Marry to rubber? An investigation on the matrilocal residence of smallholder rubber farmers in southwest China

X. Wang[1]; S. Min[1]; B. Junfei[2]

1: China Center for Agricultural Policy, School of Advanced Agricultural Sciences, Peking University, China, 2: China Agricultural University, College of Economics and Management, China

Corresponding author email: xbwang.ccap@pku.edu.cn

Abstract:

This paper constructs a simple model of matrilocal residence with the heterogeneities in family labor and resource endowments of the wives' households. Using the data collected from a comprehensive household survey of small-scale rubber farmers in Xishuangbanna Dai Autonomous Prefecture in Southwest China, the empirical results suggest that the economic factors go beyond the traditional custom of the Dai women and determine a woman's decision to be a matrilocal residence. The labor shortage of a woman's household may foster the incidence of matrilocal residence, while a woman whose natal household possesses more rubber plantations has a higher probability of matrilocal residence. The results confirm that in the presence of labor constraint and resource heterogeneity, a higher labor demand of a household and possessing more location-specific resource may increase the likelihood of matrilocal residence of female family members after marriage. The findings complement the literature regarding matrilocal residence in a community with disequilibrium distribution of the location-specific resources.

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1. Introduction

Marriage migration as a particular type of labor migration has existed a long time (Watts, 1983), is similar to the regular labor migration such as off-farm employment and rural-urban migration, and thus is highly responsive to the changing economic, social and political climate (Davin, 2005). Migration studies showed a nontrivial proportion of migration in low-income countries, particularly in rural areas, was composed of moves by women for the purpose of marriage (Kaur, 2004). Confronting the constraints such as *Hukou*[1] system (in China), rural origins, and low education and status, many women in poor areas similarly pursued migration by marrying into more developed regions in exchange for economic opportunities, farm and off-farm work (Fan and Huang, 1998; Zhang, 2009).

In fact, marriage migration is not limited to the movement of women, and it generally can be divided into three types, patrilocal residence (couples living with husbands' parents), neolocal residence (couples living independently), and matrilocal residence (couples living with wives' parents). Patrilocal residence traditionally was the primary form of marriage in most Asian countries such as China and Japan (Whyte, 1979; Lavely and Ren, 1992; Kato, 2013). With the global transformation of society and economics in the last century, the neolocal residence has become the dominant marriage form world-widely. Statistical results of Landmann *et al*. (2017) showed that the matrilocal residence widely existed in many developing countries although it varies across countries. Particularly, in some southeast countries such Laos and Cambodia, the percentage of matrilocal residence was even up to 15-16% (Table A1).

In China, the forms of marriage migration have also been transforming. The study of Lavely and Ren (1992) showed the patrilocal marriage was strong in China in 1955-85, occupying approximately 80% of all residential patterns, averagely the neolocal marriage only held 10-20%, while the matrilocal marriage was relatively rare, 4% or

[1] *Hukou system is the Chinese household registration system, which creats a spatial hierarchy of urban places and prioritizing the city over the countryside, controls population movement up and down the spatially defined status hierarchy, prevents population flow to the largest cities, enforces the permanent exile of urban residents to the countryside, and binds people to the village or city of their birth, as well as transfers the locus of decision-making with respect to population mobility and work from the transformed household to the work unit or danwei, specifically, in the countryside, to the lowest unit of the collective (Cheng and Selden, 1994).*

less in each province. Since the 1990s the neolocal marriage has been increasing dramatically and become the dominant residence type in China after married, it was 56% by 1994 (Treas and Chen, 2000) and up to near 70% by 1997 (Chen, 2005). Due to the rapid urbanization and the increase in rural-urban migration of young farmers in recent years, the neolocal marriage was expected to continue rising (Zhang, 2009). Although the matrilocal residence has been existing in China historically, its proportion has become relatively low by the 21st century (Table A1).

Interestingly, there is a special place in southwest China - Xishuangbanna Dai Autonomous Prefecture (XSBN), where it is widely considered that the traditional marriage of Dai minority women tends to have a higher probability of being matrilocal residence than the other ethnicities (Unger, 1997; Yang, 2001; Zhang, 2004; Diana, 2013). This traditional custom seems quite similar to the Thai people in Thailand, where the proportion of matrilocal residence was about 10% (Table A1), significantly higher than that in China. However, as of now, due to the lack of statistical data and field survey data, the relatively accurate number regarding matrilocal residences of women including the Dai women in XSBN is still unknown. There is no empirical evidence that can specify how many percentages of the Dai women is a matrilocal residence and what its difference with the other ethnicities.

According to the economics of marriage, the determinants of the Dai women's matrilocal residence may go beyond their traditional customs. The economics of marriage was first introduced by Becker (1973, 1974) and developed by a number of previous studies e.g. Grossbard (1978), Manser and Brown (1980), Grossbard-Shechtman (1982,1984), Nelson (1994), Weiss (1997), Matouschek and Rasul (2008). Generally, the economic approach to the family interprets marriage and relevant issues through the lens of utility-maximizing, forward-looking behavior (Becker, 1993). Thus, the observed decisions related to marriage such as matrilocal residence are likely to be an optimal result, which maximized the utility of a new couple' household under certain resource endowments and economic constraints.

Several explanations for the causes of matrilocal residence have emerged in prior qualitative studies. Divale (1974) believed that matrilocal residence was an adaptive response to the disequilibrium involving land, water, or food resource ratios between husband’s and wife’s households. Thus, a man whose natal household has relatively low endowments tends to migrate to his wife’s household which has more

endowments. Similarly, the study of Ember (1974) indicated that a migrating society due to its relatively high disequilibrium of resource endowment normally has a greater possibility of matrilocal residence. In the study of indeterminacy of the period of matrilocal residence, Bossen (1988) found that the departure of the junior couple might be delayed or hastened by the labor force needs of both spouses' natal families. Therefore, the matrilocal residence can be hypothesized to be a result of the equilibrium of labor and resource endowments between wives' and husbands' natal families.

The few empirical studies on matrilocal residence have provided important references regarding the influence factors of matrilocal residence. Using the data in two agricultural villages in northeast Japan from 1716 to 1870, Tsuya and Kurosu (2000) found that matrilocal marriage was negatively influenced by the number of wives' older sibling but positively affected by household landholding. Kato (2013) found a higher probability of matrilocal residence if the wife had a job or her natal family provided homeownership and intergenerational transfer of household property. While the studies of Fan and Huang (1998) and Zhang (2004) implied that matrilocal residence might be correlated with women's education, economic endowments, parents, and family composition, their studies did not provide direct evidence. Based on the survey data of 1655 married persons born in 1964-1976 in southeastern China, Chu et al. (2011) empirically evidenced that the number of wife's brothers and the educational difference between couples negatively affected the likelihood of matrilocal residence. However, these studies not only lacked an appropriate theoretical framework of matrilocal residence but also failed to control for the possible factors of marital custom related to specific ethnicity such as the Dai minority.

The objective of this study is to better understand the matrilocal residence of the Dai female farmers in southwest China. To achieve it, first, following previous studies on the economics of marriage, we develop a conceptual model with the heterogeneities in family labor and location specific resource endowments (rubber plantation) to illustrate the decision of female farmers to be a matrilocal residence. Second, using a unique household survey data of stallholder rubber farmers in XSBN, southwest China, we empirically test the impact of the Dai minority attribute on a woman's decision to be matrilocal residence, explore the possible mechanisms of the Dai minority effects, and particularly examine the impacts of female farmers' natal family labor and rubber plantation on their decision on matrilocal residence after getting married. Afterward, a

series of robustness checks for the empirical results are conducted. Finally, the potential implications of this study are discussed from the perspective of different disciplines, briefly.

The results suggest that the economic factors including family labor and local specific resource endowments play a more important role in Dai women's decisions to be a matrilocal residence, compared with their traditional custom. The mechanisms of the Dai minority effects on matrilocal residence are channeled through individual education, family's labor demand, and rubber plantation. The labor shortage of a woman's household may foster the incidence of matrilocal residence, while a woman whose household possesses more rubber plantations has also a higher probability of matrilocal residence. The findings confirm that in the presence of labor constraint and resource heterogeneity, a higher labor demand of a household and possessing more location-specific resource may increase the likelihood of matrilocal residence of female family members after she married. Although this study is limited to XSBN, it likely has broader implications for a better understanding of the marriage migration in the other resource richness but disequilibrium distribution regions.

This paper is organized as follows. In the next section, we construct a model to illustrate a woman's decision to be a matrilocal residence and introduce the empirical strategies to estimate the impacts of family labor and rubber plantations on a Dai woman's decision to be a matrilocal residence. Section 3 presents the study area, data collection procedure, and descriptive statistics. In section 4, we report the estimation results and robustness checks. Section 5 briefly discusses the potential implications of this study from the view of various disciplines. The final section concludes the paper.

2. Methods

2.1 A model of matrilocal residence

Following previous studies (Becker, 1973; Grossbard-Shechtman, 1984), we use a simple utility maximization framework to derive a conceptual model to illustrate a woman's decision to be a matrilocal residence. Assume a new couple obtains a discounted lifetime utility value, U(matrilocal) if they choose to be a matrilocal residence, and U(non-matrilocal) if they don't choose to be a matrilocal residence. As marriage can enable the transfer of labor force and resource endowments between wife's and husband's household (Fan and Li, 2002; Divale, 1974; Ember, 1974), these

two utilities are assumed to be determined by labor (L) and resource endowments (R) as well as a vector of other factors (Z). Thus, two utility functions can be respectively written as:

$$U(\text{matrilocal})=U_m(L^w, L^{wh}, R^{wh}, Z^{wh}, L^h, L^{hh}, R^{hh}, Z^{hh}) \quad (1)$$

$$U(\text{non-matrilocal})=U_n(L^w, L^{wh}, R^{wh}, Z^{wh}, L^h, L^{hh}, R^{hh}, Z^{hh}) \quad (2)$$

where *w*, *wh*, *h* and *hh* index the wife, the wife's household, the husband and the husband's household, respectively.

In this case, whether a new couple will choose matrilocal residence can be described as:

$$\text{Max}\ [\ U(\text{matrilocal}), U(\text{non-matrilocal})\ ] \quad (3)$$

Equation (3) denotes that they make the decision of matrilocal residence by comparing the utilities to realize between matrilocal and non-matrilocal residences. If the former is greater, the couple will choose to reside matrilocal; otherwise, they will choose a non-matrilocal. Thus, a latent variable that determines the decision of matrilocal residence can be expressed as:

$$I^*=U(\text{matrilocal}) - U(\text{non-matrilocal}) \quad (4)$$

The couple will choose matrilocal residence if $I^* > 0$; otherwise not. Therefore, the observed decision of matrilocal residence can be expressed as:

$$D = \begin{cases} 1 & if \quad I* > 0 \\ 0 & if \quad I* \leq 0 \end{cases} \quad (5)$$

By incorporating equations (1) and (2) into equation (5), we thereby can yield a conceptual model regarding a new couple's decision to be matrilocal residence:

$$D=f(L^w, L^{wh}, R^{wh}, Z^{wh}, L^h, L^{hh}, R^{hh}, Z^{hh}) \quad (6)$$

In a marriage market, an appropriate marriage meant a woman must be matched with a man who is most likely to marry (Becker, 1974), while the matching generally is based on the characteristics of both men and women (Grossbard-Shechtman, 1982). Hence, a husband's characteristics $\mathbf{X}^h(L^h, L^{hh}, R^{hh}, Z^{hh})$ are supposed to be strongly correlated with his wife's characteristics $\mathbf{X}^w(L^w, L^{wh}, R^{wh}, Z^{wh})$, theoretically. This relation can be written as:

$$\mathbf{X}^h(L^h, L^{hh}, R^{hh}, Z^{hh}) = g[\ \mathbf{X}^w(L^w, L^{wh}, R^{wh}, Z^{wh})] \quad (7)$$

In case the information on the husband and his household is unknown, through incorporating equation (7) into equation (6), a woman's decision to be a matrilocal residence (M) then can be derived as a reduced form of equation (6):

$$M=f(L^w, L^{wh}, R^{wh}, Z^{wh}, \varepsilon) \quad (8)$$

where ε is an unobserved random error term. The coefficients to be estimated for L^{wh} and R^{wh} represent the impacts of labor and resource endowments of the woman's household on her decision to be a matrilocal residence, respectively.

2.2 Empirical model and hypothesis

To achieve the research objectives, we are to employ the standard Probit model to empirically examine the impacts of a woman's family labor and resource endowments on her decision of matrilocal residence. Following the equation (8), the empirical model is specified as:

$$M_i = \begin{cases} 1 & if\ \ matrilocalresidence \\ 0 & if\ \ non-matrilocalresidence \end{cases} \tag{9}$$

$$Pr\left(M_i = 1 \middle| L_i^w, L_i^{wh}, R_i^{wh}, Z_i^{wh}\right) = \Phi\left(\beta_0 + \beta_1 L_i^w + \beta_2 L_i^{wh} + \beta_3 R_i^{wh} + \beta_4 Z_i^{wh}\right) \tag{10}$$

where $\Phi(\bullet)$ denotes the cumulative normal distribution function; *i* index the i^{th} woman; while $\beta_0, \ldots, \beta_4$ are the parameters to be estimated.

$$\ln L = \sum_i \{M_i\, ln\left[\Phi\left(\beta_0 + \beta_1 L_i^w + \beta_2 L_i^{wh} + \beta_3 R_i^{wh} + \beta_4 Z_i^{wh}\right)\right] + (1 - M_i)\, ln\left[1 - \Phi\left(\beta_0 + \beta_1 L_i^w + \beta_2 L_i^{wh} + \beta_3 R_i^{wh} + \beta_4 Z_i^{wh}\right)\right]\} \tag{11}$$

Thus, the log-likelihood equation can be written as in equation (10), which will be estimated using the maximum likelihood estimation procedure.

The significance and sign of the coefficients β_2 and β_3 indicate whether and how family labor and resource endowments affect the woman's decision on matrilocal residence, respectively. According to the findings of previous studies such as Tsuya and Kurosu (2000) and Chu et al. (2011), we expect that β_2 is significant and negative, i.e. **Hypothesis 1:** *a woman whose natal family has more labor endowments is less likely to be matrilocal residence after marriage*. Furthermore, assume the resource endowments (R^{wh}) of the wife's household is location-specific, thus following Baker and Jacobsen (2007), β_3 is anticipated to be significantly positive, i.e. **Hypothesis 2:** *A woman whose natal family possesses more location-specific-resource endowments has a higher probability of matrilocal residence after marriage.*

3. Data and descriptive statistics

3.1 Study area

In this study, we use the data collected from a comprehensive household survey of smallholder rubber farmers in Xishuangbanna Dai Autonomous Prefecture (XSBN) of Yunnan province in southwest China in March 2013. XSBN is a minority autonomous region with diverse culture including about 10 ethnic groups (e.g. the Dai minority, the Hani minority, and the Han majority), while the Dai minority is the dominant ethnic group and occupies over 30% of total population in the prefecture. Moreover, XSBN is a mountainous region where rapid changes in land use have taken place with the transition from traditional agriculture and tropical rainforest to rubber farming (Zhang *et al.*, 2015). The study of Min *et al.* (2017a) showed that over 58% of smallholder rubber farmers were the Dai people. Therefore, the Dai minority is also the main stakeholders of rubber economy in XSBN.

To achieve the objective of this study, utilizing the data of small-scale rubber farmers in XSBN is an interesting case in several regards. First, rubber plantation is an appropriate proxy variable for the location specific resource endowments. As a strict requirement of growing environment of natural rubber, rubber plantation is recognized as a kind of important resource endowment with remarkable comparative advantage for smallholders in XSBN. Also, rubber plantation is location specific and traditionally not allowed to be reallocated to a daughter if she married without living with her parents. Second, the special approach and time for harvesting rubber latex make rubber farming is highly labor intensity (Min *et al.*, 2017a). In XSBN, all rubber trees are planted in the mountainous region. Rubber trees have to be tapped in the early morning before the sun rises and collected before noon. Considering the potential risk and danger of farm working among the rubber trees in the mountains before the sun rises, generally, males in a household are commonly responsible for tapping rubber while the female members are in charge of collecting the latex of rubber. Thus, the relatively high male labor demand of rubber farming may facilitate observing the impact of resource endowments on a female's decision to be a matrilocal residence. Third, it is said the traditional marriage of Dai minority women tends to have a higher probability of matrilocal residence than the other ethnicities. Thus, the possible difference in matrilocal residence between Dai minority and other ethnicities can reflect the impacts of traditional customs of the Dai minority on a female's decision to be a matrilocal residence. Overall, the case

study of smallholder rubber farmers in XSBN is supposed to provide a unique opportunity to examine the issues we raised and empirically test our hypotheses.

3.2 Data collection

To obtain a representative sample of smallholder rubber farmers in XSBN, in the survey we applied a stratified random sampling approach by taking into account the distribution of rubber plantations. The details on the sampling approach and procedure please refer to the studies of Min *et al*. (2017b). In total, we collected 612 household questionnaires from 42 villages of 8 townships in the three counties of XSBN. During the survey, we employed a comprehensive household questionnaire, which includes detailed information on socioeconomic characteristics of family members, land use, rubber farming and some other rubber relevant questions.

To explore the matrilocal residences of female members of smallholder rubber farmers, we particularly designed a module to collect the information on their families and household agriculture those are before they got married. To narrow the research scope of this study, we target on the women who must satisfy the following points: 1) original family member in the surveyed household, including the woman who was an original member of this household in past, but excluding the woman who came from other households due to marriage or other reasons; 2) married, divorced or widowed; 3) no more than 40 years old. Smallholder rubber farming in XSBN was started in the 1980s such that smallholders just began to harvest rubber in the 1990s. We consider the effects of rubber farming on marriage migration also emerged in the same period. Therefore, we only target the women whose ages are no more than 40 years old. Finally, we totally collected 402 qualified women's information and their households' socio-economic characteristics.

3.3 Descriptive statistics of key variables

Table 1 presents the definitions and descriptive statistics of all variables used in the model of matrilocal residence. About 12.4% of sample women decided to be matrilocal residence after getting married. In the light of previous studies (Morgan and Rindfuss, 1984; Lavely and Ren, 1992), a vector of variables (Z_i^{wh}) such as marriage-year and ethnicity were included. Averagely, these sample women have been married for over 8 years. Also, of these 402 qualified women, about 55% belong to the Dai minority.

To avoid the potential endogeneity of explanatory variables in explaining a woman's decision to be a matrilocal residence, all explanatory variables were set as lagged variables i.e. all the collected data were the status before the woman got married. According to the variable setting of a woman's labor endowment (L_i^w) in previous marriage studies (Lavely and Ren, 1992; Zhang, 2004; Fan and Huang, 1998; Chu et al., 2011; Kato, 2013), we included her age and education level before marriage. Averagely, the age of first marriage is 21 years old. The numbers of a woman's brothers and sisters as well as the health status of her parents were employed as proxy variables of labor endowment (L_i^{wh}) of her natal family (Tsuya and Kurosu, 2000; Chu et al., 2011; Rajan, 2014). On average, a woman had one brother and one sister, while about 10% of the qualified women's parents were unhealthy.

Table 1: Definitions and descriptive statistics of all variables

Variables	Definition and description	Means	Std. Dev.
Sample size		402	
MATRI	Matrilocal residence after marriage(1=yes; 0=no)	0.124	0.330
DAI	Ethnicity (1=Dai, 0= others)	0.550	0.498
YEARS	How long have the woman been married? (years)	8.744	5.202
AGE	Age of marriage (years)	20.813	3.621
EDU	Level of education (years)	7.381	3.168
BRO	Num. of brothers (in the year of the woman married)	0.995	0.971
SIST	Num. of sisters (in the year of the woman married)	1.007	1.222
PARE	Health status of parents (in the year of the woman married; 1=unhealthy, 0=healthy)	0.095	0.293
LAND	Land area household operated land (Hectare/person)	0.914	0.888
RUBBER	Areas of rubber plantation (Hectare/person)	0.486	0.574
SPECI	Specialize in rubber farming (proportion of rubber planting areas in total land areas)	0.519	0.365
LOW	Altitude ≤ 600 MASL (1=yes; 0=no)	0.187	0.390
MIDDLE	600 MASL <Altitude ≤ 800 MASL (1=yes; 0=no)	0.493	0.501
HIGH	Altitude > 800 MASL (1=yes; 0=no)	0.321	0.467

Data Source: Authors' survey.

To empirical test the impacts of resource endowment (R_i^{wh}) on a matrilocal residence, the areas and specialization of rubber plantation of the women's households were included; meanwhile, we also comprise the variable of land size (Tsuya and Kurosu, 2000). The results show that land size of their households on average was 0.914 hectares per capita, wherein 51.9% (0.486 hectares) were used to plant rubber. Considering XSBN is a mountainous region, we also controlled for the altitude of

household location. Approximately 19% qualified women's households were located below 600 meters above sea level (MASL), while near 50% and 30% were located in middle altitude and high altitude region.

Table 2 shows the differences in mean values of all variables between women who are a matrilocal residence and non-matrilocal residence, providing an indication concerning the possible correlations between these variables and matrilocal residence. The Dai minority women have a significantly higher proportion to be matrilocal residence than that of other ethnicities. This result is consistent with the traditional customs of the Dai minority, but it did not control for the other possible variables affecting her decision to be a matrilocal residence.

The women with matrilocal residence have averagely been married over ten years, which is significantly greater than that of non-matrilocal residence. It shows a positive correlation between marriage years and matrilocal residence, implying a decreasing trend of matrilocal residence over time. Also, the matrilocal residence is correlated with female education, that is, women with higher education level tend to be a non-matrilocal residence.

Table 2: Differences between matrilocal residence and non-matrilocal residence

Variables	MATRI=1		MATRI=0		Difference#	
	Means	Std. Dev.	Means	Std. Dev.		
Sample size	50		352			
DAI	0.760	0.431	0.520	0.500	0.240	***
YEARS	10.320	5.850	8.520	5.073	1.800	**
AGE	20.120	3.166	20.912	3.674	-0.792	
EDU	6.300	2.550	7.534	3.220	-1.234	***
BRO	0.660	0.848	1.043	0.979	-0.383	***
SIST	0.600	0.808	1.065	1.260	-0.465	**
PARE	0.200	0.404	0.080	0.271	0.120	***
LAND	0.859	0.797	0.922	0.901	-0.063	
RUBBER	0.640	0.700	0.464	0.552	0.176	**
SPECI	0.687	0.307	0.495	0.367	0.192	***
LOW	0.300	0.463	0.170	0.377	0.130	**
MIDDLE	0.520	0.505	0.489	0.501	0.031	
HIGH	0.180	0.388	0.341	0.475	-0.161	**

Data Source: Authors' survey and calculation;
Note: # Mean-comparison tests; *,** and *** represent 10%, 5%, and 1% significance level, respectively.

The decision to be matrilocal residence appears to be positively correlated with households' labor demand. The women who have more brothers and sisters have a lower proportion to be a matrilocal residence, while they have a higher proportion of matrilocal residence if their parents are unhealthy. This result to some extent supports our first hypothesis.

Furthermore, the land size of a woman's household is not correlated with their matrilocal residence decisions, but the area of land used for rubber farming is positively correlated with matrilocal residence. Rubber farming is location-specific and is typical male labor intensive. When family labor cannot satisfy labor demand for regular management of rubber farming due to possessing more rubber plantations, the migration of external labor to households such as matrilocal residence then becomes particularly important. Similarly, as shown in Figure 1, the women whose households more specialize in rubber farming (i.e. allocating more proportions of land for rubber plantation) may have a significantly higher proportion of matrilocal residence. These results are consistent with our second expectation, that is, higher resource endowments of households such as rubber plantations facilitate matrilocal residence of female members.

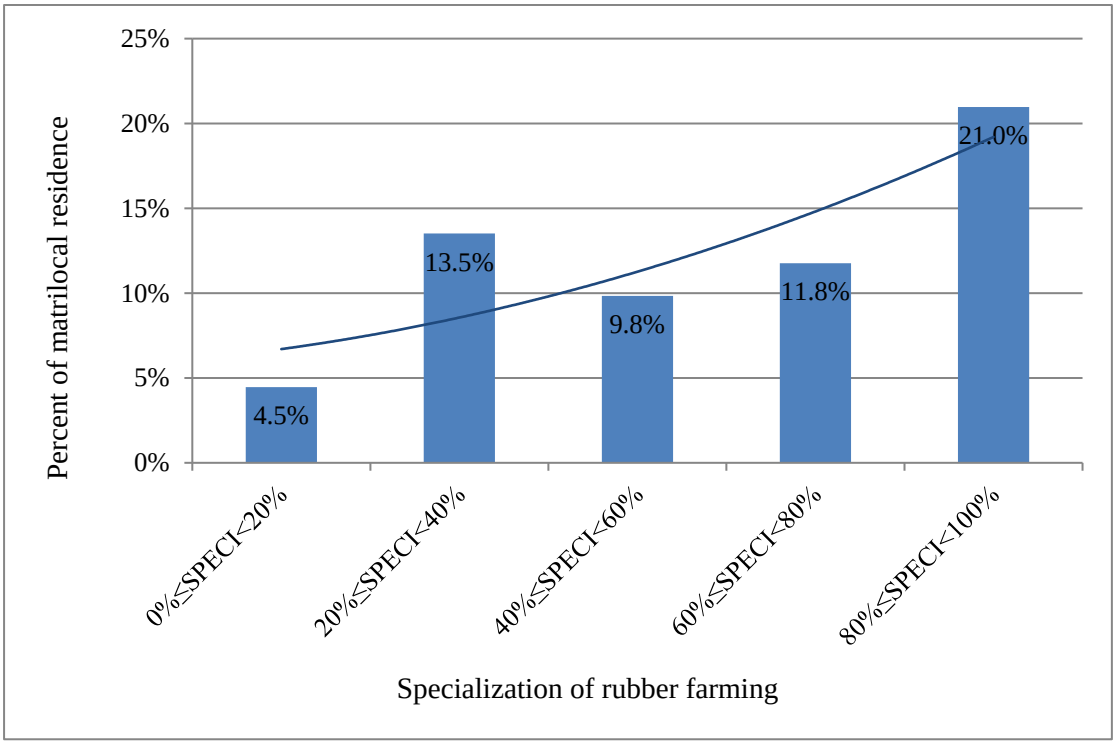

Figure 1: Relation between matrilocal residence and specialization of rubber farming

Moreover, the extents of matrilocal residence of qualified female members also vary in the altitudes of their households' locations, indicating the heterogeneity of matrilocal residence in the altitude distribution. The women whose households are located in low (high) altitude have a higher (lower) proportion of matrilocal residence.

Table 3 shows the differences in variables between the Dai minority and other ethnicities. Apart from marriage years, marriage age, parents' health status and the area of rubber plantation, all the other variables between the Dai minority and other ethnicities are significantly different. For instance, the Dai minority has fewer sisters and brothers, more specializes in rubber farming than those of other ethnicities, but a higher proportion to be a matrilocal residence. These significantly different variables between the Dai minority and the other ethnicities may help understand the possible impact mechanisms of the Dai minority attribute on a woman's decision to be a matrilocal residence.

Table 3: Differences between the Dai minority and other ethnicities

Variables	Dai minority		Other ethnicities		Difference#	
	Means	Std. Dev.	Means	Std. Dev.		
Sample size	221		181			
MATRI	0.172	0.378	0.066	0.249	0.106	***
YEARS	8.661	5.177	8.845	5.245	-0.185	
AGE	20.643	3.549	21.022	3.706	-0.380	
EDU	7.674	2.843	7.022	3.499	0.652	**
BRO	0.652	0.647	1.414	1.125	-0.763	***
SIST	0.679	0.793	1.409	1.505	-0.730	***
PARE	0.090	0.288	0.099	0.300	-0.009	
ln(LAND)	-1.050	2.912	-1.429	3.846	0.379	
ln(RUBBER)	-3.548	6.709	-5.867	8.653	2.319	***
SPECI	0.576	0.346	0.449	0.376	0.128	***
LOW	0.253	0.436	0.105	0.307	0.148	***
MIDDLE	0.548	0.499	0.425	0.496	0.122	**
HIGH	0.199	0.400	0.470	0.500	-0.271	***

Data source: Authors' survey and calculation
Note: # Mean-comparison tests, *,** and *** represent 10%, 5%, and 1% significance level, respectively.

4. Results

Table 4 shows the estimation results for matrilocal residence by including all explanatory variables. The empirical model is estimated three times by considering the different settings of resource endowment variables. In model (1a), the logarithm of

rubber planting area was applied directly. In model (1b), we control for the total land size of the household and therefore use a variable of the specialization in rubber farming in order to prevent the possible correlation between land size and rubber planting areas. In model (1c), the extent of specialization in rubber farming is further divided into five groups, accordingly, the significance of the difference in probability of matrilocal residence between groups can be tested.

Table 4: Estimation results for matrilocal residence

Variables	Result (a)	Result (b)	Result (c)
ln(RUBBER)	0.0346**		
	(0.017)		
SPECI		1.018***	
		(0.299)	
20%≤SPECI<40%			0.791*
			(0.410)
40%≤SPECI<60%			0.751*
			(0.392)
60%≤SPECI<80%			0.835**
			(0.354)
80%≤SPECI<100%			1.071***
			(0.337)
ln(LAND)		-0.027	-0.039
		(0.025)	(0.028)
DAI	0.218	0.227	0.219
	(0.199)	(0.206)	(0.204)
YEARS	0.047**	0.058***	0.056***
	(0.019)	(0.020)	(0.020)
AGE	0.022	0.021	0.022
	(0.030)	(0.029)	(0.030)
EDU	-0.086***	-0.089***	-0.092***
	(0.029)	(0.030)	(0.031)
BRO	-0.328**	-0.332**	-0.309**
	(0.132)	(0.136)	(0.137)
SIST	-0.302**	-0.289**	-0.303***
	(0.118)	(0.114)	(0.112)
PARE	0.643**	0.620**	0.619**
	(0.269)	(0.269)	(0.269)
MIDDLE	-0.105	-0.005	-0.024
	(0.215)	(0.218)	(0.219)
HIGH	-0.359	-0.147	-0.190
	(0.251)	(0.261)	(0.255)
_cons	-0.867	-1.797**	-1.909**
	(0.744)	(0.849)	(0.859)
N	402	402	402
Pseudo R^2	0.169	0.188	0.193
Log lik.	-125.5	-122.5	-121.8
Wald Chi^2	43.86***	46.40***	46.31***

Notes: Robust standard errors in parentheses; *p< 0.10, **p< 0.05, **p< 0.01

Regardless of the model specifications, the dummy variable for Dai ethnicity is always insignificant. This result reveals that only having the Dai ethnic background cannot interpret the high rate of matrilocal marriage in the area although it has been commonly recognized as a traditional custom. The observed high rate of matrilocal marriage of the Dai woman actually may be due to the significant heterogeneity between the Dai minority and other ethnicities.

4.1 Impacts of labor and resource endowments on matrilocal residence

As shown in Table 4, by controlling for other explanatory variables, the three variables regarding the labor endowments of a woman's household always have significant impacts on her matrilocal residence. The numbers of a woman's brothers and sisters have negative effects on the likelihood of her matrilocal residence. If either of her parents is unhealthy, she has a significantly higher probability of matrilocal residence after getting married. Thus, these results jointly confirm the first hypothesis that a woman whose natal family has more labor endowments is less likely to be matrilocal residence after marriage.

Among the three columns of results in Table 4, rubber (the proxy variables of resource endowment) always significantly affect the decision of matrilocal residence, regardless of any different setting forms. The result (a) suggests that as compared with those possessing fewer rubber plantations, a woman whose household owns more rubber plantations has a higher probability of matrilocal residence. When we control for household land size in the result (b), the specialization in rubber i.e. the share of rubber plantation in the total land area still has a significant and positive impact on the matrilocal residence. The result (c) further shows the significant differences in matrilocal residence among the groups of specialization in rubber farming. Hence, the second hypothesis of this study, i.e. a woman whose natal family possesses more location-specific-resource endowments has a higher probability of matrilocal residence after marriage, is also approved.

4.2 Robustness check

In this section, firstly, we investigate the potential interaction effect of ethnicity and rubber plantation on a woman's decision to be a matrilocal residence and the heterogeneities in determinants of matrilocal residence between the Dai minority and other ethnicities. Second, we further detect the possible mechanisms of the Dai minority effects on matrilocal residence, we employ the stepwise regression approach to re-

estimate the empirical model explained in equations (9) - (11). Finally, a cohort analysis for matrilocal residence is conducted to check for the robustness of the empirical results.

4.3.1 Interaction effects with ethnicity

As shown in column 2 of Table 5, the coefficients of all variables regarding rubber specialization turn to be insignificant as compared to the result (c) in Table 4, while interestingly the interaction terms of rubber specialization and ethnicity are significant. This result indicates that the impact of the Dai minority attribute on matrilocal residence is accompanied with the location specific resource endowments, confirming that the cause of matrilocal residence goes beyond the influence of traditional custom of the Dai minority.

Columns 3 and 4 in Table 5 report the estimation results of matrilocal residence for the Dai minority group and the other ethnicities group, respectively. Interestingly, marriage years is insignificant for the Dai minority but significant for the other ethnicities, revealing that the decrease in the trend of matrilocal residence over time only happens for the other ethnicities. The improvement of women's education level can reduce the probabilities of matrilocal residence for both the Dai minority and the other ethnicities. Also, for the Dai minority women, parents' health status and the specialization of household in rubber farming have significant effects on their probabilities of matrilocal residence. As for the other ethnic women, the numbers of brothers and sisters, and the altitude of household location have significant impacts on their decisions to be a matrilocal residence. Overall, the differences in the significant independent variables between the result (Dai) and the result (Other) indicate the heterogeneities in determinants of matrilocal residence between the Dai minority and other ethnicities.

Finally, the results indicate that our first hypothesis concerning the negative impact of family labor endowment on a woman's matrilocal residence is valid in varying degrees for both the Dai minority group and the other ethnicities group. However, the validity of the second hypothesis regarding the positive impact of resource endowment on matrilocal residence seems only appropriate for the Dai minority group. This result implies that labor constraint plays a role in the decision on matrilocal residence directly, while the impact of resource endowment on matrilocal residence might be associated with somewhat specific ethnicity.

Table 5: Estimation results for matrilocal residence with interaction effect and between the Dai minority and other ethnicities

Variables	Result (interaction)	Result (Dai)	Result (Other)
DAI	-0.878		
	(0.535)		
20%≤SPECI<40%	0.149	1.365**	-0.0426
	(0.631)	(0.696)	(0.725)
40%≤SPECI<60%	0.628	1.169*	0.530
	(0.527)	(0.676)	(0.607)
60%≤SPECI<80%	-0.274	1.597**	-0.614
	(0.534)	(0.653)	(0.600)
80%≤SPECI<100%	0.304	1.727***	-0.0134
	(0.452)	(0.624)	(0.586)
DAI#20%≤SPECI<40%	1.269		
	(0.792)		
DAI#40%≤SPECI<60%	0.523		
	(0.727)		
DAI#60%≤SPECI<80%	1.882***		
	(0.724)		
DAI#80%≤SPECI<100%	1.420**		
	(0.599)		
YEARS	0.0586***	0.0296	0.0962**
	(0.0201)	(0.0261)	(0.0404)
AGE	0.0340	0.0146	0.0452
	(0.0303)	(0.0350)	(0.0810)
EDU	-0.103***	-0.0938**	-0.125**
	(0.0330)	(0.0433)	(0.0585)
BRO	-0.389***	-0.283	-0.402*
	(0.133)	(0.206)	(0.208)
SIST	-0.327***	-0.121	-0.761***
	(0.116)	(0.174)	(0.241)
PARE	0.636**	0.899**	0.377
	(0.288)	(0.355)	(0.689)
ln(LAND)	-0.0295	-0.0511	0.00636
	(0.0285)	(0.0524)	(0.0434)
MIDDLE	-0.0347	0.169	-0.994*
	(0.228)	(0.267)	(0.528)
HIGH	-0.195	0.0161	-1.027**
	(0.262)	(0.350)	(0.449)
_cons	-1.519*	-2.193**	-0.833
	(0.852)	(1.041)	(1.875)
N	402	221	181
pseudo R^2	0.222	0.173	0.380
Log lik.	-117.5	-83.92	-27.40
Wald Chi^2	68.34***	40.81***	50.73***

Notes: Robust standard errors in parentheses; *p< 0.10, **p< 0.05, **p< 0.01

4.3.2 Possible mechanisms of the Dai minority effects on matrilocal residence

Following the mechanism test approach presented in previous studies (Li and Zhu, 2006; Sekabira and Qaim, 2017), the test in this study is to gradually control for other

socioeconomic variables, which are significantly different between the Dai minority and other ethnicities (Table 3), in the matrilocal residence regressions to see whether these controls attenuate the effect of the Dai minority dummy variable. Results are shown in Table 6. All models shown have a woman's decision on matrilocal residence as the dependent variable.

Table 6: Stepwise regression results for matrilocal residence

	(1)	(2)	(3)	(4)	(5)	(6)
DAI	0.557***	0.658***	0.265	0.497***	0.459***	0.483***
	(0.175)	(0.182)	(0.201)	(0.169)	(0.174)	(0.184)
	[0.106]	[0.116]	[0.045]	[0.092]	[0.083]	[0.089]
YEARS		0.0245				
		(0.018)				
AGE		0.002				
		(0.026)				
EDU		-0.074***				
		(0.026)				
BRO			-0.333**			
			(0.139)			
SIST			-0.243**			
			(0.105)			
PARE			0.790***			
			(0.256)			
ln(RUBBER)				0.025*		
				(0.015)		
ln(LAND)					-0.013	
					(0.029)	
SPECI					0.771***	
					(0.257)	
MIDDLE						-0.255
						(0.207)
HIGH						-0.491*
						(0.257)
_cons	-1.504***	-1.314**	-0.947***	-1.374***	-1.903***	-1.199***
	(0.144)	(0.614)	(0.250)	(0.140)	(0.236)	(0.244)
N	402	402	402	402	402	402
pseudo R^2	0.036	0.076	0.096	0.048	0.066	0.049
Log lik.	-145.6	-139.5	-136.5	-143.7	-141.0	-143.5
Chi-squared	10.15***	24.67***	22.21***	9.858***	14.34***	17.28***

Note: Robust standard errors in parentheses; Marginal effects in bracket; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

In column (1), we include the Dai ethnicity as a dummy variable, while the result shows that the Dai women have a significantly 10.6% higher probability to be a matrilocal residence than that of the other ethnicities. The model in column (2) includes the Dai ethnicity together with the women's marriage year, age at marriage, and their educational level. The estimated results show that the ethnicity variable remains

significant and its marginal effect on the probability to be matrilocal residence increases slightly. This is because that the relatively high educational level of the Dai ethnicity (table 3) significantly reduces the likelihood of matrilocal residence, as a higher level of education is associated with greater preference for independent living (Logan and Bian, 1999).

In column (3), we include the Dai ethnicity dummy variable together with the numbers of brothers and sisters and the health of parents to test the existence of a possible mechanism by labor demand. Results show that the Dai ethnicity dummy variable turns insignificant, while the numbers of brothers and sisters are significantly negative and the variable of unhealthy parents is significantly positive. These results indicate that the matrilocal residence effect of the Dai women is primarily channeled through the pathways of a labor shortage in the family.

In columns (4), (5) and (6), the planting area of rubber, the specialization in rubber, and the altitude of household location slightly reduce the marginal effects of the Dai ethnicity dummy variable in varying degrees. The results reveal the possible mechanisms of the Dai ethnicity effects on matrilocal residence through the variables of rubber planting area, the specialization in rubber and the altitude of household location. However, the Dai ethnicity dummy variable remains significant in columns (4), (5) and (6), suggesting that other pathways also play a role.

Finally, when the model included all the other socioeconomic variables (Table 5), the Dai ethnicity dummy variable is insignificant. By comparing the results between Tables 5 and 6, the consistent significant variables include the marriage year, education, the numbers of brothers and sisters, the heath of parents, rubber planting area and the specialization in rubber. These results suggest that the mechanism of the Dai minority effect on matrilocal residence is channeled through the heterogeneities in women's educational level, family labor demand, and rubber farming.

4.3.2 Cohort analysis

The results in Tables 4 and 5 show the significant differences in matrilocal residence among the different years of getting married. Similarly, in the study of Kato (2013) on Japanese family system over the twentieth century, the incidence of matrilocal residence also differed in various periods. Thus, the robustness of the determinants of matrilocal residence among different periods is worthy to be concerned. Hence, in this

section, we are to perform a simple cohort analysis to further test the solidity of the proposed matrilocal residence model.

First, we split the entire sample households into four cohorts. Table 7 presents the mean values of all variables among the four cohorts. The results of the mean-comparison test show the average values of the variables in the last three cohorts are different with those in the first cohort in varying degrees, respectively. Therefore, there exist somewhat heterogeneities in these variables among the four cohorts.

Table 7: Differences among various cohorts

Variables	(1) Before 2000 #		(2) 2001-2004			(3) 2005-2008			(4) 2009-2012		
	Mean	Std. Dev.	Mean	Std. Dev.		Mean	Std. Dev.		Mean	Std. Dev.	
Sample size	109		99			130			64		
MATRI	0.156	0.364	0.152	0.360		0.108	0.311		0.063	0.244	*
DAI	0.550	0.450	0.525	0.502		0.569	0.497		0.547	0.502	
YEARS	15.780	2.979	9.404	1.133	***	5.646	1.048	***	2.031	0.925	***
AGE	19.101	3.012	20.687	3.556	***	21.423	3.664	***	22.688	3.361	***
EDU	6.165	3.164	6.970	3.122	*	7.908	2.945	***	9.016	2.775	***
BRO	1.193	1.076	1.061	0.956		0.885	0.978	**	0.781	0.701	***
SIST	1.009	1.190	1.253	1.417		0.923	1.118		0.797	1.115	
PARE	0.101	0.303	0.131	0.339		0.069	0.255		0.078	0.270	
LAND	0.916	0.868	0.791	0.887		0.982	0.966		0.965	0.745	
RUBBER	0.320	0.454	0.330	0.497		0.623	0.624	***	0.730	0.616	***
SPECI	0.351	0.358	0.413	0.340		0.632	0.331	***	0.740	0.287	***
LOW	0.220	0.416	0.182	0.388		0.185	0.389		0.141	0.350	
MIDDLE	0.459	0.501	0.475	0.502		0.508	0.502		0.547	0.502	
HIGH	0.321	0.469	0.343	0.477		0.308	0.463		0.313	0.467	

Data Source: Authors' survey and calculation;
Note: # Mean-comparison tests with the group (1), *,** and *** represent 10%, 5%, and 1% significance level, respectively.

Second, we undertook two steps to test the solidity of the matrilocal residence model and the robustness of its determinants. a), the empirical model of matrilocal residence is estimated in each cohort, respectively. b), the four cohorts are randomly combined into five cohort combinations, and then the empirical model is estimated in each cohort combination, respectively.

Table 8 presents the estimation results for matrilocal residence model among various cohort combinations. The results of Wald Chi^2 tests indicate almost all estimation results of matrilocal residence model among different cohort combinations are statistically valid. One exception is the model in the cohort (4), which can't be successfully estimated due to small sample size and few incidences of matrilocal residence and therefore was omitted.

Table 8: Estimation results for matrilocal residence among various cohort combinations

Variables	(1)	(2)	(3)	(1)(2)	(2)(3)	(3)(4)	(1)(2)(3)	(2)(3)(4)
SPECI	1.549***	1.244**	2.245**	1.083***	1.063***	1.477**	1.081***	0.960**
	(0.528)	(0.536)	(1.104)	(0.326)	(0.402)	(0.729)	(0.310)	(0.377)
BRO	-0.523**	-0.364	-0.361	-0.387**	-0.311*	-0.367	-0.355**	-0.276*
	(0.244)	(0.265)	(0.275)	(0.176)	(0.162)	(0.269)	(0.138)	(0.160)
SIST	-0.325*	-0.520*	0.117	-0.401***	-0.248	-0.104	-0.278**	-0.262*
	(0.183)	(0.313)	(0.295)	(0.143)	(0.167)	(0.260)	(0.117)	(0.157)
PARE	1.324**	0.325	1.589**	0.646*	0.439	0.994**	0.737**	0.293
	(0.615)	(0.483)	(0.720)	(0.342)	(0.363)	(0.499)	(0.291)	(0.328)
DAI	-0.356	0.807**	0.323	0.0283	0.384	0.509	0.111	0.515*
	(0.375)	(0.394)	(0.445)	(0.253)	(0.299)	(0.422)	(0.218)	(0.286)
YEARS	0.214***	0.086	-0.219	0.049	0.094	0.020	0.060***	0.087**
	(0.072)	(0.153)	(0.153)	(0.033)	(0.062)	(0.072)	(0.022)	(0.044)
AGE	0.143*	-0.023	0.019	0.045	0.026	-0.018	0.044	0.0004
	(0.076)	(0.059)	(0.053)	(0.042)	(0.034)	(0.044)	(0.031)	(0.032)
EDU	-0.170***	-0.073	-0.054	-0.115***	-0.059	-0.082	-0.081**	-0.075*
	(0.062)	(0.075)	(0.063)	(0.042)	(0.042)	(0.054)	(0.033)	(0.038)
ln(LAND)	-0.014	-0.118	-0.061	-0.032	-0.028	-0.0354	-0.026	-0.024
	(0.044)	(0.109)	(0.076)	(0.036)	(0.039)	(0.054)	(0.027)	(0.034)
MIDDLE	0.500	0.494	-0.415	0.250	-0.112	-0.268	-0.0103	-0.062
	(0.373)	(0.476)	(0.408)	(0.286)	(0.291)	(0.347)	(0.229)	(0.270)
HIGH	0.0731	1.279**	-1.334***	0.431	-0.071	-1.268***	-0.076	-0.159
	(0.465)	(0.599)	(0.467)	(0.327)	(0.341)	(0.440)	(0.271)	(0.319)
_cons	-6.453***	-2.086	-1.525	-1.982*	-2.412**	-1.305	-2.292***	-1.744*
	(2.352)	(1.910)	(1.912)	(1.162)	(1.130)	(1.470)	(0.887)	(1.043)
N	109	99	130	208	229	194	338	293
Pseudo R^2	0.363	0.249	0.298	0.216	0.166	0.229	0.192	0.172
Log lik.	-30.04	-31.63	-31.19	-70.01	-72.55	-46.20	-108.6	-85.37
Wald Chi^2	38.62***	17.60***	29.17***	36.27***	23.02***	36.33***	40.43***	33.39***

Notes: Robust standard errors in parentheses; $^{*}p< 0.10$, $^{**}p< 0.05$, $^{**}p< 0.01$

Specifically, the validity of our first and second hypothesis persists across all cohort combinations. These results further emphasize the important role of family labor and resource endowments for a woman's decision to be matrilocal residence even over the different periods. Furthermore, the heterogeneities in independent variables among these cohorts have resulted in somewhat differences in the significances of their coefficients among the models of various cohort combinations. Overall, the cohort analysis confirms that the specification of our proposed matrilocal residence model is valid, and the results of its determinants are also robust.

5. Discussions

A major finding of this study "a woman whose natal household possesses more rubber plantations has a higher probability of matrilocal residence" actually implies that matrilocal residence may be associated with female's land use rights. Nowadays women

in rural China have the equal right with men to obtain the allocated land from the village collective. However, the women marrying out the village generally would lose the right to possess the land tenure in their natal villages, while the women living in their natal villages after marriage are not only allowed to hold their land tenure but also have the rights to inherit land upon their husband's and parents' death, as long as their land tenures are not expired. The study of Kudo (2015) found that allowing women living in a village to inherit land upon their husband's death increases the marital probability of males living in the village in rural Tanzania. Interestingly, our results reveal that rubber plantation, instead of normal land, is a significant factor attracting men's marriage migration. This may be because that rubber plantation has more potential benefits than the normal land in rural XSBN.

A good understanding of matrilocal residence has broad implications for economic, society, human, and biology relevant issues (Puiliam, 1982; Feinman, 1992; Hamilton et al., 2005; Peters, 2010; Jones, 2011). For example, the matrilocal residence could avoid somewhat traditional conflicts between mother-in-law and daughter-in-law within a family, while the strong emotional bond between wife and parents can facilitate financial and caretaking assistance between generations (Tsui, 1989). In matrilocal households, women can enjoy the assistance and protection of their families and clans, the security of economic independence, the maintenance of land right, and the authority that comes with bargaining and decision-making power (Warner et al., 1986; Judd, 2007; Grogan, 2013). Thus, the matrilocal residence can also offer the best domestic violence protection (Rajan, 2014).

According to the findings in this study, a woman's decision on matrilocal residence goes beyond the traditions of the Dai minority and mainly depends on her natal family's economic conditions including labor and location-specific resource endowments. This implies that through shifting marriage migration, the possession of resource endowments appears to strengthen a woman's right and power in a marital relationship and thereby can reduce gender inequality.

However, it should be concerned that the matrilocal residence may also raise some potential risks of family conflicts. The matrilocal residence driven by resource endowments might be not an ideal type of residences, if a social stigma "*a man who abandons his parents and leaves his ancestors is unfilial and abominable*; *a man who lives with his wife's parents is a loser and his life, and work has to rely on wife's*

household" was attached to those who live with the wife's parents after marriage (Morgan and Rindfuss, 1984). Under such condition, a husband has to withstand the social pressure of surrounding public opinion. Also, the matrilocal residence may adversely affect the productivity of son-in-law, that is, a man is more productive in patrilocal residence than in a matrilocal household (Guha, 2010). This means that a newly-joined male member due to being matrilocal residence perhaps cannot efficiently complement the labor shortage of his wife's family as expected. Therefore, overall, all above situations will largely negatively affect the marital relationship, thereby increasing the risks of family conflicts.

6. Conclusions

While the matrilocal residence has been around for many years, its related study from the perspective of economics is few. Following the theoretical framework of marriage economics in previous studies, we constructed a simple model of matrilocal residence with the heterogeneities in family labor and resource endowments of the wives' households and thereby proposed two hypotheses regarding the determinants of matrilocal residence. Based on a case study of qualified female members of smallholder rubber farmers in XSBN in southwest China, this study empirically examines the possible influence factors of a woman' decision on matrilocal residence and check for the solidity of the established model and the robustness of the results.

The results indicate that the traditional custom of the Dai minority women is not a true reason for their higher probabilities of matrilocal residence. Actually, the mechanisms of the Dai minority effects on matrilocal residence are channeled through education, labor demand, and resource endowments in terms of rubber. Also, the two proposed hypotheses are also confirmed, that is, fewer family labor endowments and more resource endowments such as rubber plantations of the wives' households can encourage the incidence of matrilocal residence. The determinants of matrilocal residence between the Dai minority group and the other ethnicities group are heterogeneous. Although the trend of matrilocal residence has been decreasing over time, labor and resource endowments of the wives' households always play important roles in their decisions to be a matrilocal residence, regardless of any periods.

This study provides new insights into a woman' decision to be a matrilocal residence, particularly, in a community with disequilibrium distribution of resources. Marriage migration can be interpreted as a mechanism for equalizing the spatial

distribution of young marriageable men and women (Watts, 1983), while matrilocal residence appears to help to balance the distribution of labor and location-specific resources between a couple's natal families. Although it's hard to accept that a marital relationship of matrilocal residence is not only due to love but also correlated with the endowments of labor and resources, we have to admit this just is reality and in line with the law of economic development. Also, both positive and negative impacts of matrilocal residence discussed in this study are also worthy to be concerned.

Finally, while this study complement for empirical evidence concerning the determinants of matrilocal residence, we would like to point that a major limitation of the present study is data constraint. First, this study can't identify the difference in matrilocal residence between rubber farmers and other farmers. It would be better if the future study would further collect the information of other farmers and treat them as a reference group. Second, if the empirical model of matrilocal residence could control for more independent variables and the characteristic variables of husbands, we may obtain more interesting findings. Third, based on a more widely sample, a multiple choice model analysis on marital residence including patrilocal, neolocal and matrilocal residence can provide more novel insights into the economics of marriage.

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Appendix

Table A1: Average percentages of matrilocal, patrilocal and neolocal residences in some Asian countries(2000-2016)

ISO Code	Country	% Matrilocal Residence	% Patrilocal Residence	% Neolocal Residence
CHN	China	1.22	17.60	81.18
NPL	Nepal	1.98	30.73	67.29
IND	India	2.12	31.45	66.43
VNM	Vietnam	3.83	18.95	77.22
BGD	Bangladesh	3.97	26.98	69.05
COL	Colombia	7.08	4.87	88.05
PHL	Philippines	7.49	7.08	85.43
THA	Thailand	9.79	7.31	82.90
IDN	Indonesia	10.70	8.55	80.75
KHM	Cambodia	15.05	5.36	79.59
LAO	Laos PDR	16.40	13.30	70.30

Source: Landmann et al.(2017) and Global Data Lab (https://globaldatalab.org/areadata/patrilocal/).