

PERCEPTION OF FARMERS ABOUT E-NAM AND DIGITAL MARKETING APPLICATIONS

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ABSTRACT

In India, a slew of market-distorting laws and regulations stymie the growth of an integrated agricultural market. In 2016, the Indian government launched National Agriculture Market, or e-NAM, is a pan-India electronic trading system, that integrates the current APMC mandi to establish a unified national market for agricultural commodities, allowing farmers to sell their produce at the highest prices accessible anywhere in the country. The study was conducted in three districts of Telangana to examine the perception of farmers about e-NAM and digital marketing applications covering a random sample of 90 farmers. It is found that e-NAM creates a platform for farmers with an efficient supply chain to sell their produce anywhere to get a remunerative price and abolish fragmented markets. It also has considerable potential to increase competition, remove information asymmetry, and promote real-time price discovery. The majority of the farmers were having a medium level of perception about the use of e-NAM and digital marketing applications. It can be inferred that there is a need to create awareness, increase knowledge and educate the farmers as to how the e-NAM and digital marketing applications bring advantages to the marketing of their produce which will help them improve their livelihood and income level.

Keywords: e-NAM, digital marketing applications, agricultural marketing, perception

INTRODUCTION

Food security and inclusive growth of the nation are both facilitated by agricultural marketing, which is essential for developing and maintaining agricultural productivity and production (Acharya S. 2004). Long-term policy initiatives in Indian agriculture have been heavily biased in favour of productivity difficulties, while post-harvest problems have received less attention (Jamaluddin, N. 2013). It was crucial to change the emphasis from farmer productivity and income to farmer welfare (Pratik and Vinaya, 2021). Although increasing production is one way to increase a farmer's income, it is far more important to ensure equitable farm harvest prices. Otherwise, record crop production can frequently become a farmer's worst nightmare as prices plummet (Paty, B.K., and Gummagolmath, K.C. 2015).

Despite the fact that agricultural marketing in India has grown significantly since independence, many obstacles still exist, such as low farmer literacy and the existence of numerous channels that drain the cash reserves of both farmers and consumers (Rajendran G. karthikesan P. 2014), numerous problems with regulated markets, such as the ban on direct sales outside the market yard, a lack of infrastructure in the markets, and the absence of regular elections for the members of the agricultural production board. (Acharya S.

2004), high wastage in the supply chain and high incidence of market charges, long gestation periods of infrastructure Projects and seasonality of Agriculture (Tripathi, A., & Prasad, A. R. 2009), lack of a National Agricultural Market (Yadav, J.P. and Sharma, A. 2017), limited access to the market information, limited accesses of agriculture produce markets, less farmers price realization, licensing barrier, lack of market infrastructure in the agricultural market (Aggarwal, N.; Jain, S. and Narayanan, S. 2017)

Nowadays, agricultural digital marketing is very significant since consumers are becoming more conscious of the quality of farm products and the gap between the agricultural and non-agricultural sectors is closing due to digital marketing platforms (Dsouza, D.J., and Joshi, H.G. 2014). Providing farmers with access to reliable and efficient markets is a key factor in raising their revenues. Farmers profit more and consumers spend less when the market is efficient (Government of India, 2013). By bringing together the greatest number of buyers and sellers in the most efficient, transparent, and regulated manner possible, exchange platforms and other electronic markets are intended to increase competition. By eliminating the information asymmetry between suppliers and buyers and allowing farmers to profit from price discovery, the electronic market

is intended to provide pricing transparency (Chand, R. 2016). Emerging e-marketing platforms with transparent dealings (Vivek et al., 2021) could boost farmers confidence for participating in marketing activities

In 2016, the Indian government created the electronic National Agriculture Market (e-NAM), which was an important initiative. The nationwide Agriculture Market, often known as e-NAM, is a pan-Indian electronic trading system which brings together the existing APMC mandis to create a unified nationwide market for agricultural commodities. This enables farmers to sell their goods at the greatest prices possible throughout the nation. The idea for the e-NAM, also known as the Unified Online Agricultural Market or e-NAM, came from the Unified Market Platform (UMP), which was introduced in Karnataka (Chand, R. 2016). The development of e-NAM for agricultural produce, with the tagline “One Nation, One Market,” is a watershed moment in the agricultural marketing sector, helping to strengthen the sector and boost farmer income (ASSOCHAM report. 2016). The National Agriculture Market (e-NAM) would fundamentally alter the Indian farming industry. E-NAM will provide farmers with additional choices for selling their produce and improve their market accessibility through warehouse-based sales that reduce the need to transport the goods to the Mandis. (Yadav and Sharma 2017).

e-NAM is such an e-commerce platform by bringing together physical markets and drawing buyers from across the nation through electronic auction, a unified national market is created. This does rid of the several physical handlings at different levels and with different market costs. (Gupta, S. and Badal, P.S. 2018). Through e-NAM, it is anticipated that information asymmetry between buyers and sellers would be reduced, real-time price discovery will be encouraged, the auction process will be transparent, farmers will have access to a national market, prices will be commensurate with the quality of the food, and an online payment system will be implemented. (Sekhar C. S. C. and Yogesh Bhatt 2018).

The value and effectiveness of any e-NAM can be judged through perception and response of the beneficiaries (Badodiya et al., 2010). In this context, it's critical to examine electronic trading for the national agricultural market, which represents an effort to modernize the agricultural marketing system through the use of technology. Keeping in this view, the present study was conducted to study the Perception of farmers about e-NAM and other digital marketing applications.

OBJECTIVE

To study the perception of farmers about e-NAM and digital marketing applications

METHODOLOGY

The study was conducted in three districts namely Nizamabad, Karimnagar and Warangal of Telangana state which were purposively selected, as the three districts have effectively linked the APMC mandis with the e- NAM and also substantial farmers were found using digital marketing mobile applications. For the present study, exploratory design was used to provide deep insight into the problem. From each district two villages were selected purposively selected for the present investigation. A total of six villages were selected from the three districts. From Nizamabad district, Ankapur and Velpoor villages were selected. Nagunuru and Timmapuram were selected from Karimnagar district and from Warangal district, Atmakur and Khanapur villages were selected for the study. From each village 15 farmers ($6 \times 15 = 90$) were selected randomly thus making it a total of 90 farmers from three districts.

A structured interview schedule with 25 statements was developed by discussion with the relevant scientists and from research of the literature in order to understand the perception of the respondents. Out of 25 statements included in the schedule, 20 were positive and 5 were negative statements. The statements were listed in the form of a table and responses were collected on a three-point continuum namely, agree, undecided and disagree. The scoring procedure for positive statement on three-point continuum namely, agree, undecided and disagree is 3, 2 and 1 respectively. The scoring procedure for negative statements on three-point continuum namely, agree, undecided and disagree is 1, 2 and 3 respectively. Total score of a respondent was arrived at by summing the scores of statements. Hence, the maximum possible score was 75 and the minimum possible score was 25. The farmers were also grouped into three categories based on their level of Perception of farmers about e-NAM and digital marketing applications by using mean and standard deviation i.e., low, medium and high. The data of this study were collected with the help of pre-tested structured interview schedule.

The collected data were classified, tabulated, analyzed and interpreted in order to make the findings meaningful. The statistical tools such as frequency, percentage, mean, standard deviation, correlation and regression analysis were used in the study.

RESULTS AND DISCUSSION

Perception of farmers about e-NAM and digital marketing applications

Table 1: Distribution of farmers according to their perception about e-NAM and digital marketing applications

(n=90)

Sr. No.	Statements	Agree	Undecided	Disagree
1	It enables transparent online trading which enhances accessibility to the market.	15 (16.67)	42 (46.67)	33 (36.66)
2	It provides a platform which enables to sell and buy agricultural produce and products from any place.	12 (13.33)	50 (55.56)	28 (31.11)
3	It alters traditional link between farmers and traders.	13 (14.44)	40 (44.44)	37 (41.12)
4	It increases market competition.	52 (57.78)	17 (18.89)	21 (23.33)
5	It increases the time taken for produce disposal.	18 (20.00)	35 (38.89)	37 (41.12)
6	It provides a platform where many sellers and buyers are connected across country.	21 (23.33)	54 (60.00)	15 (16.67)
7	It provides a platform to the farmers to sell his produce where he feels that he is getting a remunerative price for his produce.	58 (64.44)	32 (35.56)	0 (0.00)
8	It eliminates number of intermediaries, thereby ensuring that there is increased price share for the farmers.	40 (44.44)	44 (48.89)	6 (6.67)
9	It provides better market information to farmers to improve their income and deliver better price to consumer for agricultural products.	53 (58.89)	31 (34.44)	6 (6.67)
10	Sale process is more complicated.	19 (21.11)	46 (51.11)	25 (22.78)
11	It enables more efficient supply chain.	31 (34.44)	30 (33.33)	29 (32.23)
12	There is no scope for price manipulation.	07 (7.78)	76 (84.44)	07 (7.78)
13	It abolishes fragmented markets.	70 (77.78)	16 (17.78)	04 (4.44)
14	Selling over the e-NAM is easier than traditional methods.	27 (30.00)	44 (48.89)	19 (21.11)
15	It will provide more selling options to farmers	16 (17.78)	65 (72.22)	09 (10.00)
16	It is not easy to make price comparisons by using e- marketing mobile apps	35 (38.89)	28 (31.11)	27 (30.00)
17	It provides information on price discovery, price transparency and price transmission	47 (52.22)	30 (33.34)	13 (14.44)
18	Adopting a new way of marketing becomes difficult for them who follows traditional method of marketing.	26 (28.89)	64 (71.11)	0 (0.00)
19	Farmers lack of confidence in traders. Fear of hacking, theft of money in online transaction, misuse of information, etc. are the additions in the drop of the confidence.	35 (38.89)	55 (61.11)	0 (0.00)

Sr. No.	Statements	Agree	Undecided	Disagree
20	Digital marketing apps can be used to get information on market prices across state /country.	31 (34.44)	31 (34.44)	28 (31.12)
21	Digital marketing apps would help the farmers to get market related information instantly	36 (40.00)	53 (58.89)	01 (1.11)
22	Marketing of commodities would be not easy by using digital marketing apps.	0 (0.00)	63 (70.00)	27 (30.00)
23	Using digital marketing apps on my phone is easy	23 (25.56)	49 (54.44)	18 (20.00)
24	Information about market prices is easy to get by using digital marketing apps.	40 (44.44)	32 (35.56)	18 (20.00)
25	Learning how to use and sell through the digital marketing apps is easy.	29 (32.23)	36 (40.00)	25 (27.77)

The data regarding Perception of Farmers about e-NAM and digital marketing applications is presented in the Table 1 and is discussed in the following paragraphs.

Majority (46.67 per cent) of the farmers were unsure that e-NAM and digital marketing applications enables transparent online trading. Only about 16.67 per cent of the farmers have stated that e-NAM and digital marketing interventions enabled transparent online trading which enhances accessibility to the market. About 55.56 per cent of the farmers did not know that digital marketing interventions and e-NAM provides a platform which enables to sell and buy agricultural produce and products from any place. Majority (44.44 per cent) of the farmers were uncertain that e-NAM and digital marketing applications alters traditional link between farmers and traders. While 57.78 per cent of the farmers stated that e-NAM and digital marketing applications have increased market competition. About 41.12 per cent of the farmers have stated that there is decrease in time taken for produce disposal.

Only 23.33 per cent of the farmers know that it is a platform where many sellers and buyers are connected across country. Majority (64.44 per cent) of the farmers stated that e-NAM and digital marketing applications provides a platform to sell the produce where a farmer feels that a remunerative price is available. While 48.89 per cent of the farmers stated that e-NAM and digital marketing applications eliminates number of intermediaries thereby increasing their price share. Majority (58.89 per cent) of the farmers have stated that e-NAM and digital marketing applications provides better market information about agricultural products and deliver better prices to consumer. About 22.78 per cent of the farmers have said that sale process is less complicated in e-NAM and digital marketing applications. While 34.44 per cent of the farmers have said that it enables more efficient supply chain. About 84.44 per cent of the farmers were unsure about

scope of price manipulation in e-NAM and digital marketing applications. Majority (77.78 per cent) of the farmers have stated that e-NAM and digital marketing interventions abolishes fragmented markets. Whereas 48.89 per cent of the farmers were uncertain about easiness of selling over e-NAM than traditional methods. Only 17.78 per cent of the farmers have stated that e-NAM and digital marketing applications provides more selling options to farmers.

More than 38.89 per cent of the farmers stated that it is not easy to make price comparisons by using digital marketing mobile applications. About 52.22 per cent of the farmers have stated that e-NAM and digital marketing applications provides information on price discovery, price transparency and price transmission. More than 71 per cent of the farmers were unsure that a farmer who follows traditional methods of marketing finds it difficult in adopting new ways of marketing their agricultural produce. Only about 38.89 per cent of the farmers stated that, farmers lack of confidence in traders, fear of hacking, theft of money in online transaction, misuse of information, etc. are the additions in the drop of the confidence. More than 34 per cent of the farmers have agreed that digital marketing applications can be used to get information on market prices across state/ country. While 58.89 per cent of the farmers are unsure that digital marketing apps would help the farmers to get market related information instantly.

Majority (70.00 per cent) of the farmers were uncertain about ease of using marketing applications to market their commodities. Only about 25.56 per cent of the farmers have agreed that its easy-to-use digital marketing applications on their phone. About 44.44 per cent of the farmers stated that information about market prices is easy to get by using digital marketing applications and 40.00 per cent of the farmers were uncertain about learning how to use and sell through the digital marketing applications.

Table 2: Distribution of farmers according level of perception about use of e- NAM and Digital marketing applications. (n=90)

Sr. No.	Level of perception	Frequency	Percentage
1	Low (upto 51)	34	37.78
2	Medium (52 to 55)	36	40.00
3	High (56 and above)	20	22.22
Mean = 53.06		S.D = 2.50	

It is evident from the Table 2 that majority (40.00 per cent) of the farmers were having medium level of perception, followed by low level of perception was observed with 37.78 per cent and high-level perception with 22.22 per cent of the farmers respectively. The findings are accordance with the study reported by Badodiya *et al.*, (2010); Vinaya *et al.* (2016); Ban *et al.* (2020) and Shanmukh Raju *et al.*, (2022).

Correlation analysis between independent variables and perception of farmers about e-NAM and digital marketing applications

Table 3: Correlation analysis between independent variables and perception of farmers about e-NAM and digital marketing applications. (n=90)

Sr. No.	Variables	Correlation Coefficient
X ₁	Age	-0.214*
X ₂	Education	0.559**
X ₃	Farming experience	0.019 NS
X ₄	Land holding	0.071 NS
X ₅	Annual income	0.266**
X ₆	Training received	0.492**
X ₇	Extension contact	0.522**
X ₈	Credit acquisition	-0.248**
X ₉	Innovativeness	0.515**
X ₁₀	Social participation	0.204NS
X ₁₁	Source of information	0.249*
X ₁₂	Mobile inclination	0.422**
X ₁₃	Decision making ability	0.619**
X ₁₄	Market orientation	0.325**
X ₁₅	Risk orientation	0.250*

* Significant at 5 % level of significance

NS – Non- significant

** Significant at 0.01 % level of significance

It is evident from the data presented in the Table 3 that out of 15 variables, only 10 variables i.e. education, annual income, training received, extension contact, innovativeness, source of information, mobile inclination,

decision making, market orientation, risk orientation were found positive and significantly correlated with Perception of farmers about e-NAM and digital marketing applications, out of these variables, eight variables i.e. Education, annual income, training received, extension contact, innovativeness, mobile inclination, decision making, market orientation were found correlated at 0.01 level of probability or 1% level of significance and two variables i.e. source of information and risk orientation was found correlated at 0.05 level of probability or 5% level of significance. While two variables i.e. age and credit acquisition were found negative and significantly correlated with perception of farmers about e-NAM and digital marketing applications, out of which credit acquisition was found correlated at 0.01 level of probability or 1% level of significance and age was found correlated at 0.05 level of probability and 5% level of significance. The remaining three variables i.e., farming experience, land holding and social participation did not indicate significant relationship with Perception of farmers about e-NAM and digital marketing applications.

Multiple regression analysis between independent variables and perception of farmers about e-NAM and digital marketing applications

Table 4: Multiple regression analysis between independent variables and perception of farmers about e-NAM and digital marketing applications (n=90)

Sr. No.	Variables	“b” value	“t” value
X ₁	Age	-0.047	-2.312*
X ₂	Education	0.435	2.838**
X ₃	Farming experience	0.073	1.880NS
X ₄	Land holding	0.007	0.039NS
X ₅	Annual income	0.527	2.468*
X ₆	Training received	0.330	2.250*
X ₇	Extension contact	0.267	2.721**
X ₈	Credit acquisition	-0.047	-0.541NS
X ₉	Innovativeness	0.490	2.735**
X ₁₀	Social participation	-0.019	0.092NS
X ₁₁	Source of information	0.176	2.032*
X ₁₂	Mobile inclination	0.020	0.581NS
X ₁₃	Decision making ability	0.300	3.098**
X ₁₄	Market orientation	0.054	1.117 NS
X ₁₅	Risk orientation	0.008	0.158NS

* Significant at 0.05 % level of probability R² value: 0.730

** Significant at 0.01 % level of probability

Table 4 illustrates the regression coefficient of independent variables with perception of farmers about e-NAM and digital marketing applications. It can be said by estimating the regression coefficient that R² value in this case is 0.730. Thus, it can be said that independent variables explain 73 per cent variability in Perception of farmers about e-NAM and digital marketing applications.

CONCLUSION

For years agricultural sector has been seen as a buyer's market. The rule of supply and demand has been dominated the sector. Digital marketing (e- NAM) and mobile applications could be the major breakthrough for connecting businesses if there are no market for certain products locally. e-NAM creates a platform to the farmers to sell his produce anywhere where he feels he gets a remunerative price in agricultural markets. Additionally, it has a great deal of potential to boost competition, eliminate information asymmetry, encourage real-time price discovery, and lower trade costs for both buyers and sellers without negatively affecting the firm's relationships or income. However, that won't happen until the "One Nation One Market" for agricultural products is actually realised and e-NAM is fully functioning over the whole of the country. The advantage of e-NAM over traditional methods is that it is more focused on information. Numerous appeals for technological advancement have been made in relation to the growth of modern agriculture. The use of e-NAM may prove to be a novel and successful strategy for raising farmers' revenue.

IMPLICATIONS

Based on the study, it can be inferred that there is need to create awareness, increase knowledge and educate the farmers as how the e-NAM and digital marketing applications brings advantages to the marketing of their produce which will help them improve their livelihood and income level.

To maximize the potential benefits of e-NAM and digital marketing applications, there is a need for continued government support and investment in rural infrastructure, digital literacy programs, and conducting regular training programmes on e-NAM and digital marketing applications helps farmers create a favourable perception towards use of e-NAM and digital marketing applications which will help them reap benefits.

Policymakers should focus on addressing challenges to create an environment where farmers can fully leverage the advantages of e-NAM and digital marketing applications. By fostering a more inclusive and supportive ecosystem, the agricultural sector can truly harness the transformative power

of technology to enhance the livelihoods of farmers and drive sustainable growth in the agrarian economy.

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CONFLICT OF INTEREST

All authors declare that they have no conflict of interest

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