of migrants. Most migrants surveyed in this study are married with non-migrants representing the largest percentage (80.3 %), followed by rural-urban migrants (65.4 %) and finally international migrants (63.1 %). Those who are not married tend to be freer to go, but the proportion is relatively smaller. In addition, those who have widowed status are also working abroad more than others. As presented by de Jong and Gubajhu (2009), in contrast, those who have not married will be freer to travel than those who have been married because of their attachment to social relationships.

**Table 6.1.14** Marital Status of migrant and non-migrant

| Marital Status | Sex | | International Migration | | Rural-urban Migration | | Non-Migrant | |
|---|---|---|---|---|---|---|---|---|
| | Male | Female | Freq. | % | Freq. | % | Freq. | % |
| **Married** | 159 | 113 | 82 | 63.08 | 84 | 75.68 | 106 | 89.08 |
| **Not Married** | 25 | 36 | 30 | 23.08 | 22 | 19.82 | 9 | 7.56 |
| **Widow/widower** | 1 | 26 | 18 | 13.85 | 5 | 4.50 | 4 | 3.36 |
| **Total** | 185 | 175 | 130 | 100 | 111 | 100 | 119 | 100 |

Number of observations =360
Source: Own Survey, 2008

There also exists certain family pressures on individuals, mainly women, to migrate to meet family survival needs, especially in the contexts where women have better interaction in social relations. In some cases, field observations also showed women worked abroad because of husband's low wages or unemployment. In addition, there were women working abroad because their husbands lost money by gambling or whose parents were under heavy debt. In certain instances, some of those had even divorced their husbands, breaking their social ties, in order to work abroad. These women preferred divorce because then husbands could not use

the wife's remittances on gambling or other insecure options, rather than for the purposes of buying a house, land or other worthy assets.

In Table 6.1.9 is a breakdown of the amount of government aid received by the three different migrant groups. Migrant workers who worked abroad represents the group who received the most government aid (70%), followed by migrants who worked outside the city (34,5%) and then non-migrants (57,7%). To some individuals, poverty was the main factor for working abroad, especially after receiving stories of success from their family and relatives working abroad.

**Table 6.1.15** Individuals Receiving Aids from Government

| | **International Migration** | | **Rural-urban Migration** | | **Non-Migrant** | |
|---|---|---|---|---|---|---|
| | **Freq.** | **%** | **Freq.** | **%** | **Freq.** | **%** |
| **Received** | 91 | 70 | 45 | 34.6 | 75 | 57.7 |
| **No** | 37 | 28.5 | 67 | 51.5 | 42 | 32.3 |

Number of observations =360, three respondents did not answer
Source: Own survey, 2008

In addition, the government also provides health assistance to the poor, commonly known as "Askeskin," or health insurance for poor families. Health insurance is held to ensure that they receive health benefits and protection to meet the basic needs of health (Najib, 2006). An individual recipient of Askeskin who is ill and has to undergo time in the hospital (inpatient) or at home (outpatient) will get exemption from the entire cost of treatment by the government[16]. The government prioritises them based on economic condition of the household by using information from the statistics bureau accompanied by additional confirmation from head of local government officers and chairman of neighbourhoods. Table 6.1.10 depicts that an average of 10 % of all migrants received health insurance from the

[16] In 2008 the name of *Askeskin* was changed into *Jamkesmas* which is managed by PT Askes and Ministry of Health . The programme is funded by the central government budget and the local government by given to people who could not pay cost of health care in government hospitals(Mukti, 2008).

government. The proportion is not very different between those who get insurance and those who do not. The individuals who migrate overseas have the highest proportion compared to the rest. It shows that even though there are family members who went to work abroad, they still receive insurance since they are considered as a poor family. Membership within this insurance also provides a picture of the kind of poverty most of the migrants are in.

**Table 6.1.160** Migrant and non-migrant receiving Government Health Insurance.

| | **International Migration** | | **Rural-urban Migration** | | **Non-Migrant** | |
|---|---|---|---|---|---|---|
| | **Freq.** | **%** | **Freq.** | **%** | **Freq.** | **%** |
| **Member** | 18 | 13.8 | 10 | 7.7 | 15 | 11.5 |
| **No** | 112 | 86.2 | 98 | 75.4 | 103 | 79.2 |
| **Total** | **130** | | **108** | | **118** | |

Number of observations =360, four respondents did not answer.
Source: Own survey, 2008

## 6.2. Econometric analysis

### 6.2.1. Individual level Analysis

Table 6.2.1 specifically describes the variables that will be used in the econometric analysis. It shows the dependent variable and independent variables to be used in the model. The dependent variable consists of three binary variables: Migration abroad which shows the probability of migration to other countries (1 = Migration abroad), the probability to go to work in the city or rural-urban migration (1 = rural-urban migration) and the probability to remain in villages as non-migrants (1 = no migration). The independent variables that are numeric include the Value of the house owned, Age, and Number of children. Dummy variables include education (1 = level of education higher than secondary school), Land ownership (1= owns land larger than 0.5 hectares), Social relationship (1=member of social institution), Government aid (1= receives subsidies or direct aids from government), Credit access (1= had credit access from credit institution) and being a woman (1= female).

**Table 6.2.1** Descriptive Statistic of the Dependent Variables**.**

| Dependent Variables | Min | Max | Mean | Std Dev. |
|---|---|---|---|---|
| Migration abroad | 0 | 1 | 0.361111 | 0.480991 |
| Rural-urban migration | 0 | 1 | 0.311111 | 0.463593 |
| Non-migrant | 0 | 1 | 0.327778 | 0.470057 |
| **Independent Variables** | | | | |
| Education | 0 | 1 | 0.430556 | 0.495843 |
| Being married | 0 | 1 | .7555556 | .4303555 |
| Being a woman | 0 | 1 | 0.486111 | 0.500503 |
| Age of migrant and non-migrant | 11 | 50 | 19.18889 | 4.356392 |
| Number of children | 0 | 9 | 1.905292 | 1.589754 |
| Value of house | 600,000 | 76,700,000 | 7,405,215 | 6,358,904 |
| Land ownership | 0 | 1 | 0.111111 | 0.314707 |
| Social relationship | 0 | 1 | 0.552778 | 0.497899 |
| Government aid | 0 | 1 | 0.408964 | 0.492333 |
| Credit access | 0 | 1 | 0.161111 | 0.368145 |

Number of observations =360
Source: Own survey, 2008

Table 6.2.2 outlines the results of the estimation of the determinant of migrant decisions on the basis of the estimator of the Probit model. The results show that educational background, being a woman and age are positively and significantly correlated to the decision to migrate abroad.

**Table 6.2.2** Determinants of Individual's Decision on Migrating Abroad.

| Independent Variable | Coefficient | Std. Err. | z-value |
|---|---|---|---|
| Years of schooling | **0.353**** | **0.177** | **1.990**** |
| Being married | 0.024 | 0.206 | 0.110 |
| Being a woman | **1.504***** | **0.174** | **8.670***** |
| Age | **0.031*** | **0.017** | **1.800*** |
| Number of children | -0.090 | 0.065 | -1.380 |
| Value of House | 0.000 | 0.000 | 0.410 |
| Land ownership | -0.386 | 0.267 | -1.440 |
| Social relation | **-0.638***** | **0.175** | **-3.640***** |
| Government aid | -0.235 | 0.179 | -1.310 |
| Credit access | -0.369 | 0.242 | -1.530 |
| Constant | -1.364 | 0.425 | -3.210 |

| | |
|---|---|
| Number of observations | 356 |
| Log likelihood | -156.432 |
| LR $chi^2(10)$ | 152.190 |
| P-value | 0.000 |
| Pseudo $R^2$ | 0.327 |

Note: ***. ** and * indicate significance at the 1%, 5% and 10% level, respectively
Source: Author's own calculations (based on data of own survey,2008)

The education level of an individual has a positive sign at the significance level of 5%. This indicates that those who have more than or equal to six schooling years are more likely to migrate abroad than those whose education is merely primary school (less than 6 schooling years). Therefore, with higher educational backgrounds one has better access to information and a better ability to adapt to new environments, particularly when working abroad. A good education will also improve the bargaining power of migrants in labour markets.

Being a woman is positive and significant variable with a significance level of 0.01. This means that women are more likely to migrate abroad than men as there is higher demand for labour abroad for domestic work such as housekeeping), which is usually connected to "women's work" in the region.

The age variable also has a positive and significant sign; the older a person, the more likely he/she are to migrate (with mean 20 years old). Age is also associated with working experience; workers who go abroad usually have some work experience. In addition, age is also associated with family responsibility, marital status and education with young workers tending to seek first experience by working in big cities or domestically, in Malang city for example, before going abroad.

On the other hand, the social relation variable has a negative and significant influence on the tendency to migrate abroad at the significance level of 0.01. This shows that the stronger the social bond, the less tendency there is for the individual to migrate. The migrants' social attachment to social organizations discourages migration because they will lose their social attachments.

Most of the residents in the Wagir sub-district participate actively in religious-based institutions such as *tahlil, yasinan* (praying together), and the commemoration of religious events. Furthermore, social relations can improve access to information on jobs or loans. In addition, someone's participation in organizations around the village would hinder them from working in a far place. Since they are socially associated with the organization, they would prefer working in a place nearby.

The results of the estimation of Probit test shown in Table 6.2.3 demonstrate that land ownership, credit access, being a woman and age have a negative and significant correlation on the decision to migrate to cities, while government aid has a positive association. Land ownership has a negative and significant influence at a significance level of 10%. This means that people with landownership of land larger than 0.5 ha, have a lower tendency to go to work in a town. More land means a greater chance for cultivation, thus better chance to earn higher income. In addition, less land ownership also encourages wider use of the allocation of

time for non-farming activities. The positive sign of credit indicates that rural-urban migration decreases with increasing access to credit. The possibility of getting access to loans increases capital for doing business in the village, thus there is less of a need to migrate in search of greater income.

**Table 6.2.3** Determinants of Decision of the Rural-urban Migration.

| Independent Variable | Coefficient | Std. Err. | z-value |
|---|---|---|---|
| Years of schooling | -0.138 | 0.181 | -0.760 |
| Being married | -0.316 | 0.224 | -1.410 |
| Being a woman | **-1.481*** ** | **0.187** | **-7.920*** ** |
| Age | **-0.041*** | **0.022** | **-1.860*** |
| Number of children | -0.085 | 0.060 | -1.410 |
| Value of house | -0.000 | 0.000 | -0.280 |
| Land ownership | **-0.647** ** | **0.267** | **-2.430** ** |
| Social relation | -0.230 | 0.182 | -1.270 |
| Government aid | **0.605*** ** | **0.173** | **3.500*** ** |
| Credit access | **-0.573** ** | **0.251** | **-2.280** ** |
| Constant | 1.365 | 0.496 | 2.750 |
| | | | |
| Number of observations | | | 356 |
| Log likelihood | | | -164.291 |
| LR $chi^2(10)$ | | | 114.81 |
| P-value | | | 0.000 |
| Pseudo $R^2$ | | | 0.259 |

Note: ***. ** and * indicate significance at the 1%, 5% and 10% level, respectively
Source: Author's own calculations (based on data of own survey,2008)

The variable of being a woman has a negative and significant sign at the significance level 1 %. This illustrates that females do not tend to work in urban areas. In other words, men tend to work more often outside of villages, rather than working in the village or abroad. It

strengthens the descriptive analysis in the previous chapter by affirming the assumption that those working outside the village are predominantly men.

The age variable has a negative and significant sign at significance level 1 % in the decision to migrate. This shows that the older the age of someone, the likelihood to migrate out of the city is lower, with a range of 11-50 years (see Table 6.2.1). It also means that most of those who work outside the city are relatively young.

Furthermore, the government aid variable has a positive and significant impact on the tendency to migrate. The people who received assistance from the government are likely to work in cities rather than staying in the village or working abroad. Government assistance as described above is only given to the poor. The conditions of poor families encourage them to work in cities.

Even though the education variable, value of house variable, social relations, and the numbers of children variable are not significant, they have a negative coefficient. The trend towards migration will be less if each individual has a better education, better house, extensive social relations among neighbours and other villagers, and have many children. And finally, for the last variable, having children tends to become a burden and therefore discourages them to leave the family.

**Table 6.2.4** Determinants of Decisions of Non-Migrants.

| Variable | Coefficient | Std. Err. | Z-value |
|---|---|---|---|
| Years of schooling | -0.223 | 0.190 | -1.17 |
| Being married | 0.105 | 0.246 | 0.43 |
| Being a woman | 0.030 | 0.181 | 0.16 |
| Age | 0.0001 | 0.021 | 0.00 |
| Number of children | **0.132**** | 0.063 | **2.09**** |
| Value of House | **-0.000**** | 0.000 | **-2.20**** |
| Land ownership | **0.942***** | 0.262 | **3.59***** |
| Social relation | **0.733***** | 0.198 | **3.69***** |
| Government aid | -0.176 | 0.190 | -0.92 |
| Credit Access | **0.499**** | 0.243 | **2.05**** |
| Constant | -2.046 | 0.190 | -4.01 |
| Number of observations | | | 356 |
| Log likelihood | | | -148.56201 |
| LR $chi^2(10)$ | | | 152.29 |
| P-value | | | 0.000 |
| Pseudo $R^2$ | | | 0.3389 |

Note: ***. ** and * indicate significance at the 1%, 5% and 10% level, respectively
Source: Author's own calculations (based on data of own survey,2008)

The results of the estimation using the Probit model to determine factors that influence an individual to remain in the village can be seen in Table 6.2.4. Several variables which are statistically significant in the decision not to migrate include number of children, value of houses, land ownership, social relations and credit access. Statistically, land ownership has positive and significant coefficient that indicate that the tendency to stay in the village would be strengthened as land ownership increases. This shows that land ownership is an important factor in the decision whether to leave the village. The possession of land encourages them to work in the agricultural sector. Additionally, the social relationships variable also has a fairly strong and positive significant influence which shows that the more they involved in social

institutions, the greater their tendency to remain in the village. These individuals are involved emotionally and functionally in institutions in the village, which also constitute religious activities such as *tahlilan* and *yasinan* for men and *dibaan* for women.

The Credit access variable also has a positive and significant influence on people's tendency to remain in the village. This means that the larger the capacity of credit access in this area, the greater their probability not to migrate. Good credit facilities help them to run a business in the village either as farmers or other types of entrepreneurs. Credit institutions, both formal and informal, are mushrooming in the area along with the increase of living standards and the improvement of transportation infrastructure (e.g. road access and bridges). They can receive formal credits from banks and cooperatives while informal credits can be obtained from their neighbours, family, or *thithil (informal)* banks, i.e. someone who can lend money to customers with simple procedures despite high interest rates . In desperate conditions, these banks became the last resort of the people..

The number of children variable also has a positive and significant impact. In other words, the greater number of children they have, their tendency to remain in the village is greater. The families with large numbers of children remain in the village rather than working abroad or out of town. If all the parents have to go to work, either abroad or out of town, they usually leave their children with members of their families, such as grandparents. But the greatest concern is the future of their children, who would prefer to accompany their families. They usually also have many siblings, and the grandfather or grandmother of their children are helping children of other relatives. So they have no choice but to care for their own children.

The value of house variable has a negative and significant impact on the tendency to remain in the village and the greater the value of their homes, the smaller their tendency is to live in the village. This result is contrary to the initial hypothesis which states that the value of the house is positively related to a propensity remain in the village. Through a number of observations, information was obtained that those who have larger homes were often unsatisfied and still sought to go abroad or to leave their home towns. By working out of town or out of the country, they will possess more land and homes, not only as a place to live but also investment.

### 6.2.2. Village level analysis

Table 6.2.2 presents the descriptive statistics of variables used in the village level models. The dependent variable is the number of migrants overseas (share of labour migrants abroad) in each village in East Java Province. The explanatory variables are education (number of schools), farmer households (share of farmer households in the village), and water resources (1=no problems with water), land for non-agriculture (share of non-agriculture land in the village), land for irrigated agriculture (share of irrigated farmland in the village), land for non-irrigated agriculture (share of non-irrigated farmland in the village), market access (distance to the nearest market from the village), credit access (number of credit institutions), credit program (1= if government offers the loan or grant programme to the villages), poor people (share of people who are officially confirmed as living under poverty) and health insurance (share of households receiving health insurance from government).

**Table 6.2.5** Descriptive Statistic of Variables for Migration Overseas in Village Level Analysis**.**

| **Dependent Variables** | **Min** | **Max** | **Mean** | **Std. Dev** |
|---|---|---|---|---|
| Migration Overseas (%) | 0 | 1610 | 42.237 | 111.658 |
| **Independent Variables** | | | | |
| Building School(%) | 0 | 55 | 5.162 | 3.989 |
| Farmer Families (%) | 0 | 100 | 70.984 | 22.815 |
| Land for non-agriculture | 426.1499 | 3869.224 | 2 | 193680 |
| Land for agriculture (irrigated) | 129.4207 | 1128.054 | 0 | 75000 |
| Land for agriculture (non-irrigated) | 152.7846 | 2127.508 | 0 | 121808 |
| Water Resources (1=did not have problem with water) | 0 | 1 | 0.795 | 0.403 |
| Market access (km) | 0 | 99 | 3.976 | 3.903 |
| Number of Credit Institution | 0 | 162 | 1.46 | 3.203 |
| Credit Program (1=if available) | 0 | 1 | 0.32 | 0.466 |
| Poor People (%) | 0 | 5.69 | 0.051 | 0.113 |
| Number of people with health insurance | 0 | 100 | 27.56 | 0.190 |

Source: Countryside Potency Data of Indonesia, BPS Indonesia, 2006
Numbers of observations: 7677

From the data in table 6.2.5, it can be seen that in each village, the average number of people who migrate abroad to seek employment is 42. On average, each village has 5 formal educational institutions which include elementary school, kindergarten, junior high school, and non-formal educational institutions like *pondok pesantren* (Islamic boarding schools) and study groups. Additionally, the table also shows that about 70 % of villagers in East Java work in the agricultural sector either as landowners, tenants, and/or farm workers meaning that agricultural sector is still the main form of employment in the rural area of East Java.

The Land ownership variable can be seen by looking at the share of land used for agriculture and non-agricultural activities. Table 6.2.5 indicates that on average 46% of land in the village is used for agriculture. By dividing the average of agricultural land irrigated and non-irrigated with the average number of farm families in the village, the average ownership of agricultural land to each household of farmers is 0.48 hectares (for a subsistent farmer). The average water resources have a value of 0.79 which means that 79 % of villages in East Java have no problems with water resources.

The average distance of a village to a nearby market is 3 km, which means that rural communities' access to the market is still relatively far because most of them, especially in remote areas, do not have vehicles. However, in general, every village has credit institutions such as cooperatives or banks that are reachable (1.45 km away) by the community. Furthermore, about 32 % of villages participated in credit programmes from the government. Because government programs are focused on poor villages, it also can be stated that there are about 32 % of villages in East Java categorized as poor villages.

The average share of people which are confirmed as living under the poverty line rural areas is as much as 0.5 percent of the total population of the village. The term "poor people" in this case is different with poor people which are defined by the statistics bureau. In this analysis, "poor people" is calculated from the number of *Surat Miskin* which are applied by household with approval from head of neighbourhood and head of the village. The new government policy to alleviate poverty gives *Surat Miskin* to people who have difficulties to access education and health.

Another indicator variable is the condition of health insurance in the village described by health insurance. On average, 27 % of the villagers receive a health care subsidy from the government. However, this amount is more than the average level of poverty in East Java of 18, in 2008 (BPS, 2009). In order to analyse the determinants affecting the decision of migration at village level, the Tobit model described in equation 4.4 in chapter 4 was used. The model is employed to find out the influences of a number of variables on the share of number of total labour migrants abroad. For this purpose, the Tobit model regression was estimated using the Countryside Potency Data of East Java Province in year 2006. Table

6.2.6 provides a summary on the econometric estimation results involved in the determining factors of migratation to other countries at the village level.

**Table 6.2.6** Determinants of the Decision to Migraten Overseas at the Village Level**.**

| **Variable** | **Coefficient** | **Std. Err.** | **t-value** |
|---|---|---|---|
| Number of education institutions | **4.535*** ** | **0.508** | **8.920*** ** |
| Farmers Families | **0.000*** ** | **0.000** | **2.650*** ** |
| Land non-agriculture | **0.022*** ** | **0.004** | **5.160*** ** |
| Land for agriculture (irrigated) | **-0.013*** ** | **0.0039** | **-3.250** ** |
| Land for agriculture (non-irrigated) | **-0.034** ** | **0.007** | **-5.100*** ** |
| Water resources | **-0.005*** ** | **0.001** | **-3.700*** ** |
| Market access | **-0.001*** ** | **0.000** | **-5.620*** ** |
| Credit Institution | 0.000 | 0.000 | 0.410 |
| Credit Program | -0.001 | 0.001 | -0.870 |
| Poor people | **0.012** ** | **0.004** | **3.040 ** ** |
| Health insurance | **-0.006** ** | **0.003** | **-2.32 ** ** |
| Constant | -0.008 | 0.002 | -3.070 |
| | | | |
| *sigma* | 0.037 | 0.000 | |
| Number of observations | | | 6132 |
| LR chi2(13) | | | 211.37 |
| P-Value | | | 0.000 |
| Log likelihood | | | 8391.841 |
| Pseudo R2 | | | -0.0119 |

***. ** and * indicate significance at the 1%, 5% and 10% level, respectively.

Source: Author's own calculations base on data from Countryside Potency Data of Indonesia, BPS Indonesia, 2006

Statistically, the share of land uses for non-agriculture purposes, the share of education of farmer households in the village, and the share of letter poverty holder variable have a positive and significant impact. A positive sign on the share of land usage for non-agriculture variable means that the greater proportion of land in the village used for non-agricultural activities increases the tendency of villagers to migrate to other countries. The use of land for non-agricultural activities such as residential buildings and industries, forces them to seek jobs abroad.

The number of educational institutions variable gives a coefficient marked positive and significant to the propensity of an individual to migrate, which means that the higher the education level of individuals in rural areas in East Java, the more likely they are to migrate abroad. As explained earlier, this variable uses a number of educational institutions in rural areas as proxy of a good educational level. With the increasing number of educational institutions, it will increase the level of knowledge which an individual uses in preparation for working elsewhere, especially when working overseas.

The share of farmer families in the village also shows a positive and significant coefficient, which means the higher the number of households working in agriculture, the higher level of overseas migration in these villages. Individuals who used to work in agriculture have limited skills available to work in other sectors such as services and trade, especially women. For women, working in the agricultural sector will not help them to improve their social status. Due to their limited land possession, it is difficult for farmers to develop within the agricultural sector, so they instead choose to move to other sectors. Increasing women's education raises women's participation in the labour force. Social change causes women to be one of the important backbones to increase household incomes, whether they are single or married.

The Number of *Surat Miskin* receivers is also a positive and significant coefficient to migration. The higher share of poor people there are in a village, the more likely the villagers would prefer to migrate to other countries. Limited job opportunities lead to the inability of

the village to provide income for the people. Due to this, migration to other countries becomes an alternative to seek a better livelihood.

Water resources have on the other hand a negative and significant impact at significance level 1%, suggesting that the better availability of water resources lessens the tendency to migrate. A better source of water will improve rural communities' quality of life so that they do not need to go elsewhere. In addition, the health insurance variable also has a negative and significant correlation at the 0.05 level. This indicates that the more access to health care in the form of health insurance from the government, the less their tendency to work abroad is. A low level of health care and health insurance creates a low quality of life in the village because high medical costs force them to look for a good job elsewhere.

The non-agricultural land variable has a positive and significant coefficient at the significance level of 0.01. Otherwise variable agricultural land has a negative and significant correlation. This means that the higher of share of the village land used for non-agricultural activities, the greater the tendency to migrate is. This situation also illustrates that the bulk of the people in the East Java villages still rely on agriculture, so that when the agricultural land availability shrinks, they seek employment outside the farm, and working abroad is one of the most attractive options.

The results also show that land for (non-irrigated) agriculture has a negative sign and significant coefficient indicating that the larger the share of non-irrigated agricultural land, the lower the tendency of people to migrate overseas.

The market access variable has a negative and significant sign at significance level of 0.01. This indicates that when there is nearby access to markets, the tendency to migrate abroad is lower. Better market access provides better opportunities for farmers or residents, as both suppliers and consumers. Their opportunity to earn more revenue would be greater than those who do not have good market access. Thus, their tendency to make a living by working in other places which are closer to markets would be lower.

## 6.3. Discussion

This section discusses the descriptive and econometric findings. For the case of individuals who migrate abroad, several human capital variables such as education, being a women and age have a positive influence on the probability to migrate. These results are consistent with the hypothesis presented in chapter three purports that the variable is positively related to the decision to migrate (Baur Zimmerman, 1995; Sell and DeJong, 1978; Massey *et al*, 2003; Smith 2003). A better level of education will enhance the reputation of someone, making it easier for him/her to access information regarding migration (Gallerani *et.al* 2005). Additionally, females tend to prefer to migrate abroad due to sex, marital status (being married) and access to credit ((Uchenna, 2006; Arena *et.al*, 2008).

However, in this study women who migrate are also influenced by factors of labour demand abroad as reported by Oishi (2002). Labour intensive labour is rewarded with a much higher wage abroad than that offered in the country of origin and thus encourages females to choose international migration Migrants reach an average age of 20 years before beginning to work overseas. This finding reinforces the argument presented by Ehenberg and Smith's (2003) that the peak age is between 20 and 24. The younger population choses to leave the village in order to gain work experience, despite the fact that the salary received will be insufficient to support their families. Jobs, such as stone porters, carpenters, factory workers, and construction workers, do not require special skills, high education levels, and this leaves these sectors open to village youth. Although they are actually interested in working overseas, they withdraw their intention to work abroad due the high costs of doing so. Individuals with limited employment opportunities in the village like to work in cities, which has become one of the main options for the village poor.

Additionally, social relationships have a tendency to obstruct a person from migrating as outlined in the hypothesis. Social relationships will increase a person's access to job sources or capital in the countryside (Wardhono, 2006; Galeerani *et al*, 2005).

Conversely, as stated in the hypothesis, in the case of rural-urban migration land ownership and access to credit has a negative relationship on the propensity to migrate from cities. Lower levels of land ownership encourage people to seek non-farm or off-farm employment,

and thus increases a persons probability to migrate. As Gray (2008) explains, land ownership is strongly related to migration. This is also supported by Van Vey's study (2005) of Mexico and Thailand, which illustrates that the amount of land owned by households has a negative impact on the propensity to migrate. One possible explanation for this negative impact is provided by Bahn (2005) who illustrates that economics of scale on agriculture activities affect both the industry and labour allocation enclosured by rural-urban migration. Some individuals chose a job in an urban setting as a form of off-farm employment. Accordingly, migration represents a strategy for a migrant to diversify their income (Stark, 1991). The affect that access to credit has on migration also confirms this study's hypothesis, which argued that credit access has a negative effect on the probability to migrate to an urban area. This was also confirmed in studies by Gallerani *et. al* (2005) and Kelly (2000).

In contrast to the hypothesis, both sex and age variables have a negative correlation with migration to an urban area. This results from female's lack of interest in working in an urban environment, as they find working abroad more appealing or they prefer to stay in the village. Age is negatively correlated with the choice to migrate to an urban setting, indicating that more experienced individuals prefer to work abroad.

This study confirms that four variables—the number of schools, land for agriculture, water problems, and market access—affect decisions to migrate, confirming this study's hypothesis for village level analysis. These findings are consistent with Nasich (2003), Hoerder (2004), and Bahn (2005), who argue that people prefer to stay in villages that have better infrastructure and natural resources. Migration enables poor people to surpass poverty; thus migration represents a livelihood strategy for the impoverished (Wheeler, Sabbates and Castaldo; 2005). In rural East Java, poverty and education have stimulated migration.

Land for agriculture provides employment, acts as an an investment opportunity, and prevents individuals from migrating (Muhidin, 2004; Van Vey, 2005; Konseiga, 2007). Land conversion to non-agricultural activities leads to the loss of agricultural land in East Java and encourages migration to other countries. In addition, most converted rice fields were initially technically/semi-technically irrigated and had high productivity. The conversion has also resulted in the degradation of the irrigation quality in the surrounding land (Sumaryanto,

2001). Furthermore, most residents also work outside the village due to the shortage in non-farm jobs in the village. In accordance to the theory of Todaro (1997), an increase in agricultural wages occurred in several of the villages where this research was conducted, such as Pandanrejo village, Gondowangi, and Petungsewu. This was primarily a result of the decrease in labour supply for the agricultural sector.

Observations in the study area also indicate that a large part of agricultural land is used for housing. In the future, this land conversion would hinder growth in the Indonesian agricultural sector. Generally, land conversions have steadily occurred in East Java, as evidenced by the dominance of trade, hotels, and restaurants, as well as the industrial sectors, in contributions to the GDP of East Java. Based on the data, land conversions to building areas, such as residential, office, trade and other service areas, showed significant growth. Between 2000 and 2004, the annual conversion of farmland for construction reached 2501.3 ha ( Bappeprop, 2008).

# Chapter 7 Summary, Conclusions and Recommendations

## 7.1. Summary

This research concludes that individuals who work abroad were mostly female, educated, and young. The driving factor explaining this is largely demand, as there were more vacancies available for domestic work. The results suggest that the higher the educational background of an individual, the more likely he/she is to work abroad (Gallerani *et al.* 2005). As a result of family-related factors, females were more inclined to work abroad than males (Oishi, 2002). It also illustrates that there was a change in domestic occupation, whereby males were no longer the family's sole income earner. In several East Asian and Middle East countries, males are usually employed as taxi drivers and construction workers. In fact, these occupations are dominated by workers from South Asia countries. This limits opportunities for male workers from the case study regions to compete in labour markets.

The descriptive analysis reveals that individuals who work abroad earn a higher income when compared to those who work in urban area and non-migrants. Migration to foreign countries is further influenced by demand factors, as domestic workers are in high demand. The lack of labour in agricultural sector will increase wage in the sector.

This study concludes that human capital, physical capital and social capital are the main factors that determine the migration decision. For female international migration, those who had higher educational background and were older were more inclined to migrate abroad. In the village analysis, large number of schools had positive effects vis a vis migration. The study examined the hypothesis that education as a human capital has positive impact for migration. A short-term subsidy from the government provided to each school had not been successful in alleviating poverty. Better education and information access may increase migration abroad in the future.

Males tends to migrate to other cities (rural-urban migration) for compatible employment. Young male workers also tend to work in big cities in search of new experiences, mainly in informal sectors. In addition, intense social relationships among men often hinder them from

working abroad. People prefer to stay in condition with better infrastructure and natural resources.

The results also illustrates that men used the majority of their remittances to buy land, motorcycles, or to build houses; shares used for educational expense tends to be small. Although, in general, the people of East Java do not experience problems with water resources, those who experience water shortages are also likely to migrate. The research to unveil that some farmers in the East Java leave the village due the water shortages.

External factors also influence individual/household migration decision-making processes. Improved economic conditions will provide better income expectations reducing the need to move to another place. It is important to note that culture also influences migration; however, it is difficult to prove using the quantitative method employed in this study. Viewed from the perspective of workers' motives, the expectation to seek the experience and to gain knowledge about the outside world has also become an important motivation, especially for young migrants. Parents also encourage them to seek work experience. Social obligation for women to get married is also an important impetus. Being late at getting married is negatively perceived in the society. Generally, the cost of marriage in Eastern Java particularly Malang is usually borne by the women. Therefore, migration is also seen as way to collect money for their marriage.

Those below the poverty line have no access to credit, as credit is only given to those who have collateral and are capable repay the debt. The remote location of the market limits people’s access to purchase and to sell commodities. Furthermore, villages that are located at a greater distance from markets often experience difficulties with drinking water. The government developed most schools and also provided credit to the villagers. This illustrates the village’s high-level of dependency on the government. Migration is primarily experienced in areas that are dry and suffer from water problems; in East Java, these areas are commonly located in the south. Migration, especially overseas migration, is non-permanent and acts as a safety valve or a temporary strategy to prevent unemployment in rural areas. The migrant obtains remittance and work experience that would be useful to create employment in their village of origin and thus, migration may promote economic growth in rural areas. Furthermore, the government plays an important role in rural development, especially

providing rural infrastructure through government spending subsidies. Improving conditions in rural areas will prevent villagers from moving to urban areas.

## 7.2. Conclusions

As illustrated in the previous chapters, land conversion reduces the proportion of agricultural land in the village. Consequently, working abroad becomes one of the major options to satisfy needs, ensure survival, repay debt, or to achieve a new social status. As increasing numbers migrate to other regions or abroad, a situation is created whereby the agricultural sector finds it increasingly difficult to secure a sufficient number of workers. Consequently, wage rates in the sector increase. This eventually increases production costs in agricultural sectors and thus the contribution of the sector will weaken in the future.

In general, non-irrigated land in East Java is used for non-rice farming, for example tree crops or plantation, such as tobacco, coffee and forest species. With the improvement of commodity prices due to the declined value of the Rupiah, many farmers in East Java have changed their orientation towards export-oriented plant crops, such as coffee, wood or cacao. This condition provides employment in rural areas that discourages international migration. Additionally, local communities that lack agricultural land historically experience internal migration, where residents are employed outside the locality. The extent to which agriculture land provides livelihood for residents is dependent on the rainy season. During the dry season land rarely produces crops thereby encouraging residents to seek an alternative income source. In fact, they become accustomed to to *nglaju* (commuting) or participating in seasonal work following the growing season, returning to the village during harvest or planting time (Ananta, 2001). Some leave to go to major cities such as Surabaya, Sidoarjo, or even Jakarta. In 2008, the number of people living below the poverty line in East Java reached 6.65 million (18.51 %). Most lived in the south and on Madura Island, which is a barren area (BPS, East Java, 2008). For farmers in the countryside, poverty results from the reduction of agricultural land. With limited land ownership, an average of 0.4824 ha per farmer household, individuals or households possesses insufficient resources to satisfy their daily needs. Accordingly, they are persuaded to abandon working in the agriculture sector. Most chose to work in the trade or service sectors, often n neighbouring cities.

For East Java, data about the contribution of non-farm incomes to all farmers' incomes are limited. Nonetheless, Yustika (2003) finds that in the Malang District-East Java, farmers who possess less than one hector of land had a remarkably high non-farm income, accounting for 80% of their total income. Drawing on this finding, it can be deduced that most small-scale farmers' income is not derived from activities in the agricultural sector, but from economic activities outside the agricultural sector. In the future, non-farm income will likely occupy a larger share of the total income.

The southern part of East Java and the Madura Island territory often experience water-related problems. In these regions, the soil is drier and barren, in contrast to conditions in the west and central parts of East Java where soils are more fertile. As a result, residents are more likely to migrate than those in other regions. As described in the data above, most remittances are received from migrant workers who come from the south, from places such as Ponorogo, Malang, and Tulungagung.

Government policies also play a pivotal role in determining migration trends in rural villages, especially regarding health insurance, market access, and credit from government, all of which negatively affect migration propensity. Those three variables depict government intervention in rural development. Health insurance represents a government programme that addresses the difficulties that impoverished residents experience paying medical expenses. Credit programmes are often provided for farmers or small businessmen in the form of training or money. One programme established to increase development in rural areas is the *Kecamatan* Development Program (KDP), which is the Government of Indonesia's effort to alleviate poverty in rural communities and improve local governance. This programme also provides opportunities to construct physical infrastructures such as roads and market buildings which improves rural resident's access to markets. KDP was implemented in the midst of Indonesia's political transition period and decentralization process. Despite this volatile political and economic background, KDP eventually became a core part of the government's strategy of decentralization and improving local governance (World Bank, 2005). Most importantly, KDP emphasizes the principles of community participation, especially for women and impoverished villagers, transparency, competition for funds, and sustainability. All KDP activities aim to enable villagers to make their own choices about the kind of projects they need and want. However, this condition also illustrates the dependency of rural-villages on government aid. If this persists, an increased burden will be placed on the government and will discourage both village and community independence.

Variables such as land ownership, government support, availability of water resources, and health strongly influence migration and are directly related to welfare. In addition, poverty has a positive effect on the tendency to migrate. This could imply that better welfare reduces the tendency toward international migration.

Furthermore, when the perspective of service users or employers of female workers in foreign countries like Saudi Arabia, Hong Kong and Taiwan is considered, domestic workers from Indonesia (Java) are known to be very obedient. Despite a potential language barrier, the willingness of Indonesian domestic workers to accept lower wages combined with their loyalty to employers results in a very high demand for domestic workers from Indonesia (Loveband, 2003). A similar situation occurs domestically in Indonesia, as domestic workers also tend to stay with the employer. On one hand, this may reduce the costs, while on the other hand, it increases the daily work load. Regardless of motivation, this situation is mutually beneficial for the involved parties.

Over the past fifty years, the spectrum and political economy of rural planning and policy present an inconsistency and lack imagination in terms of focus and orientation. In national and international contexts, emphasis on the agriculture sector remains. Globally, even in the face of rapidly changing demographics, social, environmental and economic realities, and policy framework continue to emphasize agriculture as the main sector for rural regions (Lapping, 2006). According to the World Bank, Indonesia, despite high rates of poverty reduction, vulnerability remains high and many poor have not benefited adequately from the country's economic growth. Three decades of authoritarian rule in Indonesia also undermined local capacity and placed heavy restrictions on the organization of local communities. Local-level governments have been generally unresponsive and unaccountable to the needs of its citizens. Corruption is rampant and the mismanagement of government projects and funds led to a general disillusionment with public programmes (Wong, 2003).

### 7.3. Recommendations

Migration abroad is an important strategy for households to overcome employment problems. However, Indonesian labour migrants are still vulnerable to law and regulations problems and exploitation as the majority have a low educational background and are less-experienced. The Indonesian government and employers, especially abroad, should anticipate various problems that reduce the number of Indonesian labour migrants. This study found that education

facilities have influence on probability to migrate. Under this circumstances, improved knowledge about laws and regulations, as well as language training. Given the importance of migration for the local economy, the government should place more attention on how potential labour migrants meet the expected requirements of the labour market. In addition, rural development should be oriented to increase educational levels. This is a much greater necessity than direct aids.

To increase Indonesia's economic growth, labour migration needs to be utilised and mobilised by encouraging labour force participation. The policy implications for the labour-origin countries are that these governments should increase domestic investment to create employment opportunities. If government still need the remittances to increase current account, they should regulate and select the types of workers needed by the economy and the destination country. These are intended to avoid the negative impact of the present labour migrants vis a vis the local workers in the labour destination countries.

The result of this study showed that agricultural land ownership preventing people to migrate. However, agricultural lands are continuously converted. Agricultural policies that can be adopted include agricultural efficiency and opening land area for agricultural use. The first option presents a greater possibility as land ownership per household in East Java is very small. Improving agricultural technology would generate efficient agricultural production by reducing land farming. On the other hand, agricultural extension might reduce the amount of forest land which is not conducive for environmental development in East Java.

Rural village development, aiming at the improvement of growth by increasing capital, social access and market access, would lower the chance of migration. This research has proved that the growth of industry in *Kecamatan* Wagir has encouraged citizens not to work in urban areas, but it has not been successful to discourage them from working abroad. This implies the need for more intensive investment in high-value commodities. In this regard, the study recommend the government to improve market access and credit access for stimulating and improving investments in agricultural productivity and income of rural households. Rural development also needs programmes that encourage self-reliance rather than heighten rural village dependency on the government, as this will, in the future, lessen the government's role. Other approaches to improving local livelihood and governance should be introduced via diversification of local economics activities.

Coping with the overlapping of development in various sectors represents a primary problem. In many cases, the development in land exploitation overlaps other claims and interests. The prevalence of poverty in villages becomes a general phenomenon, not only in East Java but also in many areas in Indonesia. Furthermore, rural development policy in Indonesia must be aimed at improving community welfare and decreasing the number of households below the poverty level. This result is not a conclusion that can be generalized for all areas. Several social motives like the “demonstration effect” and religious motives have not been investigated by this study. Similar studies are suggested to obtain a clearer understanding about migration.

As an exploratory study, this research still has weaknesses, such as the use of the number of schools as a proxy for the level of education due to a lack of available individual education data at the provincial level. In addition, survey data at the provincial level did not provide the same information, such as the number of people migrating to foreign countries. The only available data is from 2006. From the aspect of data preparation, data unification in agricultural census conducted by the Office of Statistics’ questionnaire lists is required. Moreover, the model specification and estimation for the future should consider panel data and or the time series should be extended to include households and villages level. On the other hand, as several reasons and decisions to migrate cannot be explained using quantitative methods, it requires more detailed studies such as the influence of other cultural and social reasons. The use of a different may uncover a more diverse result.

# References


Abidin. Hasanuddin Z. and Tresna D. Kunaefi. (2009): *Natural Hazards and Higher Education in Indonesia, Jounal Educationist*, Vol. III No. 1 Januari ISSN : 1907 – 8838.

Adams, Richard H. (2008): The Demographic, Economics and Financial Determinant of International Remittances in Developing countries, Policy Research Working Paper, 4583, World Bank.

Adesina. Adedayo. (2007): *Socio-Spatial Transformations And The Urban Fringe Landscape In Developing Countries* Being A Paper Presented At United Nation University Institute For Environment And Human Security (UNU-UHS): Summer Academy On Social Vulnerability And Resilience Building In Mega city. Munich, Germany. July 22nd-28th 2007.

Agesa U. Richard. (2004): *Review of Economics of Household*, ABI/INFORM Global, pg.161

Ananta, Aris. (2001): *The Impact of Migration Status on Household Financial Resilience During the Indonesian Crisis: A Case Study* , Social and Cultural Issues No 1, http://www.iseas.edu.sg/sc1(2001):pdf.

Ananta. Aris, E. N. Anwar, R. Miranti. (2000): *Age-Sex Pattern of Migrants and Movers : A Multilevel Analysis on an Indonesian Data Set*, Asian Meta centre Research Paper Series no.1,June, http//www.populationasia.org/Publications/Research_Papers.

Ananta. Aris. (1998): *Paper on Symposium on Overcoming Bottlenecks; Freer and More Open Labour Markets in the Asia-Pacific Region*. Bali: January 18th ,1998.

Arango, Joaquin. (2000): *Explaining Migration: A critical view*, International Science Journal 165 283-296.

Arenas, E. et. al. (2008): *Recent Trends in Internal and International Mexican Migration: Evidence from the Mexican Family Life Survey*. CCPR (California Centre for Population Research):-2008-034, On-Line Working Paper Series, University of California.

Asia Pacific Migration Research Network (APMRN):. (2002): *Migration Issues in the Asia Pacific*. Issues Paper from Indonesia www.unesco.org/shs/most

Badan Pusat, Statistik. (2005): *Agricultural Census 2003 in Indonesia. Organization and Activity*, BPS Indonesia.

Bahns, Karin Margareth. (2005): *Rural-urban Migration in Developing Countries : Applicability the Harris-Todaro Model with Special Focus on Chinese Economy*, Dissertation, Konstanz University.

Bank Indonesia (2010): *Indonesia's Balance of Payment Report* , Tr.IV-2010, Bank Indonesia Jakarta, http://www.bi.go.id/NR/rdonlyres/4C5296EF-CA3D-4E6B-8866B92F509B4363/22540/NPITwIV10_rev.pdf.

Bappekab. (2006) *Middle Term Development Plan 2005-2010 of Malang Disrict*, Bappekab, Malang didtrict.

Bappeprop. (2006): *Middle Term Development Plan 2005-2010 of East Java Province*, Bapeprop, East Java Province.

Bappeprop. (2008): *Investment in Agriculture in East Jawa*, Bapperop East Java Propince

Barnes, Frances,.(2010): *Indonesia country Report 2010*, AUSAID, http://www.ausaid.gov.au/publications/pdf/indonesia_study.pdf.

Barthe'lemy, Jean Claude, M Beuran and M Maurel. (2009):Aid and Migration: Substitutes or Complements? World Development Vol. 37, No. 10, pp. 1589–1599, Elsevier Ltd.

Bauer T. and K. Zimmermann. (1995): *Modeling International Migration: Economics Econometric Issues, Causes of International Migration,* Proceedings of Workshop Luxemburg, 14-16 December 1994

Bebbington, (1999) *Capitals and Capabilities: A Framework for Analyzing Peasant Viability, Rural Livelihoods and Poverty*, World Development Vol. 27, No. 12, pp. 2021±2044, 1999 www.elsevier.com/locate/worlddev.

Beebbington, Anthony J.(1999) *Capitals and Capabilities: A Framework for Analyzing Peasant Viability, Rural Livelihoods and Poverty*, World Development, Vol.27,No.12,pp.2021–2044, Elsevier Science

Belot, Michèle and Ermisch John. (2009) *Friendship ties and geographical mobility: evidence from Great Britain*, Jurnal of Royal statistical Society. 172, Part 2, pp. 427–442. http://onlinelibrary.wiley.com/doi/10.1111/j.1467-985X.2008.00566.x/pdf

Bhugra, Dinesh. (2004): *Migration and Mental Health*, Acta Psychiatrica Scandinavica 1094.243_258.

Bickman L., D.J Rog (Ed.). (2009): *Sage Handbooks of Applied Social Research Methods*, Sage Publication, Inc.

Black, Richard and Sward, Jon (2009) *Migration, Poverty Reduction Strategies and Human Development* , MPRA Paper No.19222, posted 11. December/23:06 http://mpra.ub.uni-muenchen.de/19222/

BNP2TKI, (2008): *Deployment of Indonesian workers overseas 2008*, BNP2TKI, Jakarta. http://www.bnp2tki.go.id/statistik-mainmenu-86/data-penempatan-mainmenu-87.html

Borooah K. Vani. (2002): *Logit and Probit, Ordered and Multinomial Models*. Sage University Papers Series on Quantitative Application in Social Sciences, Series no 07/138, Thousand Oaks, CA

Bourdieu Pierre,. Richarson, J. eds. (1986) *The Form of Capital* , Handbook of Theory and Research for the Sociology of Education , Westport, CT: Greenwood, pp. 241–58.

Boyd M. (1989): *Family and Personal Networks in International Migration. Recent Developments and New Agendas*. International Migration Review, 23(3):: 638–670.

BPS-Statistic, Malang District, (2008) : *Malang Regency in Figures,* BPS Statistic Malang District

BPS-Statistics, Malang District. (2008): *Malang District in Figures*, Edition 2009, BPS Malang District.

BPS-Statistics. (1997): *Estimation of Fertility, Mortality, and Migration: Results of the 1995 Intercensal Population Survey,* SUPAS Series S3, BPS Indonesia

BPS-Statistics. (2000): *Population of Indonesia: Results of the 2000 Population Census*. Series RBL1.2. BPS Indonesia

BPS-Statistics. (2000-2004): *Industrial Statistic large and medium* , 1993-2002, BPS East Java Province

BPS-Statistics. (2004): *East Java in Figures 2004*, BPS East Java Province

BPS-Statistics. (2006): *Countryside Potency Data of Indonesia 2005*, Jakarta: BPS Indonesia.

BPS-Statistics. (2006): *Official Statistics News*, No 47/IX/ 1 September, BPS Indonesia, www.bps.go.id/release/files/kemiskinan-01sep06.pdf .

BPS-Statistics. (2006): Statistic News, *Level of Peverty in Indonesia 2005-2006*,Jakarta , BPS, No. 47 / IX / 1 September 2006, BPS Indonesia.

BPS-Statistics. (2008): *Poverty in East Java*, BPS East Java Province http://www.jatimprov.go.id/index.php?option=com_content&task=view&id=1096&Itemid=80.

BPS-Statistics. (2009): *Official Statistics Website, Indonesian Central Biro Statistics, ,* Jakarta, BPS, Indonesia. http://www.bps.go.id/tab_sub/view.php?tabel=1&daftar=1&id_subyek=23&notab=2.

BPS-Statistics. (2009): *Poverty Profile in Indonesia March 2009.* BPS – Statistics Indonesia Jakarta. http://www.bps.go.id/brs_file/kemiskinan-01jul09.pdf

BPS-Statistik News (2010):,*Poverty in Indonesia Maret 2010*, BPS-Statistik News , No. 45/07/Th. XIII, 1 Juli 2010 http://www.bps.go.id/brs_file/kemiskinan-01jul10.pdf.

Brocklesby,. M.A. and E. Fisher. (2003) *Community Development in sustainable livelihoods approach- an introduction*, Oxford University Press and Community Development Journal

Bruin, J. (2006).*Newtest : Mommand to Mompute New Test*. UCLA: Academic Technology Services, Statistical Consulting Group http://www.ats.ucla.edu/stat/stata/ado/analysis/

Carletto, C. et al . (2004): *Internal Mobility and International Migration in Albania*. ESA Working Paper No. 04-13, June, 2004. Agricultural and Development Economics Division, FAO, United Nation.

Carney, D., Drinkwater, M., Rusinow, T., Neefjes, K., Wanmali, S., and Singh, N. (1999). Livelihoods approaches compared. DFID, London, UK.

Cebula Richard (2005): Internal *Migration Determinants: Recent Evidence*, International , Advances in Economic Research, vol. 11, pp. 267-274

Cebula, Richard J. (2005): *Internal Migration Determinants:Recent Evidence*, International Advances in Economic Research, Issue11:267-275.

Chavez, Rafael Antonio Pleitez. (2004): *Remittances as a Strategy to Cope With Systematic Risk: Panel Result From Rural House hold in el Salvador*, Dissertation, Agricultural, Environmental and Development Economics, Ohio State University

Coleman, James S. (1990): *Foundation of Social Theory*, President and Fellows of Harvard College, Harvard University Press.

Comola Margherita and L. Mello(2010) *Educational attainment and selection into the labour market: The determinants of Employment and earnings in Indonesia*, Working Paper, Paris School of Economics.

Cox, A. and M. Ureta. (2003): *International Migration, Remittance and Schooling: Evidence from El Salvador*. NBER Working Paper Series: 9766. National Bureau of Economic Research, Cambridge.

Deb, Partha and Seck Papa. (2009): *Internal Migration, Selection Bias and Human Development: Evidence from Indonesia and Mexico.* UNDP Human Development Reports, Research Paper, July 2009. Human Development, Research Paper, 2009/31.

Deshingkar Priya, S. Grimm. (2005): *Internal Migration and Development: A Global Perspective.* Prepared for IOM, February, International Organization for Migration, pg. 32, http://www.iom.int .

Dohmen J, Thomas. (2005): *Housing, mobility and unemployment Regional Science and Urban Economics*. 35 pg 305- 325, www.elsevier.com/locate/econbase.

Ehrenberg. G Donald and Robert S Smith . (2003): *Modern Labour Economics, Theory and Policy,* Eight Edition, Pearson Education Inc, USA.

Faist, Thomas . (2000): *The Volume and Dynamics of International Migration and Transnational Social Spaces*. Oxford University Press, New York.

Faist, Thomas, T. Hammar., et,al. (eds.). (1997): *International Migration and Development* : *Multidisciplinary Perspectives*. Berg, Oxford.

Fan, C. Cindy. (2005): *Interprovincial Migration, Population Redistribution, and Regional Development in China*: *1990 and 2000 Census Comparisons*. University of California, Los Angeles The Professional Geographer, 57(2), pages 295–311 , Blackwell Publishing, Oxford.

Fields S. Gary S. (2007): *The Harris-Todaro Model*, Working Papers, Cornell University ILR, School Year.

Fields S. Gary. (2004): *Dualism in The Labour Market : Perspective on the Lewis Model after Half Century*, The Manchester School Vol 72 No. 6 December 2004, 1463–6786 724–735.

Firdausy, Carunia Mulya. (2005): *Trends, Issues, and Policies Toward International Labour Migration: An Indonesian Case Study*. Paper, Population Division, Department of Economic and Social Affairs, United Nations, New York. UN/POP/MIG/2005/02, 23 June 2005.

Firman Tommy (2004): *Demographic and Spatial Patterns of Indonesia's Recent Urbanisation*. Population, Space and Place, 10, 421–434 (2004):

Firman Tommy. (1999): *Metropolitan Expansion and Growth of Female in Migration to Jakarta*. Asia Pacific Viewpoint, Vol 40, No 1, April

Gallerani Vittorio, Meri Raggi, Antonella Samoggia, Davide Viaggi. (2005): *Theory and Practice of Rural Development : Experiences in Albania*. Federico Caffe Centre Publiser, Denmark.

Geis, Wido S. Uebelmesser, M. Werding. (2008): *How do Migrants Choose their Destination Country? An Analysis of Institutional Determinants*. Cesifo Working Paper No 2506

Gökhan, Ali (2008) *The determinants of internal migration in Turkey*, Thesis, Sabanci University Research Database.

Gray, Clark , (2009): *Environment, Land, and Rural Out-migration in the Southern Ecuadorian Andes*, World Development , Volume: 37, Issue: 2, Publisher: Elsevier Ltd, Pages: 457-468.

Greene William H. (2003): *Econometric Analysis*. Fourth Edition, Prentice Hall,

Grimm, Michael and Klasen, S . (2008): *Geography vs. Institutions at the Village Level*. Cesifo Working Paper No. 2259

Grootaert et al.(2004) *Measuring Social Capital An Integrated Questionnaire*, The International Bank for Reconstruction and Development, World Bank working Paper no 18.

Gujarati, Damodar. (2003): *Basic Econometrics*. Third Edition, United States Military Academy, West Point, McGraw-Hill.

Haas , de Hein (2007): *Migration and Development: A Theoretical Perspective*, COMCAD Arbeitspapiere - Working Papers,No. 29, 2007.

Hagen-Zanker, J. (2008): *Why do people migrate?. A review of the theoretical literature.* Working Paper, MGSoG/2008/WP002, Maastricht Graduate School of Governance, Maastricht University.

Hagner, D. (2000): *Primary and Secondary Labour Markets: Implications for Vocational Rehabilitation*. Rehabilitation Counseling Bulletin (RCB): 44: 1 (2000), Hammill Institute on Disabilities and SAGE publications.

Haque Sahidul. (2005): *Migration Trends and Patterns, South Asia and Management Approaches an Initiatives*. Asia-Pacific Population Journal, Vol 20, No 3, December, ESCAP, United Nation

Harttgen, Kenneth and Klasen, Stephan. (2009): *A Human Development Index by Internal Migrational Status*, MPRA Paper No. 19237, posted 12. December 2009 / 00:34 University of Goettingen, 01. October 2009. http://mpra.ub.uni-muenchen.de/19237

Heij,Christiaan , P. de Boer, P.H. Frances, T. Kloel, HK. Van Dijk. (2004): *Econometric Method with Application in Business and Economics*, Oxford University Press.

Hernández- Raúl Coss et.al (2008): *The Malaysia-Indonesia Remittance Corridor Making Formal Transfers the Best Option for Women and Undocumented Migrants*, World Bank, Working Paper 149.

Hoerder, Dirk. (2004): *Migration as A Balancing Process : Individual and Societal Connections of Mobility in Migration, Mobility and Borders, Issues of Theory and Policy*. Thomas Heisen, Anthony Hickey, Allen Karcer (eds): IKO, Godmaddingen. http://www.ccis-ucsd.org/PUBLICATIONS/wrkg49.PDF.

Hugo, Graeme (2007): *Indonesia's Labour Looks Abroad* , Migration Information Source..http://www.migrationinformation.org/Profiles/display.cfm?ID=594.

Hugo, Graeme. (2000): *The Impact of the crisis on Internal Population Movement in Indonesia*., *Bulletin of Indonesian Economic Studies,* Vol 36 No 2, August 2000, pp. 115-38.

Hugo, Graeme. (2003): *Urbanization in Asia: an overview*, Paper prepared for the Conference on African Migration in Comparative Perspective, Johannesburg, South Africa, um.princeton.edu/pumconference/papers/

Hyung-Jun. Kim. (2002): *Agrarian and Social Change in a Javanese Village*, Journal of Contemporary Asia, Vol. 32.

ILO (2008): *Guide to Labour Standard International, International Labour Standards* Department , Geneva

International labour Organization. (2003): *Employment trends in the tobacco sector: Challenges and prospects*, ILO. http://www.ilo.org/public/english//sector/techmeet/tmets03/tmets-r.pdf.

International Migration Law, (2004): Glossary on Migration, International Organization for Migration, Geneva

IOM. (2004): *International Migration Law: Glossary on Migration*. International Organization for Migration.

IOM. (2008): *Migration in Indonesia: Fact and Figures*, International Organization for Migration, Jakarta

IOM. (2010) : *Labour migration From Indonesia,An Overview of Indonesian Migration to Selected Destinations in Asia and the Middle East*, International Organization for Migration , Jakarta

Jennissen, R. (2007): *Causality Chains in the International Migration Systems Approach*. Journal Population Research and Policy Review, Volume 26, Number 4 / August 2007, Springer Netherlands

Keely, B. Charles dan James F. Hollifield (Eds):. (2000): *Demography and Internatonal Migration*, Routledge, Great Britain.

Kennan John and R. W. James. (2009): *The Effect of Expected Income on Individual Migration Decisions*, University of Wisconsin-Madison and NBER, December

Knerr, Beatrice. (1994): *Labour Migration from Developening Countries, Macroeconomics and Policy Intervention*, Habilitationschrift zur Erlangung de Lehrbefugnis fur das Fachgebiet Enwickulungstheorie und Politik vorgelegt der Fakultat IV-Agrarwissenshaften II de Universitat Hohenhiem, November

Konseiga, Adama. (2007): *Household Migration Decisions as Survival Strategy: The Case of Burkina Faso*, Journal of African Economies , Vol. 16(2)::198-233

Kothari Uma (2002 ) Migration and Chronic Poverty , Institute for Development Policy and Management, University of Manchester Working Paper No 16 , Chronic Poverty Research Centre ISBN Number: 1-904049-15-X.

Lapping B, M..T Marsden and H. Mooney (eds) (2006): *Rural Policy and Planning*, in Handbook of Rural Studies. Paul Cloke, Sage Publication, London

Laurilla Hannu. (2008): *Economics of Migration: Theoritical Approachs*. VDM Vrlag Dr Muller.Aktiengesselschaft & Co. KG, Saarbrucken.

Leinbach, Thomas R. (1989): *The Transmigration Programme in Indonesian National Development Strategy*, Habitat Intl.. Vol. 13, No. 3, pp. 81-93, 1989.

Lin, Nan and B. H. Erickson. (2008): *Theory, Measurement, and the Research Enterprise on Social Capital* in Social Capital : an International research Program, Ed. Lin, Lin Nan and B. H. Erickson p. Oxford University Press, New York. pg. 1-24.

Lockard Craig A.(1971) *The Javanese as Emigrant: Observation on the Development of Javanese Settelment Overseas*, Indonesia, Vol. 11 (Apr., 1971), pp. 41-62, Southeast Asia Program Publications at Cornell University, http://www.jstor.org/stable/3350743.

Lottuma J. and D. Marksb (2010): The determinants of internal migration in a developing country: quantitative evidence for Indonesia, 1930-2000 , Cambridge Working Papers in Economics (CWPE ) 1013 February.

Loveband, Anne. (2003): *Positioning of The Product: Indonesian Women Migrant Workers in Contemporary Taiwan*, Worker Paper Series, no 43, City University of Hong Kong.

Lucas, Robert E.B. (2005): *International Migration and Economic Development*, Edward Elgar, UK

Lync, Kenneth. (2005): *Rural-Urban Interaction in Developing Word*, Routledge, New York

Madalla G.S. (1986): *Limited-Dependent and Qualitative variables in Econometrics*, Cambridge University Press.

Manning, Chris. (1998): *Indonesia Labour Transition*.Cambrige University Press, pg 146

Marini B, M. Cloke, T. Marsden and P. H. Mooney (eds). (2006): *Rural Economies*, in Handbook of Rural Studies, Sage Publication, London.

Massey, D. S. et al. (1993): *Theories of International Migration: A Review and Appraisal*, Population and Development Review, Vol. 19, No. 3. September.

Massey, D. S. et al. (1998): *Worlds in motion: understanding international migration at the end of the millennium.* International Studies in Demography. Clarendon Press Oxford.

Massey, Douglas S. and L. C. Basem. (2007): *Determinants of Savings, Remittances, and Spending Patterns among U.S. Migrants in Four Mexican Communities*, Sociological inquiry, Volume 62 Issue 2**,** Pages 185 – 207.

McDevitt Thomas M and G. Saad. (1985): *Incorporating Husband-Wife Differences in Place Utility Differentials into Migration Decision Models***,** Population and Environment, Volume 8, Number 1 & 2, Spring/Summer 1985-86, Human Sciences Press.

Mckenzie David and Rapoport Hille (2007). Network effects and the dynamics of migration and inequality: Theory and evidence from Mexico, Journal of Development Economics 84 (2007) 1–24, www.elsevier.com/locate/econbase.

Menakertrans, (2011*): Indonesian Employment Development*, Menakertrans, Jakarta.

Morse,. Stephen, N. McNamara and M. Acholo.(2009) Sustainable Livelihood Approach: A critical analysis of theory and practice. Geographical Paper No. 189, University of Reading, UK.

Muhidin Salut S. (2004): Answering the Research Challenge on Family Migration in the Developing Country: The Case of Indonesia, Population Studies and Training Centre (PSTC), Brown University.

Muhidin Salut, Rogers Andrei, Lisa Jordan, Megan Lea. (2004): *Indirect Estimates of Age-Specific Interregional Migration Flows In Indonesia Based On The Mobility Propensities of Infants*, July 2004, Working Paper POP2004-0001, Research Program on Population Process, Institute of Behavioral Science, University of Colorado.

Mukti, Ali Ghufron. (2008): *Health System Strengthening using Primary Health Care Approach,* Regional Conference on "Revitalizing Primary Health Care" , Jakarta, Indonesia, 6-8 August 2008 SEA/RPHC/2008/13, 1 July 2008, World Health Organization.

Munshi,. Kaivan and Mark Rosenzweig. (2005): *Economic development and the decline of rural and urban community-based networks*, Economics of Transition, Vol. 13, No 3, pp 427 -443, July, SSRN, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=776990.

Najib, M. Mayanda, L. Mundiharno., Pujiyanto., and Suharno. (2006): *Analysis of Efficiency and Effectively on Administration and Financial of PJKMM* ( Health Insurance Program for the Poor), Last Report , Faculty of Public Health , University of Indonesia. http://www.litbang.depkes.go.id/download/seminar/askes_cisarua/UI/ReportPJKMM_UI(2006):pdf

Nasikh. (2003): *The Movement of Labour from Agricultural Sector to the Industrial sector: Case in The Village of Tambak Rejo Sub-district of Kraton District of Pasuruan East Java.*, Thesis, Master Program of Economics of Resources, Brawijaya University, Indonesia.

Naudé, Wim A. (2008): *Conflict, Disasters and No Jobs: Reasons for International Migration from Sub Saharan Africa*. UNU-WIDER Research Paper No. 85. Helsinki, Finland: United Nations University

Neuman, W. Lawrence. (1997): *Social Research Methods , Qualitative and Quantitative Approach*, Third Edition, Allyn and Bacon

Niimi, Yoko and C. Özden. (2006): *Migration and Remittances : Causes and Linkage*, World Bank Policy research Working Paper 4087, December, World Bank.

Öberg, S. (1995): *Theories on interregional migration: an overview*. Working Paper-95-47, International Institute for Applied Systems Analysis (IIASA):, Laxenburg, Austria

Oishi, Nana. (2002): *Gender and Migration: An Integrative Approach*, Working Paper 49, The Centre for Comparative Immigration Studies CCIS, University of California, San Diego March.

Parinduri, *R. A. and S. M. Thangavelu* . (2008): *Remittance and Migrant Households' Consumption and Saving Patterns: Evidence from Indonesia*, Nottingham Univ. Business School Malaysia Campus Research Paper No. 08-02 .

Pedersen, Peder J., M. Pytlikova, N. Smith. (2008): *Selection and network effects-Migration flows into OECD countries 1990–2000*, European Economic Review 52 (2008), 1160–1186.

Piore, Michael J. (1979): *Birds of Passage: Migrant Labour and Industrial Societies*. Cambridge, UK: Cambridge University Press.

Ramcharan, Rodney. (2002) Migration and Human capital Formation : Theory and Evidence from the U.H High school movement , Working Paper, IMF, WP/01/123.

Ranis, Gustav. (2003): *Is Dualism Worth Revisiting?*, Centre Discussion Paper, no. 870, Economics Growth Centre, Yale University, September

Rogers, Andrei, S. Muhidin, L. Jordan, M. Lea.(2004): *Indirect Estimates of Age -Specific Interregional Migration Flows in Indonesia Based on the Mobility Propensities of Infant*, Working Paper POP 2004-0001, July, Research Program on Population Processes,

Rogers, Andrei., B. Jones, V.Partida, S.Muhidin. (2007): *Inferring migration flows from the migration propensities of infants: Mexico and Indonesia*, Original Paper, DOI 10.1007/s00168-006-0107-1, Springer-Verlag

Sabates-Wheeler Rachel. Ricardo Sabates and Andriana Castaldo (2005): *Tackling Poverty-Migration Linkages*, Working Paper Development Research Centre on Migration, Globalisation and Poverty , Arts C-226, University of Sussex , Brighton BN1 9SJ.

Safrida. (2008): *The Impact of Migration Policy on Labour Market and Indonesian Economy* , Dissertation, Doctoral Program of Economics of Agriculture, Bogor Institute Technology.

Santosa, Bambang-Heru and H. McMichael. (2004): *Industrial Development in East Java : A Special Case.?* Working Paper, Australian National University, Division of Economics, Research School of Pacific and Asian Studies, 2004 http://rspas.anu.edu.au/economics/publish/papers/wp2004/wp-econ-2004-07.pdf.

Schrieder, Getrud and B. Knerr. (2000): *Labour Migration as a Social Security Mechanism for Smallholder Households in Sub-Saharan Africa: The Case of Cameroon*, Oxford Development Studies, Vol. 28, No. 2, pp224-236.

Schwarze, Stefan. (2004): *Determinant of Income Generating Activities of Rural Households, A Quantitative Study in The Vicinity of the Lore-Lindu National Park in Central Sulawesi/Indonesia*, Dissertation, Faculty of Agricultural Policy, George August-University of Goettingen.

Sell, Ralph R. and G.F. DeJong. (1978): *Toward a Motivational Theory of Migration Decision Making*, Journal of Population, Vol. 1 (4): Winter 1978, Human Sciences Press.

Silvey, Rachel. (2006): *Consuming the transnational family: Indonesian migrant domestic workers to Saudi Arabia*, Global Networks Vol 6, No 1, pg 23–40. Journal Compilation, Blackwell Publishing Ltd & Global Networks Partnership.

Skeldon, Ronald. (2003): *Migration And Poverty*; Paper presented at the conference on "African Migration and Urbanization in Comparative Perspective, Johannesburg, South Africa, June 4 – 7.

Somwaru, A, Diao X. Gale. Tuan. F. (2001) : *China's Employment and Rural Labour Migration*, Selected paper, American agricultural Economics association annual Meeting, Chichago, Il, August 5-August 8.

Stark, Oded. (1991): *The Migration of Labour*. New York: Cambridge University Press.

Sture, Oberg (1995) Theories on Interregional Migration: An Overview, WP-95-47 IIASA, A-2361, Laxenburg Austria.

Sumaryanto, S. Friyatno, and B. Irawan. (2001): *Paddy Field Conversion to Non-Agriculture Utilization and its Negative Impacts*, Proceeding of National Conference of Land Farming Multifunction, Ministry of AgricultureRepublic Indonesia, Jakarta

Taylor J. Edward (1999): The new economics of labour migration and the role of remittances in the migration process. International Migration, 37 (1), pp. 63-88.

Taylor J. Edward and G.Dyer (2009): *Migration and Sending Economy: A Disaggarated Rural Economy-Wide Analysis*, Journal of Development Studies, Vol 45, No 6, pp.966-989, July, Routlegde, Taylor &Francis Group.

Taylor J. Edward and P. L. Martin, Evenson and Pingali (eds.)(2001): *Human capital: Migration and rural population change*, Handbook of Agricultural Economics, 2001, vol. 1, Part 1, pp 457-511

Taylor J. Edward. (2006): *International migration and economic development.* International symposium on international migration and development. Population Division, Department of Economic and Social Affairs, United Nations Secretariat, Turin, Italy, 28- 30 June (2006): UN/POP/MIG/SYMP/2006/09: p. 4 – 5.

Taylor J. Edward. et al. (2003): *Migration and Incomes in Source Communities: A New Economics of Migration Perspective from China*. Economic Development and Cultural Change, Volume 52, Number 1, Issue: October 2003, Chicago Journals, University of Chicago Press.

Temple R., W. Jonathan.(2005): *Growth and Wage Inequality in Dual Economy*, Bulletin of Economic Research Vol, 57, No. 2, pp. 145-169, April 2005, SSRN, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=697322

Todaro, Michael P. and , C. S. Smith. (2009): *Economics Development*, Tenth Edition, Pearson Education Limited, England.

Todaro. Michael P. (1997): *Urbanization, Unemployment, and Migration in Africa: Theory and Policy*, Working Paper , No. 104, https://www.popcouncil.org/pdfs/wp/104

Uchenna, Mberu Blessing. (2006): *Internal migration and household living conditions in Ethiopia*, Demographic Research, Vol 14, Article 21, Page 509-540, 28 June 2006

UNDP.(2011), *Sustainability and Equity: A Better Future for All* , in Human Development Report 2011, UNDP, http://hdrstats.undp.org/images/explanations/IDN.pdf

United Nation. (1998): *Recommendations on Statistics of International Migration Revision 1,* Department of Economic and Social Affairs Statistics Division , Statistical Papers Series M, No. 58, New York.

Van Dalen, Hendrik P, G. Groenewold and T. Fokkema. (2005): *Remittances and their Effect on Emigration Intentions in Egypt, Morocco and Turkey*, Tinbergen Institute Discussion Paper, TI 2005-030/1.

VanWey, L.K. (2005): *Land Ownership as u Determinant of International and Internal Migration in Mexico and Internal Migration in Thailand, IMR,* Volume 39 Number 1 (Spring 2005):, pp. 141-172.

Vidal. Sergi and Kley, Stefanie. (2010) *The Geographic proximity of Social Ties in Migration Intentions and Behaviour*, Migremus Arbeitspapiere Nr. 1/2010, October, University of Bremen.

Waddington Hugh, and R Sabates-Wheeler.(2003): How Does Poverty Affect Migration Choice? A Review of Literature Institute, Working Paper of Development Studies, Sussex

Widjaja, Muliadi. (2009): An *Economic and Social Review on Indonesian Direct Cash Transfer Program to Poor Families Year 2005,* International and Cross-National Studies, Maryland Reform academy http://www.welfareacademy.org/pubs/international/policy_exchanges/asppapers/widjaja.pdf

Williams Catharina P.(2008): *Female transnational migration, religion and subjectivity: The case of Indonesian domestic workers*, Asia Pacific Viewpoint, Vol. 49, No. 3, December 2008, ISSN 1360-7456, pp344–353.

Wong, Susan. (2003): *Indonesia Kecamatan Development Program: Building a Monitoring and Evaluation System For a Large-Scale Community-Driven Development Program,* Environment and Social Development Unit East Asia and Pacific Region, World Bank, Discussion Paper

Wooldridge, Jeffrey M. (2002): *Econometric Analysis of Crossection and Panel Data*, Massachusetts Institutes Technology.

World Bank (2011): *Migration and Remittaces Factbook 2011,* The International Bank for Reconstruction and Development / The World Bank, Washington

World Bank (2011):, Poverty headcount ratio at $2 a day (PPP) (% of population),World Bank http://data.worldbank.org/indicator/SI.POV.2DAY

World Bank. (2006): *Migration, Remittance, and Female Migrant Workers*, Fact Sheet, Female Migrant Workers Research Team, World Bank.

World Bank. (2009): *Indonesia*. World Development Indicator (WDI): and Global Development Finance GDF. http://search.worldbank.org

World Bank.( 2008):*The Impact of the Economic Crisis on Migration and Remittances*, World Bank, http://siteresources.worldbank.org/INTPOVERTY/Resources/335642-1251230679308/Impact_of_EconomicCrisis_on_Migration_and_Remittances.pdf

WorldBank. (2005): *Proposed Loan to the Republic of Indonesia For Kecamatan Development Program,* unpublished, Environment and Social Development Unit East Asia and Pacific Region, World Bank. Project Appraisal Document.

Wu, Weiping. (2005): *Migrant Settlement and Spatial Transformation in Urban China: The Case of Shanghai*, Paper, World Bank Third Urban Research Symposium Brasilia, Brazil April 4-6, 2005. Worldbank.org/urban/symposium2005/presentations.

Yustika, Ahmad Erani. (2003): *Economic Analysis of Small Farm Households*, Brawijaya University Press, Malang, Indonesia.

Zaqqa, Nadim, B. Knerr (Eds).(2006): *Economics Development and Export of Human Capital A Contradiction?*, International Labour Migration Vol.1, Dissertation, University Kassel Press.

Zhao, Jinhua (2004): *Rural Labour Migration: Migrant Network, Information, and Hysteresis (Preliminary)*, Selected paper presented at the American Agricultural Economics Association Annual Meetings, Denver, CO-August 1-4, 2004.

Zhao, Yaohui. (1999): Leaving *Countryside: Rural-to-Urban Migration Decisions in China*, American Economics review, Vol. 89, No.2 Paper and Proceeding of the One Hundred Eleventh annual Meeting of the American Economic Association (May, 199),pp.281-286.

Nee, Victor and Sanders,Jimy. (2001): *Understanding the diversity of immigrant incorporation: a forms-of-capital model*, Ethnic and Racial Studies Vol. 24 No. 3 May 2001 pp. 386–411.

Comola, Margherita and de Mello, Luiz (2010): *Educational attainment and selection into the labour market: The determinants of employment and earnings in Indonesia,* Working Paper N° 2010 – 06, Paris-School of Economics.

Sribney, William (1997): *STATA Data analysis and statistical software*, STATA Corp.www.STATA.com

**Abbreviations and Acronyms**

Askeskin =*Asuransi Kesehatan untuk Masyarakat Miskin/* Health Insurance for the Poor

Bank *Thitil* : informal credit is used to cover basic necessities or durable goods, and interest rates may be steep (up to 20 percent monthly) .

BAPPEPROP : *Badan Perencanaan Pembangunan Propinsi*/ Province Development Planning Agency

BAPPEKAB: Badan Perencaan Pembangunan Kabupaten/district Development Planning Agency

BNP2TKI : *Badan Nasional Penempatan dan Perlindungan Tenaga Kerja Indonesia*/ Supervisory & Executive Body on Indonesian Workers

BPN : *Badan Pertanahan Nasional*/ National Land Agency

BPS-Statistics : *BPS-Statistics*/ State Statistics Agency

Menakertrans, Depnakertrans : *Departmement Tenaga Kerja dan Transmigrasi* / Ministry of Manpower and Transmigration/

Disnaker : *Dinas Tenaga Kerja* / Manpower office in district/province level

Gardu Taskin : *Program Terpadu Pengentasan Kemiskinan*/Integrated Program of Poverty Alleviation.

Jamkesmas = *Jaminan Kesehatan Masyarakat*/ Community Heath Security (Insurance)

KUT: *Kredit Usaha Tani* , credit for agricultural activities.

Palawija : Crops

PJTKI : *Perusahaan Jasa Tenaga Kerja Indonesia* / Labour Export Agency

PPK/KDP : *Program Pengembangan Kecamatan*/ Kecamatan (Sub-Districts) Development Program Program for Community Development..

Rp = *Rupiah* /Indonesian Currency

RPJM : *Rencana Pembangunan Jangka Menengah*/ Middle Term Development Plan

*Surat Miskin* : letter for peoople who are officially confirmed as living under poverty

SUSENAS : *Survey Sosial Ekonomi Nasional* / National Socio-Economic Survey

*Yasinan and tahlilan*: is ceremony that some people pray together for the deceased. They read *tahlil, surah Yasin(Koran)* and pray in order God forgive and bless the deceased.

# Appendices

**Table A.1** Growth of Population, Labour Force and Migration Overseas in East Java (2003-2008)

| Indicator | % | | | | | | Average |
|---|---|---|---|---|---|---|---|
| | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | |
| Population | 0.83 | 2.05 | 1.10 | 0.83 | -0.65 | 1.78 | 0.99 |
| Working Age Population | 1.42 | 1.85 | 2.08 | 2.14 | -0.86 | 1.90 | 1.42 |
| Non-Working Age Population | -0.87 | 2.65 | -1.82 | -3.20 | 0.00 | 1.42 | -0.30 |
| Labour Force | -2.59 | 5.69 | 1.12 | 0.70 | 4.28 | 3.05 | 2.04 |
| Employment | -2.86 | 5.14 | 0.77 | 0.92 | 2.25 | 4.39 | 1.77 |
| Unemployment | 2.81 | 16.21 | 7.03 | -2.86 | 38.33 | -13.60 | 7.99 |
| Open Unemployment Rates | 5.49 | 10.00 | 5.82 | -3.44 | 20.82 | -8.10 | 5.10 |
| Labour Force Participation Rates | -3.95 | 3.77 | -0.95 | -1.41 | 5.30 | 1.01 | 0.63 |
| Employment Rate | -0.27 | -0.53 | -0.34 | 0.21 | -1.94 | 1.30 | -0.26 |
| Migration Overseas | -12.20 | -16.16 | -63.01 | 418.51 | -6.81 | 8.33 | 54.78 |

Sources :BPS-Statistics , East Java Province ,2001-2008

**Table A.2.** Main Occupation , East Java 2001-2009

| | Main Occupation | 2001 | 2002 | 2003 | 2004 | 2005 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Agriculture | 8,118,663 | 7,724,192 | 8,427,454 | 7,833,593 | 8,199,624 | 8,391,650 | 8,242,330 | 8,287,920 |
| 2 | Manufacture | 2,132,400 | 2,111,343 | 2,104,063 | 2,088,033 | 2,134,862 | 2,458,400 | 2,412,280 | 2,385,680 |
| 3 | Construction | 646,544 | 672,826 | 647,641 | 687,660 | 656,759 | 955,070 | 965,770 | 974,000 |
| 4 | Trade | 1,115,755 | 3,001,006 | 3,109,072 | 3,044,239 | 3,154,300 | 3,718,380 | 3,775,810 | 3,933,110 |
| 5 | Transportation | 802,636 | 804,593 | 871,867 | 831,990 | 884,630 | 865,650 | 923,010 | 993,930 |
| 6 | Services | 1,712,529 | 1,774,423 | 1,798,927 | 1,890,906 | 2,175,547 | 2,023,630 | 2,169,340 | 2,347,460 |
| 7 | Others | 296,751 | 338,372 | 269,132 | 302,647 | 303,381 | 338,620 | 393,740 | 382,940 |
| 8 | Total | 14,825,278 | 16,426,755 | 17,228,156 | 16,679,068 | 17,509,103 | 18,751,420 | 18,882,280 | 19,305,060 |

Sources: BPS-Statistics, East Java Province. 2001-2008

Note: not available data at 2006

**Figure. A.1.** Main Occupation, East Java, 2001-2009

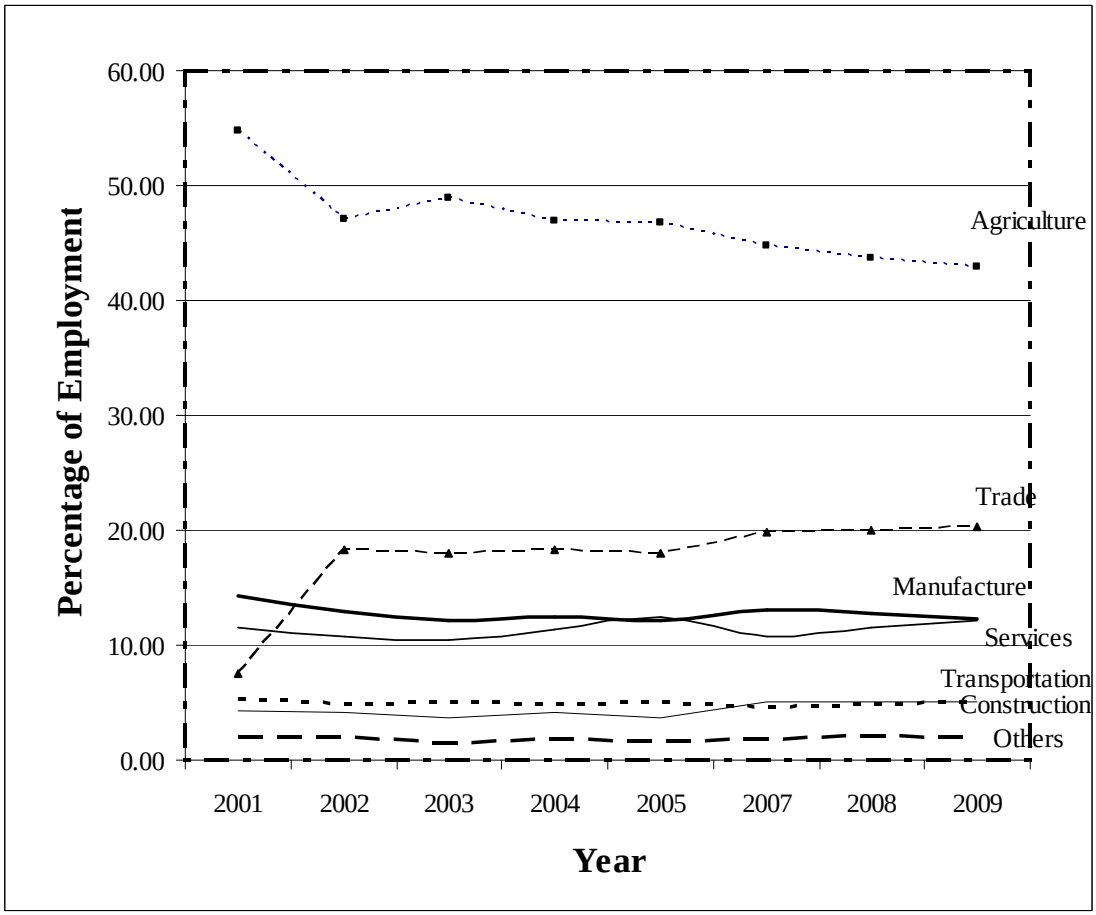



**Table. A.3.** GDRP Malang District, Current and Constant Price 2006 - 2008

| No. | Description | 2006 | 2007 | 2008*) |
|---|---|---|---|---|
| | Current Prices | | | |
| 1 | Gross Regional Domestic *Product (Million Rp)* | 19,030,257 | 21,702,482 | 24,698,863 |
| 2 | Per Capita Gross Regional Domest*ic Product* | 7,997,916 | 9,036,586 | 10,232,446 |
| 3 | Region*al Income (Million Rp)* | 17,309,494 | 19,740,089 | 22,465,530 |
| 4 | Per Capita Regional Income | 7,274,724 | 8,219,475 | 9,307,203 |
| | At Constant 2000 Prices | | | |
| 5 | Gross Regional Dome*stic Product (Million Rp)* | 4,882,713 | 5,132,030 | 5,400,282 |
| 6 | Per Capita Gross Regional Dome*stic Product* | 4,966,399 | 5,155,125 | 5,393,881 |
| 7 | Region*al Income (Million Rp)* | 10,567,414 | 11,210,731 | 11,856,423 |
| 8 | per Capita Regional Income | 4,441,206 | 4,667,979 | 4,911,975 |
| 9 | Mid-Year Population | 2,379,402 | 2,401,624 | 2,413,779 |

Source: Statistics Office in Malang District, 2009

Note: *) Temporary

**Table A.4** Percentage Distribution of Malang District GDRP At Constant 2000 Prices by Industrial Origin, 2003 - 2005 (%)

| No. | Industrial Origin | 2006 | 2007 | 2008*) |
|---|---|---|---|---|
| I | Agriculture | 31.39 | 30.86 | 30.46 |
| 1.1 | Farm Food Crops | 19.46 | 1.00 | 18.65 |
| 1.2 | Non Food Crops | 7.18 | 7.04 | 6.92 |
| 1.3 | Livestock | 4.08 | 4.16 | 4.24 |
| 1.4 | Forestry | 0.33 | 0.32 | 0.31 |
| 1.5 | Fishery | 0.34 | 0.34 | 0.34 |
| II | Mining & Quarrying | 2.63 | 2.67 | 2.69 |
| 2.3 | Quarrying | 2.63 | 2.67 | 2.69 |
| III | Manufacturing Industry | 17.34 | 17.91 | 18.37 |
| b. | Non-Oil Industry | 17.34 | 17.91 | 18.37 |
| 3.1 | & Beverages, Tobacco | 7.60 | 8.20 | 8.66 |
| 3.2 | Textiles, Leather Products& Footwear | 2.65 | 2.61 | 2.59 |
| 3.3 | Wood Prod. & Others Wood Products | 0.35 | 0.36 | 0.33 |
| 3.4 | Paper & Printing | 0.85 | 0.90 | 0.96 |
| 3.5 | Fertilizers, Chemic& Rubber Products | 3.81 | 3.76 | 3.75 |
| 3.6 | Cement & Non Metallic Mining Products | 1.17 | 1.16 | 1.15 |
| 3.7 | Iron & Basic Steel | - | - | - |
| 3.8 | Transport Equip., Machine & Apparatus | 0.10 | 0.10 | 0.10 |
| 3.9 | Other Manufacturing Products | 0.81 | 0.82 | 0.83 |
| IV | Electricity & Water Supply | 1.57 | 1.54 | 1.55 |
| 4.1 | Electricity | 1.50 | 1.47 | 1.48 |
| 4.2 | Gas | 0.00 | 0.00 | 0.00 |
| 4.3 | Water Supply | 0.07 | 0.07 | 0.07 |
| V | Construction | 1.54 | 1.60 | 1.68 |
| VI | Trade, Hotel & Restaurant | 23.72 | 23.93 | 23.97 |
| 6.1 | Trade | 22.27 | 22.46 | 22.50 |
| 6.2 | Hotel | 0.30 | 0.29 | 0.30 |
| 6.3 | Restaurant | 1.15 | 1.18 | 1.17 |
| VII | Transport and Communication | 4.48 | 4.45 | 4.38 |
| a. | Transport | 3.43 | 3.34 | 3.21 |
| 1. | Railways Transport | 0.06 | 0.06 | 0.06 |
| 2. | Road Transport | 3.24 | 3.15 | 3.02 |
| 3. | Service Allied to Transport | 0.13 | 0.13 | 0.13 |
| b. | Communication | 1.05 | 1.11 | 1.17 |
| 1. | Post & Telecommunication | 1.04 | 1.10 | 1.16 |
| 2. | Service Allied to Telecommunication | 0.01 | 0.01 | 0.01 |
| VIII | Financial, Ownership & Business Services | 3.89 | 3.85 | 3.85 |
| 1. | Bank | 0.07 | 0.07 | 0.08 |
| 2. | Non-Bank Financial Institution | 1.00 | 1.02 | 1.05 |
| 3. | Building Rental | 1.85 | 1.82 | 1.80 |
| 4. | Business Services | 0.97 | 0.94 | 0.92 |
| IX | Services | 13.44 | 13.19 | 13.04 |
| a. | Government | 4.35 | 4.33 | 4.34 |
| b. | Private | 9.09 | 8.86 | 8.70 |
| 1. | Social & Community Service | 1.04 | 1.03 | 1.05 |
| 2. | Amusement & Recreation Services | 0.14 | 0.14 | 0.14 |
| 3. | Personal & Household | 7.91 | 7.69 | 7.51 |
| **GRDP** | | **100.00** | **100.00** | **100.00** |

Source: BPS-Statistics Malang District, 2009

Note: *) Temporary

**Table A.5** Regional Minimum Wages in East Java Province, 2002-2008 (per mounth/thousand rupiahs)

| | District | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 |
|---|---|---|---|---|---|---|---|---|
| 1 | Pacitan | 250 | 289 | 321 | 345 | 405 | 450 | 500 |
| 2 | Ponorogo | 252 | 286 | 315 | 338 | 400 | 450 | 500 |
| 3 | Trenggalek | 245 | 274 | 316 | 336 | 437 | 460 | 510 |
| 4 | Tulungagung | 290 | 332 | 349 | 381 | 460 | 490 | 526 |
| 5 | Blitar | 267 | 295 | 317 | 341 | 409 | 450 | 502 |
| 6 | Kediri | 361 | 415 | 480 | 501 | 602 | 645 | 717 |
| 7 | Malang | 443 | 493 | 548 | 575 | 681 | 743 | 802 |
| 8 | Lumajang | 260 | 301 | 321 | 340 | 408 | 495 | 550 |
| 9 | Jember | 315 | 384 | 397 | 425 | 525 | 575 | 645 |
| 10 | Banyuwangi | 267 | 319 | 356 | 373 | 517 | 567 | 619 |
| 11 | Bondowoso | 250 | 300 | 310 | 350 | 480 | 495 | 550 |
| 12 | Situbondo | 255 | 311 | 348 | 368 | 436 | 493 | 530 |
| 13 | Probolinggo | 390 | 444 | 456 | 478 | 528 | 567 | 604 |
| 14 | Pasuruan | 453 | 513 | 550 | 578 | 682 | 740 | 802 |
| 15 | Sidoarjo | 453 | 516 | 550 | 578 | 682 | 744 | 802 |
| 16 | Mojokerto | 453 | 516 | 550 | 578 | 682 | 740 | 804 |
| 17 | Jombang | 304 | 398 | 426 | 445 | 580 | 640 | 690 |
| 18 | Nganjuk | 310 | 335 | 354 | 362 | 402 | 455 | 510 |
| 19 | Madiun | 254 | 254 | 320 | 340 | 400 | 450 | 500 |
| 20 | Magetan | 260 | 293 | 321 | 386 | 596 | 596 | 596 |
| 21 | Ngawi | 256 | 289 | 323 | 340 | 440 | 450 | 510 |
| 22 | Bojonegoro | 253 | 288 | 331 | 358 | 475 | 550 | 630 |
| 23 | Tuban | 280 | 323 | 345 | 400 | 525 | 607 | 660 |
| 24 | Lamongan | 278 | 328 | 380 | 419 | 558 | 600 | 650 |
| 25 | Gresik | 453 | 517 | 550 | 578 | 682 | 746 | 804 |
| 26 | Bangkalan | 330 | 390 | 440 | 450 | 550 | 586 | 622 |
| 27 | Sampang | 275 | 301 | 330 | 375 | 450 | 475 | 610 |
| 28 | Pamekasan | 300 | 400 | 430 | 450 | 500 | 560 | 625 |
| 29 | Sumenep | 295 | 360 | 400 | 425 | 490 | 545 | 590 |
| | City | | | | | | | |
| 30 | Kediri | 361 | 415 | 480 | 501 | 602 | 645 | 717 |
| 31 | Blitar | 278 | 301 | 331 | 351 | 390 | 449 | 507 |
| 32 | Malang | 443 | 497 | 548 | 575 | 681 | 742 | 802 |
| 33 | Probolinggo | 400 | 445 | 46.1 | 480 | 528 | 566 | 604 |
| 34 | Pasuruan | 375 | 440 | 450 | 475 | 580 | 650 | 710 |
| 35 | Mojokerto | 415 | 479 | 488 | 500 | 682 | 740 | 688 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 36 | Madiun | 260 | 305 | 325 | 348 | 406 | 465 | 523 |
| 37 | Surabaya | 453 | 516 | 557 | 578 | 686 | 746 | 806 |
| 38 | Batu | 443 | 484 | 548 | 575 | 656 | 705 | 737 |
| | Average of Regional Minimum Wages | 328 | 377 | 400 | 436 | 531 | 580 | 633 |
| | Growth of Regional Minimum Wages | | 14.94 | 6.10 | 9.00 | 21.79 | 9.23 | 9.14 |
| | Inflation Rate | | 5.06 | 6.4 | 17.1 | 6.76 | 6.48 | 9.66 |

Source: BPS Statistics and Bank Indonesia, East Java Province, 2009

## Series International Labor Migration

*edited by Prof. Dr. Béatrice Knerr**

Vol. 1 Nadim Zaqqa (2006): Economic Development and Export of Human Capital. A Contradiction? The impact of human capital migration on the economy of sending countries. A case study of Jordan.
Kassel, ISBN 978-3-89958-205-5

Vol. 2 Volker Hamann (2007): The Impact of International Labor Migration on Regional Development: The Example of Zacatecas, Mexico.
Kassel, ISBN 978-3-89958-251-2

Vol. 3 Béatrice Knerr (Ed.) (2006): Vorweggenommene Erweiterungen: Wanderungsbewegungen aus Grenzgebieten in die EU.
Kassel. ISBN 978-3-89958-281-9

Vol. 4 Germán A. Zárate-Hoyos (Ed.) (2007): New Perspectives on Remittances from Mexicans and Central Americans in the United States.
Kassel, ISBN 978-3-89958-256-7

Vol. 6 Izhar Ahmad Khan Azhar (2008): Overseas Migration and its Socio-Economic Impacts on the Families Left Behind in Pakistan. A Case Study in the Province Punjab, Pakistan.
Kassel, ISBN 978-3-89958-366-3

Vol. 7 Jörg Helmke (2010): Remittance-led development: Rebuilding old dependencies or a powerful source of human development? A view on Latin America.
Kassel, ISBN 978-3-89958-968-9

Vol. 8 Béatrice Knerr (Ed.) (2012): Transfers from International Migration: A Strategy of Economic and Social Stabilization at National and Household Level.
Kassel, ISBN 978-3-86219-208-3

Vol. 9 Cristian Vasco (2011): The Impact of International Migration and Remittances on Agricultural Production Patterns, Labour Relationships and Entrepreneurship. The Case of Rural Ecuador.
Kassel, ISBN 978-3-86219-086-7

Vol. 10 Rasha Istaiteyeh (2011): Economic Development and Highly Skilled Returnees: The Impact of Human Capital Circular Migration on the Economy of Origin Countries. The Case of Jordan.
Kassel, ISBN 978-3-86219-084-3

Vol. 11 Béatrice Knerr (Ed.) (2013): Highly-skilled Migrants from Asian Countries in Germany.
Kassel, ISBN 978-3-86219-240-3

Vol. 12 Syafitri, Wildan (2012): Determinants of Labour Migration Decisions. The Case of East Java, Indonesia
Kassel, ISBN 978-3-86219-314-1

---

*) Department of Development Economics, Migration and Agricultural Policy (DEMAP), University of Kassel
Steinstr. 19
D-37213 Witzenhausen

knerr@uni-kassel.de

The research presented in this volume explains which factors determine the migration and related household decisions in rural areas of Indonesia's East Java Province. Based on the New Economics of Labour Migration (NELM), the study analyses rural-to-urban as well as international migration focusing on Malang District, and, as a result, identifies factors, which are essential for the design of policies and programs aiming to promote rural development. It is based on primary data collected by a field survey across 12 villages in the sub-district of Wagir, and secondary data which came out from a survey carried out by the Central Bureau of Statistics in 7,677 villages. The results demonstrate that institutional factors, i.e. market access, access to credits and infrastructure, especially water resources, have positive impacts on rural households' decisions not to engage in migration. The same applies to government subsidies, namely health insurance. Furthermore, the share of non-agriculture land, education facilities, share of farming households in the village and share of the population living in poverty have a positive impact on international migration. Working abroad is helping women to improve their social status. Due to family pressures they become important backbones for increasing household incomes, whether they are single or married, which causes them to migrate for work.

The results suggest that local governments could significantly contribute to reduce migration by facilitating market and credit access which could stimulate investments to enhance agricultural productivity and incomes of rural households.



*Wildan Syafitri was born in Malang, Indonesia. He earned a Bachelor degree in Economics from Brawijaya University, Malang, in 1994, and received a scholarship from the Indonesian government to continue a Master degree in Economics which he finished in 2003. He joined the PhD program at the Department of Development Economics and Agricultural Policy (DEMAP) at the University of Kassel in 2007 and obtained his PhD degree in Economics in early 2012. During his studies he presented his research at several international conferences and conducted migration research at DEMAP. He has been working as a lecturer and researcher at the Department of Economics at Brawijaya University from 1997 to present from where he got leave over the time of his PhD studies in Germany.*

ISBN 978-3-86219-314-1