The Pharma Innovation

M Shanmukh Raju
Ph.D. Scholar, School of Social
Sciences, College of Post Graduate
Studies in Agricultural Sciences,
Central Agricultural University,
Imphal, Umiam, Meghalaya, India

M Rama Devy
Professor, Department of
Agricultural Extension,
Agricultural College, Acharya N.G.
Ranga Agricultural University,
Guntur, Bapatla, Andhra Pradesh,
India

PV Sathya Gopal
Professor and Head, Institute of
Agri-Business Management, S.V.
Agricultural College, Acharya N.G.
Ranga Agricultural University,
Tirupati, Andhra Pradesh, India

Profile characteristics of farmers of e-NAM

M Shanmukh Raju, M Rama Devy and PV Sathya Gopal

Abstract
National Agricultural Market (e-NAM) is a pan-India electronic trading portal that seeks to network existing Agricultural Produce Market Committees (APMCs) through a virtual platform to create a unified national market for agricultural commodities. A study was conducted to know the profile characteristics of registered farmers of e-NAM in Duggirala market of Andhra Pradesh. A total sample of 120 farmers was randomly selected from six mandals *viz.* Kollipara, Bhattiprolu, Kollur, Tenali, Mangalagiri and Duggirala of Guntur district in Andhra Pradesh. The data were collected with pre-structured interview schedule. Exploratory research design was followed for the study. Profile characteristics of respondents *viz.* Age, Education, Land holding, Social participation, Mass media exposure, Extension contact, Risk orientation, Market orientation, Income orientation, Telescopic faculty and Economic motivation were selected for the study. The detailed analysis of the study revealed that majority of the respondents were middle aged (63.33%), educated up to high school (34.17%), had small farm size (29.17%), had medium level of social participation (71.67%), mass media exposure (55.83%), extension contact (65.83%), risk orientation (63.33%), market orientation (60.00%), income orientation (49.17%), telescopic faculty (56.67%) and economic motivation (62.50%). There is every need to improve the profile of the respondents to make them understand completely about e-NAM, improve their knowledge and effective utilization of e-NAM.

Keywords: e-NAM, farmers, profile, telescopic faculty, market orientation, income orientation

Introduction

India is largely an agrarian economy, with agricultural sector constituting about half of the workforce. The country had witnessed remarkable progress in terms of agriculture production and productivity (Sihmar, 2014) [18]. Even after the fulfilment of superabundant harvest, the farmers are still resorting to distress sale of produce. The agricultural marketing system of the country had been characterized by various bottlenecks such as bulky sale of agricultural commodities at village level immediately after the harvest, poor packaging, absence of on-farm grading of produce, insufficient marketing infrastructure, long marketing channels, existence of various malpractices in the marketing of agri-produce, lack of market information system, non-transparent price discovery mechanism, low marketable surplus especially of small and marginal farmers, crash in market price (Harisha *et al*., 2020) [6].

Regulated Markets in the form of Agricultural Produce Marketing Committees (APMCs) were established in various States to address these issues. Despite several advantages bestowed on the farmers through APMC regulation, these acts prohibited direct sale by farmers outside the market yard, cartelization by market functionaries like traders, commission agents and labour and complete control of government on establishment, development and supply of market services leading to inefficiencies. The producers and the consumers often get a poor deal and the middlemen control the market, but do not add much value (Somashekhar *et al*., 2014) [20]. The auctioning process is entirely manual and cumbersome resulting in lack of transparency and delayed payment to farmers. However, the agricultural markets fail to evolve in pace with the changing dynamics of value chain and agricultural products (Raju *et al*., 2022b) [13].

Realizing the lacunae in the existing system of agricultural marketing, Government of India has promptly launched National Agriculture Market (NAM) as a pan-India electronic trading portal on 14th April, 2016 which is completely funded by Central Government and implemented by Small Farmers Agribusiness Consortium (SFAC). NAM portal networks the existing APMC (Agriculture Produce Marketing Committee) / Regulated Marketing Committee (RMC) market yards, sub-market yards, private markets and other unregulated markets to unify all the nationwide agricultural markets by creating a central online platform for agricultural commodity price discovery (Reddy, 2018) [15]. The key stakeholders include Farmers, Traders, APMCs, Assaying Bodies, Farmer Producer Organisations (FPOs), Banks,

Corresponding Author
M Shanmukh Raju
Ph.D. Scholar, School of Social
Sciences, College of Post Graduate
Studies in Agricultural Sciences,
Central Agricultural University,
Imphal, Umiam, Meghalaya, India

Logistics operators, Warehouses, Mandi board *etc*. It was intended to provide quality commensure price realization, streamline the procedures across the integrated agricultural markets in the country, improve the mechanism of price discovery, remove information asymmetry between buyers and sellers and also to create the "One Nation, One Market" concept for agricultural products (Chand, 2016) [2]. It also would provide the farmers with multiple options of sale of their produce and enhance market accessibility through warehouse based sale (Yadav and Sharma 2017) [23].

As the scheme was aimed at achieving utmost success in supporting the farming community in enhancing their farm income, the participation of the farming community be at higher side. But realistically the scheme had not been reaching the farming community because of its operational encroachments by the other stakeholders of the e-NAM. Since the inception, the scheme had faced various challenges in its implementation. Several irregularities both at organizational and personal level hindered the ultimate goal of provision of remunerative prices for farmers produce. Success of this scheme largely depend on the knowledge possessed and effectiveness perceived by the beneficiaries towards functioning of the e-NAM which is influenced by their profile characteristics either directly or indirectly. (Raju *et al*., 2022a) [12]. Therefore, a systematic study was conducted to know the profile characteristics of farmers traded in e-NAM.

Material and Methods
The study was conducted in Guntur district of Andhra Pradesh during 2019-2020 by adopting *Exploratory* research designs. The district lies approximately between 1500 18' to 1600 50' North latitudes and 790 10' to 800 55' East longitudes. Duggirala e-NAM integrated APMC in Andhra Pradesh was purposively selected for the study. Six mandals with highest number of Duggirala e-NAM registered farmers namely Bhattiprolu, Kollur, Kollipara, Tenali, Mangalagiri and Duggirala in Guntur district were selected purposively. From each of the selected mandal, twenty respondents were selected randomly, making a total of 120 respondents. The respondent for the study was operationally defined as the farmers who registered and traded with e-NAM in Duggirala APMC of Andhra Pradesh. The primary data were collected personally with the help of an interview schedule; the interviews were conducted on farmer's field or in their homes through face-to-face contact. The profile characteristics *viz.* Age, Education, Land holding, Social participation, Mass media exposure, Extension contact, Risk orientation, Market orientation, Income orientation, Telescopic faculty and Economic motivation were selected for the study.

Results and Discussion
Age
It is evident from the Table 1 that nearly two third of the e-NAM registered farmers belonged to middle age (63.33%) category succeeded by old age (24.17%) and young age (12.50%) categories. From the above data it could be inferred that the sample of respondents consisted of all the age groups but middle age category is more compared to young and old age. The probable reason for the trend might be that, middle and old age category farmers were having more trading experience and association with the APMC which might had motivated them to sell their produce through reformed APMC *i.e*., e-NAM. Because of the increased opportunities for education and employment, the younger generation is more attracted towards alternate employment rather than farming. The findings are in conformity with that reported by Dhruw (2018) [3], Pavithra (2018) [11], Shende (2019) [16], Geethavani (2019) [5] and Siddeswari *et al*. (2021) [17].

Education
More than one third (34.17%) of the respondents were educated up to high school followed by primary school (15.00%), middle school (13.33%), graduation (10.83%), illiterate (10.00%), intermediate (08.33%), Functional literate (04.17%) and post-graduation & above (04.17%) categories. The trend might be due to the fact that educational facilities in villages were strengthened and villages were having accessibility to high schools and colleges. Enthusiastic and affordable farmers had completed graduation followed by post-graduation. The findings of the present study were similar with the findings of Maya (2018) [8], Tyngkan (2018) [21], Shende (2019) [16] and Smitha (2019) [19].

Land holding
Nearly one third (29.17%) of the respondents belonged to small land holdings category subsequently marginal (22.50%), large (21.67%), semi-medium (19.17%) and medium (7.50%) land holding categories. The probable reason for the trend might be that turmeric, being a commercial crop, small and marginal farmers might not be interested to take risk both from point of long duration as well as involvement of complex operations. The findings of the present study were similar with that of Dhruw (2018) [3], Tyngkan (2018) [21] and Natthu (2019) [10].

Social participation
Nearly three fourth (71.67%) of the respondents had medium social participation succeeded by high (15.83%) and low (12.50%) social participation. The probable reason for this trend might be due to the fact that some of the respondents were having membership in more than one organization like Rythu Mitra Groups, Village panchayats, FPOs *etc*., and regularly participating in the meetings held by those organizations. As most of the respondents were middle aged with high school education, their zeal for recognition in the society is satisfied through social participation. One the other side, lower social participation might be due to their higher age, illiteracy and lack of interest towards social activities. The findings are in conformity with that reported by Rao (2016) [14] and Bhaskar *et al*. (2019) [1].

Mass media exposure
More than half (55.83%) of the respondents had medium mass media exposure, succeeded by those with low (22.50%) and high (21.67%) mass media exposure. The probable reason for this trend might be due to the fact that as majority of respondents were middle aged with education up to high school and few with graduation and post-graduation had inclination towards better utilization of different mass media such as television, newspapers, farm publications and mobiles to acquire information on modern technologies of production, value addition and marketing. On the other side, low mass media exposure might be due to their heavy workload and non-possession of digital assets by majority of small and marginal farmers. The findings are in conformity with that reported by Maya (2018) [8] and Wahab (2018) [22].

Extension contact
Nearly two third (65.83%) of the respondents had medium extension contact followed by low (22.50%) and high (11.67%) extension contact. The probable reason for the above distribution might be that turmeric, being a commercial crop requires regular technical support for realizing better quality produce as well as remunerative price for produce. Hence the farmers might be maintaining regular contact with scientists, extension agents, progressive farmers input agencies *etc*., so as to take up different farming operations. The findings are in conformity with that reported by Dhruw (2018) [3], Maya (2018) [8] and Nagesh (2019) [9].

Risk orientation
Nearly two third (63.33%) of the respondents had medium level of risk orientation followed high (19.17%) and low level (17.50%) of risk orientation. Risk is an inevitable evil in every one's life. As the technologies are becoming more obsolete day by day, one has to take risk to reap windfall profits from innovations. Turmeric cultivation involves heavy investment and relatively long duration to get returns from the crop. The probable reason for this trend might be that educated farmers and farmers with large landholdings might be ready to take optimistic risk to adopt the innovations in turmeric cultivation. On the other side, small and marginal farmers with illiteracy might be so conservative and orthodox in their life style not willing to take risk in turmeric cultivation. The results are in conformity with the findings of Nagesh (2019) [9].

Market orientation
Three fifth (60.00%) of the respondents had medium level of market orientation, followed by high (24.17%) and low (15.83%) levels of market orientation. The plausible reason for this trend might be that having better marketing avenues turmeric, the turmeric farmers might be exploring all turmeric marketing channels to get better price for their produce. During the course of action, they might be analyzing the pros and cons of different marketing channels based on their past experiences and deciding the best course of action to market their produce. On the other side, the farmers with illiteracy and small landholding might be resorting to the locally available traders to sell their produce. The results are in conformity with the findings of Maratha (2017) [7] and Maya (2018) [8].

Income orientation
Nearly half (49.17%) of the respondents had medium level of income orientation followed by high (29.17%) and low level

(21.67%) of income orientation. The probable reason for this trend might be that majority of the respondents might be resorting to all possible ways of reducing cost of cultivation in terms of inputs, labour and operational expenses. As a part of that they might be critically persuading every rupee invested in turmeric cultivation. They also focus on most appropriate channels to realize high profits. On the other side, few farmers might be concentrating more on production aspects rather than net returns. They might be investing more on different aspects without scientific rationality. Some of the farmers might be approaching commission agents, money lenders and input agencies. The results are in conformity with the findings of Rao (2016) [14].

Telescopic faculty
More than half (56.67%) of the respondents had medium level of telescopic faculty followed by low (24.17%) and high (19.17%) levels of telescopic faculty. Majority of the respondents might be restricting their vision towards mere getting of income during current season rather than building an empire through cultivation. Even though there were ample opportunities to raise their standard of living with optimistic utilization of resources, the farmers might be always thinking towards realization of short term goals. Few of them projecting their vision their vision duly utilizing their telescopic faculty with optimistic reason. It might be also due to the reason that considerable proportion of e-NAM registered farmers were middle aged having medium extension contact, social participation, risk orientation, market orientation and mass media exposure.

Economic motivation
More than three fifth (62.50%) of the respondents had medium level of economic motivation succeeded by high (24.17%) and low level (13.33%) of economic motivation. The probable reason for the distribution might be that the urge of earning more profits through turmeric cultivation is optimistic and farmers can accomplish the same by framing modest objectives for this purpose. In this juncture, majority of the respondents might be oriented towards high profits duly utilizing all the resources in an effective manner. On the whole eighty five per cent of them were educated and had medium level of social participation, risk orientation and telescopic faculty which had contributed towards medium to high level of economic motivation. The results are in conformity with the findings of Dubey (2018) [4], Natthu (2019) [10].

Profile characteristics of respondents

Table 1: Distribution of respondents according to their profile characteristics (n=120)

S. No.	Characteristics	Category	Frequency (f)	Percentage (%)
1.	Age	Young Age (≤35 years)	15	12.50
		Middle Age (36-55 years)	76	63.33
		Old Age (≥56 years)	29	24.17
2.	Education	Illiterate	12	10.00
		Functional Literate	5	4.17
		Primary school (1st to 5th class)	18	15.00
		Middle School (6th to 7th class)	16	13.33
		High school (8th to 10th)	41	34.17
		Intermediate	10	8.33
		Graduate	13	10.83
		Post Graduate & Above	5	4.17
3.	Land holding	Marginal (Up to 2.5 acres)	27	22.50
		Small (2.5 to 5 acres)	35	29.17

		Semi-medium (5 to 7.5 acres)	23	19.17
		Medium (7.5 to 10 acres)	9	7.50
		Large (>10 acres)	26	21.67
4.	Social participation	Low (Less than $\overline{X} - \sigma$)	15	12.50
		Medium ($\overline{X} \pm \sigma$)	86	71.67
		High (More than $\overline{X} + \sigma$)	19	15.83
5.	Mass media exposure	Low (Less than $\overline{X} - \sigma$)	27	22.50
		Medium ($\overline{X} \pm \sigma$)	67	55.83
		High (More than $\overline{X} + \sigma$)	26	21.67
6.	Extension contact	Low (Less than $\overline{X} - \sigma$)	27	22.50
		Medium ($\overline{X} \pm \sigma$)	79	65.83
		High (More than $\overline{X} + \sigma$)	14	11.67
7.	Risk orientation	Low (Less than $\overline{X} - \sigma$)	21	17.50
		Medium ($\overline{\overline{X}} \pm \sigma$)	76	63.33
		High (More than $\overline{X} + \sigma$)	23	19.17
8.	Market orientation	Low (Less than $\overline{X} - \sigma$)	19	15.83
		Medium ($\overline{X} \pm \sigma$)	72	60.00
		High (More than $\overline{X} + \sigma$)	29	24.17
9.	Income orientation	Low (Less than $\overline{X} - \sigma$)	26	21.67
		Medium ($\overline{X} \pm \sigma$)	59	49.17
		High (More than $\overline{X} + \sigma$)	35	29.17
10.	Telescopic faculty	Low (Less than $\overline{X} - \sigma$)	29	24.17
		Medium ($\overline{X} \pm \sigma$)	68	56.67
		High (More than $\overline{X} + \sigma$)	23	19.17
11.	Economic motivation	Low (Less than $\overline{X} - \sigma$)	16	13.33
		Medium ($\overline{X} \pm \sigma$)	75	62.50
		High (More than $\overline{X} + \sigma$)	29	24.17

Conclusion
As majority of the respondents were middle aged having high school education there is every chance of motivating them towards utilization of innovative marketing platforms like e-NAM. As extension contact, social participation and mass media exposure have great potential to influence the farming community in right direction, there is every scope to improve these three components still better so as to utilize the extension personnel and mass media for strengthening their knowledge for efficient utilization of e-NAM. Psychological variables like Risk orientation, market orientation and Income orientation, telescopic faculty and economic motivation were found to be medium. Hence there is need to organize training programmes for e-NAM registered farmers to improve quality of these variables. There is every need to improve the profile of the respondents to make them understand completely about e-NAM, improve their knowledge and utilize the platform more effectively and efficiently.

References
1. Bhaskar MU, Rao MS, Gopal PVS, Venkateswarlu B. Profile of commercial floriculture nursery owners in East Godavari district of Andhra Pradesh. The Andhra Agricultural Journal. 2019;66(3):582-585.
2. Chand R. e-Platform for national agricultural market. Eco. and Political Weekly. 2016;51(28):15-18.
3. Dhruw YS. A study on impact of National Horticulture Mission on socio-economic status of turmeric growers of Chhattisgarh plains. Ph.D. Thesis. Indira Gandhi Krishi Vishwavidyalaya, Raipur, Chhattisgarh, India, 2018.
4. Dubey M. Impact assessment of soil health card scheme on income and nutrient management practices in major crops among the farmers of Raisen district in Madhya Pradesh. M.Sc. (Ag.) Thesis. Indira Gandhi Krishi Vishwavidyalaya, Raipur, Chhattisgarh, India, 2018.
5. Geethavani T. Impact of e-NAM on enhancement of farm income in Andhra Pradesh: An Analytical study. M.Sc. (Ag.) Thesis. Acharya N G Ranga Agricultural University, Guntur, Andhra Pradesh India, 2019.
6. Harisha N, Tulsiram J, Meti SK, Chandargi DM, Joshi AT. Extent of adoption of tomato cultivation practices among farmers under shade nets in Kolar District of Karnataka. Asian Journal of Agricultural Extension, Economics & Sociology. 2020;38(4):43-50.
7. Maratha P, Badodiya SK. Study on marketing behaviour and other attributes of vegetable growers at Kota block of Kota district in Rajasthan. International Journal of Pure & Applied Bioscience. 2017;5(1):329-337.
8. Maya AK, Tekale VS, Thakare PN. Adoption of improved cultivation practices of turmeric in Yavatmal District. International Journal of Current Microbiology and Applied Sciences. 2018;7(12):640-647.
9. Nagesh H. A critical study on Pradhan Mantri Fasal Bima Yojana in Srikakulam district of Andhra Pradesh. M.Sc. (Ag.) Thesis. Acharya N G Ranga Agricultural University, Guntur, Andhra Pradesh, India, 2019.
10. Natthu CP. Impact of mobile based agro advisory services by state department of agriculture in Marathwada region. Ph. D Thesis. Vasantrao Naik Marathwada Krishi Vidyapeeth, Parbhani, Maharashtra, India, 2019.
11. Pavithra S, Gracy C, Rakaa S, Gowda Patil G. Innovations in agricultural marketing: a case study of e-tendering system in Karnataka, India. Agricultural Economics Research Review. 2018;31(1):53-64.
12. Raju MS, Devy MR, Gopal PVS. Knowledge of farmers on functioning of e-NAM. Indian Journal of Extension Education. 2022a;58(2):26-29.
13. Raju MS, Devy MR, Gopal PVS. Farmers perceived effectiveness of e-NAM. Indian Research Journal of Extension Education. 2022b;22(3):43-48.
14. Rao NS. A study on knowledge and adoption of turmeric farmers in Guntur district of Andhra Pradesh. M.Sc. (Ag.) Thesis. Acharya N G Ranga Agricultural University, Guntur, Andhra Pradesh, India, 2016.
15. Reddy AA. Electronic national agricultural markets.

Curr. Sci. 2018;115(5):826-837.

16. Shende SS. Entrepreneurial behaviour, turmeric growers, Hingoli district. M.Sc. (Ag.) Thesis. Vasantrao Naik Marathwada Krishi Vidyapeeth, Parbhani, Maharashtra, India, 2019.

17. Siddeswari GK, Gopal PVS, Sailaja V, Reddy BR. Socio psychological characteristics of the practicing women entrepreneurs emerged out of self-help groups in Andhra Pradesh. The Pharma Innovation Journal. 2021;SP-10(1):14-21.

18. Sihmar R. Growth and instability in agricultural production in Haryana: A District level analysis. International Journal of Scientific and Research Publications. 2014;4(7):1-2.

19. Smitha BR, Jahagirdar KA. Knowledge level of farmers on e-tools in Vijayapur and Bagalkot districts. Journal of Farm Science. 2019;32(1):77-81.

20. Somashekhar IC, Raju JK, Patil H. Agriculture supply chain management: a scenario in India. Research Journal of social science and management. 2014;4(07):89-99.

21. Tyngkan H. Impact of electronic- national agriculture market (e-NAM) on the income of farmers in Raipur and Dhamtari Agricultural Produce Market Committees (APMCs) of Chhattisgarh. M.Sc. (Ag.) Thesis. Indira Gandhi Krishi Vishwavidyalaya, Raipur, Chhattisgarh, India, 2018.

22. Wahab ZAM. Awareness and opinion of stakeholders regarding Weather Based Crop Insurance Scheme (WBCIS) and Pradhan Mantri Fasal Bima Yojana (PMFBY) in Punjab. M.Sc. (Ag.) Thesis. Punjab Agricultural University, Ludhiana, Punjab, India, 2018.

23. Yadav JP, Sharma A. National agriculture market: the game changer for Indian farming community. International Journal of Scientific Research and Management. 2017;5(7):5810-5815.