ROLE OF INFORMATION TECHNOLOGY IN AGRICULTURE MARKETING AND IT'S SCOPE IN PUNE DISTRICT

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Abstract:

Now a days information technology (IT) as one of the modern human made technologies which is influencing life, training, research and management pattern etc. Information Technology is used to develop life, agricultural research, education and extension to improve quality. This study took place in Pune District, Maharashtra to study impact of IT on farmers and to find out gaps in the existing information system. It also concentrated on how this market information can be used for planning, production and holding stocks. The sample size was 50 including rural and semi urban population. The Major findings are the farmers in the age group of 30-50 are using IT for their produce. Agricultural marketing is male dominated field. Graduates and post graduates are using IT effectively. IT can be the best mean not only to develop agricultural extension but also to expand agriculture research and education system in Pune India. This paper focuses on the scope of IT in Pune District only.

Keywords: Information Technology, Agricultural Marketing, Pune District

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The Indian Agricultural Scenario:

Agriculture is the largest livelihood provider in rural India. Inspite of this, the small farmers are not getting enough as compared to efforts put in the agricultural. It has direct effect on the agricultural productivity of the nation. In the agriculture sector, constant applications of latest ideas, better technologies and efforts are essential to enhance economic growth for well being of the farmer and the country. That is why Information Technology (IT) in agriculture should act as a catalyst in the development process of the agricultural. In agricultural marketing decisions, directs the competitive process and simplifies marketing mechanisms for the effectiveness and wellness of the farmers. In the agricultural marketing information system the information should be available accurate and ontime and reliable. So that farmer should be able to decide when to produce, how much to produce and where to sell. Similarly consumers should be able to find new suppliers.

Pune District Information:

Location : Pune district comes under the plain zone (transitional belt) and situated at an elevation of 55717 meter above the mean sea level. The district is located between 17054‟ , 19024‟ N altitude, 73019, and 75010‟ E longitude.

Area: Pune district occupies an area of about 15642 sq. km, which is 5per cent of the total area of Maharashtra state. Of which 15021 sq. km. comes under rural area and 621 sq. km comes under urban area. The district has 1844 villages, 1234 grampanchayats, 13 panchayat samitees, 11 councils, 2 Municipal corporations, 3 cantonment boards and 13 tahsils.

Climate and Rainfall: At the Western Ghat and hill region is cool and eastern region having hot and dry climate. The maximum temperature of Pune district ranges between 34 and 410C during April-May, while the minimum temperature varies between 50C to 100C in the months of November to January

Soil and Topography: Pune district possesses mainly three types of soils, viz. black-fertile, brown and mixed type. In western region soil, type has brown and low quality while eastern region having fertile and plain type. The richest alluvial soil track found in the Valley of Bheema River. Therefore, the agro-climatic condition of district is favorable.

Objectives:

1. To study existing marketing information system and to find out gaps

2. To study critical information needed in agricultural marketing
3. To study the market information to the farmers for planning, production and holding stocks

Information Technology can be defined to include the computing technology i.e., all processor based machines and peripheral and the communication technology such as the facsimile machines, modems, satellites, radio, telemetry etc.

Tool of IT in Agricultural Marketing:

1. **Radio**: Radio is the oldest IT tool and provides entertainment to masses. Some of the applications are:
   - Relay of talks with experts on almost every issue associated with agriculture
   - Interactive discussions with experts and training of farmers and extension Workers
2. **E-paper**: Available on the internet
3. **Video Cassettes / CD's**: It provides an opportunity to user for easy access to vast amount of material, etc. and to store in it.
4. **TV:** communication with an audience through audio-visual medium,
5. Internet: it is used worldwide for sharing the information through the website.
6. . **Video conferencing**: It is an visual plus audio conferencing for farmers located in various villages. This technology is very flexible and open to entire world. But it is costlier as compared to others.
7. **Compact disk read only memory (CD-ROM):** It is used to store text, animations, small amount of videos, graphics, sound, slides and can be used for self placed learning to users.
8. **Radio-Frequency IDentification (RFID):** used to the tags to track items within their control

Advantages of 'Information Technology' in Agriculture Marketing:

1. IT can improve the working situations and lives of the farmers in this country.

2. Consultancies regarding diseases, difficult weather (or) any abnormal ground conditions pest alerts, animal health, are the key needs of the farming community.

3. Providing low cost connectivity will enable the farmers to achieve relevant information and seek answer to his specific questions by means of internet.

4. It could enhance the profits of a farmer by making the middle structure ineffective by providing direct market access.

5. Farmer can check the market rates of the agricultural commodities in regional language along with data on agricultural schemes, crop technology, when to spray and plant their crops etc.

6. Providing the information and various application forms on the Net can check corruption and harassment of farmers by the Government officials.

7. The farmer need not to visit the offices for form collection and information gathering, they can down load the form at their own place and submit the application.

8. They can follow the progress of their application through Net.

9. Land records can also be made available online; this will help to create transparency.

Research Methodology:

a) **Type:** Descriptive Research

b) **Data Collection:**

Primary data was collected through structured and closed ended questionnaire and interview**.**

Secondary data was collected through Magazine, agricultural reports etc.

c) **Sampling Design**

Sample Design: Probability, Systematic Random Sampling

Sampling Unit: Farmers

Sample Size- 50

Geographical Area: Pune District

Results and Findings:

Age (Years)	Frequency	%
20-30	16	32
30-40	20	40
40-50	12	24
50 and above	2	4

The result shows that major age group of respondents is following between 30-40 yrs is 40%.

Below that the age group of 20-30 is 32%. This result shows that the major age group of farmers is following in the age group of 20-40 years.

Sex:

Male	35
Female	15

The study shows that by 70% of the respondents are involved in agril marketing who are using information tools to gather the information related to the farms and crops. Because females are less exposure to agril marketing. It is happening because of for the agril marketing requires lots of energy, efforts, etc.

Education	Frequency	%
Illiterate	3	6
Non Matrix	22	44
Matrix	15	30
Graduate	8	16
Post Graduate	2	4

The study shows that majority of the respondents are non metric and they are quite literate and able to operate information technology tools like mobile. They are also able to operate some applications on the mobile which is installed by someone else.

Type of Respondents	Frequency	%
Rural	30	60
Semi urban	20	40

This study shows that majority of the respondents are from rural areas 60%. And the remaining respondents are staying in the semi urban areas and doing their farm which is nearby the city.

It is also found that the people who are staying in semi urban areas are able to operate mobile and their applications effectively. Also it shows that they are getting information faster than the rural area people.

Do you use Mobile	Frequency	%
Yes	47	94
No	3	6

The study shows that most of the respondents are using mobile phones 94%. It is found that they are using basic mobile phones along with some additional features which are useful in the getting information.

Do you use internet	Frequency	%
Yes	14	28
No	36	72

The study shows that 72% of the respondent are not using internet on their mobile phone. It is found that who are using mobile phones are staying in the semi urban areas. Those who are using internet on their mobile phone are graduates and post graduates.

For which purpose (Agril. use) you are using mobile /	Frequency	%

internet? (Multi Choice)		
To know price of commodity	22	44
To know weather conditions	32	64
To discuss with Agril. experts	12	24
To discuss among farmers	44	88
To sell the commodity	32	64

The study shows that 64% of the respondents are using information technology for to discuss among farmers. ie. Their problems related to crops and getting information related to new insecticides new diseases, new remedies over the new diseases. Below that internet on mobile phones are used for to sell the commodity 64% and to know weather conditions. Whether conditions are asked by the farmers who are growing fruits and vegetables. 24% are using internet for to discuss with the agril. Experts because they are facing problem of languages.

Possible incentives of use of IT in Agril. (Rate 1 Least - 5 Most	**1**	**2**	**3**	**4**	**5**
To get technical support	12	8	9	2	19
Access to new technology	18	14	7	6	5
Reduce risk of hold-up	6	2	5	13	24
Increase Productivity	4	3	9	14	20

This study shows that farmers are using IT for reducing risk of their hold up and to get maximum price of their produce and the for increase productivity and to get technical support.

Which crops (Main) you are producing	**Frequency**	**%**
Wheat	13	26

Maze	8	16
Fruits	11	22
Vegetables	14	28
Others	4	8

The study shows that 28% of the respondents are producing vegetables because they are getting liquid cash on daily or on weekly basis to meet their daily and weekly needs. Besides that 26% are producing wheat as main crop of production. 22% are producing fruits (Pomegranate and Grapes) cash crops.

Medium of getting information	**Frequency**	**%**
Newspaper	10	20
Radio	14	28
TV	17	34
Books/ Magazines	8	16
Any other	1	2

The study shows that 34% of the respondents are using TV as information source. They are watching Marathi channels like Sam TV, E TV, Sahyadri (Regional channels) etc. Besides that they are getting information from Radio. The people staying in rural areas are listening to Radios. They are also referring newspaper articles and field related magazines. Most of them are referring magazine Agro one.

Type of information needed by you	**Frequency**	**%**
Subsidies	14	28
Credit facilities	14	28
Market Trend	16	32
Post Harvest (Technology)	6	12

The study shows that 32% of the respondents are using information technology to know the market tends ie to know the prices fluctuating in the market so that they should get maximum price to their produce. Besides that information technology is used for knowing the subsidies and credit policies given by the government time to time.

Promotion of Farm Produce	Frequency	%
Word of Mouth	26	52
Banner	1	2
Shows	13	26
No Promotion	10	20

The study shows that 52% of the respondents are using word of mouth as a tool of publicity of their produce. 26% preferred shows to promote their farm produce,

Gap findings of the study is:

Cost of production of crop is increasing day by day because of increased inflation rate.

Middlemen are taking commission for the promoting of the produce of the farmer.

Crop gross margins

Knowledge on the agricultural policies is not reaching to the farmers.

Extensive use of latest technologies.

Less effective distribution channels

Weather forecasting

Conclusion:

The results of the study shows that Agricultural Marketing is dominated by males. The age group of farmers is following most between 30-50 yrs who are using information technology most effectively. They are quite literate to operate mobiles and mobile application to get the required information. Most of the farmers are using mobile phones nowadays. Some are using internet on their mobile for getting information related to the crop production. Those who are using internet on their mobile phone are graduates and post graduated. Farmers are using IT most for discussing among the farmers for getting better information which is reliable more. This study also showed that vegetables are produced mostly because they are getting liquid cash on a day or weekly basis and they are from semi urban areas. After that they are producing wheat as a main crop along with fruits (Pomegranates and Grapes). They are getting required information from the TV Channel (Regional) and Radio. They are required information for market trend, subsidies and credit facilities most.

Scope of further research:

1. Farmers should be trained for better bargaining power. They should get better price to their produce.
2. Cash crops should be produced more.
3. Farmers should get more support from government.
4. Availability of accurate and timely information.
5. Extensive use of information technology

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Questionnaire

1. Name:……
2. Age: □18-30 □30-40 □40-50 □ 50-60 Sex: □ M □ F
3. Education:

   □ Illiterate □ Non Matrix □ Matrix

   □ Graduate □ Post Graduate
4. Type of Respondents : □ Rural □ Semi urban
5. Do you use Mobile : □ Yes □ No
6. Do you use Internet: □ Yes □ No
7. For which purpose (Agril. use) you are using mobile / internet?

   □ To know price of commodity □ To know weather conditions

   □ To discuss with Agril. experts □ To discuss among farmers

   □ To sell the commodity
8. Possible incentives of use of IT in Agril. (Rate 1 Least - 5 Most)

   □ To get technical support □ Access to new technology

   □ Reduce risk of hold-up □ Increase Productivity
9. Which crops you are producing

   □ Wheat □ Maize □ Fruits □ Vegetables others
10. Livestock

    □ Poultry □ Hogs □ Beef □ Dairy
11. Distribution of the farm produce

    □ Direct □ Agents □ Middlemen

    □ Broker □ Any other
12. Type of information needed by you

    □ Subsidies □ Credit facilities

    □ Market Trend □ Post Harvest (Technology)
13. Promotion of Farm Produce:

    □ Word of Mouth □ Banner

    □ Shows □ No Promotion