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Postprint: Livelihood Strategy Choices of Left-behind Rural Households in the Context of Labor Transfer in Gannan Pastoral Area

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Abstract

The behavior and experiences of labor migration have exerted and continue to exert complex and profound impacts on the livelihoods of impoverished farming (pastoral) households, constituting the background and prerequisite conditions for left-behind family members to make new livelihood choices. Under capital fluctuations and factor constraints, farming (pastoral) households in western ethnic minority regions make diverse production decisions, forming different types of livelihood strategies. Based on this, this paper takes the Gannan pastoral area as a case study, analyzes the characteristic variables of labor migration, summarizes the main livelihood strategy patterns of typical labor-migrant farming (pastoral) households, reveals the relationship between labor migration in the Gannan pastoral area and the livelihood strategy choices of left-behind farming (pastoral) households, and draws corresponding conclusions. The results indicate that the education level of migrant labor, the duration of labor migration, the destination of employment, and the type of jobs held by migrant labor have, to a certain extent, influenced the livelihood strategy choices of left-behind farming (pastoral) households. This can provide a reference basis for government departments in western ethnic minority regions to formulate scientific, rational, and sustainable labor resource utilization policies, thereby promoting the sustainable development of local farming (pastoral) households' livelihoods.

Full Text

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Abstract

The behavior and experience of labor transfer have produced complex and profound impacts on the livelihood means of poor farmers and herdsmen, which constitutes the background and prerequisites for left-behind households in selecting new livelihood strategies. With a background of capital change and factor constraints, farmers and herdsmen have conducted different production decisions and formed different types of livelihood strategies in the western ethnic region, which is the ecologically vulnerable area. Traditionally, farmers and herdsmen in this region conduct a single livelihood approach based on animal husbandry, which leads to great instability in farmers' livelihoods. Taking the Gannan pastoral area in Gansu Province, China, as an example and analyzing characteristic variables with labor transferring and summarizing typical livelihood strategy modes for transferring households, this paper quantitatively measures the influential mechanism of transferring on the selection of livelihood strategies and draws relevant conclusions by use of Multiple Logistic Regression model. The results showed that the educational level of migrant labor force, the period and orientation of migration, and type of work have influenced the choice of livelihood strategies for the left-behind farmers and herdsmen. In general, the higher the educational level of the migrant labor force is, the easier it is to use the strategy of "non-agricultural and self-employed" instead of "livestock breeding." The longer they've been out doing migrant work, the easier it is for them to use "livestock breeding" and "economic crop cultivation" instead of "non-agricultural and self-employed" to make a living. If the transfer of labor happens within Gannan territory, left-behind farmers and herdsmen tend to choose "animal husbandry" as their livelihood source; if the transfer of labor force happens outside Gannan territory, left-behind farmers and herdsmen tend to choose "non-agricultural and self-employed." The type of transferring work for migrant labor is a significant factor determining the choice of "non-agricultural and self-employed." That is to say, when laborers are more prone to conducting construction and service industry work, left-behind farmers and herdsmen are less likely to use "non-agricultural and self-employed" to survive. It could provide reference to formulate scientific, reasonable, and sustainable labor-resource usage policy and to promote sustainable development of livelihood for farmers in western ethnic areas.

Keywords: Transferring of Labor; Sustainable Livelihood; Livelihood Strategy; Gannan Pastoral Area

1. Data and Methods

1.1 Model Specification

This study employs a multivariate logistic regression model to analyze the factors influencing livelihood strategy choices among left-behind households. The model is specified as follows:

The dependent variable is the livelihood strategy choice ($y_i = j$), with key independent variables including: $\ln(\text{age}_i)$, $\ln(\text{education}_i)$, and $\ln(\text{distance}_i)$. The model also incorporates $\text{GHDEF}(\text{cid:201}) \times \text{KL}$ as a categorical variable with four levels: $\text{GHDEF}(\text{cid:201}) \times \text{KL} = 1$ (0.25), $\text{GHDEF}(\text{cid:201}) \times \text{KL} = 2$ (0.50), $\text{GHDEF}(\text{cid:201}) \times \text{KL} = 3$ (0.75), and $\text{GHDEF}(\text{cid:201}) \times \text{KL} = 4$ (1.00).

The variable $\text{DEF}(\text{cid:247})$ is categorized as: $\text{DEF}(\text{cid:247}) = 1$ (10 years) and $\text{DEF}(\text{cid:247}) = 2$ (4-10 years). The variable $\ln(\text{duration}_i)$ includes two subcategories: $\ln(\text{duration}_i) = 1$ (x31) and $\ln(\text{duration}_i) = 2$ (x32). $\text{GHDEF}(\text{cid:201}) \times \text{KL}$ is represented as $(\text{cid:128}) \times (\text{cid:192}) + (\text{cid:142})$.

The logistic regression model was estimated using SPSS 13.0 software. The model fit statistics show a -2LogLikelihood value of 298.361 and a Chi-square value of 118.234 ($p < 0.000$), indicating good overall model fit. The Cox & Snell R^2 and Nagelkerke R^2 values suggest the model explains a substantial proportion of the variance in livelihood strategy choices.

1.2 Variable Description

Table 4 presents the variable descriptions for the multivariate logistic regression model. The analysis examines how different factors influence the probability of selecting various livelihood strategies, including livestock breeding, economic crop cultivation, and non-agricultural self-employment.

The regression results indicate several significant relationships. For instance, the coefficient for $\text{GHDEF}(\text{cid:201}) \times \text{KL}$ (x1) is 1.522 ($p < 0.01$), while $\text{GH}(\text{cid:247})$ (x2) shows a coefficient of 1.441 ($p < 0.05$). The variable $\ln(\text{duration}_i)$ (x31) has a coefficient of 2.213 ($p < 0.01$), and $\ln(\text{duration}_i)$ (x32) shows -2.213 ($p < 0.01$). The $\text{GHDEF}(\text{cid:201}) \times \text{KL}$ variable (x43) demonstrates a positive coefficient of 2.341 ($p < 0.05$).

The analysis reveals that “ $\text{GH}(\text{cid:247})$ ” and “ $\ln(\text{duration}_i)$ ” are significant predictors of livelihood strategy choice, with odds ratios indicating the direction and magnitude of these effects. Specifically, when the migrant labor force has higher education levels, households are more likely to adopt non-agricultural self-employment strategies rather than relying solely on livestock breeding.

The model further shows that the duration of labor transfer significantly influences strategy selection. Longer periods of out-migration correlate with increased likelihood of maintaining livestock breeding and economic crop cultivation.

tion as primary livelihood strategies, while shorter durations are associated with diversification into non-agricultural activities.

The spatial orientation of labor transfer—whether within or outside Gannan territory—emerges as a critical factor. Local labor transfer tends to reinforce traditional animal husbandry-based strategies, while external labor transfer promotes non-agricultural self-employment among left-behind household members.

References

- [1-2] Citation references appear in the original text.
- [3] Additional citation reference.
- [4-5] References related to livelihood vulnerability and labor transfer impacts.
- [6-8] Studies on labor migration and rural development.
- [9-12] Research on sustainable livelihood strategies and policy implications.
- [13-14] Analyses of labor transfer patterns in ecologically vulnerable areas.
- [15-19] Comprehensive studies on rural livelihood diversification and labor market integration.
- [20] Technical reference for SPSS statistical methods.
- [21-30] Additional references on logistic regression applications and rural development studies.

Note: The original text contains extensive reference citations with corrupted formatting. The references above represent the key thematic areas covered in the citation list, which includes studies from journals such as *Journal of Huazhong Agricultural University (Social Sciences Edition)*, *Economic Survey*, *Chinese Journal of Population Science*, *Chinese Rural Economy*, *Journal of Agrotechnical Economics*, and *Comparative Economic & Social Systems*, among others, published between 2007 and 2016.

Note: Figure translations are in progress. See original paper for figures.

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