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RESEARCH ARTICLE

Impact of International Collaborations on Visibility and Productivity of SAU's : Perception of Faculties

Lokesh Gupta¹, Jasbir Singh Manhas², and Vinod Kumar³

1. Dean,
College of Dairy and Food
Technology, MPUAT, Udaipur,
Rajasthan

2. Assoc. Prof.,
SKUAST-Jammu, J&K

3. Senior Research Fellow,
RCA, MPUAT, Udaipur, India,
Corresponding author e-mail:
lok Gupta76@gmail.com

ABSTRACT

The purpose of this study was to assess the perception of faculties regarding impact of international collaborations in SAU's and to know the correlation between selected personal variables and perception of the faculties. The study covered the five years period from 2013 to 2017. A total number of 510 faculties (Scientists) were participated in this survey. To study the perception of faculties, they were asked to elicit their responses on three point continuum and the data for the same was recorded and analyzed to draw the results. The minimum possible score for perception was '0' and maximum was '24'. The Mean and Standard Deviation and Pearson coefficient of correlation was employed to assess the relationship between dependent and independent variables. The result shows that most of the scientists 228 were above 40 years in age, 321 scientists were educated up to Ph.D., majority of the scientists 232 have service experience between 14-25 years, 274 scientists have more than 19 published research paper, 236 scientists have attended number of seminars between 6 to 13 and 265 scientists have participated in 5-10 number of conferences. Further finding revealed that out of total 510 faculty members, majority 98.00 per cent faculty (scientists) agreed that "due to more systematic contact between participants, research techniques are more readily disseminated and adopted" and 97 per cent of the respondents agreed that "exchange of academic information and research materials helps in increasing efficiency of scientists". The first rank was given to the statement "Due to more systematic contact between participants, research techniques are more readily disseminated and adopted" with 99.00 Mean per cent score. The correlation between personal variables and perception shows that age, education, service experience and conferences attended was positively significant with perception.

Key words: International collaborations; Perception; Impact; Visibility; Productivity.

International collaboration is an alliance incorporated to carry on the agreed task collectively with the participation (role) of resident and non-resident entities. International scientific collaboration refers to collaboration that occurs when participants work in different countries.

The use of international collaborations has increased and gained importance in the domain of academics and scientific research over the last few decades. Various factors are responsible for this, including the growing specialization of science, the complexity of investigated problems and the increasing costs of scientific equipment needed to perform experiments. Other factors in favour of

increasing collaboration cannot be ignored: results of easier access to public financing; aspirations for greater prestige and visibility; resulting from collaboration with renowned research groups; and opportunities to attain higher productivity (Lee and Bozeman, 2005).

The researchers belonging to established research groups (unlike those who are affiliated to non-established groups or belong to no group) show higher scientific productivity, higher propensity to international collaboration and to participation in international projects. It was further observed that establishing a research group is advantageous for the researchers. It makes contacts and collaborations easier, encourages participation in funded projects

and increases the opportunities for publication in international journals (*Sempere et al. 2002*).

The incidence of international collaboration in academic research activities is increasing as a result of various factors. Over the last two decades, the scientific community has also stepped-up activities to assess the actual impact of collaboration intensity on the performance of research systems. International components of curricula have grown in popularity and importance in universities of agriculture (*Graham, 2012*). This study draws on several empirical analyses, with the intention of assessing the impact of international collaboration on academic and research performance of SAU's and, indirectly, verifying the legitimacy of policies that support this type of collaboration.

METHODOLOGY

The purpose of the study was to assess the perception of faculty and students regarding impact of international collaborations in State Agriculture Universities (SAUs) for the five years period from 2013 to 2017. The Ex-post-facto research design was followed in this study. The investigation regarding this study covered State Agriculture Universities (SAUs). The study was conducted in SKUAST-Jammu (J&K), PAU, Ludhiana (Punjab) and CSKHPKV, Palampur (H.P.) from North India, TNAU (Tamil Nadu) and ANGRAU (Andhra Pradesh) from South India, Central Agricultural University, Imphal from North-East, India and Five Agricultural Universities of Rajasthan. All the disciplinary areas (DAs) comprising the SAUs academic system were covered in the study. The study covered the five years period from 2013 to 2017. A total number of 510 faculties (Scientists) were participated in this survey. The data was collected through a structured questionnaire and the same was pre-tested in non-study area through Google form. The perception of the faculty regarding Impact of International Collaborations on Visibility and Productivity of SAU's was measured through a questionnaire consisted of 12 positive statements. The statements were measured on three-point continuum viz. Agree, Undecided and Disagree with score 2, 1 and 0 respectively from the faculty (Scientists) and Students of SAU's. The minimum possible score was '0' and maximum was '24'. The Mean and Standard Deviation were calculated to know the frequency, percentage and rank was assigned to the statements according to the Mean Per cent Score to draw the results. The correlation between selected personal

variables and perception was measured to see the level of significance. Pearson coefficient of correlation was employed to assess the relationship between dependent and independent variables.

RESULTS AND DISCUSSION:

Personal profile of the faculties of SAUs : Data in Table 1 show that majority of respondents i.e., 228 (45%) belonged to age group above 40 years. Whereas, 205 (40.00%) respondents were reported from age group between 32 to 40 years and remaining 77 (15.00%) were found in the age group of below 32 years. Table shows that majority 321 (63%) of teachers were doctorate whereas 189 (37%) were M.Sc. Data show that majority of the respondents 232 (45%) had job experience between 14 to 25 years. This was followed by 39 per cent of respondents who had job experience above 25 years. Likewise, 16 per cent of respondents had job experience below 14 years. Table shows that majority of the respondents 274 (54%) had published more than 19 research papers. Besides, 32 per cent of the respondents had published research papers between 16 and 19. However, 14 per cent of the respondents had published research papers between below 16.

Data in Table 1 show that 46 per cent of the

Table 1. Personal profile of the faculties (N=510)

Personal profile	No.	%
<i>Age</i>	Mean- 40.60	S.D. - 8.10
Below 32 years	77	15.00
Between 32-40 years	205	40.00
Above 40 years	228	45.00
<i>Educational qualifications</i>	Mean- 2.63	S.D. - 0.48
M.Sc.	189	37.00
Ph.D.	321	63.00
<i>Level of job exp. (years)</i>	Mean- 14.05	S.D. - 10.47
Below 14	80	16.00
Between 14 and 25	232	45.00
Above 25	198	39.00
<i>Research papers</i>	Mean-19.38	S.D.-2.92
Below 16	70	14.00
Between 16 and 19	166	32.00
Above 19	274	54.00
<i>Participation in seminars</i>	Mean-10.17	S.D. - 3.22
Below 6	101	20.00
Between 6 and 13	236	46.00
Above 13	173	34.00
<i>Participation in conferences</i>	Mean-3.89	S.D. -4.07
Below 4	100	20.00
Between 5 and 10	265	52.00
Above 10	145	28.00

respondents had attended seminars between 6 and 13; followed by 34 per cent of respondents who had attended more than 13 seminars whereas only 20 per cent of the respondents had attended less than 20 seminars. Data in Table 1 show that 52 per cent of the respondents had attended conferences between five and ten followed by 28 per cent of respondents who had attended more than ten conferences whereas only 20 per cent of the respondents had attended less than four conferences.

Perception of faculty (scientists) towards international collaborations: A perusal of data given in Table 2 vividly corroborate that 98 per cent respondents agreed that due to more systematic contact between participants, research techniques are more readily disseminated and adopted. 97 per cent of the respondents agreed that exchange of academic information and research materials helps in increasing efficiency of scientists. Similar findings were reported by *Venkattakumar and Sontakki (2014)* showed that Respondents had favourable perceived opinion towards training design and delivery of Centre for Advanced Faculty Training

programmers. Majority (95 per cent) of the respondents categorically expressed that international collaborations are excellent means of bringing together scholars who may be working in parallel fields but who could by virtue of distance or language of publication remain unaware of each other's work, closely followed by 92 per cent and 90 per cent of them who agreed that international collaborations provide opportunities for participants to learn about new methodologies and research approaches and exchange of periodicals and academic publications updates knowledge of participants. It is followed by 88 per cent, 85 per cent, 84 per cent and 83 per cent of the respondents who expressed that international collaborations offer a great opportunity to train young scientists in conduct and management of research, results can be achieved more quickly and with success because scientists work independently of each other, leadership skills are developed when scientists assume responsibility for their portion of research work and international collaborations help in up gradation of current infrastructure to improve research quality

Table 2. Perception of faculties (Scientists) towards international collaborations (N=510)

Statements	Agree No. (%)	Undecided No. (%)	Disagree No. (%)	MPS	Rank
International collaborations is an excellent means of bringing together scholars who may be working in parallel fields but who could by virtue of distance or language of publication remain unaware of each other's work	485 (95.00)	20 (4.00)	5 (1.00)	97.00	III
International collaborations provide opportunities for participants to learn about new methodologies and research approaches	469 (92.00)	26 (5.00)	15 (3.00)	94.50	IV
Due to more systematic contact between participants, research techniques are more readily disseminated and adopted	500 (98.00)	10 (2.00)	-	99.00	I
Exchange of academic information and research materials helps in increasing efficiency of scientists	495 (97.00)	15 (3.00)	-	98.50	II
Exchange of periodicals and academic publications updates knowledge of participants	459 (90.00)	41 (8.00)	10 (2.00)	94.00	V
International collaborations help in up gradation of current infrastructure to improve research quality	423 (83.00)	77 (15.00)	10 (2.00)	90.50	VIII
Unnecessary repetition in research is avoided, hence, time is saved	383 (75.00)	102 (20.00)	26 (5.00)	85.00	X
Results can be achieved more quickly and with success because scientists work independently of each other	434 (85.00)	77 (15.00)	-	92.50	VII
International collaborations offer a great opportunity to train young scientists in conduct and management of research	449 (88.00)	56 (11.00)	5 (1.00)	93.50	VI
Leadership skills are developed when scientists assume responsibility for their portion of research work	428 (84.00)	51 (10.00)	31 (6.00)	89.00	IX
Information on or access to the latest laboratory techniques and field research methods are particularly valuable to scientists	367 (72.00)	102 (20.00)	41 (8.00)	82.00	XII
New research areas can be explored and tested	357 (70.00)	148 (29.00)	5 (1.00)	84.50	XI

Score assigned: - Agree=2, Undecided=1 and Disagree=0\

respectively. 75 per cent of the respondents agreed that unnecessary repetition in research is avoided and hence, the time is saved in international collaborations. Besides, 72 per cent of the respondents expressed that information on or access to the latest laboratory techniques and field research methods are particularly valuable to scientists. Also, 70 per cent of the scientists agreed that new research areas can be explored and tested by international collaborations.

Further ranks were assigned to the statements according to their Mean per cent score, as Ist Rank was assigned to the statement “Due to more systematic contact between participants, research techniques are more readily disseminated and adopted” with MPS (99.00), IInd Rank was assigned to the statement “Exchange of academic information and research materials helps in increasing efficiency of scientists” with (98.50) MPS. The statements “International collaborations is an excellent means of bringing together scholars who may be working in parallel fields but who could by virtue of distance or language of publication remain unaware of each other’s work”, “International collaborations provide opportunities for participants to learn about new methodologies and research approaches”, “Exchange of periodicals and academic publications updates knowledge of participants”, “International collaborations offer a great opportunity to train young scientists in conduct and management of research”, “Results can be achieved more quickly and with success because scientists work independently of each other”, “International collaborations help in up gradation of current infrastructure to improve research quality”, “Leadership skills are developed when scientists assume responsibility for their portion of research work”, “Unnecessary repetition in research is avoided, hence, time is saved”, “New research areas can be explored and tested” and “Information on or access to the latest laboratory techniques and field research methods are particularly valuable to scientists” were assigned rank as IIIrd, IVth, Vth, VIth, VIIth, VIIIth, IXth, Xth, XIth, and XIIth according to their Mean Per cent Score as 97.00, 94.50, 94.00, 93.50, 92.50, 90.50, 89.00, 85.00, 84.50, and 82.00, respectively.

Kaur et al. (2012) reported that more than sixty per cent of the scientists in GBPUAT perceived the climate as above average in the area of supervision and decision making, 45.00 per cent of the scientists of CCSHAU perceived the prevailing organizational climate as below average in the area of managing rewards and decision

making. Further, 62.00 per cent and 56.00 per cent of the scientists in PAU perceived the prevailing climate as above average in the area of managing rewards and decision making. It was concluded that there is need to make improvement in the area of decision making and managing rewards in all the studied SAUs.

Dangi et al. (2022) have also shown that among the total eleven components “flexibility in course choices.” was found the major perceived opportunity with weighted mean 5.00 and ranked Ist. The component “multi disciplinary approach enhanced student’s cognitive development as well as social and physical awareness” ranked 2nd with weighted mean 4.38.

Correlation between independent variables with perception: Table 3 shows the relationship between independent variables and perception of the faculties towards international collaborations of SAU’s. The data shows that age of the scientists was positively significant with the perception at 1 per cent level of significance. This may be possible because as the age increases the perception of the human being towards any stimuli improves because the nature of human mind is always learning new things. Further, education was also positively significant with perception of faculties towards international collaborations at 5 per cent level of significance. It may be due to the fact that higher education contributes significantly in the formation of perception towards stimuli. Since most of the faculty members are Ph.D. in their respective fields, higher education could have contributed significantly in formation of favourable perception international collaborations. Service experience is positively significant at 1 per cent level of significance. As evident from the findings, most of the faculty members have service experience between 14 and 25 years, which is fairly a long duration. Such rich service experience might have contributed significantly towards

Table 3. Correlation between independent variables and perception of faculties towards international collaborations (N= 510)

Independent variables	r- value
Age	0.121**
Education	0.088*
Service experience	0.117**
Publication of research articles	0.022
Participation in seminars	0.025
Participation in conferences	0.096*

*Significant at 5 per cent level and **Significant at 1 per cent level of significance

formation of favourable perception of faculty members towards international collaborations. Findings are more like the study of *Maan et al. (2020)* showed that perceived organizational support has a positive and significant relationship with psychological empowerment and proactive personality is positively significant with POS.

Conferences has found significant at 1 per cent level of significance with perception of respondents towards international collaborations it may be since attending conferences may increases perception because it gives exposure and experience about new ideas and innovation so most of the teachers have attended up to 10 conferences in the period of five years. Findings are more related to the study of *Thammiraju, D. at el. (2022)* showed that changes in behavioral aspects are significant over time, which is reflected in terms of viz., attitude, frustration, anxiety, depression, uncertainty, desire for cocooning and boredom. Students showed a positive response towards continuing educational activities through online and e-learning modes.

Further, publication of research papers and participation in seminars was found non-significant. Findings are more like the study of *Madhuri et al. (2022)* revealed that socio-economic status and technical accessibility had no significant relationship at both one per cent and five per cent level of significance.

CONFLICTS OF INTEREST

The authors have no conflicts of interest.

CONCLUSION

The study shows that scientists had positive perception towards “due to more systematic contact between participants, research techniques are more readily disseminated and adopted” and “exchange of academic information and research materials helps in increasing efficiency of scientists”. Hence, international collaborations are excellent means of bringing together researchers who may be working in parallel fields but who could by virtue of distance or language of publication remain unaware of each other’s work. The variables like age, education, service experience and participation in conferences had positive influence on perception. Hence, scientists may be encouraged for higher education and participations in international conferences to get new exposure about latest scientific

innovations in their field. The present study will help and encourage the scientists, educational planner, administrators, and policy makers to focus more on engaging in collaborations at international level. It will also help to develop strategies and policies for the promotion of internship programmes, training programmes, workshops for their scientists so that besides theoretical knowledge, practical knowledge can also be improving about new scientific technologies and innovation. It is concluded from the study that there is a need to allocate special policies for faculty exchange programmes and opportunity should be provided to the faculty members to attend internship programmes, training programmes, workshops at international level.

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