

# E -tailing of Agri-Inputs: A Business Opportunity in Digital Economy.

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**Abstract**—With mission of doubling farmers' income by 2022, many measures have been taken to improve productivity, provide fair price to farmers for their produce and improve life of farmers. Agtech start-ups are coming up more than ever in present decade with aim to provide better and timely information, products and services to the farmers. Next phase in agricultural development will be digital and technology driven. As per NASSCOM report June 2019, more than 450 Agri Techstartups are working and sector has raised \$248 million as funding. The present study is conducted to see the potentialities of e-tailing business opportunities for Agri Inputs in Gujrat State. The secondary objective was to identify the problems faced by the farmers buying agri-inputs through offline mode i.e. physical markets. The primary data has been collected from the farmers of Gujrat states in person and through email Google forms those who are familiar with smart phone. The results exhibited that respondents have shown willingness to purchase seeds, agrochemicals, fertilizers and farm tools through e-tailing. The results reported that online marketers should make user interface in regional language, user friendly and also provide credit facility as provided by offline. It was suggested that in order to make farmers buy online the medium should be more than just an e-commerce platform selling products and it should be holistic solution provider.

**Keywords:** Agri-Inputs, Business Opportunity, e-tailing.

## Introduction:

Agriculture has always been called the backbone of Indian economy, supporting the livelihoods of the majority of the population and thus playing a major role in Indian economy. The challenges of 21<sup>st</sup> century farmers are different as they have to produce more food with limited and declining resources viz a viz its more about sustainable agriculture now. Present decade focus on digitalization of agriculture with various measures taken by public and private partnerships through digital India initiative in order to increase the efficiency, worker's productivity and easing of work with use of technology. With mission of doubling farmers' income by 2022, many measures have been taken to improve productivity, provide fair price to farmers for their produce and improve life of farmers. However, farmers are still

struggling for the price, availability, its accessories and quality of inputs, especially for consumables inputs regarding seeds and crop protection products availability on time in required quantity and reliable quality majorly of. Recently, there have been many experiments in the agri-input sector in terms of new distribution and marketing channels with some of players trying to provide total solutions to farmers including farm and allied inputs. These new channels range from marketers' own outlets to supermarkets to franchised outlets besides traditional channel. Agtech start-ups are coming up more than ever in present decade with aim to provide better and timely information, products and services to the farmers. The Indian agri start-up sector is looking for sustainable growth with more focus on supply chain aspects, farm data analytics, and infrastructure and information platforms. Actually, the current situation is right time to make more investment in multidiscipline based solutions and integration of knowledge and skills in agri-innovation. Presently Agrostar and Bighaat are doing well in this field with few other bootstrapped start-ups. Farmer online purchase is increasing but for agri-input start-ups it is very challenging to disrupt the traditional distribution channel and scale up.

## Previous Studies

Farmers, buying behaviour as agri-inputs consumer is different than those of consumer for consumable products (Kool, Meulenberg, & Broens, 1997). Information about merchandise and price comparison so to purchase from vendor who sells at lowest price is obtained through internet (Ratchford, 2001). The success of e-tailing depends on the efficient web site design, effective shopping and apt delivery (Zeithmal, 2002). E-commerce is beneficial for retailers as it provides greater market access and information along with decrease in procurement and operation costs (Rao, 1999). Online retailing of agri inputs is futuristic (Surjeet et al., 2016) as it will help cut the middleman and farmers will get inputs at low price.

**Research Gaps:** All the previous studies done are regarding potential of e-commerce in Rural India owing to increase in internet penetration and other factors but no quantitative research is done specifically i.e. for online selling of agri-inputs in India. Only two studies found “Scope of online selling of agri-inputs, Surjeet et al., 2016” and “Prospects in e-retailing of agro-inputs, A Karn, 2016” which dealt specifically for online selling of agri-inputs but they were based on secondary data and implied potential owing to increase in internet penetration and other factors In present study of Gujarat’s farmer for e-tailing of agri-inputs is carried out, which measures farmers willingness to buy agri-inputs online and also factors important to cater them and which problems faced in offline channel are to be overcome.

**Objectives:**

- 1) To understand farmer’s buying behaviour towards agri-inputs in Gujarat.
- 2) To study problems faced by farmers in Gujarat while purchasing agri-inputs from offline channel.
- 3) To study future potential of e-tailing of Agri-inputs in Gujarat.

**Data Collection & Methodology:**

The present study is descriptive in nature and for the data collection, Gujrat state had been selected as already agri start-ups like agro star is working there and farmers are having awareness of agri start-ups. The primary data had been collected from 119 respondents through structured questionnaire by using convenience sampling. Descriptive statistics were used to generate results to meet the objectives of the study. Cronbach’s alpha calculated to check reliability of Domain specific innovative scale.

**Results and Discussions:**

The results indicate that the majority of the respondents (39%) had their education graduation and above and Illiterate were least (12%). Further, 37 % of the respondents had Income 25-50% from agriculture and 75-100% income was least (8%) while 80% of the respondents had irrigation facility in the farm as well. The results regarding problem faced by farmers which shows instability in price is the biggest problem faced by them, followed by expert advice and quality product. So, online sellers should focus on maintaining stable prices for quality product and also provide with expert advice regarding usage of agri-inputs. Moreover, 35% respondents had to travel 6-10 km to purchase agri-input followed by 31% respondents who travel 11-20 km and least number (14%) of the respondents travelled more than 20kms to purchase agri-inputs. Further, respondents gave highest importance to quality of product followed by price and brand. Least importance was given to credit facility, home delivery and packaging. So, it shows that to target farmers through online

channel importance should be on high quality branded products at reasonable prices.

**Measuring farmers’ innovativeness in agri-input sector with application of the Domain specific innovativeness scale**

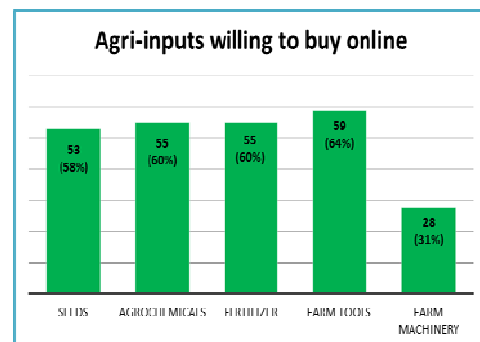
The range of DSI, total score is between 5 and 25. The mean score is 15.75. As it can be seen in table calculated means are around 3 and none is above 4. This indicates that respondents in Gujarat are slightly inclined to adopt innovations. For scale reliability using SPSS, cronbach’s alpha test was done to measure co-efficient of reliability of DSI scale. Cronbach’s alpha coefficient value came to be 0.890\* which is high so correlation between questions is good.

**Table 1: Farmer’s Innovativeness**

No	Statements	Mean	Std. Dev.
1	I do buy new, different or innovative agri- inputs even if I have not used it before.”	2.98	1.135
2	I do buy new, different or innovative agri-input before anyone else I know”	2.88	1.136
3	Generally, I am amongst the first of my fellow farmer friends to buy new, different or innovative agri- inputs	3.19	1.076
4	Compared to my other farmer friends, I buy more new, different or innovative agri- inputs	3.38	1.157
5	If new, different or innovative agri-inputs are available in market I always purchase them.	3.32	1.073
DSI total score		15.75	
Cronbach’s alpha		0.890*	

Further, 77% of the respondents are willing to buy agri-inputs online which states that demand for online buying of agri-inputs is high in Gujarat and there is potential for it.

**Which agri-inputs willing to buy online**



**Figure 1: Online buying Agri Input**

As shown in above graph responses to purchase all agri-inputs almost lies between 58-64% except for farm machinery which is only 31%. Given responses are in alignment with what people currently purchase online i.e. they are currently purchasing farm tools maximum and in future they along with new users will follow same trend.

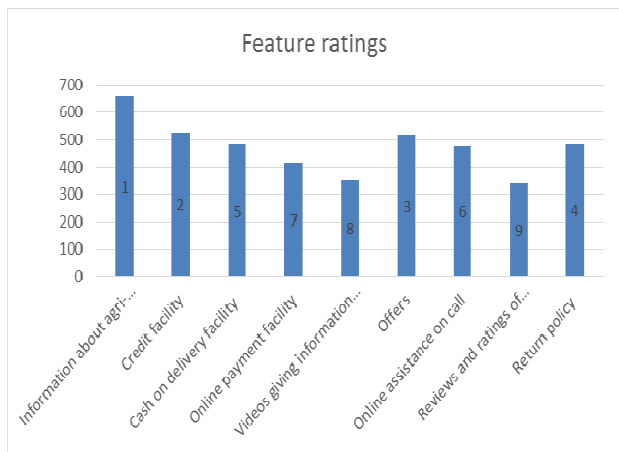


Figure 2: Features Ranking

As shown in above graph 2 for respondents Information in regional language was ranked highest followed by credit facility, offers and return policy. Lowest rankings were given to reviews and ratings of other farmers. Online payment facility and informative videos ranked 7<sup>th</sup> and 8<sup>th</sup> respectively. It can infer from this that online marketers should make user interface regional language friendly and also provide credit facility as provided by offline retailers. Offers can attract more farmers and return policy too should be followed.

Table 2: Delivery Time Acceptable

No	Agri-input	1-2 days	3-5 days	Up to 2 weeks	Total
1	Seeds	22	31	0	53
2	Agro chemicals	24	30	1	55
3	Fertilizers	15	38	2	55
4	Farm tools	1	17	41	59
5	Farm machinery	0	8	20	28
	Total	62	124	64	

Further, Out of 53 respondents who were willing to purchase seeds online, 22 of them wants seeds to deliver within 1-2 days, 31 respondents wanted it to be delivered with 3-5 days. Out of 55 respondents who were willing to purchase fertilizers online, 15 of them wants it to be delivered within 1-2 days, 38 wanted it to be delivered with 3-5 days and 2 up to 2 weeks. So, from above table 3-5 days can be optimum time for majority of the agri-inputs. Infrequently purchased agri-inputs can be delivered upto 2 weeks.

CONCLUSION AND SUGGESTIONS

The objective of the study was to study potentialities of e-tailing of agri-inputs in Gujarat. The results of study suggested that there is huge potential for selling agri-inputs online as majority of respondents or anyone in his family has access to smartphone with internet connection and showed willingness to purchase online. However, they lack awareness using online channel. Therefore, education cum training towards online buying especially to farmers must be organised. The three major constraints faced by respondents while purchasing agri-input from market of price, expert advice and quality should be overcome by online channel. Above overcoming these challenges online channel should attract new users by providing offers. Credit facility has to be provided like offline channels. Delivery charges are not acceptable and optimum delivery time accepted is 3-5 days. Therefore, e-tailors has to build trust with farmers in order to get more acceptability.

Mobile applications user interface should be made local user friendly by providing content in regional languages and the application should be image heavy than text heavy as it will be easy for farmers who are less educated to recognize using images rather than read texts. According to location of farmers weather forecast and other relevant information should also be provided. Supply chain need to be very efficient in order to reach last mile with limited infrastructure, for that taking leverage of existing channels like Indian postal service and existing distributors. To build trust among the farmers is most important for making them switch to something they are not aware of, hence through demonstrations, public vans and sales personal first educating them on using mobile applications and then by providing them with quality product. In order to make farmers buy online the medium should be more than just an e-commerce platform selling products it should be holistic solution provider.

Limitations and Directions for Further Research

The study is limited in its nature because of potentiality of e-tailing explored in Gujarat only. The findings augment the findings of (Surjeet et al.,2016) online retailing of Agri inputs is futuristic as it will help cut the middleman and farmers will get inputs at low price. The present study showed future potentialities for e-tailing of agri-inputs as most of the respondents were willing to purchase agri-input online. The similar study can be conducted for different states to understand what other states' people think about e-tailing of agri-inputs and what features are important for them to switch to online channel. Comparative studies too can be done for understanding how to cater different regions. More in depth analysis can be done in states like Karnataka which are tech savvy to understand what more can be added to online channel.

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