# Chukyo University Institute of Economics

# Discussion Paper Series

September 2009

No. 0903


# Changes in Informal Employment with Economic Development: Evidence from Asian Countries


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## Abstract:

Informal employment is important both in terms of the number of jobs available in an economy and contribution to GDP. This paper examines the transformation of informal employment itself, not only its volume like previous research. The data were originally provided by members of the Asian Productivity Organization. The findings are: (1) informal employment is significantly correlated with industrialization rather than economic growth; (2) more people have changed from being self-employed to employed in informal sector, as found in previous studies in the formal sector; (3) income dualism exists in informal employment, as assumed by previous studies, and the dualism is found in the early stages of economic development, with some informal employees earning as much as formal employees.



JEL code: E26 (Informal Economy); J21 (Labor Force and Employment, Size, and Structure), J24 (Occupational Choice: Labor Productivity), J31 (Wage Differentials), J28 (Labor Force Composition)



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## 1. Introduction

The discussion on informal employment is very important because it accounts for a large proportion of GDP and a great number of jobs in developing countries. A large number of studies have analyzed informal employment. Recent research has analyzed not only the volume but also the characteristics of informal employment.

Some papers argue that there is dualism in informal employment: an upper tier with good income into which employees enter of their own volition, and a lower tier with low income and jobs that people take up out of economic necessity. This dualism has been verified through analyses of specific countries, for example, Brazil and the Philippines (Henley, Arabsheibani and Carneiro, 2007; Bekkers and Stoffers, 1995).

The ratio of the voluntary high-income tier and involuntary low-income tier can change with economic development. Whether people work by themselves informally or work at formal enterprises might also vary according to the economic level of the country. Using data from Asian countries, this paper verifies the changes that occur in informal employment according to economic development. This research is part of an Asian Productivity Organization project: Research on Productivity Improvement in the Informal Sector[1].

Informal employment was highlighted by the Kenya Report in 1972[2]. In the early period, it was thought that only low-wage workers engaged in informal employment, which involved jobs that lay out outside the formal sector. In the 1980s, the ILO and other experts met and discussed informal employment—a consensus at this meeting resulted in the ILO-PREALC approach. At this meeting, they agreed that only low-skilled or low-educated people of a specific gender and age were involved in informal employment. They said that the surplus labor supply caused by industrialization or migration to urban areas from rural areas caused informal employment. They also stated that informal employment did not have unique characteristics. There were two categories of informal employment: jobs taken as a means of subsidence and jobs taken during a recession or crisis of structural reform.

In the 1990s, the image of the informal sector became positive; it came to be viewed as a sector that created jobs. The competition between economic activities carried out by

those in formal and informal sectors became a problem. On one hand, those in informal employment were at a disadvantage because they could not use public infrastructure, obtain aid, or participate in job training. On the other hand, the informal sector took advantage of their ability to avoid taxes and evade minimum wage laws to minimize costs. Additionally, in the 1990s, expanding globalization led the government to support large companies. However small and medium-sized enterprises did not receive such national support, and therefore, firms in informal sectors were generally regarded as unfavorable competitors. In addition, calculations of GDP had never taken into account the economic activities of informal employees; however, at the Fifteenth International Conference of Labour Statisticians, it was decided that such activities should be included.

In the 2000s, renewed emphasis was placed on formalization versus the focus on the economic potential of the informal sector in the 1990s (Platteau and Gaspart 2003, Platteau 2004). Some people think that formalization plays a role in reducing poverty (de Soto, 1989, 2003; Nugent and Swaminathan, 2006).

Research on informal employment in recent years has progressed to an analysis of its effects and characteristics. The purpose of this paper is to analyze the dynamics of informal employment in the context of economic development. If the status of informal employment changes with economic level, the necessary policy will be different. Further, if the conditions for expansion in informal employment are clear, it will help determine the likely prospects for informal employment, that is,- whether it will expand or diminish.

The structure of this paper is as follows: the second section presents previous analyses of informal employment and explains the topics of this paper. It also explains the category standard, namely, the "informal matrix,"—which presents how the previous studies attempted to capture informal employment. Informal employment is regarded as not having unique characteristics. The category standard is important because this paper focuses on the "transformation" of informal employment with economic development. The third section presents the verification method and the data that are used in this paper. The fourth section presents the results and discusses their implications. Finally, the fifth section concludes the paper

## 2. The issues

This paper analyzes the transformation of informal employment with economic development. To date, many researchers have discussed whether informal employment expands or diminishes with economic development. However, previous researchers could not arrive at a clear answer. An OECD report[3] based on previous research points out the negative relation between the volume of informal employment and economic development at a national level but the nuanced relation between them at the regional level. This OECD report says that economic growth is not necessary for reducing informal employment but that it is required for poverty reduction. This report can be construed as follows. Nowadays, because informal employment is linked with global supply chains, economic growth does not necessarily bring about a reduction in informal employment. Indeed, the earnings of informal employees increase with economic growth. Therefore, economic growth is necessary for reducing poverty but not for reducing the size of the informal sector.

In the first place, informal employment is taken up by rural migrants who move to urban areas because of economic industrialization and cannot find a job. From this, a positive relationship between the volume of informal employment and the index of industrialization might be inferred (i.e., industry value added output in the GDP) rather than the index of economic development (i.e., GNI per capita). Economic development resulting from industrialization increases informal employment but it does not expand when industrialization does not occur or without migration to urban areas. Then, if formalization progresses during economic development, informal employment decreases, but it does not decrease if formalization does not occur. That is to say, it is not sufficient to analyze the volume of informal employment according to economic development, as done previously in the research. It is also necessary to consider the source of economic development.

Moreover, attention should be paid to the measurement of informal employment, which has yet to be discussed—many researchers used data pertaining to the self-employed as a substitute for informal employment because it is difficult to obtain data through other measurements. In fact, the OECD report confirmed that

self-employment data is a suitable substitute for informal employment data, and therefore, decided to use the former in its analyses. However, Balassa (1964) (in Maloney's (2004) paper) and Pieper (2000) argued that the number of self-employed decreases with industrialization. Because self-employment was substituted for informal employment corresponding decreases in informal employment were inevitable. Therefore, it is important to analyze which measurements of informal employment increase (or decrease) with economic development.

In this part, I will examine how informal employment has been captured because, as described above, it is a sensitive matter. The measurement of informal employment has changed drastically as follows. In the early years, it was captured by a residual method, that is, informal employment equals labor force minus formal employment and unemployment. In the Kenya Report, which introduced informal employment to the outside world, informal employment was measured as the number of people who were not recorded as being employed. The report presented seven criteria for an informal sector: 1) Ease of entry, 2) Reliance on indigenous resources, 3) Family ownership of enterprises, 4) Small scale of operation, 5) Labour-intensive and adapted technology, 6) Skilled acquired outside the formal school system, 7) Unregulated and competitive markets. After the report, direct measurement and observation of informal employment was emphasized. At the same time, common perceptions and international definitions were being discussed around the world. The ILO conference in 1993 was considered to have reached a consensus. In general, informal employment was categorized according to a matrix in Table 1, which was presented at the ILO conference in 2002. Two main types of informal employment were defined: workers whose activities are informal (mainly those who are self-employed, work alone, or work with a family member) and workers employed informally by formal enterprises.

Recently (as of 2009), the ILO recommended some questionnaires to be added to the Labor Force Survey conducted by each country; the questionnaires would establish the extent of informal employment and enable a direct comparison between data pertaining to different countries. However, these data are not yet available. Therefore, this paper uses existing data. Further, it is advantageous to cover entire nations when estimating the extent of informal employment using the labor matrix in SNA (System of

National Accounts). The OECD report argues that employment in the informal sector can be estimated but those who work informally in the formal sector cannot be estimated because these data have only been captured in recent years and, since that is not enough, they substitute data for the self-employed for those in informal employment.

By analyzing which measurements show an increase (or decrease) in employment in correspondence with economic development, I can consider the transformation in working styles. In addition, I must consider changes in not only the working style of those involved in informal employment but also their living style (e.g., occupation/income).

Maloney (2004) and the OECD report argue that dualism exists within informal employment: an upper tier who voluntarily joined the ranks of the informally employed and have a high income, and a lower tier who become informally employed involuntarily and who have a low income. Case studies like Tannen's (1991) of Brazil and Koo and Smith (1983) of the Philippines in 1968 support the fact that dualism exists in informal employment.

Maloney (1999) says that the upper tier in this dual structure mainly represents the self-employed. Arias and Khamis (2008) argue that there is no distinction between the incomes of employees in the formal sector and that of the self-employed in the informal sector but that the wages of employees in the informal sector are lower than the wages of those in the formal sector. They also state that some workers move from the formal sector to being self-employed in the informal sector to seek a wage premium.

Pagés and Stampini (2007) find employees in the informal sector have greater mobility than the self-employed; that is, informal employees have a greater chance of moving to the formal sector than do the self-employed. Lehmann and Pignatti (2008) in OECD report argue that some workers voluntarily move from the formal sector to the informal sector in search of a premium income but that the voluntary segment itself is small compared with the overall informal sector.

In the literature, the transformation of informal employment indicated in Figure 1[4] is predicted. In the early years, people moved from rural to urban areas and some of them worked in informal employment involuntarily. They are self-employed rather than

employed. In this case, the income distributions of informal and formal employment are different: this phenomenon is suggested in the lower part of Figure 1. When the economy develops, some of the self-employed in informal employment hire workers and some make as much money as formal employee; the income distributions in Figure 1 changes to the one on the right-hand side from the one on the left-hand side. The income distributions of formal and informal employment overlap considerably. Then, some employees in the formal sector move to the informal sector voluntarily because it is possible to earn good income even in the informal sector.

As well as the (pure) income premium, Maloney (2004) points to the social security system as a cause of the voluntary movement by workers to the informal sector. Workers who do not feel that social security has merit appear to choose to work in the informal sector voluntarily. Therefore, informal employment reduces if the opportunities for employees in formal enterprises increase as part of the process of economic growth and urbanization, but informal employment increases if some people do not believe in the social security system or tax regime, which leads them to enter the informal sector voluntarily. (In this case, the social security system covers only formal employment by tacit agreement[5].)

In general, the public social security system is not well established in developing countries; moreover, it is established in stages as economic development advances. When economic growth occurs, informal employment reduces with the establishment of a social security system if people believe that the system has merit but it expands if the people do not believe in the system.

The following question arises: informal employment increases with urbanization in the first period of economic growth, but do the next generations who are born in urban areas also work as informal employeesment? The movement of one individual between formal and informal employment was verified in many specific regional research projects. If movement in an individual's lifetime exists, then movement across generations is predicted. I will verify this argument in this paper. The next section explains the method of analysis.

## 3. The method of analysis

First of all, this paper analyses whether informal employment increases with industrialization. Lewis(1954) once said that high agricultural productivity causes laborers to supply unlimitedly from low-income rural areas to high-income urban areas. Subsequently, Harris and Todaro (1970) argued that such migration occurred even if laborers cannot find a job in urban areas since, at least, their expected wage is higher than in rural areas. In other words, some laborers who migrate from rural to urban areas cannot find a job and they survive on informal employment. Additionally, high wages in urban areas signifies industrialization. Also, the ensuing expansion of informal employment increases the demands for marginal industries (e.g., informal eateries) and enlarges informal employment.

Is it therefore true to say that economic growth that does not result from industrialization (or urbanization) does not increase informal employment? I analyze whether higher industrialization leads to higher informal employment. The rate of industry value added output in the GDP is used as an indicator of industrialization. Before this analysis, I also considered whether there was a correlation in our data set between economic growth using GNI per capita and informal employment using self-employed, as done in previous research.

Moreover, I examined whether the working styles of informal employment were changed by industrialization, although industrialization defines the working styles of formal employment from self-employed to employee. In other words, I considered whether social practices are transferred as follows: in the beginning, most people come to urban areas and work on a self-employed basis for survival, but after that, people are employed by informal or formal enterprises,—the scale of enterprises expand with industrialization, and these enterprises need more workers. Therefore I catch informal employment using not only the self-employed but also other indicators. I investigate how these indicators change with economic growth and suggest that the scale of enterprise expands with economic growth. This means that the number of persons who are hired by employers increases. Then, it can be confirmed whether the number of workers employed by the self-employed also increases. I can also review how different

the scale of informal employment is among each indicator by drafting Venn diagrams about countries with available data.

Second, according to previous research, most people join the informal sector involuntarily in the early stages and live in poverty, but, later, some people engage voluntarily in informal employment and become rich. Therefore, this paper compares the incomes and methods of those working within the same country and verifies whether a high-income tier and a low-income tier exist, as shown in previous analyses. Then, the paper analyzes whether this dualism also changes by comparing the wages of informal and formal workers, and the major occupations among APO member countries.

Third, I focus on the social security system because one of the causes of voluntary informal employment is a consideration of the social security system together with the tax system. As a first step, involuntary informal employment increases with industrialization or urbanization and then the numbers of people employed informally increases. If such people can switch to formal employment as part of the process of economic growth, informal employment decreases with economic growth. However, if people favor working in the informal sector to avoid tax or social security contributions—the social security system is established in conjunction with economic growth—the volume of informal employment does not decrease even with economic growth.

Before discussing the relationship between informal employment and the social security system, I should ask whether social security covers informal employment. One of the definitions of informal employment is exclusion from the social security system. Therefore, this paper examines whether the social security system covers the self-employed, unregistered employees, and so on, and how established the relevant social security system is.

Next, I analyze whether the satisfaction level with the social security system leads to a decrease in informal employment. When the social security system covers only formal employment, if workers think social security has merit, informal employment decreases but if workers have a contrasting view, some workers become informal employment voluntarily and informal employment expands. In practice, this paper compares the cost of social security to the GDP, the rate of coverage of informal employment and the

volume of informal employment. If the cost of social security is large and the coverage of the informal sector is low, the volume of informal employment is small because people might not become informal employment voluntarily. If people think the social security system has no merit, the size of informal employment does not remain small. However, the actual data of this paper does not discriminate between voluntary and involuntary informal employment. When the cost of social security is low, social security might not be well established and it is not possible to find the relationship between the social security system and informal employment.

Finally, although I consider changes of informal employment itself as set out above, I also analyze continuity of informal employment. In this paper, continuity has two meanings: (1) people cannot change their job, and (2) different generations of the same family work in the same job. I observed the working methods of people with parents working in informal employment. Also, I analyze the number of informal workers in each industry in both rural and urban areas during some periods.

Data is given from APO member countries participating in this APO project such as Bangladesh, Fiji, India, Korea, Malaysia, Mongolia, Nepal, Pakistan, the Philippines, Sri Lanka and Vietnam. The data source is mainly from the Labor Force Survey and coverage years are from 1990 to 2008. The Appendix shows which years are covered in each country.

## 4. The Result

### 4.1. Industrialization, informal employment and its transformation

Figure 2 suggests the relation between the volume of informal employment and GNI per capita. Here, we use self-employed data to catch informal employment[6]. The more GNI per capita there is, the less informal employment exists.

Then, Figure 3 suggests the relation between informal employment and the rate of industry value added output in the GDP rather than GNI per capita. Korea and Malaysia are remarkable. The relation between informal employment and economic

indicators become clear. Malaysia, which has a higher rate of industry value added output in the GDP than Korea, has less informal employment than Korea in Figure 3, although Malaysia has less informal employment than Korea in spite of less GNI per capita than Korea, as seen in Figure 2. GNI per capita in Korea increased during my research period even though the rate of industry value added output in the GDP did not change. During this period, the volume of the informal sector also did not change, as evidenced by the nearly vertical graph for Korea in Figure 2. In Figure 3, the data plots remain the same for both rate of industry and informal employment.

In contrast, in the case of Fiji, Pakistan and the Philippines, industrialization is positively correlated with informal employment in Figure 3. This phenomenon is not observed in Figure 2.

As noted above, in the cases of Malaysia and Korea and in the cases of Fiji, Pakistan and the Philippines, the relation between industrialization and informal employment seems to be in the shape of a dogleg. In other words, in the early phases of industrialization, informal employment expands, first in Fiji, then Pakistan and the Philippines/Sri Lanka, and then, as in the case where more industrial sectors develop, informal employment decreases in the order Korea and Malaysia. Additionally, Figures 2 and 3 show that in the case of Bangladesh, the data cover the period from 1984 to 2005 and informal employment decreases and then increases again.

Figure 2 and Figure 3 suggest that the informal sector has a close connection with industrialization, which, in most cases, is the source of economic growth rather than economic development itself. Although the previous papers verified that industrialization caused people to move from work as self-employed to work as employees, do those in informal employment also change their working method? In Figure 4, the longitudinal axis is the rate of industry value added output in the GDP and the horizontal axis is the percentage of informal employment over the labor force. Figure 4 shows the relationship between informal employment and industrialization and is based on various indicators of informal employment. ◆ plots informal employment indicated by the self-employed, × plots informal employment indicated by unregistered employees. The percentage of informal employment "indicated by self-employed" covers the numbers 3, 4, 5, 8 and 9 in the matrix of Table 1 shown

previously. The percentage of informal employment "indicated by unregistered employees" covers the numbers 1, 2, 6, 7 and 10 in that matrix.

In Vietnam and the Philippines, where the rate of industry value added output in the GDP is high, there are more unregistered employees than self-employed. In contrast, in Bangladesh and Sri Lanka, where the rate of industry value added output in the GDP is low, there are more self-employed than unregistered employees. This evidence shows that increases in the number of employees caused by industrialization occur in the case of informal employment as well as formal employment.

Figure 4 shows the transformation of working methods by economic growth even in the case of informal employment. At the same time, the observation is different from the measurement of informal employment. Therefore, Figure 5 is a Venn diagram of some countries using a variety of indicators. The Venn diagram suggests that increased industrialization brings more unregistered employees and less self-employed. Additionally, the domination of large size firms increases with industrialization.

Figure 6 shows the relation between the rate of industrial value added of GDP and informal employment using more indicators than Figure 4. It uses the following indicators: 1) self-employed (◆ blue), 2) unregistered and less than 10 employees plus unregistered and less than 10 self-employed workers (■ red) (using unskilled labor instead of unregistered in Korea and unregistered and less than 10 employees plus self-employed in Vietnam), 3) unregistered employees (△ orange), 4) unregistered (unregistered self-employed workers plus unregistered employees) (○ green) (using unregistered employees and the self-employed with under 20 workers in the Philippines by gender instead of all unregistered employees). The self-employed shows a decrease with industrialization whereas the number of unregistered employees increases. In particular, the number of unregistered employees increases significantly with industrialization when plotted by gender, although there is no clear trend when the genders are combined. Companies with less than 10 unregistered employees or companies with less than 10 employees run by unregistered self-employed people are narrow definitions of informal employment because they are both unregistered and they carry out small-scale economic activities. Even if the indicator is based on a narrow definition, the informal employment decreases by industrialization among both genders.

If I use the wide definition, under which informal employment is just unregistered employment (○ green), informal employment decreases to a greater degree than if I use only the self-employed as that definition. However, the decrease is not significant in the case of males.

Figure 7 shows the percentage of self-employed who hire workers (or who do not hire workers). According to the theory set out above, the self-employed begin to hire workers when industrialization advances and the economy in the urban area develops, so the number of self-employed who hire workers increases with industrialization.

When considering Figure 7, the self-employed who hire workers in the Philippines increase from 2003 to 2004 while the rate of industrialization of GDP does not change and it decreases from 2004 to 2007 while the rate of industrialization of GDP decreases. In the case of India, the number of self-employed people who hire workers increases during the industrialization advance from 1999 to 2004. In the case of Korea, although self-employed who hire workers increases during 2000–2002, when the rate of industrialization decreases, the number of self-employed who hire workers moves in the same direction as the rate of industrial value added of GDP from 2002 to 2007. The latter is the consistent with the theory.

### 4.2. Income of Informal Employment and Economic Growth

In the previous section, it was seen that earlier industrialization increases informal employment and then decreases it in the next stage of growth. The status of those engaged in informal employment also changes from self-employed to employee. Previous research argues that some people enter informal employment voluntarily and others involuntarily—the latter being those living in poverty. Such works considered Figure 1 and verified the proposition in the real world. In this section, I offer a profound analysis of the economic level at which the dualism is observed or whether that dualism changes with international comparison, as in the lower part of Figure 1.

Figure 8 is a comparison of the wages between informal employment and formal employment. For Bangladesh, the comparison year is 2007 and the wages of both formal

and informal employees are compared by industrial sector. The wage from formal employment is a monthly income and the wage for informal employment is twenty five times the daily wages. For Nepal, the year is 2007 and the data for informal and formal employment are monthly income.

In Bangladesh, the wage for formal employment in the transport sector is higher than that of informal employment, but, in contrast, the wage for informal employment is higher in the hotel/restaurant and manufacturing sector. In other sectors, the wages of formal and informal employees are approximately the same level. In the case of Nepal, in every sector the wages for informal employment (substituted by self-employment data) are lower than the wages for formal employment.

The lower part of the table is concerned with the economic level of Bangladesh and Nepal. Every indicator of economic level shows that Bangladesh was at a higher economic level than Nepal in 2007. From this evidence, informal employment in Bangladesh seems to not only be caused by poverty but also include voluntary entries where there is economic development. Informal employment is at a low-income level in Nepal where the economy is not yet well developed. It is also important to remember that, whilst the economic level of Bangladesh is higher than that of Nepal, it is not higher than other Asian countries. Further, the level of industrialization in Bangladesh is also at a low level (see Figures 2 and 3). In other words, workers in informal employment are already earning as much as those in formal employment at the relatively early stages of economic development.[7]

Additionally, the wage difference between those in formal and informal employment is the most important. I propose Figure 9 for reference. These are the wages of formal and informal employment (registered or unregistered), of those working in firms with under 10 or more than 10 employees, urban or rural in Sri Lanka in 2007. Figure 9 shows the difference between registered or unregistered is the greatest. Then Figure 9 also describes the time series wage of registered/unregistered by industry sector. It suggests that the wage of unregistered workers is higher than that of registered in the previous year in agriculture. The differences between them diminish in wholesale and personal service.

Moreover, I compare the number of persons by industry on an international basis

because the wage is closely linked with what the job involves. As Figure 10 shows, the number of people involved in informal employment in trade/wholesale is important regardless of the economic level. The less informal employment there is, equivalent to more industrialization, the greater the number of those involved in transport.

### 4.3. Social Security and Informal Employment

The previous section indicated that countries in which those in informal employment earn as much as those in formal employment exists early in the country's economic development by comparing Bangladesh and Nepal. Those in well-paid informal employment normally enter the informal sector voluntarily. Maloney (2004) says one cause of voluntary entry is the social security system.

Then, in Table 2, I summarize the outline of each country's social security system, the amount of social security costs against GDP and the percentage of coverage for unemployment for informal employment. Table 2 shows that in some countries, even informal employees receive unemployment benefits. At the very low level, countries with the highest costs in their social security systems have a smaller informal sector. After over some high social security level, once the rate of informal employment increases, countries with the highest costs in their social security systems once again have a smaller informal sector. In Bangladesh, there is less merit in working in formal employment to benefit from the social security system because about 30% of informal workers are coved by this system. In addition, the social security system is not well established yet. Bangladeshi informal employment increased—see Table 2.

The OECD's report says the fee of unemployment insurance affects the rate of self-employed positively using OLS and negatively using the fixed effect model. Kazekami (2007) argues that the cost of the social security system affects the number of employees positively using OLS and negatively but it is insignificant according to the fixed effect model. Limiting unemployment insurance, as done in the OECD report, affects the rate of employee positively, but it is insignificant according to the OLS model, and affects it negatively but is insignificant according to the fixed effect model. Table 4

is the result of the estimation in Kazekami (2007)[8]. That the social security system may or may not encourage formalization, which means that the social security system affects the self-employed negatively—or employees positively—depending on the evaluation of the system. The unsettled and insignificant coefficient in Kazekami (2007) might be reflected by this effect.

### 4.4. Continuity and Informal Employment

Does the transformation described above continue throughout one person's life and into the next generation? The source of informalization is based on the migration from rural to urban areas. I wondered whether the practice of working in informal employment passed down from the first generation of migrants to the next generation. Once a person begins working in informal employment, must the person remain an informal employment for the rest of his/her life or are people free to transfer between formal and informal jobs?

Table 5 shows the rate of people involved in informal employment whose parents works(ed) in informal employment in Vietnam. This figure suggests that more than 70% of the workers whose parents are (were) employed informally themselves worked formally. Note, however, that there is a caste system in Pakistan, Nepal, Sri Lanka and India. The caste system fixes the occupation but it is not so strict nowadays in some countries (NIKKEI newspaper on March 12th 2009). And concerning the change of one person's life, Maloney (1999) and Kazekami (2006) argue that people have a high fluidity between formal and informal employment.

Figure 11 shows the number of employee or self-employed by industry in Malaysia. The number of employees in manufacturing increased before decreasing a little recently. The number of self-employed in the wholesale and community sectors shows an increase. What is the reason for the increase in the self-employed (sometimes considered as informal employment) in these sectors?

To answer this question, I examine the pyramid, which is the number of workers by industry and age. If one person does not change his/her job, the form of the pyramid is

no different from the total industry pyramid. Also, if the next generation does not change jobs but follows their parents, the form of the pyramid changes less than the change in the total industry pyramid. (This means the form of each industry pyramid does not change more than the dynamic of its population). Unfortunately, the two reasons are not mutually exclusive,[9] Figure 12 shows the number of workers by age and region in manufacturing, wholesale and community; these industries were chosen because, according to figure 11, they underwent dramatic changes.

First, the total industry pyramid suggests that, apart from the 15-24 year old age range, the number of workers increases in the both urban and rural areas.[10] In the manufacturing pyramid, the number of workers in the 15-24 and 25-34 years age range have recently decreased in urban areas and the number of workers in the 25-34 and 35-44 years age range have decreased in rural areas. The latter shows a greater reduction than the figures for total industry. Therefore, there are workers who do not choose manufacturing but also migrate to urban areas from rural ones.

Second, the workers in wholesale increase for all age ranges in urban areas, but workers who are in the 35-44 years age range decrease in rural areas. This means some translate to the urban areas. Third, the number of workers in the community sector increases in both rural and urban areas.

## 5. Conclusion

Sections 3 to 4.4 can be summarized as follows. Industrialization correlates positively with informal employment in the early stages of economic development, and it correlates negatively with informal employment after then. The hot issue in previous studies is the expansion or reduction in informal employment, but this paper suggests that informal employment itself changes with economic development. The important point is not only the volume but also what the people are doing.

Regarding the transformation of working styles in informal employment, the main change has been that many self-employed people have become employees. In the previous research, it was predicted that the dualism of informal employment and the

number of workers in informal employment voluntarily increased with economic growth. In this paper, that prediction is verified by comparing actual wages of those in informal and formal employment. There are people in informal employment who earn as much as those in formal employment, even at the relatively early stages of economic development.

One of the reasons for working in informal employment voluntarily has been assumed to be the social security system or tax system. If people think the social security system is ineffective, the system becomes an incentive for the transfer to informal employment. Therefore, I examined the effect of the social security system on the volume of informal employment.

The coefficient was not clearly positive or negative and it was not significant. It can be considered that people respond differently to the social security system.

Also this paper examined whether informal employment continued across the generations. In the case of Vietnam, the generation following the first migrants from rural areas who became engaged in informal employment themselves worked in formal employment. I also considered this matter using Malaysia.

The purpose of this paper is not only the prediction of informal employment volume in the future but also the transformation of informal employment itself. It is clear that dualism in informal employment exists relatively early in economic development and the methods of working also changes. Informal employment does not have a fixed place in the cycle of economic change. Informal employment must be considered to place the national economy in the proper perspective—avoiding overestimates or underestimates—rather than as a mere matter related to the economic engine of growth.

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Notes:

[1] However, this paper does not represent APO's opinions.

[2] "Employment, incomes and equality: a strategy for increasing productive employment in Kenya" published by ILO in 1972 is commonly called the Kenya Report.

[3] "Is Informal Normal?" by OECD in March 2009. The same report is referred to later in the paper.

[4] The OECD Report uses job quality as the x-axis instead of income as in this paper.

[5] This depends on the definition of informal employment. In a few cases, the definition of informal employment involves the socially disadvantaged, and the criteria for determining this category of people is their eligibility in the social security system. Of course, when this definition of informal employment is used, it is possible that informal employment can be covered by the social security system.

[6] The data for Bangladesh in Figure 2 is unregistered employees or employers not self-employed like the others.

[7] It remains an issue that the income figures for informal employment in Bangladesh are twenty-five times the daily wage. Also, the measurement indicator between Bangladesh and Nepal is different. However, the wage data of Bangladesh are collected by occupations and certainly include informal employment (e.g. garbage collection).

[8] This estimation is controlled by explaining the following variables: GDP per capita, square of GDP per capita, rate of unemployment, volume of trade, political rights and civilian rights.

[9] Also, it must be noted that some people change age group in the following year but others remain in the same age group because the age range is 10 years.

[10] Although there are gaps in the data, the number of workers increases within the same data tiers.

**Table 1. ILO Informal Employment Matrix**

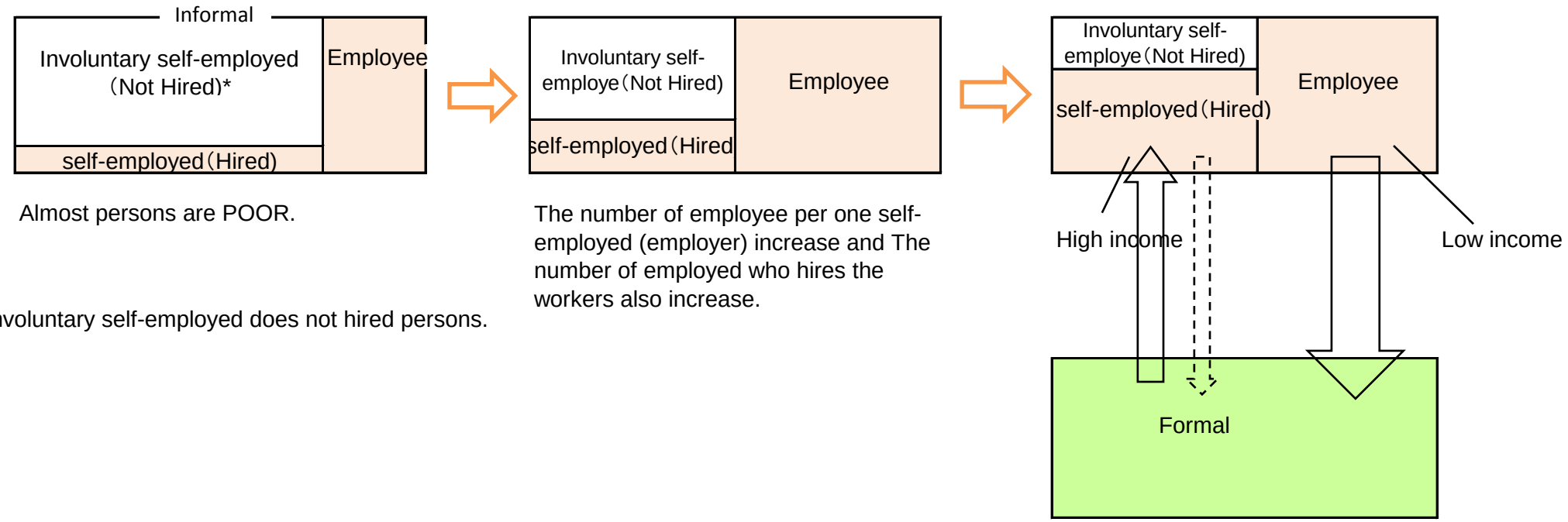
| Production units by type | Jobs by status in employment | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Own-account workers | | Employers | | Contributing family workers | Employees | | Members of producers' | |
| | informal | formal | informal | formal | informal | informal | formal | informal | fromal |
| Formal sector enterprises | | | | | 1 | 2 | | | |
| informal sector enterprises | 3 | | 4 | | 5 | 6 | 7 | 8 | |
| Households | 9 | | | | | 10 | | | |

Dark grey cells refer to jobs that, by definition, do not exist in the type of production unit in question. Light grey cells refer to formal jobs. Un-shaded cells represent the various types of informal jobs.

Source:ILO,"Decent Work and Informal Economy", 2002

Figure 1：Image, Changes in Informal Employment

When industrialization progress…

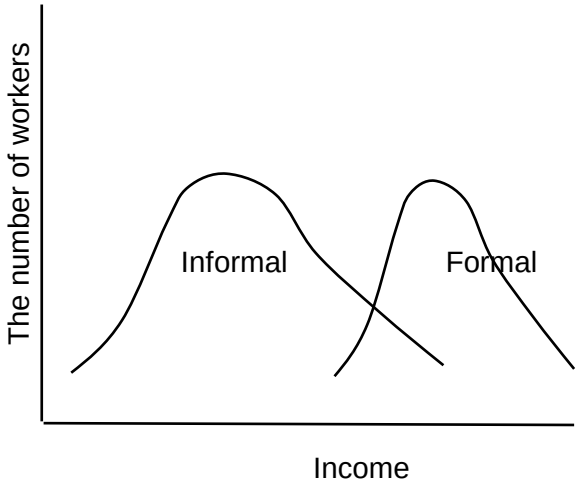



Almost persons are POOR.

The number of employee per one self-employed (employer) increase and The number of employed who hires the workers also increase.

*Involuntary self-employed does not hired persons.

Spread of arrow indicates the number of persons.



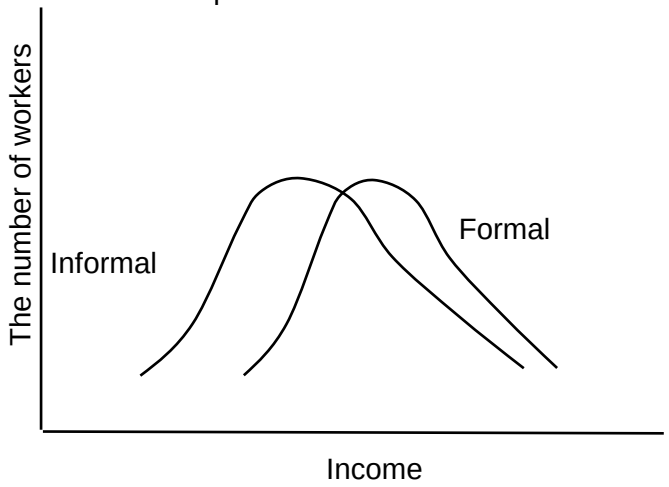
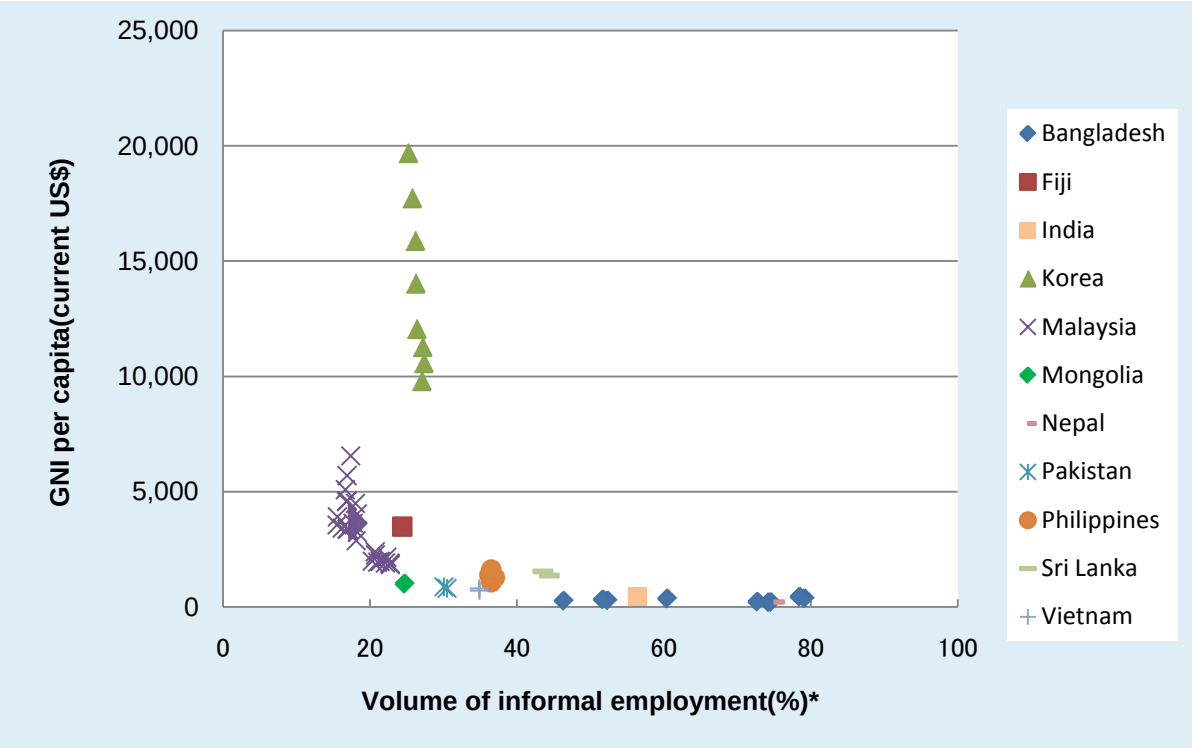
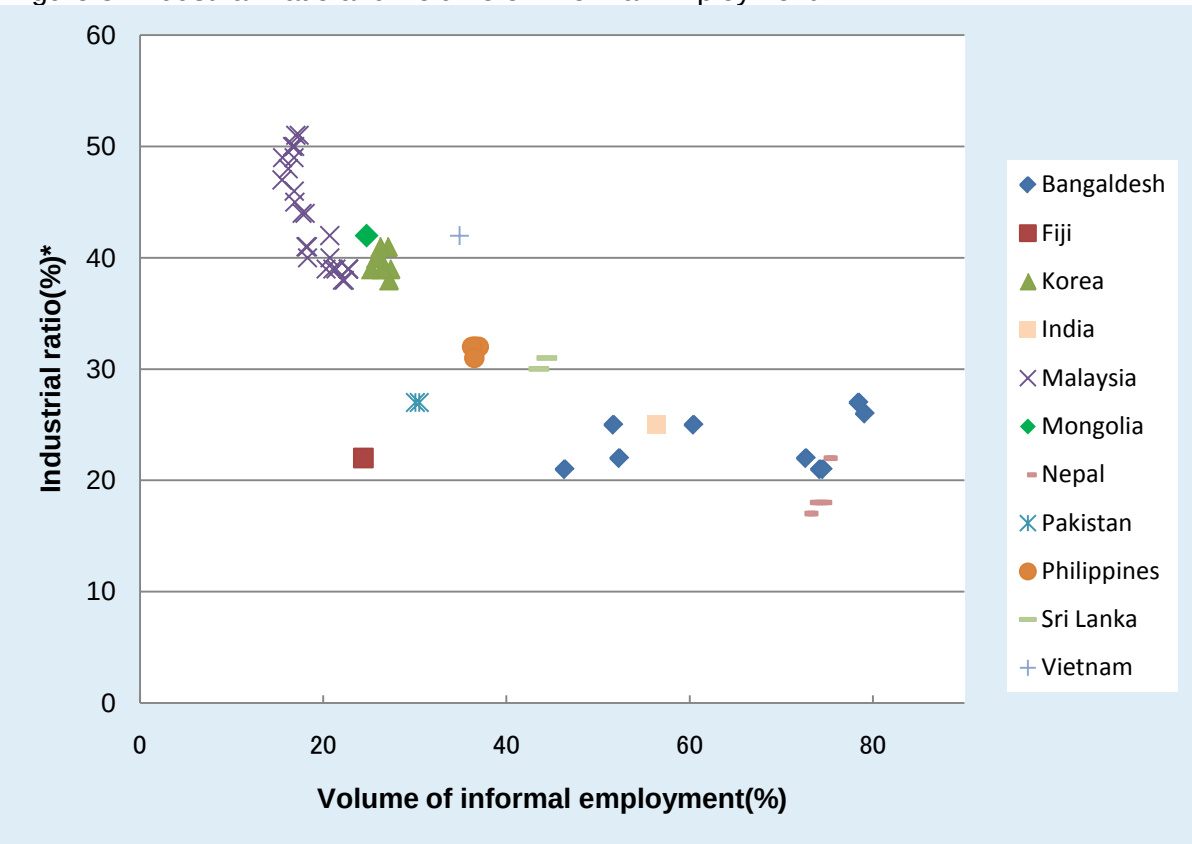



Figure 2 GNI per capita and Volume of Informal Employment



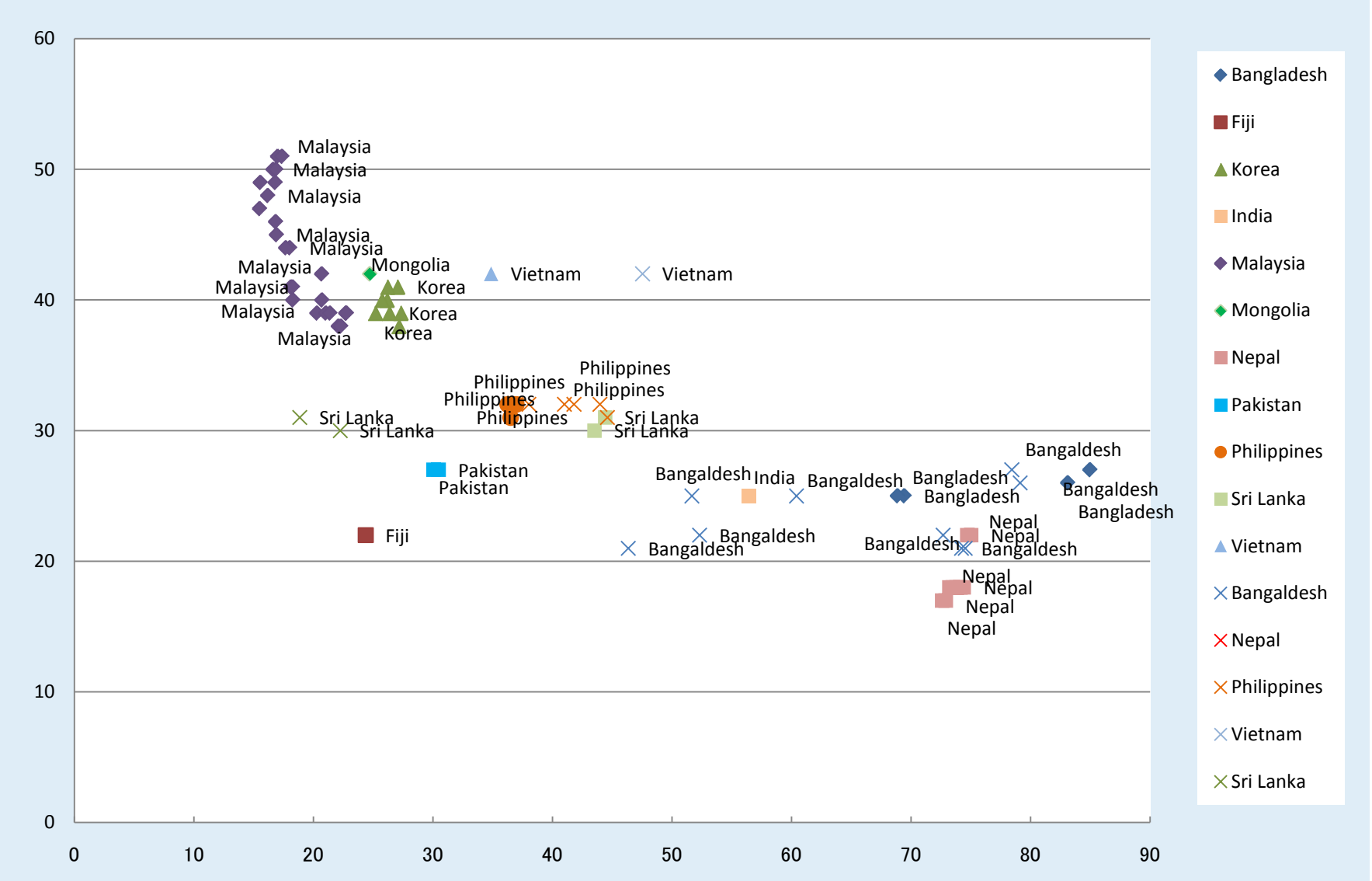

*Informal employment ration in Labor Force.
Source of GNI per capita is WDI(World Development Indicators) .

Figure 3 Industrial Ratio and Volume of Informal Employment




*rate of industry value added output in the GDP. Data source is WDI.

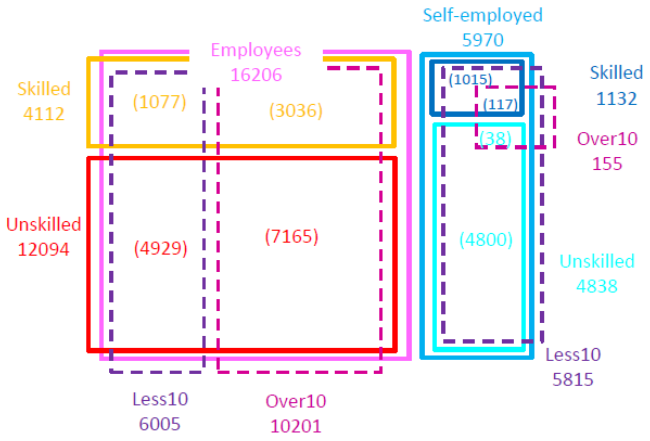
Figure 4 Industrial Ratio and Informal Employment by Various Indicators



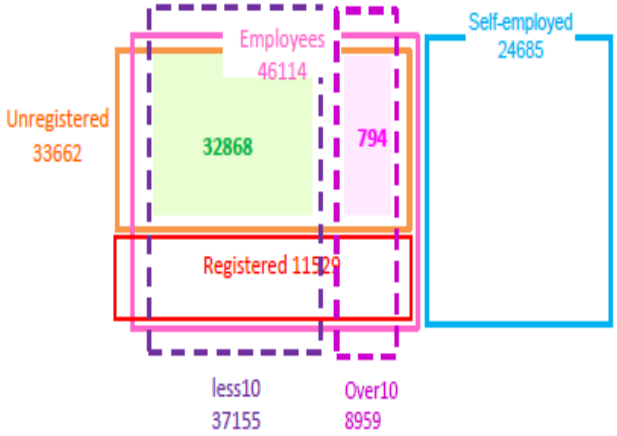

Note:Vertical axis is industrial ratio(%),horizontal axis is volume of informal employment(%).
◆ : measured by self-employment, ×:measured by unregistered of employee.

Figure 5：Venn diagram

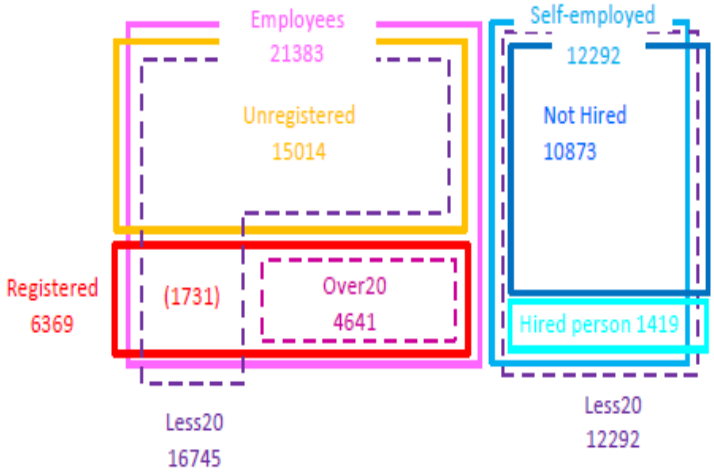
Korea2008



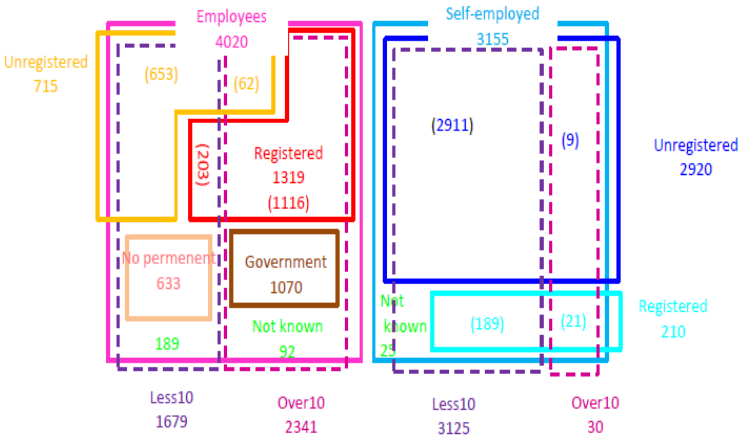

Vietnam2007



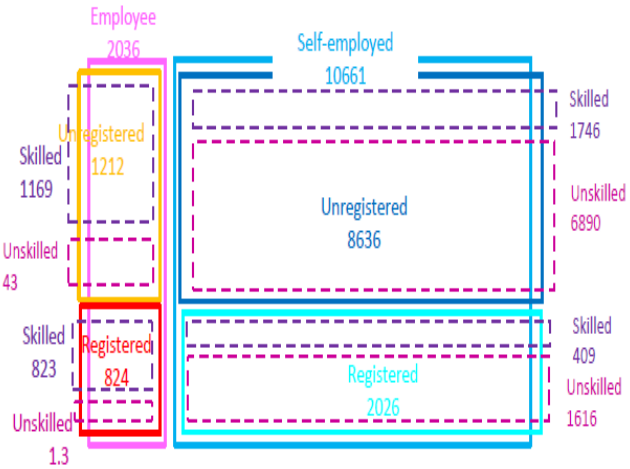

The Philippines2007




Sri Lanka2008



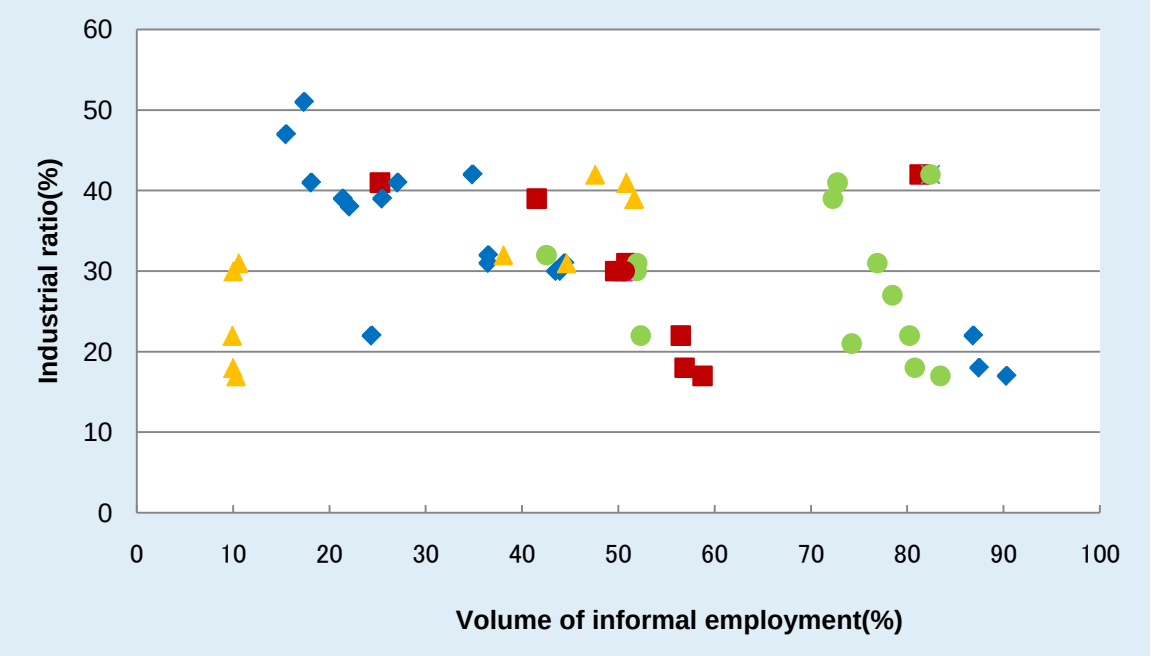

Nepal2008



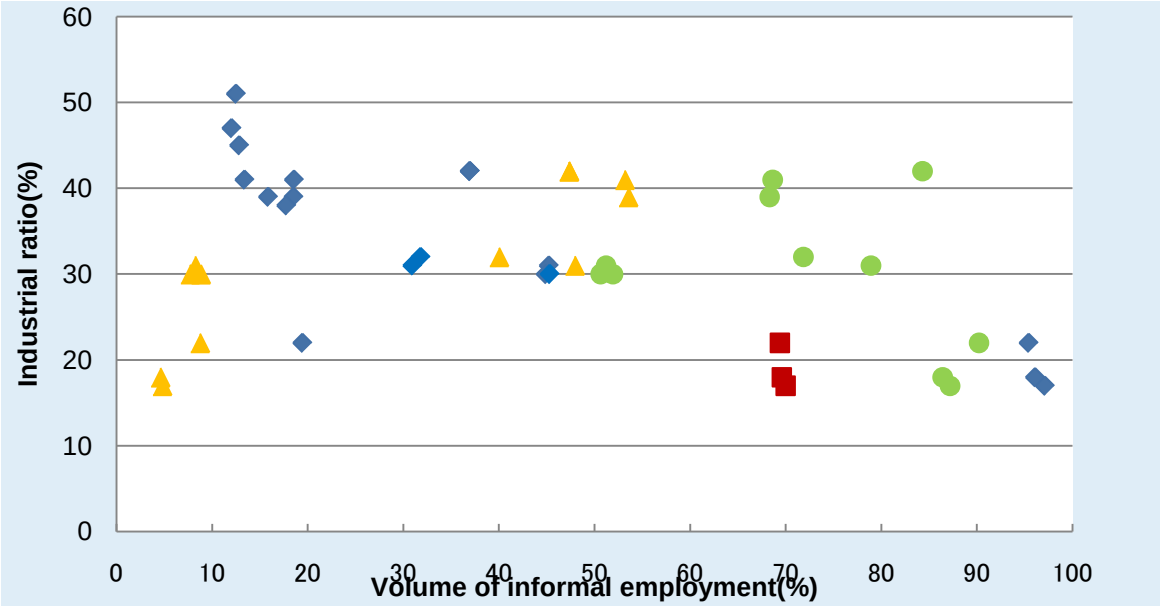

Unit :Thousands persons

Figure 6 Industrial Ratio and Informal Employment by Various Indicators and Gender

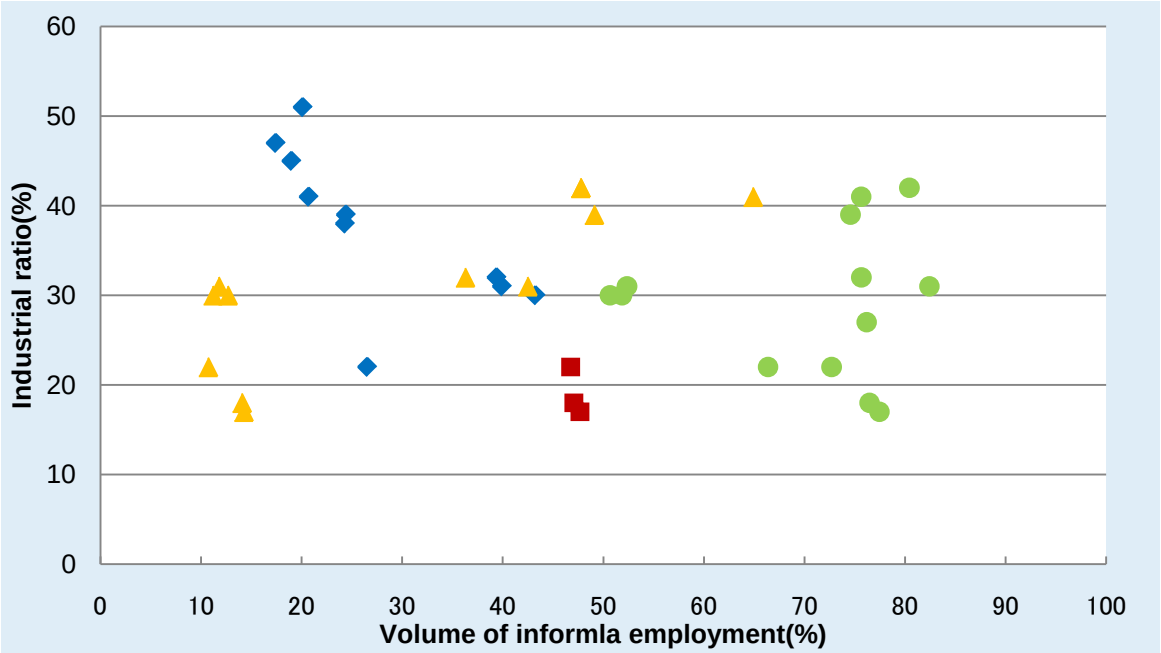
Male and Female




Female

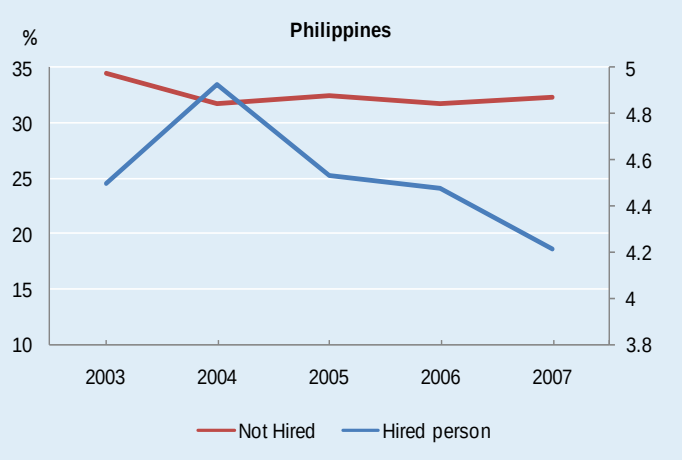


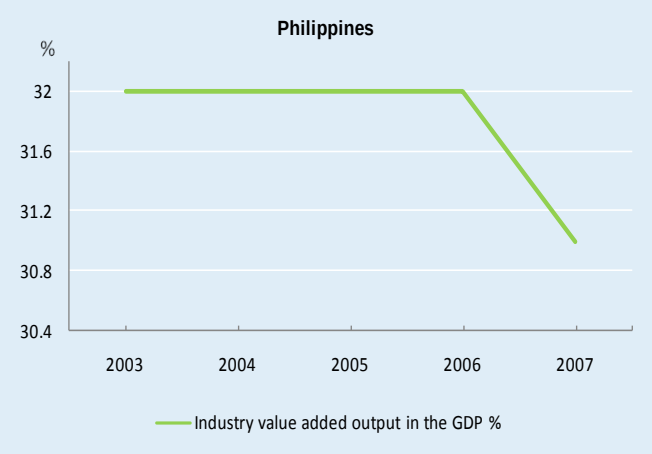

Male



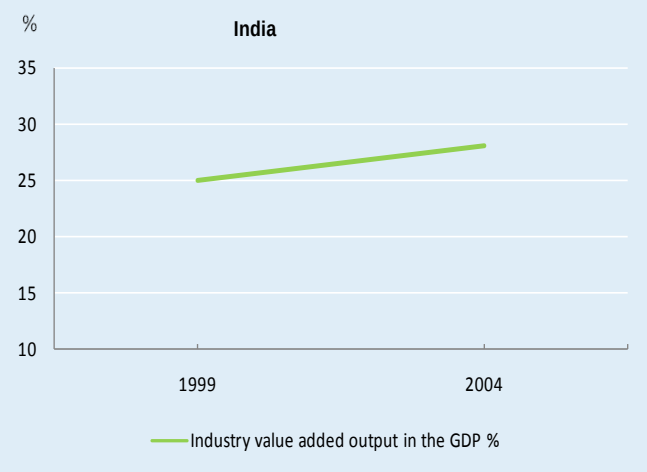

Note: ◆: measured by self-employment, ■ : measured by unregistered & less10 of employee plus unregistered & less10 of self-employed, ▲: measured by unregistered of employee, ●: measured by unregistered (unregistered of self-employed plus unregistered of employee).

Figure 7：Trends of Self-employed who Hires Workers

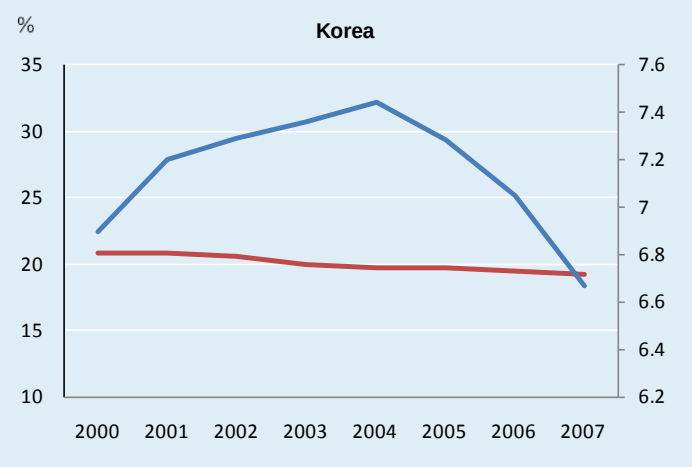



Note: Vertical axis is percentage of self-employed (left: self-employed who does NOT hire workers, right: self-employed who hires workers) in Labor

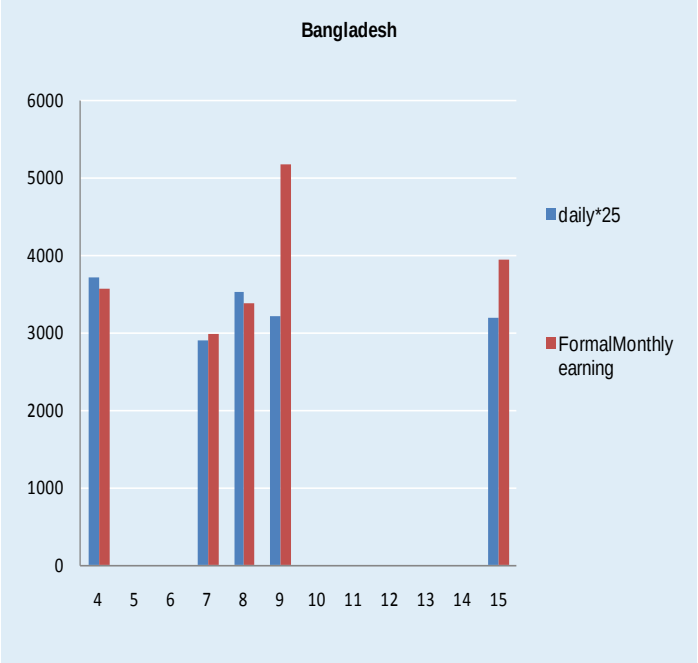

Note: Vertical axis is percentage of self-employed



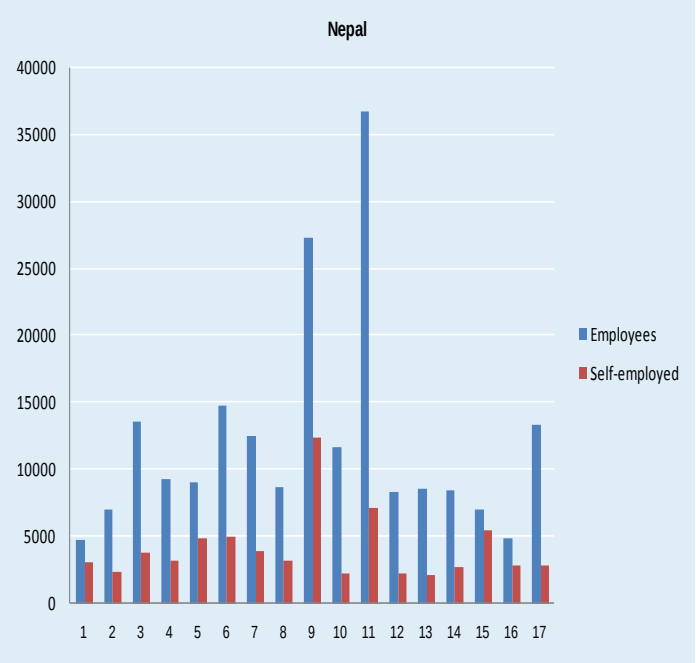


Note: Vertical axis is percentage of self-employed

Figure 8 Wage Comparisons between Formal and Informal




Vertical axis is Tk. (currency unit in Bangladesh) / month.

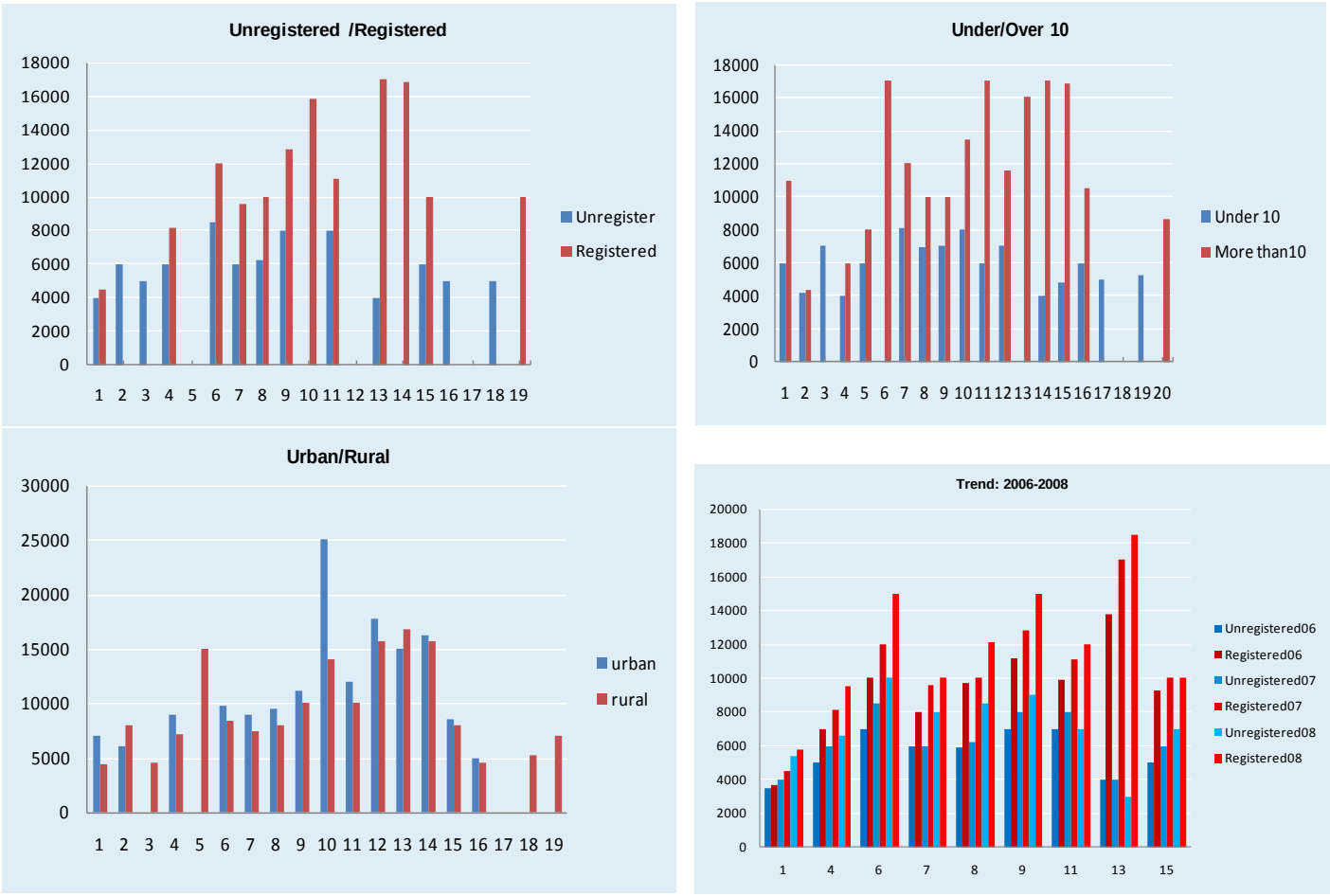



Vertical axis is Rupee (currency unit in Nepal) / month.

| Horizontal axis | |
|---|---|
| 1 | Agriculture, hunting and forestry |
| 2 | Fishing |
| 3 | Mining and quarrying |
| 4 | Manufacturing |
| 5 | Electricity, gas and water supply |
| 6 | Construction |
| 7 | Wholesale and retail trade; repair of motor v |
| 8 | Hotels and restaurants |
| 9 | Transport, storage and communications |
| 10 | Financial intermediation |
| 11 | Real estate, renting and business activities |
| 12 | Public administration and defence; compulsory |
| 13 | Education |
| 14 | Health and social work |
| 15 | Other community, social and personal service |
| 16 | Activities of private households as employers |
| 17 | Extraterritorial organizations and bodies |

| | Bangladesh | Nepal |
|---|---|---|
| year: | 2007 | 2007 |
| GDP (current US$) | 67694366720 | 10207169536 |
| GDP growth (annual %) | 7 | 3 |
| GNI per capita, Atlas method (current US$) | 470 | 340 |
| GNI per capita, PPP (current international $) | 1340 | 1040 |
| GNI, Atlas method (current US$) | 75047141376 | 9660348416 |
| GNI, PPP (current international $) | 212677439240 | 29224589673 |
| Industry, value added (% of GDP) | 28 | 17 |

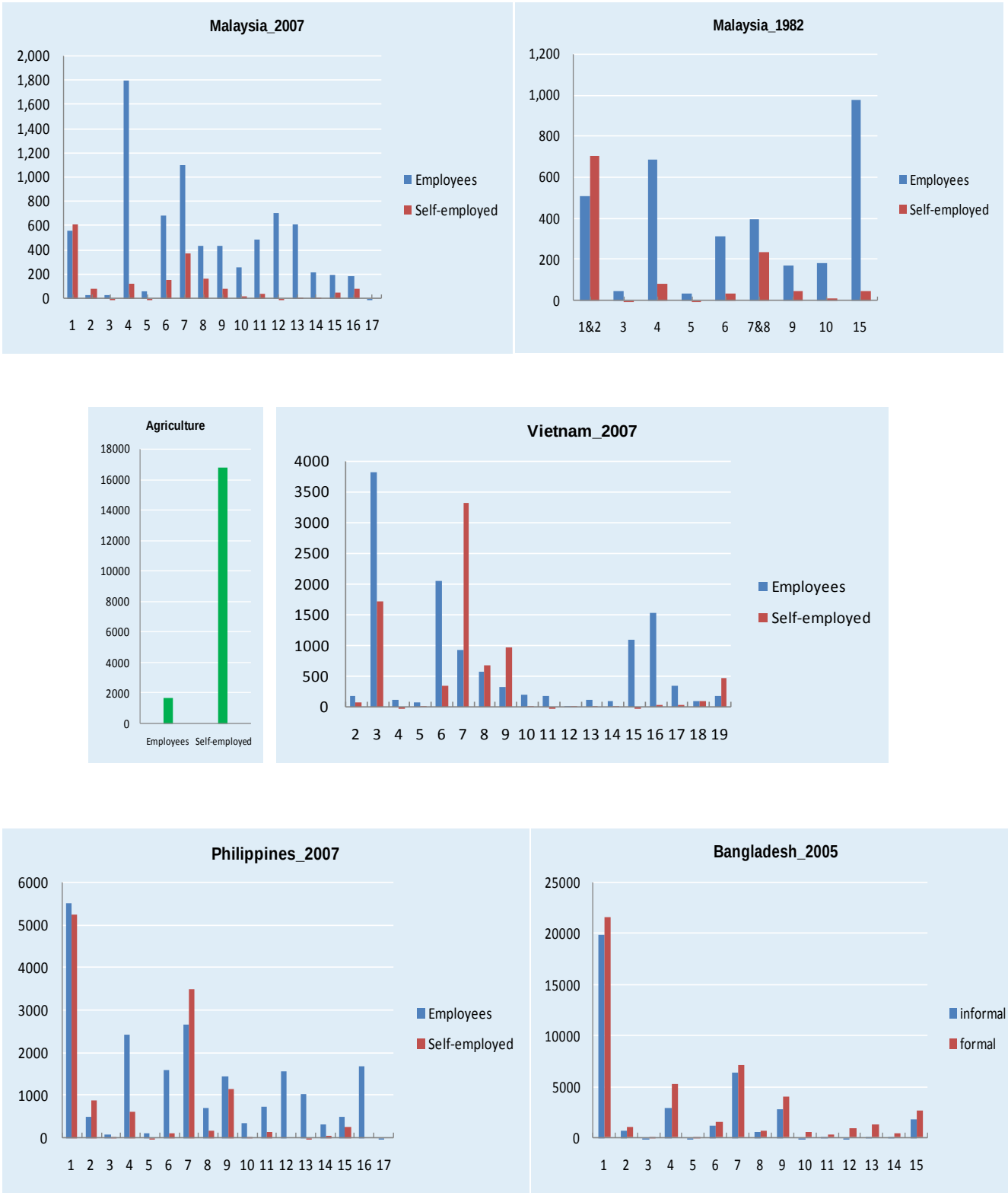
Figure 9 Wage Difference in Sri Lanka



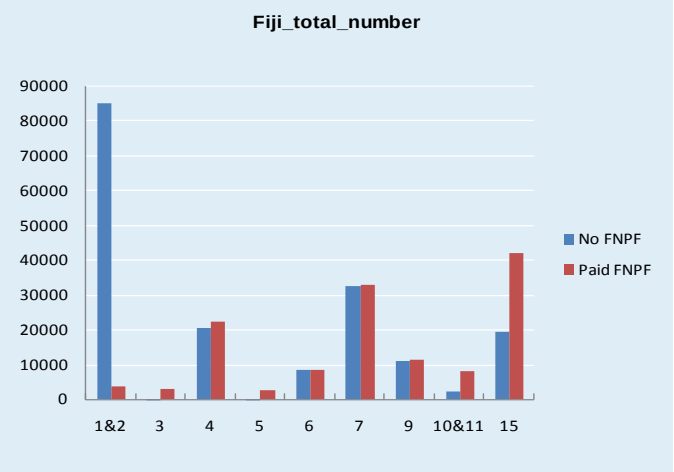

Note: Vertical axis is Rupee (currency unit in Sri Lanka) / month.

| Horizontal axis | |
|---|---|
| 1 | Agriculture, hunting and forestry |
| 2 | Fishing |
| 3 | Mining and quarrying |
| 4 | Manufacturing |
| 5 | Electricity, gas and water supply |
| 6 | Construction |
| 7 | Wholesale and retail trade; repair of motor v |
| 8 | Hotels and restaurants |
| 9 | Transport, storage and communications |
| 10 | Financial intermediation |
| 11 | Real estate, renting and business activities |
| 12 | Public administration and defence; compulsory |
| 13 | Education |
| 14 | Health and social work |
| 15 | Other community, social and personal service |
| 16 | Activities of private households as employers |
| 17 | Extraterritorial organizations and bodies |
| 18 | Miscellaneous labour work |
| 19 | Industries not adaquatly described |

Figure 10：The number of Informal and Formal Employment by Industry




Note: 12 “Public administration and defense; compulsory” includes public education and health and 13 “Education” and 14 “Health and social work” are private.




| Horizontal axis | |
|---|---|
| 1 | Agriculture, hunting and forestry |
| 2 | Fishing |
| 3 | Mining and quarrying |
| 4 | Manufacturing |
| 5 | Electricity, gas and water supply |
| 6 | Construction |
| 7 | Wholesale and retail trade; repair of motor v |
| 8 | Hotels and restaurants |
| 9 | Transport, storage and communications |
| 10 | Financial intermediation |
| 11 | Real estate, renting and business activities |
| 12 | Public administration and defence; compulsory |
| 13 | Education |
| 14 | Health and social work |
| 15 | Other community, social and personal service |
| 16 | Activities of private households as employers |
| 17 | Extraterritorial organizations and bodies |
| 18 | Miscellaneous labour work |
| 19 | Industries not adaquatly described |

| Horizontal axis for Vietnam | |
|---|---|
| 1 | Agriculture, forestry, fishing |
| 2 | Mining and quarrying |
| 3 | Manufacturing |
| 4 | Electricity, gas, steam, hot-water and air conditioning supply |
| 5 | Water supply; sewerage, waste management and remediation activities |
| 6 | Construction |
| 7 | Wholesale and retail trade; repair of motor vehicles and motorcycles |
| 8 | Transport, storage |
| 9 | Accommadation and food service activities |
| 10 | Information and communication |
| 11 | Financial and insurance services |
| 12 | Real estate activities |
| 13 | Professional, scientific and technical activities |
| 14 | Administrative and support service activities |
| 15 | Communist party, political and socio organisation's activities; public adminstration and defense; compulsory social security |
| 16 | Education and trainning |
| 17 | Human health and social work activities |
| 18 | Arts, entertainment and recreation |
| 19 | Other service activities |

Note: More industrialized countries are indicated in the higher part of Figure 10.

Table 2 Social Security and Informal Employment

| Country Name | Outline of Social Security System | Rate of Expenditure for Social Security in GDP | Coverage Ratio of Social Security for the Unemployed | % of Informal Employmen | Year |
|---|---|---|---|---|---|
| Bangladesh | See table 3 below | | 37.08% of those engaged in informal employment | 78.4% | 2005 |
| | | 0.0229% | | 52.3% | 1992 |
| Korea, Rep. | Social security for the unemployed does not cover those working in manual labor industries (farming, fishing, and forestry), companies with fewer than 5 employees, or construction companies with revenues under 20 million won. The self-employed do not receive unemployment benefits; however, there is a movement to legislate the unemployment social security system to provide them with such benefits. | 2.8521% | | 27.04% (2000) | 1996 |
| | | | 34.6% of those in Est. w/ less than 10 workers, 34.5% of those who do not have a written contract, 39.2% of those who are non-regular workers. | 25.2% | 2008 |
| Malaysia | Employment Act 1955, which provides lay-off benefits etc., provides for people earning wages not exceeding RM 1,500.00 per month or people working as manual laborers, domestic servants, etc. Social security protection (SOCSO) includes medical and cash benefits, provisions for artificial aids, etc. A worker employed under a contract of service or apprenticeship and earning a monthly wage of RM3,000 or below must compulsorily register and contribute to SOCSO. SOCSO does not cover domestic servants, self-employed workers, foreign workers, etc. | 0.1519% | | 18.3% | 1993 |
| Fiji | The Fiji National Provident Fund（FNPF）includes social security for the unemployed. | 3.523% | | | 1992 |
| | | | 44% (covered by FNPF) | 24.4% | 2005 |
| Vietnam | The social security scheme for the unemployed covers people working under contracts with no time limits or working between 12 months and 36 months for employers using more than 9 laborers. | | | 34.9% | 2007 |
| Pakistan | | 0.0860% | | 30.4% (2006) | 1996 |
| Sri Lanka | There are Employees Provident Fund and Employment Trust Fund. In practice, most employers with less than 5 employees in the organization do not contribute to the funds. Self-employed workers use the self-employed pension scheme. | 2.6228% | | | 1992 |
| | | | | 43.97% | 2008 |
| （Ref.）Japan | | 14.2850% | | | 1996 |

Note: Informal Employment is measured by the number of self-employed people.

Table 3 Social security for Informal Employment in Bangladesh

| Type of benefit | National | | | Urban | | | Rural | | |
|---|---|---|---|---|---|---|---|---|---|
| | Both | Male | Female | Both | Male | Female | Both | Male | Female |
| Total | 1143414 | 819751 | 323664 | 563208 | 396683 | 166525 | 580206 | 423067 | 157139 |
| Wages and Salary in leave due to | 423977 | 278153 | 145824 | 194312 | 127057 | 67255 | 229665 | 151095 | 78570 |
| Wages and Salary during yearly | 222256 | 172418 | 49839 | 130390 | 96266 | 34125 | 91866 | 76152 | 15714 |
| Social Security by the employer: | | | | | | | | | |
| a.Health/Treatment Allowance | 250080 | 156735 | 93345 | 111072 | 80583 | 30489 | 139008 | 76152 | 62856 |
| b.Benefit for accident at work | 84775 | 78558 | 6127 | 41259 | 35042 | 6217 | 43515 | 43515 | 0 |
| c.Old age | 49287 | 49287 | 0 | 16650 | 16650 | 0 | 32637 | 32637 | 0 |
| d.Others | 113040 | 84601 | 28439 | 69525 | 41085 | 28439 | 43515 | 43515 | 0 |

Source: Descent Work Indicator Pilot survey 2005, Bangladesh Bureau of Statistics

Table 4 Estimation of Social Security Cost and Informal Employment

explained variable＝Employment ratio, Kazekami(2007)

| explanatory variable | One Way Fixed Effect | OLS | Sample |
|---|---|---|---|
| The ratio of total social security cost in GDP | -0.068（Insignificant） | 0.945（1%） | Developing countries |
| The ratio of unemployment insurance cost in GDP | -0.329（Insignificant） | 0.976（Insignificant） | Developing + Developed countries |

explained variable＝Self-employed ratio, OECD report

| explanatory variable | One way Fixed Effect | OLS | Sample |
|---|---|---|---|
| job Security Costs | -8.43(1%) | 1.37（5%） | OECD + LAC |
| job Security Costs | -8.34(1%) | 1.09(10%) | LAC |

LAC=Latina American and Caribbean countries

Table 5 Continuity and Informal Employment in Vietnam

| Items | Ratio of heads of IHB expecting their children to continue their work in IS | |
|---|---|---|
| | Ha Noi | Ho Chi Minh |
| 1. Industry, construction | 33.5 | 23.5 |
| 2. Trade | 18.1 | 14.6 |
| 3. Services | 15 | 16.4 |
| Total | 19.5 | 17.4 |

Figure 11：The Number of Employment by Industry: Trends in Malaysian

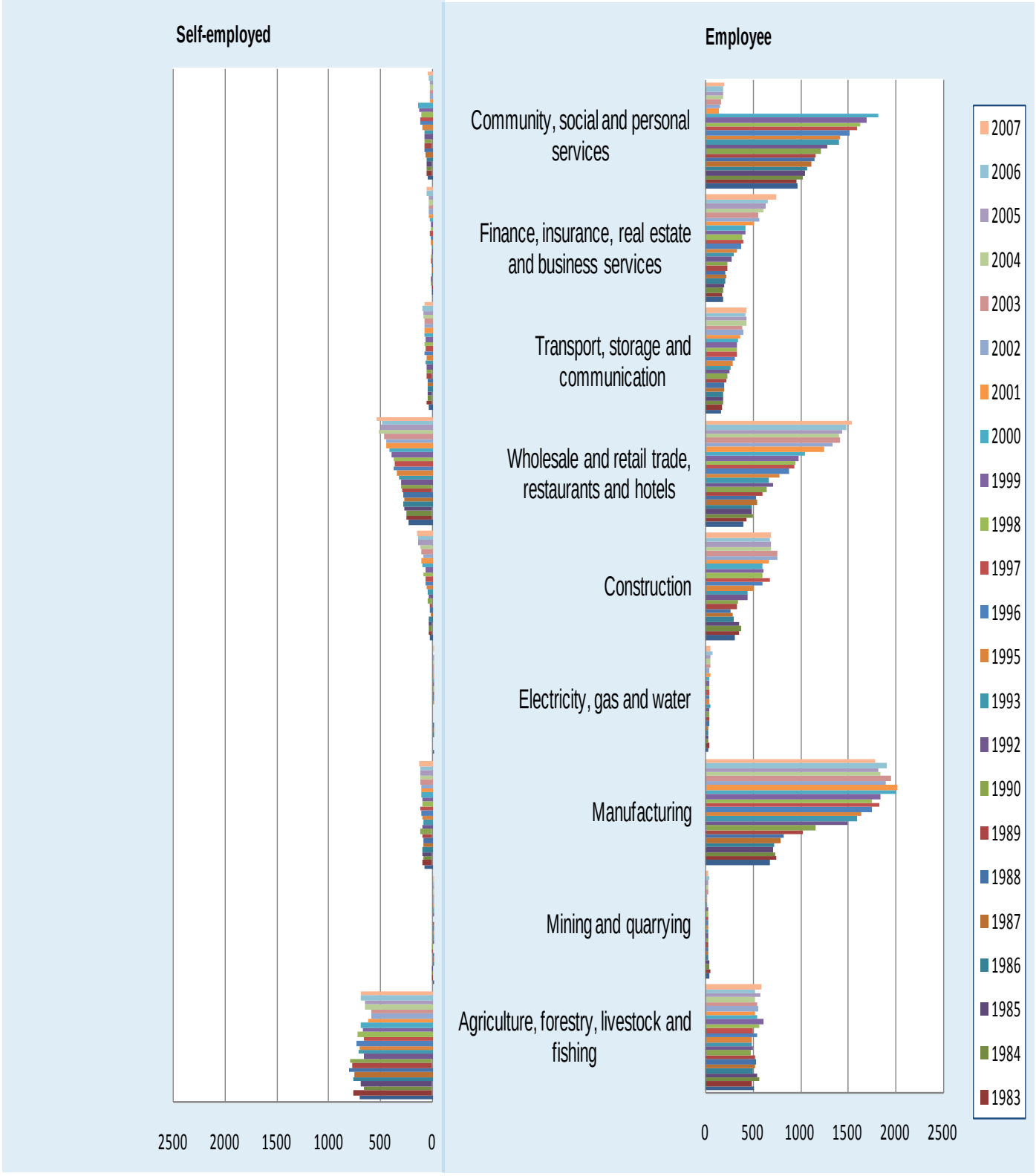
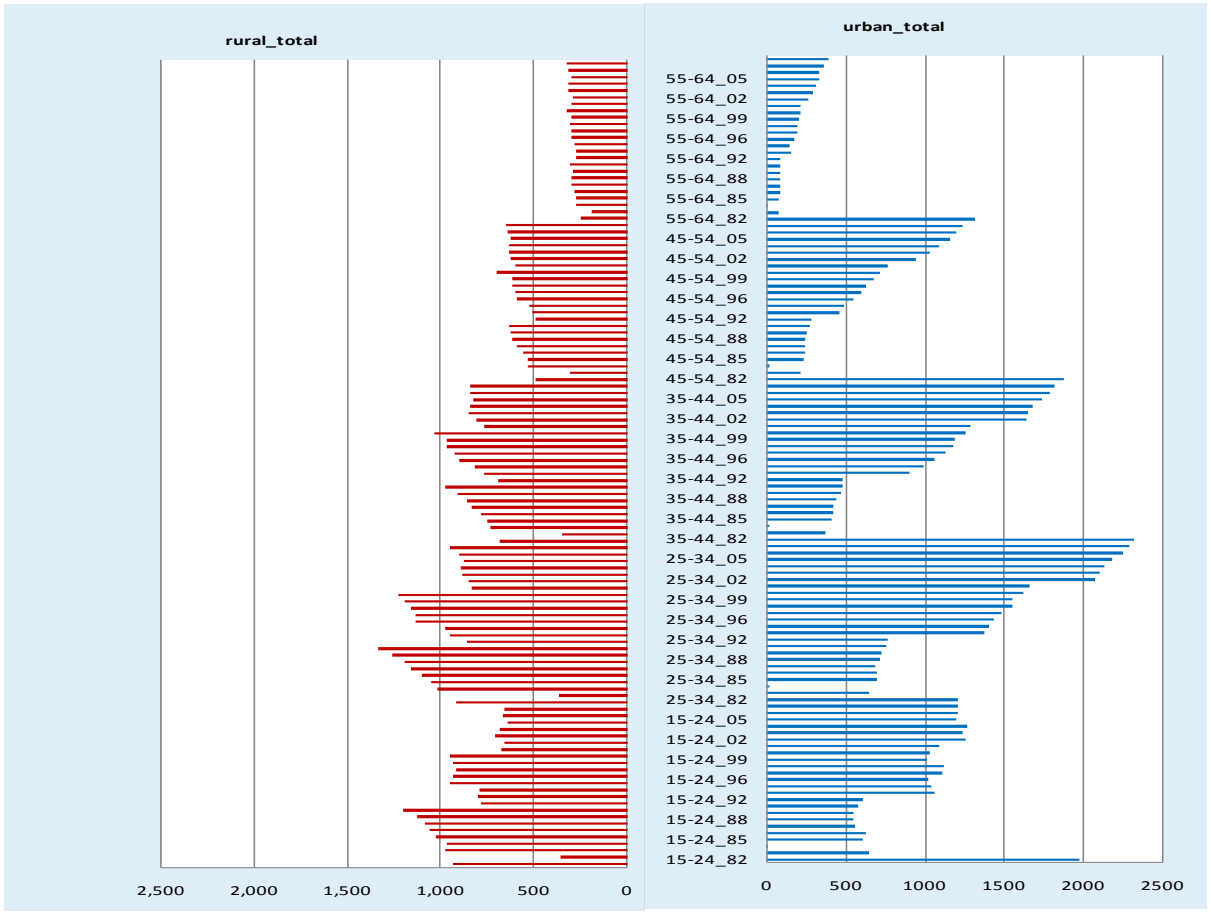
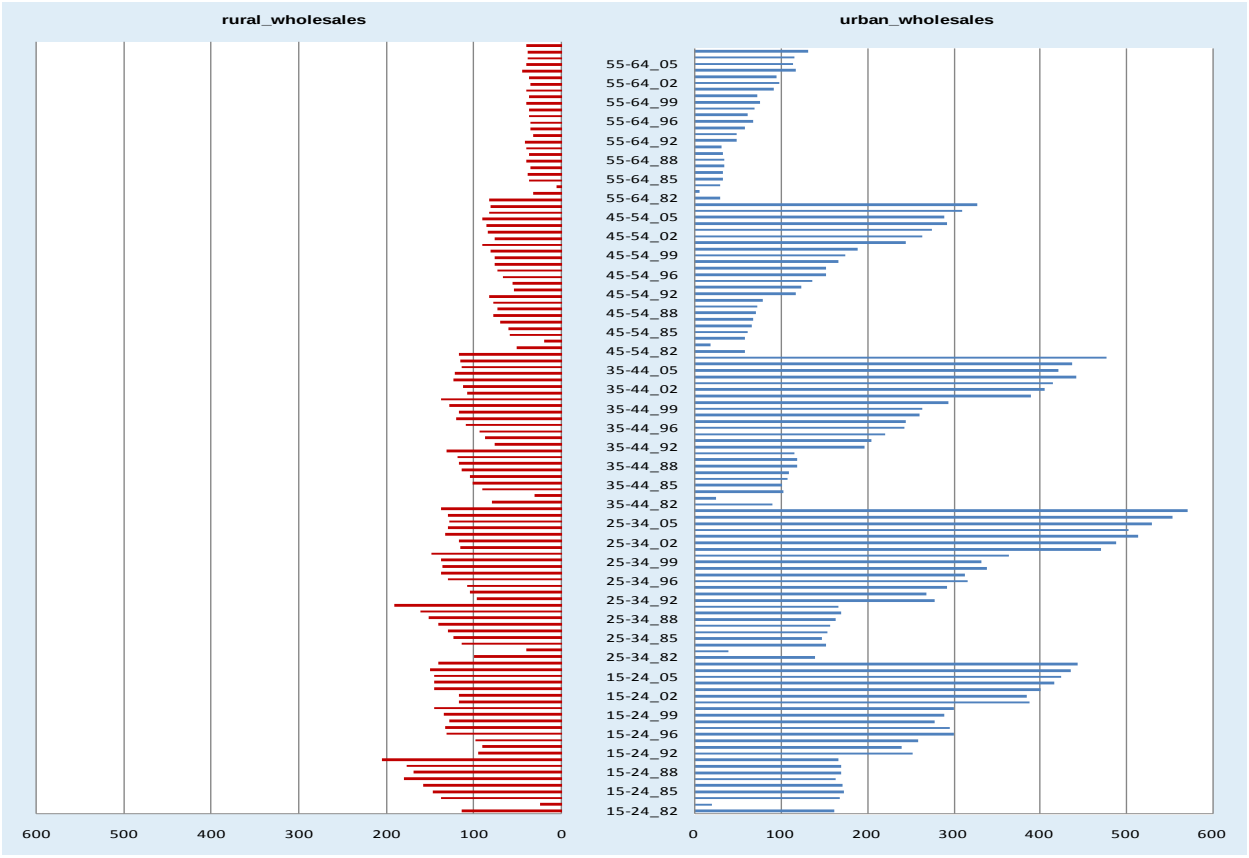


Figure 12：The Number of Employment by Age: Some Industries

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55-64_88
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55-64_82
45-54_05
45-54_02
45-54_99
45-54_96
45-54_92
45-54_88
45-54_85
45-54_82
35-44_05
35-44_02
35-44_99
35-44_96
35-44_92
35-44_88
35-44_85
35-44_82
25-34_05
25-34_02
25-34_99
25-34_96
25-34_92
25-34_88
25-34_85
25-34_82
15-24_05
15-24_02
15-24_99
15-24_96
15-24_92
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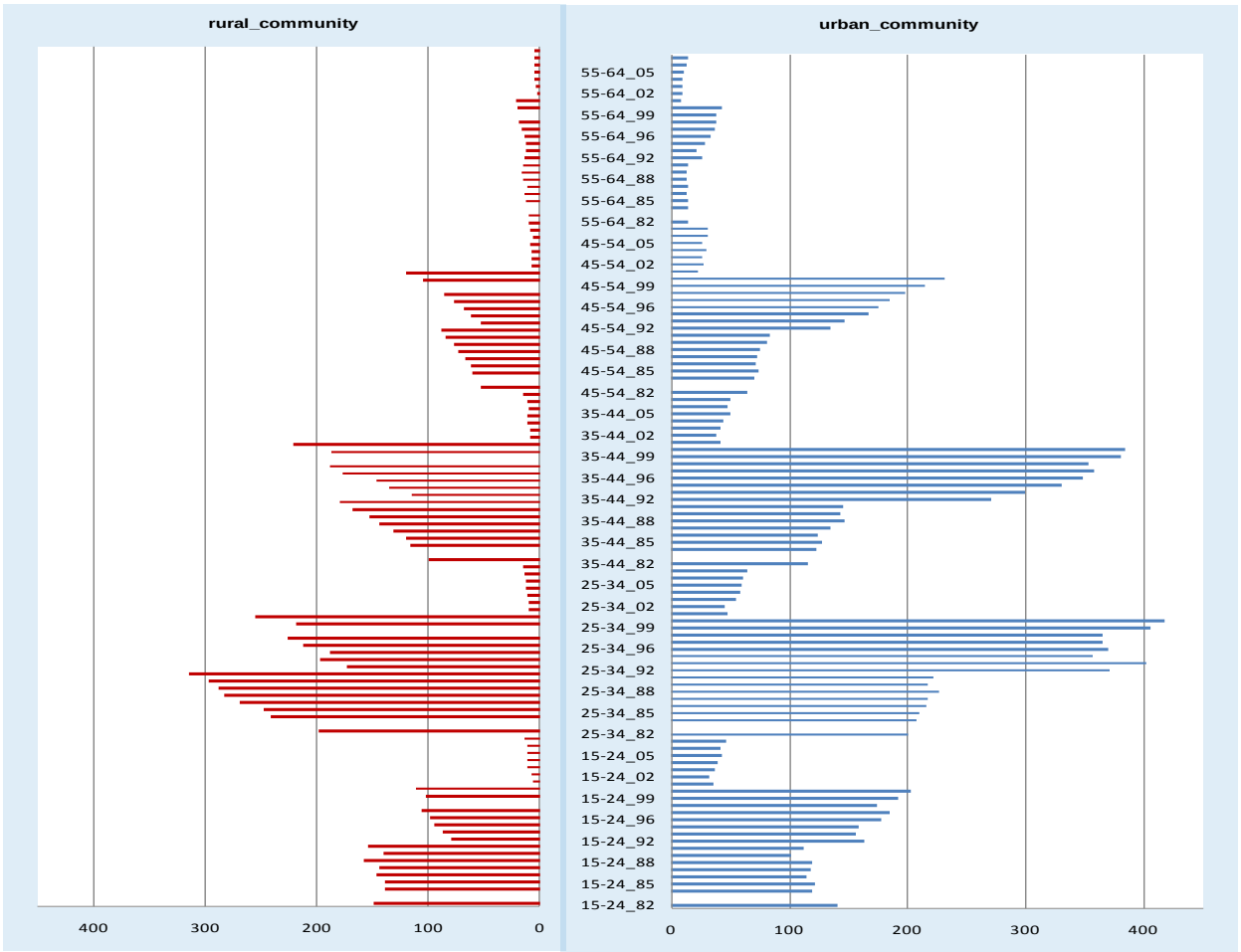
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35-44_82
25-34_05
25-34_02
25-34_99
25-34_96
25-34_92
25-34_88
25-34_85
25-34_82
15-24_05
15-24_02
15-24_99
15-24_96
15-24_92
15-24_88
15-24_85
15-24_82
400
300
200
100
0
0
100
200
300
400

Appendix

| Country Name | Year | Country Name | Year |
|---|---|---|---|
| **Bangladesh** | 1983 | **Malaysia** | 1982 |
| | 1984 | | 1983 |
| | 1985 | | 1984 |
| | 1986 | | 1985 |
| | 1989 | | 1986 |
| | 1991 | | 1987 |
| | 1996 | | 1988 |
| | 2000 | | 1989 |
| | 2003 | | 1990 |
| | 2005 | | 1992 |
| **Fiji** | 2005 | | 1993 |
| **India** | 1999 | | 1995 |
| | 2004 | | 1996 |
| **Korea** | 2000 | | 1997 |
| | 2001 | | 1998 |
| | 2002 | | 1999 |
| | 2003 | | 2000 |
| | 2004 | | 2001 |
| | 2005 | | 2002 |
| | 2006 | | 2003 |
| | 2007 | | 2004 |
| **Mongolia** | 2006 | | 2005 |
| **Nepal** | 1998 | | 2006 |
| | 1999 | | 2007 |
| | 2000 | **SriLanka** | 2006 |
| | 2001 | | 2007 |
| | 2002 | | 2008 |
| | 2003 | **Vietnam** | 2006 |
| | 2004 | | 2007 |
| | 2005 | | |
| | 2006 | | |
| | 2007 | | |
| | 2008 | | |
| **Pakistan** | 2006 | | |
| | 2007 | | |
| **Philippines** | 2003 | | |
| | 2004 | | |
| | 2005 | | |
| | 2006 | | |
| | 2007 | | |