IMPACT OF SMART FARMING PRACTICES ON AGRICULTURE EDUCATION IN VIDARBHA, MAHARASHTRA: AN ANALYSIS ON STUDENT'S PERSPECTIVE

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Abstract

The present study examines how agricultural education in Maharashtra's Vidarbha region is impacted by Smart Farming Practices (SFTs) with a focus on understanding student's perspective from agriculture background. The study is done of agriculture educational background like undergraduates, postgraduates and other categories. It is very critical to evaluate how these shifts have affected the education and training that an upcoming agricultural professionals receive as technology enhances and it continues to shape the agriculture future on a progressive ground. A thorough research framework by integrating both qualitative and quantitative approached is taken into consideration. Students from Vidarbha region of Maharashtra were surveyed to gather the information and comprehensive knowledge by integrating Smart Farming Practices into the course curriculum. The study looks at the pros and cons that students have adjusting to SFTs. The results shows that few students were partially aware about Smart Farming Practices and it will be increased post using new technology compared to the old technology. The study further examines how much of this awareness would aid in academic setup. Also, the paper closely looks at the variables that affects student participation like curricular formation, institutional help and availability of resource.
The aim of this findings is to enhance the alignment of agri-education with SFT's by offering insightful information to policymakers, educational institution and agriculture allied sector. In order to effectively amalgamate technology into education and then prepare the students for the future prospects as well as hurdles due to technological changes in agriworld by student's perspective.

Keywords : *Agriculture, SFTs, Education, Awareness, Syllabus*

Introduction:

India is agrarian economy. Farming has been the main source of income for the last few decades. In Maharashtra, agriculture has been regarded as the pillar of our economy as it will help to boost and develop economy that will enhance the standard of living, GDP growth, National Income and Per-capita Income. Vidarbha is surrounded by the states of Madhya Pradesh, Chhattisgarh, Telangana and other areas of Maharashtra.

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Vidarbha region of Maharashtra agriculture fuses technology's like drip irrigation tech, modernized farming machinery and precision farm tools such as GPS. Apps in Mobile phones also helps to gather weather and market forecasts which will help farmers in making their decision. The use of biotechnology is obvious through the launch of genetically modified crops which will enhance the productivity and crop yields. Drones helps in monitoring systems to get the advance solutions for crop conservation. Testing kits of soil also accord to informed fertilization method displaying a mixture of old wisdom and new advancements in Vidarbha's farming topography.

Despite rapid growth of SFTs in modern agriculture era still there are shortfalls in the syllabus of agriculture background who are doing their Bachelor's or Master's degree or Diploma course. Their curriculum focuses on ancient agriculture practices and have not covered smart farming tools. This gap in the syllabus should be filled-up by incorporating awareness among students regarding benefits and application in use. It will create a huge impact on farmer's revenue generation and there will be lesser problems of collateral loans.

Review of Literature:

Yadachi S, et al. (2023) In this study researcher indicate that Indian Agriculture faces numerous issues. While with the use of IoT it has potentially replaced human labor in farming. Studies revealed that in a worldwide perspective drones aids in time, labor and resources conservation while declining chemical costs. It further investigated that their should be government adoption of drone tech to boost the agriculture allied people and farmers in India together.

Katekar Vishal and Cheruku Jeevan (2022) Researcher suggested that Indian agriculture grapples with various issues enclosing productivity decline, climatic change, and sustainability. Adopting drone technology in farming offers significant contributions across social, economic, and environmental dimensions. It highlights Government of India initiatives promoting drone technology while discussing the associated challenges.

Upendra R, et al. (2020) studied that India's agricultural practices face various barriers, including climatic patterns, diverse geographical environments, traditional agricultural methods and shifting of political and economic landscapes. Several technological enhancements counting Big Data analytics, Digital Agriculture, Smart Farming or Internet of Agriculture Technology (IoAT), Crop Management, Weed and Pest control and Crop Protection are all reviewed in this paper.

Balafoutis A, Evert F, et al. (2020) researcher survyed inventory of SFTs because it provides access to current SFT developments to identify new research challenges, policy-makers information on SFTs current state to create incentives for higher adoption rates.

Rani Alka, et al. (2019) In this study, researchers suggest that drones possess immense potential to transform the Indian agriculture set-up. As the technology advances, the production of drones are expected to become quiet cost-effective. The study indicates that drones could become an integral part of agriculture, helping farmers in managing their fields and resources in effective and sustainable way in the future for conservation.

Objectives of the Study:

To spread awareness amongst students of agriculture background about Smart Farming Practices in Vidarbha, Maharashtra.

Research Hypothesis:

Alternative Hypothesis (H1): Students of agriculture background are aware about Smart Farming Practices in Vidarbha, Maharashtra.

Null Hypothesis (H0): Students of agriculture background are not aware about Smart Farming Practices in Vidarbha, Maharashtra.

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Research Methodology:

a. Sources of the Data: Here, the study uses both Primary as well as Secondary data. In primary data, the detailed well-structured questionnaire was conducted on agriculture background students of Undergraduates and Postgraduates.

b. Sample Size and Methods: The sampling method used here is random sampling. The size of the sample collected was 53 respondents from Vidarbha region.

c. Limitations: Here are the few limitations of the present study. They are as follows:

1. It is based on quantitative research.

2. It is based on the micro-level of consumers as a sample size i.e on agriculture students.

3. The research is only done on the state of Vidarbha region of Maharashtra.

Analysis of Data:

A brief study was conducted among 53 students from the Vidarbha, Maharashtra. It was conducted on agriculture students and agriculture researchers from different educational background like High School, Diploma, Undergraduate, Postgraduate and other courses. The study of the research can be seen from the various tables. From 53 respondents, **Male participation is 56.6% and Female Paticipation is 43.4%, Age-group of students participated were from 20-25 years.**
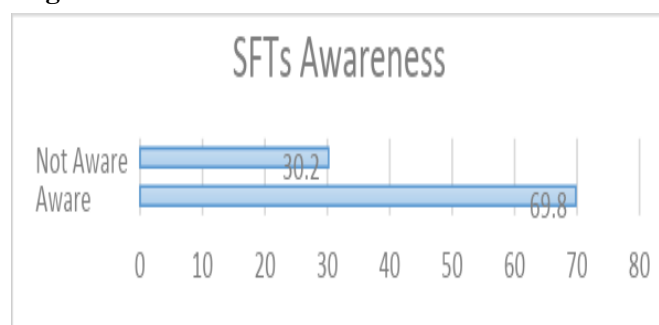
Fig. 1 : Educational Background:
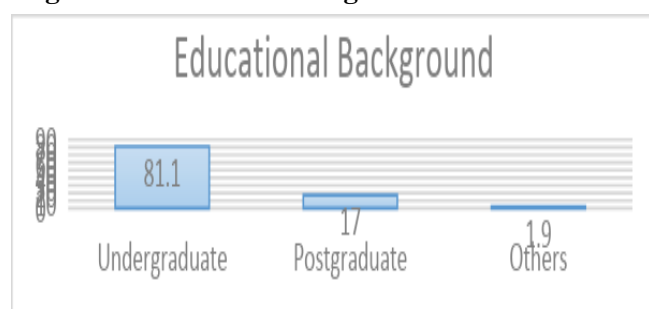
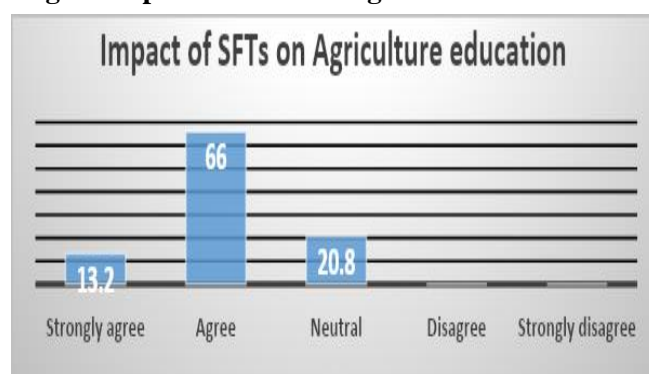**(Source: Author's own compilation)** From Fig 1, we observe that there are various educational backgrounds in percentage of undergraduates, postgraduates and others. 81.1% are undergraduates, while 17% are postgraduates and 1.9% are from other backgrounds of agriculture studies.

Fig. 2 : SFTs Awareness:

(Source: Author's own compilation) From the above Fig 2, we observe that awareness of SFTs in percentage are given; 69.8% are aware and 30.2% are not aware yet about SFTs.

Fig. 3: Impact of SFTs on Agriculture education:

(Source: Author's own compilation) From the above Fig. 3, we have seen impact of SFTs on Agriculture education; 13.2% have strongly agreed while 66% is highest who have agreed and 20.8% who were neutral.
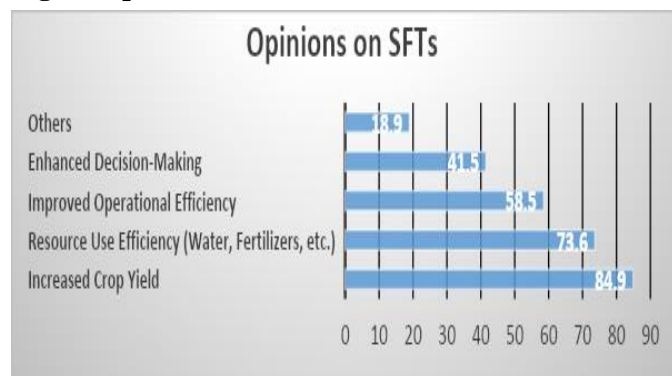
Fig. 4: Training on SFTs:
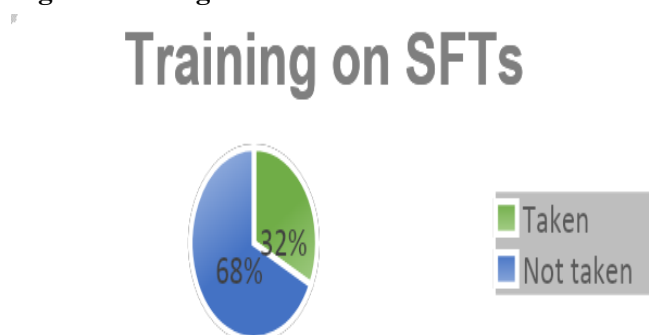
(Source: Author's own compilation)

Fig 4. shows how many have taken prior trainings on SFTs; 32.1% have only taken while 67.9% have still not taken any training.

Fig. 5: Opinions on SFTs:

(Source: Author's own compilation) In this Fig. 5, we have seen Opinions on SFTs; 84.9% have shared opinion for increased crop yields, 73.6% have shared resource use efficiency (Water, Fertilizers, etc.), 58.5% for improved Operational Efficiency, 41.5% shared opinion on Enhanced Decision-Making and 18.9% have selected other opinions.

Fig. 6: Opinions on SFTs adoption in future:

(Source: Author's own compilation) Fig 6. shows Opinions on SFTs adoption in future. Out of 53 respondents, 88.7% will definitely adopt while that of 11.3% will not adopt.
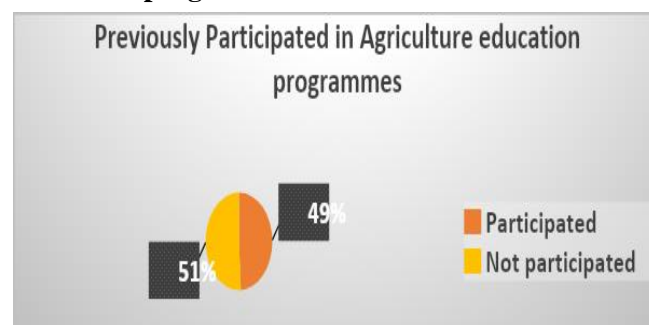
Fig. 7: Educational significant role about SFTs:
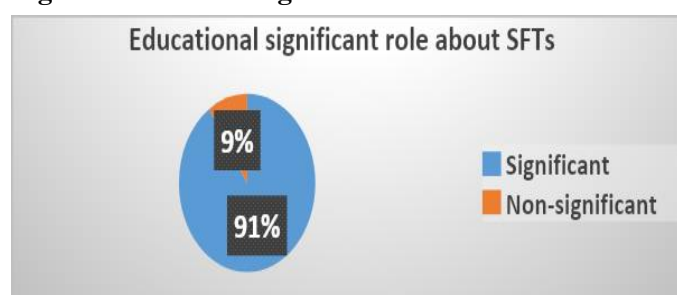
(Source: Author's own compilation) In this Fig 7, we

have seen educational significant role about SFTs promoting and knowledge spread in Vidarbha; 90.6% believed significant role while 9.4% did not believed.

Fig. 8: Previously Participated in Agriculture education programmes:

(Source: Author's own compilation) From this Fig 8, we have seen participation in agriculture programme by students; 49.1% has participated and 50.9% did not participated yet.

Results and Discussion : According to the analysis of data null hypothesis is rejected. With the help of the above data analysis tools we can observe that irrespective of gender and age composition on agriculture course students from Vidarbha, Maharashtra. We see that most of the respondents are from Undergraduate and Postgraduate background. SFTs awareness is there amongst the students but training is taken by only few. Their opinions based on Increased Crop Yield were given but most of the students shared.more participation will be seen by them in future and participation.

Conclusion/ Recommendations:

- **SFT Awareness:** Limited awareness of Smart Farming Practices in Vidarbha requires a specialized course for students of agriculture to gather importance of technological enhancements.
- **Certification:** This will offer a large number of youth to get engaged with minimal fees and on hybrid mode to encourage participation in SFT Programmes and by updating cirriculum and formation of it.

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- **Conducting awareness:** Through workshops, webinars, expo and exhibitions with live demonstrations of new and advanced technologies which will enhance farming community in Vidarbha region.
- **Government Assistance:** Initiatives including schemes, subsidies and free online courses can play an important role in promoting SFTs and adopting amongst the farmers, students and researchers.
- **Local Training Facility:** Establishment of training centers in every village of Vidarbha makes widespread knowledge dissemination, fosters competitiveness and generating income and employment opportunities for those involved in agriculture sector.

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