Authorship Pattern, Motivatiional Factors and Barriers in Intelletucal Assets of Research Assistant in Dr.P.D.K.V., Akola: A Scientometric Study

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Abstract- *This paper present Authorship pattern, motivational factors and barriers in Intelletcual assets of research assistant in Panjab rao Deshmukh Krishi Vidhyapeeth, Akola from 2006-2015. The covers Gender, Age, Designation, Subject Wise intelletcual assets status of research assistants,Innovative Extension Teaching Methods, Organized Extension Activities, Publications for use of farmers, Extension work Carried out FFS and ICT Modules, Co-curricular activities for students, Financial support, Motivational factors, Authorship pattern, Barriers in research productivity.*

Keywords- Mapping, Intelletcual Assets, Research Assistant, Dr.P.D.K.V., Akola, Scientometric.

I. INTRODUCTION

India as a predominantly agricultural country attributes a major share of its overall development to the agriculture sector. Indian agriculture is a miscellaneous and extensive sector involving a large number of stakeholders. India has one of the largest and institutionally most complex agricultural research systems in the world. However, such a complex research system was not a sudden development. Instead, historically, it involved a process that started in the second half of the 19th century during the colonial period and eventually led to the establishment of the Imperial (now Indian) Council of Agricultural Research (ICAR). In the present research system, the role of ICAR at the national level in aiding, promoting and coordinating research and education activities across the country is of significant importance. In this article we trace the development of agricultural research system in India, since the colonial era till today. Various factors influencing the overall development of agricultural research system in the country are discussed. Although agriculture has been playing the most vital role in Indian economy, during the course of the study, it has been observed that not much emphasis has been given to the history of evolution of agricultural research in India.

II. STATEMENT OF THE RESEARCH PROBLEM

The Problem under Investigation is "Authorship Pattern Motivational Factors and Barriers in Intelletcual Assets of Research Assistant in Dr.P.D.K.V., Akola: A Scientometric Study. The study will evaluate the intelletcual assets of the research assistant in Dr. P.D.K.V., Akola.

III. DEFINATIONAL ANALYSIS

3.1. Mapping:

Colosimo & Fitzibbons (2012) Concept maps are graphical tools for organizing and representing knowledge. Concept mapping is fundamentally a tool form organizing knowledge. It has applications for individuals and groups alike. Concept maps can assist in various aspects as a means of organizing ideas and making tacit or "instinctual" knowledge explicit and external.

3.2. Intellectual Assets

The knowledge, experience,and skills that employees have, that an organization can use for its benefit. Bottle and other accept that the productivity of an academic can be calculated by counting the number of publishing produced over a period of time. Supporting the above view Hattie and others also point out that the individual Agricultural Professional scholarly productivity can be counted and used as a unit of analyses when evaluating higher education. Counting can thus be used to measures the status of an academic with regard to scholarly publishing.

3.3. Research Assistant

A research assistant is a researcher employed, often on a temporary contract,by a university or a research institute, for the purpose of assisting in academic research. Research assistants are not independent and not directly responsible for the outcome of the research and are responsible to a supervisor

or principal investigator. Research assistants are often educated to degree level and might be enrolled in a postgraduate degree program and simultaneously teach

3.4. Dr. P.D.K.V.

Dr.Panjabrao Deshmukh Krishi Vidypeeth (PDKV) started functioning at Akola from October 20, 1969, with an objectives of providing education in agriculture and allied subjects for the Vidarbha region consisting the eleven districts namely Akola, Nagpur, Amravati, Wardha, Buldhana, Yavatmal, Chandrapur, Gadchiroli, Bhandara, Gondia and Washim. These districts leads to the cultivation of different food, pulses, oilseeds, vegetables and plantation crops. Considering the different Agro-climatic condition suits for education and research activities in the Parbhani campus.

3.5. Akola

General Characteristics of the District: For the purpose of administrative conveyance, the district is divided into seven Tahsils and Panchayat Samities. According to the 2001 Census, there was 542 Gram Panchayat for the purpose of Rural Development.The main crop grown in the district are Jawar, Wheat, Cotton, Tur, Mung.

3.6. Scientometic

Scientometric is part of the sociology of a science and has application to science and has application to science policy making. The term Scientometrics as, "It is a complex of quantities (mathematical and statistical) methods, which are used to investigation the process of science." (Tiwari, 2006).

IV. REVIEW OF LITRATURE

Sengar (2014) the present study aimed to analysis the publication trends of the CSIRIMTECH scientist and researcher during 1991-2010. Authorship patterns, which reveals that majority of the CSIR-IMTECH scientists/researchers preferred to publish the research results in joint authorship (83.48%) than individually (single authorship, 16.51%). However, the degree of joint authors gradually decreased with increase in number of authors (two authors (23.06%); three authors (21.95%).

Pratap (2014) in this paper, a comprehensive and in-depth bibliometric analyses that breaks down scholarly performance into three components - quantity, quality and consistency have been conducted. The citation data is retrieved from the Web of Science. The most productive organizations, countries, authors and also the most influential journals in which this newly emerging area is published using these criteria, with particular emphasis on the Indian contribution have been identified.

V. OBJECTIVES

The main objective of this study is analyzing the Intellectual Assets of Dr. Punjabrao Deshmukh Krishi Vidyapeeth, during 2001 to 2015. In particular, the study focuses on the following objectives.

1. To measure Intellectual Assets of Dr.Panjabrao Deshmukh Krishi Vidyapeeth, Akola.

2. To know the Intellectual Assets of Research Assistant in Agricultural Profession.

    a. To find out the year wise Intellectual Assets (Research productivity) of Agricultural Professionals.
    b. To know Intellectual Assets (research productivity)of research assistant in Agricultural Professionals in books, published lecture and conference proceeding, Journal articles. Extension articles, research projects etc.
    c. To know Gender wise intelletcual assets of research assistant.
    d. Productivity age of research assistant.
    e. To know Designation wise intelletcual assets of research assistant.
    f. To know Subject wise intelletcual assets of research assistant.
    g. To identify the profile author having largest number of publication of Agricultural Professionals.

VI. HYPOTHESIS OF THE STUDY

1. Majority research assistant just published papers in journal.
2. Male Research Assistant have more intelletcual assets than Female Research Assistant.
3. More experience more intelletcual assets.
4. High Designation high intelletcual assets.
5. Significant growth of intelletcual assets of the research assistant during the period of study with more multi authored papers.
6. Well situation ofworking & living condition motivate the research assistant to write.
7. Research assistant facing language problem to write publication

VII. SCOPE AND LIMITATION OF THE STUDY

Present study is limited to Dr.Panjabrao Deshmukh Krishi Vidyapeeth, Akola proper campus and it's including Various Constituent Agricultural Colleges research assistant. So, it's under PGI of Akola, college of agricultural forestry, college of horticulture, college of agricultural engineering.

VIII. RESEARCH METHODOLOGY

8.1 Survey Method

Present study has done with the help of survey method. Survey research is distinguished by its reliance upon the selection of person from large and small population and the making of observation. So that inference can be applied to present population. A population is may be group of persons, objects institution or other units that passes at least on common characteristics.

Encyclopaedia of library and information science defined this method as "the survey research methods enable investigation to conduct complete enumeration of population survey. It saves time and money without scarifying accuracy or information adequacy.

8.2 Data Collection Method

The research problem "Mapping of Intellectual Assets of Dr.Panjabrao Deshmukh Krishi Vidyapeeth, Akola: A Scientometrics Study will be studied by doing literature survey primarily and information will be collecting from the agricultural professional through questionnaire and will also be interviewing personally to avoid the constraint of study.

The collecting data and information will be analysing by applying statistical method and certain techniques of research methodology. The interference drawing in the study will have thus base on the analysis of data collecting so far.

8.3 Questionnaire Design

Questionnaire is often using in survey as primary data collection tools. Questionnaire is a device for securing answer to questions by using a form which the respondent fills in him. It is a fairly reliable tool for gathering data from large, diverse, varied and scattered social group.

IX. DATA ANALYSIS

The total numbers of constituent colleges in proper campus inDr. P.D.K.V., Akola are 5. And total number of research assistant 33 out of them 30 research assistant have respondent, 3 have not respondent. The collected data have been analysed with using following parameters. Year wise intelletcual assets, Types of intelletcual assets,Gender wise intelletcual assets, Age wise intelletcual assets, Designation wise intelletcual assets, Financial Agencies, Authorship Pattern, Motivational Factor, Barriers in intelletcual assets.

10.1. Year wise Intelletcual Assets

Table No. 10.1 and Figure No. 10.1. presents the Year Wise Intelletcual asset of research assistant in Dr. P.D.K.V., Akola. during 2006-2015. The figure and table shows that there are total 1109Intelletcual Assets. 2015 was the more research productive year in relative to the number of intelletcual assets. In 2015research assistant contributed 167 Intelletcual assets/ research papers in Symposia, Seminars, Conferences, Journals, Books chapter Research, Books, Provided Consultancy Services, given the Recommendation, given the lectures as a resource person, achieved award, Research Project etc. The less intelletcual assets year of the research assistant was 2006 having only 69Intelletcual assets / research publications. It shows that the productivity of Research Assistant increase year by year. It is growing than previous year.

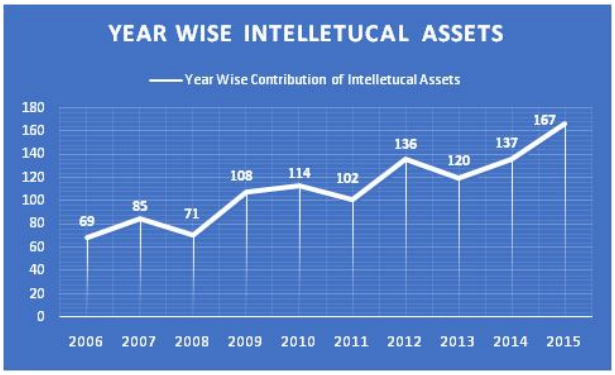


Figure No. 10.1. Year wise Intelletcual Assets

Table No. 10.1. Year Wise & Types of Intelletcual Assets

Sr. No.	Types of Intelletcual Assets	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total	%
1	Symposia	12	1	4	7	4	5	3	5	6	6	53	4.78
2	Seminar	2	1	5	4	5	9	13	6	7	15	67	6.04
3	Conference	3	3	2	2	4	0	4	7	17	8	50	4.51
4	Journals	15	27	18	24	28	29	30	35	32	38	276	24.89
5	Books Chapters	0	0	1	0	0	1	1	0	1	1	5	0.45
6	Books	0	0	0	0	2	1	2	1	1	0	7	0.63
7	Consultancy Services	0	0	0	0	0	0	0	2	1	0	3	0.27
8	Recommendations	3	1	5	4	2	4	4	6	8	13	50	4.51
9	Resources Persons	4	6	9	13	16	13	18	12	19	16	126	11.36
10	Award	0	0	1	2	0	0	1	1	0	2	7	0.63
11	Extension Articles	30	46	25	52	50	32	55	41	39	59	429	38.68
12	Research Projects	0	0	1	0	3	8	5	4	6	9	36	3.25
13	Patent	0	0	0	0	0	0	0	0	0	0	0	0.00
14	Crop Verities	0	0	0	0	0	0	0	0	0	0	0	0.00
	Total	69	85	71	108	114	102	136	120	137	167	1109	100.00

10.2 Types of Intelletcual Assets

It is observed from the Table 10.1. & Figure no.10.2. Indicated that the year wise distribution of Intelletcual assets

in Symposia, Seminars, Conferences, Journals, Books chapter, Books, Consultancy services, Recommendations, delivered lecture as Resource Person, Achieved Award, Research Project, Patent and crop varieties from 2006 to 2015. The details of the number of Intelletcual assets during 2006-2015 are tabulated in the table no.10.1. It is found that the total number of Intelletcual assets/publication from 2006 to 2015 is 1109. The figures no.10.1 that mostly research assistant are intelletcual assets/published their research work in Extension articles 429(38.68%), followed by Journals 276 (24.89%), 126 (11.36%) delivered lecture as a resource person, followed by 67 Seminar (6.4%), 53 (4.78%) IN Symposia, 50(4.51%) in Conference, in Book Chapters 5(0.45%), research assistant was also write Books 7(0.63%) Edited, Text, & Reference Books. given the Recommendation50 (4.51%), achieved Award 7 (0.63), research assistant also completed Minor Research Project and Major Research Project with 36 (3.25%). Nobody Registered Any Patent and not realised any crop verities.**This indicates that the above discussion"Majority research assistant just published papers in journal."(Hypothesis No. 1). is invalid.**

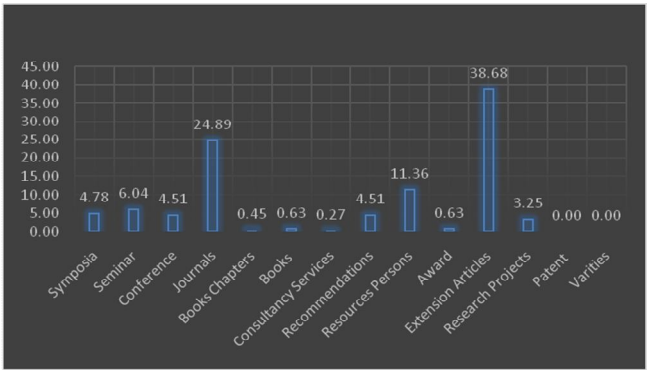


Figure No. 10.2. Contribution of Types of Intelletcual Assets

10.3. Gender Wise of Intelletcual Assets

It can be observed from Table & Figure No. 10.3 presented that the 21 Male research assistant and 9 females res. Asst. The table no. 10.3 shows that there are totals 1109 Intelletcual Assets. Male res. Asst. have published 820 (73.94%) publications, while female res. Asst. have published 289 (26.06%)publications. It indicates that Male research asst. have more research productivity than Female Res. Asst.**This indicates that the above discussion"Male Research Assistant have more intelletcual assets than Female Research Assistant" (Hypothesis No. 2). is valid.**

Table No. 10.3. Gender Wise Research Productivity

Sr. No.	Gender	No. Of Respondent	%	No. of Intelletcual Assets	%
1	Male	21	70.00	820	73.94
2	Female	9	30.00	289	26.06
	Totals	30	100.00	1109	100.00

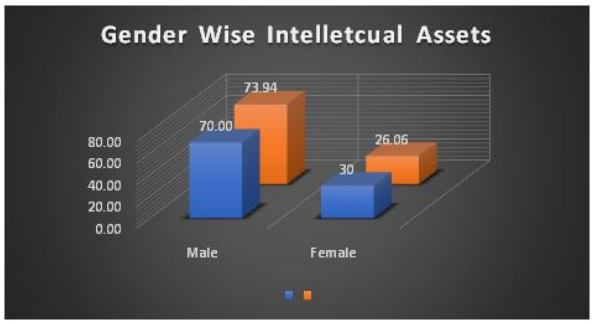


Figure No. 10.2. Contribution of Types of Intelletcual Assets

10.4. Age Wise Research Productivity

Table & Figure No. 10.4 indicated that the Age Wise Respondent and Intelletcual assets of respondent. It is found that there are The below table show that the majority of the research assistant are belong to 31-40 age group 16 (53.33%),& its research assistant intelletcual assets is 444 (39.68%) & 41-50 age group 13 (43.33%) research assistants are belonging & its intelletcual assets is 656 (59.15%) etc. having ranks first, second, third, fourth, respectively. From table we observe thati.e. in 51 to above age group the respondent is 1 (3.33%)& its intelletcual assets is (1.17%) but intelletcual assets 41-50 age group is 59.15 % This indicates that the above discussion "More experience more productivity" (Hypothesis No. 3) is Invalid.

Table No. 10.4. Age Wise Research Productivity

Sr. No.	Age Groups	No. of Respondents	% of Respondent	No of Intelletcual Assets	%
1	31-40	16	53.33	440	39.68
2	41-50	13	43.33	656	59.15
3	Above 51	1	3.33	13	1.17
	Totals	30	100.00	1109	100.00

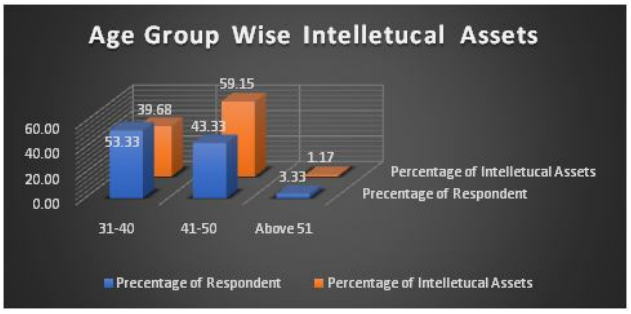


Figure No. 10.4. Age Wise Research Productivity

10.5. Designation Wise Research Productivity

It can be observed from Table & Figure No.10.5. presented that the 8(26.67%)Junior Research Assistant and 22(73.33%) Senior Research Assistant. The table no. 10.5. shows that there are totals 1109 Intelletcual Assets. Junior Research Assistant Have Contributed 264 (22.18%) Intelletcual Assets, while Senior Research Assistant Intelletcual Assets Have Contributed 863 (77.82%) Intelletcual Assets. It indicates that Senior Research Assistant have more intelletcual assets than Junior Research Assistant.This indicates that the above discussion"High designation high intelletcual assets" (Hypothesis No. 4). is valid.

Table No. 10.5.Designation Wise Research Productivity

Sr. No.	Designations	Respondents	% of Respondent	Intelletcual Assets	%
1	Junior Research Assistant	8	26.67	246	22.18
2	Senior Research Assistant	22	73.33	863	77.82
	Totals	30	100.00	1109	100.00

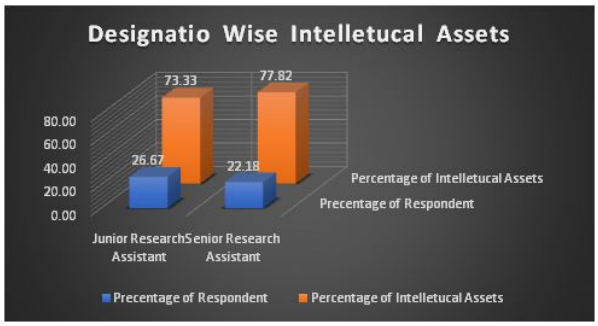


Figure No. 10.5.Designation Wise Research Productivity

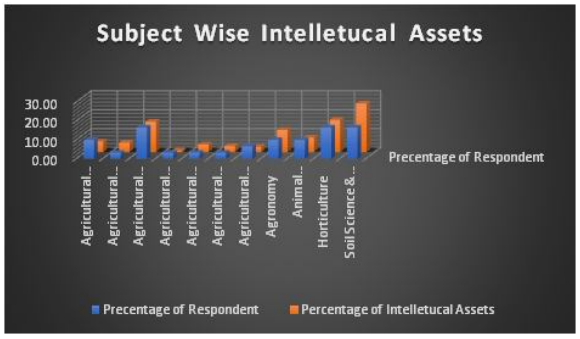
10.6. Subject Wise Research Productivity

In Agriculture total 11 subjects & out of subject research assistant working in various departments in PDK Vidhyapeeth. The intelletcual assets output of these subjects is given in the Table No. 10.6. Soil Science is top with 286 Intelletcual assets which is 25.79% of the total contribution. The second rank is to the Horticulture with 190(17.13%) Intelletcual assets. The less number of Intelletcual assets is brought out by the Agricultural Plant Pathology 30 (2.71%) Intelletcual assets & second less number of intelletcual assets is brought Agricultural Entomology i.e. 11 (0.99%) Intelletcual assets.

Table No. 10.6.Subject Wise Research Productivity

Sr. No.	Subjects	No. of Respondents	% of Respondent	No. Intelletcual Assets	%
1	Agricultural Botany	3	10.00	62	5.59
2	Agricultural Economics	1	3.33	56	5.05
3	Agricultural Engineering	5	16.67	178	16.05
4	Agricultural Entomology	1	3.33	11	0.99
5	Agricultural Extension Education	1	3.33	45	4.06
6	Agricultural Forestry	1	3.33	36	3.25
7	Agricultural Plant Pathology	2	6.67	30	2.71
8	Agronomy	3	10.00	130	11.72
9	Animal Husbandry & Dairy Science	3	10.00	85	7.66
10	Horticulture	5	16.67	190	17.13
11	Soil Science & Agricultural Chemistry	5	16.67	286	25.79
	Total	30	100.00	1109	100.00

Figure No. 10.6.Subject Wise Research Productivity



10.7. Authorship Pattern

Table & Figure no. 10.7.shows that it is clear that 6.67% respondents use single authorship pattern; while 23.33% respondents preferred double authorship pattern and 60.00% respondents used three authorships and lowest number of 6.67% respondents use single authorship pattern.70.00% more than three author authorship pattern.This indicates that the above discussion"Significant growth of intelletcual assets of the research assistant during the period of study with more multi authored papers"(Hypothesis No. 5). is valid.

Table No. 10.7. Authorship Pattern

Sr. No.	Authorship Pattern	No. of Respondents	%
1	Single Author	2	6.67
2	Double Author	7	23.33
3	Three Author	18	60.00
4	More than three authors	21	70.00

Figure No. 10.7. Authorship Pattern

10.8. Motivated Factors for research

Table & Figure no 10.8. shows that motivated factors for research. Majority of 50.00% respondents motivated by Funding agency, well situation of working & living condition followed by 26.67% current information materials; 10.00% funding agency and guiding from family members/ friends; and 0.00% monitory benefits. 33.33% certificates of merits/medals, publicity 132.33% a Nobody motivated by 23.33%. This indicates that the above discussion "Well situation ofworking & living condition motivate the research assistant to write" (Hypothesis no. 6) is invalid.

Table No. 10.8. Motivated Factors for research

Sr. No.	Motivated Factors	No. of Respondents	%
1	Well situation or working & living condition	8	26.67
2	Funding agency	15	50.00
3	Current Information materials	3	10.00
4	Guiding from family members/friends	0	0.00
5	Monitory benefits	0	0.00
6	Certifications of Merits/Medals	10	33.33
7	Publicity	4	13.33
8	Any other factor	7	23.33

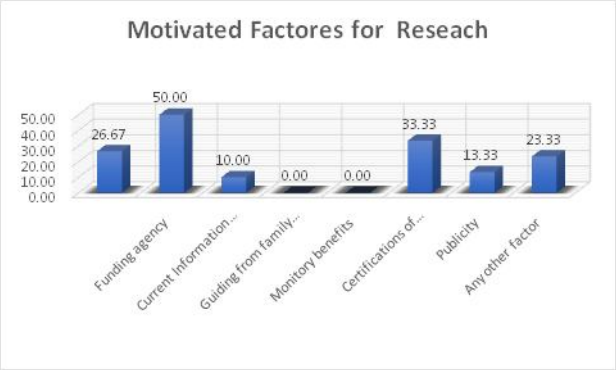


Figure No. 10.8. Motivated Factors for research

10.9. Barriers in Research Productivity

We observe that table & Figure no.10.9 shows that majority of 36.67% respondents have the major barriers in research productivity is Timebarrier whereas 33.33% respondent have the major barriers in research productivity is Availability of resources; 23.33% respondents have barriers in research productivity is insufficient fund; 6.67% respondents have barriers in research productivity is lack of cooperation to authority; 3.33% respondents have barriers in research productivity is language and 0.00% respondents have barriers in research productivity is lack of ICT Knowledge. This indicates that the above discussion "Majorityof research assistant facing language problem to write publication". (Hypothesis no. 7) isinvalid.

Table No. 10.9. Barriers in Research Productivity

Sr. No.	Major Barriers for writing/publishing papers	No. of Respondents	%
1	Insufficient fund	7	23.33
2	Lack of cooperation to Authority	2	6.67
3	Language Barrier	1	3.33
4	Lack of ICT knowledge	0	0.00
5	Time Barrier	11	36.67
6	Availability of resources	10	33.33

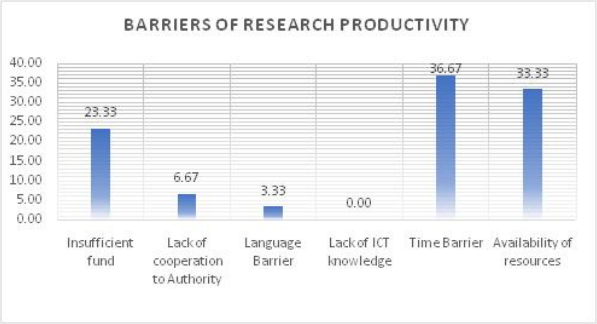


Figure No. 10.9. Barriers in Research Productivity

X. CONCLUSION

The intelletcual assets shows a steady growth during the period of study which shows that the subject under the research assistant of various departments are successful in carrying out research activities. Those subjects which show a decrease in the output needs to be further encouraged. Most of the Intelletcual assets are contributed as extension articles published. There is also intelletcual assets in Journals articles published. There is also papers published in the Seminar volumes, Conference proceedings and Symposia volumes. Which indicate that research assistant are getting enough opportunities to present their papers in types of extension articles & Journals. The authorship pattern shows that there are more multiple authored papers than single authored which indicates good collaboration of research in agricultural disciplines. The participatory research activities need to be encouraged which will further improve the quality of scientific research.

The research productivity can be increased by improving further the research environment, upgrading the infrastructural facilities, recruiting more qualified research assistant and increasing the participation in research activities. More incentives, rewards, and encouragement should be given to the faculty members for publishing in high NASS Score journals. Research assistant should be encouraged to conduct collaborative work of research projects.

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