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## Spatial differentiation and its formation mechanism of homestead functions-based on a survey of 613 typical farmers in pinggu district

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The function of homestead is the main component of the function of residential area, which is an important embodiment of the survival needs of farmers. To distinguish the spatial distribution law and formation mechanism, which can provide scientific basis for the formulation of practical and effective homestead system. Based on the survey data of 613 typical peasant households, this paper identifies the functions of each homestead, builds the model of nuclear density and multiple Logistic regression, quantitatively analyzes the functional spatial differentiation of homestead and its influencing factors, and reveals the formation mechanism of the functions of homestead under the comprehensive action of system elements of "peasant households - homestead - village". The research shows that :1) The homestead in PingGu district of Beijing mainly has the social security function(SSF), and the profit function(PF) and the retention function(RF) have also appeared, accounting for 71.78%, 10.60% and 17.62%, respectively. 2) The social security function is the strongest in the economically backward mountainous areas, while the Profit function and the retention function are the strongest in the economically sound plain areas and the economically moderate mid-level mountainous areas, respectively, accounting for 77.31%, 15.91% and 22.10%, respectively. The functions show spatial gradient changes. 3) Cluster analysis shows that the social security function has two strong core: remote backward hilly mountain and northern suburban economy better plain area, which present a "point - face" shape distribution, Profit function is concentrated in the hilly mountain resorts and economy better, Ma Fang industrial park near the city, which present "point-belt" shape distribution, retention function integration in the economic moderate mid-levels district southwest foothills belt, urban industrial zone, which present "multi-belt" shape distribution. 4) The function of homestead arises from the needs of farmers according to their family and homestead conditions under a certain village positioning. The characteristics of villages, such as location and economy, are external factors, which exert a continuous adjustment effect on the functions of homestead in the form of long-term effects. The characteristics of homestead, such as location and construction age, are restrictive factors, which have a two-way feedback effect on the function of homestead in the form of basic function. Non-agricultural income ratio, arable area and other family characteristics and age, occupation and other household characteristics are internal factors, in the form of direct action on the function of homestead stage excitation effect. 5) we can try to separate the use right and qualification right of the retention functional house, the use right of the Profit functional house, and improve the functional efficiency of the house base by innovating the system of obtaining the house base and constructing the mechanism of replacing the urban guaranteed house with the house base.