Social Science Research Landscape in South Asia: A Comparative Assessment of Research Output Published during 1996-2013

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Abstract - The paper analyses composition and dynamics of social sciences research output in five South Asia countries as reflected in publications indexed in Scopus international bibliographical database and as summarised in Scimago database. The study which covers publications and citations data for the years 1996-2013 reveals that social sciences research in South Asia appears to be growing exponentially, doubling in publication size every six years. Within the confines of South Asia region, there is a great social science research divide between nations that publish papers in bulk and those that publish very little. India alone published prolific share (84%) within South Asia region compared to 6.4% by Pakistan and 3.2% by Bangladesh. In the global context also, there exists social science research divide. South Asia region barely published less than 1.6% share in 18 years 1996-2013, compared to rest of the world share that published 98.427%. South Asia is strong in quantity but not in quality in social sciences research. Relative citation index of South Asia has been below the world average. South Asia share of internationally collaborated papers is low (14.15%). India's share of internationally collaborative papers has been the least across all fields of social sciences. It is a pointer for investigation why India should rank at bottom in South Asia countries ranking on international collaboration despite its prolific share (84%) in the region in social Sciences research.

Keywords: Social Sciences, Publications, Bibliometrics, Scientometrics, South Asia, India, Pakistan, Bangladesh, Sri Lanka, Nepal

1. Introduction

South Asian economies have been evolving, experiencing a long period of robust economic growth, averaging 6% a year over the past 20 years. They have increased their economic profile on the world stage, built human capital by ensuring that the people of South Asia have access to education, health

care, and social safety nets. But in their race for socio-economic development, these economies had followed different trajectories for the expansion of social sciences to achieve the levels of growth needed to meet the aspirations of all their people. South Asian countries as such have come to experience widely varying impact on their national research output in social science disciplines. There exist sharp differences between South Asia nations both in the nature of their social science institutional structures and in the pace at which these economies have grown. India leads in the number of universities, specialized research institutions, and other governmental and non-governmental bodies conducting social science research. Research and educational opportunities here are highly developed compared to its neighbouring countries. In contrast, social science landscapes in Pakistan, Bangladesh, Sri Lanka and Nepal are different. Their educational and research enterprises are not so large in number count as India's. Their institutions of higher learning, NGOs, and specialised research institutes highly differ in research facilities and quality (1).

The 'Report of the Committee Constituted by Government of India to Review the Functioning of ICSSR, 2011' (2) had observed that the current number of universities, research institutes, NGOs and their research outputs in the region were lopsided, no longer meeting rising demands for higher education access. Their R&D sector was lacking high quality research facilities, despite their growing importance to the economic development agenda. Their public spending in the higher education sector was less compared to the needs, and not able to withstand the impact that the fast growing young population in the region is having on the higher education and research sector. India, Bangladesh, Pakistan, Sri Lanka, and Nepal together account for around 25% of the world's population.

Given the wide differences in their social science landscapes, South Asia countries are bound to have wide differing impact on the research emanating from their respective countries. To determine and evaluate their comparative research performance from a regional perspective, it would be useful to undertake a detailed analysis of their scholarly output in social sciences using publication and citation indicators. Mapping social science research would give stakeholders across South Asia countries an opportunity to understand and ascertain their comparative strength and weaknesses in social science disciplines. Such an insight would provide fresh opportunities to introspect and frame future policies pertaining to research spending, quality, visibility and ensuring long term growth and development of social science research from a regional perspective.

This paper therefore looks at the status of social sciences research in South Asia and determines what impact the socio-economic developments within India, Pakistan, Bangladesh, Sri Lanka, and Nepal had

had on their comparative research profiles in social sciences.   This paper therefore compares and benchmarks their research performance on publication and citation indicators. These indicators provide a reasonable measure of research publication size, publication growth rate, visibility and impact of research. This study covers research publication and citation data pertaining to South Asia countries in social sciences for the years 1996 to 2013.

1.1 Literature Review

Bibilometric literature comprises a good number of studies on social science research in South Asia. But comparative evaluation undertaken in these studies is focused mainly on publications productivity made by select three or four South Asia countries and the captured data analysed using select publication and citation indicators. There is no study till date which has sought to undertake comparative assessment and evaluation of social science research in five South Asia countries covering India, Pakistan, Bangladesh, Sri Lanka, and Nepal. Mehbuba and Rousseau (2010)(3) compared India vis-à-vis Bangladesh, Pakistan and Sri Lanka publications in social sciences using three indicators: percentage of un-cited articles, citations per document and h-indices. Gupta and Bala (2012)(4) examined S&T publications of four South Asia countries (Pakistan, Bangladesh, Sri Lanka and Nepal) published during 2001-10, using measures such as global publication contribution and share, growth pattern, distribution of publications by subjects and geographical areas, share of international collaborative publications and characteristics of high productivity institutions and highly cited papers. Gupta and Mahesh (2013)(5) compared social science research in four South Asia countries, namely Pakistan, Bangladesh, Sri Lanka and Nepal for the period 1996-2011 using various quantitative and qualitative indicators. They looked at the similarities in the research profile of these four countries, and their research priorities across sub-fields under the five broad social science subjects, such as business, management & accounting, decision sciences, economics, econometrics & finance, psychology and social sciences-general in these three countries. Gupta, Kumbar and Gupta (2013)(6) analysed India's performance on social sciences on publications growth rate, citation quality, internationally collaborative publications in the national output, productivity distribution by broad and narrow subjects. Gupta, Tiwari and Gupta (2014)(7) examined social science research by four South Asia countries on indicators including publication growth rate, citation impact, share of internationally collaborative papers, leading collaborators, broad subject-wise scatter of publications productivity, geographical distribution of publications productivity, institutional contribution and impact, and most productive journals in social science research. Gupta and Kumbar (2014)(8) examined the status of social science research of India, China and Brazil for their

comparative performance on quantitative and qualitative indicators including global publication share and rank, annual growth rate, national publication share, internationally collaborative publications share, and research impact as reflected in citation analysis. They brought out similarities in their research profiles, looked at their research priorities, the citation impact of their publications across subfields under the five broad social science subjects, such as business, management and accounting, decision sciences, economics, econometrics and finance, psychology and social sciences (general) in the countries.

To fill the gap in the literature, this study aims to look at comparative performance of five South Asia countries including India, Pakistan, Bangladesh, Sri Lanka, and Nepal using a different methodology to aggregate and analyse publications data on a series of publication and citation indicators.

2. Objectives

The main objective of this study is to analyze publications and citations data for comparative assessment of social science research in five South Asia countries, namely Pakistan, Bangladesh, Sri Lanka and Nepal. The study uses a series of quantitative and qualitative measures to: (i) measure and analyse annual growth and the growth pattern of South Asia countries; (ii) measure national output and the global share of South Asia countries; (iii) analyse the citation visibility and impact of research output by South Asia countries; (iv) compare the share of internationally collaborative papers in the national output of South Asia countries; (v) study the research productivity distribution by broad subjects to discover publications growth pattern, identify national research priorities, impact of research, and the extent of international collaboration in social sciences.

3. Methodology & Data Source
The study is a bibliometric analysis of social sciences research conducted in five South Asia countries, viz. India, Pakistan, Bangladesh, Sri Lanka, and Nepal. The data for the study has been sourced from *SCImago* (using its Journal and Country Rank website, http://www.scimagojr.com) developed by Prof. Felix de Moya Anegon of the University of Granada in Spain from the *Scopus* database (http://www.scopus.com/search/) The social sciences data captured for the study is limited to five major sub-categories viz i) Social Science – general, ii) Business, Management, & Accounting, iii) Decision Science, iv) Economics, Econometrics, & Finance, and v) Psychology. The study covers 18 years data pertaining to the period 1996-2013. For capturing trends in overall social science output coming from five countries South Asia countries, the output under the above five subject categories has been combined

Publication data count is based on publication year. Citation and bibliometric indicators have been derived, not on yearly publication data count, but on five-yearly overlapping publication count. Accordingly, the annual time series data covering publication years 1996-2013 has been split into 14 five-year overlapping data subsets ranging from 1996-2000, 1997-2001, 1998-2002 ... to 2009-2013. Each subset aggregates data pertaining to corresponding five publication years it covers. For example, 1996-2000 data subset aggregates data corresponding to publication years 1996/1997/1998/1999/2000; data subset 1997-2001 aggregates data corresponding to the years 1997/1998/1999/2000/2001; .... and moving likewise on to the last data subset 2009-2013. The data analysis based on five-year moving aggregate helps to avoid year-to-year aberrations, smooth out irregularities in annual times series data, and capture underlying trends in a data set even when time series data happens to be volatile.

Citation count is also based on five-year citation window. For example, data subset 1996-2000 would include citations from year 1996 to end-2000 for papers published in 1996-2000. Five-year citation window has been chosen mainly because this period is considered long enough to capture macro changes in the publication and citation performance of South Asia countries.

A number of quantitative and qualitative measures have been used in this study, which are described below:

(i) Growth Rate - Growth rate has been computed on Compounded Annual Growth Average (CAGR) instead of annual average growth. Annual average growth rate is the arithmetic mean of the growth rate over each annual period i.e. the average growth from 2005-2006, 2006-2007, 2007-2008 etc. CAGR is preferred because it depends upon mean average rate and in addition it addresses data volatility in annual output data figures. For example, two samples with same mean may return different CAGR rates. The one with larger data volatility will return smaller CAGR. CAGR is considered a more reliable metric compared to annual average growth rate.

(ii) Relative Citation Index - Relative citation index (RCI) has been used to compare countries performance in research. RCI number denotes the country citations per paper average in relation to world average. Relative Citation Index (RCI) is both a measure of impact and visibility of a country's research. The RCI score is used to show how often papers are cited relative to the world average in the relevant domain and year of publication. By definition the RCI for the world is always 1.00 for any domain. If the RCI for an institution/country/region is greater than 1.00, it is performing above the world average for that field. Conversely, if the RCI is less than 1.00, the institution/country/region is performing poorly compared to the world average in that field. For this study, RCI has been calculated using data for papers published and citations received during every five-yearly overlapping time intervals covered by data subsets ranging from 1996-2000 to 2009-2013.

RCI is different from citation impact which is citation count divided by publication count for a group of papers over a certain time period. The relative citation index is computed by dividing the number of citations per paper for a country in a domain with the number of citations per paper for the world in the same domain.

(iii) Specialisation Index - The Specialisation Index (SI) is an indicator of the research intensity of a country/region/institution relative to the world in a given field of research. It describes the extent to

which a country is specialised relative to the rest of the world in that discipline. This is used to show where a country might have a comparative advantage in terms of its research focus to particular areas of research. By definition the Speciaisation Index for the world is always 0.00 for any domain. If SI score is above 0 the country is more specialised relative to the world in a discipline, it places more emphasis on that particular discipline compared to its other research areas. If it is below 0.00, it would mean that the country has less of a focus in that field relative to the rest of the world. It compares the country share of articles with the world's share in the same discipline.

$$SI\ (Specialisation\ Index)\ =\ \frac{(AI-1)}{(AI+1)}$$

Wherein AI (*Activity Index*) $=\dfrac{\text{(Papers by a country in a subject divided by Papers by the country in all subjects)}}{\text{(World papers in the subject divided by World papers in all subjects)}}$

(iv) National Pub Int - National Pub Int is an indicator of publication share of internationally collaborated papers in the national output of a country in a given domain and in a given publication period. It describes the extent to which a country has its research focus on international collaboration.

v) World Share – World share is is an indicator of publication share of a country in the world publication out in a given domain and year of publication. It describes the extent to which has a country comparative advantage in its research performance over others.

Indicators Summary

| Pub Count	Moving Five-Year Aggregate of papers (integer count). For example, 1996-2000 count is an aggregate of papers published in five consecutive years *i.e.* 1996/1997/1998/1999/2000
Citation Count	Citation count is based on five-year citation window. Total citations, say, during 1996-2000, are to all papers published during this same period.
Citations Per Paper	Total citations per paper (5 year window, i.e., for articles in 1996-2000 count citations received during 1996-2000)
Compounded Annual Growth Rate	CAGR is mean average rate and in addition it addresses data volatility in annual output data figures. For example, two samples with same mean may return different CAGR rates.
National PubInt	National share of internationally co-authored papers.
World Share	National percentage share in the world publications output in a given domain and year of publication
Relative Citation Index	A comparative indicator of a nation/region/institute measuring its average citations per paper relative to world average of one per paper in the relevant domain and year of publication.
Specialisation Index	A comparative indicator of a nation/region/institute measuring the intensity of research publications in a subject relative to world average index of value zero

4. Data Analysis

4.1 Publications Growth Landscape

The social sciences research in the South Asia region has been found to be growing, almost doubling in publication size every six years. Publications output in the region jumped 95% in six years between 2001

and 2007 (up from 769 to 1496 papers) and 135% in next six years between 2007 and 2013 (up from 1496 to 3513 papers). The time series publication data recorded in 18 years between 1996 and 2013 approximates growth to exponential trend line (goodness of fit R^2= 0.95). This demonstrates statistically that publication size of social science research in South Asia is growing exponentially, doubling in every six years (Figure 1).

The increase in social science publications within the region between 1996 and 2013 corresponds to 13.37% compounded growth a year computed on five-year aggregate data. Given this growth trend in social sciences, projections are that South Asia's publication output may jump to approximately 8000 papers by the year 2019 (Figure 2).

Figure 1: Exponential Growth Trend in Social Sciences: 1996-2013
(Analysis Based on Annual Publications Data of South Asia Region)
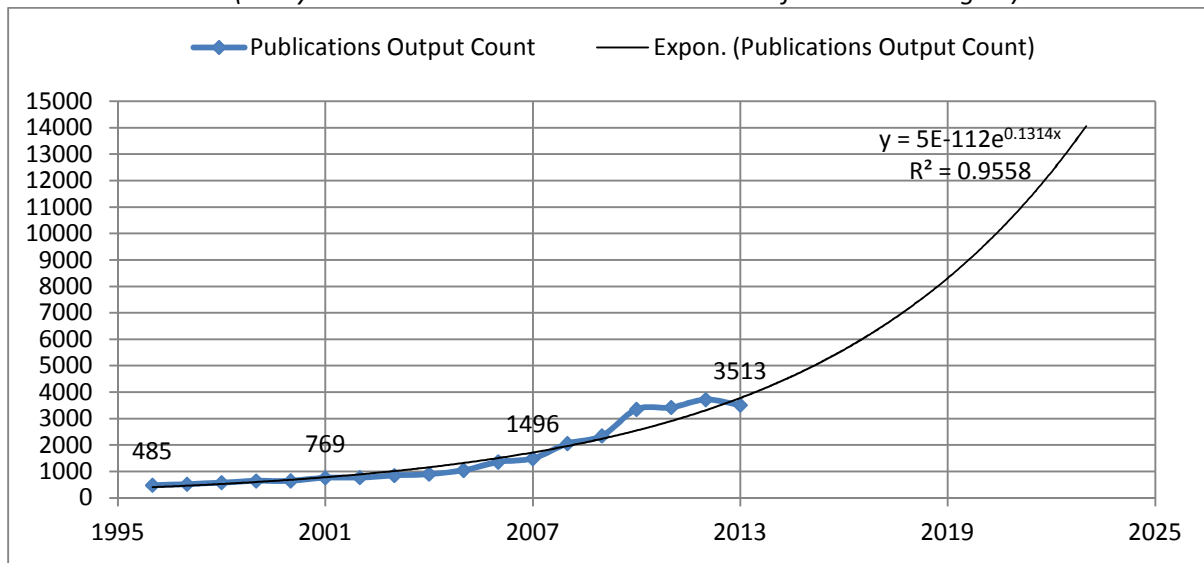
Figure 2: Comparative Growth Trend in Social Sciences in South Asia Countries: 1996-2013
(*Analysis Based on Five-Year Moving Aggregate Data*)
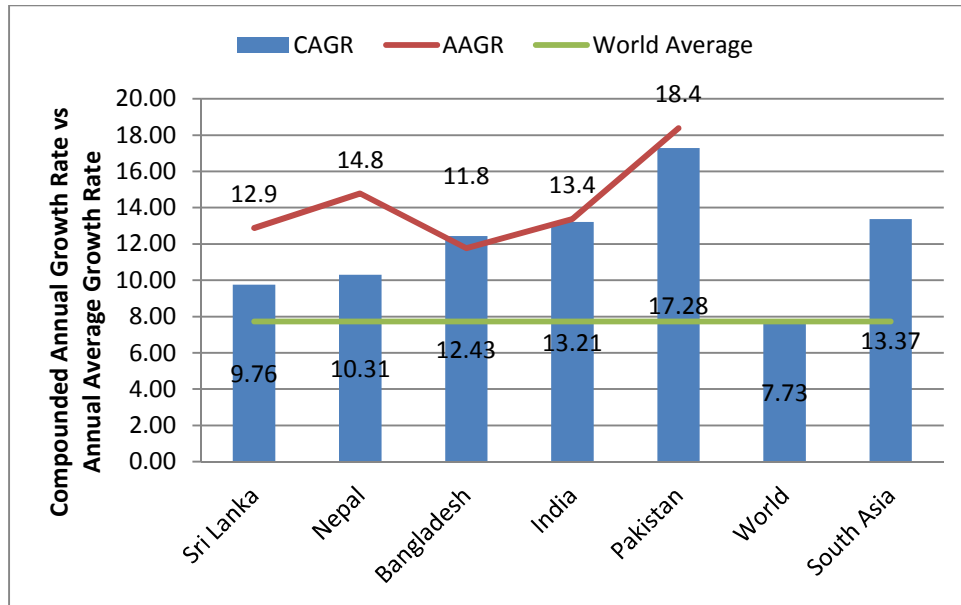
South Asia countries differ sharply in their growth rates in social science research. Pakistan tops the region, registering strongest publication growth rate 17.28% a year followed by India (13.21%), Bangladesh (12.43%), Nepal (10.31%), and Sri Lanka (9.76%). Pakistan's publications growth rate in social science (17.28%) is nearly twice that of Sri Lanka (9.76%). This study used five-year moving aggregate data for comparing South Asia countries' growth rates computed using CAGR method. Figure 2 shows how compounded annual growth rates in social sciences research are lower than growth rates measured using annual average method.

4.2 World Share

South Asia is not very prolific in social sciences in the global context. South Asia region accounts for 1.573% share (61851 papers) in the world output in social sciences in 18 years period 1996-2013. Compared to rest of the world share (98.427%, 3931442 papers) South Asia's share in social sciences research looks small. South Asia's share of world publications in social sciences increased from 1.026% to 2.097% in 14 years between 1996-2000 and 2009-13. The percentage share of the region in world publications averaged 1.573%. India averaged its largest percentage share (1.324%) of world papers within the region, followed by Pakistan (0.136%), Bangladesh (0.057%), Sri Lanka (0.036%), and Nepal (0.02%). Pakistan displayed strongest growth in its percentage share of world publications in social sciences 8.82% (up from 0.064 to 0.209%) in 14 years from 1996-00 to 2009-13, followed by India which displayed 5.24% growth (up from 0.87 to 1.324%), Bangladesh's 4.25% (up from 0.043 to 0.077%), Sri Lanka's 1.84% (from 0.031% o 0.040%) and Nepal's 2.37% (from 0.018 to 0.025%) (Table 1).

Table 1: Global Share of South Asia Countries in Overall Social Science
(Based on Five-Year Moving Aggregate Data)

Publication Period	World Output	Global Publication Share					
		South Asia	India	Pakistan	Bangladesh	Sri Lanka	Nepal

1996-00	594590	1.026	0.871	0.064	0.043	0.031	0.018
2009-13	1685901	2.097	1.746	0.209	0.077	0.040	0.025
Mean	3931442	1.573	1.324	0.136	0.057	0.036	0.020

4.3 Country Share in South Asia Region

Social sciences research in South Asia is heavily skewed due to India's dominating publication activity, accounting for as much as 84.2% publication share (52052 papers) to the region in 14 years during 1996-2013. In contrast, comparator countries taken together account for 15.8% publication share to the region -- Pakistan (5329, 8.6% share), Bangladesh (2256, 2.3% share), Sri Lanka (1415, 2.3% share) and Nepal (799, 1.3% share) during 1996-2013.

India's publication share in South Asia output has declined in 14 years marginally by 1.68% (down from 84.93% to 83.25%). On the other hand, combined publication share of other four South Asia countries (Pakistan, Bangladesh, Sri Lanka and Nepal) has gone up by 1.68% (from 15.07% to 16.75%) in 14 years from 1996-2000 to 2009-2013 (Figure 3).

Figure 3. Comparison of Publications Share of South Asia Countries in Social Sciences

	India	Pakistan	Bangladesh	Sri Lanka	Nepal
■ % Share	84.2	8.6	3.6	2.3	1.3
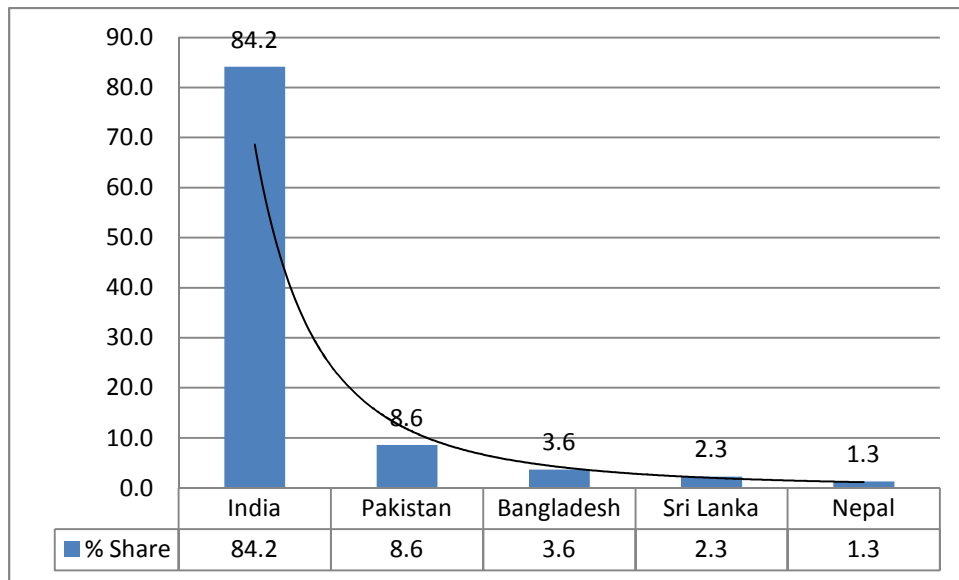
Figure 4: Gap between India and Comparator South Asia Countries in their National Publication Share in Social Sciences: 1996-2013

Based on Five-Year Moving Aggregate data
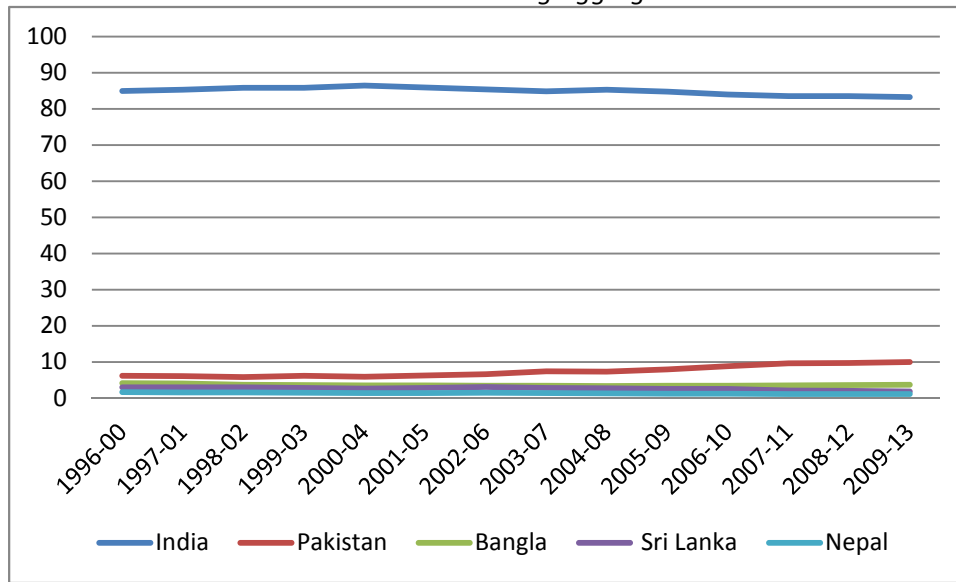
Within the confines of South Asia region, there is a great social science research divide between nations that publish papers in bulk and those that publish very little. India which alone published prolific share between 83% and 85% is a nation that publishes social science research in bulk compared to Pakistan, Bangladesh, Sri Lanka, and Nepal which as a nation published very little in social science between 3% and 6% in 14 years between 1996-2000 and 2009-2013. The gap between India and comparator countries in their national publication share in social sciences is indeed wide and it continued to persist for 14 long years period between 1996-2000 and 2009-2013 (Figure 4).

4.4 Citation Visibility & Impact

All five South Asia countries averaged their relative citation index below the world average of 1. This implies that visibility and impact of social sciences research in South Asia countries has been less than that of the world average. Sri Lanka tops among South Asia countries on relative citation index in social sciences (0.920), followed by Nepal (0.878), Bangladesh (0.811), India (0.483) and Pakistan (0.361). India's low RCI score (0.483), despite its prolific publication share in South Asia (84%), points to the necessity of analysing the efficacy of public funding with respect to quality, and its adjustment to newer research areas (Table 2 and Figure 5).

Table 2: Relative Citation Index of South Asia Countries in Overall Social Science

Period	World	South Asia	India	Pakistan	Bangladesh	Sri Lanka	Nepal
1996-00	1	0.512	0.462	0.456	0.861	0.746	0.931
2009-13	1	0.668	0.659	0.497	0.829	1.070	1.172
Mean	1	0.507	0.483	0.361	0.811	0.920	0.878

Figure 5. RCI of South Asia Countries in Social Sciences: 1996-2013
*Based on Fiver-Year Moving Aggregate data*
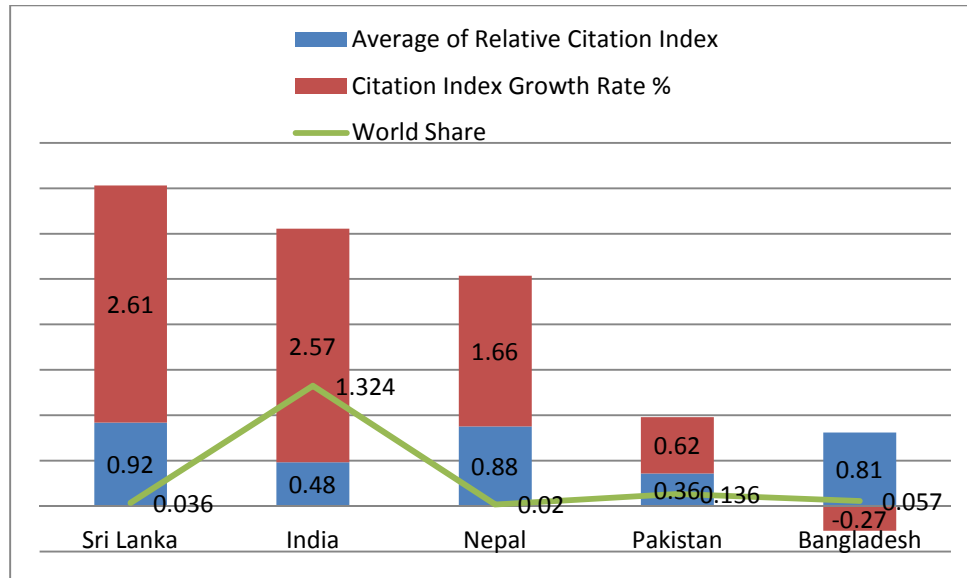
South Asia region witnessed 1.92% rise in its relative citation index overtime, up from 0.512 to 0.688. But South Asia countries individually showed mixed trend in RCI change. India averaged 2.57% increase up from 0.462 to 0.659, Sri Lanka (2.61%) up from 0.746 to 1.070, Nepal (1.66%) from 0.931 to 1.172, and Pakistan (0.62%) up from 0.456 to 0.497. Bangladesh's RCI slipped marginally 0.37% down from 0.861 to 0.829 (Table 2 and Figure 5).

4.5 International Collaboration

Co-authored papers serve as a measure of collaborative efforts in research. In addition, internationally co-authored papers are known to give the country more visibility and impact in research. Internationally co-authored papers account for 14.61% share in the total regional output by South Asia countries in social sciences published during 1996-2013. Nepal tops among South Asia countries accounting for (61.58%) highest share of internationally co-authored papers in the national output. Bangladesh ranked second accounting for 52.44% national share, followed by Sri Lanka (48.34% share), Pakistan (28.52% share), and India (7.15% share) (Table 3 and Figure 6).

**Figure 6: Share of Internationally Collaborative Papers in the National Output
of South Asia Countries in Social Sciences: 1996-2013**
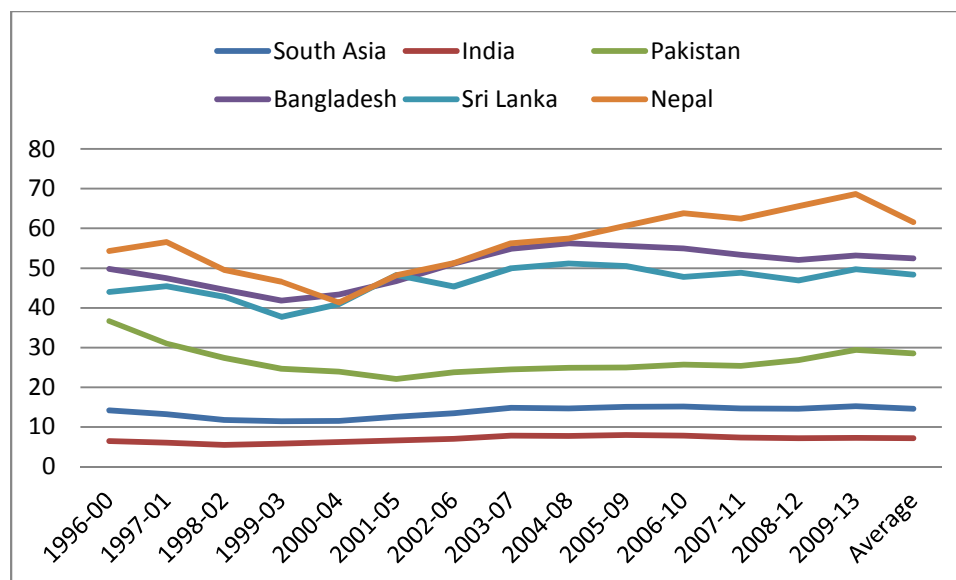
Table 3: International Collaborative Output Share of South Asia Countries in **Overall Social Science**

Period	South Asia	India	Pakistan	Bangladesh	Sri Lanka	Nepal
1996-00	14.17	6.41	36.68	49.80	43.96	54.29
2009-13	15.23	7.24	29.43	53.18	49.70	68.67
Mean	14.61	7.15	28.52	52.44	48.34	61.58
CAGR	0.52	0.87	-1.56	0.47	0.88	1.69

India's percentage share of internationally collaborative papers in its national output was the least in comparison to other South Asia countries. In 14 years Pakistan's national share of internationally collaborative papers slided by 1.56%. On the other hand, national share of comparator countries in the region increased between 0.47 and 1.69% during the same period. The negative shift seen in the national share of Pakistan in internationally collaborated papers alludes to lesser attention that the country pays to international collaboration in social science research (Table 3 and Figure 6).

4.6 Distribution of Publications Productivity across Main Subjects

4.61 Comparison of Publication Growth Rate across Subjects: South Asia vs World

South Asia displayed 13.5% growth a year in social sciences in 14 years relative to the whole world (8.7%). Besides, South Asia displayed faster growth in all five fields of social sciences relative to the whole world. Economics, Econometrics, and Finance has seen the strongest growth (17.32%) within South Asia vs whole world (8.84%). In Business, Management & Accounting displayed 13.39% growth in South Asia vs whole world (7.33%). South Asia displayed 13.16% growth in Social Sciences-General vs whole world (8.38%). In Psychology South Asia's growth was 13.01% vs whole world (5.41%). South Asia's growth in Decision Science was 10.68% vs whole world (8.57%). This analysis covers data between 1996-2000 and 2009-2013 (Table 4 and Figure 7-8).

**Table 4: Compounded Annual Growth Rate across Main Fields in Social Sciences**

| Main Fields of Social Sc	World	South Asia	India	Pakistan	Bangladesh	Sri Lanka	Nepal
SSG	8.38	13.16	13.52	14.19	10.54	8.42	9.98
BMA	7.33	13.39	12.86	22.79	19.64	11.09	14.61
DS	8.57	10.68	10.11	21.67	12.60	20.74	3.72
EEF	8.84	17.32	16.87	24.48	16.99	11.01	12.80
Psy	5.41	13.01	12.73	17.42	12.87	13.88	8.78
Mean	7.7	13.5	13.2	20.1	14.5	13.0	10.0
SSG=Social Sciences-General; BMA=Business, Management & Accounting; EEF=Economics, Econometrics, and Finance; Psy=Psychology; DS=Decision Science							

Pakistan's displayed strongest growth (ranging between 14.19 ~ 24.48% a year in 14 years) in all five subject fields of social sciences, followed by Bangladesh (10.54 ~ 19.64%) and India (10.11 ~ 16.87%). Sri Lanka displayed fastest growth in Decision science (20.94%) and slowest in Social Sciences-General (8.42%). It displayed 11.01% growth in Economics, Econometric, & Finance, 11.09% in Business, Management & Accounting), and 13.88% in Psychology. Nepal displayed fastest growth in Business, Management & Accounting (14.61%) and slowest in Decision Science (3.72%). It displayed 12.70% growth in Economics, Econometrics, & Finance, 8.78% in Psychology and 9.98% in Social sciences-General (Table 4 and Figure 7-8).

Figure 7. Comparison of Growth in Social Sciences Research: World Vs South Asia
Based on Five-Year Moving Aggregate Data
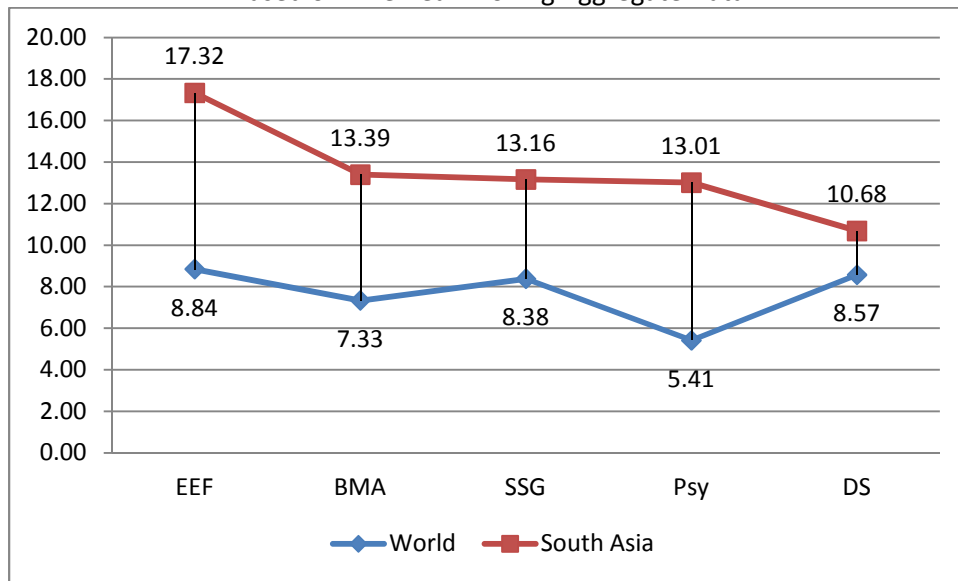
Figure 8. Publications Growth Rate of Comparator Countries in South Asia
Subject-wise Comparison
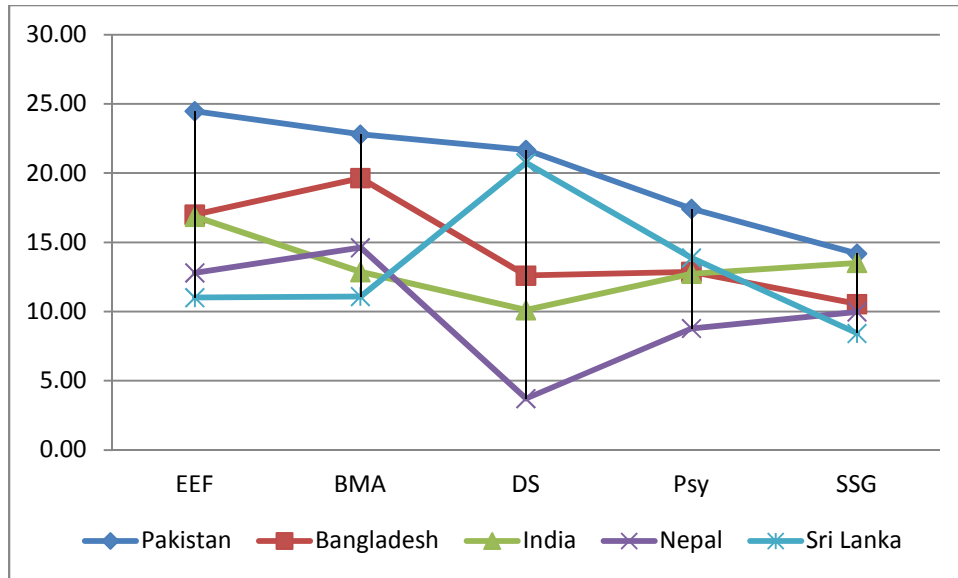
4.62 National Research Priorities of Individual South Asia Countries

South Asia countries share similar national research priorities in social science disciplines. The distribution of research publications across subject fields is a broad reflection of research priorities of a country. In order to get an insight into research priorities of South Asia countries, their national publication shares were estimated and compared across five fields in social sciences: i) Social Science-General, ii) Business, Management, & Accounting, iii) Economics, Econometrics, & Finance, iv) Decision Science, and v) Psychology. Comparison of research publications data across five subject fields reveals that South Asia countries share similar national research priorities in social science disciplines (Table 5 and Figure 9).

Social science–general has emerged as the top priority research area of interest in every South Asia nation; each country displayed its highest national percentage share in this very field only. However, South Asia countries differ in their national share figures in this field significantly. Across South Asia, Nepal displayed strongest national percentage share in social science-general (75.84%), followed by Bangladesh, 64.94%; Sri Lanka, 61.48%; Pakistan, 57.33%; and India, 43.33%.

Business, Management & Accounting is the 2nd top priority research area of interest in every South Asia nation; each country displayed its 2nd highest national percentage share in this field only. However, South Asia countries differ in their percentage share figures in this field differed significantly. Across South Asia, India displayed strongest national publication share in business, management & accounting (26.96%), followed by Pakistan, 16.33%; Sri Lanka, 15.5%; Bangladesh, 12.59%; and Nepal, 5.51%.

Decision Science is the 3rd top priority area of research of interest in every South Asia nation; each country displayed its 3rd highest national percentage share in this field only. However, South Asia countries differ significantly in their national share figures in this field. Across South Asia, Pakistan displayed strongest national publication share in this field (15.05%), followed by Bangladesh, 13.3%%; India, 12.78%; Nepal, 11.14%; Sri Lanka, 11.02%.

Table 5: National Research Priorities of South Asia Countries in Social Sciences
*(Based on FiveYear Moving Aggregate Data)*

Region	SSG	BMA	DS	EEF	Psy
World	47.91	19.12	10.65	6.16	16.16
South Asia	46.16	24.97	12.94	11.3	4.63
India	43.33	26.96	12.78	12.26	4.66
Pakistan	57.33	16.33	15.05	7	4.3
Bangladesh	64.94	12.59	13.3	5.41	3.77
Sri Lanka	61.48	15.05	11.02	7.28	5.16
Nepal	75.84	5.51	11.14	1	6.51
SSG=Social Sciences-General; BMA=Business, Management & Accounting; EEF=Economics, Econometrics, and Finance; Psy=Psychology; DS=Decision Science					

Economics, Econometrics, & Finance is the 4th priority area of research of interest in all South Asia nations; each country displayed its 4th highest national percentage share in this field only. However, South Asia countries differ significantly in their national share figures in this field. Across South Asia, India displayed strongest national publication share is this field (12.26%), followed by Sri Lanka, 7.28%, Pakistan, 7%;, Bangladesh, 5.41%; and Nepal, 1%.

Psychology is the least prolific research area of interest amongst South Asia nations; each country displayed its least national percentage share in this field only. However, South Asia countries differ significantly in their national share figures in this field. Across South Asia, Nepal contributed strongest national share in this field (6.51%), followed by Sri Lanka, 5.16%, India, 4.66%; Pakistan, 4.3%, and Bangladesh, 3.77%.

Figure 9: Research Priorities of South Asia Countries in Social Sciences
(Based on Five-Year Moving Aggregate Data)
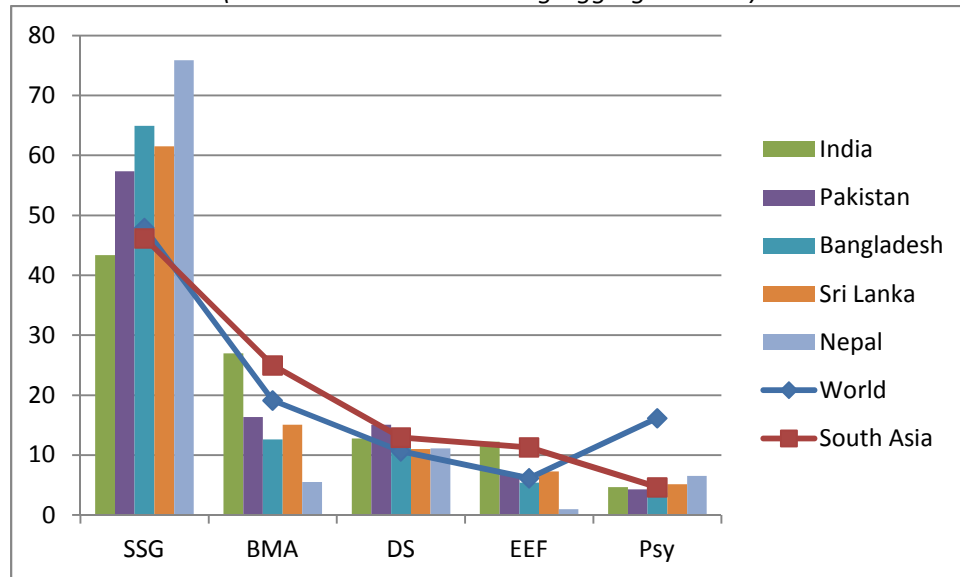
4.63 Comparison of Research Priorities: South Asia vs World

South Asia and the 'whole world' do not follow similar distribution pattern in select main fields in social sciences. Psychology has been the least prolific area in South Asia accounting for 4.63% share in the combined output by comparator countries in the region; but in the world output ranking psychology is the 3rd priority area in social sciences (16.16%).

Economics, Econometrics, & Finance is the least prolific area in the world's output (6.16% share), but in South Asia's output it is the 2nd least priority area (11.3%). 'Social Sciences-General' has continued to remain as the top priority area in both South Asia's output and world's output. Business, Management, & Accounting stands as the 2nd priority area of both South Asia and the world. Decision Science ranks as the 3rd priority research area for South Asia (12.94% share) but in the world output (10.65% share) it ranks as the 4th priority research area (Table 6).

Table 6: National Research Priorities of South Asia Countries in Social Sciences
(Based on Five-Year Moving Aggregate Data)

World Vs Regional Distribution	SSG	BMA	DS	EEF	Psy
World Output Distribution	47.91	19.12	10.65	6.16	16.16
South Asia Output Distribution	46.16	24.97	12.94	11.3	4.63
World Rank	1	2	4	5	3
South Asia Rank	1	2	3	4	5
SSG=Social Sciences-General; BMA=Business, Management & Accounting; EEF=Economics, Econometrics, and Finance; Psy=Psychology; DS=Decision Science					

Table 7: Specialisation Index across Subject Fields in Social Sciences
(Based on Five-Year Moving Aggregate Data)

| Region/Country	SSG	BHA	Psy	EEF	DS
India	-0.04	0.05	0.00	0.01	0.05
Pakistan	0.23	-0.41	-0.01	-0.18	-0.49
Bangladesh	0.02	-0.13	-0.07	0.15	0.10
Sri Lanka	-0.05	0.22	0.12	-0.02	-0.11
Nepal	0.10	-0.51	0.15	0.01	-0.48
South Asia	0.00	0.14	-0.58	0.00	0.30
SSG=Social Sciences-General; BMA=Business, Management & Accounting; EEF=Economics, Econometrics, and Finance; Psy=Psychology; DS=Decision Science					

Relative specialization index is about the publication share of South Asia from across different main subject fields in social sciences relative to share of these fields in the whole world publications. If specialisation index is above 'zero', it indicates that a country has a relatively higher share in a particular field of social science than its overall share in world total publications. If it is below 'zero' it indicates that a country's specialisation in the field is below the world average (Table 7 and Figure 10-11).

Comparison of South Asia's research output on specialisation index reveals that both South Asia and the whole world do not follow similar distribution pattern across select fields.

In social sciences-general Pakistan (0.23) and Nepal (0.10) displayed their research activity above the world average. Bangladesh is just close to world average (0.02). The research activity of both India (-0.04) and Sri Lanka (-0.05) in this field is marginally below world average.

Figure 10: Specialization Index across Subject Fields in Social Sciences
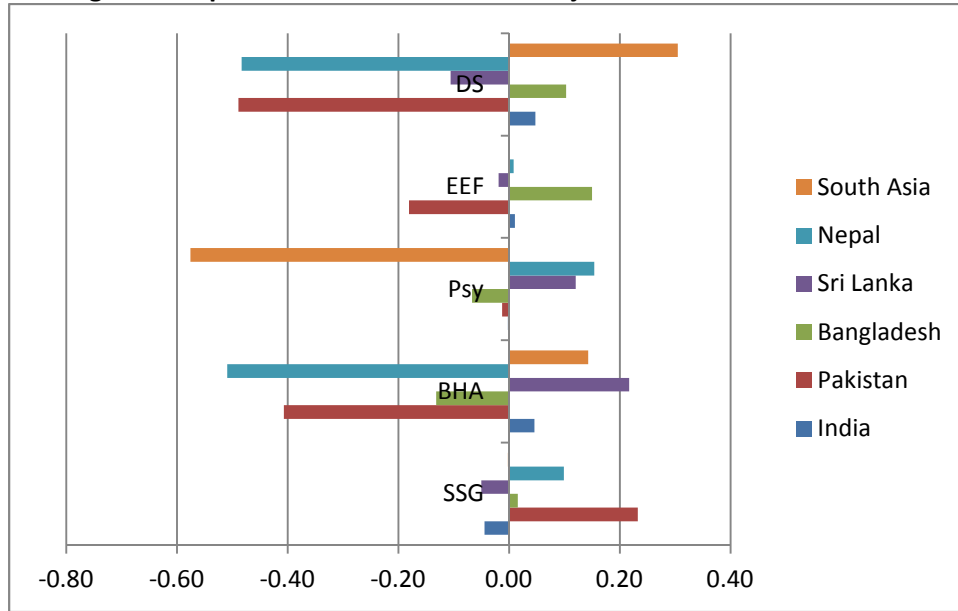
Figure 11: Specialization Index of South Asia Countries across Subject Fields in Social Sciences
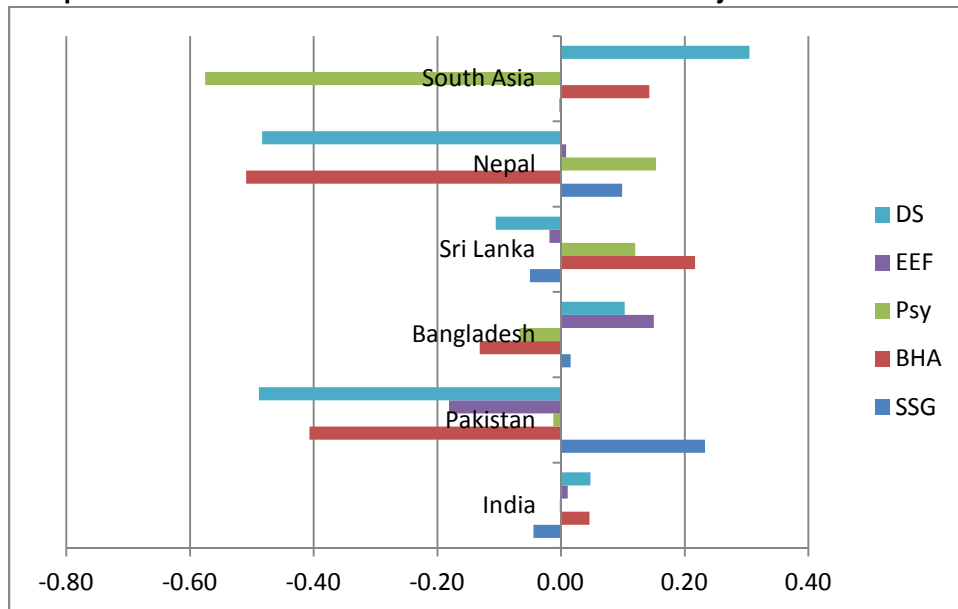
In Business, Management, & Accounting Nepal (-0.51), Pakistan (-0.41), and Bangladesh (-0.13) have displayed their research activity much below the world average. Sri Lanka (0.22) is well above world average in this field while India's activity (0.05) is marginally above world average.

In Decision Science Pakistan (-0.49), Nepal (-0.48), and Sri Lanka (-0.11) have displayed their research activity much below the world average. Bangladesh (0.22) and India (0.05) are marginally above world average.

In Economics, Econometrics, & Finance Pakistan (-0.18) is below average, Nepal (-0.02) marginally below average. Bangladesh is above the world average (0.15). Both India (0.01) and Sri Lanka a(0.01) are marginally above world average.

In Psychology both Nepal (0.015) and Sri Lanka (0.12) are above the world average. (0.15). Both India (0.01) and Sri Lanka a(0.01) are marginally above world average. Bangladesh (-0.07) and Pakistan (-0.01) are marginally below average. India (0.00) is neither below nor above world average.

South Asia is well above the world average (0.30) in Decision Science (0.30) and Business, Management, & Accounting (0.14) but below average (-0.58) in Psychology. In Social Science-General and Economics, Econometrics, & Finance its research activity is at par with the world average.


4.64 Relative Citation Index across Subjects
Relative citation impact of South Asia countries has been below the world average of 1 in all main fields of social sciences. Social Sciences-General (which also is accounting for largest share in South Asia's combined output in the field) has shown the relative citation index (0.507 score). RCI is highest in Decision Science (0.622), followed by Psychology (0.48 score), Business, Management & Accounting (0.447 score), and Economics, Econometrics & Finance (0.383 score) (Table 8 and Figure 12).

Table 8: RCI of South Asia Countries in Social Sciences

Region/Countries	SSG	BMA	Psy	EEF	DS
Sri Lanka	0.92	0.764	0.705	0.527	0.164
Nepal	0.878	0.468	0.883	0.681	0.123
Bangladesh	0.811	0.368	0.129	0.612	0.494
India	0.483	0.458	0.479	0.379	0.652
Pakistan	0.361	0.229	0.458	0.267	0.275
South Asia	0.507	0.447	0.48	0.383	0.622
SSG=Social Sciences-General; BMA=Business, Management & Accounting; EEF=Economics, Econometrics, and Finance; Psy=Psychology; DS=Decision Science					

Figure 12. Comparison of South Asia Countries on RCI across Subject Fields in Social Sciences
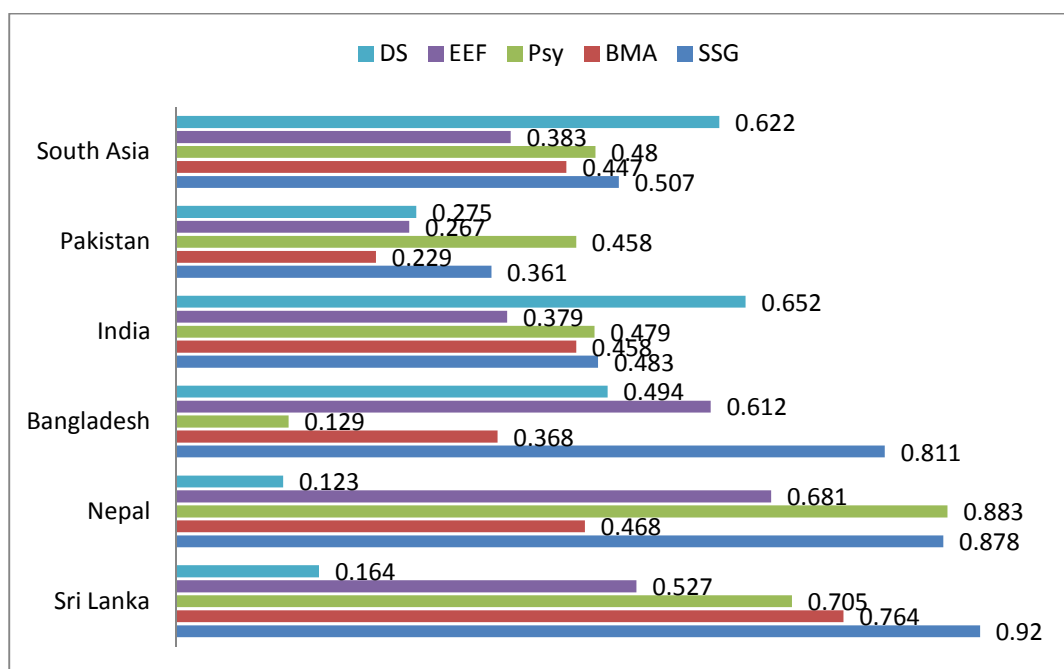
4.65 National Share of South Asia Countries in International Collaboration across Subjects

The South Asia countries differ widely in their national share of internationally collaborative papers across main social science fields (Table 9 and Figure 13).

Psychology is the most sought after area in South Asia region for international collaboration in research. Except for Pakistan, all comparator South Asia countries registered highest national share of internationally co-authored papers in psychology. Nepal's national share of international collaborative was 84.72%, Bangladesh (75.29%), Sri Lanka (67.21%), Pakistan (43.67%), and India (34.03%).

Table 9: Share of Internationally Co-authored Papers in the National Output of South Asia Countries in Social Sciences Fields: 1996-2013

Comparator Countries	Decision Science	Psychology	Economics, Econometrics, & Finance	Business, Management, & Accounting	Social Science-General
Nepal	87.5	84.62	66.29	65.9	58.25
Bangladesh	53.28	75.29	58	55.99	49.21
Sri Lanka	32.04	67.12	55.77	49.77	47.01
Pakistan	52.82	43.67	31.42	32.18	22.62
India	30.99	34.03	19.97	13.8	16.51

Decision Science is the 2nd most sought after area for international collaboration in research by all comparator South Asia countries except for Sri Lanka. Nepal registered 87.5% share followed by Bangladesh (53.28%), Pakistan (52.82%), and India (30.99%). For Sri Lanka, Decision Science is the least priority area for international collaboration (32.04%).

Economics, Econometrics, & Finance is the 3rd most sought after area for international collaboration in research by all comparator South Asia countries – Nepal (66.29%), Bangladesh

Figure 13. Comparison of National Share of South Asia Countries in Internationally Co-authored Papers across Main Fields of Social Sciences
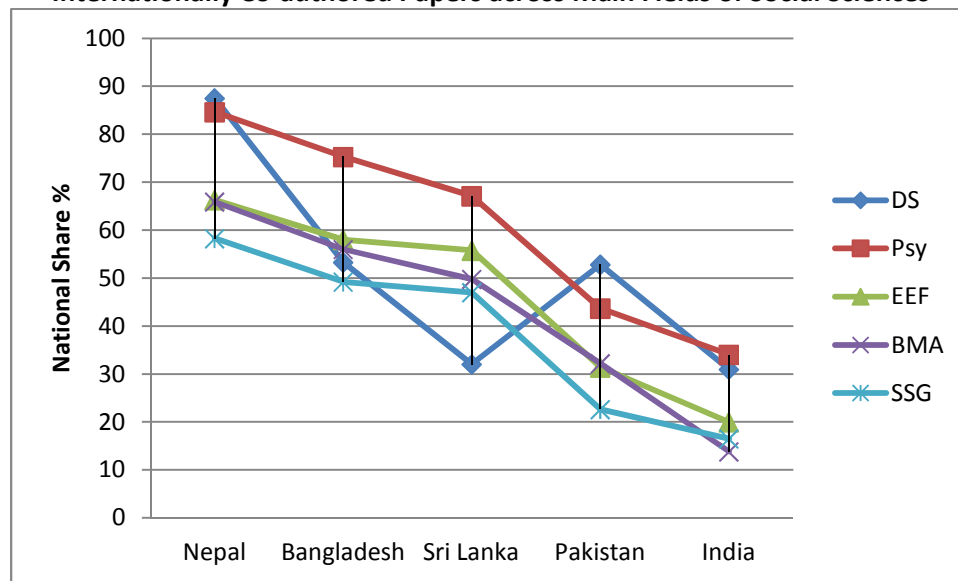

Business, Management & Accounting is the 4th most sought after area for international collaboration in research by all comparator South Asia countries - Nepal (65.9%), Bangladesh (55.99%), Sri Lanka (49.77%), Pakistan (32.18%), and India (13.8%).

Social Sciences-General is the least prolific area in social sciences for international collaboration in research in South Asia countries - Nepal (58.25%), Bangladesh (49.21%), Sri Lanka (47.01%), Pakistan (22.62%), and India (16.51%).

4.652 - National Share of Internationally Co-authored Papers across Comparator Countries

Nepal's national share of internationally co-authored papers has been the largest across all main fields of social sciences relative comparator countries in the region. National share of Bangladesh's has been 2nd largest across all fields of social sciences, except Decision Science.

Figure 14. Comparison of Internationally Co-authored Papers by Comparator Countries in South Asia
(Based on Five-Year Moving Aggregate Data)
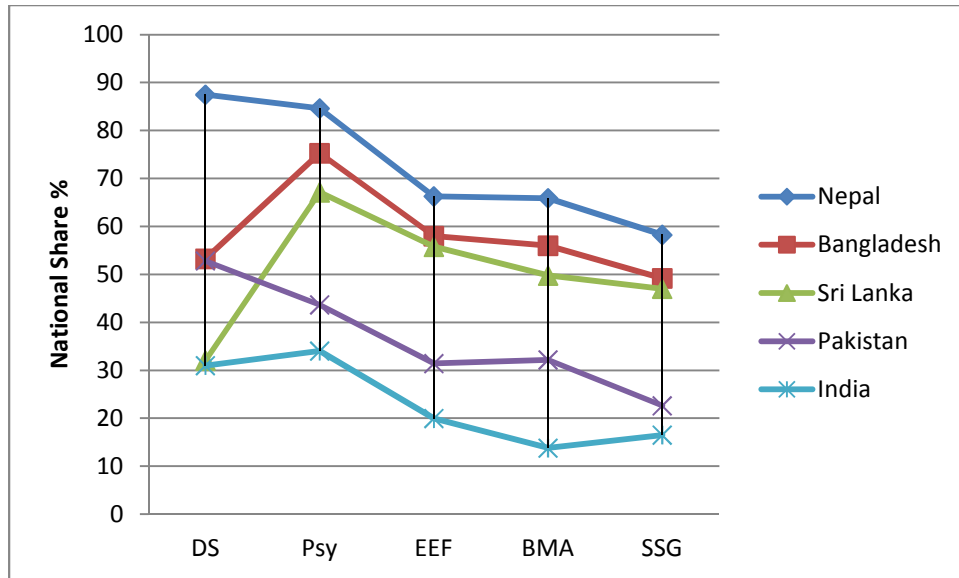
National share of Sri Lanka's has been 3rd largest across all fields of social sciences, except Decision Science. Pakistan has been the 4th largest country for its national share of internationally collaborative papers across all fields of social sciences. India's share of internationally collaborative papers compared to other comparator countries has been the lowest across all fields of social sciences. It is a pointer for investigation why India should rank at the bottom in South Asia on international collaboration even though its share in South Asia output in social Sciences research is as high as 80% (Figure 14).

5. Conclusion

Research papers in journals are considered as valid indicators of research activity of a country. Bibliometric analysis of publication and citation data of five South Asia countries in social science during the years 1996-2013 reveals that social science research in South Asia is growing exponentially, doubling in publication size every six years. South Asia averaged 13.37% growth a year compared to world average of 7.73%.

Within South Asia region, there is a great divide in social sciences research between nations that publish papers in bulk and those that publish very little. India alone accounts for prolific share 84.2% in South Asia region compared to 6.4% by Pakistan and 3.2% by Bangladesh. Distribution of social science research in the region is highly skewed. India accounts for bulk of the productivity in the region. On the other hand, Pakistan, Bangladesh, Sri Lanka, and Nepal are relatively smaller regional players in social science research together accounting for 16% output.

South Asia countries differ sharply in their growth rates in social science research. Pakistan tops the region, registering 17.28% fastest growth a year followed by India (13.21%), Bangladesh (12.43%), Nepal (10.31%), and Sri Lanka (9.76%). Pakistan's publications growth rate in social science (17.28%) is nearly twice that of Sri Lanka (9.76%).

South Asia countries share similar national research priorities in social science disciplines. Social Science-General is their top research priority area followed by Business, Management, & Accounting; Economics, Econometrics, & Finance; Decision Science; and Psychology. Despite similarities in their research priorities, South Asia differ in their national share figures in each main subject field.

South Asia is still not a very prolific region in social sciences in the global context. Its world share is relatively low, merely 1.573% in 14 years. India's with its world share of 1.324% leads the region. However, world shares of comparator countries Pakistan, Bangladesh, Sri Lanka, and Nepal are abysmally low ranging between 0.02% and 0.136%. If South Asia is to become a strong and leading world player in social science research, it must aim to strengthen its world share and also accelerate growth in the region, far above 13.37% a year. Research collaboration coupled with higher spending on R&D in social science research can foster growth in South Asia.

South Asia and the 'whole world' do not follow similar distribution pattern across select main fields in social sciences. Though Psychology ranks as the least prolific area in South Asia, but in the world output distribution it ranks as the 3rd priority area. Economics, Econometrics, & Finance is the least prolific area in the world output, but in South Asia it ranks as the 2nd least priority area. South Asia and the 'whole world' nearly share similar distribution pattern in 'Social Sciences-General (top priority)', 'Business, Management, & Accounting (2nd ranking)' and Decision Science (4th in world ranking and 3rd in South Asia ranking).

Specialisation index of South Asia has been above the world average in all social sciences fields, except psychology. In Decision Science South Asia's index has been three times above the world average 'zero'. In Psychology, South Asia's specialisation index is 0.5, above the world average. Economics, Econometrics, and Finance has been seen as the fastest growing subject field (17.32%) in South Asia relative to its world average (8.84%). However, in terms of quality indicator 'relative citation index' South Asia countries have displayed performance below the world average in all main fields of social sciences.

In global context, South Asia is strong in quantity but not in quality output in social sciences research. Visibility and impact of social sciences research in South Asia countries has been below the world average; Sri Lanka' RCI score was 0.920 followed by Nepal (0.878), Bangladesh (0.811), India (0.483) and Pakistan (0.361). India's low RCI score (0.483), despite its prolific publication share in South Asia (84%), points to the necessity of analysing the efficacy of public funding with respect to quality, and its adjustment to newer research areas. Even at subject level RCI of South Asia countries is below world average ranging between 0.383 (Economics, Econometrics & Finance) and 0.507 Social Sciences-General.

South Asia is also not very strong in international collaboration; its share of internationally co-authored papers in the national output of each country is low (14.15% of the regional output). India's share of internationally collaborative papers has been the least across all fields of social sciences. It is a pointer for investigation why India should rank at bottom in South Asia countries ranking on international collaboration despite its prolific share (84%) in South Asia output in social Sciences research.

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