

Title Managing quality heterogeneity in the mango supply chain: evidence from Costa Rica
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Abstract

Quality is a key aspect for evaluating the performance of commodity chains. Quality performance depends on both subjective consumer perceptions as well as intrinsic attributes of the product. Supply chain procedures and management activities influence the quality level and may reduce or increase the heterogeneity in product quality. In addition to technological measures, timely access to information on market and management options can be helpful to reduce human-related variability.

In this article we present an explorative framework for disentangling the interactions between different managerial activities that have an effect on quality variability in mangoes. We use data dispersion statistics to understand the impact of technological and socio-economic factors on heterogeneity in quality performance at different stages of the supply chain. Based on a field survey amongst 51 different agents involved in the mango chain from Costa Rica, information regarding production technologies, agroecological conditions, management intensity, quality control, contracting practices and marketing operations is collected. We also tested randomly 10 mangoes from each agent to analyze the variability in quality attributes, focusing on the ratio between Brix and pH.

We find that quality heterogeneity is influenced both by technological variability and by socio-economic diversity. In the mango supply chain from Costa Rica, management differences amongst agents vary depending on the upstream and downstream relationships. Agents related to international traders tend to maintain lowest variability in their management practices in order to be able to respond better to consumer demands. Effective linkages with downstream agents are thus critical to guarantee appropriate incentives for managing quality in upstream segments.