FACTORS INFLUENCING THE LABOR RESTRUCTURING FROM AGRICULTURE TO NON-AGRICULTURE SECTORS IN CAN THO CITY

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ABSTRACT
The purpose of this research is to determine factors influencing the labor restructuring from agriculture to non-agriculture sectors in Can Tho city. Research data are collected from 222 households by stratified sampling. After utilizing the binary logistic method, results show that factors affecting the labor structure shift are: household labor size, labor age, percentage of male labor in the family, labor education background, household income from agriculture and local support policies. Among them, household income from agriculture and labor age adversely affect the labor restructuring from agriculture to non-agriculture sectors.

Key Words: labor transition, agriculture, non-agriculture, labor.

PROBLEM STATEMENT
Moving labor out of the agricultural sector is a key feature of the economic development process (Haan, 1999). This process formed a trend of labor restructuring from the agricultural to the non-agricultural sectors. Therefore, the goal of labor restructuring is reasonable as creating jobs in rural areas is becoming more and more urgent (Nguyen Van Tai, 1998).

Limited land area, high rate of population growth and low educational level lead to the situation that people living in rural areas find it difficult to find suitable jobs as they are separated from common jobs in agriculture (Le Xuan Ba et al., 2006). Intrinsically, the shift of labor from agriculture to non-agriculture sectors is closely linked to the characteristics of the workers, households and surrounding communities.

Le Xuan Ba et al. (2006) pointed out that these following factors: personal characteristics, households, and community features are important for the restructuring of labor from agriculture to non-agriculture. However, for different regions, the impact of these factors is also different (Nguyen Manh Hai and Tran Toan Thang, 2009).

In the current situation, the phenomenon of labor surplus in the agricultural sector in the Mekong Delta in general and Can Tho city, in particular, has become an urgent issue to be addressed. In 2004, Can Tho became a central city, from which the rate of change in the economic sector was very quick.

In the 2005-2015 period, the proportion of agricultural production value decreased from 14.9% to 6.3%, while that of industrial and construction production increased from 57.3% to
60.4% as well as services increased from 27.8% to 33.3%. This shows that labor restructuring in economic sectors is quite strong.

The percentage of agricultural labor decreased by 16.2% while that of industry – construction and services areas increased by 10.4% and 5.8% respectively (Can Tho Statistical Office, 2016). From reality and scientific bases, the study “Factors influencing the labor restructuring from agriculture to non-agriculture sectors in Can Tho city” is very crucial. This is the scientific basis for planning sustainable human resource development of Can Tho city.

THEORETICAL BASES AND RESEARCH MODEL

As stated by Tran Hoi Sinh et al (2006), labor restructuring is the movement of the old labor structure to the new one that is more suitable for the process of socio-economic development and the level of resource development of the country. This transformation always takes place following the law of continuous development of society.

The contents of the movement include: (i) The restructuring of labor quality consists of changes in education, professional skills, physical strength, sense of attitude and responsibility in labor; (ii) restructuring labor use or job structure consists of changes in labor structure by sector, by region, changing labor types; changes in labor structure by ownership forms (or by economic sectors).

Household labor size affects the labor restructuring from agriculture to non-agriculture sectors.

Household labor size is mentioned in many studies on labor restructuring, as this is a factor promoting the process of restructuring labor from agriculture to non-agriculture sectors. In accordance with Vo Thanh Dung and his colleagues (2010), households with an advantage in the number of workers will easily convert their household industries. Research by Nguyen Dinh Phuc (2017) has shown that large-scale households will be more likely to participate in non-agriculture sectors activities. The number of household members affects the ability of households to participate in business activities. Therefore, the following proposition is constructed: H1: The household labor size positively affects the labor restructuring from agriculture to non-agriculture sectors.

Worker’s age affects the labor restructuring from agriculture to non-agriculture sectors.

The age of workers is mentioned in many studies on labor restructuring. The studies of Larry et al (2012) and Nguyen Dinh Phuc (2017) shows that the higher the working age is, the lower the possibility of changing jobs from agriculture to non-agriculture sectors is. At the same time, the study of Lim et al (2002), Le Xuan Ba et al (2006), Tijani et al (2010) demonstrated that the lower the age of workers is, the higher the ability of labor transfer will be. Therefore, the H2 hypothesis is proposed: H2: The worker’s age negatively impacts the labor restructuring from agriculture to non-agriculture sectors.

Percentage of male labor in the family influences the labor restructuring from agriculture to non-agriculture sectors

Worker's gender is a factor that many researchers are interested in topics related to labor restructuring, especially the transition of labor from the agricultural sector to non-agricultural
ones. The authors such as Xiushi and Fei (1999), Vo Thanh Dung and his colleagues (2010), Nguyen Dinh Phuc (2017), Tran Thi Minh Phuong and Nguyen Thi Minh Hien (2014) pointed out that male workers show initiative and be more active than female workers in the process of changing jobs, shifting labor from agriculture to non-agriculture sectors. Thus, the following hypothesis is proposed: **H3: The percentage of male workers in the family positively affects the restructuring of agricultural labor to non-agriculture sectors.**

**Labor education level influences the labor restructuring from agriculture to non-agriculture sectors.**

The education level of labor is considered as a decisive factor for the restructuring of agricultural labor to non-agriculture sectors. According to the research by Larry et al (2012), Riithi and Maina (2015), Onya and Ejiba (2016), Sanusi et al (2016), the higher the education level of the labor is, the more likely the labor restructuring from agriculture to non-agriculture sectors will increase. Therefore, the following proposition is constructed: **H4: The labor education level positively influences the labor restructuring from agriculture to non-agriculture sectors.**

**Household income from agricultural activities influences labor restructuring from agriculture to non-agriculture sectors**

The research by Nguyen Manh Hai and Tran Toan Thang (2009) shows that income from agricultural activities has little impact on the labor restructuring from agriculture to non-agriculture sectors. However, Nguyen Dinh Phuc (2017) points out that the higher the income from agricultural activities of the household is, the less likely that the workers of the household will participate in the non-agricultural sectors. At the same time, Le Xuan Ba et al. (2006) said that household income from agriculture is a hindrance to the shift of labor from agriculture to non-agriculture sectors. In the light of the above researches, the following proposition is constructed: **H5: Household income from agricultural activities negatively influences the labor restructuring from agriculture to non-agriculture sectors.**

**Local support policies influence the labor restructuring from agriculture to non-agriculture sectors.**

The support policy on labor restructuring from the agricultural sector to non-agricultural ones is mentioned in many studies. This is an effective tool of some regions and countries in promoting proper labor restructuring. As stated by Nguyen Dinh Phuc (2017), if the locality has programs or projects to create jobs for workers, the possibility to attract workers to participate in non-agricultural jobs will increase. Tran Thi Minh Phuong and Nguyen Thi Minh Hien (2014) have demonstrated that in localities with policies to create jobs, support workers to access jobs, the possibility that the workers participating in non-agricultural sectors will be higher. Therefore, the following hypothesis is proposed: **H6: Local support policies positively influence the labor restructuring from agriculture to non-agriculture sectors.**

Base on literary review, the equation to study the factors affecting the labor restructuring from agriculture to non-agriculture sectors in Can Tho city is established:
CHUYENDICH = β0 + β1QUIMO + β2TUOITAC + β3GIOITINH + β4TRINHDO + β5THUNHAP + β6CHINHSACH

In the equation: Dependent variable is the labor restructuring from agriculture to non-agriculture sectors. It gets value 1 if the household has any worker to change job from agricultural to non-agricultural areas and receive value 0 otherwise. The independent variables are explained in detail in the following table:

Table 1: Interpretation of independent variables in the research equation

<table>
<thead>
<tr>
<th>Variables</th>
<th>Notation</th>
<th>Unit</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Household labor size</td>
<td>SCALE</td>
<td>The number of people in working age in the family</td>
<td>Vo Thanh Dung et al (2010), Nguyen Dinh Phuc (2017)</td>
</tr>
<tr>
<td>Percentage of male labor in the family</td>
<td>GENDER</td>
<td>The ratio of male workers to the total number of workers in the household</td>
<td>Xiushi and Fei (1999), Vo Thanh Dung et al (2010), Nguyen Dinh Phuc (2017)</td>
</tr>
<tr>
<td>Household income from agricultural activities</td>
<td>INCOME</td>
<td>Total income from agricultural activities in one year of the household (Million VND / household)</td>
<td>Le Xuan Ba et al (2006), Nguyen Dinh Phuc (2017)</td>
</tr>
<tr>
<td>Local support policies</td>
<td>POLICY</td>
<td>Households receiving local support policy = 1, otherwise = 0</td>
<td>Tran Thi Minh Phuong and Nguyen Thi Minh Hien (2014), Nguyen Dinh Phuc (2017).</td>
</tr>
</tbody>
</table>

Source: Author compiling, 2018

RESEARCH METHODOLOGY

Analysis methods

The research uses descriptive statistical methods to analyze the situation of labor restructuring from agriculture to non-agriculture sectors. In the meantime, binary logistic regression method is used to determine the factors affecting the restructuring of labor from the agricultural to non-agricultural sectors in Can Tho city.

Data collection method

The stratified sampling method is used to collect data. The study uses a direct interview method to collect information from 222 households in rural areas. The survey area is concentrated in Vinh Thanh, Co Do, Thoi Lai and Phong Dien districts of Can Tho city. During the survey...
process, demographic criteria were taken into account in order to improve the representativeness of the research data. The specific sample size is described in detail in the following table:

<table>
<thead>
<tr>
<th>No.</th>
<th>Regions</th>
<th>Number of households</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Vinh Thanh District</td>
<td>60</td>
<td>27.03</td>
</tr>
<tr>
<td>2</td>
<td>Thoi Lai District</td>
<td>57</td>
<td>25.68</td>
</tr>
<tr>
<td>3</td>
<td>Co Do District</td>
<td>55</td>
<td>24.77</td>
</tr>
<tr>
<td>4</td>
<td>Phong Dien District</td>
<td>50</td>
<td>22.52</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>222</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Source: Survey data, 2018

RESEARCH RESULTS AND DISCUSSION

Current situation of labor restructuring from agriculture to non-agriculture sectors

Base on the survey results shown in Figure 1, in the period between 2014-2018, the proportion of workers in rural areas changing jobs from agriculture to non-agriculture sectors accounted for 38%. In which, the majority of workers (36.6%) participated in working in industrial parks in Can Tho city (Tra Noc industrial zone, Thot Not industrial park, Hung Phu industrial park), while a few laborers work in industrial zones in the Southeast (Ho Chi Minh City and Binh Duong Province). In addition, the number of workers leaving the agricultural sector to join the non-agricultural sectors with freelance jobs accounted for 26.6%.

Freelance jobs do not require qualifications, good health or labor rules, thus attracting a large number of the labor force in rural areas. Some of the freelance jobs that workers often participate in are drivers, hired transporters, home-based garment workers, domestic helpers, seasonal workers, etc. In parallel, there are 22.5% of self-employed workers selling merchandise with the expectation of increasing income. These workers mainly do business at home in the form of small shops (groceries, soft drinks), or purchase agricultural products for resale (often called local traders) or small traders selling at local markets.

The remaining number of employees (14.3%) work in enterprises in the central districts of Can Tho city (Ninh Kieu, Binh Thuy, and Cai Rang) as office workers. In order to work in the office sector at enterprises, the employees must have good education level and professional qualifications.
Factors influencing the labor restructuring from agriculture to non-agriculture sectors

In order to better understand the variables in the equation to determine the factors influencing the labor structure transition from agriculture to non-agricultural sectors, the study uses descriptive statistics to describe the variables:

Table 3: Descriptive analysis results of independent variables

<table>
<thead>
<tr>
<th>No</th>
<th>Variables</th>
<th>Unit</th>
<th>Mean</th>
<th>S.D</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Household labor size</td>
<td>Number of workers</td>
<td>3.09</td>
<td>1.26</td>
</tr>
<tr>
<td>2</td>
<td>Worker’s age</td>
<td>The average age</td>
<td>40.14</td>
<td>11.22</td>
</tr>
<tr>
<td>3</td>
<td>Worker’s gender</td>
<td>Percentage of male workers</td>
<td>0.54</td>
<td>0.39</td>
</tr>
<tr>
<td>4</td>
<td>Worker’s education level</td>
<td>The years studying at a school</td>
<td>8.29</td>
<td>2.17</td>
</tr>
<tr>
<td>5</td>
<td>Income from agricultural activities</td>
<td>Million VND/year</td>
<td>85.82</td>
<td>94.15</td>
</tr>
<tr>
<td>6</td>
<td>Local support policies</td>
<td>Receiving rate</td>
<td>0.37</td>
<td>0.43</td>
</tr>
</tbody>
</table>

Source: Data survey, 2018

According to statistics in Table 3, each household in a rural area has approximately 3 people in working age; the average age of workers is about 40 years old with the education level of about 8/12 years and the percentage of male workers at working age is 54%. At the same time, the research results show that the average income of households from agricultural activities is about 86 million VND per year. With a standard deviation of 94.15 million VND/year, this indicates that the difference in earnings from agricultural activities of rural households is very large. In addition, the proportion of families in rural areas receiving employment support policies is limited (accounting for 37%). Workers in rural areas often receive support in
vocational training; gain access to loans to improve their qualifications, change their careers or get access to job information.

Base on the results of binary logistic regression analysis, the research equation is established in accordance with the assurances guaranteed as follows: Hypothesis testing of general conformity has the significance (Sig. = 0.00) much smaller than the 5% level. The exact forecast level of the model is 98.2%. Besides, the value of multicollinearity verification between independent variables is not violated.

Table 4: Factors influencing the labor restructuring from agriculture to non-agriculture sectors

<table>
<thead>
<tr>
<th>Variables</th>
<th>Estimated coefficient (B)</th>
<th>Significance</th>
<th>Coefficient Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-2.057</td>
<td>0.591</td>
<td>0.128</td>
</tr>
<tr>
<td>SCALE</td>
<td>1.862</td>
<td>0.010</td>
<td>6.435</td>
</tr>
<tr>
<td>AGE</td>
<td>-0.201</td>
<td>0.004</td>
<td>0.818</td>
</tr>
<tr>
<td>GENDER</td>
<td>2.987</td>
<td>0.037</td>
<td>19.828</td>
</tr>
<tr>
<td>EDUCATION</td>
<td>0.551</td>
<td>0.044</td>
<td>1.735</td>
</tr>
<tr>
<td>INCOME</td>
<td>-0.027</td>
<td>0.038</td>
<td>0.974</td>
</tr>
<tr>
<td>POLICY</td>
<td>3.196</td>
<td>0.009</td>
<td>24.445</td>
</tr>
</tbody>
</table>

Significance of the model: 0.000
Accuracy level of the forecast: 98.2%

Source: Survey data, 2018

Base on the analysis results in Table 4, the six independent variables included in the model are all statistically significant at 1% to 5%. Of all the variables, household labor size, percentage of male labor in the family, labor education level and local support policies have a positive impact on the labor restructuring from agriculture to non-agriculture sectors. In contrast, worker's age and household income from agricultural activities adversely affect the labor structure shift from agriculture to non-agriculture sectors. The impact level of the variables is explained in detail below:

Household labor size: This variable is significant at 1% level and positively correlated with the labor restructuring from agriculture to non-agriculture sectors. That is, the higher the number of people in the working age is, the higher the probability of shifting the labor structure of the family from agriculture to non-agriculture sectors. Research results reflect closely with the reality of agricultural areas in Can Tho city. Because of limitation on land and financial resources, workers in the agricultural sector tend to change their careers to the commercial, service and industrial sectors. This discovery is in line with the research results of Vo Thanh Dung et al. (2010) and Nguyen Dinh Phuc (2017).

Worker's age: This variable is statistically significant at 1% level and negatively correlated with the labor restructuring from agriculture to non-agriculture sectors. It can be understood as the
higher the age of worker is, the lower the probability of labor transitioning from agriculture to non-agriculture sectors. In fact, many older workers often choose stable jobs and are afraid of changes because of the fear of risks, so the possibility to switch job from the agricultural to the non-agricultural sectors is very low. This result is in agreement with that of Lim et al. (2002), Le Xuan Ba et al. (2006), Tijani et al. (2010), Larry et al. (2012) and Nguyen Dinh Phuc (2017).

**Percentage of male labor in the family**: This variable is of statistical significance at 5% level and positively correlated with the labor restructuring from agriculture to non-agriculture sectors. Households with a higher proportion of male workers will tend to switch jobs from the agricultural to the non-agricultural sectors. This can be explained by the fact that male workers have strong personalities, love to explore, challenges; prefer to be self-employed and have great ideas. As a result, they often follow new employment trends and are not afraid to move their location for a better career opportunity. On the contrary, most female workers prefer to be stable and work close to their families; thus the possibility to switch jobs from agriculture to non-agriculture sectors is very low. This result is in line with the research of Xiushi and Fei (1999), Vo Thanh Dung and his colleagues (2010) and Nguyen Dinh Phuc (2017).

**Labor education level**: This variable is statistically significant at 5% level and has a positive correlation with the labor restructuring from agriculture to non-agriculture sectors. In other words, the more educated workers are, the more likely it is for them to switch jobs from the agricultural to the non-agriculture sectors. This can be explained that the higher education level of workers are, the better access to job information and the better the ability to meet the labor market requirements in the non-agriculture sectors they have. Therefore, the job transition will be smoother. This result is consistent with the research of Larry et al. (2012), Riithi and Maina (2015), Onya and Ejiba (2016) and Sanusi et al. (2016).

**Household income from agricultural activities**: This variable is of statistical significance at 5% level and negatively correlated with the labor restructuring from agriculture to non-agriculture sectors. This indicates that the higher the household income from agricultural activities is, the lower the probability of shifting the labor structure of the family from agricultural to non-agricultural sectors is. In fact, households that have high income from farming activities and can ensure the quality of life in rural areas rarely change their careers to non-agricultural areas. This discovery is in agreement with the research results of Le Xuan Ba et al. (2006) and Nguyen Dinh Phuc (2017).

**Local support policies**: This variable is statistically significant at 1% level and positively correlated with the labor restructuring from agriculture to non-agriculture sectors. This represents a positive impact of the support policies for the structural shift of agricultural labor to non-agricultural areas. According to the survey, many local support policies are related to supporting vocational training, accessing loans to improve professional qualifications, changing jobs or supporting to access job information. This has helped many workers in the agricultural sector to find stable jobs, have higher incomes as well as open up better career development directions. This result is consistent with the research results of Tran Thi Minh Phuong and Nguyen Thi Minh Hien (2014) and Nguyen Dinh Phuc (2017).
CONCLUSION AND RECOMMENDATIONS

The study pointed out the factors that positively affect the labor restructuring from agriculture to non-agriculture sectors: household labor size, percentage of male labor in the family, labor education level and local support policies. In contrast, household income from agricultural activities and worker’s age have a negative impact on the restructuring of agricultural labor to non-agricultural sectors. In particular, the local support policy is the most important factor that influences labor restructuring from agriculture to non-agriculture sectors most. As a result, the study proposes some recommendations:

Firstly, improve the effectiveness of the implementation of local support policies. In fact, the Government and local authorities have many policies to support agricultural workers to change jobs in accordance with their capabilities and aspirations. However, many workers in rural areas still do not have access to this information and support. Therefore, local authorities need to pay more attention to and closely follow the process of implementing policies to support and solve difficulties and obstacles to help workers gain more access to the support policies faster.

Secondly, improve the quality of agricultural labor. Workers need to actively study to improve their level of education as well as professional qualifications, especially the qualification that are in need of locally. If the workers have a good level of education and professional qualifications, they can actively choose jobs and workplaces that are suitable for themselves, thereby reducing employment pressure for the agricultural sector.

Thirdly, effectively use family labor resources. Currently, the issue of division of family labor in rural areas is still inadequate and unreasonable. This affects the quality of labor and income for the family. Therefore, households in rural areas should consider factors such as human resources, physical resources, and household financial resources to organize a rational division of labor. They should avoid wasting working time, labor and qualifications of family members.

REFERENCES


Nguyen Van Tai (1998), Study of the current status of motivating factors and problems arising from the phenomenon of free migration to the socio-economic development in Ho Chi Minh City in the process of renewing the country's economy - Solutions to solve. Vietnam-Netherlands research program. Ha Noi.

Le Xuan Ba, Nguyen Manh Hai, Tran Toan Thang, Vu Xuan Nguyet Hong, Luu Duc Khai (2006), Factors influencing the labor restructuring in rural areas in Viet Nam, Central Institute for Economic Management. 148 pages

Tran Hoi Sinh and his colleagues (2006), Labor restructuring in 5 suburban districts in Ho Chi Minh City in the process of urbanization - Current situation and solutions. The scientific research topic. Ho Chi Minh City Institute for Development Studies.


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