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Research on the Relationship between Environmental Control, Government Support, and Innovation in Characteristic Agriculture

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Introduction

This paper uses the panel data of prefecture level cities in Beijing-Tianjin-Hebei urban agglomeration from 2010 to 2010, and uses the spatial Durbin model to empirically analyze the practical role of environmental regulation and government subsidies on green agriculture technology innovation.

Mathematical Formulas

$$LM_{ij}^{s} = \frac{[LM_{ij} - min(LM_j)]}{[max(LM_j) - min(LM_j)]}$$

$$\gamma_{ij} = \left(\frac{LM_{ij}}{\sum LM_{ij}}\right) / \left(\frac{\partial_i}{\sum \partial_i}\right)$$

$$oR_{it} = \frac{1}{x}\sum_{j=1}^{x} \gamma_{ij} \cdot LM_{ij}^{s}$$

Research Questions

The adjustment coefficient of agricultural production pollution indicators should be calculated, given the significant heterogeneity in the frequency and scale of agricultural production pollutant emissions in different geographical spaces.

Methodologies

Literature review, regression analysis, structural equation model, system dynamics model

Conclusion

Strengthen the degree of environmental policy collaboration between different geographical regions. The results of this study show that green agriculture technology innovation has significant spatial spillover. With the different implementation objects of environmental regulation and government subsidy policy, not only will it bring significant difference effect on local green agriculture technology innovation, but also will have a very significant negative effect on local green agriculture technology innovation. Therefore, technology innovation in different geographical regions should be strengthened.

Tables

Spatial weight matrix	First quadrant	Second quadrant	Third quadrant	Fourth quadrant	Cross border cities
Spatial adjacency weight matrix	Pinggu District, Miyun District, Ninghe District, Chengde City	Baodi District, Jinnan District, Hebei District, Shijingshan District, Mentougou District, Fangshan District	Langfang City, Tangshan City, Shijiazhuang City, Zhangjiakou City, Mentougou District, Hebei District, Wuqing District, Dongli District, Jinnan District	Heping District, Hengshui City, Qinhuangdao City, Dongcheng District, Xicheng District, Chaoyang District	Across the second and third quadrants: Hebei District, Mentougou District
Geographic distance weight matrix	Shijingshan District, Hongqiao District, Nankai District, Shijiazhuang City, Tangshan City, Cangzhou City	Cangzhou City, Hongqiao District, Chengde City, Baoding City, Heping District, Binhai New Area, Daxing District	Zhangjiakou City, Chengde City, Dongli District, Beichen District, Baodi District, Ninghe District, Miyun District, Chaoyang District	Hengshui City, Langfang City, Pinggu District	Across the first and second quadrants: Cangzhou City, Hongqiao District