

## **ABSTRACT**

Agricultural innovations are keys to economic growth, income stability as well as nutritional enhancement particularly in marginal areas since they are well-adapted to poor or unpredictable agro-ecological conditions. Innovation is a critical player that is seen to bring competitiveness, increase productivity and efficiency to agrienterprises. Despite that, there is limited empirical evidence on whether the uptake of the innovations has on sorghum competitiveness in small scale farm level agripreneurs in most ASALs of Eastern Kenya. This study examines the effect of production and market innovation on the competitiveness of sorghum agripreneurs, using primary data collected in 2019 from a total of 384 randomly selected small scale agrienterprises. A multivalued treatment effect model was applied to determine the role of innovation on the competitiveness of sorghum enterprises. Farm productivity and gross margin analysis were used to measure the competitiveness of the agrienterprises. The results indicated that gross margin and farm productivity of sorghum agrienterprises increase with an increase in the number of innovations used. These innovations include the uses of improved sorghum seeds, conservation agriculture, and group marketing. But also, there was a decrease in both gross margin and productivity for the agrienterprises with the highest number of innovations in the farm at saturation level. The results implied that the kind and the number of innovations employed in agrienterprises development are critical in its profitability and productivity. Therefore, interventions targeting usage of innovations in sorghum agrienterprises should be sensitized to integrate different innovations on product, process, and market in enhancing competitiveness.

### **Keywords**

Product Innovation, Market Innovation, Competitiveness, Multivalued Treatment Effect, Small Scale Agrienterprises