

学位論文の要旨 (論文の内容の要旨)  
Summary of the Dissertation (Summary of Dissertation Contents)

論 文 題 目  
Dissertation title

Rural Households' Behaviors towards Sustainable Rural Development in Vietnam

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Sustainable rural development (SRD) is considered a fundamental initiative to achieve the first and second goals of Sustainable Development Goals (SDGs) due to two reasons. First, more than 78% of the poor lives in rural area. They have limited access to infrastructure facilities and economic elements such as transportation, schools, hospitals and markets. Second, the majority of the poor engages in agricultural activities that have recently become major contributor to soil degradation and water deterioration.

Despite the implementation of several programs/policies to achieve SRD, their impacts on rural households' behaviors still remain ambiguous because of self-selection bias. To suggest further implications for policymakers, precise causal evidences of these programs/policies need to be investigated. Using both experimental data and observed data, this dissertation examines the impacts of SRD programs/policies related to agricultural sustainability and poverty alleviation through case studies of Vietnam. In detail, three sub-objectives are discussed as follows:

- (1) Objective 1: Evaluating impacts of understanding land tenure security (LTS) on agricultural investments (Chapter 2)
- (2) Objective 2: Evaluating impacts of information and subsidy treatments on farmers' adoption of organic fertilizer (Chapter 3)
- (3) Objective 3: Evaluating impacts of microcredits on welfare of ethnic minorities (Chapter 4)

Vietnam provides a compelling case study to attain these objectives due to three main reasons. First, according to the new law passed in November 2013, usage duration of annual crop land and aquaculture land in Vietnam increased from 20 years to 50 years. This allows me to examine whether understanding the increase in the duration of agricultural land use raises farmers' investments in agriculture such as soil/water conservation and organic fertilizer adoption (*Objective 1*). Second, Vietnam has been facing serious agricultural pollution due to overuse of agrochemicals. Since 2010, the Vietnamese government has emphasized on sustainability of agriculture; however, organic farming only accounts for 0.5% of total agricultural land. Thus, I aim to examine whether subsidy treatment and information treatment improve the adoption of organic fertilizer, especially for green tea-cultivating in Vietnam (*Objective 2*). Third, although Vietnam has achieved significant improvements regarding poverty reduction, there still remains a considerable gap between the ethnic majority (Kinh ethnic) and the ethnic minorities. For example, the poverty rate among ethnic minorities was 44.6% in 2016 while the poverty rate among ethnic majority was only 3.1%. Therefore, it is necessary to investigate whether microcredits improve welfare of ethnic minorities (*Objective 3*).

Regarding the first objective (*chapter 2*), this dissertation contributes to current research by showing rigorous causal effect of understanding the increase in duration of agricultural land use on agricultural investments. Although previous studies have shown the importance of knowledge on LTS, to date, only few quantitative evidences regarding effects of understanding LTS exists (*Research gap 1*). Due to unobserved covariates, those quantitative studies might fail to provide causal evidence. Using panel data from Viet Nam Access to Resources

Household Survey (VARHS) in 2010, 2012, 2014 and 2016, collected before and after the 2013 new land law, this dissertation can control for both unobserved and observed time-variant variables as well as test the parallel trend assumption. Balanced panel data includes 1834 households. Difference-in-difference with fixed effect (DID-FE) is employed to estimate the causal impacts. I find that understanding the increase in duration of agricultural land use increases investments in irrigation/soil/water conservation and adoption of organic fertilizer.

To attain the second objective (*chapter 3*), I conduct a randomized controlled trial (RCT) on 1287 tea-cultivating households in Thai Nguyen province, Vietnam to examine whether subsidy and information treatments improve the adoption of organic fertilizer. The former is given as a 50% price subsidy, while the latter shares the experience of farmers who have adopted organic fertilizer on their farms. Although previous literature highlights the significant roles of economic incentive and information access on organic fertilizer adoption, the causal impacts still remain unclear because of endogeneity bias (*Research gap 2*). In this study, I implement an RCT, which can eliminate selection bias and produce precise causal estimates. In addition, my experimental design allows me to compare the effects of two different interventions, the subsidy and information provision, which provides crucial evidence for policy implementation. I find that both the subsidy and information treatments have significant impacts on the adoption of organic fertilizer. Moreover, the effect of the information treatment via farmers who share a group identity with target farmers is approximately one-third that of the 50% price subsidy. This finding demonstrates the potential of the former to partially substitute for the latter. I also find substantial impacts of the information treatment in the context of farmers who belong to certification groups (VietGAP group).

The third and last objective (*chapter 4*) contributes to poverty alleviation literature by providing evidence on impacts of microcredits on welfare of ethnic minorities. Although a large number of studies have investigated the impacts of microfinance on rural households, their effects on ethnic minorities, who are among the left-behind groups, have not been evaluated (*Research gap 3*). In this chapter, I examine whether microcredits provided by the Vietnam Bank for Social Policies (VBSP) improves the household welfare of ethnic minorities living in northern mountainous regions of Vietnam. A stratified random sampling technique is applied to a sample of 289 households in Bac Kan province, Vietnam. Propensity score matching (PSM) is employed to mitigate bias caused by the self-selection of the VBSP borrowers. Coarsened exact matching (CEM) is employed to verify the consistency of the PSM estimates. The results show positive and consistent impacts of microfinance loans on total expenditure per capita and educational expenditure per student, which supports the welfare effects of microfinance loans on ethnic minorities in northern mountainous areas of Vietnam.

Based on the findings of the three analysis chapters, the dissertation discusses further implications for achieving SRD in Vietnam. Regarding sustainable agriculture, it is necessary to raise farmers' awareness about the LTS to encourage sustainable agricultural investments such as soil/water conservation and organic fertilizer adoption. In addition, providing information about experience of peer farmers or providing monetary incentives can be used to promoting the adoption of environmentally friendly behaviors, for example, organic fertilizer adoption. Besides, to end poverty in all its forms, it is crucial to improve the welfare of poor ethnic minorities, one of the most left-behind group. The results highlight the importance of maintaining and developing microcredit programs for ethnic minorities, especially educational microcredit programs. In short, this dissertation examines rigorously causal effects of SRD programs/policies in Vietnam with regard to agricultural sustainability and poverty alleviation. My findings can support policymakers when making future policies to enhance rural households' behaviors towards SRD.

備考 論文の要旨はA4判用紙を使用し、4,000字以内とする。ただし、英文の場合は1,500語以内とする。

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