ABSTRACT

Agriculture plays a crucial role in the economic structure of India. With over 65 percent of rural Indians depending on farming and allied activities as a source of livelihood and contributing to nearly one third of India’s GDP, agriculture is a key sector. The importance of fertilizer was realized soon after the success of green revolution, with fertilizers contributing more than 50 percent as per reports of scientists who studied the green revolution. Chemical fertilizer played a deciding role in accomplishing the nation’s food security mission. Hence it is of utmost important to carry out research on changing nature of fertilizer markets, policymaking and better understand the different influencing factors.

A detailed review of literature revealed that few scientific studies have been carried out using the European Customer Satisfaction Index Model (ECSI) to measure farmers’ satisfaction and loyalty within the Indian fertilizer market. It follows a uniform estimation procedure towards comparing different brands, organizations or industries based on consumers’ perspectives. The intention behind this study is to build up an appropriate customer satisfaction index model which will be able to capture significant differences in farmers’ opinions about a brand or services related to factors such as Company Image, Perceived Quality, Perceived Value, Satisfaction and Loyalty. An appropriate farmers’ satisfaction index can identify the reasons for brand popularity. This could be later compared with farmers group based on their age, farm income and land holding. Another calculation could be worked out on the influence of farmers’ personal characteristics such as Mode of Purchase (MoP), Purchase Influencers like Agriculture Officer or Input dealers/retailers, Years of relationship with the dealer/retailer, farming experience etc. on satisfaction and brand loyalty. With regard to constraints
factors such as uncertainty of weather (rainfall), hike in fertilizer price, fertilizer as a product type (consumption of fertilizer is not regular, it is consumed after a gap of few months) and finally the annual fertilizer business turnover in Indian which is around 1.75 lakh thousand cores INR, were considered for this study to measure farmers satisfaction and loyalty.

The researcher has selected Odisha (India) state for the study. The reasons include Odisha being a pro-agrarian state, aided by the presence of two large scale fertilizer manufacturers with around 3 million MT of annual production. Odisha also has more than 1300 MM annual rainfall. This study has adopted snowball sampling method (convenience sampling) to collect the farmers’ perception about their preferred complex fertilizer brand. Snowball sampling is a non-probability sampling method but with the potential to find out crucial respondents and their opinions, which is the ultimate aim of the study. Around 2000 structured questionnaires were distributed across the 26 districts of Odisha with the help of interviewers. Around 744 completely filled questionnaires were received (response rate 37.2%) in between November – December 2015. The interviewers were well trained during pilot survey.

The study has adopted the ECSI model to estimate farmers’ satisfaction and loyalty. There are around nine hypotheses formulated to test the relationships among the constructs. Based on an in-depth review of literature, researcher has applied SEM-PLS (Partial Least Square-Smart PLS) to estimate the model (ECSI). Another objective of this study is to measure farmers’ satisfaction and loyalty towards Indian fertilizer brands. To measure different fertilizer brands based on farmers’ perceptions, researcher has used Data Envelopment Analysis (DEA). Based on ECSI constructs, brands were measured in this study. Another significant test has been carried in this study looking to the grouping of dependent variables i.e. satisfaction and loyalty. Researcher has estimated the interaction effect of Mode of Purchase (cash or
credit purchase) on group of outcome variables, to estimate if there is any
effect of cash or credit purchase on farmers’ loyalty.

Findings reveals that the researcher formulated 10 hypothesis in
considering the ECSI model (relationship in between exogenous (Image,
Perceived Quality, Expectation, Perceived Value) and endogenous variables
(Satisfaction and Loyalty), out of which nine hypothesis were found to be
significant and one hypothesis i.e. (expectation → satisfaction) found to
be insignificant. However, the model fits well to estimate farmers’ satisfaction
and loyalty. Image is found to be the highest predictor of satisfaction and
loyalty followed by Perceived Quality and Perceived Value. DEA finding
reveals that PPL is found to be most efficient complex fertilizer brand in the
state. Another significant observation is that all band efficiencies are observed
to be above 0.9, which suggests the adoption of flexible policy by the
Government of India. Another statistical technique adopted by the researcher
is to find out the interaction effect of cash and credit purchase on farmers’
satisfaction and loyalty. The result indicates that there is an interaction effect
of Mode of Purchase on the group of outcome variable i.e farmers’
satisfaction and loyalty.

ECSI model could be implemented across the agri input industries with
little modification according to industry requirements. This model also
provides a uniform measuring tool to know the reasons for better customer
base along with the cause and failure of satisfaction. Brand Managers could
use this tool to evaluate market wise farmers’ satisfaction base and is a far
advanced method to measure farmers’ satisfaction. The limitations of the
study, implication to managers and practitioners and direction for future
research concludes the study.

**Key Words:** Farmers’ Satisfaction, Loyalty, ECSI model, DEA, India,
Fertilizer Brands.