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## Looking at Economic and Noneconomic Drivers of Farm Diversification

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Crop diversification mitigates risk by spreading market volatility and increasing farm resiliency among fruit and vegetable (FAV) farmers. We estimated how economic and noneconomic factors affect crop diversification among FAV farmers. Economic factors included access to markets and land; noneconomic factors included farmers' beliefs and access to information from extension and farmers' networks. This study also investigated the effects of these factors at different degrees of diversification.

We hypothesized that farmers selling directly to consumers are more likely to diversify compared to those selling wholesale. We expected farmers with more land to specialize their crop mix due to economies of scale. We also anticipated that noneconomic factors—such as positive expectations about their farming system and access to information from support networks—could facilitate adoption of diversification strategies. Data was obtained from a 2012 web-based survey of FAV farmers sourced from the MarketMaker database (<https://foodmarketmaker.com/>). The analysis used responses from 1,532 farmers across 16 states.

We used an ordinary least square regression to determine the effects of economic and noneconomic factors on diversification. An instrumental variable (IV) approach (i.e., distance to markets in miles) controlled for unobserved factors that might drive farmers selling in local markets and adopting crop diversification to enhance the biodiversity of local food systems. A Durbin–Wu–Hausman endogeneity test indicated that the IV approach was not endogenous. Lastly, a quantile regression estimated the effect of factors on the distribution of crop diversification.

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Results indicate that selling locally increases diversification. Farmer–customer relationships in local markets allow feedback from end users, allowing farmers to adapt crops to meet demand. Crop diversity also contributes to a colorful supply of FAV in local markets, a key marketing strategy to attract customers. Reliance on other farmers for information decreases diversification. Certified organic farmers are more likely than conventional farmers to diversify. Factors that deter crop diversification include being in the Southern region (FL, GA, SC) and farming part-time.

The quantile regression categorized operations as specialized (1–4 crops), low (5–15 crops), medium (16–28 crops), and highly diversified (29–43 crops). Results indicate that selling to local markets positively influences crop diversification across all levels. Increasing farm acreage positively influences diversification for specialized farms but negatively influences highly diversified operations. Additionally, positive attitudes toward farming positively influence diversification, and obtaining information from other farmers negatively affects specialized operations.

**Keywords:** consumer, diversification, fruit, local markets, market, retail, specializations, vegetable