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INEQUAL EDUCATION INVESTMENT IN KARNATAKA: A DISTRICT-LEVEL STUDY WITH FOCUS ON UTTARA KARNATAKA (2011–2018)

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Abstract

This study provides a comprehensive analysis of the distribution of educational institutions in Karnataka and the growth of public expenditure on education across districts from 2011-2018. Focusing on Karnataka and the Karnataka-Uttara Karnataka region, the study examines the relative percentage of various educational institutions. It further explores district-wise trends in public expenditure, identifying significant disparities. The findings highlight the concentration of institutions in certain regions and the variability in public spending, with implications for regional development. Recommendations for policy intervention are made to improve equity in educational opportunities and resource allocation.

Key words: Educational infrastructure; Public expenditure on education; Karnataka- Uttara Karnataka; Regional disparities; Technical and vocational education.

Introduction

Education is a crucial driver of socio-economic development, enhancing human capital, reducing inequalities, and supporting sustainable growth. In Karnataka, a state with a diverse socio-economic landscape, the distribution of educational institutions and public spending on education highlights significant regional disparities. While overall progress has been made in education, certain regions, particularly the Karnataka-Uttara Karnataka region, face challenges in accessing equitable educational infrastructure, especially in higher education and technical training. Existing studies have shown that public spending on education positively impacts economic growth and educational attainment. However, much of this research focuses on national or macro-level outcomes, neglecting critical regional disparities. Specifically, the distribution of technical and vocational institutions, which are vital for regional economic development, has been largely overlooked. This gap is particularly evident in the Uttara Karnataka region, where uneven distribution of higher education and technical institutions creates localized access issues. Furthermore, while the impact of public expenditure on education has been explored at the national and state levels, there is limited understanding of how these funds are allocated across districts. District-level disparities in public spending can lead to unequal educational opportunities, particularly in underserved areas like the Uttara Karnataka region, which further exacerbates social and economic inequalities. This study aims to fill these gaps by assessing the distribution of colleges, universities, and technical institutions

in Karnataka and the Uttara Karnataka region and analyzing district-wise public expenditure trends on education from 2011-2018. By identifying disparities in educational infrastructure and resource allocation, the study seeks to provide recommendations for improving the equitable distribution of educational resources across districts.

This research contributes to the existing literature by focusing on regional disparities in educational infrastructure and district-level public expenditure. In particular, it highlights the underinvestment in technical and vocational institutions, which are crucial for regional development, in the Uttara Karnataka region. By offering insights into district-level expenditure patterns, this study provides a more nuanced understanding of how public education spending can be aligned with regional needs to promote inclusive socio-economic growth across Karnataka.

Review of literature

Singh, Deepti & Shastri, Shruti (2020) The study examines the relationship between public education spending, secondary education attainment, and unemployment in India from 1987-2017, using the ARDL approach. The results show a negative impact of secondary education on unemployment but little influence of public education spending on educational attainment and unemployment. **Khan, B. (2013)** This research highlights the overall positive growth in public expenditure in Karnataka over two decades, though education spending has reduced as a share of the state's GDP. The focus is on general expenditure trends rather than specific educational outcomes. **Kushwaha, Manisha & Tiwari, Radha (2019)** The authors explore the relationship between public education spending and GSDP in Gujarat. They conclude that public expenditure contributes 67% to GSDP changes and finds a positive association between public education spending and economic growth. **Suwandaru, Agung & Alghamdi, Thamer & Nurwanto (2021) Summary**: This research analyzes the relationship between education spending and economic growth in Indonesia. It concludes that public education spending does not have a significant short-term relationship with economic growth. **Arshad Ali, Roslan Abdul Hakim et al. (2016)** The study examines higher education and its influence on GDP in Pakistan using the Granger causality test, concluding that higher education enrollment positively affects GDP. **Jana, Sebak & Maiti, Adwaita (2019)** This study looks at state-level disparities in public higher education expenditure across India. It finds that the elasticity of higher education spending to GSDP is less than one in many states, suggesting underfunding in public higher education. **Koka, Dr-Aabid & Bohre, Dr. (2019)** This study examines public education spending and its impact on the Education Development Index (EDI) in Jammu and Kashmir, finding a weak relationship between spending and educational outcomes. **Mitra, Ananya & Rout, Himanshu (2017)** This study focuses on the spending patterns of Indian states, specifically Odisha, and the low share of education expenditure relative to GDP. It calls for an increase in higher education funding to address unemployment among graduates.

Objectives:

1. To analyze the distribution of educational institutions in Karnataka and the Uttara Karnataka region, focusing on various types of institutions such as universities, polytechnics, and ITIs.
2. To assess the relative percentage of institutions in the Uttara Karnataka region compared to the overall number in Karnataka.
3. To examine the trends in public expenditure on education across different districts of Karnataka from 2011-2018.
4. To identify regional disparities in educational infrastructure and public spending.
5. To provide recommendations for improving equity in the distribution of educational resources across districts.

Research Methodology

The methodology of this study is designed to provide a thorough analysis of the distribution of educational institutions and trends in public expenditure on education across Karnataka, particularly focusing on the Karnataka- Uttara karnataka. It employs both descriptive and statistical analysis to explore disparities and trends from 2011-2018. Data on institutions such as Government Polytechnic, ITIs, engineering colleges, and universities were obtained from relevant government reports and educational surveys conducted within the state of Karnataka. fficial government reports on public spending, such as the Karnataka State Budget and education department publications, served as the secondary sources of the data. **Descriptive Statistics tools were** were used to analyze the consistency and variability of public expenditure on education across different districts. The standard deviation helps identify the extent of fluctuation, while the CV provides a normalized measure of variability, allowing comparisons across districts. Mean values were used to assess the average spending trends over the years. A relative percentage analysis was aslo used to compare the distribution of institutions in the Uttara Karnataka region versus the total in Karnataka. This helped highlight disparities in the allocation of educational infrastructure, especially in higher education and technical institutions. This methodological approach ensures a comprehensive understanding of both the distribution of educational institutions and the patterns of public spending on education across Karnataka including Uttara Karnataka.

Results and Discussions

Table 1 : List of College/Institutions/University Existing in Karnataka and **Uttara Karnataka** Region and Relative %..

Sl. No	**Name of College/Institution/University**	**Total No. in Karnataka**	**Total No. in** Uttara Karnataka **Region**	**In %**
1	Institutions	10	1	10
2	Central University	1	1	100
3	Deemed to be University	14	0	0.0
4	State University	36	4	11.1

5	Private University	10	2	20.0
6	Govt Polytechnic/GTTC	92	20	21.7
7	Govt Engineering College	14	4	28.6
8	Govt Engineering University College	3	0	0.0
9	Govt ITI's	268	55	20.5
10	Govt KGTTI	5	1	20.0
11	Govt CITS Centre	2	0	0.0
12	NSTI	1	0	0.0
13	ITOT	1	0	0.0
14	Model ITI	3	0	0.0
15	PPP ITI	76	15	19.7
16	VTIP	30	5	16.7
17	Udyoga Project	150	33	22.2

Source: AISHE reports

The data in Table1 shows the distribution of various educational institutions across Karnataka and the Uttara Karnataka region. A total of 10 institutions classified as "institutions" exist in Karnataka, of which only 1 (10%) is located in the Uttara Karnataka region. Similarly, among the 36 state universities in Karnataka, 4 are located in the Uttara Karnataka region, representing 11.1%. For private universities, 2 out of 10 are in the Uttara Karnataka region, accounting for 20%. Interestingly, central universities show full representation, with 1 out of 1 located in the Uttara Karnataka region. The technical institutions such as Government Polytechnic and ITIs show a more significant presence in the Uttara Karnataka region. Government polytechnics have a 21.7% representation in the Uttara Karnataka region, with 20 out of 92 located there. Similarly, 20.5% of the government ITIs are in the Uttara Karnataka region. However, some categories, such as Government Engineering Universities and specialized training centers like NSTI and Model ITI, show no representation in the Uttara Karnataka region, highlighting an area for potential improvement in technical and vocational education.

Table 2: Districts-Wise Trends and Growth in Public Expenditure on Education in Karnataka

District	**2011-2012**	**2012-2013**	**2013-2014**	**2014-2015**	**2015-2016**	**2016-2017**	**2017-2018**
Bengaluru Division							
Bengaluru	0.469	0.174	-0.118	0.150	0.123	0.373	0.122
Bengaluru (R)	0.005	-0.706	3.498	0.151	-0.315	1.388	-0.108
Chickballapur	0.026	0.117	730.40	-0.999	0.078	0.071	0.067
Chitradurga	0.077	0.104	0.608	0.108	0.109	0.401	-0.498
Davanagere	0.060	0.137	0.843	0.024	0.138	0.585	0.045
Kolar	-0.023	0.048	0.324	0.106	0.081	0.520	0.054
Ramnagara	-0.003	0.102	-0.112	0.107	0.124	0.428	0.069
Shivamogga	0.034	0.031	-0.995	0.091	0.088	0.528	0.051

Tumkuru	-0.068	0.101	18.663	-0.295	-0.430	-0.653	0.067
Belagavi Division							
Bagalkot	0.093	0.140	-0.057	0.105	0.118	-0.068	0.156
Belagavi	0.014	0.097	-0.053	0.140	0.072	0.196	-0.335
Dharwad	0.078	0.130	0.204	0.165	0.120	0.029	0.170
Gadag	0.588	0.126	0.270	0.255	0.045	0.310	-0.545
Haveri	0.003	0.099	19.673	-0.914	-0.004	0.288	0.086
Uttara Kannada	-0.008	0.020	0.685	0.089	0.064	0.263	0.054
Vijayapura	0.106	0.073	-0.096	0.283	-0.017	0.273	0.017
Kalaburagi Division							
Ballari	0.034	0.105	-0.051	0.264	0.101	0.363	117.12
Bidar	0.085	0.138	-0.079	0.129	0.087	0.673	0.117
Kalaburagi	0.080	0.009	1.579	0.140	0.053	0.605	0.052
Koppal	0.054	0.080	0.597	0.100	0.158	0.410	0.076
Raichur	0.015	0.086	33.651	0.121	0.084	0.095	0.079
Yadgir	0.065	-1.348	-3.899	0.055	0.074	0.494	0.039
Mysuru Division							
Chamarajanagar	0.013	-0.041	7.141	-0.868	0.120	0.502	0.034
Chikkamagaluru	-0.009	0.088	0.854	0.091	0.076	0.519	0.145
Dakshina Kannada	-0.019	0.083	0.298	0.108	0.055	0.358	0.053
Hassan	-0.017	0.052	0.848	0.219	-0.022	0.681	0.048
Kodagu	0.034	0.101	-0.096	0.096	-0.007	2.181	0.013
Mandya	0.063	0.092	0.357	0.110	0.014	0.698	0.033
Mysuru	-0.039	0.088	0.549	0.160	0.212	0.442	0.100
Udupi	-0.023	0.077	0.175	0.016	0.039	0.809	0.015

	2011-2012	**2012-2013**	**2013-2014**	**2014-2015**	**2015-2016**	**2016-2017**	**2017-2018**
Mean	109952	113566	244645	32920	31573	36448	145464
Std.	542912	559930	1109688	65563	61663	63604	594564
CV	4.94	4.93	4.54	1.99	1.95	1.75	4.09

Source: AISHE reports

In the above table the district-wise analysis of public expenditure on education reveals several trends between 2011 and 2018. A few key observations include: Public expenditure fluctuated significantly, with Bengaluru Urban showing a growth rate as high as 0.469 in 2011-2012 but falling to -0.118 in 2013-2014. Similarly, Tumkuru saw a massive spike in expenditure growth in 2013-2014 (18.663) but experienced negative growth (-0.653) in subsequent years. Districts like Bagalkot and Dharwad show relatively consistent positive growth in public expenditure, with minor fluctuations. However, districts like Gadag saw a steep decline in 2017-2018 (-0.545).The standout case is Raichur, which experienced exponential growth in 2013-2014

(33.651). Other districts like Ballari showed strong growth toward the end of the period, with significant peaks in 2017-2018 (117.12).

Mysuru Division: The most notable trend is the highly fluctuating expenditure in Chamarajanagar, which saw a substantial spike in 2013-2014 (7.141) and negative growth in other periods.

The analysis of mean expenditure growth over the years shows an overall increase, but the high standard deviation (indicating variance across districts) points to significant disparities. The coefficient of variation (CV) remains above 4 in most years, highlighting the inconsistencies in expenditure across districts.

Regional Disparities and Implications

The results highlight significant regional disparities both in the distribution of institutions and public spending. The Uttara Karnataka region, while having a fair share of technical and vocational institutions, lacks representation in key areas like engineering universities and higher education institutions. Public expenditure trends show wide fluctuations across districts, with some experiencing sporadic growth while others face declines. This variability suggests an uneven allocation of resources that could exacerbate regional inequalities in education.

Conclusion and Suggestions.

The findings of this study indicate the need for more equitable distribution of educational resources across Karnataka. The Uttara Karnataka region, despite having a fair number of polytechnic and ITI institutions, lacks adequate representation in higher education. Similarly, the wide fluctuations in public expenditure across districts highlight the need for more consistent and targeted spending policies.

To address these disparities, the following suggestions are made:

1. **Increase Investment in Higher Education**: There is a need to establish more universities and engineering colleges in the Uttara Karnataka region to balance the educational infrastructure across Karnataka.
2. **Consistent Public Expenditure**: The state government should adopt policies that ensure more uniform allocation of education funds across districts, especially in underfunded regions.
3. **Focus on Technical and Vocational Education**: Given the importance of technical skills, increasing the number of technical and vocational institutions in underserved regions would promote more inclusive economic growth.
4. **Monitoring and Evaluation**: A robust system to monitor public spending and its impact on educational outcomes is necessary to ensure accountability and effective use of resources.

By addressing these issues, Karnataka can make significant strides toward achieving educational equity, which is critical for the state's long-term development.

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