

This study attempts to investigate the relationship between batch-sizing and bullwhip effect in the Supply Chain dynamics in the rice firms of Pakistan. For carrying out this research, the data has been collected from the demand and sales sheets of a group of four large rice distributors and manufacturers (two each) from the districts of Lahore and Islamabad, Pakistan. This was done to make up two-tier supply chain as one manufacturer and one distributor was required for two-tier to complete the chain. Since this was a case study, therefore data from four firms were considered sufficient to examine the demand and inventory patterns of the selected tiers.

The research comprises two case studies from each tier. Consistent with the earlier studies, the researcher applied simulation modeling technique to estimate the likely trends of the selected rice firms for two consecutive years from December 2007 to December 2009. The data was analyzed using simulation technique that produced results, showing a non-linear relationship between batch-size and bull-whip effect. The contribution of this research is two-fold. Firstly, the current research is an extension of a study by Hussain and Drake (2011) that analyzes the relationship between batch size and bullwhip effect as non-monotonic, whereby the size of the remainder of quotient determines the value of bullwhip effect. Secondly, the batch size has less frequently been studied in the context of bullwhip effect; hence the researcher has extended strength to the existing supply chain model.

This study helps the supply chain practitioners and managers to understand and minimize negative effects of bullwhip by proper batch sizing and taking measures to control excessive inventory investment, capacity, poor customer level, lost revenues, decision making, reduced productivity, sub-optimal production and transportation. The study also provides implications for researchers and academicians. The study suggests the future researchers to conduct further research on bullwhip effect for other industries in Pakistan, especially for wholesalers and retailers.