# *Champion Services Sector Scheme- Action Plan for Education Services Sector*

**Government of Karnataka**

pwc

# *Table of Contents*


| | |
|---|---|
| Summary of the report | 9 |
| 1. Introduction | 15 |
| 2. Education Services | 20 |
| 3. Internationalization of Higher Education | 31 |
| 4. Education Technology | 47 |
| 5. Gross Enrolment Ratio in Higher Education in Karnataka | 62 |
| 6. Skill Development for Champion Service Sectors | 69 |
| 7. Implementation and Funding Plan | 75 |
| Annexure | 80 |

# *List of Figures*


| | |
|---|---|
| Figure 1: Summary of Proposed Action Plan for Education Services | 12 |
| Figure 2: Sectoral Share of GVA 2018-19 | 15 |
| Figure 3: Five Pillars of Champion Services Sector Scheme (CSSS) | 17 |
| Figure 4: Education Landscape in India | 20 |
| Figure 5: Growth Drivers of Indian Education Sector | 24 |
| Figure 6: Distribution of HEIs across Districts in Karnataka | 27 |
| Figure 7: Segment Selection for Education Services under CSSS in Karnataka | 29 |
| Figure 8: Top Destinations for Foreign Students | 32 |
| Figure 9: Top Exporters for Foreign Students | 33 |
| Figure 10: Courses pursued by International Students (% of Total Students Enrolled in Tertiary Education) | 33 |
| Figure 11: Top 10 Countries from which Foreign Students Come to India | 35 |
| Figure 12: State Wise Distribution of International Students in India | 36 |
| Figure 13: Comparison of Inbound International Student Mobility in 2017-18 and 2018-19 | 36 |
| Figure 14: Push and Pull Factors for Students to Study Abroad | 37 |
| Figure 15: Institutional Setup for Promoting Internationalization in UK | 41 |
| Figure 16: Global Ed-Tech Industry (USD Billion) | 48 |
| Figure 17: Number of Ed-Tech Companies Headquartered | 48 |
| Figure 18: Concentration of Ed-Tech Companies Per Capita | 49 |
| Figure 19: Parameters for EdTech Index | 50 |
| Figure 20: Online Education Market in India | 52 |
| Figure 21: Segments of Online Education Market- 2016 and 2021 | 53 |
| Figure 22: Growth Drivers for Ed-Tech in India | 54 |
| Figure 23: GER in Districts of Karnataka | 65 |

# *List of Tables*


| | |
|---|---|
| Table 1: District-wise Distribution of HEIs | 26 |
| Table 2: Global Best Practices for Promoting Internationalization of Higher Education | 39 |
| Table 3: Results of EdTech Index | 50 |
| Table 4: Global Best Practices to promote Ed-Tech | 57 |
| Table 5: Gross Enrolment Ratio for States and Union Territories in India | 62 |
| Table 6: District Wise GER in Karnataka (2018) | 64 |
| Table 7: Implementation and Funding Plan | 75 |
| Table 8: Summary of Discussions with Key Stakeholders | 80 |

# Glossary

| List of Abbreviations | |
|---|---|
| AISHE | All India Survey of Higher Education |
| CBSE | Central Board of Secondary Education |
| CII | Confederation of Indian Industry |
| CSSS | Champion Services Sector Scheme |
| Ed-Tech | Education Technology |
| EoDB | Ease of Doing Business |
| ESI | Employee State Insurance |
| FDI | Foreign Direct Investment |
| FKCCI | Federation of Karnataka Chambers of Commerce & Industry |
| GDP | Gross Domestic Product |
| GER | Gross Enrolment Ratio |
| GoI | Government of India |
| GoK | Government of Karnataka |
| GST | Goods & Services Tax |
| GVA | Gross Value Added |
| HEI | Higher Education Institution |
| IAMAI | Internet and Mobile Association of India |
| IB | International Baccalaureate |
| ICSE | Indian Certificate of Secondary Education |
| ICT | Information and Communications Technology |
| IGCSE | International General Certificate of Secondary Education |
| IIT | Indian Institute of Technology |
| IPR | Intellectual Property Rights |
| IT | Information Technology |
| ITeS | Information Technology enabled Services |
| ITI | Industrial Training Institute |
| MBBS | Bachelor of Medicine and Bachelor of Surgery |
| MD | Doctor of Medicine |
| MHRD | Ministry of Human Resource Development |

| | |
|---|---|
| MNC | Multinational Corporation |
| NASSCOM | National Association of Software and Service Companies |
| NEP | National Education Policy |
| NRI | Non Resident Indian |
| NSDC | National Skill Development Corporation |
| OECD | Organization for Economic Cooperation and Development |
| PhD | Doctor of Philosophy |
| PMU | Project Management Unit |
| RFID | Radio Frequency Identification |
| UGC | University Grants Commission |
| UK | United Kingdom |
| USA | United States of America |
| VNA | Very Narrow Aisle |
| WA | Wide Aisle |
| WEF | World Economic Forum |
| WMS | Warehouse Management System |

# *Preface*

With the objective to make India a USD 5 trillion economy, Government of India, in year 2018 announced the Champion Services Sector Scheme (CSSS) with thrust to 12 identified sectors. Aligning with the objective, Government of Karnataka constituted a High-Power Committee for the promotion of Service activities in the State vide Govt. Order No.CI 159 SPI 2018, Bengaluru dated 05.09.2018. The 1st High Power Committee meeting under the Chief Secretary, identified Six (6) Champion Services for the the State and Sectoral expert groups were constituted with respective departments of Karnataka. Department of Commerce & Industries was nominated as the nodal department for coordinating the efforts of individual departments. Visvesvaraya Trade Promotion Centre (VTPC) under the aegis of the Department of Commerce & Industries, was identified to coordinate the formulation of the sector specific reports by engaging consultants. Price WaterHouseCoopers (PwC) was engaged as Knowledge Partners for the study and to draw up the action plan and coordinate with respective line departments for the exercise.

The following Sectoral expert groups, along with the respective nodal departments were formulated vide the G.O pertaining to the subject:

| | **Sectoral Expert Group** | **Chairperson** | **Nodal Department** |
|---|---|---|---|
| 1. | Health & Wellness Services | Additional Chief Secretary to Govt., Medical Education Department | Medical Education |
| 2. | Education Services | Principal Secretary to Govt., Higher Education Department | Higher Education |
| 3. | Media & Entertainment Services | Secretary to Govt., Information and Publicity | Information and Publicity Dept. |
| 4. | Remittances & Emigration Services | Secretary to Govt., Skill Development Department | Skill development |
| 5. | Construction & Related Engineering Services | Additional Chief Secretary to Govt., Urban Development Department, Co-chaired by Secretary to Govt., Housing Department | Urban Development Department |
| 6. | Transport & Logistics Services | Principal Secretary to Govt., Commerce & Industries Department | Commerce & Industries Department |

This Report is a culmination of the efforts in charting a sector specific Strategy/Scheme for the Education Services Sector in the State. The report has taken into consideration inputs and feedback from stakeholders in the sector space besides, the views of nodal department.

# *Summary of the Report*

# *Summary of the report*

## *Services sector can play a critical role in helping India become a USD 5 trillion economy*

The services sector has been one of the key drivers of economic growth in India and is the dominant sector in India's Gross Domestic Product. The sector contributed to 54.3% of India's Gross Value Added (GVA) and 34% of the total employment in 2018-19[1], exhibiting a growth rate of 8.1% in 2017-18 and 7.5% in 2018-19[2]. Service exports from India grew at 7% in 2018-19 and the value of service exports from India stood at USD 153.5 billion between April-December 2018-19[3]. As India works towards becoming a USD 5 trillion economy, the services sector is seen playing a major role in helping the country achieve this goal. Realizing the potential of the services sector, the Government of India has set a sub-target of USD 3 trillion for the sector.

## *Champion Services Sector Scheme launched by Government of India to boost Services Sector*

To boost output, employment and exports from the services sector, the Government of India (GoI) launched the Champion Services Sector Scheme (CSSS) in February 2018. Under this scheme, 12 service sectors were identified for focussed development- IT& ITeS, Tourism & Hospitality Services, Medical Value Travel, Transport & Logistics Services, Accounting & Finance Services, Audio Visual Services, Legal Services, Communication Services, Construction & Related Engineering Services, Environmental Services, Financial Services and Education Services. The guidelines of the Champion Services scheme focus on five pillars- (i) New Processes (to improve Ease of Doing Business), (ii) New Infrastructure (to strengthen physical and digital connectivity), (iii) New Sector (to identify untapped sectors for value addition), (iv) New Mindset (to change the mindset from approver to partner), (v) New standards (to strengthen export competitiveness of various sectors).

## *Government of Karnataka decides to leverage the Champion Services Scheme by promoting Education Services amongst other sectors*

Subsequent to GoI announcing the CSSS, Government of Karnataka (GoK) intended to leverage the scheme to boost services sectors in the state – focussing on a set of six sectors out of the twelve Champion Service Sectors identified by the Government of India. The sectors identified by the Government of Karnataka include Transport & Logistics, Media & Entertainment, Health & Wellness, Education Services, Construction & Related Engineering Services and Remittances & Emigration Services. The objective of this report is to develop an action plan to boost the Education Services sector in Karnataka under the Champion Services Sector Scheme.

[1] Economic Survey of India, 2018-19
[2] Central Statistics Office
[3] Economic Survey of India, 2018-19

## *Internationalization of higher education, education technology, enhancing GER for higher education in Karnataka and skill development for champion service sectors identified as the focus areas for education services in Karnataka*

Based on an assessment of market trends, potential for growth, stakeholder consultations, need assessment and Karnataka's position in different segments of the sector, four segments were chosen as focus areas for Education Services in Karnataka: Internationalization of higher education, education technology, enhancing GER for higher education in Karnataka and skill development for champion service sectors. These have been selected keeping the overall objectives and pillars of the CSSS scheme in mind.

## *Internationalization of Higher Education: Currently India attracts only 1% of the foreign students coming to India*

The internationalization of universities in Karnataka will enable foreign students to use education services in the state. This will enable the inflow of foreign exchange and increase India's market share in the global education market. Currently India attracts only 1% of the students who study abroad. The most popular host countries for foreign students include USA, UK, China, Canada, Australia, France, Russia, Germany, Japan and Spain[4]. India is the second largest exporter of foreign students in the world after China. The other countries that export students to study abroad include South Korea, Saudi Arabia, Canada, Vietnam, Taiwan, Japan, Mexico and Brazil[5]. Currently, India doesn't receive any students from the top 10 countries that send students abroad. However, India does receive students from Nepal, Iran and Nigeria which have significant number of students studying internationally. In 2017-18, India received 86%, 12% and 14% of the total students studying abroad from Nepal, Iran and Nigeria respectively. Other countries that send students to India include Afghanistan, Bangladesh, Sudan, Bhutan, USA, Yemen and Sri Lanka[6]. Amongst the courses studied by international students across the globe, ICT and Engineering seem to be the most popular courses[7]. In 2018-19, India attracted a total of 47,427 international students.

## *Karnataka is the most attractive state for international students in India, but is facing stiff competition from other states*

Karnataka has been receiving the maximum number of foreign students coming to India. In 2018-19, Karnataka received 10,023 international students, which was about 21.1% of the total foreign students coming to India. Although this was the highest in the country, we see that the number of students coming to Karnataka has declined from the previous year, despite an increase in the total number of foreign students coming to India. In 2017-18, Karnataka received 12,041 international students (26.1%). Karnataka has been facing competition from various states including Maharashtra, Punjab, Uttar Pradesh, Tamil Nadu and Haryana, where the number of international students has been increasing.

[4] Institute of International Education, 2019
[5] Institute of International Education, 2017-18
[6] All India Survey on Higher Education 2018-19
[7] OECD

### *Education Technology: Global ed-tech segment is growing at 18%. Bengaluru is the 4th largest hub for ed-tech in the world in terms of concentration of ed-tech companies per-capita*

The education technology segment is growing at 18% globally[8]. Bengaluru ranks 7th in the world in terms of number of companies headquartered and 4th in the world in terms of concentration of Ed-tech companies per capita[9]. As per the EdTech index by Navitas group, the ed-tech ecosystem in Bengaluru is the 7th best in the world. The education technology segment is further supported by the growth of the online education market. The online education market in India is expected to grow at a CAGR of 52% while the number of users is expected to grow by 43% by 2021[10]. The growth drivers for this segment include increasing internet penetration, low cost alternatives, favorable demographics, demand for re-skilling courses, availability of quality education online etc. The Indian e-learning market is the second largest in the world after USA[11].

### *Strengthening community, enhancing market access, and increasing financial and non-financial support to ed-tech firms can help improve the ed-tech ecosystem in Bengaluru*

The global EdTech Index (developed by Navitas group) ranks Bengaluru 7th in the world in terms of various parameters. The results from the study indicate that the Bengaluru ed-tech space lacks in terms of community (maturity of community, including availability of incubators, co-working spaces, frequency of events, government initiatives), support (support from government and traditional education sector) and test bed dimensions (breadth, quality and accessibility of the local education sector). Moreover, interactions with stakeholders reveal that the major challenges faced by firms in this sector include issues in procuring working capital, gaining market access for start-ups, lack of ease of doing business and skill shortages for content creation and media related skills.

### *Gross Enrolment Ratio in Higher Education in Karnataka: Karnataka ranks 15th in Gross Enrolment Ratio with skewed GER across districts*

Although Karnataka's GER (28.8%) is higher than the Indian average (26.3%), it ranks 15th amongst the states in terms of GER in higher education. Moreover, the GER in Karnataka is skewed across districts, with only 9 districts having GER higher than the national average. The GER in some districts is as low as 6% indicating the need to enhance GER across districts for balanced development. Review of literature and stakeholder consultations reveal that some of the major factors that influence GER include economic background, expensive higher education, lack of interest in pursuing higher education, lack of awareness about importance of higher education, other factors such as distance from home, transport availability etc. and low passing rate in pre-university examination in Karnataka.

[8] Frost & Sullivan, 2017. Retrieved from https://store.frost.com/growth-opportunities-in-the-education-technology-market-forecast-to-2022.html

[9] Navitas, 2018.

[10] Online Education in India: 2021, Google & KPMG (2017)

[11] India Brand Equity Foundation, 2018

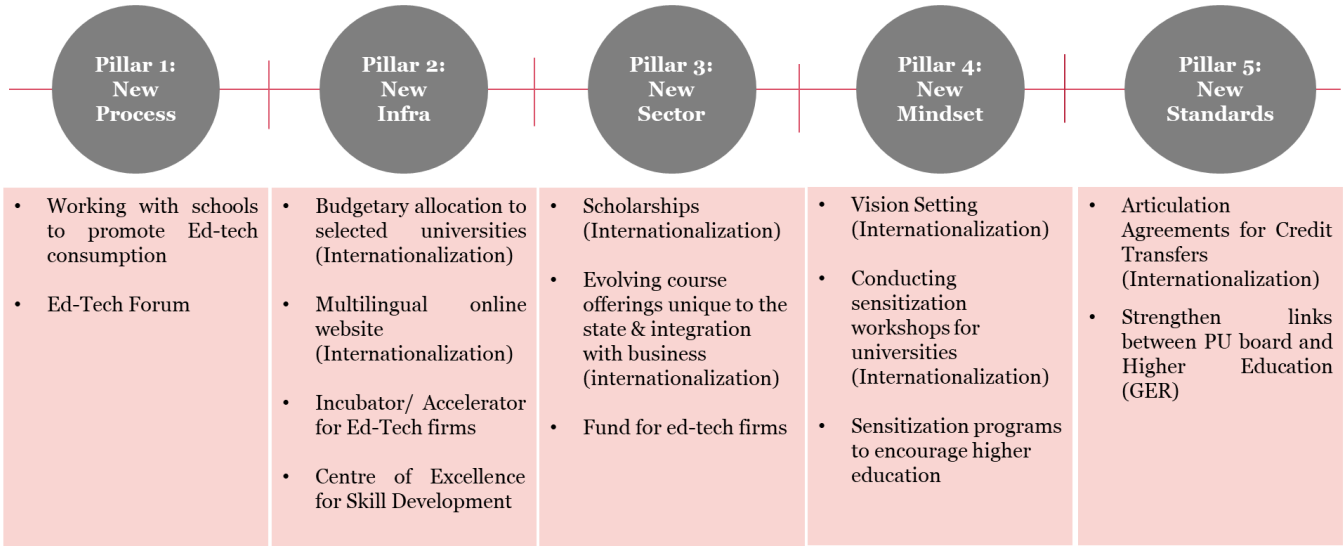
## *Skill Development for other Champion Sectors: Estimated demand for over 17 lakh skilled workers by 2022 in Healthcare, Education & Skill Development, Media & Entertainment and Transportation & Logistics Sectors*

The education services sector can support all the champion services sectors through skill development initiatives. A study by National Skill Development Corporation (NSDC) estimates that by 2022, there will be an incremental demand for 619,975 skilled workers in Healthcare, 379,100 skilled professionals in Education & Skill Development, 68,052 skilled workers for Media & Entertainment and 639702 workers for Transportation, Logistics, Warehousing & Packaging[12]. Providing skill development for services sectors will boost the growth of the sectors by ensuring the availability of a talent pool for these sectors.

## *Proposed Action Plan for Education Services under CSSS in Karnataka*

To boost the Education Services sector under the CSSS in Karnataka, the report identifies a concrete set of interventions for each of the identified segments i.e., internationalization of higher education, education technology, enhancing GER in higher education in Karnataka and skill development for champion services sectors. Figure 1 summarizes the proposed interventions for each of the identified segments under the five pillars of the champion services scheme (new processes, new infrastructure, new sector, new mindset and new standards).

*Figure 1: Summary of Proposed Action Plan for Education Services*




The proposed interventions summarized in figure 1 have been recommended based on an assessment of upcoming market trends, literature survey, stakeholder interactions, issues & challenges identified in the sector for Karnataka and global best practices; keeping the overall objectives and pillars of the champion services scheme in mind. The implementation and funding plan for each of these recommendations is discussed in detail in the report.

[12] National Skill Development Corporation, District-wise Skill Gap Study for the State of Karnataka (2017-22)

# Introduction

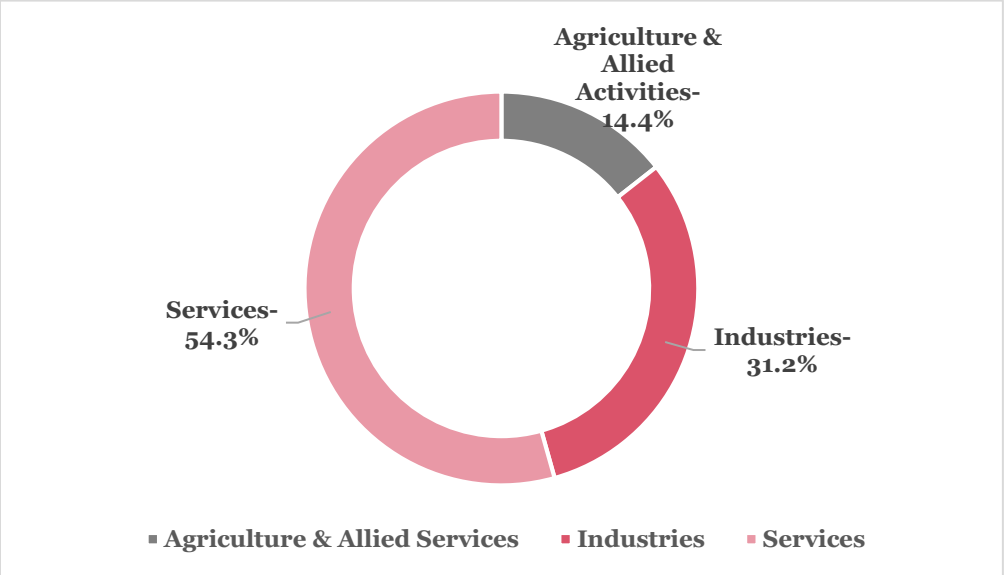
# 1. Introduction

## *Services Sector in India*

### *Services Sector is the largest contributor to India's GDP (contributing to 54% of India's GVA) and is growing rapidly*

The services sector has played a key role in driving India's growth story and is the dominant sector in India's Gross Domestic Product (GDP). The Services sector contributed to 54.3% of the country's Gross Value Added (GVA) in 2018-19[13]. Figure 2 shows the sectoral share of the Gross Value Added for 2018-19.

*Figure 2: Sectoral Share of GVA 2018-19*




*Source: Economic Survey of India, 2018-19*

The service sector has been recording high growth rates and grew at the rate of 8.1% in 2017-18 and 7.5% in 2018-19[14]. India held the 7th position in the world in terms of the size of the services sector (services GVA) in 2017. In several states such as Karnataka, Manipur, Telangana, Kerala, Bihar, Maharashtra, Jammu & Kashmir, Meghalaya, Nagaland, West Bengal and Tamil Nadu, services contribute to more than 50% of the total GVA. In terms of exports, service exports from India grew at 7% in 2018-19 compared to 17.2% in 2017-18. Value of service exports from India stood at USD 153.5 billion between April-December 2018-19[15].

However, despite its large contribution to GVA, India's services sector has not generated jobs in proportion to its share in the economy. The share of services sector in employment was 34% in 2018-19[16], which is lower than its share in GVA (54.3%). The significance of the services sector can be gauged

[13] Economic Survey of India, 2018-19
[14] Central Statistics Office
[15] Economic Survey of India, 2018-19
[16] Economic Survey of India, 2018-19

by the high rate of growth shown by the sector and its contribution to the GDP. India has set an ambitious target of becoming a USD 5 trillion economy by 2025. Recognizing the potential of the services sector, Government of India has set a sub-target of USD 3 trillion for the sector.

## *About Champion Services Scheme*

### *Government of India has launched the Champion Services Sector Scheme to boost selected services sectors in India*

The Champion Services Sector Scheme (CSSS) was approved by the Government of India (GoI) in February 2018 to give a boost to various services sectors in the country. The Government of India has set a target to increase India's share in global services exports to 4.2% (from 3.3% in 2015) and increase the services sector's share in GVA to 60% by 2022[17]. The objective of the CSSS is to increase the competitiveness of the twelve identified service sectors in India thereby promoting GDP growth, employment generation and exports.

The Government of India has identified twelve services under the Champion Services scheme. These include:

i. Information Technology & Information Technology enabled Services (IT & ITeS)
ii. Tourism and Hospitality Services
iii. Medical Value Travel
iv. Transport and Logistics Services
v. Accounting and Finance Services
vi. Audio Visual Services
vii. Legal Services
viii. Communication Services
ix. Construction and Related Engineering Services
x. Environmental Services
xi. Financial Services
xii. Educational Services

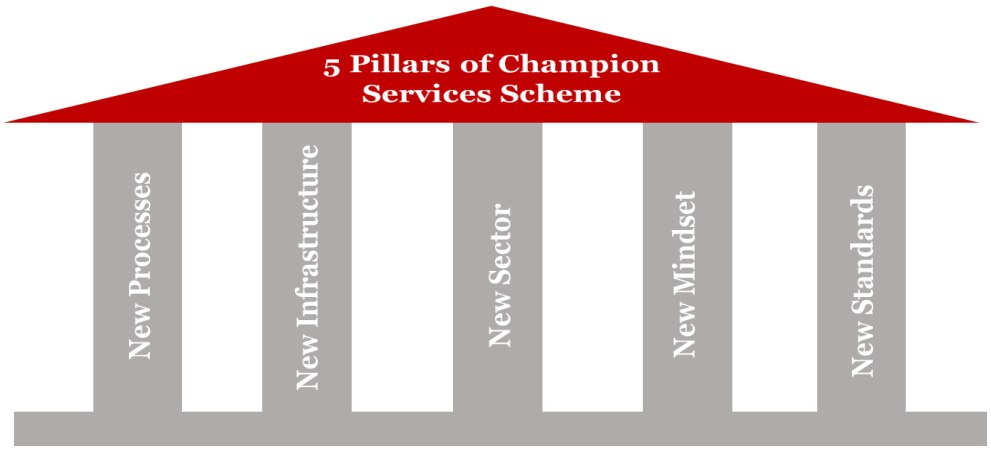
The CSSS is a Central Sector Plan Scheme of the Department of Commerce, GoI. For each of the sectors mentioned above, a nodal Ministry/ Department has been identified for the implementation of the CSSS in the respective sectors. Since this report focusses on Education Services, the nodal department for the implementation of the CSSS for Education Services is the Ministry of Human Resource Development.

The guidelines of the CSSS specify five pillars for the implementation of reforms under this scheme. The five pillars of the Champion Services Scheme are:

i. ***New Processes***: to improve Ease of Doing Business (EoDB)
ii. ***New Infrastructure***: to strengthen physical and digital connectivity
iii. ***New Sector***: to identify untapped sectors for value addition
iv. ***New Mindset***: to change the official mindset from issuing/approving authority to partnering in business
v. ***New Standards***: to strengthen export competitiveness of various service sectors

[17] https://pib.gov.in/Pressreleaseshare.aspx?PRID=1522078

*Figure 3: Five Pillars of Champion Services Sector Scheme (CSSS)*




The CSSS entails the implementation of sectoral interventions based on the five pillars for each of the identified sectors to promote growth, employment and exports from the sectors. A dedicated fund of Rs. 5000 crores has been approved under the CSSS for implementing the recommendations approved under the program.

## Champion Services Scheme in Karnataka

### Government of Karnataka decided to leverage the CSSS to promote services in Karnataka

The Government of Karnataka (GoK) has decided to leverage the Champion Services Scheme launched by the GoI to promote the services sector in Karnataka. The state has already been at the forefront of various services sectors in India such as IT & ITeS etc. The GoK has identified additional six sectors to be promoted under the CSSS to further strengthen Karnataka's position in Services. These include:

i. Transport and Logistics
ii. Media and Entertainment
iii. Education Services
iv. Health and Wellness
v. Infrastructure and Construction
vi. Remittances and Emigration

The Government of Karnataka is currently working on Action Plans for each of these sectors to make Karnataka a leader in each of these sectors not only within India but also globally; which would strengthen India's position in the global market for services. This report focusses on the Education Services Sector and looks at interventions that can increase the global competitiveness of Karnataka's Education Services Sector.

## *Objective and Structure of the Report*

The objective of this report is to explore the potential of the education services sector under the Champion Services Sector Scheme and prepare an action plan for boosting the education services sector in Karnataka. The report is structured as follows:

**Chapter 2** elucidates the **Education Services sector** and explores what is defined as education services and discusses the performance of the sector in the global, Indian and Karnataka markets. It also looks into the growth drivers of the education sector in India. The chapter concludes by shortlisting focus segments for Karnataka under the CSSS based on growth trends, emerging opportunities and Karnataka's strengths. The shortlisted segments to be included under the CSSS for education services include the internationalization of higher education, education technology (ed-tech), increasing Gross Enrolment Ratio (GER) in higher education in Karnataka and skill development for other champion service sectors.

**Chapter 3** looks into the **internationalization of higher education** in Karnataka. In this chapter we discuss what we mean by internationalization of education and discuss international student mobility trends such as top destinations and exporters of international students, influx of international students to India and Karnataka's position in attracting international students in India. To understand the variables that influence international student mobility, we discuss the push and pull model for international education flows. The chapter also discusses the global best practices followed by a number of countries for promoting internationalization. The chapter ends with a proposed action plan for promoting internationalization of higher education in Karnataka.

**Chapter 4** explores the **education technology** segment. After a discussion on what compromises the education technology segment, the global and Indian education technology market is captured. Bengaluru's position in the global ed-tech market is also discussed here. Since the online education market is a major component of the ed-tech segment, the online market trends are presented in this chapter, in addition to the growth drivers and emerging trends for the ed-tech segment in India. This chapter also looks into the issues faced by ed-tech firms in Karnataka and the global best practices for promoting education technology. The Action Plan for promoting ed-tech in Karnataka is detailed out at the end of the chapter.

**Chapter 5** looks into the gross enrolment trends in India and Karnataka. It explores the various factors that influence enrolment into higher education in India and Karnataka. The chapter ends with an action plan for **enhancing GER in higher education in Karnataka.**

**Chapter 6** deliberates on how the education services sector can support other champion service sectors by promoting **skill development for other champion service sectors**. In this segment we discuss the skill gaps in the transport & logistics, media & entertainment, health & wellness and education sectors. The action plan for promoting skill development for services sectors in Karnataka is presented in the chapter.

**Chapter 7** discusses the **Implementation and Funding plan** for the proposed action plan for education services under CSSS in Karnataka. For all the interventions proposed under the four segments, i.e. internationalization of higher education, education technology, increasing gross enrolment ratio in higher education and skill development for other champion services sectors, we identify the appropriate implementing authority/institution and broad cost estimates for the implementation of the proposed action plan.

# *Education Services*

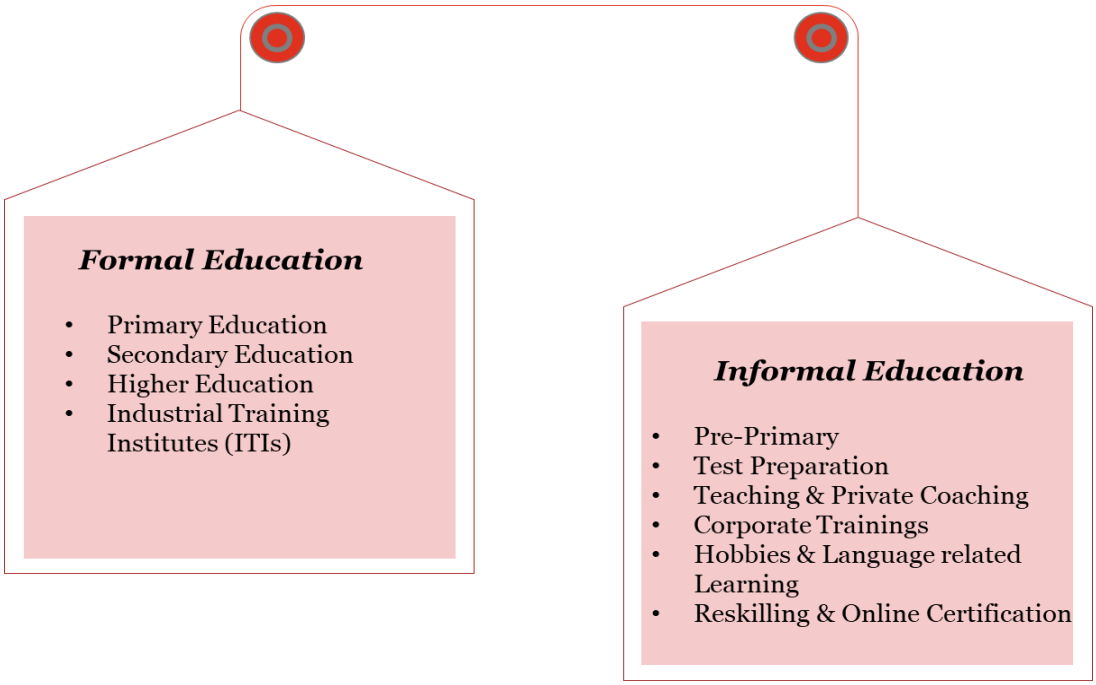
# 2. Education Services

## About Education Services

As per the North American Industry Classification System, Education Services sector comprises "establishments that provide instruction and training in a wide variety of subjects…by specialized establishments such as schools, colleges, universities, and training centers…instruction is imparted in diverse settings, such as educational institutions, the workplace, or the home, and through diverse means, such as correspondence, television, the Internet, or other electronic and distance-learning methods…"[18]

The Education space in India consists of a formal and informal segment with various players including government, private sector, NGOs and civil society. Figure 4 depicts the education landscape in India.

*Figure 4: Education Landscape in India*




The formal education system comprises of Primary and Secondary education and Higher education which includes graduate studies, post-graduate studies and diploma courses. Schools for primary and secondary education are governed by state or central boards such as Central Board for Secondary Education (CBSE), Indian Certificate of Secondary Education (ICSE), State Government boards; or International boards such as International Baccalaureate (IB), International General Certificate of Secondary Education (IGCSE) Cambridge University. The Higher Education system in India is governed by the University Grants Commission (UGC) and other regulatory bodies such as the All India

[18] https://www.bls.gov/iag/tgs/iag61.htm

Council for Technical Education (AICTE), Medical Council of India (MCI) etc. for professional courses. Industrial Training Institutes (ITIs) provide skill trainings in various vocational trades to meet the skilled manpower requirements in the country. There are about 13,353 ITIs in India, of which 11,000 are private ITIs[19].

The informal segment includes pre-primary schooling, coaching for test preparation, private coaching, corporate trainings, hobbies and language related learning, reskilling and online certifications. The informal segment is large and is growing rapidly with the increasing demand for re-skilling needs from the industry (re-skilling and online certifications market growing at a CAGR of 38%) , test preparation (growing at a CAGR 64%, increasing demand from tier 2/3 cities) and growth of the online education market (growing at a CAGR of 52%)[20].

## *Global Education Sector*

### *Global education market expected to touch USD 10 trillion by 2030*

The global education market is expected to become a USD 10 trillion market by 2030, growing at a CAGR of 4.5%. The education market contributes to about 6% of the world's gross product. The primary and secondary school segment is expected to reach over USD 5 trillion by 2030[21]. The higher education segment is expected to grow at a CAGR of over 12% between 2019-2023[22]. It is expected that between 2020-2030, ~800 million additional students will graduate from primary and secondary schools and more than 350 million additional students will graduate with higher education degrees[23].

The rising demand for education services can be attributed more to the developing countries. It is expected that Asia and Africa will drive the expansion of the education sector globally. It has been estimated that until 2030, there will be a demand for ~1.5 million teachers every year[24].

Government spending on education varies widely across countries. Cuba spends ~12.9% of its GDP on education, which is the highest globally. Scandinavian countries also have high spending on education. Norway spends 8% of its GDP on education, Sweden, Denmark and Finland spend 7.7, 7.6 and 6.9 % of their GDP respectively on education. United Kingdom and Canada spend 5.5% of their GDP on education while Australia spends 5.3% of its GDP on education. The United States of America spends about 5% of its GDP on education. Amongst the BRICS, Brazil and South Africa spend 6.2% of their GDP on education, China spends 4%, Russia spends 3.7% and India spends 3% of its GDP on education[25].

A recent report by OECD explained that the global education system is shaped by three major trends. Firstly, globalization will continue to influence the education space through more inflow of international students due to a rising middle class in several countries, global curriculum and research, shifting global education hubs etc. With the rising adoption of internet globally, the digitization of

[19] http://prsindia.org/report-summaries/industrial-training-institutes-and-skill-development-initiative-scheme
[20] Online Education in India: 2021, Google & KPMG (2017)
[21] https://www.holoniq.com/2030/10-trillion-global-education-market/
[22] https://www.businesswire.com/news/home/20191113005482/en/Global-Higher-Education-Market-2019-2023-12-CAGR
[23] https://www.holoniq.com/2030/10-trillion-global-education-market/
[24] https://www.holoniq.com/2030/10-trillion-global-education-market/
[25] World Bank Data

education will be the second largest trend. The third trend will be related to ageing. With a growing ageing population in several countries, the report predicts a large demand for upskilling[26].

## *Education Sector in India*

### *Indian Education sector touched USD 101.1 billion in 2019, growing at 10.3%*

India being home to the world's largest young population (~500 million in the age group of 5-24 years[27]) provides great potential for the growth of the education sector. As per the India Brand Equity Foundation (2019), there is a current requirement of 200,000 additional schools, 35,000 colleges, 700 universities and 40 million seats in vocational training centers across India to meet the education and skill requirement in the country. While society needs to ensure that everyone has equal opportunities to quality education, the Indian Education Space offers huge potential for service providers and other players in the sector.

The Indian education sector stood at USD 91.7 billion in 2018 and touched USD 101.1 billion in 2019, growing at a rate of 10.3%[28]. The Indian Education sector has also been witnessing large investor interest from both foreign and domestic investors. Between April 2000 and December 2018, there was an inflow of USD 2.21 billion FDI into the Education sector in India[29]. In terms of public spending on education, India ranks 62nd in total public expenditure per student. India spent about 5.6 lakh crores on education in 2018-19, which is about 3% of its total GDP[30].

The total budget allocation for the Ministry of Human Resource Development was increased by INR 10,219 crores for the FY 2019-20. The government has also increased the budgetary allocation for various schemes such as Rastriya Uchchatar Shiksha Abhiyan (RUSA) by 50% from INR 1400 Crores in 2018-19 to INR 2100 Crores in 2019-20[31]. The budget for the National Education Mission was enhanced from INR 32,334 Crores in 2018-19 to Rs. 38, 572 Crores in 2019-20. Additionally, the Government has implemented various schemes such as the Revitalizing Infrastructure and Systems in Higher Education (RISE) by 2022 to boost the sector in India.

The Union Cabinet has recently approved the new National Education Policy (NEP) on July 29, 2020. Some of the fundamental principles laid out in the NEP are[32]:

- Recognizing, identifying and fostering the unique capabilities of each student and promoting holistic development of students in academic and non-academic spheres.
- Achieving foundational literacy and numeracy for all students by grade 3.
- Multidisciplinary and holistic education across sciences, social sciences, arts, humanities and sports.
- Emphasis on conceptual understanding rather than rote learning and exam oriented learning.
- Promote creativity and critical thinking to encourage innovation and logical decision making.
- Focus on life skills such as communication, resilience, cooperation and teamwork.

[26] OECD, 2019. Trends Shaping Education 2019.
[27] United Nations, 2014, State of World's Population Report
[28] India Brand Equity Foundation, 2019
[29] India Brand Equity Foundation, 2019
[30] https://www.financialexpress.com/economy/how-much-india-spends-on-education-hint-its-less-than-rich-countries-average/1772269/
[31] https://pib.gov.in/PressReleasePage.aspx?PRID=1562349
[32] National Education Policy 2020

- Extensive use of technology in teaching, learning, removing language barriers and education management.
- Equity and inclusion as the cornerstone of all education decisions.
- Substantial investment in a strong and vibrant public education system along with facilitation of philanthropic private and community participation.

The NEP discusses internationalization of higher education and promoting India as a global study destination, providing premium education at affordable costs. It also lays emphasis on integrating vocational education into mainstream education. The NEP also lays down the objective of achieving 50% GER in higher education by 2035.

India has over 250 million school going students, which is more than any other country. India has the second largest higher education system in the world in terms of student enrollments[33]. As per the All India Survey on Higher Education (AISHE) 2018-19, the total enrolment in higher education is 37.4 billion out of which 19.2 million are males (51.4%) and 18.2 million are females (48.6%)[34]. The Indian Higher Education system is expected to touch USD 35 billion by 2025[35]. India also has the 2nd largest e-learning market after USA[36].

## *Growth Drivers of Indian Education Sector*

### *Robust Demand, Demographic Advantage, Investor Interest and Regulatory Support are amongst the key growth drivers for education sector in India*

There are a number of favorable factors for the growth of the education services sector in India. These factors create a favorable and conducive environment for the growth of education services in India and also create huge potential for the sector. The growth drivers of the Indian education sector are shown in Figure 5 and are explained in detail.

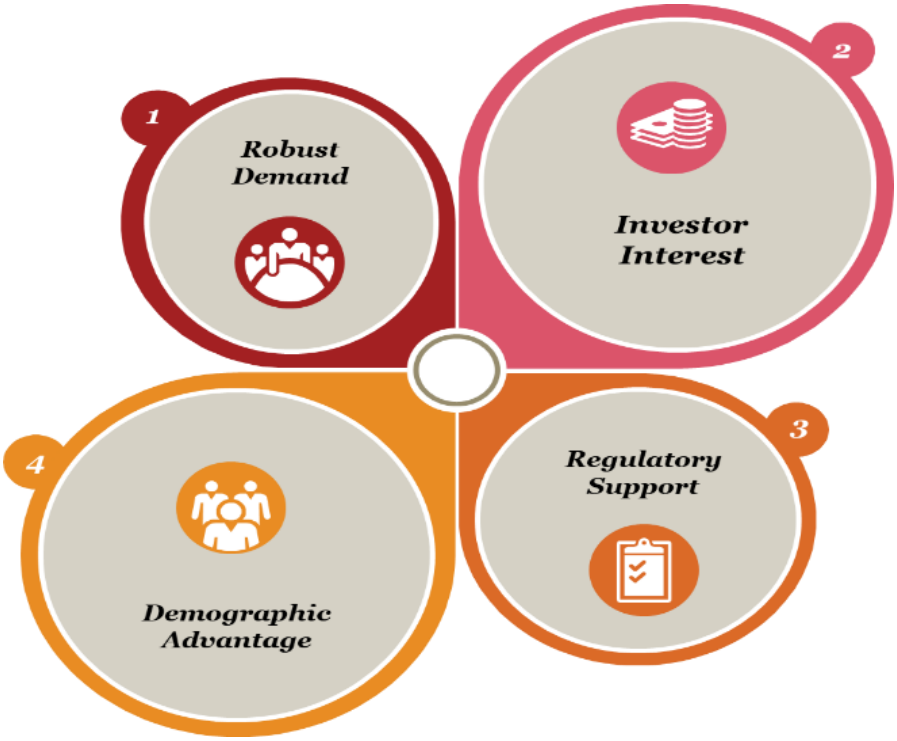
- ***Robust Demand:*** To meet the educational and skill needs of our population there is a large demand-supply gap. Currently there is an additional requirement of 200,000 schools, 35,000 colleges, 700 universities and 40 million seats in the vocational training centers[37].

- ***Demographic Advantage:*** India has a large young population which creates huge demand for education services. India has the largest population in the world (~500 million) in the age bracket of 5-24 years[38].

[33] India Brand Equity Foundation, 2019
[34] All India Survey on Higher Education, 2018-19.
[35] India Brand Equity Foundation, 2018
[36] India Brand Equity Foundation, 2018
[37] India Brand Equity Foundation, 2019
[38] United Nations, 2014, State of World's Population Report

- ***Investor Interest:*** In the recent years, there has been a huge interest from investors across the world in Indian education. There was an inflow of USD 2.21 billion as FDI between April 2000 and December 2018 in Education Sector[39].

*Figure 5: Growth Drivers of Indian Education Sector*




- ***Regulatory Support:*** There is strong government support for the education sector in India. Some of the initiatives undertaken by the Indian government include Foreign Educational Institutions Bill & National Accreditation Regulatory Authority Bill for Higher Education, Revitalizing Infrastructure & Systems in Education (RISE) announced in 2018-19 budget, allowing 100% Foreign Direct Investment (FDI) through automatic route etc.

The above factors explain the growth drivers for the Indian education sector in general. The segment-wise growth drivers for the Indian education sector are explained below:

**Pre-School Segment**

- Rising income levels
- Rapid urbanization
- Increasing number of working women
- Increasing awareness about importance of pre-school education

**Primary and Secondary School**

- Shifting preference towards private sector schooling due to emphasis on quality

[39] India Brand Equity Foundation

- Increasing income levels
- Government schemes such as Sarva Shiksha Abhiyan & Mid-Day Meal scheme

**Higher Education**

- Increased number of enrolments
- Large number of courses offered
- Increased willingness to spend on quality education
- Growth of service sector
- Increased awareness of education as a driver for prosperity

**Coaching Classes and Vocational Education**

- Higher competition for professional courses
- Increased focus on adopting tech-based solutions
- Government's increased focus on skilling and enhancing computer literacy

## *Education Sector in Karnataka*

### *Karnataka has the highest college density in India, with skewed distribution of Higher Education Institutions (HEIs) across districts*

The formal education network in Karnataka comprises of over 65 universities, 3812 colleges, 1293 standalone institutions[40], 4,597 pre-primary schools, 23,690 primary schools, 24, 142 elementary schools, 8,216 secondary schools and 1497 senior secondary schools[41]. Karnataka was ranked 3rd in NITI Aayog's School Education Quality Index amongst large states in India[42]. The index measures the quality of school education based on a number of parameters including learning outcomes, access to education, equity outcomes, infrastructure facilities and governance parameters such as teacher availability, student and teacher attendance, administrative adequacy, training, accounting and transparency[43].

The Government of Karnataka has been undertaking several steps to support the sector. In 2018-19, the government has allocated an amount of USD 3452.3 million for Primary and Secondary Education and USD 697.3 million for Higher Education. The Government is also undertaking various initiatives such as Athyuthama S.D.M.C award for best performing school in each district, exemptions for female students pursuing post graduate studies etc.

In terms of higher education, Karnataka has the highest college density (number of colleges per lakh eligible population) in the country- 53 compared to the all India average of 28 (colleges per lakh eligible population). Karnataka's capital city Bengaluru is home to a number of premier educational institutions such as the Indian Institute of Science, Indian Institute of Management, National Law School of India University etc. Bengaluru urban has the highest number of colleges amongst all districts in the country with 880 colleges)[44]. However, the distribution of Higher Education Institutions (HEIs)

[40] Department of Higher Education, Government of Karnataka

[41] https://www.karnataka.com/education/overview-of-schools-in-karnataka/

[42] https://www.indiatoday.in/education-today/news/story/school-education-quality-index-niti-aayog-kerala-best-performer-up-ranks-last-1605042-2019-10-01

[43] https://niti.gov.in/content/school-education-quality-index

[44] All India Survey on Higher Education 2018-19

including universities, standalone institutions and colleges across districts is quite skewed. The table below shows the district-wise distribution of HEIs in Karnataka.

*Table 1: District-wise Distribution of HEIs*

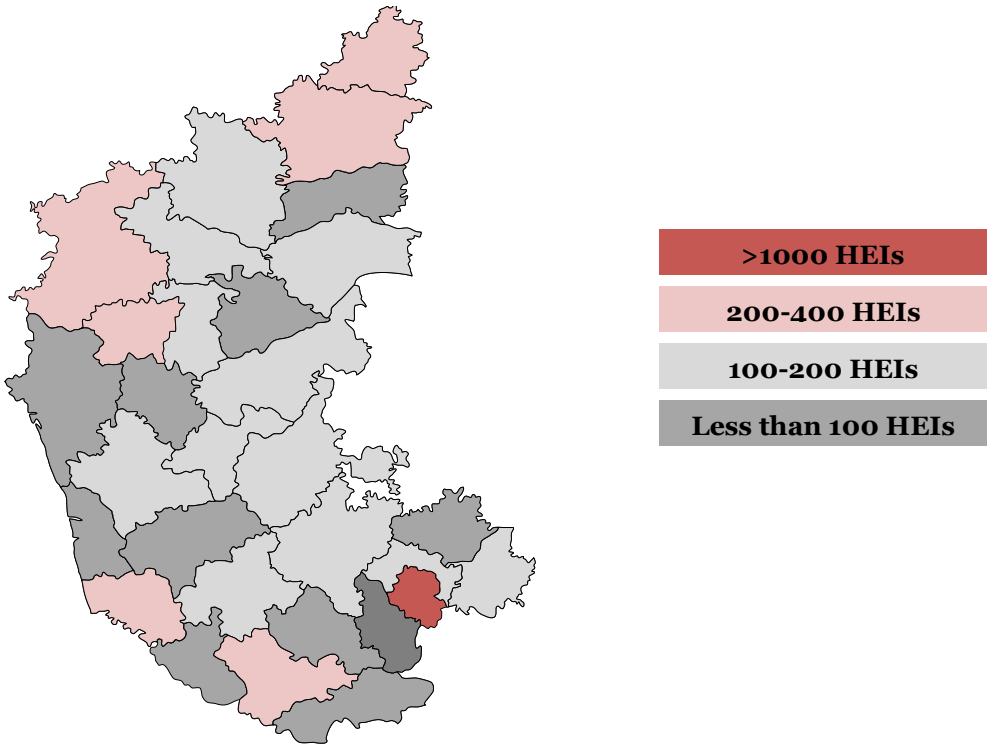
| District | No. of Universities | No. of Standalone Institutions | No. of Colleges | Total HEIs |
|---|---|---|---|---|
| Bengaluru Urban | 21 | 280 | 880 | 1181 |
| Kalaburgi | 3 | 70 | 280 | 353 |
| Belagavi | 3 | 77 | 241 | 321 |
| Dakshin Kannada | 5 | 51 | 260 | 316 |
| Dharwad | 6 | 58 | 161 | 225 |
| Bidar | 1 | 70 | 151 | 222 |
| Mysuru | 5 | 47 | 162 | 214 |
| Tumakuru | 2 | 44 | 130 | 176 |
| Raichur | 1 | 31 | 143 | 175 |
| Vijayapura | 2 | 43 | 122 | 167 |
| Kolar | 2 | 68 | 68 | 138 |
| Ballari | 2 | 36 | 98 | 136 |
| Bagalkot | 1 | 34 | 94 | 129 |
| Davangere | 1 | 36 | 87 | 124 |
| Chitradurga | 0 | 48 | 71 | 119 |
| Hassan | 0 | 30 | 80 | 110 |
| Shivamogga | 2 | 25 | 79 | 106 |
| Bengaluru Rural | 3 | 35 | 65 | 103 |
| Gadag | 1 | 22 | 78 | 101 |
| Mandya | 1 | 27 | 66 | 94 |
| Udupi | 1 | 21 | 72 | 94 |
| Uttar Kannada | 0 | 24 | 70 | 94 |
| Yadgir | 0 | 13 | 63 | 76 |
| Haveri | 1 | 22 | 52 | 75 |

| District | No. of Universities | No. of Standalone Institutions | No. of Colleges | Total HEIs |
|---|---|---|---|---|
| Koppal | 0 | 16 | 51 | 67 |
| Chikkaballapur | 0 | 17 | 45 | 62 |
| Ramanagara | 1 | 15 | 36 | 52 |
| Chikkamagalur | 0 | 8 | 38 | 46 |
| Chamrajnagar | 0 | 17 | 25 | 42 |
| Kodagu | 0 | 8 | 24 | 32 |

*Source: Department of Higher Education, Government of Karnataka*

From the table above we see that the distribution of HEIs in Karnataka is quite skewed. While Bengaluru urban has more than 1000 HEIs (which is the highest in the country), some districts in Karnataka such as Chikkamagalur, Chamrajnagar and Kodagu have less than 50 HEIs. Figure 6 maps the distribution of HEIs in Karnataka across districts. The districts marked in grey have less than 200 HEIs.

*Figure 6: Distribution of HEIs across Districts in Karnataka*




*Source: Department of Higher Education, Government of Karnataka*

From Figure 6 we see that although Bengaluru Urban has a high number of HEIs, the number of HEIs in several districts is fairly low. However, the district wise Gross Enrolment Ratios (GER) shows that some districts may have a high GER despite having a small number of HEIs. A detailed discussion of district-wise GER in Karnataka has been done in Section 5 of this report. The districts with low GER and low number of HEIs include Kodagu, Chamrajnagar, Chikkamagalur, Chikkaballapur, Koppal, Haveri, Yadgir, Mandya and Uttara Kannada.

Karnataka has also been the most preferred destination for foreign students, attracting the maximum number of international students in India. Recently, NITI Aayog ranked Karnataka as the 'most innovative state in India' and there is no doubt that the educational sector in the state has been playing an active role in fostering innovation.

Karnataka is also a leading hub for Education Technology and Bengaluru is home to a number of internationally renowned Ed-tech companies. As per the Navitas group, Bengaluru ranks 6th globally in terms of the number of Ed-tech companies headquartered and 4th in terms of the concentration of Ed-tech companies per-capita. Karnataka's leading position in technology and education make it conducive for the growth of the Ed-tech segment in the state.

## *Segment Selection for Education Sector under Champion Services Scheme in Karnataka*

### *Under the CSSS, GoK needs to focus on Internationalization of Higher Education, Increasing GER for Higher Education in Karnataka, Education Technology and Skill Development for other Champion Service Sectors*

The objectives of the CSSS is to promote selected services sectors in India and enhance their contribution to GDP, employment and exports. Education services has been short-listed as one of the Champion Services sectors by the Government of India and Government of Karnataka. This report aims at developing an action plan to boost education services under the CSSS in Karnataka. As a first step, we identify the sub-segments within the education sector which can be developed under the CSSS.

To identify the sub-segments in the education sector under the CSSS, high-growth segments that exhibit a huge market potential were identified. Higher Education, E-learning and the Pre-School Market were identified as the fastest growing segments in the Education Sector, growing at a Compound Annual Growth Rate (CAGR) of 9.9%, 52% and 23% respectively[45].

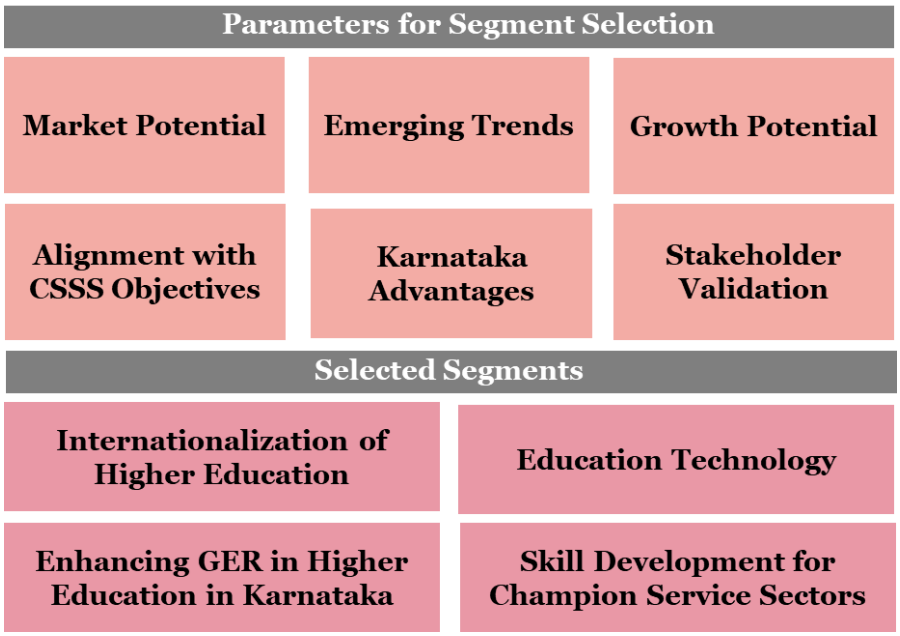
Considering the emerging trends in the global and Indian education market and the inherent strengths of Karnataka, the Higher Education and Education Technology segments were shortlisted for Karnataka under the CSSS scheme. As we will see later in the report, Karnataka has a huge advantage in the education technology segment and Bengaluru is one of the leading hubs for ed-tech globally.

Further assessment of Karnataka's education scenario including the strengths of Karnataka, identification of key challenges of Karnataka's education sector and stakeholder interactions reveal that the action plan for education services should focus on two key issues under the higher education segment: (i) Internationalization of Higher Education and (ii) Increasing Gross Enrolment Ratio in Higher Education in the state. While increasing GER in higher education is critical for improving equity

[45] India Brand Equity Foundation

and access to higher education for students in Karnataka, the internationalization of higher education deals with attracting more foreign students to Karnataka, thereby increasing the inflow of foreign exchange in Karnataka. The parameters used for selecting the segments under the CSSS scheme and the identified segments are shown in Figure 7.

*Figure 7: Segment Selection for Education Services under CSSS in Karnataka*




The segment selection for education services under the CSSS has been done keeping the objectives of the scheme in mind. The education sector can also help promote other champion services sectors by ensuring talent availability through skill development initiatives for other champion service sectors. Therefore, in addition to higher education (internationalization and increasing GER) and ed-tech, the action plan for education services in Karnataka also focusses on skill development for other champion service sectors.

# *Internationalization of Higher Education*

# 3. Internationalization of Higher Education

## Internationalization of Higher Education

Altbach et al. (2009) define internationalization as the "the variety of policies and programs that universities and governments implement to respond to globalization. These typically include sending students to study abroad, setting up a branch office overseas, or engaging in some type of inter-institutional partnership.[46]" Although internationalization of Higher Education is not new, for example Nalanda University attracted scholars from distant places like China, Korea, Turkey, Japan, Tibet, Mongolia, Sri Lanka and South East Asia more than 1000 years ago [47]; internationalization of education has become increasingly significant in the age of globalization.

Internationalization of Higher Education is associated with a number of social and economic benefits for a country. Economically, internationalization can help increase the inflow of foreign exchange in the country and increase the country's market share in global education exports. However, internationalization can play a larger role in improving the overall quality of Higher Education, increase the global rankings of a country's universities and education system, increase the soft power of a country and most importantly, provide a global atmosphere for students at home which would enable an exchange of cross-cultural ideas and sensitize the youth of a country to global issues, which is increasingly important in the world we live in today.

Although internationalization is often understood in narrow terms and is limited to attracting foreign students, internationalization is a much broader concept, with multiple dimensions to it. Internationalization of education is the process of integrating an international, intercultural and global dimension in the education system. Hence, apart from attracting more foreign students and building partnerships with foreign universities, universities should look at how a global outlook can be incorporated into the education system which can create global citizens.

## International Student Mobility

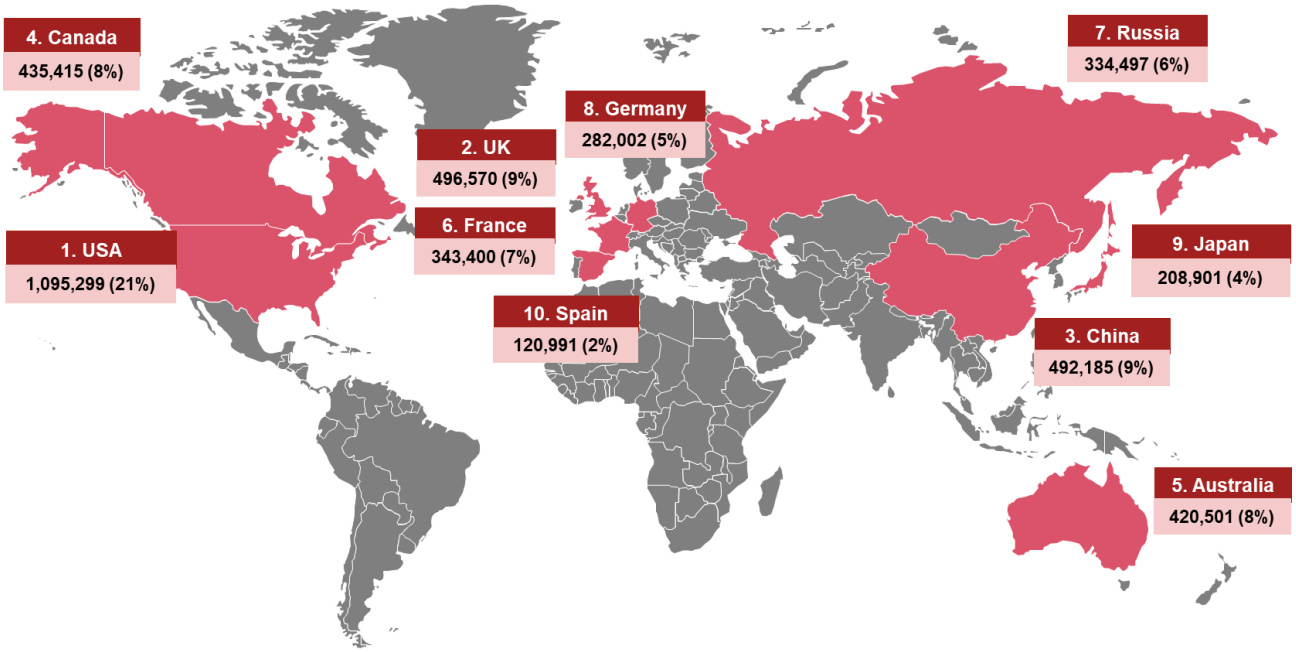
### *Currently USA attracts the greatest number of foreign students and China and India are the largest exporters of foreign students. Engineering and Information & Communication Technologies are the most popular courses pursued by foreign students across countries*

With the increase in globalization and internationalization of higher education, there has been an increase in student mobility across the globe. In 2000, there were about 2 million students who were internationally mobile, and this number has more than doubled in less than two decades to 5.3 million internationally mobile students in 2017[48]. As per the OECD, the number of internationally mobile students is projected to increase to 8 million by 2025[49]. USA, UK, China, Australia, Canada and France

[46] Altbach et al., 2009, Trends in Global Higher Education: Tracking an Academic Revolution, p.23
[47] https://nalandauniv.edu.in/about-nalanda/history-and-revival/
[48] UNESCO, 2019. https://migrationdataportal.org/themes/international-students
[49] https://monitor.icef.com/2017/09/oecd-charts-slowing-international-mobility-growth/

are some of the top countries attracting foreign students. Figure 8 highlights the top 10 countries which attract the maximum number of foreign students.

*Figure 8: Top Destinations for Foreign Students*

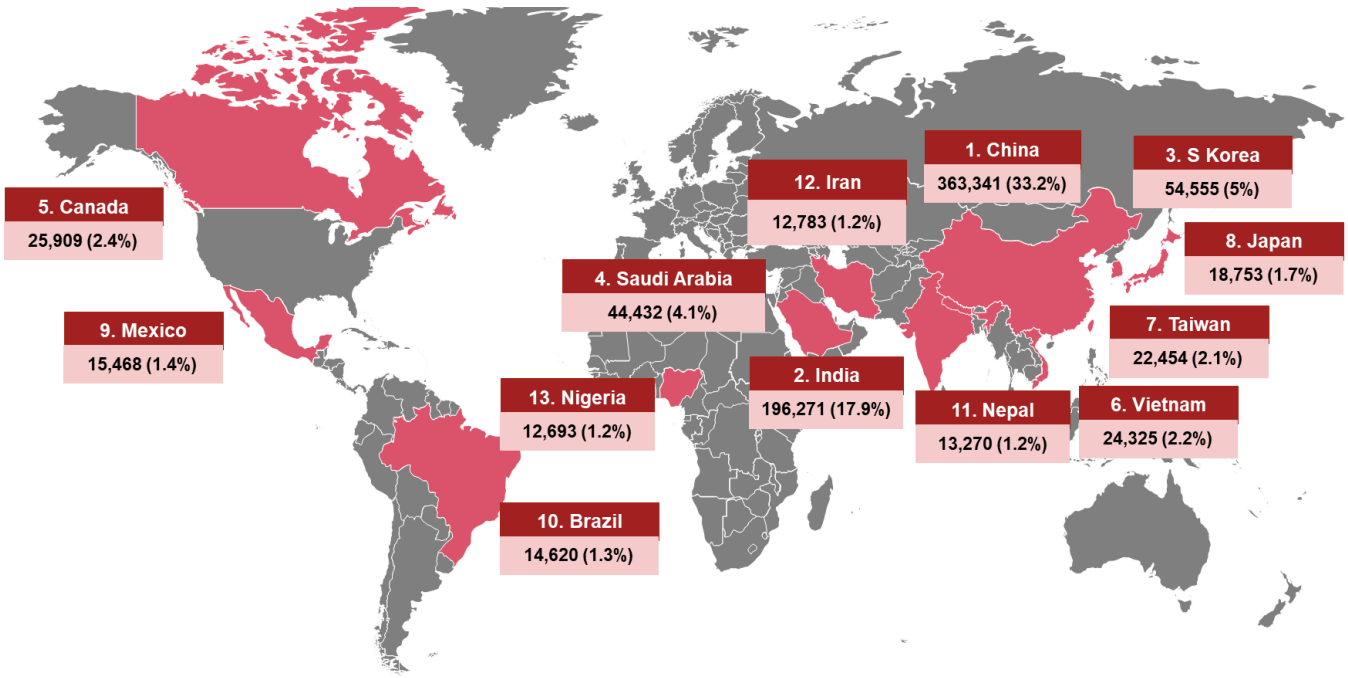



*Source: Institute of International Education, 2019*

USA is the most popular destination for foreign students. In 2019, USA attracted 1,095,299 foreign students, followed by UK (496,570 students), China (492,185 students), Canada (435,415 students), Australia (420,501 students), France (343,400 students), Russia (334,497 students), Germany (282, 002 students), Japan (208,901 students) and Spain (120,991 students).

In terms of outbound mobility, China and India emerge as the top exporters of students who study abroad. More than half the international students globally are from these two countries. China constitutes 33.2% of the total number of international students globally, followed by India. India accounts for 17.9% of international students across the world. This is followed by South Korea (5%), Saudi Arabia (4.1%), Canada (2.4%), Vietnam (2.2%), Taiwan (2.1%), Japan (1.7%), Mexico (1.4%), Brazil (1.3%), Nepal (1.2%), Iran (1.2%) and Nigeria (1.2%). Figure 9 shows the countries that are major exporters of foreign students.

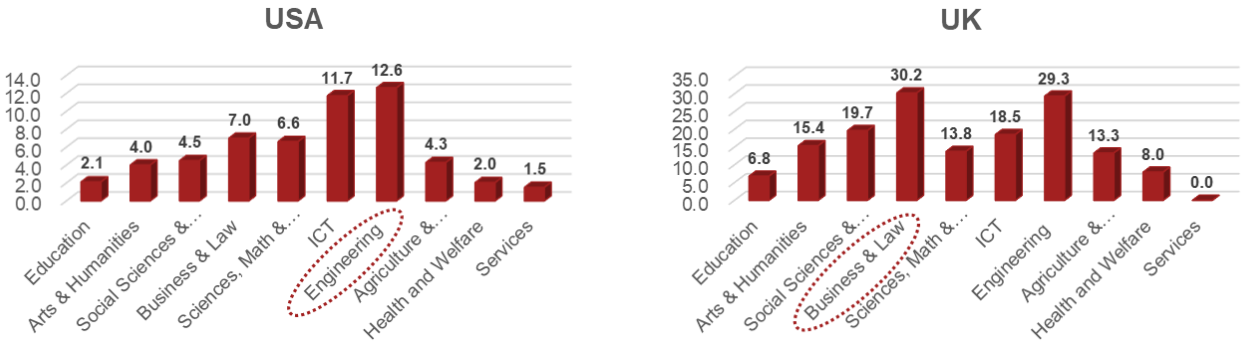
*Figure 9: Top Exporters for Foreign Students*

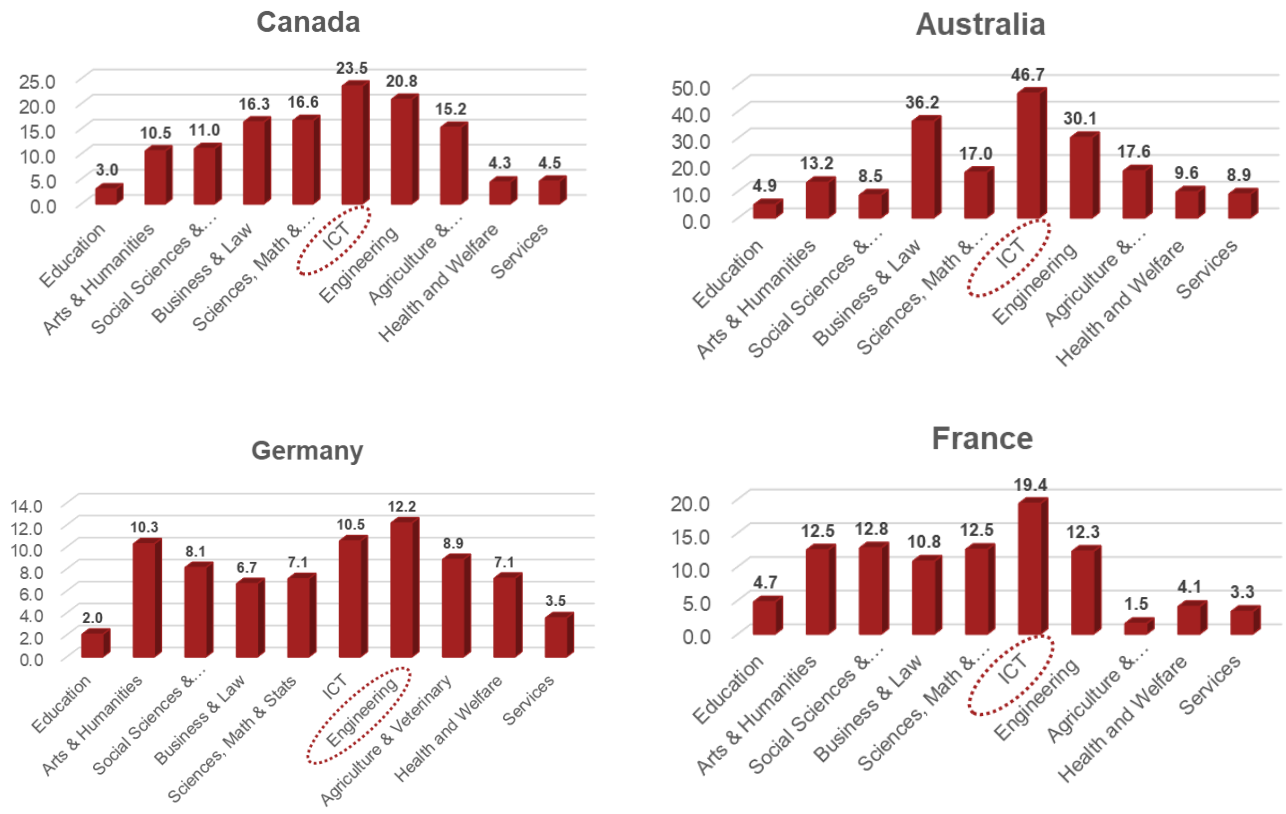



*Source: Institute of International Education 2017-18*

In terms of the courses pursued by international students, Engineering and Information & Communications Technology are the most common subjects. Courses in Business and Law are also popular amongst international students in various countries. Figure 10 shows the percentage of mobile students as a percentage of all the students enrolled in various courses and disciplines in USA, Australia, France, Germany, UK and Canada. These countries are the most popular destinations in terms of attracting foreign students.

*Figure 10: Courses pursued by International Students (% of Total Students Enrolled in Tertiary Education*






***Source: OECD, 2017***

From Figure 10 we see that, Engineering is the most popular course amongst international students in USA and Germany while ICT courses are the most popular amongst international students in Canada, Australia and France. In the UK, Business and Law courses are the most popular amongst international students.

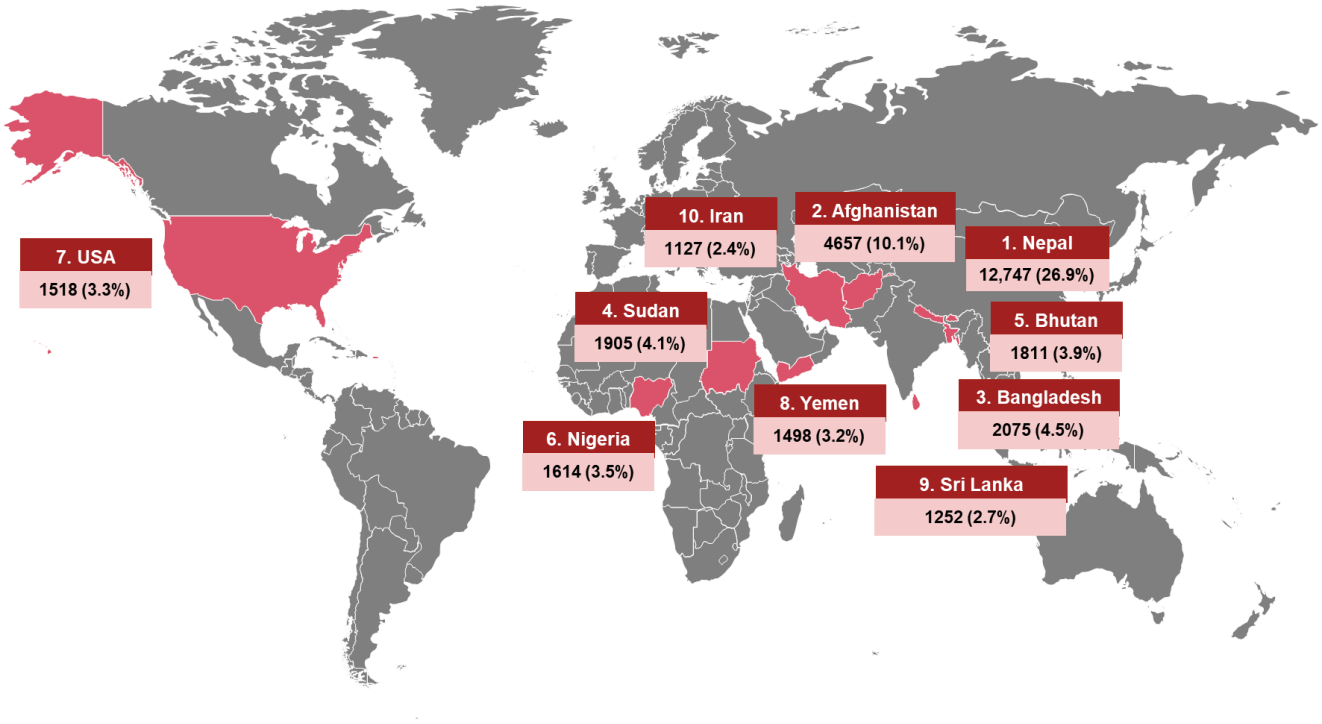
## *Inbound Student Mobility to India*

***Currently India attracts only 1% of the total number of internationally mobile students. India attracts the maximum number of foreign students from Nepal, Afghanistan and Bangladesh. Karnataka attracts the highest number of international students coming to India***

Currently India attracts only 1% of the total number of students who study abroad. In 2018-19, India received 47,427 foreign students for higher education studies[50]. The students came from 164 countries. Figure 11 shows the top 10 countries which send foreign students to India. Although India receives students from 164 countries, 65% of the total foreign students coming to India are from ten countries. Our neighbors- Nepal, Afghanistan, Bangladesh, Bhutan and Sri Lanka contribute to over 48% of the foreign students coming to India. In terms of inbound student mobility, India ranks 26th globally.

[50] All India Survey on Higher Education 2018-19

*Figure 11: Top 10 Countries from which Foreign Students Come to India*




*Source: All India Survey on Higher Education, 2018-19*

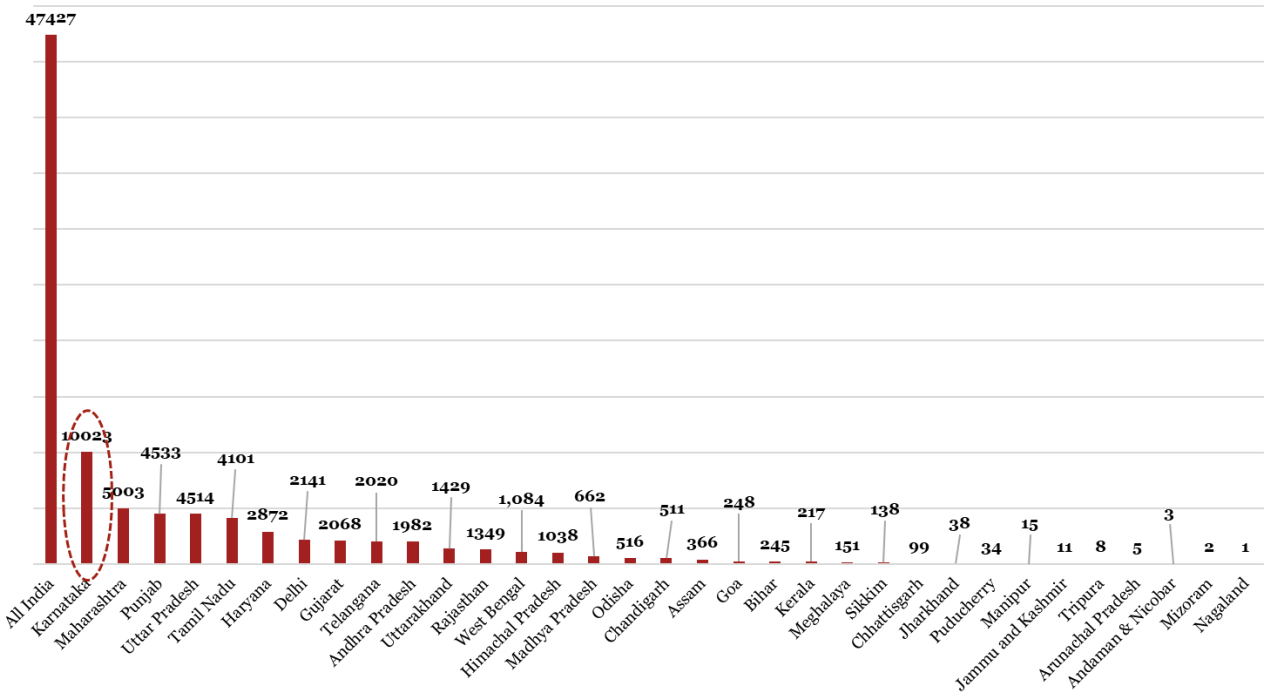
From the map above we see that India is a popular education destination for our neighboring countries and some African countries. India attracts the maximum number of foreign students from Nepal (12,747), contributing to 26.9% of the foreign students coming to India[51]. In 2017-18, around 86% of the students who went abroad for studies from Nepal came to India. After Nepal, India attracts the maximum number of foreign students from Afghanistan (10.1%) followed by Bangladesh (4.5%), Sudan (4.1%), Bhutan (3.9%), Nigeria (3.5%), USA (3.3%), Yemen (3.2%), Sri Lanka (2.7%) and Iran (2.4%)[52].

### *Karnataka attracts the maximum number of foreign students coming to India, however the number of students coming to Karnataka is declining*

Amongst the states, Karnataka attracts the maximum number of foreign students in India. In 2018-19, 21.1% of the foreign students that came to India, studied in Karnataka (10,023). Maharashtra attracted the second highest number of foreign students (10.5%), followed by Punjab (9.5%), Uttar Pradesh (9.5%) and Tamil Nadu (8.6%). The state wise distribution of inbound international students to India is shown in Figure 12.

[51] All India Survey on Higher Education, 2018-19
[52] All India Survey on Higher Education, 2018-19

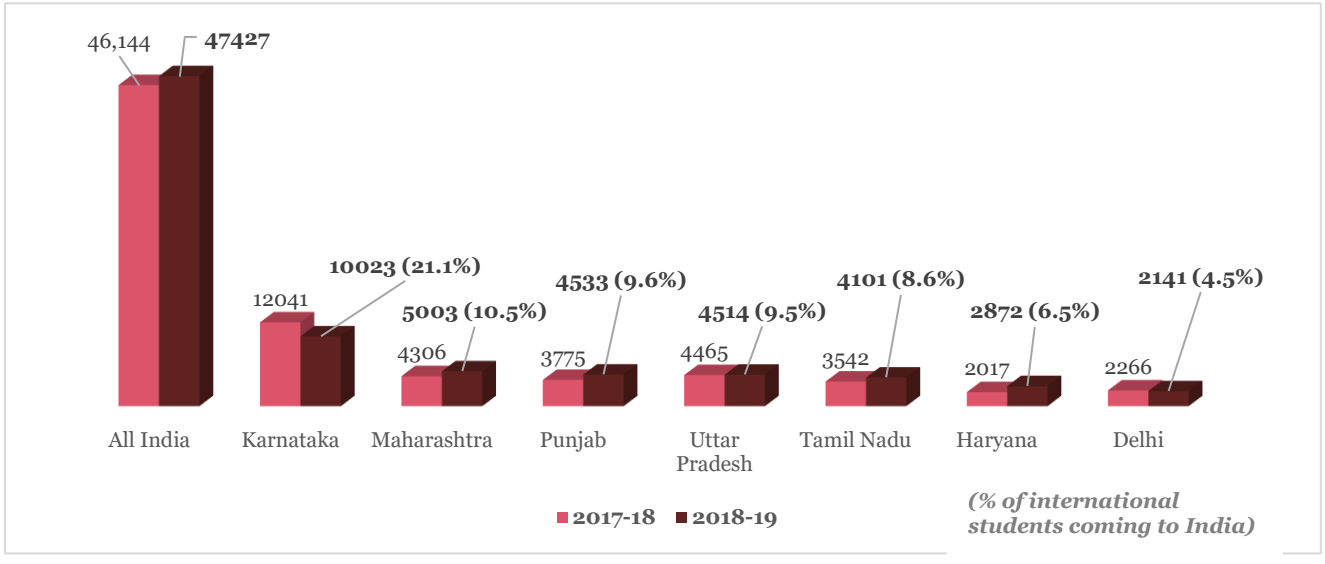
*Figure 12: State Wise Distribution of International Students in India*




*Source: All India Survey on Higher Education, 2018-19*

Although Karnataka receives the maximum number of foreign students coming to India, the number of students coming to India is declining when compared to the previous year. The graph below displays the number of students coming to India in 2018-19 and 2017-18 for selected states in India which are the most popular destinations for foreign students coming to India. The numbers in brackets indicate the share of foreign students coming to the state as a percentage of total foreign students coming to India.

*Figure 13: Comparison of Inbound International Student Mobility in 2017-18 and 2018-19*



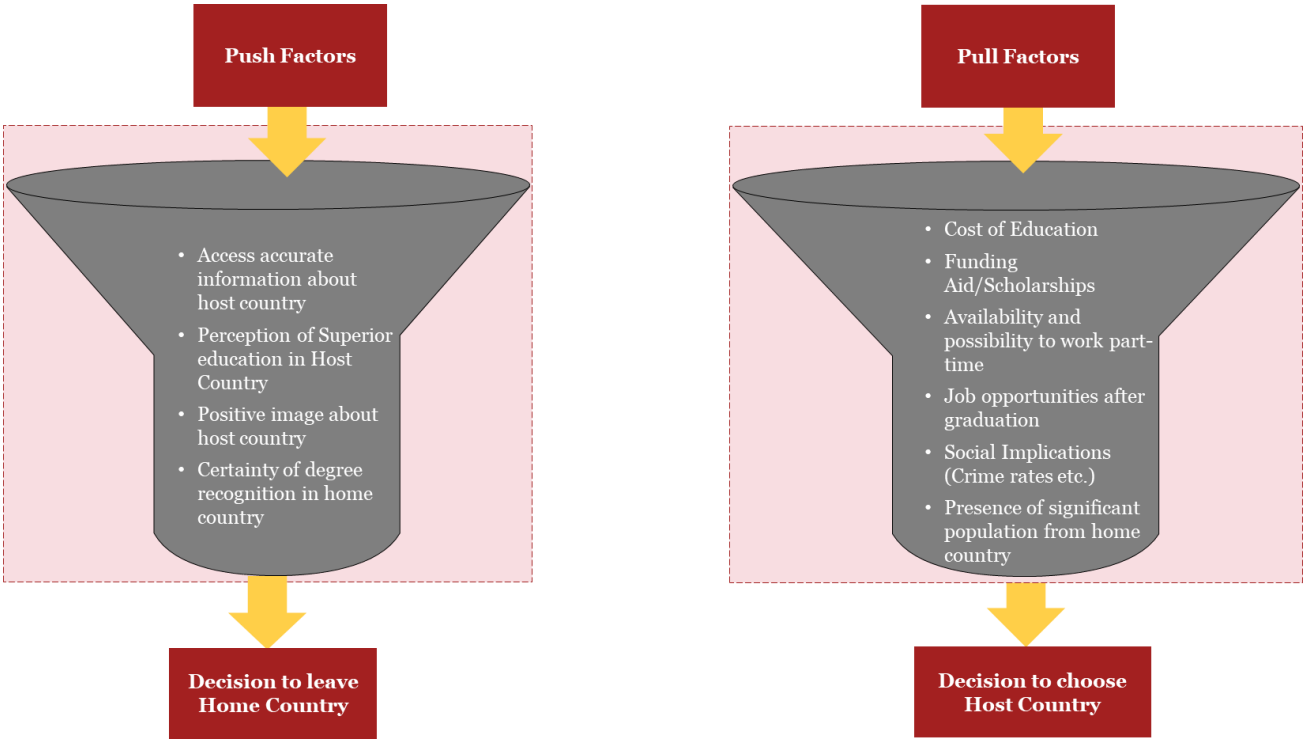

*Source: All India Survey on Higher Education, 2017-18 & 2018-19*

From Figure 13 we see that even though the total number of foreign students coming to India increased from 46,144 in 2017-18 to 47,427 in 2018-19, the number of students coming to Karnataka fell from 12041 in 2017-18 to 10,023 in 2018-19. Karnataka's share in attracting foreign students fell from 26.1% in 2017-18 to 21.1% in 2018-19. From Figure 13 we see that the number of foreign students going to other states such as Maharashtra, Punjab, Uttar Pradesh, Tamil Nadu and Haryana have been increasing. Karnataka is therefore facing stiff competition from other states in terms of attracting foreign students.

## *Push and Pull Model for International Education Flows*

In this section we understand the various factors that determine a student's decision to study abroad. A student's decision to study abroad is determined by two kinds of influences- push factors and pull factors. Push factors operate within the source country and motivate the students to leave the home country to study abroad. Pull factors on the other hand operate in the destination country and are the reasons why students choose to go to a particular destination to study. Based on a review of the literature and stakeholder consultations, some push and pull factors for international education flows have been identified and are also depicted in Figure 14.

*Figure 14: Push and Pull Factors for Students to Study Abroad*




***Source: Study Team Analysis***

As mentioned earlier, push factors operate in the home country. Some of the push factors, which motivate students to leave their home countries for studies abroad include:

- ***Information Availability about Host Country:*** The more information a student has about a host country in his country, about differences in the education system, job market and

living conditions between the home country and host country, the student may be motivated to leave the home country if s/he perceives better opportunities in the host country.

- ***Perception of Superior Education in Host Country:*** This is probably one of the most critical factors for international student mobility. If a student perceives the education system to be of a superior quality than what is available in his/her home country, the student will decide to pursue education opportunities outside the home country.
- ***Positive Image about Host Country:*** A positive image about the Host Country in the Home country can motivate a student to study abroad. If the perception about a country is poor in the Home country (for example, if there is a perception of racism faced by the citizens in the Host country), the student may decide to not study in the particular host country.
- ***Certainty of Degree Recognition in Home Country:*** Certainty of degree recognition in the home country, and in some cases superior perception of foreign degrees, which could translate into benefits such as higher pay, access to superior jobs etc., may motivate a student to study abroad.

Some of the Pull factors which determine students' decisions to choose a particular host country to pursue their education include:

- ***Cost of Education:*** The cost of education and affordability is a major determinant for students choosing to study abroad. Ceteris paribus, higher education costs are deterrent for attracting foreign students.
- ***Availability of Funding Aid and Scholarships:*** Since the cost of education plays a critical role in determining a student's decision to pursue higher education abroad, the availability of funding aid and scholarships can play an important role in attracting students to the host country.
- ***Availability and Possibility to Work Part-time:*** Part-time work opportunities may give students the option to earn while they learn, making it possible for them to afford tuition and living expenses abroad.
- ***Job opportunities after Graduation:*** Abundance of quality job opportunities after education motivate students to go to a particular host country, especially since they see it as an avenue to recover the investment made for education and also as an opportunity to work in better and higher paid jobs.
- ***Social Implications:*** Factors such as safety, low crime rates, an open and welcoming society, social integration etc. can help students feel safe and at home when pursuing higher education abroad. These factors can play a critical role in motivating students to choose a particular host country.
- ***Presence of Significant Population from Home Country:*** The presence of people from one's home country may help one feel a sense of belonging and home due to familiarity of meeting people from a similar cultural background. Hence the presence of significant population from home country can help attract foreign students to the host country.

## *Global Best Practices for Internationalization of Higher Education*

Several countries and universities globally have been taking a number of initiatives to promote internationalization and attract more foreign students to their countries. Some of the best practices implemented by the top destinations for foreign students have been summarized in Table 2.

## *Table 2: Global Best Practices for Promoting Internationalization of Higher Education*

| Strategy | Interventions |
|---|---|
| | ***United States of America*** |
| **Study Abroad Program** | • Partnership with foreign universities.<br>• Credits for courses taken abroad |
| **Recruiting international students** | • Recruitment and marketing strategies<br>• International University Rankings<br>• Support system for foreign students in host university<br>• Relaxation of student visa policy |
| **Internationalization of faculty** | • Short term faculty exchange programs<br>• Creating research partnerships with universities abroad<br>• Adding more global content to curriculum |
| | ***China*** |
| **Setting up of overseas campuses and collaborative laboratories** | • Example: in 2015, Tsinghua University built an exchange centre in the United States, in collaboration with the University of Washington and Microsoft. |
| **Improving Rankings in League Tables** | • Large public investment in Higher Education and Research |
| **Scholarships** | • In 2018, the government marked 3 billion yuan ($469 million) to spend on education of international students in China |
| **Regulatory changes** | • Students who graduate from Chinese universities are exempt from 2-year work experience requirement to get work visa.<br>• Allowing international students in Beijing to start part-time businesses & start-ups if they have consent from their universities and valid residence permit.<br>• Multilateral agreements with BRICS nations to boost greater cooperation in research, postgraduate training and academic publishing. |
| | ***Japan*** |
| **Programs launched by Japanese Government** | • Target of 300,000 International Students by 2020<br>• Global 30 Project: Focus on internationalizing 30 top universities<br>• Focus on Post Graduate Courses in Natural Sciences and Management Studies and Undergraduate short-term program |
| **Facilities for International Students** | • Introduction of English as course of instruction<br>• Increasing intake sessions-allowing students to enrol in Autumn & Spring<br>• Establishing joint degree programs with other institutions<br>• Helping students navigate with Japanese culture<br>• Separate international dormitories |
| **Regulatory Changes** | • Allow transfer of credits between universities |

| Strategy | Interventions |
|---|---|
| | ***France*** |
| **Regulatory Changes** | • Simplification of Visa processes and documents required<br>• Residence permits for graduates to enable them to look for jobs |
| **Partnerships with Foreign universities** | • Seed fund of € 5 million available to set up partnerships between French and Foreign universities. |
| **Good Reception Conditions** | • Establishment of Welcome Desk<br>• An advisor assigned to each student<br>• Platform for searching for accommodation<br>• Range of courses offered in English and courses for learning French as a language |
| **Financial Assistance** | • Scholarships- Govt has tripled the number of scholarships available from 2018<br>• Financial assistance covering two-thirds of tuition fee available for students outside EEA<br>• Housing Assistance provided to all students.<br>• Seed fund of € 10 million for international student services (€ 5 million dedicated for creating welcome desks for students & remaining for peer support, French language courses and courses in English |
| | ***United Kingdom*** |
| **Institutional Mechanism** | • Active role played by individual universities<br>• Various institutional measures including setting up of international offices for student recruitment, international quality assurance & enhancement, international students careers department, home students study abroad office, faculty internationalization of the curriculum, global research, language support for international students (English for academic purposes), redefined roles for senior management to include integration of international teaching & learning practices, policy research etc.), international leadership training departments, international student exchange facilities, distance learning and online cross-border education and international partnerships universities for developing collaborations with foreign universities (institutional measures undertaken by various universities in the UK are summarized in Figure 15). |

*Figure 15: Institutional Setup for Promoting Internationalization in UK*


*Source: Grant, E. The Internationalization of Higher Education Whitepaper*

The action plan for promoting internationalization of higher education in Karnataka draws from the best practices of various countries mentioned above and tailors it to the requirements and social and institutional setting within Karnataka.

## *Action Plan for Internationalization of Higher Education in Karnataka*

The internationalization of universities will enable the export of services by attracting foreign students to study in Karnataka. As seen in the previous section, currently India attracts only 1% of the students who study abroad. The following interventions are proposed for increasing internationalization of Higher Education in Karnataka:

- ***Setting Vision for Internationalization of Higher Education:*** In 2018-19, Karnataka attracted 10,023 international students, which was the highest in the country (21.1% of total number of foreign students coming to India)[53]. However, in 2017-18 there were 12,041 foreign students (26.1% of the total foreign students coming to India) who studied in Karnataka[54]. The total number of foreign students that came to India in 2017-18 was 46,144; while in 2018-19 this number increased to 47,427[55]. Although Karnataka has been attracting the maximum number of foreign students, we can see that the number of foreign students coming to Karnataka has been decreasing, even though the total number of foreign students coming to India has been increasing.

  As a first step, Karnataka should fix a clear vision with a clear target for attracting foreign students to the state. *It is proposed that Karnataka should set an objective to attract 15,000*

[53] All India Survey on Higher Education 2018-19
[54] All India Survey on Higher Education 2017-18
[55] All India Survey on Higher Education 2018-19 & 2017-18

*foreign students over the next five years*. A clear vision will allow all the stakeholders to work more effectively to achieve the set objectives and target. The Higher Education department should prepare a clear vision statement stating the objectives of the state in promoting internationalization of higher education in Karnataka and the measures to achieve them. The vision statement should be prepared by the department in the *short-term*.

- ***Budgetary allocation to selected universities to promote internationalization:*** Based on the global best practices, it is recommended that a few universities with potential for attracting foreign students and promoting internationalization be selected and invited to promote internationalization in Karnataka. *The Department of Higher Education should invite a set of selected universities for workshops, encouraging them to promote internationalization in Karnataka*. These universities should be selected based on their current infrastructure & capacity, quality of education services provided by them and their current efforts for internationalization including the number of foreign students in these universities, partnerships with foreign universities etc.

  The workshops should focus on sensitizing universities about the benefits of internationalization, government plans and initiatives to promote the same, Karnataka's vision and the means by which universities can promote internationalization. They should also encourage universities to focus on quality research and teaching, which can help improve the ranking of Indian universities, making them more attractive for foreign students. Modules on Intellectual Property Rights (IPR)[56] will help in fostering innovation and enhancing the overall research environment, which will enable Indian universities to gain prominence globally.

  To support the internationalization initiatives by universities in Karnataka, the department should set aside a budget to encourage the same. The fund should work in such a way that any of the selected universities/colleges in Karnataka wanting to promote internationalization, should submit a proposal (with a detailed budget) to the department requesting for budgetary allocation. The department should screen the proposals to evaluate the intent, capacity and quality of the proposal before sanctioning the budget. It should be ensured that the Department is proactive and quick to respond to these proposals. The budget set aside under this intervention should be used for the following activities:
  - *Participation in international education fairs:* to promote universities in Karnataka abroad.
  - *Marketing and promotion activities:* Financial support to universities for undertaking marketing and promotion activities such as advertising in newspapers in target countries, appointing staff in foreign countries to pitch about local colleges in Karnataka in schools and colleges of the target country etc. An analysis of the international students coming to India shows that in 2017-18, India attracted 86% of all the internationally mobile Nepalese students and 12% and 14% of all the Iranian and Nigerian students who study abroad respectively. Analysis of the major countries exporting students to study abroad and to study in India shows that India can *focus on targeting markets in the sub-continent and Africa* to attract foreign students.
  - *Setting up hostels for international students:* since foreign students may find it difficult to find accommodation etc., it is recommended that universities provide quality accommodation for foreign students. Hostels set up for international students should

[56] Intellectual Property refers to creations of the mind and encompasses various tools like Patents, Copyrights, Trademarks, Industrial Designs & Layout, Plant Varieties, Geographical Indications, Traditional Knowledge and Trade Secrets.

ensure good facilities including the provision of food catering to international tastes etc. This will help international students to adjust more easily and can also allow for networking with other international students.

- *Setting of Student Office/Welcome Desk to help international students with procedural formalities and cultural assimilation:* international students may find it difficult to navigate with procedural formalities such as visas and residence permits etc. due to lack of proper information, inability to speak local languages, bureaucratic nature of Indian procedures etc. Student offices that can guide students with these issues would help them adjust faster and enhance the ease of studying in Karnataka for them. Additionally, these offices can also help with cultural assimilation of students by providing information on the city relating to public transport, location of shops and other facilities, cultural events etc.
- *Collaborations with foreign universities:* Enabling collaborations with foreign students can promote internationalization through student exchanges, faculty exchanges, research partnerships etc. To help universities build such collaborations, a budget can be provided to universities for the costs incurred (e.g. travel costs to another country etc.) in forging such collaborations.

A workshop encouraging universities to promote internationalization and setting of a fund to support universities for the same can be undertaken by the Department of Higher Education, Government of Karnataka in the *short-term*. Even if the Department cannot provide complete budgetary support for the above initiatives, it can at least provide partial support to encourage private universities to undertake internationalization initiatives.

- ***Setting up of online website (multilingual) that provides information about studying in Karnataka:*** An assessment of the push factors for students' decision to study abroad indicates that availability of accurate information about a study destination is extremely critical. Currently a foreign student needs to go individually to websites of different universities. A single window providing all the relevant information about studying in Karnataka can ease the process for the viewer. Hence, a separate website providing accurate information about studying in Karnataka in a reader-friendly manner should be created. Websites of individual universities can be linked here. The website can be created as a *short-term* measure and should be controlled by the Department of Higher Education. It is also recommended that this website be linked to the Study in India website of Government of India.

- ***Provision of scholarships for international students:*** Availability of funding aid and scholarships is a major pull factor for attracting international students. To promote internationalization, the department can provide a few scholarships for international students. This action can be taken by the Department of Higher Education in the *short-term*. Scholarships will not only attract more international students in the short run but will also help popularize universities in Karnataka through word of mouth.

- ***NRI quotas (especially for Medical Education) to enable promotion of universities through word of mouth:*** Indian communities abroad can effectively promote universities in Karnataka through word-of-mouth. To enable this, universities in Karnataka should attract Non Resident Indian (NRI) students. Quotas for NRI students will help attract more students from other countries, since NRI students who come to Karnataka can disemminate information about universities in Karnataka amongst the local population in their

resident countries. While, NRI quotas already exist in some universities, it should also be introduced for other courses such as in medical education. This action can be undertaken by the Department of Medical Education in the *short-term*. The Department of Higher Education may also explore is the NRI quota can be offered for other courses.

- ***Allowing transfer of credits between universities, articulation agreements for allowing recognition of Indian degrees/certificates in other countries:*** Through stakeholder consultation it was found that a major deterrent for foreign students studying in India is that Indian degrees are not recognized universally. Hence a number of nationalities do not prefer to opt for pursuing degree courses in India. Additionally, Indian universities do not allow for transfer of credits with foreign universities.

  To solve this problem, regulatory changes which can allow for transfer of credits with other countries and articulation agreements which allow recognition of Indian degrees and certificates in other countries should be put in place. This would require action at the national level by Ministry of Human Resource Development (MHRD), Government of India. At the state level, universities in Karnataka can try to have one-on-one agreements and collaborations with foreign universities promoting student exchanges and joint degrees. This action can be taken by the Department of Higher Education, Government of Karnataka and universities in Karnataka with the support of the Higher Education department in the *short and medium term.*

- ***Evolving course offerings including opportunities for internships with MNCs:*** To attract more foreign students, universities in Karnataka should offer courses in fields/disciplines in which Karnataka is relatively strong or which are unique to Karnataka. Since universities in Karnataka would have a natural advantage in offering these courses, students may be attracted to pursue them in Karnataka due to the superior quality of certain courses offered in the state. Additionally, colleges and universities in Karnataka can take advantage of the presence of major industries in the state in which Karnataka has been leading the country.

  In the recent years there has been a lot of focus on strengthening the links between industry and academia and integrating industry exposure into course content. Given that Karnataka is leading the country in various sectors such as IT, aerospace and bio-technology, universities in Karnataka should focus on offering courses in Bio-Technology, Pharma, R&D[57] and IT. Additionally, universities here can also consider floating courses in Archeology[58] and Frugal Innovation[59], given the strengths of Karnataka.

  When offering these courses, universities should ensure that they have collaborations with industries, by providing students with internship opportunities in industries, sessions from industry experts etc. The emphasis on academia-industry collaboration offered in these courses will make Karnataka as an attractive study destination. Moreover, offering such courses will create a talent pool for these sectors, and successfully integrate a practical, industry-oriented dimension to the course content.

[57] 44% of India's R&D centers are in Karnataka (Invest Karnataka)
[58] There are about 42 archeological sites in Karnataka. Hampi is classified as UNESCOs World Heritage Site.
[59] Karnataka was ranked No. 1 in NITI Aayog's Innovation Index

Given the international nature of business today, universities can also have collaborations with MNCs which operate globally in a number of countries. Karnataka is home to 400 of the Fortune 500 companies. Universities in Karnataka can explore the possibility of tie-ups with MNCs which can place international students in their home countries after their graduation. Since after study work prospects is a critical pull factor determining student's education choices, a higher probability of a placement can help in attracting more students. Hence, as a *short-term measure*, the Department of Higher Education should encourage universities to forge such collaborations with MNCs and offer courses unique to Karnataka/related to leading industries in Karnataka.

Collaborations with industry organizations such as Confederation of Indian Industry (CII) and Federation of Karnataka Chambers of Commerce and Industry (FKCCI) will also help foster industry-academia linkages. Additionally, collaborating with the initiatives of several organizations can strengthen the overall ecosystem for education in Karnataka. For example, the CII conducts an annual event called the Global Higher Education Summit which brings together global institutes and organizations to foster linkages and investments in higher education and research. The Department of Higher Education should ensure to collaborate with CII and FKCCI on such initiatives.

- ***Set-up Project Management Unit (PMU) for implementation of above actions:*** For the effective implementation of the above reforms, it is recommended that a PMU be established in the Department of Higher Education, Government of Karnataka to support the government for the implementation of the proposed actions.

# Education Technology

# 4. Education Technology

## About Education Technology (Ed-Tech)

Education Technology (Ed-Tech) refers to "the practice of using technology to support teaching and the effective day-to-day management of educational institutions. It includes hardware (such as tablets, laptops or other digital devices), and digital resources, software and services that help aid teaching, meet specific needs, and help the daily running of education institutions (such as management information systems, information sharing platforms and communication tools)[60]."

While the use of technology in Education has revolutionized classroom teaching and enhanced the efficiency of operations in educational institutions, the use of the online platform as a tool for self-learning and to aid classroom teaching has been increasing widely. The growth of the online market for education further boosts the Ed-tech segment. With the evolution of technologies such as artificial intelligence, cloud computing, machine learning etc., the education technology sector has been growing.

There are a number of advantages for adopting technology in education. Integrating technology in education can help improve learning outcomes by increasing learner engagement, encouraging collaboration and providing options for individual learning by allowing students to learn at their own pace, re-do complex concepts etc. Ed-tech can also help enhance access to education and also improve access to quality education. Online education has also been associated with lower costs, making education more affordable for many.

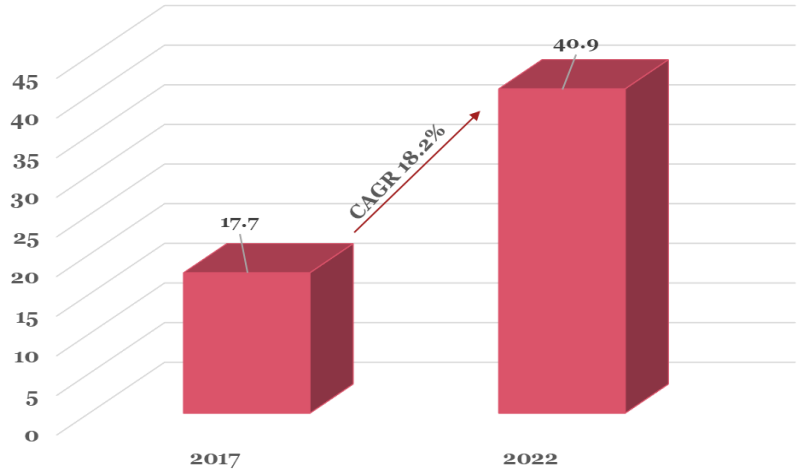
## Ed-Tech Market

### The Ed-Tech segment is growing at 18% globally; Bengaluru is amongst the leading hubs for Ed-tech globally

The Ed-Tech Market is growing rapidly at a CAGR of 18.2%. In 2017, the global education technology market crossed a revenue of USD 17.7 billion and is expected to grow to USD 40.9 billion by 2022[61]. Figure 16 depicts the size of the Education technology sector. A study has estimated that currently, less than 3% of the total expenditure on education globally is spent on education technology[62]. There is much scope for the growth of this sector. Technological innovation in education has been associated with improved responsiveness to customer demands and better design and quality.

[60] Department of Education, Government of UK
[61] Frost & Sullivan, 2017. Retrieved from https://store.frost.com/growth-opportunities-in-the-education-technology-market-forecast-to-2022.html
[62] https://www.holoniq.com/edtech/10-charts-that-explain-the-global-education-technology-market/

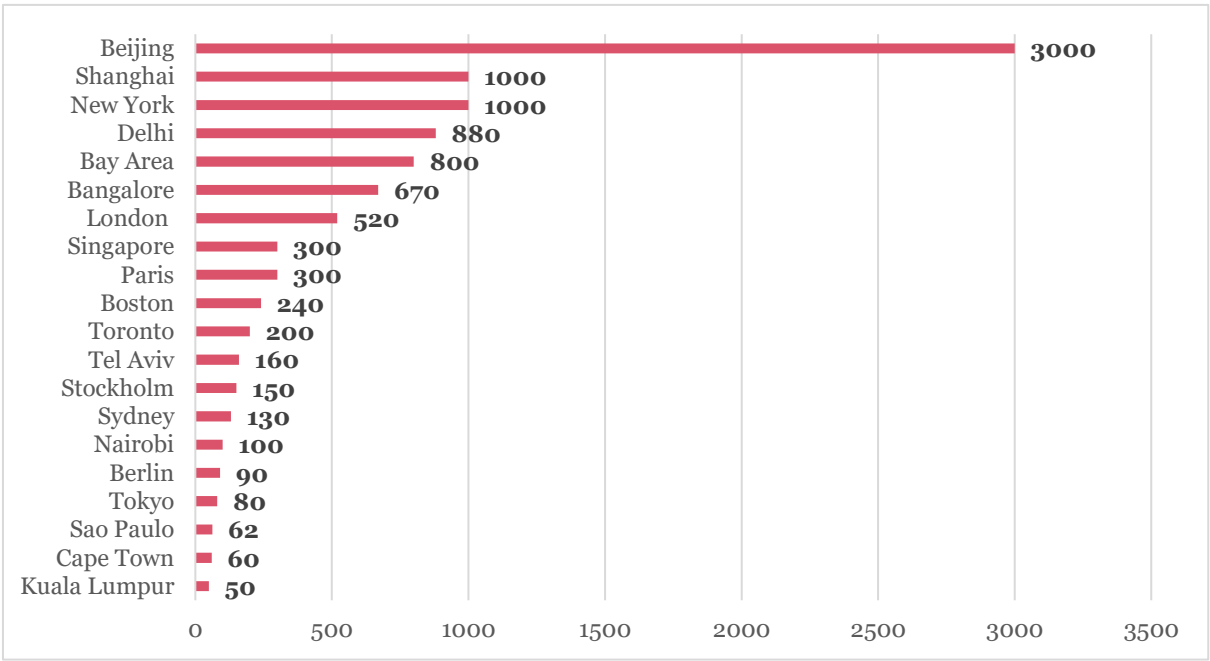
*Figure 16: Global Ed-Tech Industry (USD Billion)*




*Source: Frost & Sullivan, 2017*

A study conducted by Navitas Ventures tried to understand the best global ecosystems for Ed-tech globally. The study results showed that Beijing was the largest hub for Ed-tech globally. In terms of number of Ed-tech firms headquartered, Beijing housed the maximum number of Ed-tech firms followed by Shanghai, New York, Delhi and Bay Area. Figure 17 ranks the top 20 cities in terms of number of Ed-tech firms headquartered in the respective cities. As Figure 17 suggests, Bengaluru, the capital city of Karnataka ranks 6th globally in terms of number of Ed-tech companies headquartered globally.

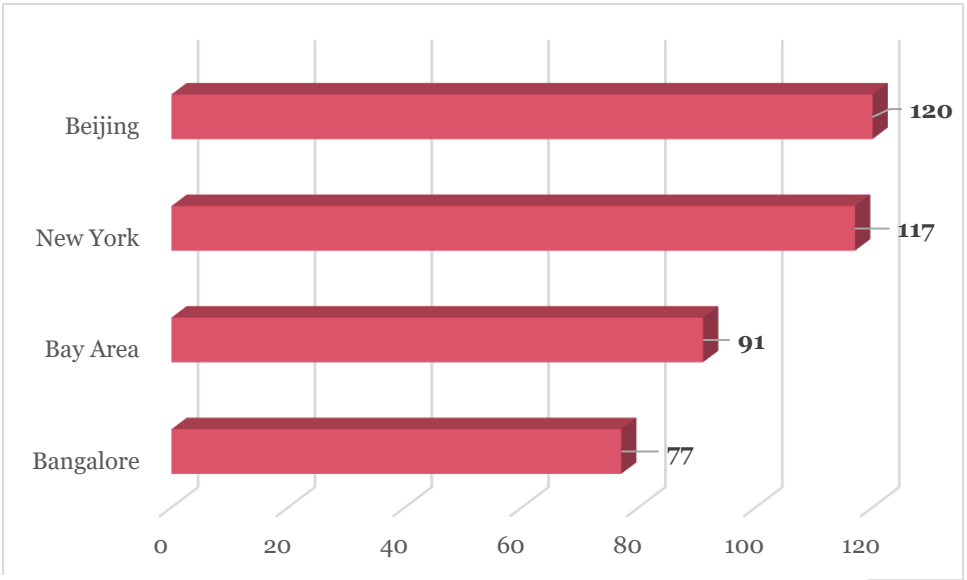
*Figure 17: Number of Ed-Tech Companies Headquartered*




*Source: Navitas, 2018*

In terms of number of ed-tech companies per-capita, Bengaluru ranks fourth globally with 77 ed-tech firms per capita. Beijing continues to top the list (120 ed-tech firms per capita) followed by New York and Bay Area. Figure 18 shows the number of ed-tech firms per capita.

***Figure 18: Concentration of Ed-Tech Companies Per Capita***



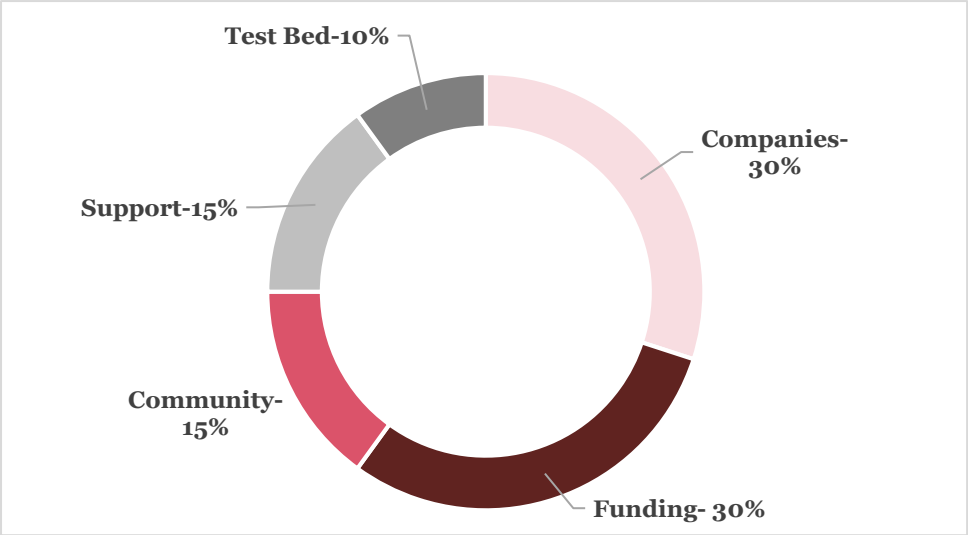

***Source: Navitas, 2018***

The same study by Navitas Ventures also evaluated the ecosystem for Ed-tech in various cities globally. The EdTech Index was formulated based on five parameters:

- ***Companies:*** This reflects the breadth and depth of the ed-tech space in the cities in terms of the number of companies headquartered. This dimension contributes to 30% of the EdTech Index.
- ***Funding:*** The funding dimension of the index represents the capital available for ed-tech firms and investor coverage. The funding component has a weightage of 30% in the EdTech Index.
- ***Community:*** This represents the frequency and maturity of ed-tech activities in the respective cities. These include the availability of accelerators, co-working spaces, business groups, events, meet-ups and government initiatives to support ed-tech firms. This dimension has a weightage of 15% in the EdTech Index.
- ***Support:*** This dimension of the Ed-tech sector represents the support available to ed-tech entrepreneurs from the government and the traditional education sector. The support parameter has a weightage of 15% in the EdTech index.
- ***Test Bed:*** A quality education system can provide foundations for the growth of ed-tech companies. This dimension includes the breadth, quality and accessibility of the local education sector. This dimension contributes to 10% of the EdTech Index.

Figure 19 represents the weightage of each of these parameters to the EdTech index.

*Figure 19: Parameters for EdTech Index*




*Source: Navitas, 2018*

The table below shows the results of the EdTech Index by Navitas group. The results suggest that Beijing tops the EdTech Index with a total score of 88. Beijing is followed by Bay Area, New York, Boston, London, Shanghai and Bengaluru. Bengaluru ranks 7th globally in the EdTech Index.

*Table 3: Results of EdTech Index*

| Rank | City | Parameters | | | | | Ed-Tech Index |
|---|---|---|---|---|---|---|---|
| | | Companies | Funding | Community | Support | Test bed | |
| Maximum Score | | 30 | 30 | 15 | 15 | 10 | 100 |
| 1 | Beijing | 30 | 26 | 14 | 13 | 6 | 88 |
| 2 | Bay Area | 26 | 30 | 10 | 14 | 8 | 86 |
| 3 | New York | 26 | 24 | 15 | 12 | 9 | 85 |
| 4 | Boston | 23 | 17 | 15 | 14 | 9 | 76 |
| 5 | London | 23 | 17 | 15 | 11 | 8 | 72 |
| 6 | Shanghai | 21 | 20 | 10 | 11 | 7 | 68 |
| 7 | Bengaluru | 23 | 17 | 8 | 7 | 5 | 58 |
| 8 | Paris | 20 | 12 | 11 | 9 | 6 | 58 |
| 9 | Tel Aviv | 20 | 9 | 13 | 11 | 5 | 57 |
| 10 | Stockholm | 18 | 9 | 10 | 14 | 6 | 56 |
| 11 | Singapore | 18 | 8 | 10 | 11 | 7 | 54 |
| 12 | Berlin | 15 | 12 | 10 | 10 | 6 | 53 |
| 13 | Toronto | 17 | 11 | 9 | 9 | 6 | 51 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 14 | Delhi NCR | 20 | 14 | 7 | 5 | 6 | 51 |
| 15 | Sydney | 17 | 6 | 8 | 9 | 6 | 45 |
| 16 | Tokyo | 11 | 9 | 7 | 11 | 6 | 42 |
| 17 | Kuala Lumpur | 11 | 6 | 6 | 8 | 6 | 37 |
| 18 | Nairobi | 14 | 6 | 9 | 5 | 4 | 37 |
| 19 | Cape Town | 14 | 6 | 8 | 5 | 3 | 35 |
| 20 | Sao Paulo | 12 | 6 | 7 | 5 | 4 | 33 |

***Source: Navitas, 2018***

**Bengaluru – Leading Hub for Ed-Tech**

*Bengaluru is not only the leading city for EdTech in India but is also globally competitive, being the 7th best EdTech hub in the world, as per the EdTech Index by Navitas group. Bengaluru is home to some of the India's largest ed-tech companies including Byju's and Simplilearn. Byjus received a total funding of USD 244 million by 2018 and is valued over USD 1 billion. On the EdTech Index, Bengaluru scores a total of 58. The component wise scores for Bengaluru are 23 for Companies, 17 for Funding, 8 for Community, 7 for Support and 5 for Test Bed. In 2018, Bengaluru had over 670 EdTech companies with 28 companies receiving funding over USD 1 million (Navitas Group). Comparing the results with other leading cities for Ed-Tech we see that Bengaluru does well on the companies dimension of the index, even beating Shanghai which has an overall higher rank than Bengaluru. In terms of other components such as Community, Support and Test Bed, Bengaluru performs poorer than Paris, Tel Aviv and Stockholm which are ranked below Bengaluru in the overall Ed-Tech Index. In terms of the Funding component, accessibility of funds for Ed-Tech entrepreneurs is lower compared to the leading Ed-Tech hubs such as Beijing, Bay Area, New York and Shanghai.* ***Hence to further boost Ed-tech in Bengaluru, measures focussing on Community, Support and Test Bed are critical.***

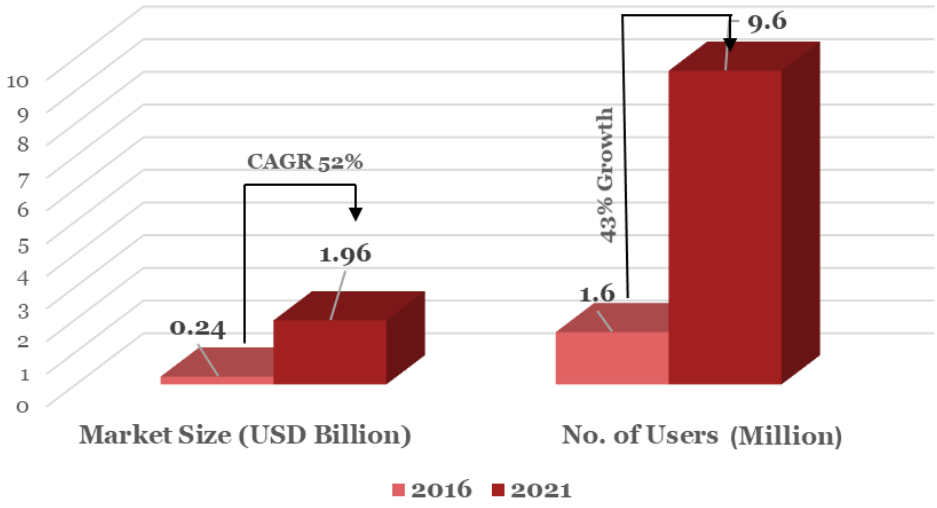
## *Online Education Market*

### *The online education market in India is expected to grow at a CAGR of 52% while the number of users is expected to grow by 43% by 2021*

The growth of the online market for education in India has been a major reason for the growth of the education technology segment in India. India is the second largest e-learning market after USA. The online education market in India stood at USD 0.24 billion in 2016 and is expected to reach USD 1.96 billion by 2021 exhibiting a high CAGR of 52%. In terms of the number of users, in 2016 there were 1.6 million users of online education in India. This is expected to grow to 9.6 million by 2021, exhibiting a growth rate of 43%[63]. Figure 20 shows the market size and number of users for the online education market in India.

[63] Online Education in India: 2021, Google & KPMG (2017)

*Figure 20: Online Education Market in India*




*Source: Online Education in India: 2021*

The key categories in the online education segment include Primary and Secondary Supplemental Education, Test Preparation, Reskilling and Online Certifications, Higher Education and Language and Casual learning. Figure 21 shows the expected market size of these segments by 2021 and compares them with the market size of these segments in 2016. Figure 21 shows that in 2016, test preparation contributed to 17% of the online education market, higher education contributed to 13%, primary & secondary supplemental education contributed 30%, reskilling & online certification contributed to 38% and language & casual learning contributed to 2% of the online education market. It is expected that by 2021, the contribution of test preparation and primary & secondary supplemental education will increase to 26% and 39% respectively. The contribution of the higher education, reskilling & online certification and language & casual learning segments are expected to be 9%, 23% and 1% of the online education market respectively. As per the report 'Online Education in India: 2021', the test preparation segment is expected to grow at a CAGR of 64%, primary & secondary supplemental education is expected to grow at a CAGR of 60%, reskilling & online certifications at 38% CAGR, higher education at 41% CAGR and language & casual learning at 42% CAGR[64].

[64] Online Education in India: 2021, Google & KPMG (2017)

*Figure 21: Segments of Online Education Market- 2016 and 2021*


*Source: Online Education in India: 2021*

## *Growth Drivers for Ed-Tech and Online Market in India*

As seen from Figure 16, the Education Technology segment is growing rapidly at a CAGR of 18.2% between 2017- 2022. There are a number of factors contributing to the growth of the sector. These have been discussed below.

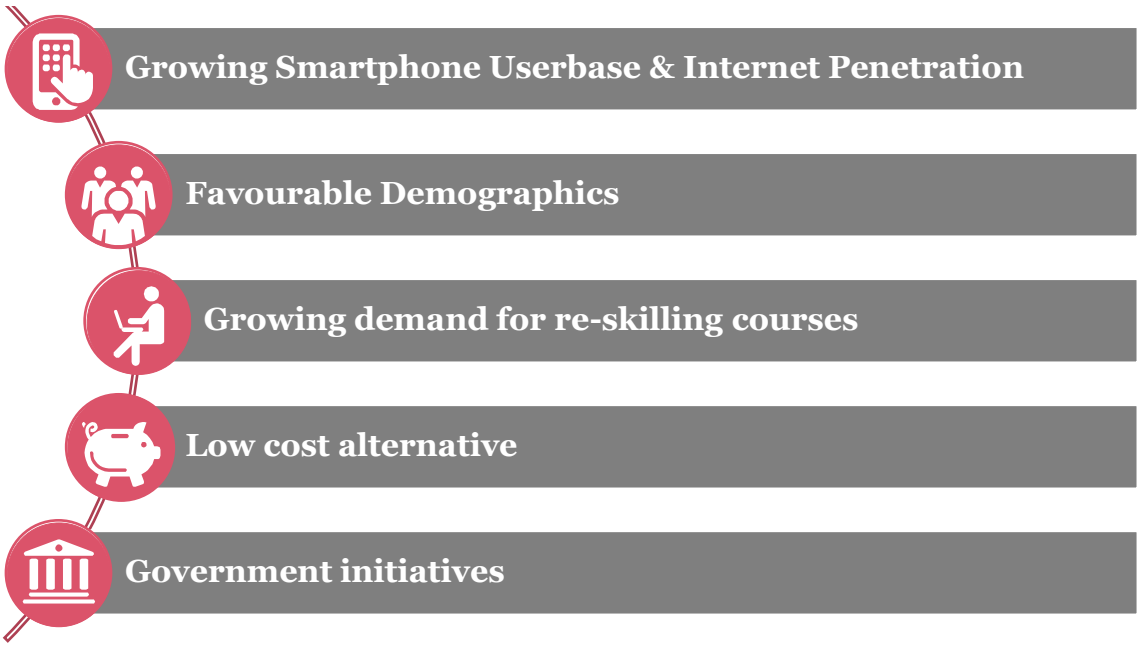
- ***Growing Smartphone Userbase and Internet Penetration:*** India has the second largest number of internet users in the world after China as per the Internet and Mobile Association of India (IAMAI). As per IAMAI, there were 451 million monthly active internet users in March 2019. It has been projected that by 2021, there will be 635.8 million internet users in India. The internet penetration increased to 35% in 2019 compared to 27% in 2016 and is expected to grow further. In 2019, there were 373.9 million smartphone users in India, and this is expected to increase to 442.5 million users by 2022[65] With a growing smartphone userbase and internet penetration, the use of ed-tech has been increasing and will continue to grow.

- ***Favorable Demographics:*** India has a large young population. As per the 2011 census, youth (15-24 years) in India constitute almost 1/5$^{th}$ (19.1%) of India's total population. The share of youth to total population is expected to grow to 34.3% by 2020[66]. Including the age group of 5-15 years, India has almost 500 million people within the age group of 5-24 years, which is the largest in the world[67]. Given that this age group is a large target sector for education and is also a large user of the online channel, the presence of a large youth is a significant factor for the growth of ed-tech in India.

[65] Statista, 2020. Retrieved from https://www.statista.com/statistics/467163/forecast-of-smartphone-users-in-india/
[66] Youth in India (2017), Ministry of Statistics and Program Implementation, Government of India
[67] India Brand Equity Foundation, 2019

- ***Growing Demand for Re-Skilling Courses to Increase Employability Quotient:*** As per the World Economic Forum, over 50% of the workers in India will require reskilling to meet the talent demands of the future by 2022[68]. With the onset of the fourth industrial revolution and changing nature of work, there is a huge demand for workers to upskill and re-skill themselves. This provides a great opportunity for the ed-tech and online market.

*Figure 22: Growth Drivers for Ed-Tech in India*




- ***Low Cost Alternative:*** Online education provides a low-cost alternative to traditional education due to various factors such as lower infrastructure costs, larger student pool etc. which allow for economies of scale to operate. On an average, online education is almost 53% cheaper than traditional education[69]. Moreover, with the increasing costs of education (between 2008 and 2014, there has been approximately 175% increase in cost of education[70]; as per some estimates, the annual education inflation has been ~10-12% in India[71]), online education has emerged as an attractive low-cost alternative, boosting the ed-tech space.

- ***Government Initiatives such as SWAYAM, Skill India, Digital India etc.:*** A number of government initiatives like SWAYAM encourage the availability of quality education online or indirectly boost ed-tech by improving digital connectivity or encouraging skill development.

[68] World Economic Forum (2018). Retrieved from: https://www.weforum.org/our-impact/over-half-of-india-s-workers-will-need-reskilling-by-2022-we-set-up-a-taskforce-to-help

[69] Online Education in India: 2021, Google & KPMG (2017)

[70] National Sample Survey Office, 2015

[71] https://economictimes.indiatimes.com/tdmc/your-money/how-to-plan-for-child-education-expenses/articleshow/52500991.cms?from=mdr

**Growth Drivers of Chinese Ed-Tech Industry**

*China is the leader for Ed-Tech, with Beijing and Shanghai as major ed-tech hubs globally. China is home to the world's largest ed-tech companies by market capitalization- TAL Education Group (US$17.7 billion) and New Oriental (US$11.3 billion) occupying the 1st and 2nd global positions respectively. It is also home to the world's best-funded startups. Seven of the top ten ed-tech unicorns globally are in China. China is one of the fastest digitizing markets-with over 171 million digital learners already. A peep into the growth drivers of the Chinese ed-tech industry shows that the major growth drivers for ed-tech in China include a large learner population, willingness to spend on education, technological development & increased internet access, government support and access to capital. Comparing the situation with India, we see that in India too we have a large learner population, increasing willingness to spend on education and increased internet access- which are driving the ed-tech segment. However,* ***enhancing government support and access to capital for ed-tech firms in India can further drive high growth of the Indian ed-tech sector****.*

## *Emerging Trends in Ed-Tech in India*

A number of new trends are emerging in the ed-tech space in India. Some of these have been summarized below:

- ***Upskilling:*** The World Economic Forum (WEF) estimates that by 2022, more than half of India's workforce will require upskilling. In artificial intelligence alone, more than 58 million jobs will be created by 2022. Sectors like Data Science, Digital Marketing, Google Analytics, Machine Learning, Growth Hacking and Marketing are witnessing high demand. This will create a significant demand for upskilling the existing workforce.

- ***Bite Size Learning:*** Bite size learning has the advantage of saving time, being flexible, creating larger impact and affordability. It is estimated that by 2021, India's mobile download will reach to 22.7 billion[72], creating large revenue opportunities for such content.

- ***Curated Content:*** There is a growing trend towards platforms with proper curators to bring the best educators vs. open systems which let anyone teach aspiring students. This will significantly increase the quality of the content available online which will further drive the ed-tech sector.

- ***Vernacular Languages:*** Another growing trend in the ed-tech segment is the consumption of learning content in vernacular languages. Regional language users expected to grow at a CAGR of 18% to reach 536 million in 2021.Career Anna- one of India's largest platform offering courses in Indian languages is witnessing month-month growth by 200% in non-English categories[73].

- ***Personalized Mentorship:*** Currently live online tutoring contributes to 1 % of supplementary education market[74]. However, this segment is expected to grow in the future and would require trained and certified individuals to come on-board.

[72] https://www.indiatoday.in/education-today/featurephilia/story/top-5-ed-tech-trends-you-will-see-in-2019-1436509-2019-01-22
[73] https://www.indiatoday.in/education-today/featurephilia/story/top-5-ed-tech-trends-you-will-see-in-2019-1436509-2019-01-22
[74] https://www.indiatoday.in/education-today/featurephilia/story/top-5-ed-tech-trends-you-will-see-in-2019-1436509-2019-01-22

## *Challenges in Indian Ed-Tech Segment identified through Stakeholder Consultations*

To understand the challenges faced by Ed-Tech companies in Karnataka, a number of companies were reached out to. The following issues were identified through stakeholder consultations in Karnataka:

- ***Lack of access to working capital and funds for growth/scaling up:*** This issue is faced by the smaller ed-tech firms. A number of stakeholders pointed out that the banking sector, especially nationalized banks do not understand the ed-tech sector and their business models which makes it difficult for the firms to raise working capital from banks even though they are profitable. The smaller firms also find it difficult to obtain funds to scale up which restricts the growth of the firm.

- ***Market access for smaller firms:*** The smaller ed-tech firms face difficulties in reaching out to markets, especially since they face stiff competition from the larger firms. Assistance to the firms with business development, exposure to events, linkages with the traditional education sector and promotion of the companies by the Government in Government events etc. could help the firms gain market access.

- ***Lack of ease of doing business:*** The lack of EoDB was another issue emphasized by a number of stakeholders. The absence of EoDB particularly for filing taxes was highlighted. The stakeholders explained that the tax filing process was extremely cumbersome and tedious, involving too much paperwork; leading to a drain on the companies in terms of time and resources.

- ***Issues in receiving payments, especially from bigger firms:*** This issue is faced mainly by the smaller firms and startups. Due to late receipt of payments, especially from the bigger firms, the daily operations of the firms are hindered and the entrepreneurs face difficulties in running their day-to-day operations, paying wages etc. Although there is a regulation that MSMEs should be paid within 45 days, many start-ups receive their payments only after this period. Some consultations with smaller start-ups revealed that they receive their payments generally after 82-90 days. Late payments increase the interest burden on the firms, which in turn cuts into the profitability. To address this issue, the Government should strictly implement the 45 days payment term for MSMEs.

- ***Tax- related issues:*** There is a lack of clarity in the terms of the Goods and Services Tax (GST) on how to classify certain ed-tech products, how to value the material sold on an app, and the classification of the product as a good or service. Currently, anything sold on the internet is classified as a service. However, many firms believe that a large range of the output from ed-tech firms are products. Hence there is a lack of clarity in this area. Additionally, a number of smaller start-ups have also mentioned that there are too many additional taxes apart from the GST. These include professional tax (to the tune of Rs. 200 per employee per month and Rs. 2500 per office per year) and ESI. The firms requested that exemptions on these fronts would be helpful.

- ***Lack of skill availability:*** The ed-tech segment requires talent with a wide array of skills ranging from content creation, programming and media related skills such as animation, visual effects, video editors etc. It also requires an understanding of teaching and learning pedagogies.

In addition to this, a number of softwares are used by the Ed-tech industry. Although programmers and IT professionals are easily found in Bengaluru, the other skills are harder to find. Moreover, it is difficult to find talent trained in all the skills. Hence, the ed-tech industry can greatly benefit by training resources in all these skills.

## *Global Best Practices for Boosting Ed-Tech Sector*

A number of initiatives have been taken by various Governments and private organizations worldwide to promote Ed-tech. A look into the components of the EdTech Index by Navitas group suggests that the ed-tech ecosystem in Bengaluru lacks in terms of the community, support and test-bed dimensions. Moreover, interactions with stakeholders reveal that the major challenges faced by firms in this sector include issues in procuring working capital, gaining market access for start-ups, lack of ease of doing business and skill shortages for content creation and media related skills. Given below are the best practices followed by many countries to boost the ed-tech sector and tackle similar issues identified above.

*Table 4: Global Best Practices to promote Ed-Tech*

| Country | Strategy |
|---|---|
| **China** | • Heavy support from Government including increased spending on Education since 2011.<br>• Separate building for Ed-tech start-ups- the MOOC Times Building in Beijing is a 22-story tower filled with more than 3 dozen Ed-tech start-ups and houses an accelerator & incubator.<br>• Gaokao Reforms & Technology Curriculum- more focus on English and use of technology in Education.<br>• 13th Five Year Plan focusses on inclusive pre-school education by 2020, informationization of education, technology in education etc.<br>• Modernization of China's Education by 2030 Plan launched in 2017- to focus on increasing investment in advancing education systems through learning space innovations, learning methodology innovations, curriculum redesigns, organizational restructures and the adoption of new IT technologies in learning and teaching. |
| **Estonia** | • Government to support start-ups in education technology industry with €300,000 over the next two years- Government to invest in solutions developed by start-ups and their implementation in Estonian schools. |
| **UK** | • Provision of high-speed internet to schools in need<br>• Help schools with adopting technology in education including best practice dissemination, teacher trainings etc.<br>• Work with industry, research and education groups to establish test beds<br>• Making Ed-tech start-ups aware of facilities available for them<br>• Promote accelerators and incubators for Ed-tech start-ups. |
| **Indian Institute of Technology Bombay** | • Specialized Master's and PhD programs to create talent pool for Ed-tech sector- theories of learning and pedagogy, analysis, design, effective implementation and evaluation of learning environments; instructional design, research methodologies, translating research into practice, and working collaboratively on complex interdisciplinary projects, content creation and adoption of emerging technologies. |
| **Nordic Ed-tech Alliance** | • Public and private organizations working together to promote Nordic excellence in the global EdTech industry. The Alliance is made up of public |

institutions, industry associations, companies, investors, and universities from Norway, Sweden, Finland, Denmark and Iceland
- Support of Ed-tech companies from pre-incubation to acceleration
- Opens platform for discussion about innovation and helps in building stronger networks that can drive innovation
- Enhances cooperation and collaborations between market stakeholders and Ed-tech companies
- Improves access to funding

The action plan for promoting the education technology sector in Karnataka draws from the best practices of various countries mentioned above and tailors it to the characteristics of the Bengaluru startup and ed-tech space and the issues faced by ed-tech firms in Karnataka.

## *Action Plan for Boosting Ed-Tech in Karnataka*

The Ed-tech segment is growing at 18% globally[75] and Bengaluru is one of the leading cities for Ed-tech globally. Bengaluru ranks 6th in the world in terms of number of companies headquartered and 4th in the world in terms of concentration of Ed-tech companies per capita[76]. The global Ed-tech Index (developed by Navitas) ranks Bengaluru 7th in the world in terms of various parameters such as companies (breadth and depth of ed-tech space), funding (availability of capital and investor coverage), community (frequency and maturity of ed-tech activity), support (from government and traditional education sector) and test beds (breadth, quality and accessibility of local education sector). Comparing the scores for Bengaluru with other leading ed-tech hubs globally on each of these parameters shows that the Bengaluru Ed-Tech segment lacks in terms of the community, support and test-bed dimensions.

Interactions with stakeholders reveal that the major challenges faced by firms in this sector include issues in procuring working capital, gaining market access for startups, regulatory reforms to enhance ease of doing business and skill shortages for content creation and media related skills. Based on all the factors mentioned above and the global best practices, the following interventions are proposed for boosting Karnataka's ed-tech sector:

- ***Setting up a dedicated incubator and accelerator for ed-tech startups:*** To increase the support to ed-tech entrepreneurs and startups, it is proposed that an incubator and accelerator exclusively for ed-tech startups be established in Karnataka. Incubators can help new and early stage startups to grow by providing various kinds of support such as office space, seed funding opportunities, monitoring, training and other benefits. Accelerators can help later stage startups, enabling them to scale up. Scaling up was identified as one of the key challenges faced by smaller ed-tech startups. A number of cities across the world have incubators and accelerators dedicated exclusively for ed-tech startups. A similar initiative in Karnataka can greatly boost the ed-tech segment.

  Moreover, ed-tech firms can benefit from agglomeration economies due to geographical proximity with other ed-tech firms and entrepreneurs enabling innovation and exchange of ideas. In China for instance, the MOOC Times building is a 22-floor building housing more than

[75] Frost & Sullivan, 2017. Retrieved from https://store.frost.com/growth-opportunities-in-the-education-technology-market-forecast-to-2022.html
[76] Navitas, 2018.

three dozen ed-tech startups and an incubator for ed-tech firms. Additionally, the accelerator can create awareness amongst firms on IPR related issues and can provide handholding support to existing firms for filing IPRs, in particular copyrights and patents. This will foster a culture for innovation within ed-tech firms in Karnataka. It will also enable firms in Karnataka to earn more revenues through royalties etc., which would ensue as a result of commercializing one's intellectual property. Establishing an incubator and accelerator exclusively for ed-tech startups can be undertaken by the Department of Higher Education, GoK/Department of Commerce & Industries, GoK/Department of Electronics Information Technology Biotechnology and Science & Technology, GoK as a *long-term* measure. While a dedicated incubator/accelerator for ed-tech firms will boost the ed-tech segment, establishment of an incubator/accelerator may take some time. In the *short-term*, the Department of Higher Education/Commerce & Industries/ Department of Electronics Information Technology Biotechnology and Science & Technology, GoK can popularize the already existing incubator programs by Government of Karnataka (such as Elevate 100), NASSCOM etc. amongst ed-tech firms.

- ***Setting up a revolving credit facility to provide working capital to ed-tech firms:*** Lack of access to capital for expansion and growth is a major issue faced by a number of ed-tech entrepreneurs[77]. Setting up a revolving credit facility which can support ed-tech firms in Karnataka can help promote the sector. The fund can probably be tied eventually to the incubator/accelerator established for ed-tech companies. The fund can be managed initially by the Department of Higher Education/ Department of Commerce & Industries, GoK (and can eventually be managed by the accelerator/incubator) and should be implemented as a *short-term* action.

- ***Pilot program for helping Government schools to promote Ed-tech consumption, thereby increasing market access for Ed-tech firms:*** This action will help improve the 'support' and 'test-bed' dimension of the ed-tech ecosystem. Stakeholder interaction revealed that market access was one of the main issues faced by ed-tech startups, particularly the newer and smaller sized firms. Encouraging schools to adopt ed-tech material produced by local firms in Karnataka will not only help enhance and improve teaching methods and learning outcomes but will also increase market access for ed-tech firms. This action should be undertaken by the Department of Primary and Secondary Education and Department of Higher Education, GoK in the *short-term*.

- ***Offer programs on Ed-tech to create a talent pool for Ed-tech industry:*** Another critical issue identified during stakeholder interactions was regarding the availability of skilled talent for the ed-tech segment. The ed-tech industry requires talent trained in a wide array of skills ranging from content creation to animation, visual effects etc. Stakeholder interactions reveal that it is difficult to find employees trained in the entire set of skills required for ed-tech. The Indian Institute of Technology Bombay offers Master's (2-year program) and PhD courses in Educational Technology. The program is an inter-disciplinary program focusing on theories of learning and pedagogy, design & analysis of learning environments, emerging educational technologies, human computer interaction, research methods and data analytics. The programs also train students in using various technologies used for creating ed-tech content. The programs aim to improve the teaching-learning process by training students to design effective

[77] Stakeholder consultation

learning environments which can leverage innovative technologies and pedagogies to support formal and informal learning.

It is recommended that similar programs be offered in some of the premier institutions in Karnataka. This will ensure the availability of skilled talent for the Ed-tech industry in the state. The Department of Higher Education should encourage a few institutions in the state to start similar programs over the *short and medium term*.

- ***Creating forum for Ed-tech companies to enhance support and collaborations for ed-tech firms and build a strong community in Karnataka:*** This measure will address the 'community' aspect of the Ed-Tech ecosystem in the state. As seen from the report on EdTech Index by Navitas group, Bengaluru's ed-tech ecosystem lacks in terms of community when compared to other ed-tech hubs in the world. A strong community can have several positive effects on industries and firms such as mutual support, networking opportunities, access to resources and skills, sense of belonging, professional growth etc. To strengthen the ed-tech community in Karnataka, it is recommended that a forum for ed-tech companies should be formed. The forum should work on organizing community events, meet-ups, workshops, networking sessions etc. for ed-tech firms. The forum can also focus a module on IPR and security related issues to encourage innovation within EdTech firms in Karnataka. The initiative should be supported with initial seed funding from the Government and should look to become self-sustainable in the long run. The Department of Higher Education/Department of Commerce & Industries, GoK should be responsible for ensuring the forum is established in the *short-term*. The forum should focus on conducting such events and promote ed-tech firms not only in Bengaluru, but also in other districts of Karnataka.

- ***Set-up Project Management Unit (PMU) for implementation of above actions:*** To support the Government in the implementation of the above reforms, it is recommended that a PMU be established in the Department of Higher Education/Department of Commerce & Industries, Government of Karnataka for the effective implementation of the proposed actions.

# GER in Higher Education in Karnataka

# 5. Gross Enrolment Ratio in Higher Education in Karnataka

## Gross Enrolment Ratio

The Gross Enrolment Ratio (GER) is defined as the "number of students enrolled in a given level of education, regardless of age, expressed as a percentage of the official school-age population corresponding to the same level of education.[78]" For Higher Education in India, the GER is calculated considering the 18-23 years age group as the eligible age group. The GER is calculated by expressing the total enrolment in higher education, regardless of age as a percentage of the eligible official population (18-23 years) in a given school year[79]. The GER is used to understand the general level of participation and capacity of the higher education system.

## Gross Enrolment Ratio for Higher Education in India

### Average GER in India is 26.3%, Karnataka ranks 15th with GER of 28.8%

The Gross Enrolment Ratio (GER) for Higher Education in India is 26.3%[80]. The total enrolment in higher education in 2018-19 was 37.4 million with 18.2 female (48.6%) and 19.2 male students (51.4%). The GER for females is 26.4% and the GER for males in 26.3%[81]. The draft National Education Policy (NEP) has set an objective to obtain at least 50% enrolment in Higher Education by 2035.

In terms of state performances, Sikkim has the highest GER of 53.9%, followed by Tamil Nadu (49%) and Himachal Pradesh (39.6%). Union territories such as Chandigarh, Puducherry and Delhi also top the list with GERs of 50.6%, 46.4% and 46.3% respectively. The table below gives the GER of various states and union territories in India.

*Table 5: Gross Enrolment Ratio for States and Union Territories in India*

| S. No | State/UT | GER (in %) |
|---|---|---|
| 1 | Sikkim | 53.9 |
| 2 | Chandigarh | 50.6 |
| 3 | Tamil Nadu | 49.0 |
| 4 | Puducherry | 46.4 |
| 5 | Delhi | 46.3 |
| 6 | Himachal Pradesh | 39.6 |
| 7 | Uttarakhand | 39.1 |

[78] United Nations Educational, Scientific and Cultural Organization
[79] https://data.gov.in/keywords/gross-enrolment-ratio
[80] All India Survey on Higher Education 2018-19
[81] All India Survey on Higher Education 2018-19

| S. No | State/UT | GER (in %) |
|---|---|---|
| 8 | Kerala | 37.0 |
| 9 | Telangana | 36.2 |
| 10 | Manipur | 33.7 |
| 11 | Andhra Pradesh | 32.4 |
| 12 | Maharashtra | 32.0 |
| 13 | Jammu and Kashmir | 30.9 |
| 14 | Goa | 30.1 |
| 15 | Arunachal Pradesh | 29.7 |
| 16 | Punjab | 29.5 |
| 17 | Haryana | 29.2 |
| 18 | Karnataka | 28.8 |
| 19 | Meghalaya | 25.8 |
| 20 | Uttar Pradesh | 25.8 |
| 21 | Mizoram | 25.7 |
| 22 | Andaman & Nicobar Islands | 23.2 |
| 23 | Rajasthan | 23.0 |
| 24 | Odisha | 22.1 |
| 25 | Madhya Pradesh | 21.5 |
| 26 | Gujarat | 20.4 |
| 27 | West Bengal | 19.3 |
| 28 | Tripura | 19.2 |
| 29 | Jharkhand | 19.1 |
| 30 | Assam | 18.7 |
| 31 | Nagaland | 18.7 |
| 32 | Chhattisgarh | 18.6 |
| 33 | Bihar | 13.6 |
| 34 | Dadra and Nagar Haveli | 9.3 |
| 35 | Lakshadweep | 7.4 |
| 36 | Daman and Diu | 5.5 |
| | **All India** | **26.3** |

***Source: All India Survey on Higher Education, 2018-19***

## *Gross Enrolment Ratio for Higher Education in Karnataka*

### *In Karnataka GER is skewed across districts, with only 9 districts having a GER higher than the national average*

As per the All India Survey on Higher Education 2018-19, the GER in Karnataka is 28.8%. Amongst the states, Karnataka ranks 15th in terms of GER in higher education. The higher education GER for male students in Karnataka is 28.2% and the GER for female students is 29.4%. The district-wise GERs for higher education in Karnataka are shown in the table below. Dakshin Kannada has the highest GER of 68.6%, followed by Bengaluru Urban (50.5%) and Udupi (45.4%). Yadgir district has the lowest GER of 6.3%.

*Table 6: District Wise GER in Karnataka (2018)*

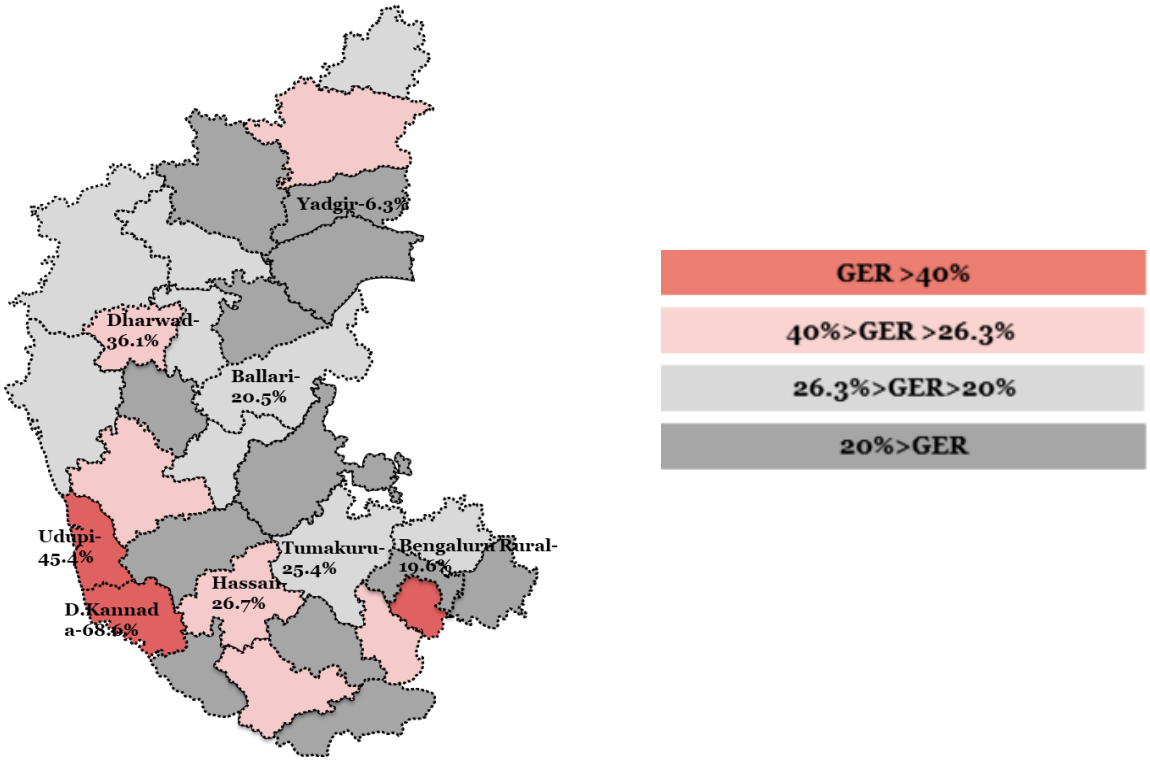
| S. No | District | GER (in %) |
|---|---|---|
| 1 | Dakshina Kannada | 68.6 |
| 2 | Bengaluru Urban | 50.5 |
| 3 | Udupi | 45.4 |
| 4 | Dharwad | 36.1 |
| 5 | Mysuru | 34.1 |
| 6 | Kalaburagi | 32.2 |
| 7 | Shivamogga | 29.3 |
| 8 | Ramanagara | 28.2 |
| 9 | Hassan | 26.7 |
| 10 | Tumakuru | 25.4 |
| 11 | Bagalkot | 25.1 |
| 12 | Vijayapura | 24.2 |
| 13 | Belagavi | 24.2 |
| 14 | Davanagere | 23.5 |
| 15 | Bidar | 23.5 |
| 16 | Uttara Kannada | 22.9 |
| 17 | Chikkaballapura | 21.9 |
| 18 | Gadag | 20.7 |
| 19 | Ballari | 20.5 |
| 20 | Bengaluru Rural | 19.6 |
| 21 | Kolar | 19.5 |
| 22 | Chikkamagalur | 19.4 |
| 23 | Mandya | 18.9 |
| 24 | Raichur | 18.9 |

| S. No | District | GER (in %) |
|---|---|---|
| 25 | Chitradurga | 17.7 |
| 26 | Kodagu | 16.2 |
| 27 | Haveri | 15.6 |
| 28 | Koppal | 11.2 |
| 29 | Chamarajanagar | 10.9 |
| 30 | Yadgir | 6.3 |

*Source: Higher Education Department, Government of Karnataka*

From the table we see that while the district with the highest GER is Dakshin Kannada (68.6%), the district with the least GER is Yadgir (6.3%). This indicates a huge disparity between the GERs of different districts. Figure 23 maps out the GERs in different districts in Karnataka. The districts marked in pink have a GER greater than the National average (26.3%). From Figure 23 we see that only 9 districts have a GER greater than the National average. Out of these, only three districts have a GER of more than 40%- Dakshin Kannada, Bengaluru Urban and Udupi. The remaining 21 districts marked in grey have a GER lower than the National average. Hence, although Karnataka's GER is higher than the National average, only nine districts have a GER higher than the National average. The districts marked in dark grey show the districts where the GER is extremely low, i.e. less than 20%. The districts with the highest and lowest GER within each category (GER>40%; 40%>GER>26.3%; 26.3%>GER>20%; 20%>GER) are marked in the figure.

*Figure 23: GER in Districts of Karnataka*




*Source: Department of Higher Education, Government of Karnataka*

## *Factors Influencing Gross Enrolment Ratio*

The Gross Enrolment Ratio is an indicator of the general level of participation in education. In this section we look into the factors that influence the GER. An understanding of these factors will enable actions that can be taken to increase the GER for Higher Education in Karnataka.

Based on a survey of the literature[82], some factors that influence the GER have been identified. These have been elaborated below:

- ***Economic Background:*** Economic background can play a critical role in determining educational choices. Poor economic background may deter one's choice to obtain education due to necessity to work, unaffordability of tuition fee etc. Hence, students from poorer families may not enroll into education. Districts which are relatively economically backward may have lower GERs.

- ***Expensive Higher Education:*** The more expensive education becomes, it becomes less affordable for many, reducing the accessibility of education. This would in general reduce the GER.

- ***Not interested in Education/Do not know why they should go for it:*** Certain students may not be interested to pursue higher education or may not understand the importance and benefits of obtaining an educational degree. They may hence decide not to pursue education further or may drop out of the education system. Greater awareness on the importance and benefits of education and the opportunities available to students after education may help improve the GER.

- ***Other factors:*** Other factors that influence the enrolment into education include distance from home to educational institutes, availability of transport from home to institute, guidance from family etc.

  *Additionally, based on stakeholder consultation, the following factor was identified for the low GER in Karnataka:*

- ***Low Passing Rate in Pre-University Examination in Karnataka[83]:*** Based on stakeholder consultation, it was identified that in Karnataka, the percentage of students passing the examination for the Pre-University Examination is quite low (~60%), keeping the enrollment of students in the eligible age group into higher education low.

[82] Das, A, 2016, Identification of Reasons of Low GER of Higher Education of Rural Female Students using Clustering Technique; Rena, R, 2007, Factors Affecting the Enrollment and The Retention of Students at Primary Education in Andhra Pradesh; Bhattacharjee, S, 2019, Increasing Enrolment in Higher Education: A quantitative and qualitative challenge

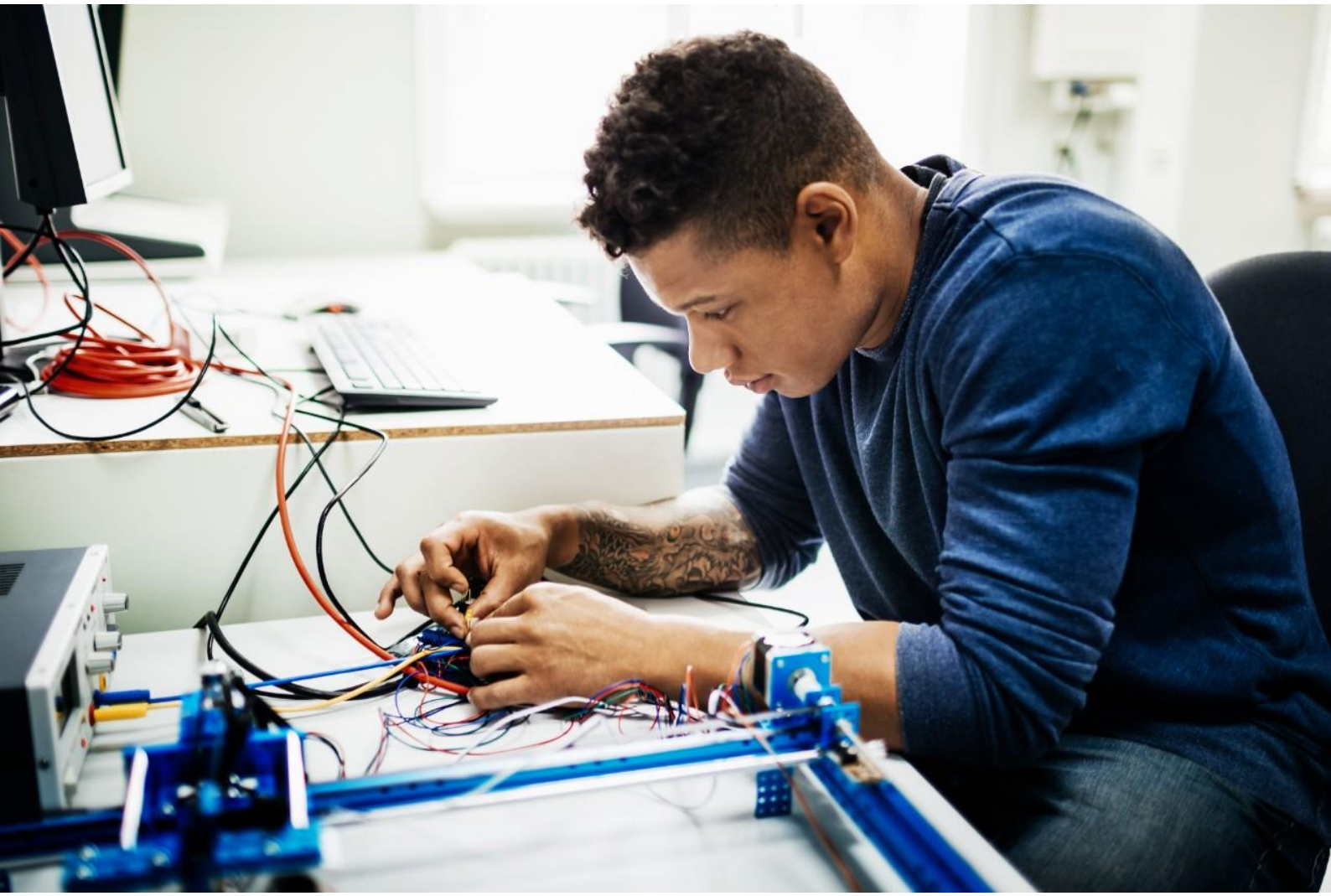
[83] Stakeholder Consultation

## *Action Plan for Increasing Gross Enrolment Ratio in Higher Education in Karnataka*

As seen from the analysis done in the previous sections, although Karnataka's average GER (28.8%) is higher than the all India average GER (26.3%), Karnataka ranks 15th amongst the states in terms of GER. Additionally, the GER is extremely skewed across the districts in Karnataka. Only 9 districts have a GER higher than the National average. The GER in some districts is as low as 6.3% indicating the need to enhance GER in other districts for balanced development. Based on an analysis of the factors contributing to low GER, the following interventions are proposed for enhancing the GER in higher education for Karnataka:

- ***Conducting sensitization programs at school level to encourage students for Higher Education:*** An analysis of the factors affecting enrolment into higher education shows that the lack of awareness on the importance of higher education, lack of interest or lack of awareness about why one should pursue higher education are some of the factors that contribute to low enrolment in higher education. Moreover, because many are unaware of the importance of higher education, many students attribute a low opportunity cost to not pursuing education and instead choose to enter the job market. There is also an unawareness about the options and opportunities available to students after pursuing higher education. Making students at the school aware about the importance of education and the benefits and opportunities available to them after pursuing it could encourage more students to enroll in higher education. In this regard, it is suggested that the Department of Higher Education and Department of Primary and Secondary Education should organize some sensitization programs in schools, encouraging students to pursue higher studies. This action should be taken in the *short-term.*

- ***Strengthening the links between the Pre-University Board in Karnataka and Department of Higher Education:*** As mentioned earlier, the proportion of students passing the Pre-University examination in Karnataka is quite low, ~60%, keeping the enrolment into higher education low. An enquiry into the reasons for low success rate of students can help increase the proportion of students clearing the pre university examination and enrolling into higher education. The Department of Higher Education should take the initiative in the *short term* to reach out to the pre-university board and discuss the same with them. Strengthening the links between the two departments can also provide an opportunity for syncing pre-university and university studies, thereby enhancing the relevance of the curricula.



# Skill Development for CSSS

# 6. Skill Development for Champion Service Sectors

***The Education Services Sector can support other Champion Services sector by undertaking skill development initiatives for other Champion Sectors***

The objective of the Champion Service Sector Scheme is to promote the services sector to increase employment, exports and GDP. With the evolving nature of services globally and in India, skill development initiatives which will help our workforce keep up with the upcoming trends and work requirements is extremely critical.

Since skill development for services sectors is extremely important, we propose that the Education sector can further contribute under the champion services scheme by promoting skill development in other champion services sectors. Hence the education sector can play a critical role in the CSSS scheme by ensuring the availability of a talent pool for the other champion service sectors. Skill development will not only help achieve the objectives of the CSSS but is also aligned to the Skill India mission laid down by Government of India.

As mentioned earlier, the Government of Karnataka has chosen six champion service sectors- Transport & Logistics, Media & Entertainment, Health & Wellness, Remittances & Emigration, Infrastructure & Construction and Education. In this section, we identify the skill gaps and requirements in some of the other champion service sectors. These have been detailed out below. Under the CSSS Action Plan for Education, it is recommended that skill training modules/ degree and diploma programs/certifications addressing the skill gaps and requirements in these sectors should be made available in universities, colleges, training centers and ITIs in Karnataka.

## *Transport and Logistics*

The growth of logistics sector would require skilled manpower. A study undertaken by the National Skill Development Corporation (NSDC) estimates that by 2022, an additional 639,702 workers would be required for transportation, logistics, warehousing and packaging in Karnataka[84]. An assessment of the skill requirements in the sector shows that the road freight and warehousing segment show a critical skill gap which is widening at a rapid pace. Within these segments, the following skills have been identified for the Indian logistics sector:

- ***Truck Drivers:*** In the road freight segment, there is a critical shortage of quality truck drivers. Although this shortage exists at the all India level, stakeholders have pointed out that this problem is extremely critical in Karnataka as well.
- ***Loading Supervisors:*** In the warehousing segment, loading supervisors are in short supply. Loading supervisors generally have a lot of responsibility and hence good quality staff are required for this position.
- ***Warehouse Managers:*** Another critical skill gap in the warehousing segment is for warehouse managers. Until recently warehouse managers were typically in administrative roles, generally in-charge of small-scale godowns. However, with the evolving nature of the

[84] National Skill Development Corporation, District-wise Skill Gap Study for the State of Karnataka

logistics sector, warehousing managers would need to be trained in more warehouse specific operations such as familiarity with new warehousing formats (WA and VNA compared to ground storage), use of IT systems (RFID, WMS etc.), modern equipment (pullet trucks, reach stackers etc.), practices around safety and security of stock and industry specific stocking and handling practices.

- ***Poor image, low attractiveness, absence of institutionalized skill development environment:*** One of the major reasons for the skill gap in the sector is due to the poor image and lack of attractiveness of the jobs in the sector. Another critical reason is the lack of an institutionalized set up for skill development pertaining specifically to the logistics sector. Initiatives to improve the attractiveness of the sector and creation of a robust institutional framework for skill development in logistics are critical to address the skill gap in this sector.

### *Media and Entertainment*

The Media and Entertainment sector has immense growth potential in Karnataka. It is estimated that by 2022, 68,052 additional skilled workers would be required in the sector in Karnataka[85]. Since the sector has various sub-segments such as TV, Print, Gaming, Cinema, Advertising, Animation, Live Events, Radio and Music; this sector would require skill development over a range of skills. These have been elaborated below:

- ***Digital Advertising:*** Digital advertising training and certification programs are offered by some training and educational institutes. Stakeholder consultations have revealed that many prospective candidates claim to have an in-depth understanding of digital marketing with limited knowledge on the same. Most new recruits are trained on the job and high attrition makes it a challenge to constantly recruit new candidates. There is a need to structure and formalize a curriculum on Digital Marketing and related services. In this regard it is recommended that the government create a framework to establish a comprehensive digital marketing curriculum to be offered by universities within the state. The curriculum should be jointly developed with inputs from education institutions and industry.

- ***Animation and Visual Effects:*** The Animation, post-production and VFX (Visual Effects) industry is poised to grow at a CAGR of 20% until 2020[86]. This means that a large number of jobs will be generated in the sector. Even though there are a number of courses in the market for animation and visual effects, stakeholder consultation reveals that the quality of most of these programs is quite poor and most of the fresh graduates require on the job training. This means that there is a need to upgrade the quality of these courses which may require investment in technologies and upskilling of the trainers.

- ***Game Development:*** The global gaming and e-sports industry is expected to touch USD 162 billion by 2023. India's gaming market, growing at a CAGR of 18.9%, is expected to double by 2023 and is projected to reach a market value of USD 2.6 billion[87]. Given the high growth rate of the sector, a number of jobs are expected to emerge in this sector. Game development requires an array of skills ranging from programming skills, visual effects, design, storytelling etc. Currently there are very few courses in the market for game development, and the quality of these courses are often not at par with international standards. Hence, quality programs in

[85] National Skill Development Corporation, District-wise Skill Gap Study for the State of Karnataka
[86] Reimaging India's Media and Entertainment Sector (March 2018)
[87] PwC Global Entertainment and Media Outlook 2019-2023

various skills required for Game Development should be made available for interested students/professionals. Private universities can also be encouraged to offer degree/diploma courses in Game Development.

## *Health & Wellness*

The Indian healthcare and wellness sectors are both growing rapidly and are expected to generate large scale employment opportunities. The Indian healthcare sector is growing at a CAGR of 16.28% and is expected to touch USD 372 billion by 2022[88]. It has been estimated that by 2022, a demand for 619,975 additional skilled workers will be generated for healthcare in Karnataka[89]. Within the Health and Wellness sector, the following segments have been identified for skill development:

- ***Nursing:*** As per international standards and best practices, the optimal nurse-to-patient ratio in an emergency unit should be 1:4 while the nurse-to-patient in a critical care unit must be 1:2. Taking these numbers into account, India is currently facing a shortage of about 2 million nurses. Retention of existing nurses is also a problematic issue due to various factors such as higher salaries abroad, lack of appreciation and excessive work overload. Stakeholder consultations reveal that due to excessive regulation, private players find it extremely difficult to set-up nursing colleges. There is hence a need to train more nurses, retain existing ones by making the profession more attractive and change the existing regulations for nursing colleges, allowing more private players to step in.

- ***Radiology:*** The need for radiologists is particularly important to boost telemedicine and teleradiology. Currently there is a shortage of radiologists who can be employed on a large scale. Moreover, telemedicine centers are unable to train radiologists themselves due to the regulatory hurdles. To become a radiologist, a student needs to complete his MBBS and MD in radiology, which means that a large investment is needed from the student's end. Moreover, most students prefer to practice in hospitals rather than processing reports in teleradiology centers. Stakeholder consultations reveal that for teleradiology, resources can be trained quicker and need not be trained completely in medicine. However, currently, it is not permitted to train students in teleradiology without an MBBS degree, resulting in a skill shortage. A more detailed study estimating the shortages in the sector and the existing regulations would be required.

- ***Paramedical Staff:*** With the growth of the health care sector, there is a growing need for paramedical staff such as occupational therapists, physician's assistants, medical emergency professional, technicians, personnel trained in testing procedures, nurses etc. Currently, hospitals are facing shortages relating to paramedical staff. There is a need to train more people for these roles.

- ***Staff trained for providing intensive care:*** Intensive care is required for patients who are seriously ill and need close monitoring. Intensive care often requires the use of sophisticated monitoring equipment and constant care. Hence intensive care providers need to be trained in the provision of intensive care giving and use of the required equipment. Hospitals currently are facing a shortage for staff who can work in their intensive care/critical care units. It is therefore required to train more professionals for the same.

[88] India Brand Equity Foundation, January 2018.
[89] National Skill Development Corporation, District-wise Skill Gap Study for the State of Karnataka (2017-22)

- ***Increase the number of post-graduate seats:*** To address the shortage of specialists, the number of post-graduate seats (where doctors are trained in a specialized field post MBBS) needs to be increased. Currently, the entire medical education system including public and private colleges have an annual admission capacity of 67,352 MBBS seats and 31,415 post graduate seats. Hence the number of post-graduate seats are less than half (~46%) of the MBBS seats. To increase the number of doctors with specialization, it is therefore necessary to increase the number of post-graduate seats.

### *Education*

A study by the NSDC indicates that by 2022, a demand for 379,100 skilled workers will be generated in the education and skill development sector in Karnataka[90]. Although these statistics reflects the need for teachers and trainers, stakeholder consultations reveal that there is a need for skill development initiatives to boost the ed-tech segment. The education technology segment requires talent with a wide skill set including programming, an understanding of teaching and learning pedagogies, content creation, design (including animation and visual effects), etc. It also requires the use of various technologies and software. Currently it is difficult to find talent trained in all these skills and often the segment requires intensive on the job training. Skilling modules in various skills required in the sector can give a boost to the sector.

## *Action Plan for boosting skills for Champion Services Sectors in Karnataka*

To give a boost to other Champion Service Sectors, the Government of Karnataka has decided to use Education services to ensure the availability of a talent pool for other service sectors. In the sections above, we have identified a few critical skills that are required for the growth of the other Champion Service sectors such as Transport & Logistics, Health & Wellness, Media & Entertainment and Education Technology. To ensure skill availability in these sectors, it is recommended that:

- ***Setting up of Centre of Excellence for provision of training in Skills related to Services Sector:*** A study conducted by the National Skill Development Corporation showed that there will be a demand for 17,06,829 additional workers in four champion sectors selected by Karnataka- healthcare (619,975 workers), education & skill development (379,100), media & entertainment (68,052) and transportation, logistics, warehousing and packaging (639702) by 2022. Additionally, the study also estimates that there will be a huge skill requirement in other service sectors such as tourism, travel, hospitality and trade (1,356,186), IT & ITeS (1,430,938) etc. by 2022[91].

  To meet the skill requirements in the state and to boost the services sectors in Karnataka, it is recommended that a Centre of Excellence focussing on skill development for services be established. The Centre of Excellence can look into the nature of the skilling programs required, future skill requirements, course content and can work with various skill development centres and other institutions to provide skill development programs for service sector skills. It is recommended that the Department of Higher Education/ Department of Commerce & Industries/ Skill Development, Entrepreneurship, Livelihood Department, GoK take charge of setting up the Centre of Excellence by the *medium-term*.

[90] National Skill Development Corporation, District-wise Skill Gap Study for the State of Karnataka (2017-22)
[91] National Skill Development Corporation, District-wise Skill Gap Study for the State of Karnataka (2017-22)

The Centre of Excellence should also look at the ***provision of vocational and skill training programs in districts with low GER***. In the previous section we saw that several districts across Karnataka had a low GER in Higher Education. 21 districts had a GER below the national average of 26.3%. The details of the district wise GER in Karnataka have been provided in Table 6 in the previous section.

In districts where the GER in higher education is low, local skill based training courses should be encouraged. Vocational training courses provide opportunities for higher earnings and increase employability of the people with relatively low investment in terms of time and cost. Provision of training courses in line with the economic activities in the district will not only enable the local population to improve their incomes but will also boost economic activity in the districts due to the availability of appropriate skills and talent pool.

Once the Centre of Excellence for services sector skills is in place, the Centre of Excellence can take responsibility to *identify the required skills in the districts with low GER, in line with the predominant and upcoming economic activities in the districts*.

# *Implementation and Funding Plan*

# 7. Implementation and Funding Plan

The objective of the report was to prepare an Action Plan for Education Services for Karnataka under the Champion Services Sector Scheme. In the previous sections, the focus segments for Karnataka were identified- internationalization of higher education, education technology, enhancing GER for higher education in Karnataka and skill development for champion service sectors. In the previous sections, each of these segments were discussed in detail and an action plan to boost these sectors was drawn out for each of the segments.

In this section we look into the implementation mechanism and funding requirement for each of the interventions under the proposed action plans. For each of the interventions, the table below summarizes the responsible agency for implementing the suggested intervention and the funding requirement for the same. The table also aligns each of the proposed interventions with the champion service pillars (i.e. new processes, new infrastructure, new sector, new mindset and new standards).

*Table 7: Implementation and Funding Plan*

| S. No | Action | CSSS Pillar | Proposed Funding (INR) | Implementing Agency |
|---|---|---|---|---|
| | *Internationalization of Higher Education* | | | |
| 1 | Setting Vision for Internationalization of Higher Education | New Mindset | NA | Department of Higher Education |
| 2 | Conducting Sensitization Workshops for Universities | New Mindset | 5 lakhs | Department of Higher Education |
| 3 | Budgetary allocation to selected universities to promote internationalization<br><br>(attending international fairs, marketing initiatives, English courses, collaboration with foreign universities, setting up hostels, welcome desks) | New Infrastructure | 5 Crores | Department of Higher Education along with selected universities |
| 4 | Setting up of online portal that provides information about studying in Karnataka (multilingual) | New Infrastructure | 30 Lakhs | Department of Higher Education |
| 5 | Provision of scholarships for international students | New Sector | 62.5 Crores<br><br>(for 2500 students) | Department of Higher Education |
| 6 | NRI quotas (especially for Medical Education) to enable promotion of universities through word of mouth | New Standards | NA | Department of Medical Education/ |

| S. No | Action | CSSS Pillar | Proposed Funding (INR) | Implementing Agency |
|---|---|---|---|---|
| | | | | Department of Higher Education |
| 7 | Allowing transfer of credits between universities, articulation agreements for allowing recognition of Indian degrees/certificates in other countries | New Standards | NA | MHRD |
| 8 | Evolving course offerings unique to Karnataka including opportunities for internships with MNCs | New Standards | NA | Department of Higher Education along with selected universities |
| 9 | Set-up Project Management Unit (PMU) for implementation of above actions | - | 2.5 Crores | Department of Higher Education |
| | | ***Education Technology*** | | |
| 1 | Setting up a dedicated incubator and accelerator for ed-tech startups | New Infrastructure | 100 Crores | Department of Higher Education/ Department of Commerce & Industries/ Department of Electronics Information Technology Biotechnology and Science & Technology |
| 2 | Revolving Credit Facility | New Sector | 15 Crores | Department of Higher Education/ Department of Commerce & Industries |
| 3 | Pilot program for helping Government schools to promote Ed-tech consumption, thereby increasing market access for Ed-tech firms | New Mindset | 15 Crores | Department of Primary and Secondary Education and Department of Higher Education |

| S. No | Action | CSSS Pillar | Proposed Funding (INR) | Implementing Agency |
|---|---|---|---|---|
| 4 | Offer programs on Ed-tech to create a talent pool for Ed-tech industry | New Mindset | NA | Department of Higher Education |
| 5 | Creating forum for Ed-tech companies to enhance support and collaborations for ed-tech firms and build a strong community in Karnataka (initial seed funding from state) | New Processes | 1 Crore | Department of Higher Education/ Department of Commerce & Industries |
| 6 | Set-up Project Management Unit (PMU) for implementation of above actions | - | 2.5 Crores | Department of Higher Education/ Department of Commerce & Industries |
| | ***Enhancing GER in Higher Education*** | | | |
| 1 | Conducting sensitization programs at school level to encourage students for Higher Education | New Mindset | 5 Crores | Department of Higher Education |
| 2 | Strengthening the links between the Pre-University Board in Karnataka and Department of Higher Education | New Standards | NA | Initiative to be taken by Department of Higher Education |
| | ***Skill Development for Champion Sectors*** | | | |
| 1 | Setting up of Centre of Excellence for provision of training in Skills related to Service Sector | New Infrastructure | 50 Crores | Department of Higher Education/ Department of Commerce & Industries/ Skill Development, Entrepreneurship, Livelihood Department, GoK |

The table above summarizes the proposed interventions for each of the segments along with the required funding, the agency responsible for implementation of the intervention and the CSSS pillar under which the proposed actions fall. The total funding proposed for implementing all the interventions under the Champion Services Action Plan for Education Services in Karnataka is INR 258. 85 Crores. Of this total amount, INR 70.35 crores is for promoting internationalization of higher education, INR 133.5 crores is

for boosting education technology in the state, INR 5 crores is for enhancing GER in higher education in Karnataka and INR 50 crores is for skill development for champion sectors. As per the latest guidelines of the CSSS, INR 3369.75 crores has been allocated under the Champion Services Sector Scheme by Government of India. The Action Plan for Karnataka has tried to align itself to the budget allocation made under this scheme to the maximum possible extent. Under the allocation made by GoI, a total of INR 710.35 crores has been made for education services of which INR 562.5 crores is for scholarships, INR 100 crores for infrastructure, INR 11.5 crores for multilingual website, INR 0.17 crores for translation of promotional material, INR 31.5 crores for bridge courses in English, INR 3.56 crores for orientation seminars/alumni meet/etc. and INR 1.12 crores for heritage walks. A number of interventions in the Action Plan for Karnataka fall under these categories.

Under the Technology Services component of the CSSS allocation, INR 95.03 crores is allocated for incubation services. The Action Plan for Education Services in Karnataka recommends the setting up of a dedicated incubator and accelerator for ed-tech companies. It is recommended that funding be sought for this intervention under the technology services component of the CSSS allocation. Additionally, INR 436.87 crores has been allocated for the development of future skills under the CSSS allocation. Funding for the intervention on development of a Centre of Excellence for Skill Development in Services can be sought under this component.

# Annexure

# Annexure

## Summary of Key Stakeholder Interactions

To develop the action plan for Education Services under the CSSS in Karnataka, the study team met with a number of stakeholders for their inputs and validation of the proposed action plan. The discussion summary with some of the key stakeholders are provided in the table given below.

*Table 8: Summary of Discussions with Key Stakeholders*

| S. No | Date | Person Met | Designation & Department | Key Discussion Points |
|---|---|---|---|---|
| 1 | 22.10.2019<br><br>30.10.2019 | Dr. Rajkumar Khatri | Principal Secretary, Higher Education | • Update on CSSS scheme and update on progress achieved<br>• Presentation of work done and proposed Action Plan. Dr. Khatri has given his inputs on the same. |
| 2 | 06.11.2019 | Dr. S.A. Kori | Executive Director, Karnataka State Higher Education Council | • Discussion of CSSS and presentation of Proposed Action Plan<br>• Dr. Kori has given his inputs on the same. |
| 3 | 01.08.2019<br><br>28.08.2019<br><br>07.11. 2019 | Dr. Bhagyavana S Mudigoudra | Special Officer & State RUSA Convenor, e-Governance Unit, Education Department - Higher Education | • Discussion about CSSS scheme and discussion on way forward.<br>• Presentation of proposed action plan and inputs received on the same were noted.<br>• Also mentioned to explore idea of Knowledge City and PPP model for financing higher education |
| 4 | 30.08.2019 | Mr. Eldho Mathews | Researcher & Policy Analyst on Indian Higher Education | • Discussion on current situation of Indian Higher Education (HE) and future trends.<br>• Mr. Mathews suggested the action plan to focus on governance of HEIs |
| 5 | 02.09.2019 | FRRO | Bureau of Immigration | • Requested data regarding foreign students in Karnataka. Official letter sent through Commissioner's Office. |

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| 6 | 13.09.2019 | Dr. Rajendra Francis | Former RUSA State Nodal Officer | • Brief details of the CSS Scheme, the proposed approach for development of Action Plan and the way forward<br>• Discussion on key issues relating to higher education in Karnataka.<br>• Poor infrastructure was identified as one of the key issues for higher education sector in Karnataka.<br>• Other issues included improvements in quality through staff trainings required, accountability of staff etc. |
| 7 | 14.09.2019 | Dr. Arkalgud Ramprasad<br><br>Dr. Chetan Singai | Director, Ramaiah Public Policy Centre<br><br>Deputy Director, Ramaiah Public Policy Centre | • Brief details of the CSS Scheme, the proposed approach for development of Action Plan and the way forward<br>• Discussion regarding regulations for attracting foreign students such as credit transfer system and articulation agreements etc.<br>• Discussion on online education segment – the need for blended model and effective monitoring<br>• Discussed the probability and options of pushing other champion service sectors through Education |
| 8 | 27.09.2019 | Ms. Padmaja Narsipur | CEO, Clearly Blue | • Discussion of key problems faced by Ed-tech start-ups.<br>• Lack of access to credit, regulatory issues relating to taxation and lack of market access were the main issues faced by start-ups in the Ed-tech space. |
| 9 | 27.09.2019 | Mr. Pravin Prakash | Chief People Officer, Byjus | • Discussion of landscape of Ed-tech space in India, key issues and challenges<br>• Mr. Pravin said that the major issues faced by the firm were related to taxation for Ed-tech products. |
| 10 | 04.10.2019 | Dr. Giridhar S | COO, Azim Premji University | • Discussion of Education Space in Karnataka |

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|---|---|---|---|---|
| | | Dr. Rishikesh | Professor, Azim Premji University | • It was suggested that action plan should focus on the underserved districts of Karnataka, especially North East Karnataka |
| 11 | 05.10.2019 | Dr. Debananda Misra | Associate Director, Development, Indian School of Business | • Mr. Misra mentioned that Karnataka should leverage its position as an IT leader and focus on interventions which reflect that.<br>• It was also discussed that education should focus on building more collaborations with industries and other stakeholders, making education a more open system. |
| 12 | 14.10.2019 | Dr. Dinesh Nilkant | Director, Jain University | • Mr. Nilkant opined that education needs to be more skill oriented.<br>• He also mentioned that helping foreign students to find jobs can be a factor for attracting more foreign students to India.<br>• He also mentioned that opening campuses in Tier 2 cities is not feasible. |
| 13 | 27.11.2019 | Mr. Manish Kothari | Managing Director, ISBR Group of Institutions | • Mr. Kothari discussed that we should focus on quality numbers coming in. He explained the efforts for internationalization taken by his institution.<br>• He also said that the promotion of internationalization should focus on promoting 'brand India' and a value-based education system.<br>• Mr. Kothari also laid emphasis on giving more autonomy to all institutions to start programs etc. |
| 14 | 27.11.2019 | Dr. Suresh Ramanathan | Dean & Principal, Great Lakes Institute of Management | • Dr. Ramanathan discussed that an agnostic approach to internationalization can be undertaken, which focusses more on promoting online courses and using a blended model (with part time education opportunities in India and part time in the home country). |

| | | | | |
|---|---|---|---|---|
| | | | | • Dr. Suresh also explained the need for defining excellence and suggested that a few focus areas based on our strengths should be selected and promoted for internationalization |
| 15 | 27.11.2019 | Dr. Partha Chatterjee | Dean, International Relations, Shiv Nadar University | • Dr. Chatterjee discussed that quality should be the key concern area and will also eventually lead to inflow of foreign students to India. |
| 16 | 27.11.2019 | Mr. Srikant Sinha | Chief Executive Officer, Telangana Academy for Skills and Knowledge | • Mr. Sinha explained the need for the education system to focus on practical trainings and employment-oriented education. |
| 17 | 27.11. 2019<br><br>07.01.2020 | Prof. Rupa Chanda | Professor, IIM Bengaluru | • Prof. Rupa Chanda discussed the need for focussing on courses which are unique to Karnataka to promote internationalization<br>• Focus on establishing industry-academia relationships especially with MNCs as an internationalization strategy.<br>• Prof Chanda also validated that Karnataka should focus on the Ed-tech segment |
| 18 | 17.07.2020 | Mr. Arvind Viswanathan | CEO, Pitch Scientific | • Importance of IPR for fostering innovation<br>• Main issues related to IPR include lack of awareness about IPR and copyright issues.<br>• Need for creating awareness and handholding support to help researchers/firms file IPR. |