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Promoting smart contracts for specialty crops: Examining food buyers' willingness to participate in blockchain system

In our current food system, smart contract systems between buyers and small-scale farmers of specialty produce are not widely popular. In most regions, local produce is grown by small-scale farmers who do not have the capacity or resources to sell directly to an institutional buyers or either sell to consumers via farmer's market or food hub. Without a secure method to ensure a buyer for their produce, risk is incurred for farmers. The blockchain system creates a contract between buyers and small farmers creating a win-win situation. Participating in the blockchain system will reduce risk on the producers & buyers, enhance product traceability, price, product quality, and transparency for all participants in the agricultural supply chain. It is only an assumption that the food buyers and farmers will find the blockchain platform useful. Food buyers demand for the system, and willingness to comply with the requirements for participation, is central theme to this study. A strong demand would propel the adoption and success of the platform whereas the platform could fail if the food buyers deem it not useful. The objective of this research is to examine the food buyer's willingness to participate in the blockchain system and identify the constraints for participation. The theory of planned behavior was used for the study and the estimated sample size for this study was 352. The questionnaires were administered via Qualtrics platform to operators of food hubs, food service contractors, grocery stores and restaurants. Buyers were asked to rate their willingness to participate in the blockchain system based on 5-point Likert scale. Moreover, barriers, which could deter them from participating in the system, were asked along with food buyers' willingness to pay annual user or membership fee to participate in the blockchain. The survey responses received so far showed that food buyers are interested in participating in smart contract platform. Probit regression model to be used for the study to analyze the factors responsible for willingness to participate in block chain system. The findings of this study help to design smart contract blockchain which makes food tracking easier, transparent transactions and creates appropriate marketplace for small farmers and food buyers.