



Labor Division in Pig Farming Households: An Analysis of Gender and Economic Perspectives in the Red River Delta Vietnam

Nguyen Thi Hai Ninh^{1*}, Philippe Lebailly², Nguyen Mau Dung²

¹Department of Economics and Rural Development, University of Liege, Belgium, ²Faculty of Economics and Rural Development, Vietnam National University of Agriculture, Vietnam. *Email: haininh.hua@gmail.com

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ABSTRACT

This paper attempts to understand about gender division of labor in pig farming households and to identify factors affecting that division. Using primary data collected from 40 pig farming, we find that female laborers play more important role in pig production. More than 60% of women participating in making decision regarding to many stages of pig farming. Especially, in small scale households women are observed to take main responsibility for almost all activities as many men do off-farm jobs far from home. Compared to wives, husbands are more likely to make decision regarding pig farming. Nevertheless, in households with higher-educated and younger couples, we identify a higher probability of husband and wife making decision together. Therefore, to improve the role of women in pig farming, it is necessary for local authority to train them knowledge relating to pig farming and to change their husbands' perception on gender equality.

Keywords: Labor Division, Pig Farming Household, Gender and Economic Perspective

JEL Classifications: C01, J01, J16

1. INTRODUCTION

Vietnam has achieved a high pace of industrialization, which has led to conversions of a large area of agricultural land and other types of land for non-agricultural purposes, and this has forced thousands of farmer households to change their traditional livelihoods and even their lives (Nguyen, 2009). In comparison with other regions in Vietnam, the Red River Delta has the largest number of people affected by the loss of farmland with about 300,000 households and so farmers have to seek various ways to earn their living (Hoang, 2009). Of these ways, changing from crop cultivation to pig farming is considered as an appropriate decision to improve income for a majority of farm households in the Red River region. According to the statistical data in 2011, pig farming percentage distribution by seven ecological areas in

the country is highest in the Red River delta with approximately 27% (Nguyen, 2013). With about 80% of pig raisers identified as smallholders, the development of the pig sector in the Red River region is very important for improving income and generating family employment (Lapar, 2014). However, the industrialization process has also transformed employment structures and labor supply in many farm households, leading to changes in household's labor division for agricultural production in general and for pig farming in particular (Nguyen et al., 2015). With many husbands and adult sons absent working in industrial and service sectors far away, the trend in labor division of farm households is that women undertake almost all activities relating to cultivation and livestock while men are only confined to some work such as soil preparation and assisting women in tending and harvesting crops and livestock breeding (Nguyen, 2011).

The division of labor is defined as the specialization of cooperative labor into specific, circumscribed tasks and roles, intended to increase productivity. Historically, the growth of a more and more complex division of labor was closely associated with the growth of total output and trade, and of the complexity of industrialization processes (Nguyen, 2010). The concept of labor division has been debated by several famous classic thinkers like Adam Smith, Karl Marx and Emile Durkheim, as well as contemporary scholars such as Massey. In their debates, most scholars have paid attention to the division of labor by sector, by region and by gender. In so doing, they have concentrated on the “rationality” of labor divisions within a sector, a region, a family or in an economy as a whole. In Vietnam, most research on labor division in agricultural sector has focused on the changing role of women in rice (Paris et al., 2009; Chi et al., 2010; Pham, 2013; Gallina, 2016) and aquacultural farming (Mekong River Commission, 2006; Atdhe et al., 2009; Arlene et al., 2016; Caulier et al., 2016). Much less is known about how women fare in pig farming, particularly the division of household labor which is one of the most persistent forms of gender inequality (Bussarawan et al., 2008).

This paper looks at the division of labor in pig farming households from gender to economic perspectives. In other words, the paper attempts to clarify who does what kinds of work in pig farming households and examine to what extent this labor division affect household’s income under the context of industrialization in the Red River delta. In order to address these two questions, in the next section we review theories on gender division of labor. Description of the data and methodology is in Section 3. We report results in Section 4. Conclusion and recommendation are found in Section 5.

2. THEORETICAL FRAMEWORK

2.1. Gender Division of Labor

The way work is divided between men and women according to their gender roles is usually referred to as the “gender division of labor.” This does not necessarily concern only paid employment, but more generally the work, tasks and responsibilities that are assigned to women and men in their daily lives, and which may, on their turn, also determined certain patterns in the labor market (ILO, 2008). In most countries, houseworks like cleaning, cooking, washing clothes or sustaining the household by small scale agricultural production are considered as women’s tasks, even when they have a paid job outside the home. On the other hand, more technical house tasks such as dealing with electrical or mechanic equipment, is traditionally a man’s job. However, the gender division of labor is not fixed for all time; it changes in response to wider economic, political and social changes (ILO, 2008). Under industrialization process of Vietnam, men and women follow different migration models, and engage in different occupation when they migrate. Migration may also result in men taking on tasks that they would not normally consider within their socially ascribed role, like having to cook for themselves. In contrast, their wives at home have to deal with technical house tasks and many heavy activities in agricultural production; in some cases, they conduct all of activities alone (Gallina, 2016). This paper analyzes gender division of labor in pig farming household by looking at two aspects as time availability and decision making power.

2.1.1. Time availability

This perspective depicts the division of household labor as a result of husband’s and wife’s competing time commitment. The spouse who is not employed or who works for pay for a smaller number of hours is expected to contribute more to pig farming (Bussarawan et al., 2008).

2.1.2. Decision making power

Decision making within households has to do with bargaining, and this bargaining depends on gender role attitudes. That is, husband and wife with more egalitarian attitudes are expected to have more equal decision making power (Fondo, 2007). Several studies in developing countries have pointed out that men dominate the household decision making power in most places while women have subordinate position (Tiransia, 2011). Therefore, in our research the role of women in pig farming will be measured by their participation in decision making process with their husbands.

2.2. Gender Division of Labor in Economic Perspective

Various theories have been addressed to explain why men and women divide their work in household. Such theories can be grouped into several categories like nature, culture, and economy. Theories that consider the division of labor by gender to be a practical response to economic conditions are diverse. Some theories suggest that women do the housework and men monopolize paid work because labor specialization maximizes the efficiency of the entire family unit. Women are assumed to have “tastes” for doing housework and their commitment to child bearing are seen as limiting their movement into the market place (Becker, 1993). Resource theories similarly assume that spouses make cost-benefit calculations about housework and paid work using external indicators such as education and income (Bussarawan et al., 2008). Taking economic perspective into account, our paper sheds the light on affect of gender division of labor on pig farming household’s income.

2.3. Factors Influencing Gender Division of Labor

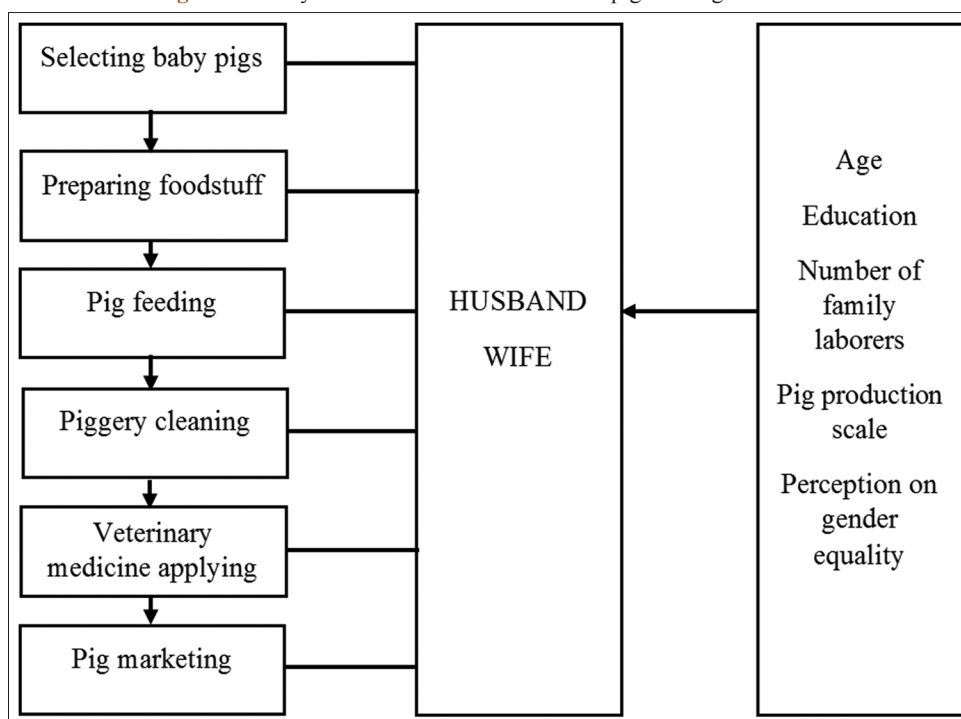
A number of factors are responsible for the gender division of labor today: Some are gender neutral and others are gender biased. A gender neutral process is one where in a household, comparative advantage and the maximization of household welfare is used to determine which partner does what (Fondo, 2007). Other variables responsible for the division of labor in pig farming household are age, educational level and perception on gender equality of spouse; number of family laborers who can involve in pig farming and pig production scale (Figure 1).

3. RESEARCH METHODOLOGY

3.1. Research Site

In 2011, the Red River Delta had the largest pig population in the country with about 7.1 million. Accordingly, this region had the highest pig density of 909 pigs per km² of agricultural land (General Statistics Office, 2012). However, the number of households engaged in pig farming has decreased over the years since 2016 because of unfavourable movement of relative input-output prices, environmental problems, disease outbreaks, and especially industrialization that draws land and labor out of the

Figure 1: Analytical frame of labor division in pig farming household



agricultural sector (Lapar, 2014). Despite the fact that pig farming has declined in recent years, it is still considered as the major income source of rural households, particularly for those are in shortage of agricultural land and farm laborers.

Hai Duong province is located in the centre of Red River delta with many industrial zones have been established which absorb thousands of laborers across the province and other provinces to work. Industrialization leads to the largest number of agricultural laborers decrease in Hai Duong province in comparison with other provinces in the Red River region (Le Thai, 2011). Thus, maintenance of pig farming is important livelihood strategy which is decided by many households to cope with the lack of family labor supply. According to statistical data 2015, the value of pig production occupied more than 80% of total value of livestock breeding in the province.

3.2. Data Collection

Taking into account all determinants analyzed above, the authors conducted a field survey on pig farming in Hai Duong province in 2017. In this survey, we interviewed 40 pig farming households which were divided into 2 groups, small scale group includes households with <50 pigs and large scale group consists of those raising more than 50 pigs. This classification is based on the share of pig farming households by scale which is identified by Lapar (2014) in his review of pig sector in Vietnam (Table 1). By dividing pig farming households into these categories, we try to test the hypothesis that there are differences in gender division of labor between 2 groups in terms of working time and making decision of spouse.

The household survey was implemented in two first weeks of April 2017. The main purposes of our survey are to gather both

Table 1: Scale of household pig holdings

Number of pigs	Share of pig farming households
1-2	51.9
3-5	25.7
6-10	8.9
10-49	12.8
>50	0.8

Source: Lapar, 2014

qualitative and quantitative data on pig farming including: Number of pigs (sows and fattening) breeding each litter, number of litter per year, pig farming stages (feeding, cleaning, veterinary medicine applying, pig selling). Information relating to division of labor in each production stage are also collected like: Frequency and time spending of each gender to these activities, decision making power who decides to do what. In addition, demographic characteristics of farm households are saved in order to determine whether it has impact on gender division of labor such as gender, age of household head, perception of husband and wife on gender equality and number of family laborers. A total of 73 respondents including 40 men and 33 women are drawn for the survey. The personal interviews using a standard questionnaire with open and closed questions are implemented separately with husband and wife in a household. They are interviewed in different places to ensure that husband’s answers does not affect his wife responses and vice versa.

Before doing the main household survey, we did pre-tested in 5 pig production households. The aim of pre-testing was to test the questionnaire to find out if questions were understood and the questions were in a logical order (Tiransia, 2011). The questionnaire was then revised and adjusted based on the responses during the pretesting. Some questions were reformulated in order to make them easier to understand, especially questions on gender

division of labor as it was found not to catch the actual situation in pig production at the locality.

3.3. Data Analysis

The data are checked and cleaned by going through each and every questionnaire by all authors. Missing values are also checked by running frequencies on each variable. For a description of surveyed households, frequency distribution with mean and standard deviation are used. In addition, cross tabulation and Chi-square test are also employed to test for differences in proportions and significant difference between two pig farming groups. Also, the authors employ Mann-Whitney two sample and chi square test for non parametric test.

In order to examine factors affecting gender division of labor in pig farming household, a logistical regression model is applied. This model helps to quantify the impact of demographic characteristics on the way that households apply to decide who do what. Dependent variable is defined by decision making power. It is determined by husband and wife responses about decision for specific activities in pig farming. The answers are either “it is husband,” “it is wife” or “both decide” for the particular tasks. So dependent variable equals to 1 if only wife or both husband and wife involve in decision making, and equals to 0 if only husband decide all the works.

4. RESULTS

4.1. Demographic Characteristics Information

As in many South East Asian countries, men in the Red river delta of Vietnam are usually householders because of the traditional role of the male breadwinner. It is revealed by some researches that ability of male to make decision is better and more definitive than the one of female and is less affected by outside factors. In accordance with many previous findings, we observe that householders in both groups are mainly male (Table 2). There is only one household having female house head among 40 surveyed households. Most of householders are over 45 year-old (65%), the rest is in 30-45 year-old range (35%). In households having long period engage in pig farming, householders are observed to be older and more experience.

In general, educational level of householders is mostly primary school. So that, their ability to absorb new techniques in pig farming is limited and also, their potential to access pig selling market are narrowed. That affects much their pig farming even though they are willing to learn and to apply new techniques for their works.

We identify that the average numbers of family members in a household are 3.9 persons in the large-scale group and 3.7 persons in the small-scale group. This size is also an average size of households in the Red River Delta in general, it is a medium size and reflects the decrease in mechanical population in rural areas due to migration to cities to seek for non agricultural works. As a result, labor in the households is divided into 2 types, labor for just pig farming and labor for off-farm activities such as working in industrial factories, doing small business, or working in service sector. Off-farm laborers who are mainly householders’ sons and daughters with age under 35. Almost works in pig farming are not complicated and do not require high skill. Therefore, laborers can have time for doing other activities without putting too much effort. Households can use all available laborer from grandparents to children for pig farming. They just hire outsource labor only when timing is required or work load is huge.

4.2. Gender Division of Labor in Pig Farming

In pig farming, the division of labor by gender is necessary because each gender has its strong point in knowledge and ability. This division can reduce time consumption and increase productivity that increases the family income. Besides, the division also creates stronger connections between the family members.

It can be seen that both husband and wife participate in almost works. However, intensities are different. During breeding process, there is no fixed division of labor. When the husband is busy, his wife will do the works and vice versa. When work load is high or need be finished in time, even their children or their grandparents will participate. We find a difference in division of labor between the 2 groups of households. In large-scale households, husband participate in pig farming more than his wife with 75% of the husbands spend over 50% of their time for breeding works (Figure 2). Conversely, 60% of the wives in small scale households spend more than 50% of their time for breeding works.

Table 2: Household demographic characteristics

Description	Unit	Large-scale (n=20)	Small-scale (n=20)
Average age of householders	Year-old		
From 30 to 45	Persons	7	7
Over 45	Persons	13	13
Gender of householder			
Male	Persons	20	19
Female	Persons	0	1
Education			
Under secondary school	Persons	18	20
High school and upper	Persons	2	0
Size of household			
Family members/household	Persons	3.90	3.70
Laborers/household	Persons	3.20	2.85
Labor allocation			
Labor for pig farming	Persons	41	39
Off-farm laborers	Persons	23	18

Source: Household survey data

In addition to time share in pig farming, we also ask spouse about daily working hours they spend on different breeding stages (Table 3). Number of working hours the spouses in large-scale group spend each day is more than the one in small-scale group. Even though the large-scale households invest more for facilities to reduce time and labor consumption, the quantity of pigs is too high so that working time required is more. Further, husbands in large - scale households spend more time for pig farming than wives because it is the main family income source. In the small-scale group, wives spend more time because husbands need to do off-farm works for additional income.

The division of labor in pig farming is analyzed not only on working time but also on frequency that husband and wife participate in each breeding activities. Basically, a full pig farming circle consists of 6 activities including selecting baby pig, preparing foodstuff, feeding, piggery cleaning, veterinary medicine applying and pig selling. In selecting breeds, the husbands are the main decision makers in both groups. Only in some households, where the wives are the householders or their husbands are absent, the wives make the decisions. The selecting is very important for quality and productivity of the livestock and is quite hard because breed suppliers are normally far from home, it needs to travel back and force many times and to be decisive. Therefore, the husbands are more suitable for it.

Foodstuff preparation is simple but requires estimation of food amount enough for livestock to best grow. In large-scale households this work is done mainly by both wife and husband

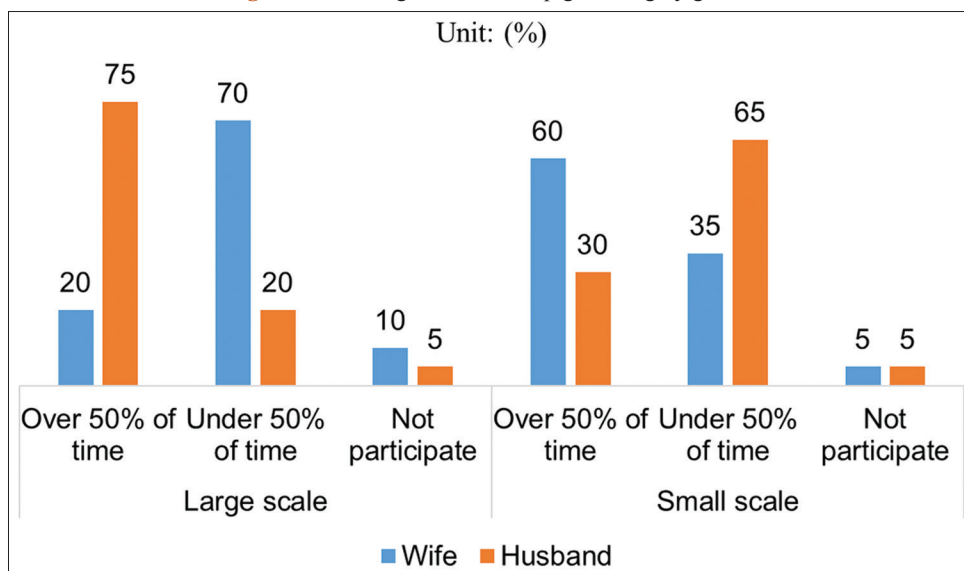
with 70% in order to keep timing while in the small-scale group, 60% of wives do this stage (Figure 3). Compare to large-scale group, foodstuff preparation in the small-scale group is quite easy and mainly uses side products of crop cultivation like vegetables, maize, soybean, etc. Thus, the wives take responsibility for this task while the husbands do other works to create more income. However, the large-scale households raise large quantity of pig. Therefore, this preparation consumes a lot of time and requires both wives and husbands to do.

In comparison with other pig farming stages, pig feeding is quite hard and needs be in time, especially in the large-scale households. Facilities in the surveyed households are quite primitive. Therefore, feeding is done manually by mainly both wives and husbands in this. The proportion of male participating in feeding in the large-scale group is higher than in the small-scale group. In the large-scale households, husbands pay more attention in breeding because it is the main source of income.

In general, cleaning piggery and showering pigs are quite important to protect pigs from diseases. In the large-scale group, both wives and husbands of 70% of the households do cleaning job together because of high work load. In both groups, the proportion of female doing it alone is low because this work is hard and health-influent. Male with better health does it instead of female.

In pig production, applying veterinary medicine for disease protection is very important before diseases break out and are difficult to control. The survey reveals that veterinary service

Figure 2: Working time share in pig farming by gender



Source: Household survey data

Table 3: Daily working hours spend on different pig farming stages

Description	Large-scale (n=20)		P-value	Small-scale (n=20)		P-value
	Husband	Wife		Husband	Wife	
Preparing foodstuff	2.5	2.3	0.000	1.0	2.5	0.009
Feeding	4.7	3.0	0.194	1.2	3.8	0.026
Piggery cleaning	4.0	2.5	0.043	1.0	2.0	0.081

Source: Household survey data, Mann-Whitney test. ***Significant P<0.001, **Significant P<0.05, *Significant P<0.1

at commune level is not very adequate. Veterinary shops and veterinarians are mostly in towns that are far from farms. So that, vaccination or disease detection are all done by wives or husbands. Injection requires some people doing together in short time. For example, a man catches and keeps a pig, another one prepares drugs and one man is to inject. In both groups, this work is done by mostly wives and husbands together. In some cases, it can be done by only wife or husband due to the other absent but it still needs some help from neighbors or relatives.

According to farmers, selling pigs is the final stage of breeding process. It directly brings income to families. Normally, traders come directly to households or are called by the householders. Householders deal with traders for price. Figure 3 shows that in large-scale group, both wife and husband participate in selling. Sometimes, the households use outsource labor, which is mainly labor exchange, for pig catching. During selling, catching and

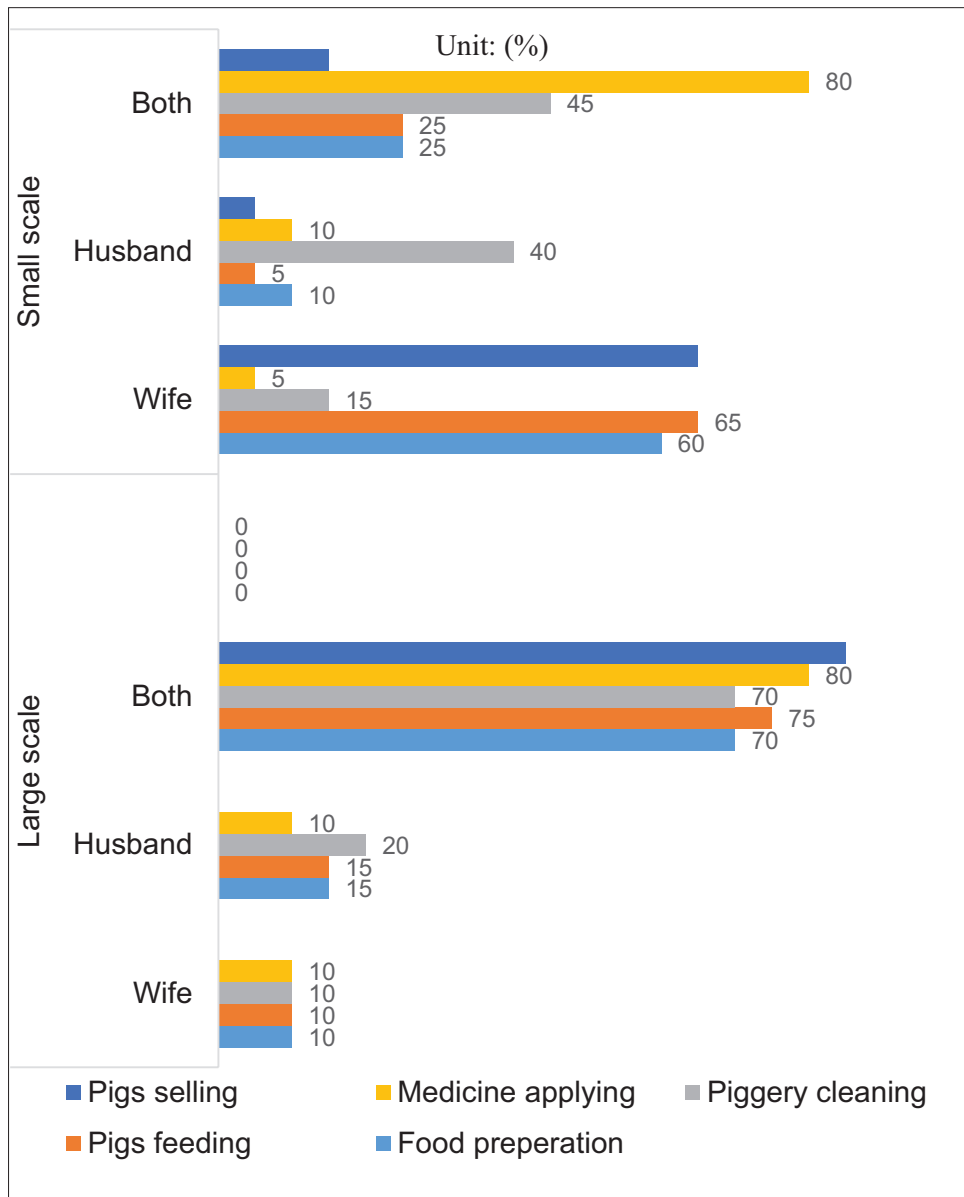
driving pigs to trucks are hard works and to be done by male. Female is in charge of monitoring weighing scale and recording weight.

4.3. Gender Division in Decision Making

A part from division in each stage of pig farming, gender division of labor in families is also expressed in terms of decision making power. Traditionally, male has usually been breadwinner in a Red river delta family. However, with the absence of husbands working off farm far from home, many wivies become breadwinners who are empowered to make decision at home instead of their husbands. With respect to decision making power between husband and wife in pig production, this part focuses on clarify who decide what in terms of financial investment, pig farming activities and pig selling.

Decisions of financial investment for pig production including how much capital to be invested, how much loan needed and from

Figure 3: Division of labor by different pig farming stages



Source: Household survey data

where always needs mutual agreement between wife and husband because it requires high capital of about 1000 US dollars for a litter of 10 pigs. An individual rarely make such decisions. Loans they need are mostly from their relatives or banks which require both wife and husband to be present. Thus, financial investment for pig farming is mostly decided by both wife and husband in 95% of surveyed households (Figure 4), and the proportion of wife or husband making decision is equal in both groups. In some cases, when the wife is busy, the husband decides and vice versa but big expenditures will be decided by both.

Regarding pig farming activities, decision of “*who do what*” are mostly made by the discussion between wife and husband. In some households in small-scale group where only wife is at home, she has to take this task herself. Meanwhile, there is 5% of husbands (Figure 4), mostly in the large-scale group, decide all pig farming activities without negotiating with their wivies. Among pig farming activities, deciding number of pigs in each litter is very important because that influences subsequent matters such as piggery, labor, foodstuff volume and facilities. It requires decision made by both wife and husband with 95% in the large-scale group and 75% in the small-scale group. Also, foodstuff type and veterinary medicine mostly are decided by either both wife and husband or husband in both groups. In general, the proportion of sole wife making pig farming activities’ decision is lower than sole husband as wives have to do deal with house tasks and crop production. Moreover, wives do not usually attend training classes to enhance their knowledge and experience in pig farming. Consequently, their contribution in decision making is normally lower than their husbands.

In pig marketing, keeping contact and remaining the longterm relationship with pig traders is very important to have stable

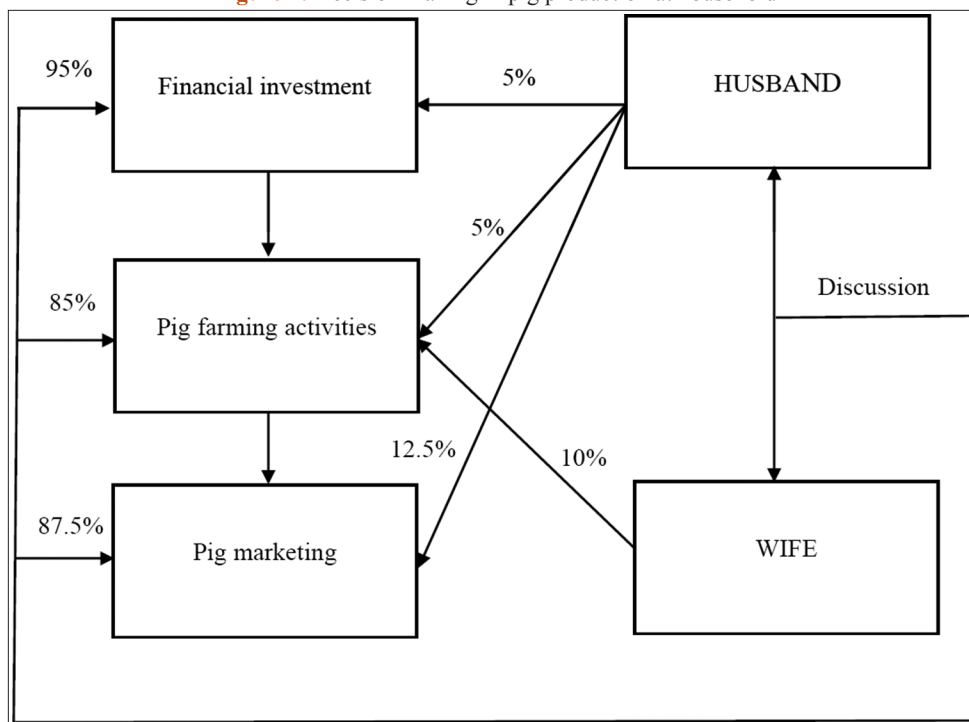
market and price. That is the reason why both wife and husband pay attention to this matter in 87.5% of surveyed households (Figure 4). In the small-scale households, wives concern more about price and most of them contribute in making price decision with their husbands. Husbands normally have longterm views. Therefore, most of them take care the relationship with clients. Furthermore, all pig traders are men, so that talking man to man is easier and it is faster to achieve final deal.

4.4. Economic Perspective of Labor Division in Pig Farming Household

Theoretically, husband and wife divide their work in house to maximize the efficiency of the entire family unit. In other words, they try to optimize household’s income by using most of family labor resource in terms of educational level, health status, age, etc. Accordingly, pig farming households in the Red river delta diversify their income sources to obtain as much money as they can by assigning family labor into multiple work including pig farming, crop cultivation and off-farm activities. To achieve an insight into economic aspect of labor division in pig farming households, the authors analyze the correlation between household’s income with the division of working time for pig farming of husband. We attempt to test hypotheses that in households where the main livelihood depends on pig farming, husbands are assigned more time (over 50% of time) working for pig farming activities. On the other hand, in households where husbands working <50% of time for pig farming, it is because they focus on earning income from off-farm activities.

In our survey, we also observe that the quantity of pigs in the two groups is quite different. A large-scale household raises average 109 pigs/L. Meanwhile, a small-scale household raises only 49 pigs/L. Both groups raise 2 litters a year. The weight of

Figure 4: Decision making in pig production at household



Source: Household survey data

finishing pigs is quite similar and meet standard. In recent years, pork price went down but no one among the surveyed households lost. In households where husbands spend over 50% of working time on pig farming, income from this sector contributes to 79% of total household's income whereas income from off-farm activities is accounted for 18.5% and mostly earned by their adult children (Table 4).

Industrialization process in the Red river delta brings a lot of off-farm jobs to farm laborers who achieve requirements on education, health and age. Therefore, earning from off-farm activities becomes the main choice of many farm households, especially for those can not afford to invest in large – scale pig farming. Households with husbands participate in pig farming <50% of working time are mostly small-scale production. In these households, wives take more tasks not only in pig farming but also in crop production. That is the reason why income share from crop production of this group is higher than the first group. Moreover, income proportion from off-farm activities in this group is also higher than first group with 27.3% (Table 4).

4.5. Factors Influencing Division of Labor in Pig Farming Households

Division of labor in pig production depends on many household's demographic factors including age, health status and educational level of spouse. Further, number of family laborers involving in pig farming, pig production scale and especially husband's perception of gender equality are also considered to have influence on decision of "who do what" in household. As mentioned in research methodology, the authors apply a binary logistic model to quantify impact of such determinants on decision making in pig farming, whether husband has higher power in assigning who do what or both husband and wife decide together.

Results of logistic regression model illustrate that production scale, age and educational level of spouse, and husband's perception of gender equality have statistically significant effects on decision making process for pig farming. In general, in large scale group the probability of decision making by both husband and wife is 1.768 times higher than in small scale group; the higher educated and younger age of couples, the higher probability that decision in pig farming are made by both of them (Table 5). In a traditional family in the Red river delta, if a husband has higher education level than his wife, his opinions will be more respected and he will be able to divide works to the others. However in modern household, couples are mostly at younger age and the wife is also high-educated so that couples can discuss to make decision together. Furthermore, education is a background to fast and effectively absorb and gain knowledge through training courses. Whenever there is a training course, younger women are able to participate. Therefore, they can confidently negotiate with their husbands in making decision regarding to pig farming.

For what concern on perception of husband about gender equality, the finding is as expected. In household where husband considers that his wife plays an important role in making decision the probability of couples decide all the work is higher. In surveyed households, we recognize a common social perception is that male needs be breadwinner in families. Men need be strong and responsible for their families. Meanwhile, women with their native gentleness and sweetness automatically claim to do light, detailed works which are mostly houseworks. Women normally do not have much social relationship and definitive decisions like men do. We find that sexism still exists but of course less severely than before. Houseworks such as cooking, washing, taking care of children are mostly done by women even though they also have to do agricultural works. While men are mostly in charge of works relating to society, community and having to travel a

Table 4: Household's income distribution based on husband working time classification

Income sources	Husband working time in pig farming				P-value
	Over 50% of time (n=21)	Income share (%)	Under 50% of time (n=19)	Income share (%)	
Pig farming (USD)	11.575	79.0	5.637	66.8	0.039
Crop production (USD)	370	2.5	500	5.9	0.000
Off-farm activities (USD)	2.699	18.5	2.300	27.3	0.067
Total income (USD)	14.644	100	8.437	100	0.001

Source: Household survey data. Mann–Whitney test. ***Significant P<0.001, **Significant P<0.05, *Significant P<0.1

Table 5: Results of logistic regression model

Variation	β coefficient	Significant	Exp (β)
Production scale	0.570**	0.014	1.768
Age_H	-0.552*	0.071	0.575
Age_W	-0.343*	0.066	0.709
Education_H	0.381**	0.032	1.463
Education_W	0.394*	0.097	1.482
Health_H	1.056	0.349	2.874
Health_W	1.769	0.663	5.864
Perception_H	0.849**	0.022	2.337
Perception_W	1.425	0.201	4.175
Family laborer	0.069	0.929	1.071
Constant	1.264	0.067	3.539
Omnibus tests of model coefficients	χ ² : 33.898	Significant: 0.000	Nagelkerke R ² : 0.788

**Coefficient is significant at the 0.05 level, *Coefficient is significant at the 0.1 level

lot. When there is a matter concerning breeding or family, both wife and husband will discuss. But eventually, the husband will make the final decision. Thus, social perceptions still exist and partly influence the thought about gender in families. In surveyed households, the role of wives in families is appreciated, especially in financial managing. However, there are some men still consider women's role normal or unimportant. Such men's sexism affects division of labor. Reversely, some women self evaluate that they do not have as good decisions as their husband do due to their low level of education and knowledge. They also always consider that their husbands are householders and in charge of making decisions. Therefore, when they are assigned a work, they do not refuse even sometimes they feel not right. Another reason for that is the conservative of the husbands. They will not change their decisions regardless of their wives' ideas. Thus, women are inhibiting themselves. They need to actively bring out their own opinions to achieve effective division of labor.

5. CONCLUSION

Despite the fact that pig selling price has reduced in recent years, pig farming still contributes remarkable income to farm households in the Red river delta, especially in the context of farmland is transferring to off-farm purposes. However, in pig farming at household level, our paper reveals that there are some limitations about division of labor in the studied area. The householders are not trained for business management, low educational background with 95% of householders obtain only primary and secondary school that inhibits their decision making and dividing works. The education level of laborers, especially women, is also low that obstructs the applying of new techniques and technologies and leads to low productivity.

Overall, gender division of labor in pig farming is difference in each type of activities and in each group of households. Depending on characteristics of each production stage and the contribution of pig farming to total household's income, the division of labor varies. In the small-scale group where pigs are raised mainly by using their own products of agriculture, wives usually perform more work than husbands because a majority of husbands working in off-farm activities. Reversely, in the large-scale group where pig breeding is the main economic activity, husbands undertake more work than wives. However, husband and wife are found to have equal decision making power, most of the wives are entitled to discuss with their husbands before making decision relating to pig farming together. Taking into account factors affecting on decision making power, we identify that production scale, age and educational level of couples, and husband's perception of gender equality have statistically significant effects on decision making process. Therefore, improve the awareness of husbands about their wives' role in pig farming could be consider as appropriate policy for women empowerment in the Red river delta.

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