COMPARATIVE STUDY OF DOCTORAL RESEARCH IN COMMERCE AND MANAGEMENT FACULTY IN UNIVERSITIES OF GUJARAT

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ABSTRACT

With the emergence of Knowledge Society, knowledge driven and dominant economy has emerged in last few decades in the world. This implies that power of knowledge is increasing significantly in social, economical and cultural aspects of the world. Countries with power of knowledge creation have advanced in science and technology and subsequently rules over other countries. Country's ability to create knowledge is reflected in its ability to produce quantity and quality research outputs. One of the indicators of research outputs is Doctoral Research leading to the degree of Ph.D. in Universities. Present study attempts to provide a description of comparison of doctoral research output in two related faculties; i.e. Faculty of Commerce and Faculty of Management in the State Funded Public Universities of Gujarat during the year 2006 to 2015.

Keywords: Knowledge Society, Dominant Economy, Social, Economical and Cultural Aspects.

INTRODUCTION

Indian Higher Education is massive in size and diversity. It consists of 864 Universities, 40026 Colleges and 11669 Stand Alone Institutions. 278 Universities are affiliating i.e. having Colleges.313 Universities are privately managed. 338 Universities are located in rural area.15 Universities are exclusively for women, 4 in Rajasthan, 2 in Tamil Nadu & 1 each in Andhra Pradesh, Assam, Delhi, Haryana, Karnataka, Maharashtra, Odisha, Uttarakhand and West Bengal. In addition to 1 Central Open University, 13 State Open Universities and 1 State Private Open University. There are 488 General, 114 Technical, 67 Agriculture & Allied, 52 Medical, 19 Law, 13 Sanskrit and 9 Language Universities and rest 63 Universities are other Categories. With the emergence of Knowledge Society, knowledge driven and dominant economy has emerged in last few decades in the world. This implies that power of knowledge is increasing significantly in social, economical and cultural aspects of the world. Countries with power of knowledge creation have advanced in science and technology and subsequently rules over other countries.

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OBJECTIVES OF THE STUDY

Objective of this paper is to examine Doctoral Dissertations leading to Ph.D. Degree in two related Faculties, i.e. Faculty of Commerce and Faculty of Management in State-Funded Public Universities of Gujarat during the year 2006 to 2015. It also aims to assess the university wise and gender wise doctoral research in the field of management and commerce.

SIGNIFICANCE OF THE STUDY

The need and importance of research productivity cannot be overlooked in a university environment. Doctoral Research in the university is one of the most significant indicators of academic productivity. It may be pointed out that, research publication in any field of specialization provide current information for growth, progress, development and an improved society. The importance of quality research cannot therefore be overlooked. Quality research exposes new information and sharing of socio-cultural ideas with others. Quality research contributes to genuine indigenous and sustainable development therefore implies that the need for quality research has been widely acknowledged not only in academic institutions, but also in management organizations. Research provides greater opportunities for collaboration and networking among scholars spread throughout the world. National and international dimensions of research issues can therefore be studied as they can allow for communication with peers and experts around the world.

LITERATURE REVIEW

Print and Hattie (1997) reviewed that research performance could be assured directly through the value of publications. Even demographic variables were related and affected research productivity. Age was one of the factors that affected research productivity. They noticed decline in productivity with increase in age. According to Brian Martin (2009), Research productivity is an outcome of few factors which prompts a researcher to conduct research. The factors which influence a researcher are writing creativity, luck, happiness health and crowd wisdom. Gholamhossein Heidari Tafreshi, Mohammad Naghi Imani and Parivash Mohammadi Ghashlag (2013) concluded that there are seven components that comprises research productivity namely submitting articles, book writing and translation, thesis supervision, administrative scientific services, judgment in relation to administrative scientific service, Innovation and invention, having research plan According to them organizational factors did not have direct effect on research productivity of Islamic University. Dr. Jayprakash and Dr. M. M. Bachalapur (2014) concluded that research productivity is required to measure the performance of researches in universities. They tried to evaluate faculty members evolved in research activity in the colleges of GOA University.

METHODOLOGY

- Type of the Study
 - The present study is analytical and exploratory in nature.
- Sources of the Data

The total number of doctoral degrees awarded in the field of commerce and management from 2006 to 2015 in seven State-Funded Public Universities of Gujarat has formed data. A Ph.D. Degree awarded has been taken as Unit of Sample. Annual Report of respective universities has been basic source of the data. Each Sample University has been contacted separately requesting them to supply data on Ph.D. Degree awarded in respective University during the period of study. Also, *Compendium of Doctoral Dissertation in Gujarat*, a publication by Knowledge Consortium of Gujarat, Government of Gujarat has been used for further reference. Descriptive analysis of the same is based on researcher's skill under the guidance of respected guide. The researcher has attempted to consolidate the data according to year wise growth, university wise and subject wise distribution to trace the growth in the subject.

Tools and Techniques of Data Analysis

The collected data are duly edited, classified and analyzed using all types of relevant statistical techniques like ANOVA one way and t Test Two-Sample assuming Equal Variances. Following procedure has been adopted to classify and analyze the data.

HYPOTHESIS

- **H**₀: There is no significant difference between Ph. D. degree awarded in various universities
- **H**₀: There is no significant difference between Ph. D. degree awarded in various universities in Commerce.
- **H**₀: There is no significant difference between Ph. D. degree awarded in various universities in Management.
- There is no significant difference between Ph. D. degrees awarded to Male students in various universities.
- There is no significant difference between Ph. D. degrees awarded to Female student in various universities

ANALYSIS

Table 1: Ph. D. Degrees Awarded in Various Universities

| Year | SU | MKBU | MSU | SP | GU | HNGU | VNSGU | Total |
|-------|-----|------|-----|-----|----|------|-------|-------|
| 2006 | 5 | 3 | 6 | 9 | 0 | 13 | 0 | 36 |
| 2007 | 16 | 7 | 7 | 3 | 0 | 9 | 4 | 46 |
| 2008 | 7 | 9 | 2 | 2 | 4 | 3 | 0 | 27 |
| 2009 | 2 | 5 | 6 | 9 | 3 | 7 | 0 | 32 |
| 2010 | 29 | 13 | 1 | 15 | 5 | 7 | 5 | 75 |
| 2011 | 20 | 9 | 13 | 16 | 6 | 11 | 16 | 91 |
| 2012 | 13 | 7 | 7 | 19 | 10 | 7 | 20 | 83 |
| 2013 | 15 | 15 | 8 | 6 | 5 | 4 | 13 | 66 |
| 2014 | 13 | 3 | 7 | 6 | 4 | 9 | 1 | 43 |
| 2015 | 40 | 3 | 10 | 21 | 0 | 15 | 5 | 94 |
| Total | 160 | 74 | 67 | 106 | 37 | 85 | 64 | 593 |

Table 1 shows Ph. D. degrees awarded in various universities of Gujarat state. Total number of Ph. D. degrees awarded in Saurashtra University is 160 during the period of study. It means that total number of Ph.D degrees awarded by Saurashtra University is highest in comparison to the rest of sampled universities. Total of number Ph.D Ph. D. degrees awarded in MKBU and MSU are 74 and 67 respectively. However total number of Ph.D. Ph. D. degrees

awarded by SP is 106 which is ranked second during the period of study. There are 37 and 64 Ph. D. degrees awarded in GU and VSNGU respectively from 2006 to 2015. Saurashtra University has also highest number of Ph. D. degrees awarded during the last year of study period. However HNGU was at top position in the initial years of the study period as total number of submission of thesis was 13 in 2006. The trend of submitting thesis was fluctuating in all sampled universities of Gujarat state during the period of study. Total number of Ph. D. degrees awarded by all sample universities is 593 which is a notable figure.

ANOVA TEST

 H_0 : There is no significant difference between Ph. D. degrees awarded in various universities.

H₁: There is a significant difference between Ph. D. degrees awarded in various universities.

Level of significant: 5% Degree of freedom: 69

Table 2: ANOVA

| Source of Variation | SS | df | MS | F | P-value | F crit |
|---------------------|---------|-------|--------|------|---------|--------|
| Between Groups | 925.54 | 6.00 | 154.26 | 3.81 | 0.00 | 2.25 |
| Within Groups | 2549.90 | 63.00 | 40.47 | | | |
| Total | 3475.44 | 69.00 | | | | |

Table 2 indicates the ANOVA test of sampled universities. The calculated value of F is 3.81 and critical value is 2.25 which are lower than calculated value. Hence Null hypothesis is rejected and alternative hypothesis is accepted. Difference is significant.

Table 3: Ph. D. Degrees Awarded in Commerce in Various Universities

| Year | SU | MKBU | MSU | SP | GU | HNGU | VNSGU | Total |
|-------|----|------|-----|----|----|------|-------|-------|
| 2006 | 1 | 0 | 1 | 6 | 0 | 0 | 0 | 8 |
| 2007 | 7 | 0 | 0 | 1 | 0 | 0 | 1 | 9 |
| 2008 | 4 | 1 | 0 | 2 | 1 | 1 | 0 | 9 |
| 2009 | 2 | 1 | 0 | 4 | 1 | 3 | 0 | 11 |
| 2010 | 12 | 4 | 0 | 4 | 1 | 1 | 1 | 23 |
| 2011 | 10 | 0 | 1 | 0 | 0 | 1 | 4 | 16 |
| 2012 | 5 | 2 | 0 | 4 | 5 | 1 | 5 | 22 |
| 2013 | 4 | 1 | 3 | 0 | 2 | 0 | 3 | 13 |
| 2014 | 6 | 0 | 2 | 0 | 0 | 4 | 0 | 12 |
| 2015 | 16 | 0 | 3 | 4 | 0 | 4 | 3 | 30 |
| Total | 67 | 9 | 10 | 25 | 10 | 15 | 17 | 153 |

Table 2 shows Ph. D. degrees awarded in commerce in various universities of Gujarat state. Total number of Ph. D. degrees awarded under commerce faculty in Saurashtra University is 67 during the period of study. It means that total number of Ph.D degrees awarded by Saurashtra University is highest in comparison to rest of the sampled universities. Total of number Ph. D. degrees awarded in MKBU and MSU are 9 and 10 respectively. However total number of Ph.D. Ph. D. degrees awarded by SP is 25 which is ranked second during the period of study. There are 10 and 17 Ph. D. degrees awarded in GU and VSNGU respectively from 2006 to 2015. Saurashtra University has also highest number of Ph. D.

degrees awarded during the last year of period of study. However SP was at top position in the initial years of study period as total number of submission of thesis was 6 in 2006. The trend of submitting thesis was fluctuating in all sampled universities of Gujarat state during the period of study. Total number of Ph. D. degrees awarded under commerce faculty by all the sampled universities is 153 which is a notable figure.

ANOVA TEST

 H_0 : There is no significant difference between Ph. D. degrees awarded in various universities in Commerce.

 H_1 : There is a significant difference between Ph. D. degrees awarded in various universities in Commerce.

Level of significant: 5%

Table 4: Anova: Single Factor

| Summary | | | | |
|---------|-------|-----|---------|----------|
| Groups | Count | Sum | Average | Variance |
| SU | 10 | 67 | 6.7 | 22.01111 |
| MKBU | 10 | 9 | 0.9 | 1.655556 |
| MSU | 10 | 10 | 1 | 1.555556 |
| SP | 10 | 25 | 2.5 | 4.722222 |
| GU | 10 | 10 | 1 | 2.444444 |
| HNGU | 10 | 15 | 1.5 | 2.5 |
| VNSGU | 10 | 17 | 1.7 | 3.566667 |

Table 5: ANOVA

| Source of Variation | SS | df | MS | F | P-value | F crit |
|---------------------|----------|----|----------|----------|-----------|----------|
| Between Groups | 256.4857 | 6 | 42.74762 | 7.781277 | 2.781E-06 | 2.246408 |
| Within Groups | 346.1 | 63 | 5.493651 | | | |
| Total | 602.5857 | 69 | | | | |

Table no.5 indicates the ANOVA test of sampled universities. The calculated value of F is 7.781277 and critical value is 2.246408 which is lower than the calculated value. Hence Null hypothesis is rejected and alternative hypothesis is accepted. Difference is significant.

Table 6: Ph. D. Degrees Awarded in Management in Various Universities

| Year | \mathbf{SU} | MKBU | MSU | SP | GU | HNGU | VNSGU | Total |
|-------|---------------|------|-----|----|----|------|-------|-------|
| 2006 | 4 | 3 | 5 | 3 | 0 | 13 | 0 | 28 |
| 2007 | 9 | 7 | 7 | 2 | 0 | 9 | 3 | 37 |
| 2008 | 3 | 8 | 2 | 0 | 3 | 2 | 0 | 18 |
| 2009 | 0 | 4 | 6 | 5 | 2 | 4 | 0 | 21 |
| 2010 | 17 | 9 | 1 | 11 | 4 | 6 | 4 | 52 |
| 2011 | 10 | 9 | 12 | 16 | 6 | 10 | 12 | 75 |
| 2012 | 8 | 5 | 7 | 15 | 5 | 6 | 15 | 61 |
| 2013 | 11 | 14 | 5 | 6 | 3 | 4 | 10 | 53 |
| 2014 | 7 | 3 | 5 | 6 | 4 | 5 | 1 | 31 |
| 2015 | 24 | 3 | 7 | 17 | 0 | 11 | 2 | 64 |
| Total | 93 | 65 | 57 | 81 | 27 | 70 | 47 | 440 |

Table 6 shows Ph. D. degrees awarded in management faculty in various universities of Gujarat state. Total number of Ph. D. degrees awarded in Saurashtra University is 93 during the period of study. It means that total number of Ph.D degrees awarded by Saurashtra University is the highest in comparison to rest of the sampled universities. Total of number Ph. D. degrees

awarded in MKBU and MSU are 65 and 57 respectively. However total number of Ph.D. Ph. D. degrees awarded by SP is 81 which is ranked second during the period of study. There are 27 and 47 Ph. D. degrees awarded in GU and VSNGU respectively from 2006 to 2015. Saurashtra University has also highest number of Ph. D. degrees awarded during the last year of the study period. However, HNGU was at top position in the initial years of study period because total number of submissions of thesis was 13 in 2006. The trend of submitting thesis was fluctuating in all sampled universities of Gujarat state during study period. Total numbers of Ph. D. degrees awarded by all sampled universities in management faculty is 440 which is a notable figure.

H₀: There is no significant difference between Ph. D. degrees awarded in various universities in Management.

H₁: There is a significant difference between Ph. D. degrees awarded in various universities in Management.

Level of significant: 5%

Table 7: ANOVA: Single Factor

| Summary | | | | |
|---------|-------|-----|---------|----------|
| Groups | Count | Sum | Average | Variance |
| SU | 10 | 93 | 9.3 | 48.9 |
| MKBU | 10 | 65 | 6.5 | 12.94444 |
| MSU | 10 | 57 | 5.7 | 9.122222 |
| SP | 10 | 81 | 8.1 | 38.32222 |
| GU | 10 | 27 | 2.7 | 4.677778 |
| HNGU | 10 | 70 | 7 | 12.66667 |
| VNSGU | 10 | 47 | 4.7 | 30.9 |

Table 8: ANOVA

| Source of Variation | SS | df | MS | F | P-value | F crit |
|---------------------|----------|----|----------|----------|----------|----------|
| Between Groups | 286.4857 | 6 | 47.74762 | 2.121667 | 0.063022 | 2.246408 |
| Within Groups | 1417.8 | 63 | 22.50476 | | | |
| Total | 1704.286 | 69 | | | | |

Table 9 indicates the ANOVA test of sampled universities. The calculated value of F is 2.121667 and critical value is 2.246408 which are higher than calculated value. Hence Null hypothesis is accepted and alternative hypothesis is rejected. Difference is insignificant.

Table 10: Gender-wise Ph. D. Degrees Awarded to Male Students in Commerce and Management in Various Universities

| Year | SU | MKBU | MSU | SP | GU | HNGU | VNSGU | Total |
|-------|-----|------|-----|----|----|------|-------|-------|
| 2006 | 4 | 2 | 5 | 7 | 0 | 10 | 0 | 28 |
| 2007 | 14 | 6 | 3 | 3 | 0 | 8 | 2 | 36 |
| 2008 | 5 | 7 | 2 | 2 | 2 | 2 | 0 | 20 |
| 2009 | 2 | 4 | 4 | 8 | 3 | 4 | 0 | 25 |
| 2010 | 25 | 6 | 1 | 12 | 5 | 6 | 2 | 57 |
| 2011 | 14 | 7 | 8 | 11 | 5 | 10 | 12 | 67 |
| 2012 | 8 | 4 | 5 | 14 | 7 | 5 | 11 | 54 |
| 2013 | 10 | 6 | 5 | 4 | 3 | 4 | 9 | 41 |
| 2014 | 7 | 1 | 3 | 3 | 4 | 8 | 1 | 27 |
| 2015 | 21 | 1 | 4 | 11 | 0 | 14 | 5 | 56 |
| Total | 110 | 44 | 40 | 75 | 29 | 71 | 42 | 411 |

Table 4 shows gender wise Ph. D. degrees awarded in various universities of Gujarat state. The table shows Ph. D. degrees awarded to male students in various universities. Total number of Ph. D. degrees awarded in Saurashtra University is 110 during the period of study. It means that total number of Ph.D degrees awarded by Saurashtra University is highest in comparison to rest of the sampled universities. Total of number Ph. D. degrees awarded in MKBU and MSU are 44 and 40 respectively. However total number of Ph.D. Ph. D. degrees awarded by SP is 75 which ranked second during the period of study. There are 29,71 and 42 Ph. D. degrees awarded in GU, HNGU and VSNGU respectively from 2006 to 2015. Saurashtra University also has the highest number of Ph. D. degrees awarded during the last year of the study period. However HNGU was at top position in the initial years of the study period as the total number of submission of thesis was 10 in the year 2006. The trend of submitting thesis was fluctuating in all the sampled universities of Gujarat state during the study period. Total numbers of Ph. D. degrees awarded to the male gender in all the sampled universities is 411 which is a notable figure.

ANOVA TEST

H₀: There is no significant difference between Ph. D. degrees awarded to Male students in various universities.

H₁: There is a significant difference between Ph. D. degrees awarded to Male students and Female students in various universities.

Level of significant: 5% Degree of freedom: 63

Table 11: ANOVA: Single Factor

| Summary | | | | |
|---------|-------|-----|---------|----------|
| Groups | Count | Sum | Average | Variance |
| SU | 10 | 110 | 11 | 56.22222 |
| MKBU | 10 | 44 | 4.4 | 5.6 |
| MSU | 10 | 40 | 4 | 3.777778 |
| SP | 10 | 75 | 7.5 | 18.94444 |
| GU | 10 | 29 | 2.9 | 5.877778 |
| HNGU | 10 | 71 | 7.1 | 12.98889 |
| VNSGU | 10 | 42 | 4.2 | 22.62222 |

Table 12: ANOVA

| Source of Variation | SS | df | MS | F | P-value | F crit |
|---------------------|----------|----|----------|----------|----------|----------|
| Between Groups | 477.5429 | 6 | 79.59048 | 4.420524 | 0.000862 | 2.246408 |
| Within Groups | 1134.3 | 63 | 18.00476 | | | |

Table 12 indicates the ANOVA test of the sampled universities. The calculated value of F is 4.420524 and critical value is 2.246408 which are lower than calculated value. Hence Null hypothesis is rejected and alternative hypothesis is accepted. Difference is significant.

HNGU VNSGU MSU SP GU Year SUTotal 7 Total

Table 13: Ph. D. Degrees Awarded to Female Students in Commerce and Management in Various Universities

Table 13 shows Ph. D. degrees awarded to female gender in various universities of Gujarat state. Total number of Ph. D. degrees awarded in Saurashtra University is 50 during the period of study. It means that total number of Ph.D degrees awarded by Saurashtra University is highest in comparison to rest of the sampled universities. Total of number Ph. D. degrees awarded in MKBU and MSU are 30 and 27 respectively. However total number of Ph. D. degrees awarded by SP is 31 which is ranked second during the period of study. There are 8,14 and 22 Ph. D. degrees awarded in GU, HNGU and VSNGU respectively from 2006 to 2015. Saurashtra University has also highest number of Ph. D. degrees awarded during the last year of study period. However HNGU was at top position in the initial years of the study period as total number of submission of thesis was 3 in 2006. The trend of submitting thesis was fluctuating in all the sampled universities of Gujarat state during the study period. Total numbers of Ph. D. degrees awarded by all the sampled universities are 593 which is a notable figure.

ANOVA TEST

 H_0 : There is no significant difference between Ph. D. degrees awarded to Female student in various universities.

H₁: There is a significant difference between Ph. D. degrees awarded to Female students in various universities.

Level of significant: 5% Degree of freedom: 69

Table 14: Anova: Single Factor

| Summary | | | | |
|---------|-------|-----|---------|----------|
| Groups | Count | Sum | Average | Variance |
| SU | 10 | 50 | 5 | 28.66667 |
| MKBU | 10 | 30 | 3 | 7.55556 |
| MSU | 10 | 27 | 2.7 | 4.233333 |
| SP | 10 | 31 | 3.1 | 8.988889 |
| GU | 10 | 8 | 0.8 | 1.288889 |
| HNGU | 10 | 14 | 1.4 | 0.933333 |
| VNSGU | 10 | 22 | 2.2 | 8.622222 |

Table 15: ANOVA

| Source of Variation | SS | df | MS | F | P-value | F crit |
|---------------------|-------|----|----------|---------|---------|----------|
| Between Groups | 110.2 | 6 | 18.36667 | 2.13251 | 0.06177 | 2.246408 |
| Within Groups | 542.6 | 63 | 8.612698 | | | |
| Total | 652.8 | 69 | | | | |

Table 15 indicates the ANOVA test of the sampled universities. The calculated value of F is 2.13251 and critical value is 2.246408 which are higher than calculated value. Hence Null hypothesis is accepted and alternative hypothesis is rejected. Difference is insignificant.

FINDINGS

Number of Ph. D. degree awarded by research scholars in selected universities. Total number of PhD degree awarded by Saurashtra university during the study period are 160, total number of Ph.D. degree awarded by M.K. Bhavnagar university during study period are 74, total number of Ph.D. degree awarded by M.S. University are 67, whereas total number of students are 106,37,85 and 64 by S.P. University, Gujarat University, HNGU and VNSGU respectively. Researcher has applied ANOVA test to examine mean difference between different universities. The difference is significant. Total number of commerce students of PhD in different universities are 67(SU),9(MKBU),10(MSU),25(SP),10(GU),15(HNGU) and 17 (VNSGU). ANOVA test says there is significant difference. Total number of management students of PhD in different universities are 93(SU), 65(MKBU), 57(SP), 81(SP), 27(GU), 70(HNGU) and 47 (VNSGU). The result of ANOVA test explains that the difference is significant. Table- 4 shows gender wise Ph. D. degrees awarded in different universities of Gujarat state. Total numbers of Ph.D degrees awarded by male gender in all selected universities are 411. Total number of Ph. D. degrees awarded in Saurashtra University is 110 during the study period which highest followed by SP, HNGU, MSU, GU and VNSGU. ANOVA test indicates that Null hypothesis is rejected and alternative hypothesis is accepted. Difference is significant. Table- 5 shows thesis submitted by female gender in different universities of Gujarat state is 182. SP University has the highest number followed by MKBU, MSU, VNSGU, HNGU and GU. ANOVA test indicates that Null hypothesis is accepted and alternative hypothesis is rejected. Difference is insignificant.

LIMITATIONS OF THE STUDY

Findings of this study cannot be applied to other types of universities e.g. State Private Universities, State Specialised Universities, Central Universities, Deemed Universities and Institutions of National Importance. The validity of the study is depending upon the reliability of the secondary data. This study is based on secondary data which has its own limitations.

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