

Research Productivity Through the Lens of Doctoral Guidance: A Study of Sanskrit Universities in India

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ABSTRACT

Sanskrit, the voice of India's soul and wisdom contains a vast repository of knowledge covering a wide spectrum. To what extent doctoral guidance in Sanskrit Universities have explored the multiple vistas remains un-investigated. The objectives included: (a) analysis of the quantum, trend in growth of doctoral theses in Sanskrit Universities; (b) Overview of the direction of doctoral research; (c) Finding out variance in research productivity between Single- Campus and Multi-Campus University; and (d) the impact of multi-topics guidance on the research productivity of guides. Following a longitudinal design, the dataset covered 1016 doctoral theses from two Sanskrit Universities spanning 2002-2016. In terms of topics, Sahitya was the most popular topic followed by Shikshashastra and Vyakarana. The coverage of topics and research productivity of the guides varied between the single and multiple campus Universities. The single-campus University had a higher per-capita productivity compared to the multi-campus. Guides who offered multi-topics guidance were 2-3 times more productive than guides who offered guidance in single-topic. The Departments in Sanskrit Universities need to innovate in the way research is presently approached and carried out by them and explore the limitless opportunities that Sanskrit offers. The arena of doctoral guidance also needs to be revisited so that it gets its right orientation. The study has useful takeaways for the academic administrators.

Keywords: Research productivity, Sanskrit, Doctoral theses, Single-campus university, Multi-campus university, Multi-topic doctoral guidance.

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INTRODUCTION

'Samskṛta', the term which refers to the Sanskrit language, is a combination of two words: 'Sans' which means 'something done in totality,' and 'Kṛit' which means an 'accomplished piece or task'. As Paul¹ observes, "Sanskrit is considered as an accomplished language in its totality, without a trace of any structural obscurity both semantically and phonetically. As many as 36 modern languages, including German, Russian, Polish as well as a large number of Slav and Scandinavian tongues have their origins to this magnificent language." Further, Paul¹ cites English Orientalist Sir Monier Williams who had hailed Sanskrit as the "only finished language among all existing and extinct tongues."

Sanskrit is also acknowledged as the vehicle of Knowledge Tradition of Bharat and as the voice of India's soul and wisdom.² Sanskrit is a mine of not just ancient and vedic

literature but also a treasure-house of wisdom, a vast repository of knowledge covering a wide spectrum and offers multiple vistas for exploration. As with any discipline, research productivity is critical for the growth and sustenance of a discipline like Sanskrit and research productivity assumes significance in an academic setting at the level of Higher Education Institutions (HEIs). However, the term 'research productivity' is quite complex, as it is multi-dimensional in nature, involving multi-output activities and has to be defined and approached, having regard to the distinct research landscape in which a discipline is placed.

Research productivity is a matter of high interest, not only to the researchers, but also to the educational policy makers and academic administrators. The defining element of Higher Education Institutions (HEIs) today is research, which has become the gold standard when it comes to evaluation of higher education institutions. The research profile of an HEI is not only an index of intellectual capital but also forms the basis of attracting students, scholars and research funders worldwide. There are heightened expectations from HEIs to pursue a research agenda and to transform into "new knowledge generation" centres.

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The increasing emphasis on scholarly outputs by faculty in HEIs is a global trend in today's knowledge era. According to McCabe and McCabe,³ "Research provides a good opportunity for teaching faculty to deepen their knowledge and provides a good background for teaching. This is because research develops academic knowledge and reinforces the skill needed for effective knowledge transfer. It also inspires academics towards hard work, fills the gap of previous research and creates an opportunity for future research."

This study focuses on the research productivity in the discipline of Sanskrit through the lens of doctoral guidance. Doctoral Guidance and Doctoral theses are a very important part of scholarly output and one of the major components of research productivity in Universities. An analysis of doctoral theses can provide a meaningful insight into the research trends prevalent in a subject discipline. Further as Mulla and Kannur⁴ put it, a study of doctoral theses is also indicative of the direction of research. This study attempts to present an overview of the trend in doctoral research in Sanskrit Universities besides exploring the direction of research in Sanskrit Universities.

The term 'productivity' is approached as an input-output activity and calculated in terms of number of doctoral research scholars guided per number of guides who participated. Further, productivity is understood not only as the potential and ability to generate, but also as a vector combining the dimension of utilisation of this potential.

Previous studies on the output of doctoral research in India get to be seen in Library and Information Science, that too, from the perspective of research trend.⁵⁻⁸ Literature also exists concerning studies relating to citation in theses, including a study on referencing pattern among the Sanskrit researchers.⁹ Nonetheless, there has been no study carried out on the research productivity in terms of the output at doctoral level in the discipline of Sanskrit in Sanskrit Universities. Besides, this study also explores the less investigated and not-so investigated research questions such as variance in research productivity between single and multi-campus Universities and also the impact of multi-topic doctoral guidance on the research productivity of guides.

The objectives of the study included the following:

- To analyse the quantum, trend in growth and differential productivity of doctoral theses guided in Sanskrit Universities from 2002 to 2016.
- To present an overview of the direction and trend in doctoral research in Sanskrit Universities in India during 2002 to 2016.
- To find out the variance in research productivity between a Single-Campus University and a Multi-Campus University among Sanskrit Universities, and

- To investigate the impact of multi-topics guidance on the research productivity of guides in the discipline of Sanskrit.

SCOPE AND METHODOLOGY

The study is confined to the discipline of Sanskrit and has in its scope a multi-campus Sanskrit University (University with off campuses at multiple locations across the country) viz., Rashtriya Sanskrit Sansthan (RSS), New Delhi and a Single Campus Sanskrit University (University having one site) viz., Rashtriya Sanskrit Vidyapeetha (RSVP), Tirupati, under the Ministry of Human Resources Development (MHRD), Government of India. Further, the study is limited to research output in terms of doctoral students guided as reflected in the doctoral theses during the period from 2002 to 2016. Therefore, from among the off-shore campuses forming part of the multi-campus university, only such of those which were established on or before the year 2002 viz., Allahabad, Bhopal, Garli, Guruvayoor, New Delhi (Headquarters), Jammu, Jaipur, Lucknow, Mumbai, Puri and Sringeri have been included.

Data relating to doctoral theses awarded during the period from 2002 to 2016 along with the particulars relating to the guides and Ph.D topics were compiled from the information published in the websites of the respective universities i.e. www.rsvdyapeetha.ac.in and www.sanskrit.nic.in. The data were carefully structured as per the objectives of the study. The classification of Ph.D topics as adopted by RSVP in its website viz., Agama, Advaitavedanta, Darshana, Dharmashastra, Dvaitavedanta, Jyotisha, Mimamsa, Nyaya, Puranetihasa, Shabdhabodha, Sahitya, Sankhyayoga, Shikshashastra, Veda, Vishistadvaitavedanta and Vyakarana was followed for purpose of topic-wise analysis. MS Excel and SPSS 20.0 were used for statistical analysis. Descriptive Statistics was done to compute the mean and standard deviation (SD), median. Test of normality was negative and therefore, the following non-parametric tests were performed using the SPSS software.

Mann-Whitney Test was done to compare the research productivity across single and multi-campus university and between guides offering doctoral guidance in single and multi-topics. Kruskal-Wallis test was done to compare research productivity across the topics of research as well as to compare productivity across campuses in the multi-campus university.

RESULTS

Quantum of Productivity (Number of Doctoral Theses)

The Multi-campus Sanskrit University RSS registered a total of 571 theses during the 15-year period 2002-2016. (Mean =38.07; SD =21.20 and Median =36.00). A total of 445 theses

were produced by RSVP, a Single Campus Sanskrit University during the same period. (Mean =29.67; SD =20.05 and Median =21.00). The year-wise differential productivity is presented in Table 1.

Interestingly, in terms of the number of doctoral theses, the overall differential productivity between the single and multi-campus university was only 22% during the 15-year period. Further, as seen from Table 1 and Figure 1, while the productivity difference narrowed considerably in 2010, the single campus university had even registered a higher

productivity over the multi-campus university in as many as four years between 2011-2014.

Trend in Growth and Differential Productivity

The growth and differential productivity was further analysed in intervals of five years. The analysis revealed that there is a downward trend in the differential productivity in both types of Universities and the differential productivity in terms of the number of theses during the recent five-year period i.e. 2012-16 had narrowed down to a meagre 6.51%. The growth rate in terms of the number of theses during the five yearly periods of 2007-2011 and 2012-2016 was higher in the single-campus University. While the growth rate in terms of the number of guides who had participated in Ph.D guidance was higher in the single-campus University during 2007-2011, the multi-campus University had a higher growth rate during 2012-2016. (Table 2) Interestingly, despite the upward trend in the growth rate of guides in the successive five yearly periods in both the single and multi-campus Universities, a non-commensurate and downward trend was witnessed in the growth rate of the number of theses in both single and multi-campus during the recent five year periods. (Figure 2)

Table 1: Quantum of Productivity (No. of Theses): Multi Campus Vs Single Campus University.

	RSS (Multi Campus University)	RSVP (Single Campus University)	Differential Productivity in %
2002	14	11	21.43
2003	16	16	0.00
2004	12	11	8.33
2005	35	12	65.71
2006	43	12	72.09
2007	36	14	61.11
2008	33	17	48.48
2009	60	36	40.00
2010	24	23	4.17
2011	37	49	-32.43
2012	20	50	-150.00
2013	36	52	-44.44
2014	49	74	-51.02
2015	69	47	31.88
2016	87	21	75.86
Total	571	445	22.07

Overview of the direction and trend in doctoral research

An analysis of the topic-wise productivity of number of doctoral theses revealed the following: Sahitya seemed to be the most popular topic across both single campus (33.71%) and multi campus (36.07%) universities. While the second and third popular topic in the multi-campus University were Vyakarana (17.16 %) and Shikshashastra (12.26 %), it was Shikshashastra (24.49%) and Vyakarana (9.66 %) in the single-campus University. In terms of the coverage of topics, while the single campus university RSVP had produced doctoral theses in 15 out of the 16 topics (except Darshana), the multi-campus RSS Sanskrit University had produced doctoral theses in 14 out of the 16 topics. No doctoral thesis was produced by RSS in the topics of Agama and Shabdabodha. Interestingly, among the thirteen topics in which both the types of Universities had

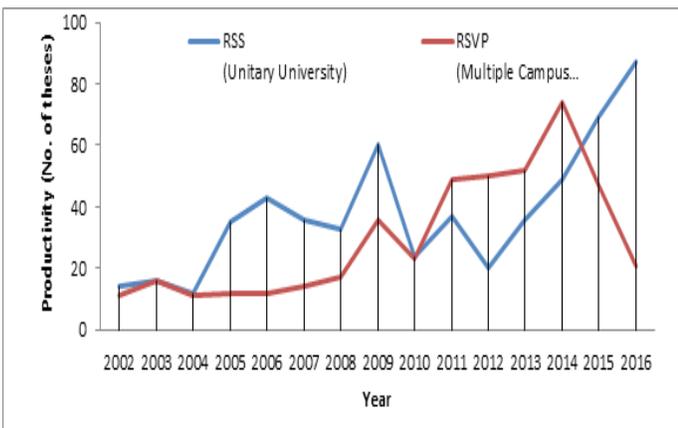


Figure 1: Quantum of Productivity: (No. of Theses): RSS Vs RSVP (2002-2016).

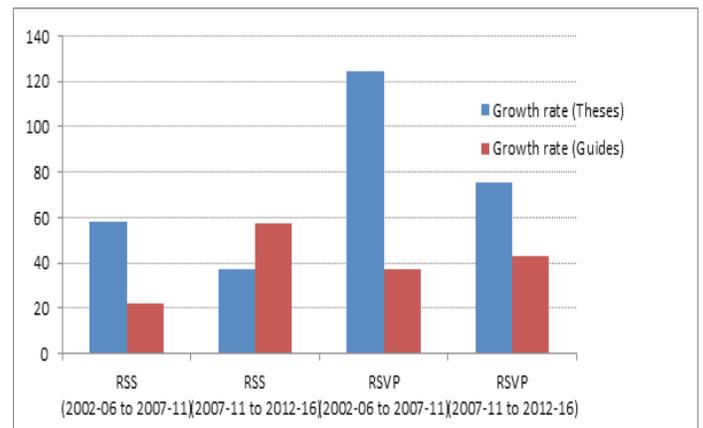


Figure 2: Growth rate: Theses Vs Guides in RSS and RSVP.

Table 2: Trend in Growth and Differential Productivity (No. of Theses): RSS Vs. RSVP.

	RSS (Multi-Campus University)		RSVP (Single-Campus University)		Differential Productivity No. of Theses (five-year period) (%)	RSS (Multi-Campus University)		RSVP (Single-Campus University)	
	No. of Theses	No. of Guides (Active)	No. of Theses	No. of Guides (Active)		Growth rate Theses (%)	Growth Rate Guides (%)	Growth rate Theses (%)	Growth rate Guides (%)
2002-2006	120	58	62	27	48.33				
2007-2011	190	71	139	37	26.84	58.33	22.41	124.19	37.03
2012-2016	261	112	244	53	6.51	37.37	57.74	75.54	43.24

produced doctoral theses, the Multi Campus University was the highest in seven out of the thirteen topics: Advaitavedanta, Dharmashastra, Jyotisha, Puranetihasa, Sahitya, Veda and Vyakarana. The Single Campus University was the highest in five out of the thirteen topics: Dvaitavedanta, Shikshashastra, Mimamsa, Nyaya and Vishistadvaita vedanta. Both RSVP and RSS had produced the same number of doctoral theses in Sankhya yoga. Further, it was observed that the topics in which doctoral theses were produced in the various campuses of the multi-campus university were also not uniform. (Table 3).

In fact, during the fifteen-year period spanning from 2002 to 2016, doctoral theses in few topics were produced in only select campuses out of the eleven campuses of the multi-campus University. For example, doctoral guidance in Dvaitavedanta was produced only in the Allahabad Campus; Mimamsa only in Sringeri Campus; Sankhyayoga and Vishistadvaita vedanta only in Puri Campus. Among the off- campuses of the multi-campus university, Puri campus had the highest coverage of twelve topics. Allahabad Campus was the second highest with nine topics, followed by the Guruvayoor, Jaipur and Sringeri campuses with eight topics each. Lucknow campus was next with seven topics. The campuses of RSS at New Delhi and its other campuses at Bhopal, Garli and Jammu produced doctoral theses in five and four topics respectively. Mumbai Campus had the least coverage with just two topics.

Single Campus University Vs Multi Campus University

In terms of the productivity calculated as a ratio of the number of theses produced and the number of active guides, RSVP, the single campus university had a higher overall per-capita productivity (7.54) over the multi campus RSS University (3.07) during the fifteen year period 2002-16. The topic-wise coverage was also analysed in intervals of five years to see if there was any difference in pattern in research productivity. It was observed that the single and multi-campus differed considerably both in terms of coverage of topics as well as in productivity (Table 4 and Figures 3a to 3d).

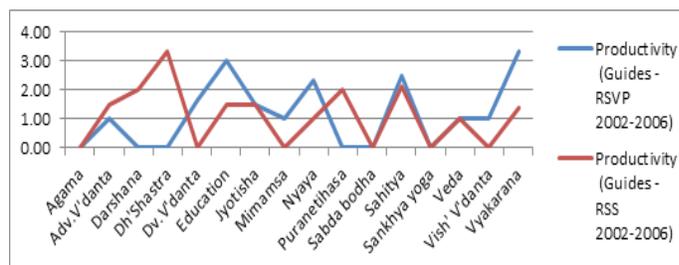


Figure 3a: Topic-wise Mean Productivity (Single campus Vs Multi campus): 2002-2006.

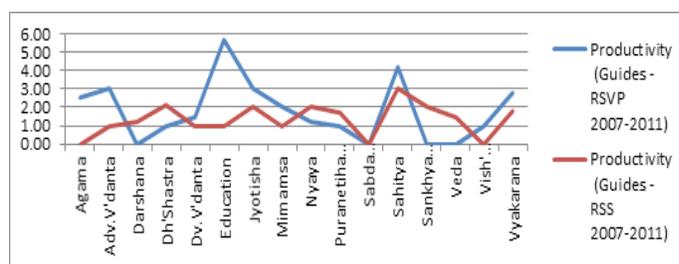


Figure 3b: Topic-wise Mean Productivity (Single campus Vs Multi campus): 2007-2011.

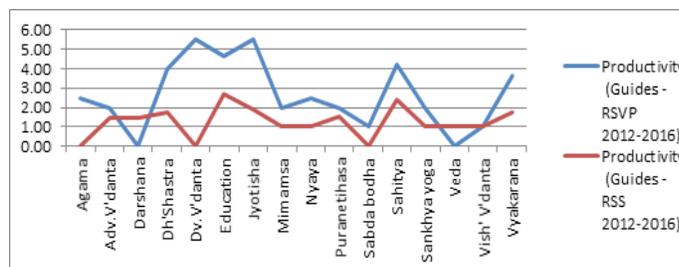


Figure 3c: Topic-wise Mean Productivity (Single campus Vs Multi campus): 2012-2016.

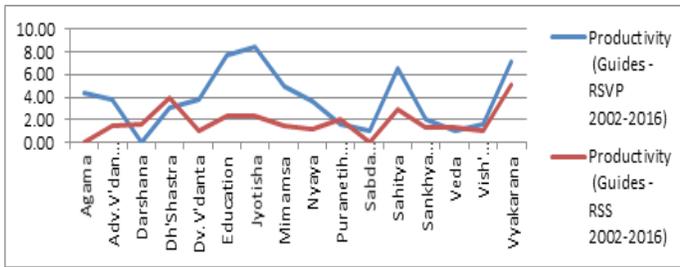


Figure 3d: Topic-wise Mean Productivity (Single campus Vs Multi campus): 2002-2016.

Coverage of topics

Coverage of topics during 2002-2006

Numerically, the multi campus and single campus were similar in terms of coverage and had produced doctoral theses in ten out of the sixteen topics. No doctoral theses were produced by both RSVP and RSS in three topics: Agama, Shabdabodha and Sankhyayoga. However, with respect to the remaining three topics, while RSVP did not cover Darshana, Dharmashastra and Puranetihasa, RSS did not produce doctoral thesis in Dvaitavedanta, Mimamsa and Vishistadvaitavedanta during 2002-2006.

Table 3: Details of Topic-wise Productivity (Single campus Vs Multi campus): 2002-2016.

	RSVP (Single Campus)		RSS (Multi Campus)	
	Productivity (Total No. of students guided 2002-2016)	Productivity (Total No. of students guided 2002-2016)	Details of Topic-wise Guidance observed in the various Campuses	
Agama	13	0	Guidance not observed in any of the RSS campuses.	
Advaita vedanta	23	24	Guidance observed in Garli, Guruvayoor, Jaipur, Puri, Sringeri; Not observed in Allahabad, Bhopal, HQ, Jammu, Lucknow and Mumbai.	
Darshana	0	23	Guidance observed in Allahabad, Jaipur, Lucknow and Puri; Not observed in Bhopal, Garli, Guruvayoor, HQ, Jammu, Mumbai and Sringeri.	
Dharma shastra	9	48	Guidance observed in Allahabad, Guruvayoor, HQ, Jaipur and Puri; Not observed in Bhopal, Garli, Jammu, Lucknow, Mumbai and Sringeri.	
Dvaita vedanta	19	1	Guidance observed only in Allahabad; Not observed in Bhopal, Garli, Guruvayoor, HQ, Jaipur, Jammu, Lucknow, Mumbai, Puri and Sringeri.	
Jyotisha	34	57	Guidance observed in Allahabad, Bhopal, Garli, Guruvayoor, HQ, Jaipur, Jammu, Lucknow, Puri and Sringeri; Not observed only in Mumbai.	
Mimamsa	5	3	Guidance observed only in Sringeri; Not observed in Allahabad, Bhopal, Garli, Guruvayoor, Jaipur, Puri, HQ, Jammu, Lucknow and Mumbai.	
Nyaya	22	7	Guidance observed in Allahabad, Guruvayoor, Lucknow, Puri and Sringeri; Not observed in Bhopal, Garli, HQ, Jaipur, Jammu, Mumbai.	
Puranetihasa	5	16	Guidance observed in Allahabad, Lucknow and Puri; Not observed in Bhopal, Garli, Guruvayoor, HQ, Jaipur, Jammu, Mumbai and Sringeri.	
Shabdabodha	3	0	Guidance not observed in any of the RSS campuses.	
Sahitya	150	206	Guidance observed in all the campuses.	
Sankhyayoga	4	4	Guidance observed only in Puri; Not observed in Allahabad, Bhopal, Garli, Guruvayoor, Jaipur, HQ, Jammu, Lucknow, Mumbai and Sringeri.	
Shikshashastra	109	70	Guidance observed in Bhopal, Guruvayoor, HQ, Jaipur, Jammu, Lucknow, Mumbai, Puri and Sringeri; Not observed in Allahabad and Garli.	
Veda	1	13	Guidance observed in Allahabad, Guruvayoor, Jaipur, Puri and Sringeri; Not observed in Bhopal, Garli, HQ, Jammu, Lucknow and Mumbai.	
Vishishtadvaita vedanta	5	1	Guidance observed only in Puri; Not observed in Allahabad, Bhopal, Garli, Guruvayoor, Jaipur, HQ, Jammu, Lucknow, Mumbai and Sringeri.	
Vyakarana	43	98	Supervision observed in Allahabad, Bhopal, Garli, Guruvayoor, HQ, Jaipur, Jammu, Lucknow, Puri and Sringeri; Not observed only in Mumbai.	

Table 4: Details of Topic-wise Mean Productivity (single campus Vs Multi campus): for the time-periods 2002-2006, 2007-2011, 2012-2016 and during the whole period 2002-2016.

	Mean Productivity (Guides -RSVP 2002-2006)	Mean Productivity (Guides -RSS 2002-2006)		Mean Productivity (Guides - RSVP 2007-2011)	Mean Productivity (Guides -RSS 2007-2011)
Agama	No Output	No Output	Agama	2.50	No Output
Adv.v'danta	1.00	1.50	Adv.v'danta	3.00	1.00
Darshana	No Output	2.00	Darshana	No Output	1.20
Dh'shastra	No Output	3.33	Dh'shastra	1.00	2.10
Dv.v'danta	1.67	No Output	Dv.v'danta	1.50	1.00
Jyotisha	1.50	1.50	Jyotisha	3.00	2.00
Mimamsa	1.00	No Output	Mimamsa	2.00	1.00
Nyaya	2.33	1.00	Nyaya	1.25	2.00
Puranetihasa	No Output	2.00	Puranetihasa	1.00	1.67
Shabdabodha	No Output	No Output	Shabdabodha	No Output	No Output
Sahitya	2.50	2.10	Sahitya	4.17	3.00
Sankhyayoga	No Output	No Output	Sankhyayoga	No Output	2.00
Shikshashastra	3.00	1.50	Shikshashastra	5.71	1.00
Veda	1.00	1.00	Veda	No Output	1.50
Vish' v'danta	1.00	No Output	Vish' v'danta	1.00	No Output
Vyakarana	3.33	1.40	Vyakarana	2.75	1.81
	Mean Productivity (Guides -RSVP 2012-2016)	Mean Productivity (Guides - RSS 2012-2016)		Mean Productivity (Guides - RSVP 2002-2016)	Mean Productivity (Guides - RSS 2002-2016)
Agama	2.50	No Output	Agama	4.33	No Output
Adv.v'danta	2.00	1.45	Adv.v'danta	3.83	1.50
Darshana	N.O.	1.44	Darshana	No Output	1.64
Dh'shastra	4.00	1.75	Dh'shastra	3.00	4.00
Dv.v'danta	5.50	No Output	Dv.v'danta	3.80	1.00
Jyotisha	5.50	1.92	Jyotisha	8.50	2.38
Mimamsa	2.00	1.00	Mimamsa	5.00	1.50
Nyaya	2.50	1.00	Nyaya	3.67	1.17
Puranetihasa	2.00	1.50	Puranetihasa	1.67	2.00
Shabdabodha	1.00	No Output	Shabdabodha	1.00	No Output
Sahitya	4.21	2.37	Sahitya	6.52	2.99
Sankhyayoga	2.00	1.00	Sankhyayoga	2.00	1.33
Shikshashastra	4.62	2.70	Shikshashastra	7.79	2.33
Veda	No Output	1.00	Veda	1.00	1.30
Vish' v'danta	1.00	1.00	Vish' v'danta	1.67	1.00
Vyakarana	3.67	1.77	Vyakarana	7.17	5.16

Coverage of topics during 2007-2011

The multi campus RSS had a higher coverage (13 topics) as against the single campus RSVP (12 topics). While RSVP did not cover Darshana, Shabdabodha, Sankhyayoga and Veda, RSS did not produce doctoral thesis in Agama, Shabdabodha and Vishistadvaitavedanta during this period.

Coverage of topics during 2012-2016

The single campus RSVP had a higher coverage (14 topics) as against the multi campus RSS (13 topics). While RSVP did not cover Darshana and Veda, RSS did not produce doctoral thesis in Agama, Dvaitavedanta and Shabdabodha.

The status of topic-wise productivity revealed the following:

Agama: Doctoral Guidance in Agama was observed only in RSVP, that too from 2007 onwards. The five-year periods 2007-2011 and 2012-2016 had similar rate of productivity.

Advaitavedanta: Doctoral theses were produced in Advaitavedanta in both the Universities during all the three five-year periods. The productivity in Advaitavedanta was higher in the single campus RSVP compared to the multi campus RSS during 2002-2006, 2007-2011 and 2012-2016 and also during the entire period of 2002-2016.

Darshana: Doctoral Guidance in Darshana was observed only in RSS. The highest productivity was observed during 2002-2006 followed by 2012-2016 and 2007-2011.

Dharmashastra: The productivity of RSS was higher during 2002-2006 and 2007-2011. Doctoral Guidance in Dharmashastra was observed in RSVP only from 2007. But, interestingly, the productivity of RSVP was higher during 2012-16. The overall productivity for the period 2002-2016 was higher in RSS.

Dvaitavedanta: The productivity in Dvaitavedanta was observed in RSVP during all the three five-year periods: 2002-2006, 2007-2011 and 2012-2016. Doctoral Guidance in Dvaita vedanta was observed in RSS only during 2007-2011 and the productivity was lesser than in RSVP. The overall productivity for the period 2002-2016 was higher in RSVP.

Jyotisha: Doctoral theses were produced in Jyotisha in both the Universities during all the three five-year periods. While the productivity was same during the first five-year period 2002-2006, the productivity was higher in RSVP during 2007-2011 and 2012-2016. The overall productivity for the period 2002-2016 was also higher in RSVP.

Mimamsa: The productivity in Mimamsa was higher in RSVP during all the three five-year periods: 2002-2006, 2007-2011 and 2012-2016. Doctoral Guidance in Mimamsa was observed in RSS only from the year 2007 onwards. The

overall productivity for the period 2002-2016 was higher in RSVP.

Nyaya: Doctoral theses were produced in Nyaya in both the Universities during all the three five-year periods. The productivity of RSVP was higher during 2002-2006 and 2012-2016. However, RSS had the higher productivity during 2007-2011.

Puranetihasa: The productivity of RSS was higher during 2002-2006 and 2007-2011. Doctoral Guidance in Puranetihasa was observed in RSVP only from 2007. But, interestingly, the productivity of RSVP was higher during 2012-16. The overall productivity for the period 2002-2016 was higher in RSS.

Shabdabodha: Doctoral Guidance in Shabdabodha was observed only in RSVP, that too only during the five-year period of 2012-2016.

Sahitya: Doctoral theses were produced in Sahitya in both the Universities during all the three five-year periods. However, the productivity was higher in RSVP, a single campus University during all the three five-year periods: 2002-2006, 2007-2011 and 2012-2016, compared to the multi campus RSS University. The overall productivity for the period 2002-2016 was also higher in RSVP.

Sankhyayoga: Doctoral theses were produced in this topic in RSS from the year 2007 onwards and in RSVP only from the year 2012. Despite the late start, RSVP had the higher productivity during 2012-2016.

Shikshashastra: Doctoral theses were produced in Shikshashastra in both the Universities during all the three five-year periods. However, the productivity was higher in RSVP, a single campus University during all the three five-year periods: 2002-2006, 2007-2011 and 2012-2016, compared to the multi campus RSS University. The overall productivity for the period 2002-2016 was also higher in RSVP.

Veda: Doctoral theses were produced by RSS during all the three five-year periods. RSVP had productivity in this topic only during 2002-2006, with nil output during 2007-2011 and 2012-2016. The overall productivity for the period 2002-2016 was higher in RSS.

Vishistadvaitavedanta: Doctoral theses were produced by RSVP during all the three five-year periods. However, RSS had productivity in this topic only during 2012-2016, with nil output during 2002-2006 and 2007-2011. The overall productivity for the period 2002-2016 was higher in RSVP.

Vyakarana: Doctoral theses were produced in Vyakarana in both the Universities during all the three five-year periods. However, the productivity was higher in RSVP, a single campus University during all the three five-year periods: 2002-2006, 2007-2011 and 2012-2016, compared to the

multi campus RSS University. The overall productivity for the period 2002-2016 was also higher in RSVP.

Productivity of Guides

Single topic Vs Multi topics: The productivity of guides who provided doctoral guidance in multi-topics was higher than that of the guides who offered doctoral guidance in a single-topic in both the single-campus and multi-campus Universities. Similar trend was also seen in the individual campuses of the multi-campus University viz., the campuses at Allahabad, Guruvayoor, Headquarters (New Delhi), Jaipur, Lucknow, Puri and Sringeri.

It is significant to note that the productivity of guides in multi-topics was 3.25 times more than the productivity of guides in single-topic at RSS, the multi-campus University, despite the strength of the guides in multi-topics being 1/6th of the strength of the guides in single-topic. Similar productivity pattern was witnessed in RSVP, the single-campus University, where the productivity of guides in multi-topics was nearly twice than the productivity of guides in single-topic. Again, the higher productivity of guides in multi-topics was in spite of its strength being half than that of guides in single-topic (Table 5 and Figure 4).

Statistical Tests

The results of non-parametric Mann Whitney Test revealed a significant difference between the Multi- Campus and Single-Campus Universities with reference to total theses produced in terms of the topics. (U=111647.000; IzI=3.409; p=0.001). Similarly, the results of the non-parametric Kruskal Wallis test

revealed a significant difference among the various campuses comprising the Multi-Campus University with reference to the total number of theses produced in terms of the topics. ($\chi^2(10)=27.418$; p=0.002).

The results of non-parametric Mann Whitney Test revealed a significant difference in the productivity between Guides in Multi-topics and Guides in Single topic in RSS, RSVP as well as (RSS + RSVP) taken together and summarised in Table 6.

DISCUSSION AND CONCLUSION

Universities are the primary training grounds for researchers which nurture research scholars during their initial research

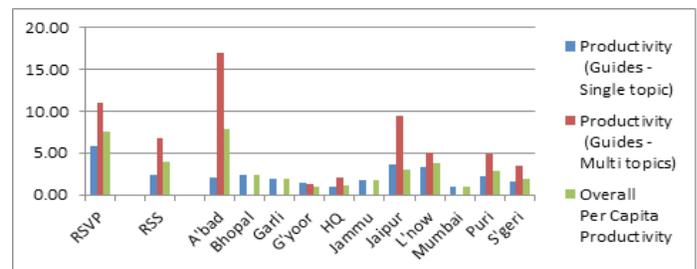


Figure 4: Productivity of Guides (Single-topic Vs Multi-topics).

Table 6: Results of Mann- Whitney test.

#	Campus	U value	IzI value	p value
1	RSS (Multi-Campus)	U = 719.000	IzI = 5.855	p = 0.000
2	RSVP (Single-Campus)	U = 188.000	IzI = 3.251	p = 0.000
3	RSS + RSVP	U = 1570.500	IzI = 7.299	p = 0.001

Table 5: Details of Productivity of Guides (Single-topic Vs Multi topics).

Campus	Mono-Topic			Multi-Topics			Overall		
	No. of Guides (Active)	No. of Students guided	Productivity of Guides	No. of Guides (Active)	No. of Students guided	Productivity of Guides	Total Guides (Active)	Total Students guided	Overall Productivity (per capita)
RSVP	39	225	5.77	20	220	11.00	59	445	7.54
RSS	159	368	2.31	27	203	7.52	186	571	3.07
Allahabad	8	17	2.13	5	85	17.00	13	102	7.85
Bhopal	13	32	2.46	0	0	0.00	13	32	2.46
Garli	16	30	1.88	0	0	0.00	16	30	1.88
Guruvayoor	13	19	1.50	2	4	1.33	15	23	1.00
HQ	7	7	1.00	1	2	2.00	8	9	1.13
Jammu	13	22	1.69	0	0	0.00	13	22	1.69
Jaipur	28	100	3.61	5	47	9.40	33	147	3.06
Lucknow	14	47	3.36	4	20	5.00	18	67	3.72
Mumbai	4	4	1.00	0	0	0.00	4	4	1.00
Puri	31	71	2.26	8	38	4.88	39	109	2.79
Sringeri	12	19	1.58	2	7	3.50	14	26	1.86

career. Doctoral Guidance is one of the major components of research productivity in HEIs and a very important part of scholarly output. In fact, doctoral guidance does not limit itself to producing only doctoral theses but also leads to yet another important form of research output in the form of research articles in journals, etc. The quantum of doctoral theses produced in a single-campus University being higher than a multi-campus University is a matter that requires attention of the academic administrators. While such a productivity pattern augurs well for the single-campus University, the multi-campus University comprising of eleven campuses across the country needs to analyse and investigate for its short performance and adopt strategies to exploit its potential.

The non-correspondence between the growth rate of guides and growth rate of theses viz., poor enrolment to the doctoral programmes etc, is a pointer to the fact that the vector component of productivity viz., the potential to produce has not been harnessed and explored fully in the Universities resulting in downward trend and is a point to ponder by the University authorities.

The direction and trend of research reveals that certain topics are relatively over-researched, while few topics remain under-researched. No doubt, the choice of topics by the research scholars in doctoral programmes does depend upon the interest areas of the students and also in turn on the interest areas and inclination of the guides. However, in the overall interest of the growth of the discipline, specific allocation of seats earmarked for the different topics can go a long way in improving the topic-wise representation and an equitable growth of all topics in the discipline. This aspect deserves attention of the academic administrators.

As observed in the quantum of productivity, the fact that the overall per-capita productivity of a single-campus University being higher than a multi-campus University can serve as an eye-opener in understanding the why and how of this phenomenon and can be taken up for a detailed investigation by the academic administrators. While such a productivity pattern augurs well for the single-campus University, the multi-campus University comprising of eleven campuses across the country is expected to outperform the single-campus University. While there could be many valid reasons for the above scenario, a root-cause analysis would definitely benefit in enhancing the overall per-capita productivity of the multi-campus University. In this era of continuous and quality evaluations like the National Institute Ranking Framework (NIFR) and rating by the National Assessment and Accreditation Council (NAAC), an analysis on the performance in terms of doctoral theses in short intervals of every three years can also be attempted.

The higher productivity of guides in multi-topics with minimal strength puts in perspective the need for specialisation in multi-topics by the faculty in the discipline of language and considering that Sanskrit is an accomplished language, rich and fertile which can offer immense scope. The faculty in the discipline of Sanskrit need to look beyond the multiple topics within the domain of language and explore inter-disciplinary research actively to enhance the width and depth of research. As mentioned in the MHRD³ report containing the Vision and Roadmap for the development of Sanskrit, “Sanskrit language and literature is a vast repository of knowledge encompassing all spheres of life, like science and technology, astronomy and architecture, medicine and metallurgy, agriculture and sculpture, mathematics and management, economics and ecology. In today’s globalised economy and in the context of knowledge society, India needs Sanskrit more than ever before, to bridge the ancient and modern, to unravel the knowledge contained in the ancient texts, to protect our Intellectual Property Rights, to explore new avenues of innovations and to lead India into the forefront of the knowledge driven globe.” The Departments in Sanskrit Universities should initiate concrete action plans in this direction by way of synergy and active collaborations between and among the different players who form this ever-expanding research landscape.

The Departments in Sanskrit Universities need to innovate in the way research is presently approached and carried out by them and make it more vibrant to explore the limitless opportunities that Sanskrit offers. Today, research productivity seems to be happening more by default than by design. The arena of doctoral guidance needs to be revisited so that it gets its right orientation. The Sanskrit Universities and in turn the research productivity in this discipline can get enriched by fully utilising the potential hidden in scholastic efforts through appropriate interventions and strategies. The study has useful takeaways for the academic administrators.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

ABBREVIATIONS

HEI: Higher Education Institution; **HQ:** Head Quarters; **MHRD:** Ministry of Human Resource Development; **NAAC:** National Assessment and Accreditation Council; **NIFR:** National Institute Ranking Framework; **RSS:** Rashtriya Sanskrit Sansthan; **RSVP:** Rashtriya Sanskrit Vidyapeetha.

REFERENCES

1. Paul S. Who killed Sanskrit?. Deccan Herald. 2019;10. <https://www.deccanherald.com/opinion/main-article/who-killed-sanskrit-756464.html>
2. Ministry of Human Resources Development. Vision and Road map for the development of Sanskrit: Ten year perspective Plan. 2016. Retrieved August 5, 2019, from http://www.sanskrit.nic.in/data/Vision_and_Road_Map.pdf
3. McCabe L, McCabe LL. How to Succeed in Academics: Successful Career

- Management. 2000.
4. Mulla KR, Konnur PV. Research Activities of Bangalore University (1963-2005)-A Publimeric Study. *Indian J Interdisci Res.* 2010;1(2):24-30.
 5. Mahapatra RK, Sahoo J. Doctoral dissertations in library and information science in India. 2004;51:58-63.
 6. Madasamy R, Alwammal R. Doctoral degrees in library and information science in India during 2003-2008: A study. 2009;262-6.
 7. Chandrashekara M, Ramasesh CP. Library and information science research in India. In *Asia Pacific Conference on Library Information Education and Practice.* 2009;530-7. <http://aliep.kc.tsukuba.ac.jp/proceedings/Papers/a65.pdf>.
 8. Pandita RK, Singh S. Doctoral theses awarded in library and information science in India during 2010-2014: A Study. *DESIDOC Journal of Library and Information Technology.* 2017;37(6):379-86.
 9. Chandrakumar V, Sritharan T. Referencing pattern among the Sanskrit Researchers: A citation study. *ILA Bulletin.* 2003;39(1):27-32.