N·S·D·C
National
Skill Development
Corporation

Uttarakhand Skill Gap Study

A study of the existing situation of demand and supply of labour.

Prepared for: National Skill Development Corporation (NSDC)

Prepared by: Ank Aha Private Limited

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Abbreviations

ASI	Annual Survey of Industries
AYUSH	Ayurveda, Yoga and Naturopathy, Unani, Siddha, and Homeopathy
CAGR	Compound Annual Growth Rate
COPS	Canadian Occupational Projection System
CPSU	Central Public Sector Undertaking
DEEKSHA	Dedication to Enhance Education through Knowledge, Skill and Habit Assessment
DISCOM	Distribution Company
EAAG	Economically Active Age Group
EAP	Economically Active Population
EM	Entrepreneurship Memorandum
EUS	Employment Unemployment Survey
FMCG	Fast Moving Consumer Good
FY	Financial Year
GDDP	Gross District Domestic Product
GDVA	Gross Domestic Value Addition
GSDP	Gross State Domestic Product
GVA	Gross Value Addition
IIE	Integrated Industrial Estate
INR	Indian Rupee
ITI	Industrial Training Institute
IT-ITeS	Information Technology – Information Technology enabled Services
kWh/m2	Kilowatt hour per metre square
LFPR	Labour Force Participation Rate
LSI	Large Scale Industry
M.T.	Metric Tons
MCA	Ministry of Corporate Affairs
MSME	Micro, Small and Medium Enterprises
NIC	National Industrial Classification
NSDC	National Skill Development Corporation
NSQF	National Skills Qualifications Framework
NSQF	National Skill Qualification Framework
ONGC	Oil and Natural Gas Corporation
PCI	Per Capita Income
PE	Provisional Estimate
RPL	Recognition of Prior Learning
SC	Scheduled Caste
SIIDCUL	State Infrastructure Industrial Development Corporation of Uttarakhand Limited
SPSU	State Public Sector Undertaking
SPV	Special Purpose Vehicle

SRS	Sample Registration System
SSC	Sector Skill Council
ST	Scheduled Tribe
WFPR	Work Force Participation Rate

1. INTRODUCTION

1.1 Background

1.1.1 Study Background

Based on a series of reports published in 2012 by National Skill Development Corporation (NSDC) in collaboration with private sector consultants, many states are experiencing an incessant gap between the skills that the employers need from the labour force and those that are offered by the workforce. The previous studies projected the skill gap on the basis of a top-down approach of interviews with large organisations and subsequently projected sector skill council wise labour demand numbers. In contrast, this study has been carried out with the research, strategy, technology and implementation support of Ank Aha Private Limited to provide:

- ✓ An analysis of the actual realization of investments and policies into employment opportunities on the demand side.
- ✓ A methodology utilizing the National Skills Qualification Framework (NSQF) to combine the impact of an individual's education, work experience and formal skilling on defining his/her skill level.
- ✓ Analytical insights to bridge the gap between aspiration of the population and the consequent policy focus on setting skilling targets.
- ✓ Analysis of stakeholders involved in the skilling ecosystem and recommendations bridging the gap that exists in terms of sectoral skilling targets and its relevance in the context of people's aspirations, employer's perception of skill and skill sector wise growth trends in the economy.

In this context, the study considers the reality of India's employment scenario and focuses not just on the large companies offering formal employment, but also on MSMEs and people's aspirations to start their own enterprises. It also attempts to quantify the informal skills among the population gained through variety of work experience and education. Overall, the study qualitatively and quantitatively projects the future employment scenario in the economy and level of skill in the labour force.

1.1.2 State Background

Since its separation from Uttar Pradesh in November 2000, the state of Uttarakhand exhibited strong economic Gross State Domestic Product at factor cost growth rate of over 10% per annum till 2010-11. The state consistently ranked in top five states in terms of growth rate and also performed better than other newly formed states of Chattisgarh and Jharkhand. These growth rates were propelled by government expenditure and favourable tax policies by the state. After 2011-12, a decade since the formation, the growth rates have waned and have consistently fallen below 9%, even though Uttarakhand has consistently ranked 2nd among all major states in terms of per capita income according to data compiled by Central Statistics Organisation[i]. This presents a scenario where state policies and existing local consumption are not able to drive the state economy at a rate that it has the potential to grow, based on past growth trends. In such a scenario, among other measures skilling the population

in upcoming and high growth sectors can help generate more self-employment opportunities and also attract bigger private investments to push the state's economy at a greater pace.

Apart from the economic potential, the state also has high demographic potential. In 2015-16, there was an estimated 70.3 lakh population [ii] in the Economically Active Age Group (EAAG) of 15-65 in the state of Uttarakhand. This constituted for 65% of the state's total population and provided for a favourable demographic dividend that can potentially be harnessed for long term economic growth of Uttarakhand. However, according to the Employment Unemployment Survey (EUS) that was conducted in 2015, only about 47.5% of population[iii] above 15yrs constitutes the labour force of the state.

While the state has a total labour force of 36.91 lakhs[iv], it also has around 37 lakh people who are in the economically active age group but do not participate in the labour force. EUS also notes that of the total male and female populations in the state, 29.3% male population, and 77.5% of female population are outside the labour force. This LFPR is lower compared to any of the developed countries and even BRICS countries, including India. These figures pose a serious problem wherein the apparent demographic dividend, especially that of economically active women, of the state is not utilised to its full potential for realising significant economic growth.

Apart from non-inclusion in the labour force, other factors of productivity of the worker population and rising wage pressure from the existing workforce, also pose serious threat to an organisation's profitability. This in-turn negatively impacts firms' hiring decision and reduces the possibility of greater population induction into the labour force. Wage pressure though has been kept in check by companies in India through employment of short-term contractual labour, but this has impacted the wage aspiration and job satisfaction of the workforce.

While lack of productive and skilled labour is a bottleneck in the growth of economy, low rate of growth of employment opportunities from the employers also discourages the population from adequately skilling themselves in the trades in demand. It is in this context that a skill gap study is performed. This skill gap study consist of quantitative insights on the differences in levels of skill required by the employer and those offered by the employees, and qualitative insights on work aspirations of the population in EAAG. Uttarakhand's relatively small size compared to other major states and its high education and income levels make it suitable for piloting targeted mass skilling programs to gauge the impact of a well-planned skilling approach on economy and income levels.

1.2 Understanding the Study

The objective of this skill gap study is to assess the state and district level skill gap in terms of both quantity and variety of skills. The study will be leveraged by Departments of State Government and by National Skill Development Corporation (NSDC) to develop an actionable, sector-wise skilling intervention for all districts, as well as a cohesive plan for the State.

This study will focus on providing insight into current labour market conditions of the districts and the state. On the basis of the current conditions, the report will also provide a forward-looking scenario of

skill gap in terms of workforce estimates and required skills and competencies. The report is categorised into seven major sections. The rationale and overview of each section is as follows:

1) **State Profile:** Delving deeper into understanding the demographic, economic and industrial profile of the state. Providing a macro context to the skill gap in the state.

2) **State overview of skill gap**: Analysing the supply of skilled population, projecting employment opportunities for upcoming years and analysing various sectors for the state.

3) **Youth Aspirations**: Taking a qualitative look across the state at how youth are perceiving opportunities. These are then mapping to the jobs eco-system.

4) **District Comparatives:** Breaking down the data to a district level where demographic, educational, economic and industrial insights are compared across districts.

5) **District Takeaways:** Leveraging the district level data available, providing an insight on the various opportunities and concerns on skill gap that could be present.

6) **Way Forward:** Providing a stakeholder analysis and insights on possible areas of focus to overcome the existing skill gaps.

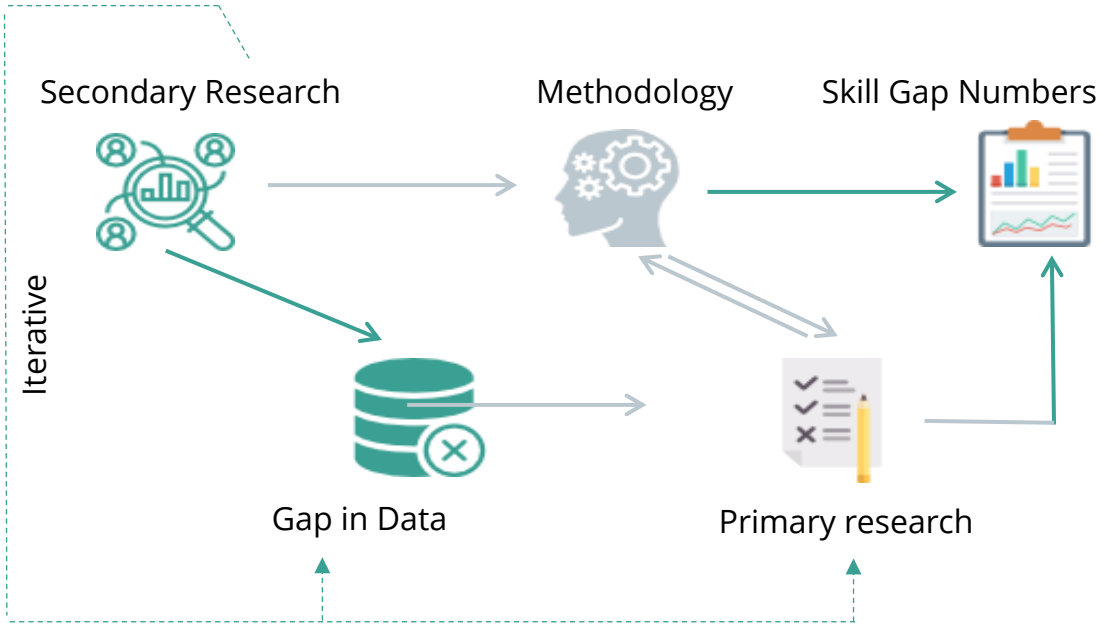
Overall, the study will provide projections for gaps between the incremental demand for labour and incremental supply of labour force. Alongside this, the study will also address an important aspect of youth aspiration and employer perception that impacts the productivity of the workforce.

1.3 Methodology

This skill gap study, as envisaged by NSDC and its implementation partner, is an amalgamation of a number of primary data sources. These data sources have either been assimilated by the Government in the past or have been collected by the partner, through a statistically significant number of primary surveys across all thirteen districts of Uttarakhand. The study provides incremental employment and labour supply numbers through an exhaustive bottom-up approach. This study approach helps determine the demand for labour and the supply of labour in various skill categories based on a data-driven approach rather than a hypothesis driven research. Depending on the numbers derived in each scenario, the study further projects these numbers till 2022, based on the interaction of dependent and independent variables in each of the granular scenarios.

In order to devise a ground-up data driven methodology, an iterative process was followed. In this process, secondary research was utilised to prepare an initial cut of the methodology. Sources such as Census 2011, 5th Employment Survey, Directorate of Economics and Statistics, RBI handbook of statistics on Indian States, Uttarakhand GDP handbook, etc., were consulted in addition to other valuable inputs from various stakeholders. In cases where there was a lack of sufficient data from secondary sources, primary survey questions were updated to fill the data gaps.

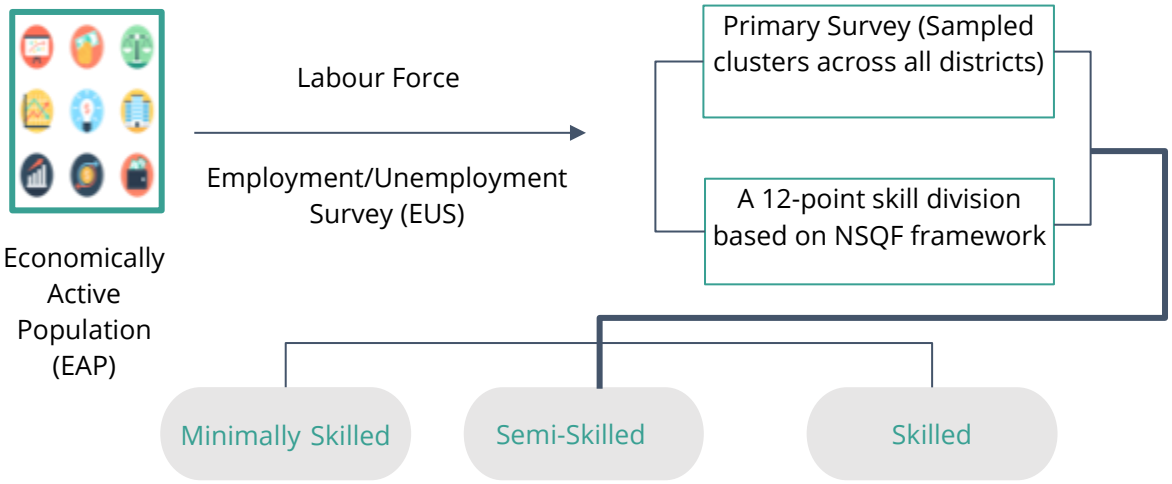
This process was repeated till a comprehensive questionnaire addressing most of the possible gaps was prepared for primary research. The questionnaire also sought the input of District Employment Officers from all 13 districts, large industry partners, MSMEs, ITI students and Surveyors from Uttarakhand. Some of the primary research as well as the methodology component of the process was also crystalized based on first phase of pilot surveys performed in Udham Singh Nagar and Tehri Garhwal. Finally, the skill gap numbers were analysed on the basis of primary data and the devised methodology.



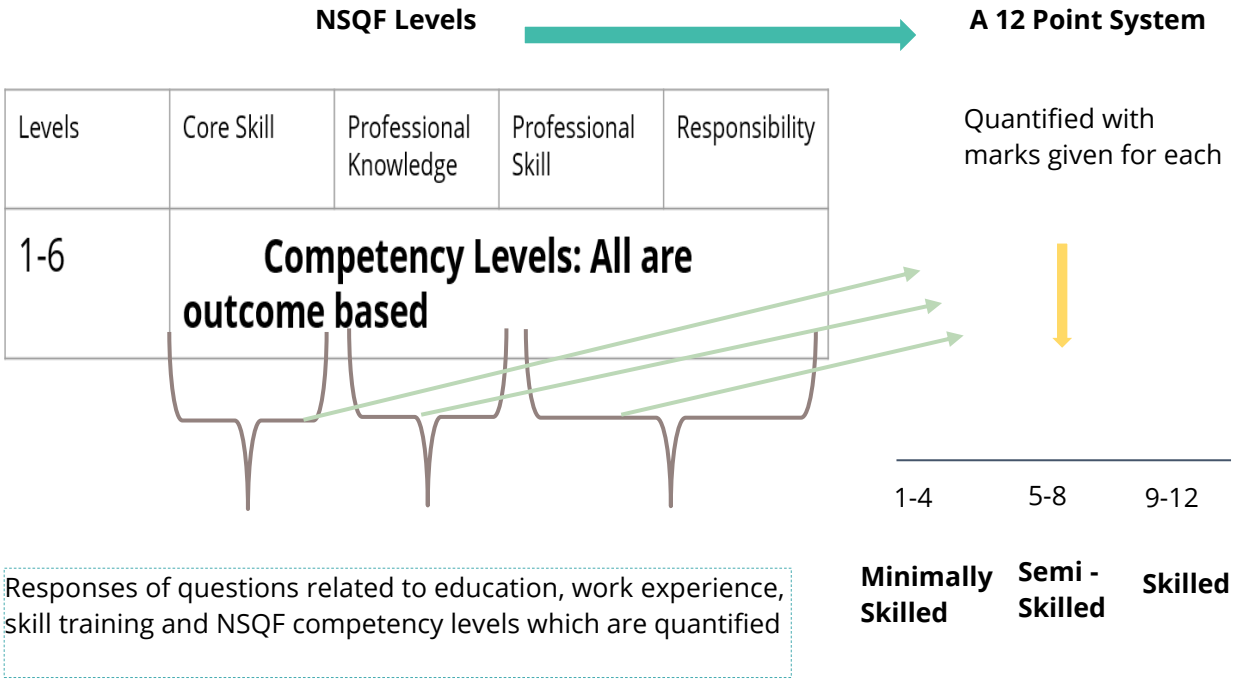
With an iterative process for formulation, the methodology was divided into two sub-sections of demand and supply. The two sub-sections are elaborated below:

1.3.1 Supply

Incremental supply of labour is estimated through a cohort composition method. The population across various ages from Census 2011 has been used as the basis for calculation of incremental labour force supply. For example, a 4-year-old boy in 2011 will turn 15 and enter the working age in 2022. Also, a 55-year-old person has a likelihood of dropping out of workforce as he/she ages in 2022. The methodology is also dependent on age wise death rates for Uttarakhand based on Sample Registration Survey (SRS) 2015 and approximation of district wise net population migration through random forest algorithm[v] on Census, remotely-sensed and ancillary data. The labour force participation rates from the 5th EUS is further utilized to derive quantum of labour force from the entrant population. This incremental labour force in the prime age group of 15-35, as determined from the age group of population trained in ITIs and PMKVYs, can be trained in a number of skill-sets based on sector wise demand projections and population aspirations.



The incremental labour force is then tested through a 12-point quantified skill qualification framework (QNSQF) (developed for the skill gap study) to obtain the projections for skilled, semi-skilled and minimally skilled population. The Skill Qualification Framework takes into account all factors which contribute to skill levels of person i.e. education, work experience and formal as well as informal skilling. In order to obtain skilling targets, the projection of skill level of future population is based on the current skill levels of the population based on the existing infrastructure and employment opportunities.



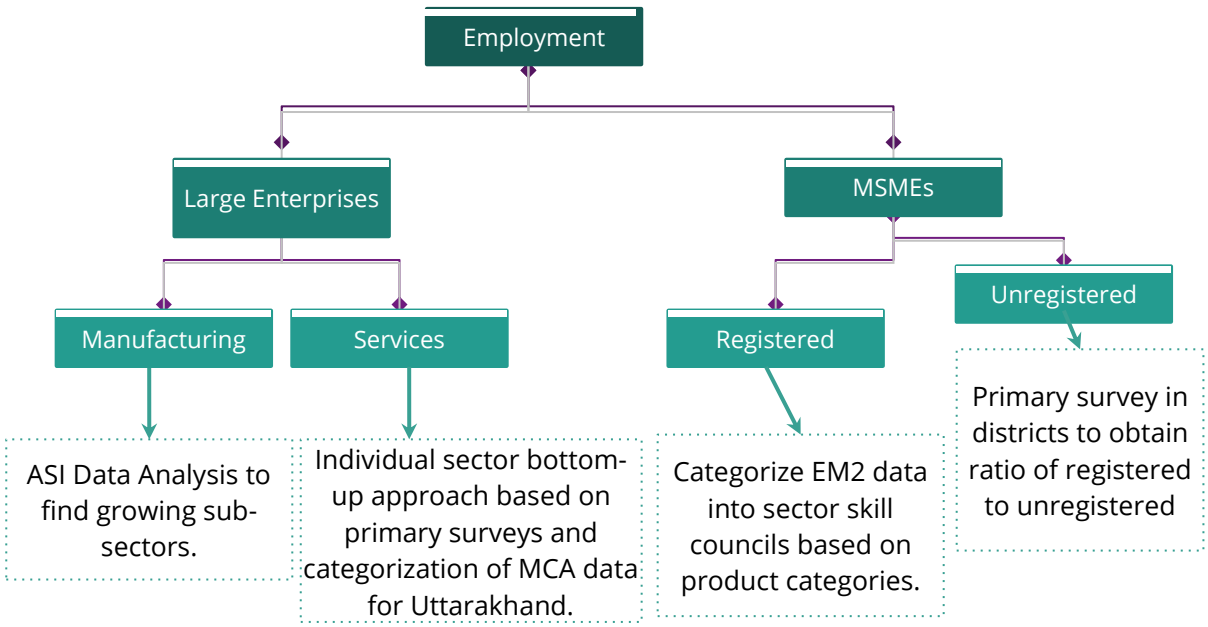
The QNSQF framework is based on the National Skill Qualification Framework (NSQF) in the following three manners:

1. NSQF comprises of level descriptors, which are skill competency levels. Each level descriptor is made up of sub components i.e. Core Skill, Professional Knowledge, Professional Skill and Responsibility. Each sub component has been ascribed to certain educational and work profile features of a labour force participant i.e. Work Experience, Education, Formal skill training etc.
2. The questionnaire has been prepared based on the NSQF in order to ascertain the skill level of respondents through the responses.
3. Points have been allocated based on a combination of the Work Experience, Education and Formal Skilling as well as the responses to the primary questions.

The accumulated points have been utilized to classify respondents into categories of minimally skilled, semi-skilled and skilled. The scale to rationalize these points is a simple 12-point system. The framework is utilized for skill categorization across all districts and the state.

1.3.2 Demand

Incremental demand for labour is estimated by following a unitary method of categorizing employers on the basis of scale and by categorizing them into sub-sectors. For this purpose, employment has been broken down into two standard categories - Large enterprises and MSMEs. While secondary and tertiary sectors are covered through this approach, a separate approach was used for primary sector where District Gross Value Added, economic census and production data trends were utilized to estimate employment projections. The demand thus calculated is a projection of actual translation of employer's needs into employment for population; and not an estimation of employer's perspective of quantum of future skill requirements.



Large enterprises were further broken down into those engaged in manufacturing and in services. The Annual Survey of Industries data provides a baseline for large-scale organized manufacturing, while

large scale services companies were found through Ministry of Corporate Affairs (MCA) data. The individual methodology used for manufacturing and services is described below:

1. Annual Survey of Industries (ASI) data was analyzed to find growing sub-sectors, subsequent to which each sub-sector was mapped to a SSC. Employment projections were then made through regression analysis performed on employment numbers in each skill sub-sector based on five-year ASI employment data. These state level numbers were split across districts on the basis of number of industrial units in each district obtained through District Industrial Profiles compiled and published by Development Commissioner, Ministry of Micro Small and Medium Enterprises (DCMSME) and adjusted based on SIDCUL data This split is based on an assumption of employment being similar in similarly sized manufacturing units.

2. MCA data was categorized based on National Industrial Classification (NIC) codes into skill sub-sectors and divided into districts by plotting their address on map. CAGR of registrations was obtained for relevant SSCs and then primary responses for employment numbers were used to arrive at the number of employees per enterprise based on size of enterprise. These two ratios were used to obtain number of companies and their incremental employment projections till 2022

Micro, Small and Medium Enterprises (MSMEs) were broken down into registered and unregistered categories. In the lack of any trustworthy source of secondary information on employment in MSMEs and ratio of registered to unregistered companies, a primary survey was performed in all districts. The process flow for MSME employment projection is mentioned below:

A) Entrepreneurship Memorandum (EM) 2 data was categorized into SSCs based on product categories. Enterprise registrations show a clear trend of natural growth. This trend was then used to make five-year projections based on regression analysis of year-on-year enterprise registrations. The EM2 employment data was triangulated against the data on average employment per MSME in the skill sub-sector. This average employment along with enterprise number projections provided incremental employment projections for 2022.

B) The projections were verified by comparing them against Udyog Aadhar Memorandum filings[vi] The Udyog Aadhar Memorandum filing slowly replaced EM2 filings since September 2015. Hence the EM2 projections for 2016-17 and 2017-18, based on number of filings per financial year from 2011-12 to 2014-15, was compared against Udyog Aadhar registrations in the same period. The error in projection calculations thus obtained is specified in Annexure 8.4.Ratio of registered to unregistered MSMEs was obtained through primary surveys in all districts. Collected primary data was also used to arrive at sector specific employees per enterprise. In terms of registration document proof shown to respondents, there was a non-response rate of about 25%. As the unresponsive units have a high likelihood of being unregistered, the resultant ratio of 1 unregistered per 20 MSMEs surveyed (5%) may contain a bias towards MSMEs registered either on EM2 or Udyog Aadhar Memorandum.

C) With the above methodology in place, the skill gap study was executed. However, given the exhaustive nature of the study, some sections required a more extensive methodology, depending on the availability of data sources for specific sectors. Skill subsector wise demand approach is covered in Annexure 8.5. The table outlines methodologies specific to the respective finding in Sector Skill Councils (SSCs). The section below will explain briefly the methodology used for primary survey and will also highlight some of the preliminary characteristics obtained from the surveys.

1.3.3 Primary Survey

As mentioned in the above methodology sections, with the objective of collecting varied and detailed data pertaining to the skill profile of persons, employment status, characteristics and factors that influence perception towards skill training, types of migration and corresponding reasons, and overall socio-demographic details, a sampling process was undertaken. This data was to be obtained both at state and district level. Methodologically sound techniques that are grounded in statistical theory were employed both in the estimation of the sample size for each district and in the selection of First and Second Stage Units to constitute the estimated sample size. Here, the First Stage Unit was either a 2011 Census Village or Urban Frame Survey (UFS) Blocks; and Second Stage Unit was the household.

For the sample size in each district, calculations were done with a confidence level of 95% and confidence interval of 5%. This calculation yielded a sample size of 384 for each district, bringing it to a total of 4,992 surveys for the total state. To account for incomplete surveys and for clarity of instructions, this was increased to 5,200. In all 13 districts, the total sample size of 5200 was allocated across 52 First Stage Units. Each district was allocated four FSUs and the nature of FSUs (rural or urban) was based on the rural and urban population distribution in that particular district. Therefore, each First Stage Unit was allocated 100 surveys by equal division of numbers among randomly selected clusters.

The probability process adopted for picking a First Stage Unit in a district was the Probability Proportional to Size (PPS) method. The underlying idea of the PPS method, and any probability method for that matter, is that every unit should have an equal probability of selection. So each household across the target area must have an equal probability of getting selected. In the first stage of selection in PPS, villages or UFS blocks with a higher number of households have a higher chance of getting selected and vice versa. But this is countered in the second stage, where a household in a village/UFS block with a higher number of households will have a lesser chance of getting selected when compared to a household in a village/UFS block with a lower number of households. In the end, each household has an equal chance of getting selected. The only challenge that is thrown up is an implementation one, where households are to be selected for surveying in the manner as prescribed during the second stage of selection (1 in 15, 1 in 20, etc.).

At a state level, enough responses are generated to account for different kinds of strata; urban, rural, male, female, age groups. But at a district level, the results of the survey will only be conclusive at a district level and categorisations like age group and male/female have to be considered as tabulation groups and not as strata. With this methodology in place, both EAP and MSME surveys were performed

in 4 clusters in each of the districts. While household selection depended on presence of a member in Labour force, MSME selection depended on presence of MSME units in the area. While a statistically significant number was selected for EAP surveys, MSME surveys were conducted in random 100 MSMEs across all four clusters in a district based on adequate coverage of all growth sectors in the district. The details of MSME survey is mentioned in Section 3.2.2 and basic characteristic of EAP survey is mentioned in the section below while detailed analysis of result is presented in Section 4 on youth aspirations.

1.3.3.1 Survey Characteristics

Post the pilot surveys conducted in Tehri Garhwal and Uddham Singh Nagar, the final survey was administered amongst 5266 respondents. Out of these, 144 respondents are not a part of the labor force and have been kept aside for the analysis, leaving 5122 respondents. 38% of the respondents are female and 62% of the respondents are male. The average age of the female respondents is 27.12 years and the average age of the male respondents is 29.80 years. The average age of the respondents from Chamoli was the lowest at 24.40 years and the average age from Pauri Garhwal was highest at 33.33 years. The highest education status attained by the most number of respondents was Higher Secondary (XI-XII) at 28.37% of the respondents. The average work experience possessed by the respondents who are either currently employed or were employed at some point in time is 3.84 years. The highest is 6.68 years from Tehri Garhwal and the lowest is 1.51 years from Chamoli.

55% of the respondents are employed in some manner or the other, with self-employment having the highest share of total respondents (28.63%). Full-time employment is a relatively less common phenomenon having a share of 6.9% of the total respondents. 27.62% of the full-time employment is accounted for by the district of Dehradun. Other specific observations made from or about the survey are as follows:

1) 8.7% of the respondents have received formal skill training from some institute or the other. Private Skill training centers appear to be the favorite destinations with 49.29% of the respondents with formal training attending training here.

2) Out of those who received formal skill training, 84.55% felt that training was beneficial and they would recommend it to others. Out of those who received formal skill training but would not recommend it to others, 46.34% of them were from Private Skill training centers.

3) Those who aspire for a career in the Agriculture and Allied Activities sector have 2.45 hectares of land on average as opposed to 1.15 hectares by those who aspire to work in other sectors.

4) 5.74% of the respondents' reported that either they or a member of their family had migrated in the last one year. In 90.27% of the cases, this migration has occurred in search of better employment opportunities. Almora and Bageshwar have a relatively high number of respondents, i.e. 31.36% and 31.26% respectively, who report that either they or a member of their family has migrated in the last one year.

5) 59.35% of respondents prefer to be employed within the district. The districts in which respondents have a higher preference to work in districts other than their own are Chamoli and Champawat.

6) 26.93% of respondents had a degree post senior secondary education, Out of these only about 26% were employed, 19.75% were self-employed and remaining 54% either got back to education or were unemployed.

Since the study depends on availability of secondary data and responses to primary questions, assumptions were made wherever data wasn't sufficient to cover all aspects of the study. These assumptions are listed in the next section.

1.3.4 Assumptions

The assumptions were made or limitations that were faced are listed below:

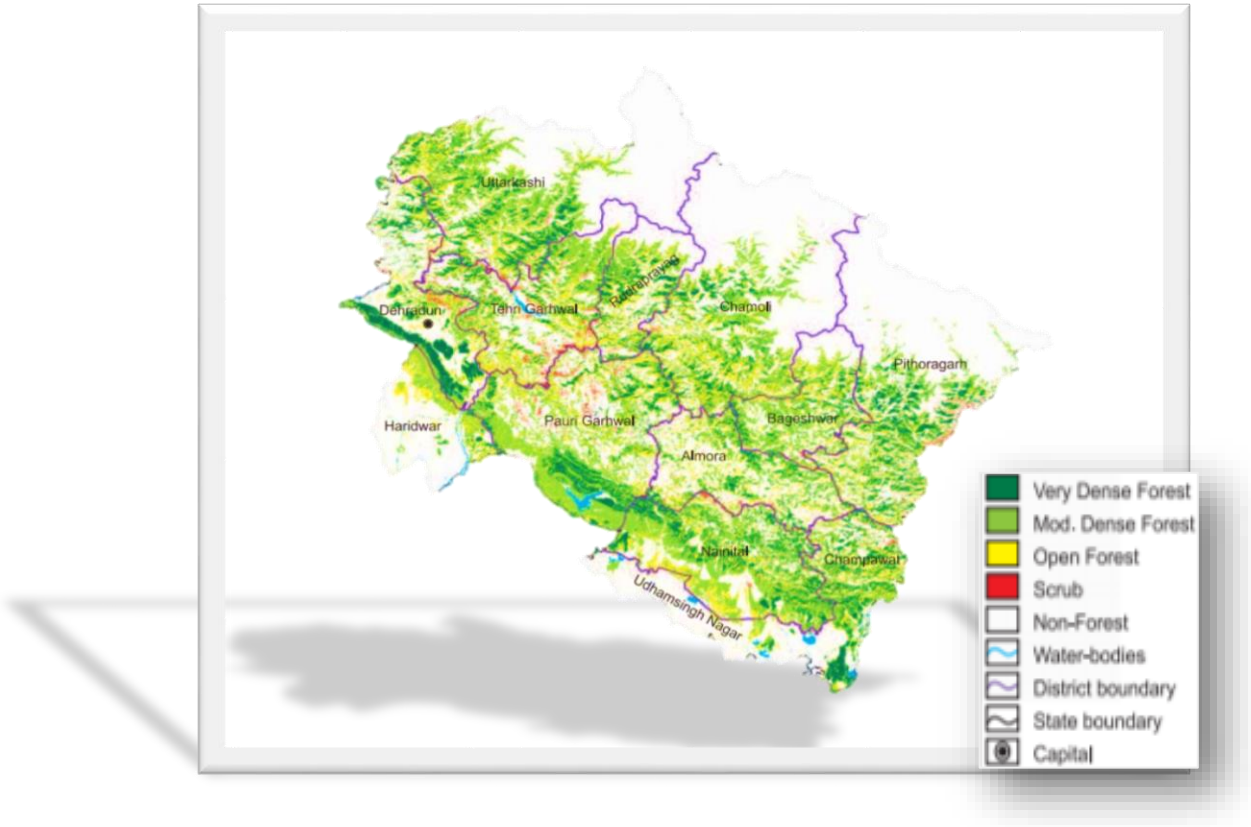
1. Mobile phone repairing/servicing has been kept under Telecom SSC.
2. Manufacture of computer and computer peripherals, repair and service of computers and accessories have been counted under Electronics SSC.
3. Apart from sectors covered in the list, all the remaining employment opportunities have been covered under Others. Some of the major ones within this are:
    a) Photocopy, printing/xerox and photo studios.
    b) Services like cyber café, tent houses, rental and leasing.
    c) Other manufacturing.
4. District level labour force participation rates are unavailable. Weighted averages to reflect proportions of rural and urban populations were taken.
5. Age-wise mortality rates were unavailable. They were substituted with age-group wise mortality rates.
6. No recent enumerations of registered and unregistered firms is present after the last MSME census in 2006-07. Approximations had to be made with data from our primary surveys on MSMEs.
7. ASI data is presented at State level. To distribute it across districts, the number of large industries in each district has been used as a proxy.

The next section will explore the demographic, economic and industrial profile of the state, so as to elicit a panoramic view of the labour market actors in the state.

2. UTTARAKHAND STATE OVERVIEW

2.1 Understanding the Context

In order to assess the current condition of Uttarakhand, it is important to be able to assess the demographic, economic and industrial profile of the State. The three components together give an overview of the historical and current context of the job creation eco-system, thus providing necessary insight on the opportunities and gaps in the eco-system. Accordingly, the study has focused on quantitatively analysing the various facets that would affect skill gaps and has drawn key insights from them.

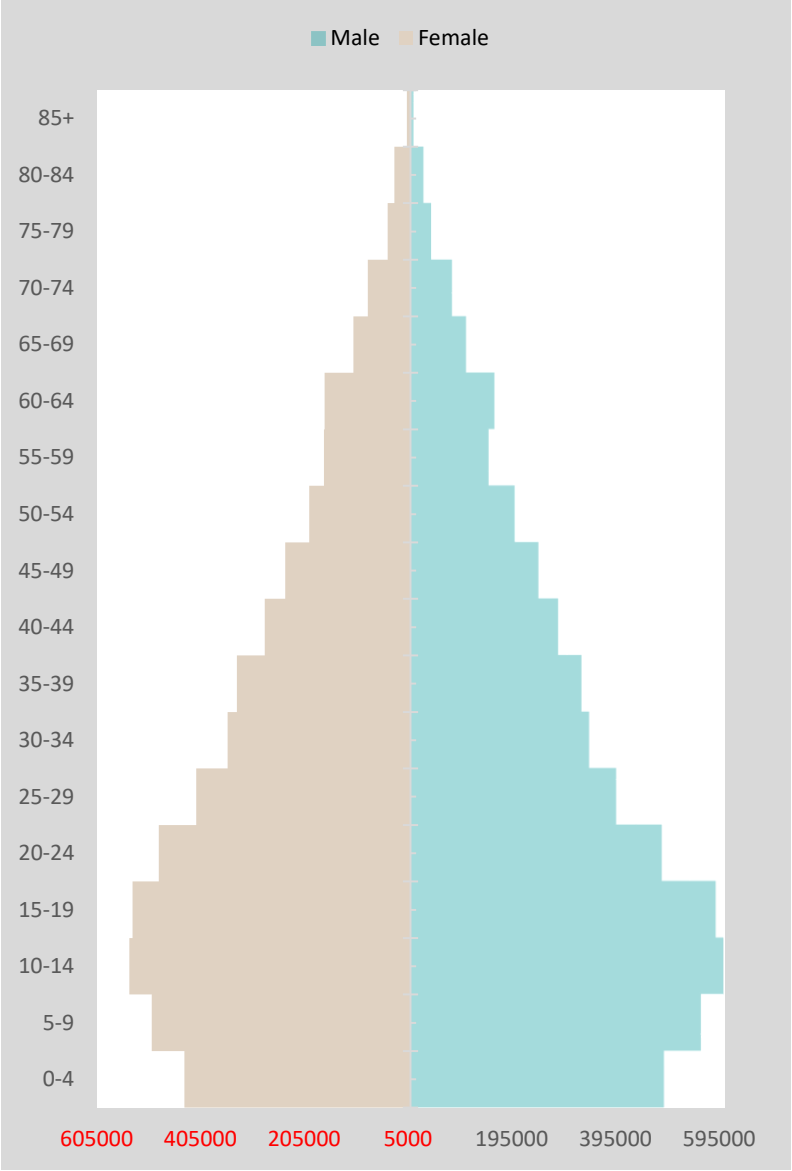


Uttarakhand was formed as the 27th State of India on 7th November 2000. The state consists of thirteen districts. Occupying a total area of 53, 483 sq. km or 1.62% of total land area of the country, Uttarakhand ranks as 19th largest state of India. Interestingly though, around 86% of the total area in Uttarakhand is mountainous and 70% of the total area is covered by forests. This plays a major role in determining the livelihood opportunities available and consequently in overall economic development.

The majority of this forest area is found in the districts of Uttarkashi, Chamoli, Pauri Garhwal and Tehri Garhwal. The state lies on the foothills of the Himalayas with Himachal Pradesh bordering the western border and Haryana, Delhi and Uttar Pradesh lying south of the State. China and Nepal are situated along the Northern and Eastern boundaries of the state. The state's geography makes the distinction between plain and hill districts quite sharp.

Of the 13 districts in the state, three districts by and large qualify as plain districts i.e. Dehradun, Haridwar and Udham Singh Nagar. Some areas of Nainital district also fall under the plain region. The rest of the districts - namely Almora, Bageshwar, Chamoli, Champawat, Pauri Garhwal, Pithoragarh, Rudraprayag, Tehri Garhwal, Uttarkashi and most part of Nainital - are hilly in nature.

There are two broad administrative divisions within the state; the Western part of the state encompassing 7 districts forms the Garhwal division, while the remaining six districts in the Eastern part of state form the Kumaon Division. Two chief economic centres of the state i.e. Dehradun and Haridwar, lie in the Garhwal division. Udham Singh Nagar, the only plain district in Kumaon, is the chief economic centre of the Kumaon division.



The terrain of the state and the regional divisions play a critical role in defining factors such as the type of economic development, migration, youth aspiration etc. The later sections of the report will detail how the terrain and geography affect the skill gap present across the state.

2.1.1 Demographic Profile

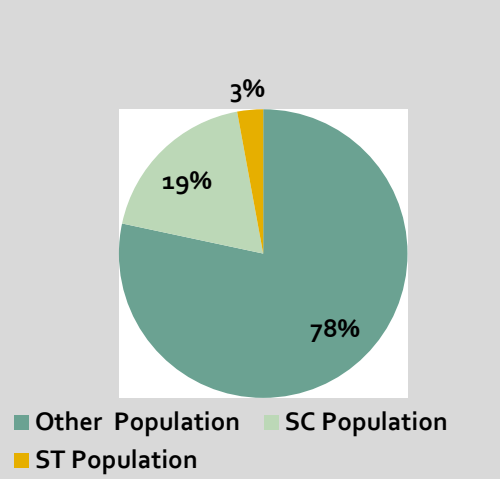
The population density of a state is critical in understanding the human talent potential. Therefore, it is imperative to understand the population pyramid and the age group of economically active individuals. Uttarakhand is the 20th most populous state of India with a total population of around 1.01 crores (as per Census 2011). The state has witnessed a healthy population growth of 19.2% from 2001 to 2011, higher than India's decadal growth rate of 17.64%. This accounts for a population CAGR of 2%.

The plain districts account for 61% of the total population, highlighting the higher population density in these specifics areas as compared to the other hilly districts. The sex ratio of the population stands at 963 females per 1000 male population. It is higher than the national sex ratio of 933 females per 1000 males. However, as per latest data from SRS 2015, Uttarakhand's performance in terms of child sex ration is substantially lower than the national average. While the national child sex ration stood at 900

females per 1000 male, Uttarakhand only had 844 females per 1000 male children. Later, sections will reveal that issues of gender are also visible in the skill gap assessment.

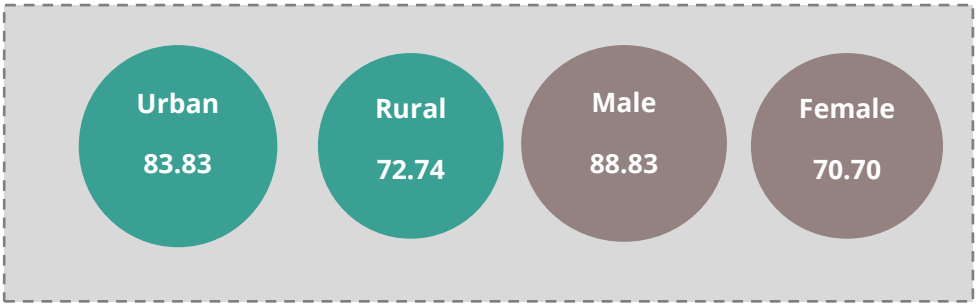
Despite this gender gap, Uttarakhand is a state that benefits from a large pool of working age population. Higher population in the economically active age groups (15-64), especially the younger age groups indicate a healthy labour supply for manufacturing and services sector. Some of the industries within these sectors like Tourism, Automobile could potentially benefit from the large labour pool.

As evident from the age group population pyramid of Uttarakhand, the group with the maximum population in 2011 was in 10-14 age group. Other age groups like 5-9, 15-19, 20-24 and 25-29, which are currently in the economically active population also exhibit high population composition. Within the aforementioned age groups, the population in rural areas is considerably more than the urban counterpart, which provides an indication of the labour force make up presently as well as in 2022. Later sections will indicate that despite the spread of "younger population" across rural areas, aspirations for job roles in IT, Automobile are spread across all age groups. In further stratification of population groups based on social categories, SC population stands at almost 20% of the total state population with the ST population making up only 3%. These ST communities are concentrated in the districts of Dehradun and Udham Singh Nagar.

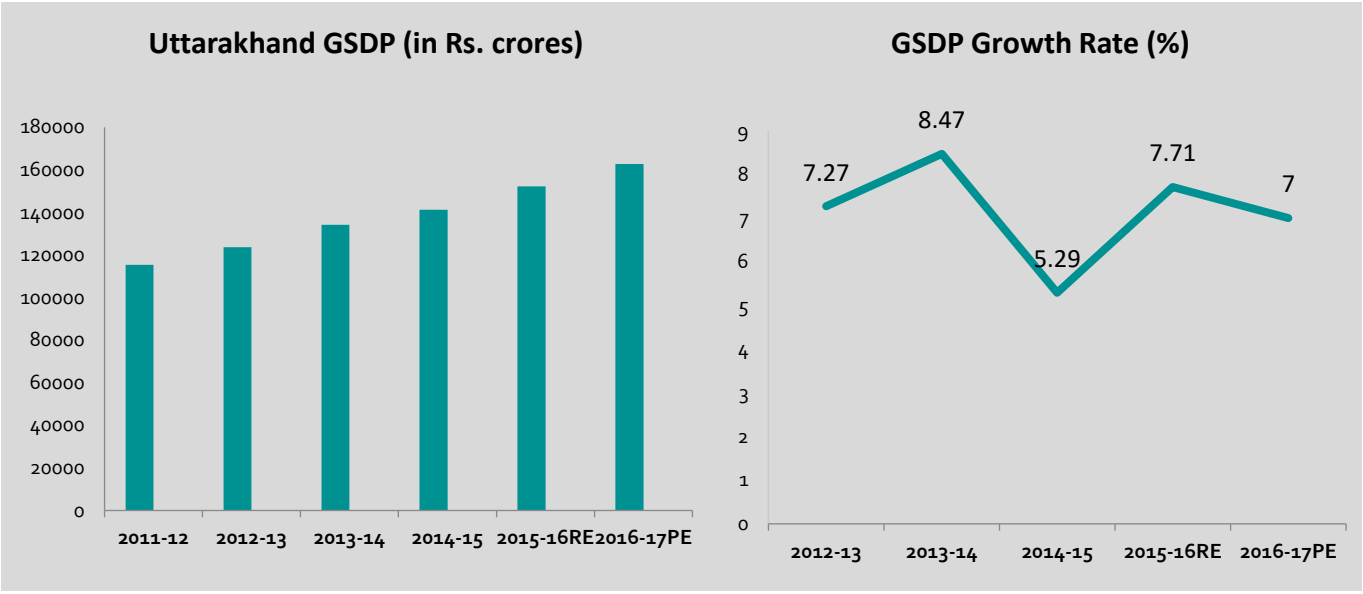


With a young population in place, Uttarakhand's favourable performance in literacy metrics bodes well for the economy. The literacy rate of the state at 79.63% stands ahead of the national figure of 74.04 %. However, the troubling gap of 18.63 percentage points between male and female literacy rates is higher than the all India figure of 16.68 percentage points[vii]. This gender gap in literacy is also higher when compared to other similar special category states like north-eastern states and Himachal Pradesh (not higher than Jammu and Kashmir). The gender difference between male and female literacy rates is prevalent across urban and rural population. However when we consider just rural and urban population, the gap between the literacy rate stands at 11.09 %. In fact, the hill districts which have a larger of percentage rural population when compared to the plain districts enjoy a higher literacy rate than their plain counterparts. The high literacy rate of Uttarakhand population and low difference between literacy rates across rural and urban population indicates the spread of education at least in the male labour pool.

In further stratifying social groups through geographic, SC population stands at almost 20% of the total state population with the ST population making up only 3%. These ST communities are concentrated in the districts of Dehradun and Udham Singh Nagar.



Thus, as is demonstrated above, Uttarakhand has economically active populations across various age groups, which is a trait common with other Northern States like Bihar, Uttar Pradesh, Odisha. However, the literacy rate of the Uttarakhand population stands higher than the other Northern states, indication a labour pool which is not only high in terms of quantity but also quality.



Through this study the intent would be to look deeper at this human capital across districts to assess the current skill gap.

2.1.2 Economic Profile

In the skill gap study, the economic profile of the state is critical in understanding the potential of possible employers. The goal of this section is to look at the macro-economic condition of the state and highlight key components that need to be considered as the skill gap study is being conducted.

At the time of its formation, Uttarakhand was mostly dependent on the primary sector i.e. agriculture and mining. However due to a combination of government policies and macroeconomic pulls, the state's economy has come to be dominated by the manufacturing and service sectors. Shortly after the state formation, the Central Government has provided a Special Package for incentivizing industrial growth

to the state in 2003. The package was for provided for ten years till 2013, and was extended till the end of 2017. The Special Package was aimed at promoting the growth of medium and small enterprises. The State Government has also initiated schemes to encourage economic productivity across certain sectors like Tourism, MSME and Textile, keeping with the times Uttarakhand Government has even released a Start Up policy to encourage youth entrepreneurship.

On preliminary analysis of economic activity, it can be seen that the Gross State Domestic Product (GSDP) at constant prices has been steadily rising at a CAGR of 7% from 2011-12 to 2016-17[viii]. The growth rate is higher than the national level growth rate of 6.85 % (CAGR) at constant prices in the same time period. While analysing annual growth rate between the concerned years, a strong dip is observed in the year 2014-15. This was majorly a result of the 2013 floods. Post 2014-15, growth has picked up again.

Unlike the national trend of highest GDP contribution by tertiary or services sector, Uttarakhand economy is driven to a great extent by the secondary sector. The secondary sector (Manufacturing) is the biggest contributor to the state economy, pegged at 51% (GDP 2016-17 at constant prices). It is followed by services sector at 34% and then the Primary sector at 10%. [ix]The succeeding paragraphs provide an overview of all the sectors of the state with some emphasis on the performance of key sectors like tourism, agriculture, food processing and others.

2.1.2.1 Primary Sector

The Gross Value of the Primary sector stood at INR 16,15,338 lakhs in the year 2016-17 (PE). Within the Primary Sector, crop growth contributes the most, followed by livestock as well as forestry and logging. Crop growth, forestry & logging, livestock, mining are the sub sectors within primary sector. Shadowing the national trend in reduced contribution from primary sector, the share of the primary sector in the entire GSDP of Uttarakhand also exhibits a downward trend, especially the Gross Value of crop production. Among other reasons, the two main reasons behind this trend are:

i) No significant change in Net as well as Gross Irrigated Area since the formation of state.

ii) Slight reduction in Gross Sown Area without any change in cropping intensity.

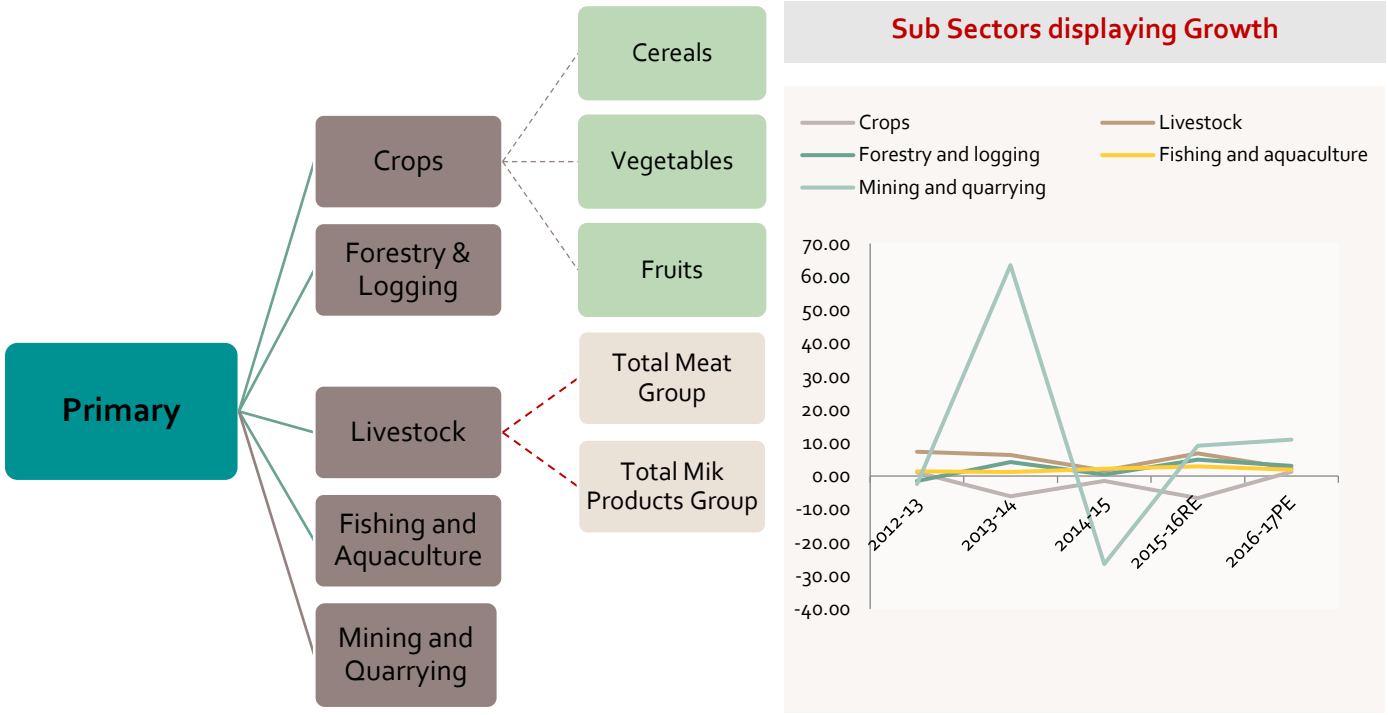
iii) Small size of average land holding within the state (less than a hectare). This leads to disaggregated agricultural production with no advantages from economies of scale.

Interestingly, from 2011-12, within crop production, the overall value of production of fruits has been decreasing. Fruit production accounted for 30% (at current prices) of the crop sub sector in 2011-12 which reduced to 26% in 2015-16. However, even with a declining share, output value of fruit production is second only to that of cereal in the crop sub sector for the concerned time period. Vegetable Production has witnessed a minimal growth of 1% in the referred time period. Forestry and logging is another sub sector which displays a declining trend; however not as stark as crop production.

Livestock is perhaps one of the only sub sectors which has displayed progress, maintaining a growth-rate of 9.02-9.04% from 2011-12 to 2015-16. Within livestock production, total milk production accounts for more than 80% of the sub sector. Later sections will discuss the opportunities in the livestock sector for the state. This analysis has further been utilized in demand projections for agriculture sector.

2.1.2.2 Secondary Sector

The secondary sector, largest contributor to Uttarakhand GSDP, is further subdivided into manufacturing, production of electricity and construction. The Gross Value Added (GVA) from the secondary sector stood at INR 80,24,144 lakhs in 2016-17 (PE). From 2011-12 to 2016-17, the



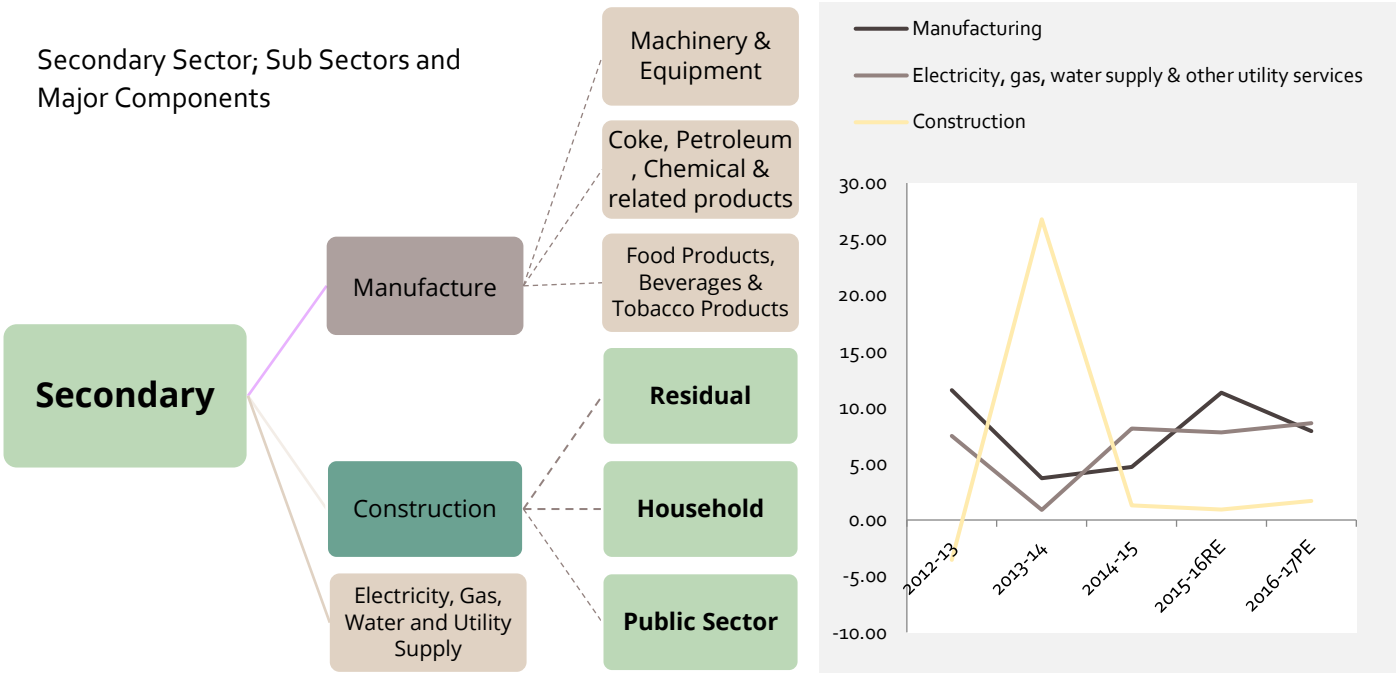
Primary Sector; Sub Sectors and Major Components

manufacturing sub sector contributed the most to the overall secondary sector (78.1%) followed by construction (6.8%) and then electricity, water and gas supply.

Interestingly, in the manufacturing sector, the biggest contribution comes from the manufacture of equipment and machinery. This is followed by the manufacture of petroleum, rubber, chemical and related products. This type of manufacturing is dominated by large scale enterprises and Central/State

Public Sector Undertakings (CPSUs/SPSUs) like TATA Motors (equipment & machinery), ONGC (gas), and Patanjali (chemical products). While some sectors have been growing, others have not displayed a similar trend. For example, since 2011-12, the contribution of manufacturing of food products has been decreasing from the total sub sectoral make-up from 9% in 2011-12 to 3% in 2015-16 (current price).

Similarly, the overall percentage contribution of construction to the manufacturing sector GSDP (constant prices) has been shrinking from 15.65% in 2011-12 to 14% in 2016-17; simultaneously the contribution of manufacturing of equipment and machinery has increased in the referred time period.



Within construction, the share of household construction has reduced from 76% in 2011-12 to 72% in 2015-16, while the share of residual construction i.e. commercial construction has gone up from 15% to 19% in the same time period. It is thus evident that that the secondary sector has had mixed performances, depending on the sector. This analysis is further utilized in calculating growth of jobs in the sub-sectors with an assumption that only the growing sub-sectors contribute to growth in incremental employment opportunities in the state.

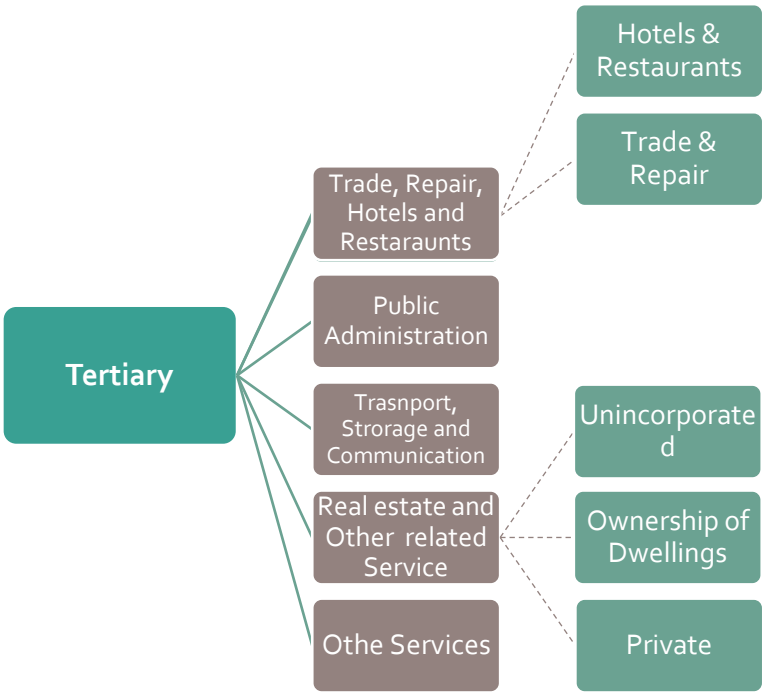
2.1.2.3 *Tertiary Sector*

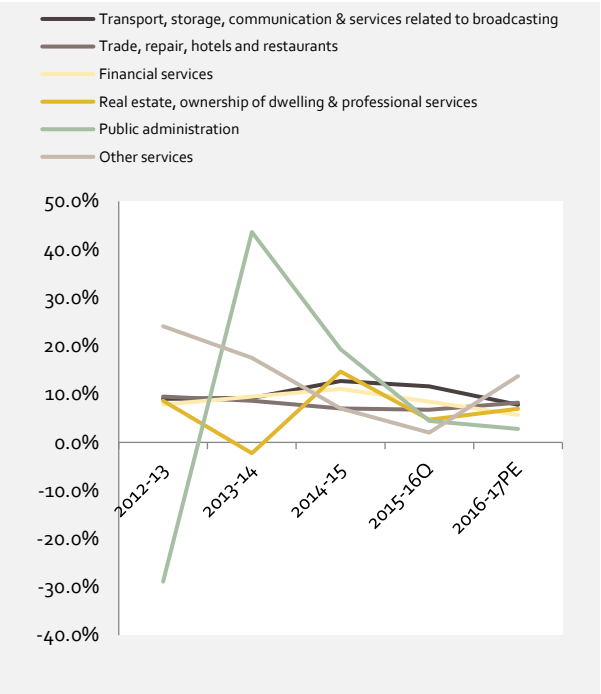
The tertiary sector mainly comprising of services contributes 34% to State GSDP and is the second largest contributor to the GSDP. It is the fastest growing sector in the state. The total contribution of tertiary sector to GSDP at constant prices stood at INR 55,49,766 lakhs in 2016-17(PE), exhibiting a growth of 12.71% from last year.

Overall, two sub-sectors of trade, repair, hotels and restaurants, and road transport have displayed a relatively healthy growth over a longer time period i.e. 2011-12 to 2016-17. The subsector of real estate has exhibited a slow-down in growth with particular shrinking of the share of dwelling ownership from 84% (2011-12) to 77% (2015-16) at current prices.

The slowing down of a few sub-sectors is contrasted with the growth of some others. Specifically, trade, repair, hotels and restaurants exhibit the highest growth from 2014-15 to 2015-16. Overall, this sub-sector has not displayed consistent growth from 2011-12 to 2015-16. From 9.5% growth in 2011-12, the sub sector dipped to 7.03% growth in 2014-15, after which the growth has stabilized at 8.25% in 2016-17.

Within the sub sector, trade and repair accounts for majority stake with more than 80% of the total share. The share of hotels and restaurants has consistently reduced from 15% to 12% from 2011-12 to 2015-16. The low and progressively lower share of hotels and restaurants points towards the small and micro enterprise nature of the larger tourism industry within the state.





As can be seen from the data analysis above, sub-sectors of services have displayed a rather mixed growth rate. One of the most important factors to notice here is the drastic reduction in growth rate of public administration since 2013-14. This hints towards the efforts on reducing public expenditure for

boosting GSDP. Recognising this, the study is designed to produce sector specific insights for a more accurate and effective analysis.

2.1.3 Industrial Profile

2.1.3.1 Large Industries

Successive State Governments of Uttarakhand have been instrumental in putting forth policies that focus on the industrialisation of the state. For instance, the Industrial Policy of 2003 provided full exemption on excise duties for 10 years from the date of commencement of commercial production and the Start-up Policy of 2017 helps promote entrepreneurship, one of the most aspirational jobs in Uttarakhand, in the state. The focus on large industries is important for economic growth with highest sectoral contributions to GSDP coming from the large scale industries. 98% of manufacturing sector, which consistently maintains the highest share of contribution to the GSDP (41.83% in 2016-17^{PE}), consists of registered manufacturing. These registered manufacturing firms (having more than 10 employees) are being counted as large scale enterprises, since the average number of workers in MSMEs as determined by field surveys is approximately 3. The state government model of setting up economic and manufacturing parks in districts is useful for pooling resources and generating employment, as well as increasing economic activity in the region. The most important advantage of industrial parks is that its infrastructure and services will have significant economies of scale. There are also benefits to be had from inter-relatedness of industries, where the finished product of one industry is the raw material for another leading to savings on transport and logistics costs.

The State Infrastructure Industrial Development Corporation of Uttarakhand Limited (SIIDCUL) is given the responsibility to develop industrial parks and estates. Accordingly, SIIDCUL has set up Integrated Industrial Estates (IIEs) in Haridwar, Rudrapur, Sitarganj and Kashipur. These IIEs house thrust industries across sectors such as cosmetics, plastics, apparel, agro- food, pharma, electrical & electronics, institutional, commercial and their respective allied sectors. These thrust industries have been identified and listed by SIIDCUL.

According to the SIIDCUL SmartCity webpage, as in May 2018, there exists 1145 acres of vacant plot for allocation to industries. Out of these, 56% is available in the Integrated Industrial Estate in Sitarganj, Udham Singh Nagar. Land availability, along with industrial policies of the state, continues to create an investment-friendly ecosystem in Uttarakhand. A case in point is the announcement of a slew of incentives such as tax breaks and subsidised electricity along with many of the major policy declarations made by successive governments in the Hill Policy 2011, Mega Textile Park Policy 2014, Mega Industrial Policy 2015 and MSME Policy 2015, among others. These incentives benefit districts where IIEs and Industrial Parks are set up, thereby generating a skill demand and employment opportunities.

The resultant power demand is met through policy - directed enterprises such as the Renewable Energy Policy and Solar Energy Policy announced by the state government, which has helped turn renewable energy generation into a lucrative business. Various subsidiaries of Acme Solar Holding Pvt. Ltd. are being setup to engage in electric power generation using solar energy. As per Uttarakhand Solar Energy

Policy - 2013, the state receives a good amount of insolation, about 4.5 to 5.5 kWh/m2. The state provided an impetus through this policy, and the call has been answered by inflow of investments into solar energy. Subsidy on project costs and permission to sell power to the grid makes this an attractive sector for investments/obligation on DISCOMS to purchase solar power. A positive external effect of this policy is the decreased burden that solar power generation would place on the environment, helping maintain a sustainable tourism industry.

Other than renewable energy, food processing industry and textile manufacturing will continue to play a major role. The Galwalias, a business family with ancestral roots in Uttarakhand, run the SPNG group. Kashi Vishwanath Textile Mill and Galwalia Ispat Udyog Pvt. Ltd. in Kashipur are a part of this group. Other major industrial players include Parle Agrotech, Unilever, Patanjali, Reckitt Benckiser, Proctor and Gamble, among FMCGs and household chemicals. Haridwar and Rudrapur have smaller scale herbal beauty products manufacturing units. The presence of these FMCG industries point to the fact that Uttarakhand has a firm foundation for its already robust food processing and textile manufacturing activities.

The Single - Window Clearance system of the state of Uttarakhand has also paved a smooth path for many industries to start up in the state. In just the last two years, 33 new industries have been proposed in these sectors as well as in wood densifying, plastics manufacturing and hotel/ trade services. It is to this ecosystem that Walmart has made an entry by announcing 25 stores to be opened between Uttar Pradesh and Uttarakhand; the proposed locations are Haridwar, Dehradun and Haldwani, with the company creating direct and indirect employment for 2000-2500 persons per store. Of these proposed 25 stores, 4 have been opened in Uttar Pradesh but the ones in Uttarakhand are yet to translate into a reality, though a proposed investment of 30 Cr had been approved in April 2017 for a store near Saharanpur Road.

2.1.3.2 Micro Small and Medium Enterprises

Policy level incentives, like excise duty exemptions, have provided Uttarakhand a comparative advantage over surrounding states. Many large industries have responded to this incentive. For example, Tata Motors had shifted production of its truck models from its Lucknow plant to Pant Nagar. This is an important phenomenon for the ancillary units that supplement large industries with their products or services. The formation of industrial clusters in the plain districts of Uttarakhand have led to a boom in MSMEs. Also, as noted in the large industries section, enterprises engaged in solar energy are beginning to come up in Uttarakhand. In the next couple of years, we can expect the cropping up of MSMEs as ancillaries to these industries.

The Integrated Industrial Development Policy of 2008 further cements the growth of MSMEs, and has also sought to bridge the economic differences between the hill districts and plain districts. The economic differences between the hill and plain districts is further clarified in section on district comparisons on economy. An example is the difference in growth rates - Dehradun being the fastest growing with a GDP growth rate of 7.62% and Champawat being the slowest growing district with a GDP growth rate of 5.75%. Modernization and technology upgradation, financial assistance, and market

linkages have proven instrumental in establishing healthy MSME clusters within the state. Major sectoral concentrations of these enterprises are food processing, textile and apparel manufacturing, furniture manufacturing, and handicrafts and handlooms.

But, given the state's emphasis on developing all three sectors of the economy, it is important that MSMEs flourish in sectors other than manufacturing. This has been achieved to an extent through policy initiatives tailored for specific regions (like the Hill Policy), and by tapping the natural resources of the state. Vast forest cover and multiple climatic zones have in several instances proved invaluable in developing a productive and profitable primary sector. Tourism potential is immense for all sorts of tourism; religious, adventure, and eco-tourism.

The forest cover helps sustain industries like furniture making and plywood manufacture, along with resin extraction. Forest depots at Rishikesh, Kotdwar, Kathgodam, Champawat and Almora contribute majorly to the production of resin. This is an important livelihood for the rural population in Uttarakhand. Given state's policy that 50% of the resin extracted has to be sold to units within the state, surplus unsold stock has been accumulating due to the lack of sufficient demand within the state. Attempts are being made to open this up into a nationwide auction. Given that only three states in the country manufacture resins and the remaining demand is met through imports from China and Indonesia, this could bring in major revenue for the state government. Around 70,000 to 80,000 quintal of resin is collected in the state every year.

Other than being major contributors to employment and economic growth, MSMEs can be an avenue to check distress migration from hill districts to plain districts and outside state. Though factors like operational flexibility and low investment requirements contribute positively to MSME growth, there are limitations that have to be addressed. A major limitation is the lack of a skilled workforce, at both worker-level and managerial-level roles. Addressing this limitation could result in a drastic reduction in the level of distress migration. While access to capital is another important limitation, government schemes like MUDRA have provided means for accessing capital at no/low interest rates.

While there has been significant activity within the Industrial policy and implementation space, there is a need for more strategic intervention in light of the skill-gap. In the later sections of this report, there will be specific insights about elements of the industrial sector.

This section provided an overview of the job creation ecosystem, by looking at the demographic, economic and industrial profile of the state. The section that follows gives an in-depth projection of the supply and demand of labour as well as skills in the State over the next few years; so as to leverage the favourable demographic dividend. A sector-wise understanding of the employment is crucial to bridging the skill-gap.

3. STATE OVERVIEW OF SKILL GAP

3.1 Understanding the Supply in Uttarakhand

3.1.1 State Level: Incremental Labour Force

The state demographic overview has revealed that the bulge of population lies in the age group of 10-34 years. This cohort will be the core and youngest part of the Economically Active Population (EAP) in the year 2022. The age wise population available in the state principally determines the State labour force supply. In this context, this section will provide an overview of the features seen in the present labour force, and the quantity as well as quality of the future labour force of 2022.

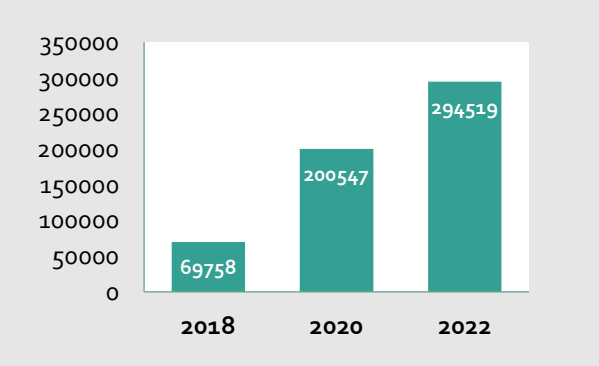
EAP is the number of persons in the age-group 15-65 who are employed or are willing and available for employment. Even with the above-mentioned demographic bounty of the state, the Labour Force Participation (LFPR) of the state has consistently decreased in the last two decades. With the rural population, the LFPR has decreased by 3.7 percentage points from 2011-12 to 2015-16[x]. The urban LFPR has suffered more, with a reduction of 9.7 percentage points within the same time period. The state replicates the national trend in terms of declining rural LFPR but nationally, the urban LFPR has been increasing for the same time period. In fact, the decrease in rural LFPR from 1999-2000 to 2011-12 has been highest in Uttarakhand when compared to other states of the country.

Principally, the loss of jobs has occurred in the farm sector. As per World Bank Reports[xi], the number of jobs in the non-farm sector from 2005 to 2012 have not been able to fill the losses incurred in the farm sector. There has been a decrease of approximately 1 million jobs in the farm sector from 2005 to 2012. Within the same time period, there has been an increase in employment provided by the Manufacturing and Construction sector however the increase in thousands while the job losses have been much bigger.

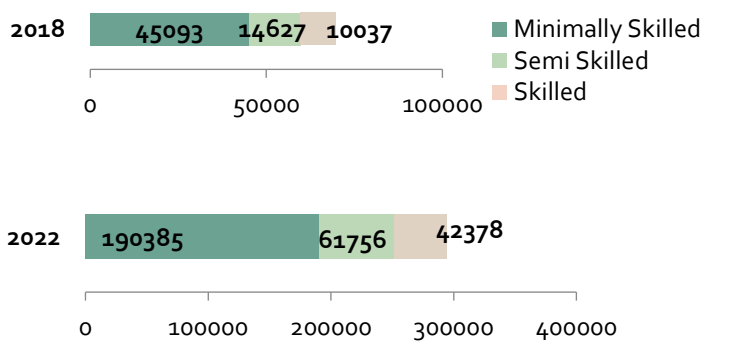
With this information in mind about the present labour force and available employment opportunities, the next sections provide an overview about the supply of labour force with respect to quantity as well as quality.

3.1.2 Quantity: Incremental Labour Supply

The projection of the labour supply of 2022 has been made on the basis of cohort composition method. Data on population between the ages of 4-54 have been taken from the Census 2011 and the population that will form a part of labour force in 2022 have been calculated according to the same methodology. However, recognizing that not all individuals would make it to the labour markets, we have accounted for age specific

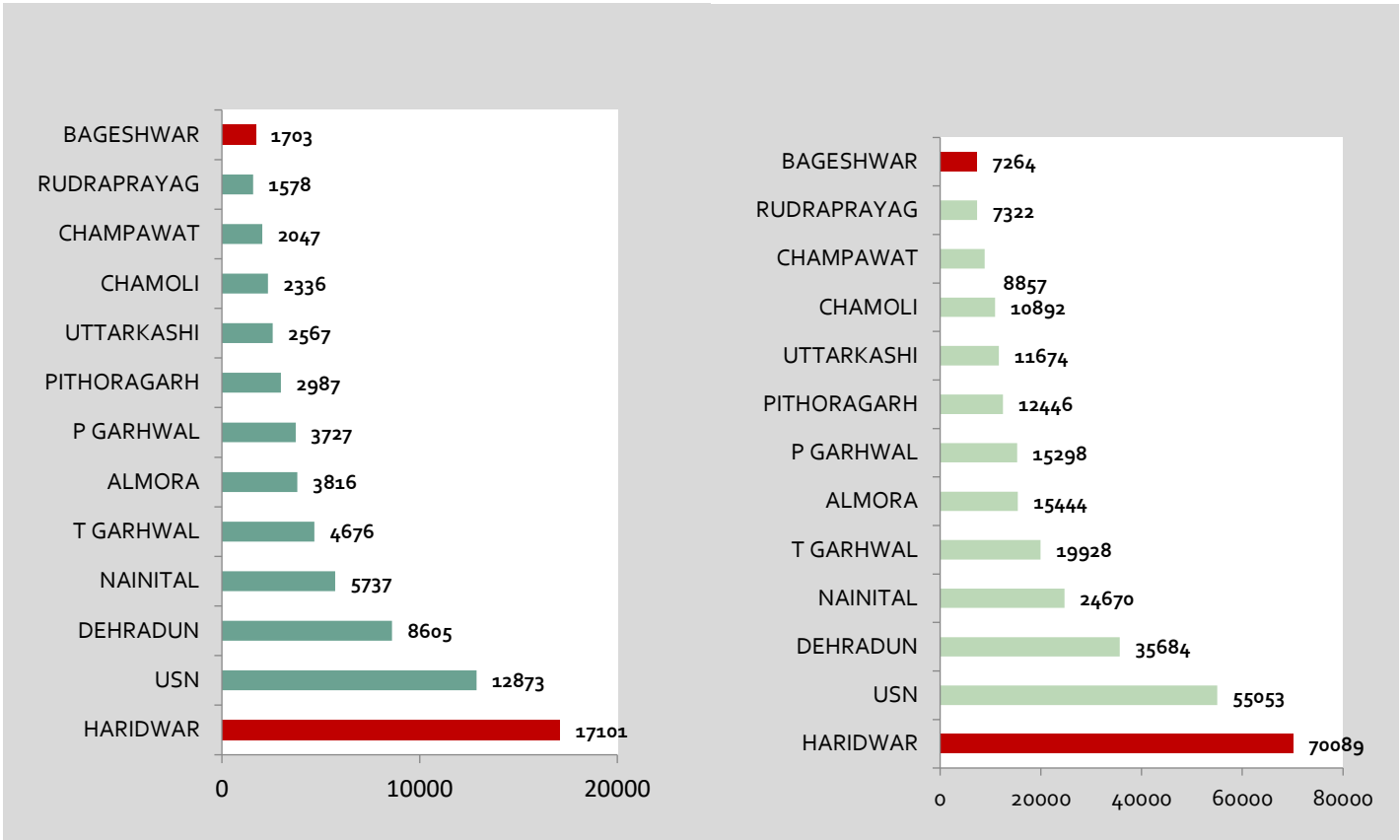


Incremental Supply of Labour force



death rates of the population and those who will make it to the job market based on the present LFPR. With the basic supply numbers intact, the survey results were applied in order to estimate the state level as well as the district-wise skill categorization of the population. The incremental supply available for 2018, 2020 and 2022 (with respect to 2017) would be **69,761**, **2,00,568** and **2,94,627** respectively. The skill categorization of the labour force has also been provided for 2018 and 2022. Categorization has been made into Minimally Skilled, Semi-Skilled and Skilled groups.

The same methodology for labour supply projection has been applied to the district. The lack of district wise age-specific death rates, State level death rates have been used to make the projection. As evidenced in the figures, the growth of the labour force peaks in 2020 after which it begins to decline. In terms of districts, as expected almost 63% of the labour force is contributed by the plain districts of Dehradun, Haridwar, Udham Singh Nagar and part plain district of Nainital. Amongst the hill districts, Tehri Garhwal, Pauri Garhwal and Almora make the highest contribution to the labour force. As evidenced in the graph below, Haridwar accounts for the highest incremental labour supply for both the years while Bageshwar records the lowest number for incremental labour supply.



From the primary survey, we have collected information about the employment and skilling status of the population. As far as the employment status of the state is considered, the maximum numbers of people are engaged in self-employed category, highlighting the importance of Medium, Small and Micro Enterprises (MSMEs). Self-employment was especially prominent in the hill districts of Pauri Garhwal, Tehri Garhwal, Pithoragarh and Almora. Lack of large-scale private companies, and an insufficient

number of government jobs based on people's aspirations have led to entrepreneurship as one of the viable employment options for younger population (18-35) belonging to the economically active age groups. Consequently, due to the varied skill requirements of entrepreneurship, a large numbers of self-employed people have also contributed to the skill makeup of the population especially in district like Almora and Pauri Garhwal, which record relatively higher skilled populations.

The next section presents the skill makeup of the population at the State and District levels.

3.1.3 Skill Levels

For the purpose of categorizing the labour supply into skill levels, a point system was created. The basis of the approach was the National Skill Qualification Framework (NSQF), under which there are skill competency levels. Each level was broken down in terms of years of education, work experience and formal skill training. Questions based on the NSQF skill competency levels were also formulated for the primary survey. The survey responses and the educational, work background of the respondent were quantified, which was then utilized to sort them into categories of minimally skilled, semi-skilled and skilled.

The breakup of skill population at the state level lies in the distribution of 66%, 20%, and 14% for minimally skilled, semi- skilled and skilled category respectively. While a significant section of the population lies in the minimally skilled population, the low difference in numbers between semi-skilled and skilled population indicates Recognition of Prior Learning (RPL) can be used to facilitate the transition of labour force in the semi-skilled population to skilled population category. Below is the skill categorization of the district population.

3.1.4 Key Takeaways

In all districts, the minimally skilled population is more than 50% of the labour force. As evidenced in the figure, plain districts are more or less homogeneous in terms of skilled population with Haridwar and Udham Singh Nagar having 10% and 11% of skilled labour force respectively. However, the major variance is witnessed amongst the hill districts, with Almora having 29% of skilled population contrasted with its neighbouring districts of Chamoli with only 5% of skilled population. Generally, proximity of districts to industrial hubs and presence of high tourism activity in districts like Almora, Pauri Garhwal, and Tehri Garhwal leads to high self-employment and more awareness towards skilling programs. This also helps them perform better in terms of quantum of skilled percentage of the population.

With this analysis, a critical inference, which comes through, is those both hard and soft infrastructures are correlated to adequate skill development. By hard infrastructure, we include the availability of skilling opportunities in the form of buildings, classrooms and machinery. Within soft infrastructure, we include availability of competent training providers, curriculum as well as the attitude towards skilling.

For example, Almora which is a hill district, has high percentage of skilled population and has a widespread skill development infrastructure with the highest number of ITIs in the state. It also involves private skill training providers in this process. On the other hand, Udham Singh Nagar has relatively low percentage of skilled population when compared to the other plain districts. One of the reasons accounting for this low percentage could be the employers' attitude towards formal training in the district. As per the survey results, MSME employers in Udham Singh Nagar consider formal training as the least favoured background option from their prospective employees after Work Experience and Education.

Along with a detailed EAP survey for measuring skill level of the population, another survey was conducted across 26 ITIs in the state. The analysis of the results from this survey are presented in the next section.

3.1.5 Primary Survey of ITIs

Industrial Training Institutes (ITIs) were set up as post-secondary educational centres all over the country with the specific aim of disseminating vocational training catering to contemporary industrial needs. They are at the forefront of skill development in the country with ITIs being synonymous with skilling and vocational training. ITIs also act as a marketplace for youth aspiring for manufacturing jobs as well as industries hunting for skilled labour. Therefore, due to its overarching role in formal vocational training, it was considered crucial to survey the ITIs present in Uttarakhand to better understand the employment market in the state, the demand of various vocations as well as the aspirations of the youth.

There exist over 11,964 ITI's in the country out of which 118 are present in the state of Uttarakhand.[xii] 59 out of these 118 ITIs are government run while the others are run by the private sector. The total seating capacity in these 118 ITIs is 13937. The team telephonically surveyed 24 and personally visited 3 ITIs in the state to glean a macro picture of the formal skill training infrastructure in the state. The

team aimed at reaching out to 2 ITIs in each of the 13 districts of Uttarakhand. The ITIs were surveyed based on convenience sampling and maximum responses were received from the government run centres. As was revealed from the field visits, government run ITIs continue to attract students and are perceived to be a safer educational choice than private ITIs. Some of the top ITIs, mostly government, witness fierce competition for admissions whereas a considerable number of seats go vacant in others. Thus, there clearly exists a wide variance in the perception of students towards ITIs.

Survey Design	
No. of Responses	27
Govt/Private ITIs Ratio	21:06
Districts Covered	13
Type	Mixed Questionnaire
Mode of Administration	24 Telephonic; 3 Visits

The salient points derived from the analysis of the ITI survey responses and field visits are elaborated below:

1. Courses/Trade: ITIs offer a variety of courses ranging from plumbing to computer operations. The most common courses are for fitters, electricians and mechanics.

Trade/Course	**Number of ITIs Offering Course (out of 27)**
Fitter	16
Electrician	16
Mechanic	6
Welder	6
Wiremen	5
Computer Op.	4
Electronics	4
Draughtsman	4
Stenographer	4

The number of ITIs offering courses on various trades are generally in line with their corresponding demand by students. For example, courses on fitters and electricians are also the most sought after courses by students due to their perceived high employment potential. The respondents (ITI officials)

claimed high competition for the fitter and other top trades in terms of enrolment. They also bemoaned lack of sufficient capacity for the training in the highly sought after trades while capacity was squandered away on other less desirable courses such as painting and wireman.

Trade	Most employable courses by no. of ITI respondents (out of 15 responses)	Trade	Least demanded courses by no. of ITI respondents (out of 15 responses)
Fitter	12	Painter	5
Electrician	4	Wireman	3
Mechanic	3	Sewing	2

2. **Facilities and Infrastructure:** On the field visit, the team found the ITIs to be well equipped and maintained. The necessary skilling infrastructure in terms of classrooms and relevant equipment for various courses was by and large present. However, it must be noted that the field visits were made to some of the higher ranked government ITIs and hence the observations from the field visits cannot be generalized for the entire state. Nevertheless, the insights from the EAP Survey, specifically interviews of those who had trained in ITIs, revealed that lack of infrastructure and facilities was rarely a concern amongst respondents. Instead these respondents demanded increased practical hours, deeper industrial-ITI linkages and job placements as their top demand while rating ITI infrastructure and facilities as their least concern. Additionally, the telephonic surveys conducted with the 24 ITIs also brought to light the presence of experienced teachers in the ITIs. The average experience of the staff in ITIs interviewed was almost 10 years.
3. **Employment Opportunities and Cultural Trends:** Apart from revealing the popularity of different courses, the respondents also spoke of the cultural trends that affect the skill development sector in the state. The cultural craze for a white collar job results in students looking down upon roles that requires manual work even if they were highly paying. For example, the job roles of machinist and mechanics were clearly in high demand but saw less interest from students. ITIs effectively compete with the more traditional polytechnics and degree colleges for talent and usually lose out to them due to the natural preference of students to engage in white collar jobs.

When asked about dropouts and the reason thereof, the main causes were found to be financial difficulty that results in the student leaving his training for a paying job. Another common reason was the propensity of students to use their ITI training as a "back-up" option while preparing for public sector exams. ITI training and a manufacturing job in a major company is no match to the allure of a public sector job, the first choice for most students.

When asked for the top employers that visit the ITIs for recruitment, the automobile industry emerged as the overwhelming leader in providing employment opportunities. The top five employers as claimed by the ITI officials all belonged to the automobile industry, clearly pointing to the success achieved by

the automobile driven industrial parks created by the state in the last decade. The ITI officials also revealed that the automobile companies have an untapped appetite for hiring more skilled workers, currently not fully exploited due to insufficient skilled labour supply. Increased training in automobile sector job roles would be a major step to address this mismatch.

Companies with maximum hiring	Number of Responses by ITI officials (out of 17)
Tata Motors	11
Maruti	7
Hero	4
Mahindra	4
Ashok Leyland	3

3.2 Understanding the Demand in Uttarakhand

Demand – based skilling has the potential to enable the working age population to reach their fullest potential and push production to the maximum possible. This is the only way to utilise the complete potential of the state's demographic dividend, before the population begins to age. This section will present estimates for labour requirements in the state of Uttarakhand. As such, this section provides lists of Sector Skill Councils (SSC) with the incremental demand for human resource marked against the respective SSC. The incremental demand numbers present an estimation of actual realization of employment opportunities in the state based on a descriptive analysis of employment in individual skill sectors. This listing would be of utmost utility for prioritising sectors for skill development.

Understanding the demand for certain professions is also important to ensure that productive sectors do not suffer from a shortage of skilled labour while less productive sectors have to deal with surplus labour supply. In order to understand the demand, developed countries execute skill gap studies on a regular basis to help align demand and supply in an optimal manner. For instance, in the United States, the Bureau of Labour Studies publishes projections in the Monthly Labour Review and in Canada, the Canadian Occupational Projection System (COPS) provides real-time estimates on number of job seekers and job openings.

These estimates are based on analysis of available secondary government data on employment coupled with a total of around 1350 responses from enterprises at different levels in terms of investment and employment. The following two scenarios have been examined while estimating incremental demand:

1. Demand due to increase or expansion in business

2. Demand due to attrition or retirement

In the primary process, the team reached out to MSMEs in each of the districts and conducted an extensive survey of a number of firms. These MSMEs were selected based on the analysis of secondary data which provided major sectors of MSMEs in each district. We then backed this with calls to large industries to gauge their demand for labour in the upcoming years. The responses from large industries were in line with the inputs from MSMEs regarding sectoral growth and human resource requirement. An analysis of MSME surveys is provided in the next section.

These extensive primary surveys were also backed with calls to larger industries to gauge their demand for labour in the upcoming years. The large industry on-site interviews as well as phone calls were ineffective in getting a non-anecdotal investment/employment plan of employers for the next five years. Although, these calls were important in providing insights on average number of employees based on size of the company and employer's perception regarding skill training. On-site visit to some of the large industries like Patanjali in Haridwar and Britannia in Udham Singh Nagar provided qualitative insights on contractual labor and employer's preference for providing on-site skill training based on specific job roles. This was complemented with secondary data analysis from the Directorate's Office to understand in depth about the possible openings. The findings from all these combinations was then reconciled and the final numbers were calculated. Following is a snapshot of the incremental demand numbers for each of the sectors.

Sector	Incremental Demand
Agriculture and Allied Activities	28012
Automobiles	12181
Beauty & Wellness	1998
BFSI	9206
Capital Goods	3930
Chemicals	6463
Construction	3297
Electronics	10435
Food Industry	20057
Furniture & Fittings	3459
Gems And Jewellery	928
Green	161
Handicrafts & Carpets	1603

Healthcare	3052
Iron & Steel	7032
IT-ITeS	8585
Leather	1291
Life Sciences	10752
Logistics	358
Mining	1654
Paint & Coating	255
Paper	3234
Power	204
Retail	3293
Rubber	3584
Telecom	2569
Textile & Apparel	12559
Tourism And Hospitality	7791
Others	23115
Grand Total	**191058**

Apart from sectors covered in the list, all the remaining employment opportunities have been covered under Others. Some of the major ones within this are:

a. Photocopy, printing/xerox and photo studios.

b. Services like cyber café, tent houses, rental and leasing.

c. Other manufacturing.

3.2.1 Core Findings

The total incremental demand for the state of Uttarakhand by the end of year 2022 has been estimated to be 1,91,058. The demand for labour is driven mostly by sectors like Livestock (Agriculture and Allied Activities), Food Processing Industry, Textile and Apparel, Automobiles, Life Sciences, and Electronics. Also of importance are sectors like Tourism and Hospitality, which already employ a sizeable proportion

of the working age population and are considered to be the natural growth sectors in Uttarakhand. Both government and private players have noticeably invested in the sectors such as eco-tourism.

Among other policies, the State Government's new plan of '13 districts, 13 new destinations' through which they are trying to promote newer tourist destinations in every district, showcases state's commitment to developing these sectors. Innovative promotion also occurs through events organized by the Tourism Department like bird festivals, adventure challenges, forest fairs, lake festivals, etc. Besides these, religious tourism has been key in ensuring a consistent footfall from both domestic and foreign tourists alike. The Char Dham Yatra – Yamunotri, Gangotri, Kedarnath, and Badrinath – is considered highly sacred and a must visit for Hindus at least once in their lifetime. Initiation of the policy intervention such as those mentioned above has created a significant demand for workers as cooks, potters, drivers, priests and guides. These job-roles also point to the potential need for minimally and semi-skilled workers in the sector. Employers also confirmed the potential need for soft skill development among the workers in this sector.

3.2.1.1 Enterprise driven demand

47% of the demand for incremental labour force is generated by MSMEs.. From the initial pilot visit and ground surveys, it had become evident that MSMEs had tremendous potential to absorb the workforce. While this promotes entrepreneurship and has a positive correlation with distribution of wealth in a growing economy, it also increases the difficulty in identifying pockets/clusters of sector specific demand as most MSMEs hire in small numbers. As a result of the MSME growth phenomena, demand is expected to be dispersed throughout the districts.

In the case of large scale enterprises, industries that have cropped up in the last 4-5yrs like life sciences and chemicals are generating demand for labour. Among the industries that have been around for more than ten years, it is the food processing industry that takes the lead.The growth in life science can be mostly attributed to Government policies promoting AYUSH villages, AYUSH industrial clusters, cultivation of medicinal herbs and medical tourism. For instance, 10 crores have been sanctioned to Sanskar AYUSH Medicare Private Limited, an SPV formed for AYUSH Cluster in Roorkee, Uttarakhand. This is indicative of policy interventions that would prompt the growth of specific industries (for more information on policy interventions please see section on Industrial growth).

3.2.1.2 Deeper dive in identifying patterns and opportunities

Certain sectors, like Food Industry and Textile and Apparel, are present in most districts whereas sectors like Leather and IT-ITeS only generate demand in a few districts. In the case of IT-ITeS, maximum demand is generated from the district of Dehradun. Further sector specific observations on incremental demand are:

1) For Food Industry, demand is generated on two fronts; MSMEs engaged in grain grinding and flour milling; and large industries engaged in food processing, mostly based out of Haridwar and Udham Singh Nagar. Parle Agro, Nestle, and Britannia are some of the large industries present here.

2) In Textile and Apparel, the share of women engaged is steadily increasing and we estimate that a majority of incremental demand would be for women. This is true both in the case of large industries engaged in spinning, weaving, and finishing of textiles as well as smaller enterprises that mostly employ tailors. Also, a MoU is likely to be signed between the Uttarakhand Government and the Apparel Training and Designing Centre for the further growth of Kashipur-based Fashion Design Centre. This is a part of an overall push by the government to increase employment in this sector, especially in hilly regions.

3) In the Automotive sector, major contribution to the incremental demand is from enterprises engaged in repair and in manufacture of auto parts. Retail/Sales has a significantly lower contribution. Industry giants like Tata Motors and Mahindra and Mahindra (M&M Ltd.) have manufacturing plants in Uttarakhand (as mentioned in the industrial policy section). M&M Ltd.'s Haridwar plant has the distinction of having one of the highest production capacity amongst other automotive plants of Mahindra.

But all these automotive firms (which include Bajaj Auto in Pantnagar and Hero Motocorp in Haridwar) are heavily dependent on the tax incentives offered by the state, and jobs might take a hit when the incentives finally begin to phase out for individual companies. These incentives have been upheld by successive state governments, but efforts towards phasing out of excise tax incentives of manufacturing plants is expected to lead to operating margin compression and 5-10% reduction in projected earnings[xiii] for the large scale auto/auto-component manufacturers in Uttarakhand.

Within districts, Industrial clusters and estates have the highest concentration of jobs. One such cluster is the IT Park in Dehradun, which has set up facilities for Information Technology and Business Process Outsourcing services. It caters to the long-standing demand for more IT jobs to be created within Uttarakhand by the graduates of engineering disciplines. A PharmaCity has also been set up in Selaqui, Dehradun, to utilise the potential that the district has in terms of production of drugs and medicines, an industry that contributes the second highest to manufacturing sector output in the GSDP.

The prime contributor, textile manufacturing, has also witnessed special policies formulated for the expansion of its activities in the form of textile parks in Sitarganj, Kashipur and Jaspur in Udham Singh Nagar district. These were announced with hopes of creating a combined total of 2,40,000 jobs with potential to further increase manufacturing in the state. The Chinese Textile Company, Zhejiang Daoqin Textile Co. Ltd. has proposed to set up a manufacturing plant, in the biggest 100% FDI Uttarakhand has witnessed. The global giant, Unilever has a household chemicals plant in Haridwar, as does Patanjali, which is the fastest growing FMCG brand in the country.

Thus, on the demand side, MSME employment generation is huge (backed by MUDRA) and upcoming industries engaged in life sciences and solar power show promise of growth. The state's industrial policies have been timed well to bring about this result. The next section provides detailed analysis on the primary survey of MSMEs that were conducted across all the districts.

3.2.2 MSME Primary Survey Analysis

Micro, Small and Medium Enterprises (MSMEs) are small scale industries or companies that are defined on the basis of the investment size below:

Classification of the MSME	Ceiling on Investment in Plant and Machinery (in Rs)
Micro	Below 25 lakhs
Small	25 lakhs to 5 crores
Medium	5 crores to 10 crores

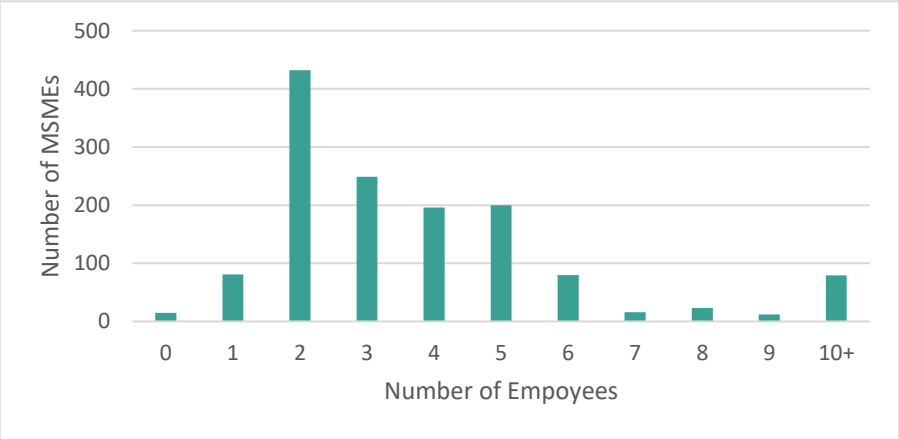
According to the 'MSME at a Glance' Report of the Ministry of MSMEs that was published in 2017, the sector consists of 36 million units in the country and provides employment to over 80 million persons. The sector also produces more than 6,000 products contributing to about 8% of GDP besides 45% to the total manufacturing output and 40% to the exports from the country. Thus, while the contribution of the sector to the GDP might be minimal, it is critical in driving the employment growth and exports of the country. This is also a highly unorganised sector and relevant data is not available to determine the exact characteristics of MSMEs based on investments made in them and the sector that it belongs to. It was for this reason that it was considered crucial to conduct a detailed primary survey of MSMEs, separate from the Large Industry Survey undertaken, that could provide useful insights into the employment opportunities at MSMEs and their requirements in terms of job roles and skillsets. We elaborate on the major findings of the MSME survey that was conducted.

MSME Survey Design	
No. of Responses	1385
Primary/Secondary/Tertiary Sectors	16%/20.4%/63.5%
Districts Covered	13 (Median No. of Surveys/Dist. = 107)
Type	Mixed Questionnaire
Mode of Administration	In Person using Mobile Applications
Respondents	97.75% Owners or family/2.25% Managers

3.2.2.1 Employment Trends in MSMEs

The average number of employees in the MSMEs surveyed was 3.6 with the median unit employing 3 workers. Almost 80% of the units employed between 2 to 5 workers. This is broadly in line with the national statistics on MSMEs which by definition tends to be small with few employees. The few employees hired also tend to be local with only 178 out of the 1385 MSME units employing workers from outside of the district.

Over the previous 12 months, 95% of the units claimed to see no change in the total number of employees. This was a dire statistic that implied minimal growth in jobs over this period. However, it must be noted, as some respondents reminded the team, of the debilitating effects of 'demonetization' on their businesses. This could have been a factor contributing to minimal job growth over the preceding 12 month period. The lack of job growth within existing MSMEs should not be confused with absolute lack of jobs in MSMEs because new MSMEs are registered frequently and the survey doesn't cover that aspect. While the survey is limited to existing MSMEs, the job roles because of newly registered MSMEs are accounted for in the demand projections based on year-on-year EM2 filing data.



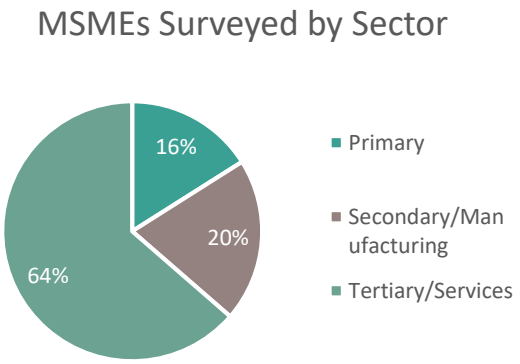
The MSME units were asked about their recruitment process and their preferred modes of hiring employees. The responses to this question revealed the overwhelming reliance on references and recommendations from friends, family and employees to hire new employees. Other more meritocratic and technologically aided methods were seldom used for recruitment.

Methods of Hiring Employees	Number of MSMEs
Recommendations from friends/family	977
Recommendations from employees	793
Newspaper/TV Advertisement	102
Online hiring websites	29
Others	196

3.2.2.2 Nature and Scale of MSMEs in Uttarakhand

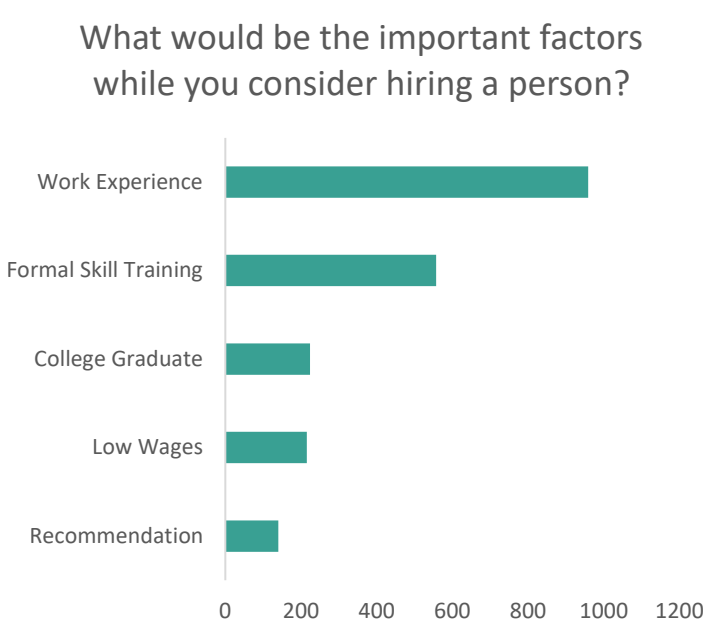
MSMEs were asked about the scale/reach of their operations and the spread of their customers. This was used to gauge the number of MSMEs that export to other states and countries. As the responses revealed, a vast majority of MSMEs served only their local towns and districts. Around 15% of the respondents claimed to have operations that extended beyond their immediate district to other regions across the state. However, only about 2% of the MSMEs engaged in national or international trade. Thus, it was recognized that MSMEs in Uttarakhand were primarily catering to the needs of the local market. The breakup of MSMEs surveyed by sectors is also provided below.

Market Catered to	Number of MSMEs	(in percentage)
Village/Town	1385	100.0%
Districtwide	807	58.3%
Statewide	210	15.2%
National	29	2.1%
International	15	1.1%

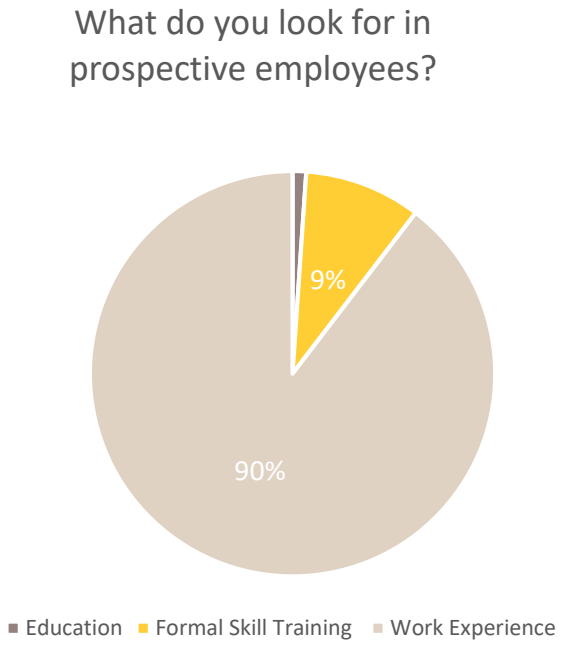


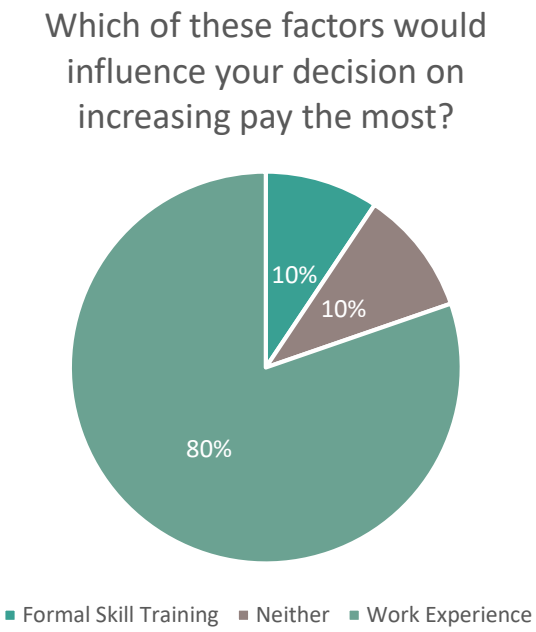
3.2.2.3 Perceptions towards Formal Skill Training

Along with gauging the employment needs of the MSME sector, finding the perception of these job creators towards formal skill training and such trained workers was also one of the primary motives of the survey. Towards this end, the respondents were asked about their willingness to hire formally skilled workers, their inclination in raising pay for those updating their skills and the qualities they seek in a potential candidate.



A clear revelation from the responses was that employers value experience in a candidate more than any other trait. An experienced candidate is more than five times likelier to be favourably viewed than a candidate with formal skill training. A candidate with experience is also far likelier to receive a pay hike than one with informal skill training or education. This is in line with some of the field observations where the employers saw on-the-job training as much more valuable than other formal skill training or a college education.



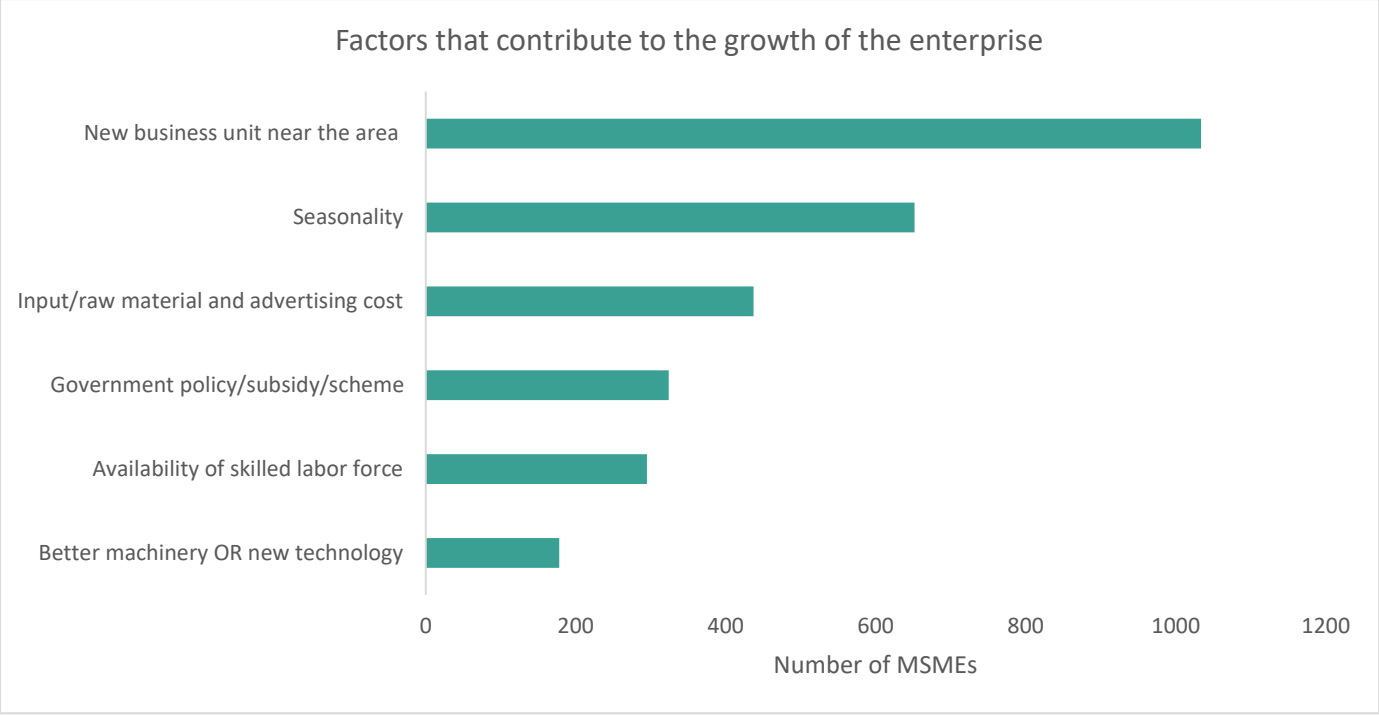


When it comes to the formally skilled, there exists a perception amongst the MSMEs surveyed that such workers would be expensive and not justify the increased wage. A large majority of respondents preferred to recruit workers demanding low wages and thereafter train them on the job. This was due to the nature of MSMEs that run on low operating margins and are sensitive to wage increases. Thus, even if the respondent valued a skilled worker, which was not the case majority of times, they would still be disinclined towards paying a premium for the skilled workers wages.

3.2.2.4 Growth Determinants and Outlook

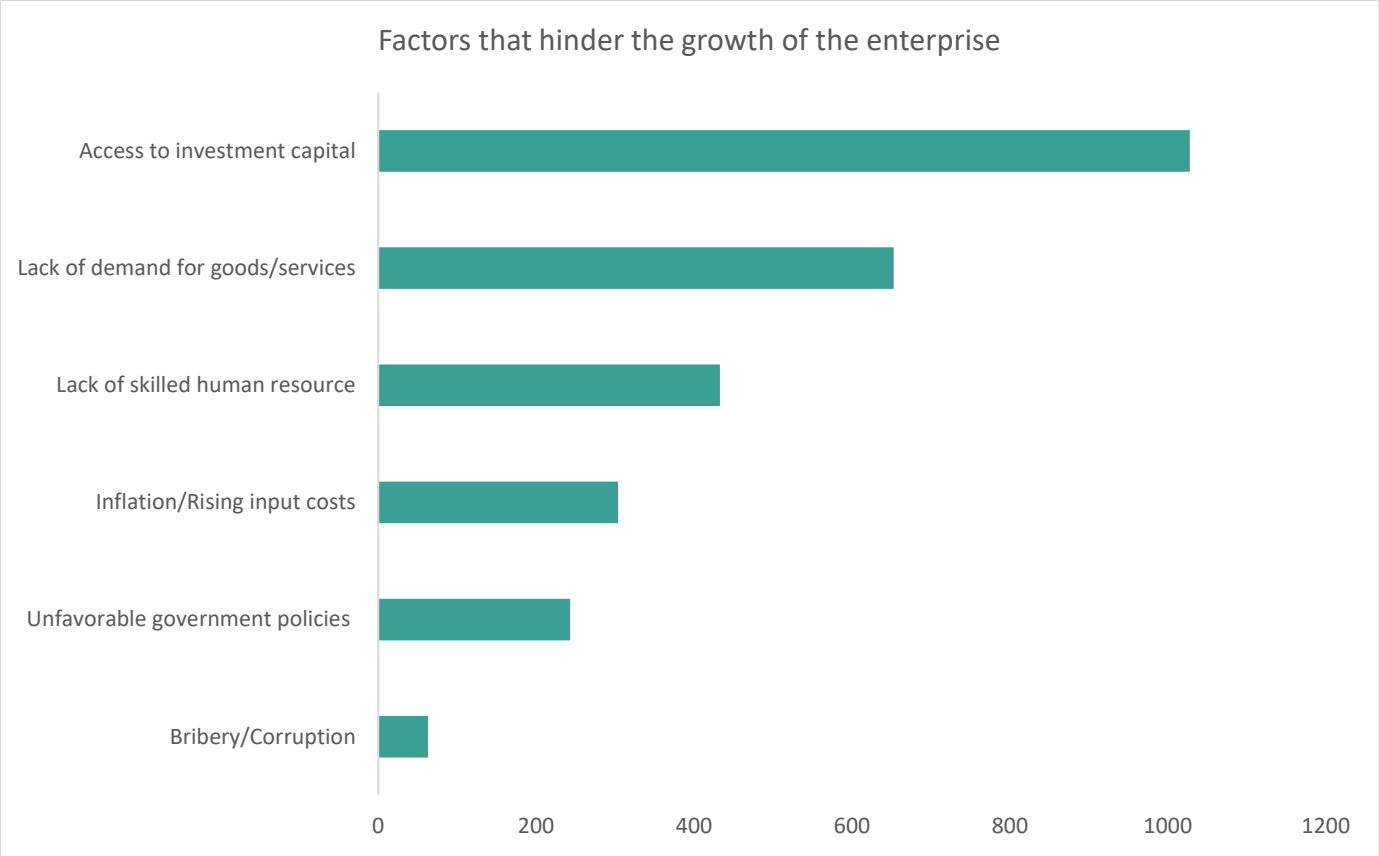
One of the key questions asked to the MSMEs was regarding their outlook for the coming 12 month period and the factors that could contribute or derail their growth. The team hoped to understand some of the common difficulties faced by entrepreneurs in running their businesses and what could be the broad macro level interventions, by government or others that could overcome these difficulties and lead to growth of these enterprises. Furthermore, gleaning the job roles that will see the maximum hiring as part of this growth would be important in planning the necessary supply side skilling interventions.

The responses from the MSMEs revealed that these enterprises did not see the availability of skilled labour supply as having a major beneficial effect on their growth prospects. The top factors that could benefit growth included the setting up of a major business/industry in the region, seasonality and uptick in the business cycle of their sector and lastly the reduction in the cost of raw materials. Surprisingly, a change in government policy or scheme, or even an offering of subsidy, was not seen as crucial to improving the growth prospects of the enterprise. A common perception was of government schemes and subsidies not translating to substantial significant gains for small scale businesses on the ground. Instead, the promotion of industrial parks and improvement in infrastructure that could reduce the cost of inputs was touted as having the maximum potential to propel growth.



As for factors that could be a hindrance to growth, access to capital and lack of demand were flagged as major concerns. Most MSMEs had problem accessing operational credit as well as financing for expansion. Less than a third of the respondents marked the unavailability of skilled labour as a major concern that could derail growth. This is consistent with the relative lack of importance attached by MSMEs to skilled labour and training.

In spite of the controversial demonetization exercise still being fresh in the memory of the respondents, unfavourable government policies were not marked as having potential to hinder the growth of the enterprises. Lastly, and even surprisingly, bribery and corruption was considered to be the least of the concerns amongst MSMEs. A vast majority of the MSMEs surveyed spoke favourably of the law and order situation in the state and corruption having a negligible effect on their business operations.



Based on questions regarding manpower requirement in various job roles in MSMEs, the requirement chart is listed below. As can be seen, sales personnel, shopkeepers and cooks/bakers are the top three job roles along with the broad category of others that mostly includes unskilled labourers.

In order to match the requirement with wages offered, the average wage per job role was also enquired. These details are listed in the graph below. It can be noticed that the job role with highest average wage offered by MSMEs was that of an accountant. This could be in lieu of the increased accounting workload on organisations post GST.

3.2.3 Insights from Surveys

The results from MSME surveys provide qualitative as well as quantitative insights into the sector with in the state. While a large section of people aspire to be entrepreneurs in the state, there are a number of barriers in terms of growth of MSMEs. Most of the MSMEs remain localized and do not provide employment opportunities to the people in general. Even when employment opportunities open up, it's mostly filled by the family members. As such for employment generation analysis, focus should be on the new MSMEs being registered every year. The next section will give an overview of primary surveys

with the District Employment Officers who are tasked with enumerating demand and supply of labour. Primary Survey of District Employment Officers.

The National Employment Service (NES) enjoys a rich and diverse history. Initially it was set up to provide veterans with employment opportunities, in 1945. Post partition, the service was also utilized to help displaced persons. Employment Exchanges were established under the aegis of Directorate General of Employment and Training (DGET). Through these local Employment Exchanges, the NES aimed to provide employment to displaced persons and veterans. The day to day administration of the Employment Exchanges was transferred to State Government/Union Territory in 1956. With Compulsory Notification of Vacancies Act 1960, all vacancies in non- agricultural establishments employing more than 25 people were to be reported to the Employment Exchange. By this time, Employment Exchanges had expanded their mandate to facilitate employment to all job seekers either through self-employment or through regular employment opportunities. Presently**,** all over the country, there are about 966 Exchanges which have been set up. In Uttarakhand, there are 24 Employment Exchanges, usually more than one Employment Exchange is located in the plain districts and hill district have one each.

The District Employment Officer (DEO) is the head of the District Employment Exchange (DEEs). For the purpose of the survey, DEOs were the object of the survey. Apart from facilitating employment, the District Level Employment Exchange is also responsible for promoting vocational education. In Uttarakhand, District levels Employment Exchanges have been converted into District Skill Development & Employment Information Centres (DSEIC) in order to provide a single window outlet for all skilling and employment related information. DEEs are also supposed to maintain an exhaustive data repository of all job seekers, as well as any vacancies in reporting firms. Survey and ground interactions with DEOs revealed some insights about both the employment and skill development scenario across Uttarakhand

(i) Confirmed by the results of our Primary Survey on the EAP, ground interaction and interviews with DEOs reveal that the most preferred option for youth is Government Employment. As there are few government posts which are advertised especially when compared to the sheer demand of these kinds of jobs. There exists a gap between the aspiration of the youth and the resources supplied by the Exchange.

(ii) It is common practice and an administrative norm that government job applicants have to register with the DSEIC for them to be eligible for State/District level government employment. The concerned centres hold an exhaustive data repository on the demographic and economic profile of the youth population.

(iii) The major private employers are reduced to 3-4 major private companies which are mostly located in the plain districts.

(iv) The frequency of Job Fairs is pretty high. At least one job fair is held in the entire district every three months. The mode of advertisements for these job fairs is mainly print media.

(v) About 50-100 applicants attended each job fair, the placement percentage for each job fair is less than 10 %.

(vi) Even if private companies hire through the Employment Exchange, all newly selected employees undergo a training course which is company specific, irrespective of their formal training status.

3.2.3.1 General Observations from the survey include:

(i) **Employment Scenario:** While government jobs are the much desired career path for an overwhelming majority of job seekers, opportunities for self-employment also exist. However these opportunities are not widespread in nature, and mostly exist in the field of tourism or small scale grocery stores. Presently the job seekers do not receive any training for entrepreneurship either in public or private skill development institutions. Three major companies hire through the Employment Exchanges namely TATA Motors, Schneider Electric, and Ashok Leyland. Both TATA motors and Ashok Leyland carry out training programmes after the final selection of candidates. Due to the multiplicity of opportunities in the plain regions, more candidates are placed in the plain districts as compared to the hill districts. It is important for Employment Exchanges to attract private employers as there is definite limit to both government jobs and entrepreneurship opportunities. As the state develops sector like Tourism, Pharmaceuticals, some medium sized enterprises within these sectors could also be encouraged by the Employment Exchanges for holding placement within the exchange.

(ii) **Job fairs/ Rozgar Melas:** Rozgar Melas are held frequently in all the districts. In the plain districts, the frequency is higher as compared to the hilly districts. On an average at least one Rozgar mela is held every three months in all districts. The medium of advertisement is primarily print media and in some cases radio. Though an average of 1000 applicants register every month with the District Level bodies, not even one-tenth of the number turn up for the Melas. It is important that advertisements are targeted in nature and reach important demographic segments like the youth, hence both social and electronic forms of media need to be utilized to spread awareness about the Melas.

(iii) **Skill Development:** Ground visits and conversations with DEOs revealed that awareness about skill development options exist, however job aspirants are not too keen on the venture as they don't foresee any immediate returns. Some officers also pointed out that the location of skill development centres could be changed to be more conducive to employment. Mostly Skill Development centres are located in the urban areas; however they need to be more widespread to garner increased accessibility. Another suggestion which was repeatedly made was to locate the skill development centres near production centres rather than urban regions as these would encourage more workers to take on skill development.

Along with an understanding of stakeholders on demand side, it is also important to develop a general understanding of important sectors in the economy. The next section does exactly that by elaborating on the sectors of importance because of high level of incremental demand or youth aspiration.

3.3 Sector Analysis

NSDC sets up Sector Skill Councils (SSCs) as autonomous industry-led bodies. Their primary objective is to create Occupational Standards and Qualification Bodies. The power of assessing trainees and awarding certificates rests with the SSC. NSDC has approved proposals for 38 SSCs so far. Of the 38 SSCs created, 80 percent of Uttarakhand's workforce is a part of 19 SSCs. NSDC further classifies the 38 SSCs into the following three categories:

1. Priority Sector (Retail, Hospitality, etc.)
2. Large Workforce (Mining, Capital Goods, etc.)
3. Informal Sector (Domestic Workers, Plumbing, etc.)

In this section, a brief summary of certain important SSCs is presented, vis-a-vis their potential in India at large and Uttarakhand in specific. These SSCs have been selected either because of their high contributions to the GDP of Uttarakhand or because they have been deemed as aspirational by the youth of the state.

3.3.1 IT -ITeS

India is a prominent sourcing destination across the world for the Information Technology-Business Process Management (IT-BPM) sector. Reports peg the growth rate of this sector around 10% of CAGR over the last few years. The management-consulting firm AT Kearney has ranked India as highest on its Global Services Location Index in 2016. This means that India is the most sought-after destination for outsourcing. This ranking index is widely used by companies around the world to gauge their outsourcing plans.

Though narratives exist that China might dislodge India from its top ranking, India is establishing itself as an industry leader in IT-ITeS. India has ranked first on the 2014, 2016, and 2017 index. To further add to this, India's lead over the country ranked second i.e. China, is widening. People skills and availability is an important sub-component of this index (30% weightage), which takes into account labour force availability by enumerating the population between the ages of 15-39 and also the cumulative skills and experiences of the workforce. While India has a solid advantage in sheer labour force availability, skilling of this workforce will ensure India's dominance in this sector. In Uttarakhand, the primary survey results suggest that the highest number of people aspire to work in this sector. Therefore, it becomes pertinent to understand the status of this sector in Uttarakhand. Currently, IT services and BPM are the major segments that exist in the state.

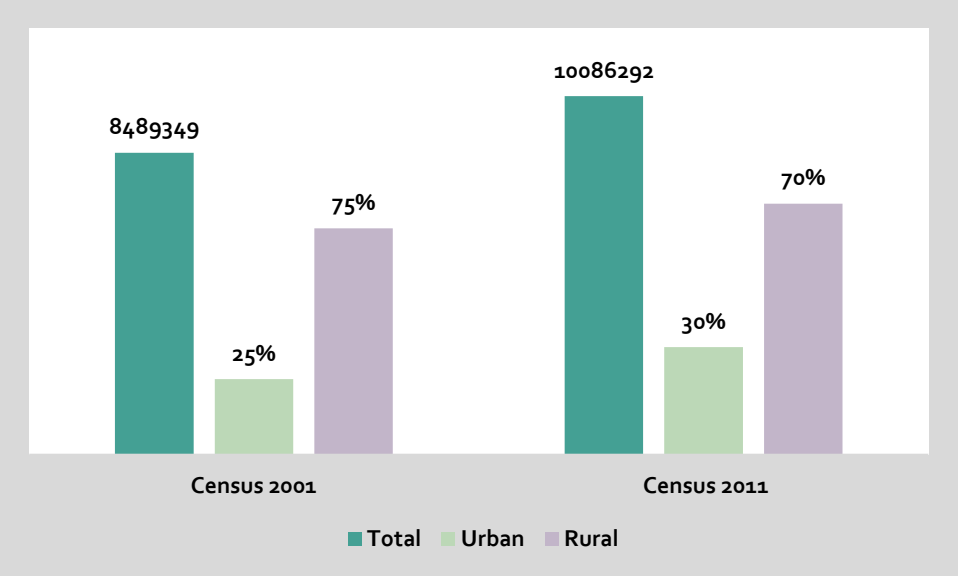
IT Services: The key business verticals in the state that are serviced by the IT firms are banking and healthcare. According to primary survey of employers in the sector, three factors help drive this sector in the state: high literacy rates, large number of engineering colleges, and comparatively lower cost of human resources. This industry is mostly centred in Dehradun.

BPM: The same factors that are driving IT services are acting as drivers for BPM as well. But the divergence from IT services manifests in terms of the location; BPM is actively picking up in some of the rural areas in the state. One enterprise that is a major player in this space is B2R. B2R is a Rural BPO company initiated with the explicit objective of providing employment for rural youth in Uttarakhand, but with a difference. It is a for-profit social enterprise that aims to deliver social value along with business value, and can hence function as a scalable and replicable model of delivery. Currently, the organisation functions with six delivery centres that are geographically dispersed in rural Uttarakhand, employing close to 300 rural youth in all; with an aim to expand to 6000 youth in 5 years.

The firm asserts the high potential of rural BPO sector given the human resource pool available. Today, B2R is not the only rural BPO in the state. It is accompanied by other such initiatives. However, the sector is limited by the relative lack of social infrastructure (education, health etc.) and the geographical challenges involved in establishing infrastructure in hilly areas.

3.3.2 Agriculture and Allied Activities

Uttarakhand is predominantly a rural state. As per Census 2011, 63% of the state's total population and 67% of state's total workforce resides in rural areas. Urbanization does occur, as witnessed in the change in urban population from Census 2001 to Census 2011.



But according to the population projections conducted for India and its states by the Technical Group on Population Projections constituted by the National Commission on Population[xiv], Uttarakhand is projected to stay predominantly rural, at least till 2026. This report, published in 2006 provides the projection for 20 years only. But according to a report by United Nations in 2012[xv], urban population is expected to overtake rural population in 2050. Uttarakhand has followed the national trend in urbanisation (from 2001 to 2011, national urban population increased by around 31% and Uttarakhand urban population increased by 29%). Therefore, it can be assumed that Uttarakhand will exhibit similar trends of shift to urban population. In light of this trend, rural economy and the opportunities it provides are to be examined thoroughly to arrive at a comprehensive skill action plan. Focus on generating

employment in rural regions will also put a check on the excessive distress migration undertaken by rural youth.

Traditionally, agriculture has been the prime sector of rural economy and rural employment. The transformation in the composition of output and occupation from agriculture to more productive non-farm sectors is an important source of economic growth and transformation in rural economy. In Uttarakhand's rural economy, a reduction in the share of agriculture and dominance of non-farm activities has been noted since formation of the state. Hence, it is necessary to identify these productive non-farm sectors and respective job roles to give the requisite boost to the rural economy and consequently curtail distress migration.

Livestock has been analysed to be one such non-farm activity. It has posted a consistent growth in terms of Gross Value Added over the past couple of years. Within livestock, the three sectors that saw a growth were dairy, meat and eggs. Also, as per the Sixth Economic Census (2013), establishments engaged in livestock form 95.9% of total agricultural establishments (not accounting for crop production and plantation). These establishments claim 93% of the employment in the sector as well. Therefore, this forms an important sub-component of Agriculture and Allied Activities in Uttarakhand. Since livestock is the only growing sub-sector of Agriculture and Allied Activities in the state, this report analyses livestock as the only sub-component of this sector for growth in employment opportunities.

3.3.3 Tourism and Hospitality

Uttarakhand's neighbouring state Himachal Pradesh has a landscape similar to Uttarakhand, but it has been able to successfully utilize its tourism potential. With a successful example nearby, state Government and private partnerships in Uttarakhand have been trying to provide for a push in the sector. The MoU signed between Uttarakhand Tourism Development Board and OYO in 2016 is an example of such private partnerships. OYO's expertise in adding value to the unbranded hotel segment will benefit both the state and visiting tourists. The government is also pushing tourism with great enthusiasm, in the form of various initiatives. Uttarakhand has 21 protected monuments, as recognised by the Archaeological Survey of India (ASI). All of these are listed below:

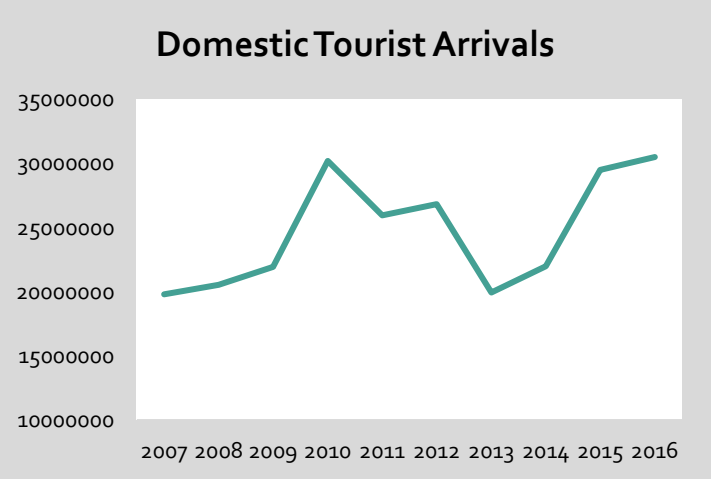
Serial No.	Monument	Location
1	Vaishnav group of temples- Dewal	Pauri
2	Devalgarh group of Temples- Devalgarh	Pauri
3	Shiv Temple- Paithani	Pauri
4	Shivalaya- Kukhargaon	Pauri
5	Laxmi- Narayan Group of Temples- Sumari	Pauri

6	Narayankoti Group of Temples-Narayankoti	Rudraprayag
7	Nalachatti Temple/Stupa	Rudraprayag
8	Damyanti Temple-Hyun	Rudraprayag
9	Laxmi-Narayan Group of Temples-Bairangana	Rudraprayag
10	Vaitarni Group of Temples- Gopeshvar	Chamoli
11	Govind Group of Temples- Simli	Chamoli
12	Kulsari Temple- Kulsari	Chamoli
13	Narayan Group of Temple- Devrana	Chamoli
14	Surya Group of Temple- Ranihaat	Tehri
15	Raj-Rajeshwar Temple- Raniaat	Tehri
16	Nanda Devi of temples-Bajinga	Tehri
17	Kyark Raithal Group of temples	Uttarkashi
18	Jamdaghni Temple- Than	Uttarkashi
19	Mahasu Temple-Barkot	Uttarkashi
20	Mahasu Temple-Pujeli	Uttarkashi
21	Devdara Temple- Paunti	Uttarkashi

Other than these monuments, the Government of India has sanctioned and released funds under two tourism targeted schemes: Swadesh Darshan and Prashad. The details are below.

Year	Name of Circuit	Name of Project	Amount Sanctioned (INR)	Amount Released (INR)
2016-17	Heritage	Integrated Development of Heritage Circuit in Kumaon region - Katarmal - Jogeshwar - Baijnath - Devidhura	81.94 Cr	16.39 Cr
2015-16	Eco	Integrated Development of Eco-Tourism, Adventure Sports, Associated Tourism related development of Tehri Lake and Surroundings	80.37 Cr	58.33 Cr

Under PRASHAD scheme of GoI, INR 34.78 Cr had been sanctioned for the integrated development of Kedarnath in 2015-16. This synergetic push from the state will have a positive impact on this sector. This impact can be measured to a certain extent by observing the data presented in chart below on tourist footfalls in the state. The Ministry of Tourism compiles the number of domestic and foreign tourist visits to a particular state. These statistics are a compilation of the work undertaken by various state tourism departments.



As can be seen in the graphs above, there was a sharp decline in tourist arrivals, especially foreign tourist arrivals, around 2013. As noted by various reports, this can be largely attributed to the monsoons of 2013 that brought about high rainfall and flooding. This multi-day downpour claimed around 4000 lives and affected nearly a million people, as observed in the Joint Rapid Damage Needs Assessment conducted by the Asian Development Bank, World Bank, and Global Facility for Disaster Reduction and Recovery (GFDRR). Apart from direct impact on lives, it also impacted the state economy and led to a damaging 3 percentage point reduction in GSDP growth rate.

This assessment notes that the disaster was further aggravated by an ongoing Hindu pilgrimage and an especially busy tourist season. A survey by PHDCCI pegged that the revenue in tourism sector was brought down to 40% of the expected total revenue in that financial year. But tourist footfall numbers post 2013 show strong signs of recovery since then. The recovery, coupled by efforts from various stakeholders, strengthens our belief that tourism will continue to remain an important economic activity in Uttarakhand and will add jobs at a steady rate.

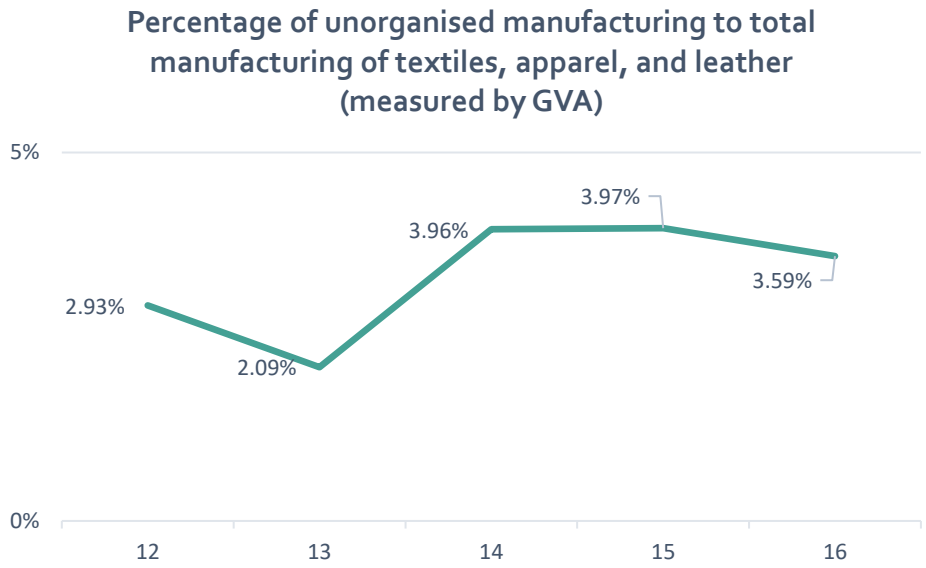
3.3.4 Textile and Apparel Manufacturing

Textile industry has been one of the largest employment generators in the country, for long. Abundant availability of raw materials, such as silk, cotton, jute, and wool have been a key factor in establishing textile as a strong industry. Unlike Karnataka and Andhra Pradesh Uttarakhand is not a major hub for textile production in the country, but textile manufacturing remains a major source of employment in Uttarakhand. Over the past five years, this sector has witnessed rapid industrialization, creating

employment. The three textile parks in Kashipur, Jaspur and Sitarganj setup a strong base for increasing employment in the textile sector.

The Integrated Textile Park at Jaspur is set up in an area of 70 acres and operates under the PPP mode. SIIDCUL has been acting as the lead promoter for ensuring smooth execution as per the Scheme for Integrated Textile Park (SITP) norms. The aim of SITP was to provide world-class infrastructure facilities to industries for setting up textile units. There are also special concessions offered by the state to units in textile parks, like capital subsidy, interest subsidy, and power bill rebates. This is under the Mega Textile Park Policy of 2014. The operational guidelines of this policy classify a mega textile project/unit as one with a capital investment of over INR. 75 Crores.

An added benefit that Uttarakhand witnesses is the reduced competition from the unorganised sector. The percentage of GVA from unorganised manufacturing of textiles, apparels, and leather products to the total GVA added from manufacturing of textiles, apparels, and leather products (organised plus unorganised) has never surpassed 5% from 2011-12 to 2015-16. The graph below plots the percentage of unorganised GVA to total GVA. It has not touched 5% for the five years in consideration.



Also, its worth noting that established brands have not yet penetrated most of the districts, especially the hill districts. This minimizes the competition from established brands.

The only cause of concern in this sector is the decreasing LFPR of women in the state. This worry is further accentuated because textiles is the sector that women aspire to work the most in, as can be observed in the section on youth aspirations.

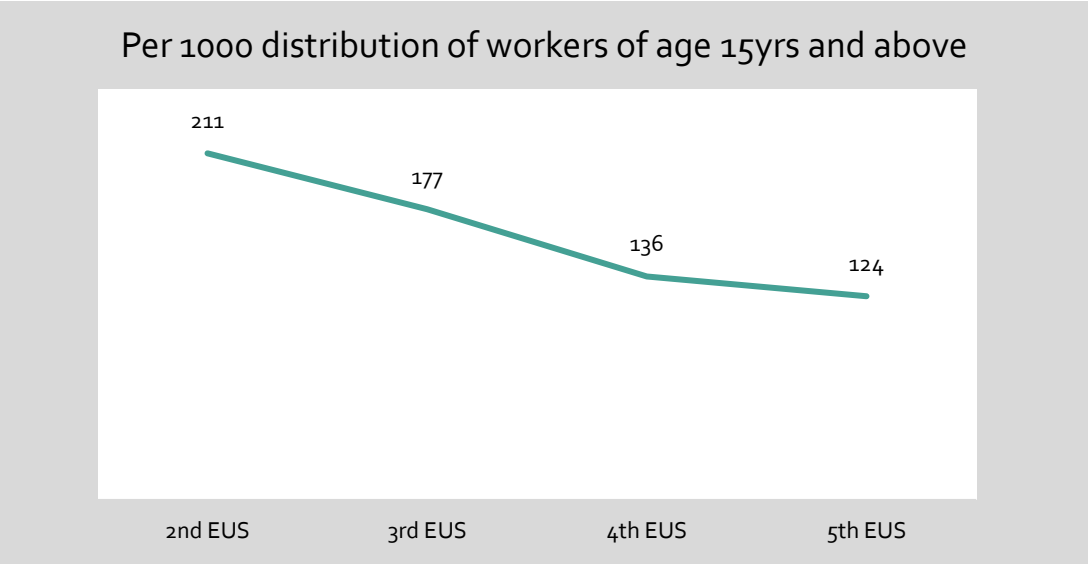
3.3.5 Construction

Construction sector in India is expected to post a healthy growth over the next couple of years. Increasing urbanization, high government spending because of initiatives like Housing for All, and

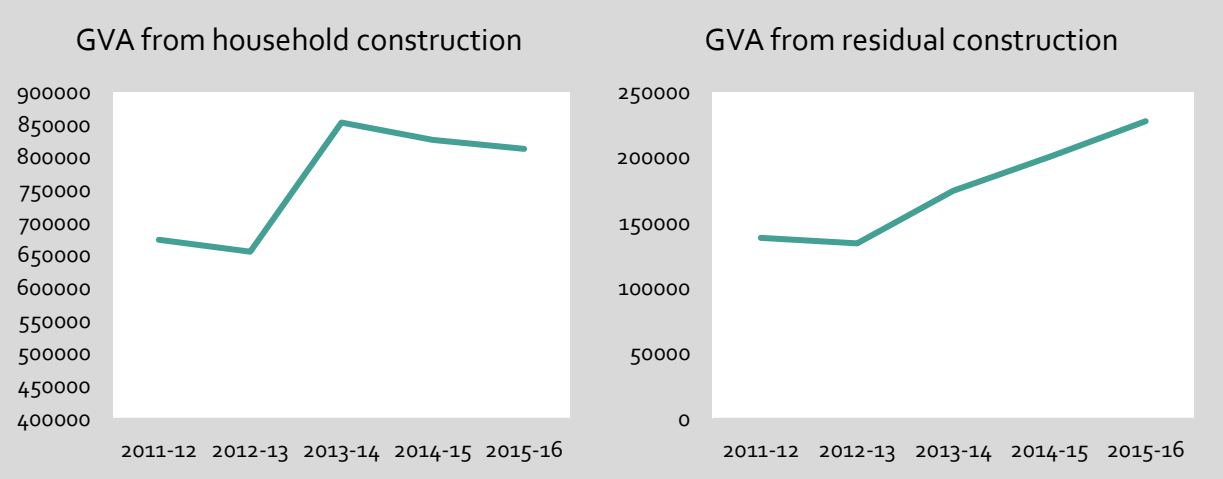
increasing role of private players in developing infrastructure act as growth drivers for the sector. The Smart City plan for Dehradun is also expected to contribute to this growth.

This sector can broadly be classified into two activities: real estate development and infrastructure development. Infrastructure development will see a lot of activity in the upcoming years, mostly due to government spending. Major infrastructure projects that are currently underway in the state are:

1. The Char Dham All Weather Highway Development Project was launched by Hon'ble Prime Minister Mr. Narendra Modi on 27th December 2017. This project will upgrade and develop the road which connects all four 'Dhams', i.e. Gangotri, Yamunotri, Kedarnath, and Badrinath. 1,100 KM of damaged highways will be converted into all season roads with 12,000 crore package. The cost of civil construction is approximated to be around 10978 crores.
2. The Rishikesh-Karnprayag rail project was also launched in 2017. With this, the connectivity between hill districts and plain districts will be established, and prop up the economy of the hill districts. This also ensures that the Char Dham is connected by rail as well road.
3. Dehradun has been approved for smart city development, out of total three districts proposed. The roll-out of the actual implementation is expected to begin in FY 2018-19.



The per 1000 distribution of workers aged 15 years and above in the construction sector, according to Usual Principal and Subsidiary Status, from the last four EUSs have been plotted. It has fallen from 211 in the 2nd EUS to 124 in the 5th EUS. This indicates that either employment in construction has been on a decline, or some other sectors have had a massive upsurge in employment. This decline could be attributed to the corresponding decline in the household sub-sector of construction in Uttarakhand. The decline is reflected in the GVA from total household sector at constant prices (chart below on the left). During the same period, the GVA for the Residuals sector (comprising mostly of construction undertaken by private corporate sector) has been posting a steady growth (chart below on the right).



The only time there was a growth in the household sector GVA was from FY 2012-13 to 2013-14. The primary reason for this could be increased activity in household repair and maintenance, post the floods in 2013. But household at 70.34% still remain the major sub-sector under construction, while residuals only claim a share of 19.71 %. This is one of the reasons driving down the employment in construction sector in the state.In the upcoming years, infrastructure development and constructions undertaken by private corporate sector might post a requirement for jobs, but the performance of household construction is uncertain based on a descriptive analysis of the sector.

This section on performance of selective sectors presents a general analysis of sector components and their relative performance. Wherever necessary, the section also provided Uttarakhand specific details about schemes and infrastructure. With this section projecting the demand and supply pertaining to jobs/labour, the next section delves into how the youth of the state perceive job opportunities. This is based on the recognition that understanding the aspirations of the youth is crucial to guiding future employment generation activity. In later sections, the report will take a deeper look at a district level about the job projections and opportunities of the above mentioned sectors and measure the possibilities in each.

4. YOUTH ASPIRATION

4.1 Mapping of Aspirations to Demand

Apart from analysis on job projections and supply of talent in the labour market, there is an equally important need to understand the career aspiration of the youth in the state. These aspirations have to be analysed in the context of the skilling and employment eco-system. Specifically, these aspirations have to be mapped to real demand and mismatches have to be identified. Mapping out aspirations to each sector can be catalytic to providing pointed support to interventions. Ms. Sunita Sanghi, Advisor to Niti Aayog on Skill Development, in an article published in Yojana on June 2017 notes that mapping aspirations is key for sustainable skill development to facilitate access to decent employment opportunities for socio economic inclusion.

The mapping of youth aspiration compared to the skilling and employment eco-system will create four categories:

1) High on aspiration, low on projected demand for human resource: Employment generation and skilling must be the focus to tackle this scenario, either by promoting policies that are conducive to the sector or by promoting entrepreneurship and self-employment.

2) High on aspiration, high on demand: Though this scenario does not necessarily need any intervention, it might be a good case study to understand the reasons behind this desired trend and determine those that can be replicated to tackle other scenarios.

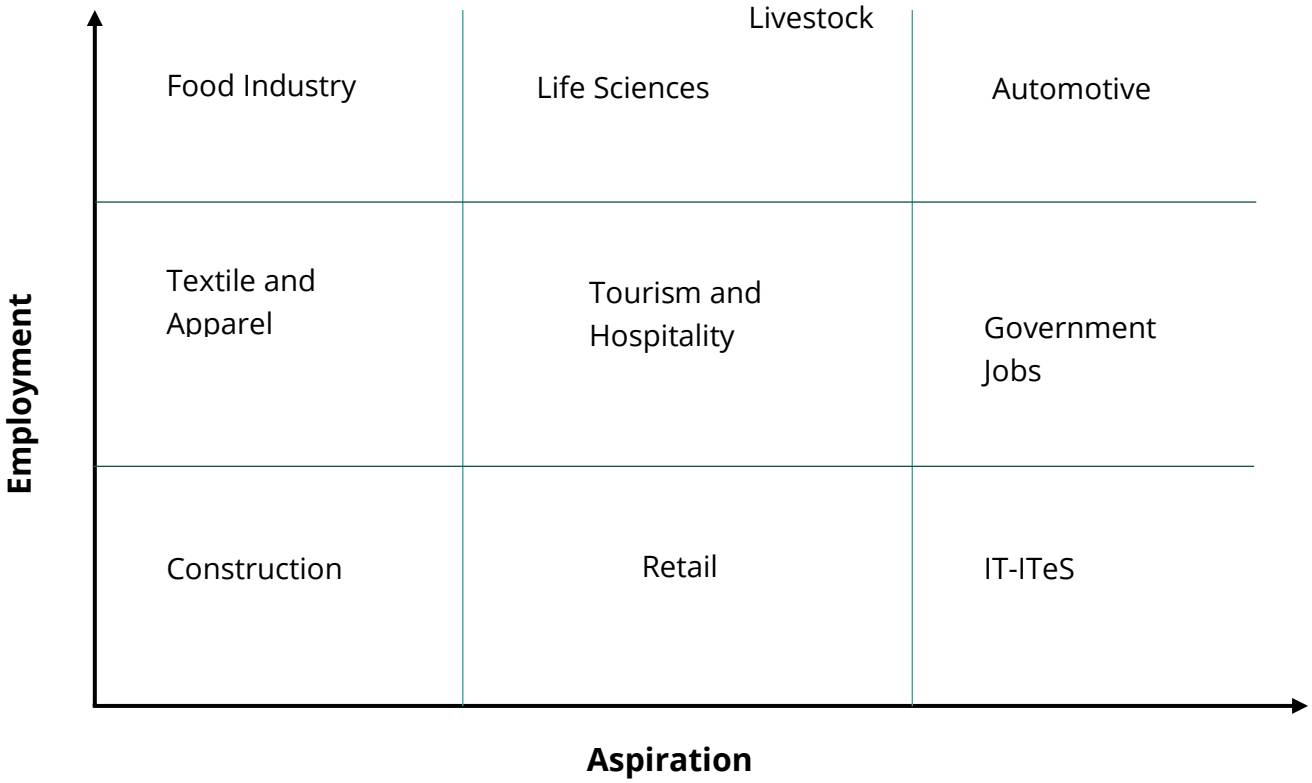
3) Low on aspiration, high on demand: These sectors require priority focus, behavioural change and/or perception rebranding. No straightforward solutions exist to adjust this mismatch; however the sectors are worth exploring. Communication strategies have to be developed for various points (training, employment) to stress on the benefits (competitive wages, better working conditions, etc.) offered by the respective sectors in high demand.

4) Low on aspiration, low on demand: These sectors are of least priority, and no intervention is recommended unless there is unexplored natural potential or a shift in Government policies towards the sector.

The above categories are not listed quantitatively however they are designed to point towards specific patterns that exist while correlating demand and aspiration.

The primary survey employed across all districts of Uttarakhand captured 5266 responses to questions related to preferred sectors and career goals, to gauge aspirations. In the analysis of primary surveys, it emerged that 53% of the working age population is interested in just five sectors (out of 37 sectors). The basis seems to be that these sectors are perceived to be either glamorous (example IT-ITeS, Automotive) or those with stable income and defined career prospects (Government, Education). This is alarming because the concerned five sectors have been estimated to have a relatively low employment potential. The only exception to the list of aspirational sectors remains the automotive sector. We observe that there is an information gap between what people know about careers and

opportunities and what employment opportunities exist in reality. Addressing this gap will result in a ready, skilled workforce in sync with the needs of the economy.



On the chart above, aspirations have been marked against estimated employment potential. On the X – axis represents aspiration while the Y-axis plots employment potential. So, if a sector in the top-right division is high on both aspiration and employment potential (like automotive). Similarly, a sector falling in the bottom-right division is low on employment potential but high on aspiration. Top-left division is low on aspiration but high on employment potential. Lastly, the bottom-left division is low on both employment potential and aspirations.

Findings from this mapping are as follows:

1) Food industry is the second highest employment-generating sector in the state. But it ranks amongst the lowest on sectoral aspirations. This mismatch is mitigated to a certain extent in industrial districts like Haridwar and Udham Singh Nagar. In these districts we noticed labour market segmentation, under which labour demand in certain sectors are met with the help of migrant workers. But given that no inflow of migrant workers happens in hill districts, these geographical locations require planned interventions.

2) Automotive sector is the fourth highest employment generating sector in the state. It is the most aspirational sector for men and third overall in the state. Employment generation comes out of large manufacturing industries and ancillary MSMEs that deal in auto-parts, while automotive retail is minimal. Though we can say that there is not much of an overall mismatch, there needs

to be more focus on the geographical locations. Demand is generated from the plain districts engaged heavily in industrial activity, and people from the hill districts also aspire to the sector and migrate for these opportunities.

3) IT-ITeS is particularly interesting because there are high aspirations but low employment potential. And most of the employment potential is likely to be generated due to the district of Dehradun. Anecdotally, in a particular instance a detailed interview was conducted with an IT entrepreneur who has been running a firm for the past two years in Dehradun. The interview provided some insights into a IT-ITeS sector employment problem. Specifically, unless the candidate has an engineering degree or is sufficiently experienced, they are offered roles as data entry operators. The nature of these jobs is similar to contractual jobs in manufacturing industries. Employees are hired or laid-off based on the needs of individual projects. Though some enterprises are trying to build BPOs in rural areas of Uttarakhand, they are yet to scale up. Interventions must either focus on enabling hill districts grow in this sector or re-channel aspirations to other sectors like food processing.

4) Textile and apparel is another case where there is potential for employment but it figures low on aspirations. Modernization of equipment and processes could go a long way in making this sector more aspirational.

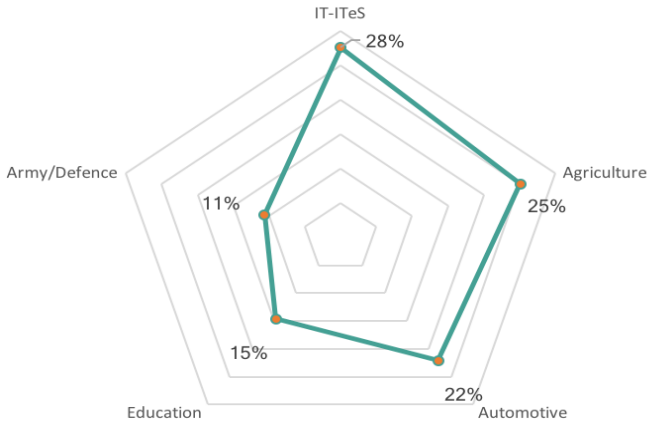
Also, based on field interactions, it can be concluded that sectoral aspirations are shaped on the basis of perception of three factors (in order of importance): social recognition, competitive wages and; better working conditions.

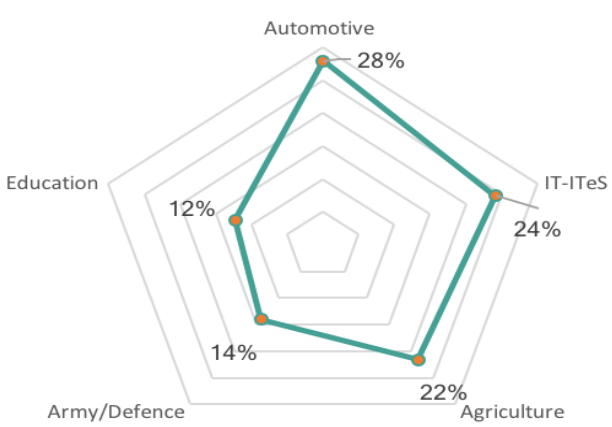
To this end, it can be inferred that interventions that focus on changing perceptions about less glamorous jobs in sectors like food industry, tourism and life sciences can help correct these mismatches and pave the way forward for a sustainable skill ecosystem.

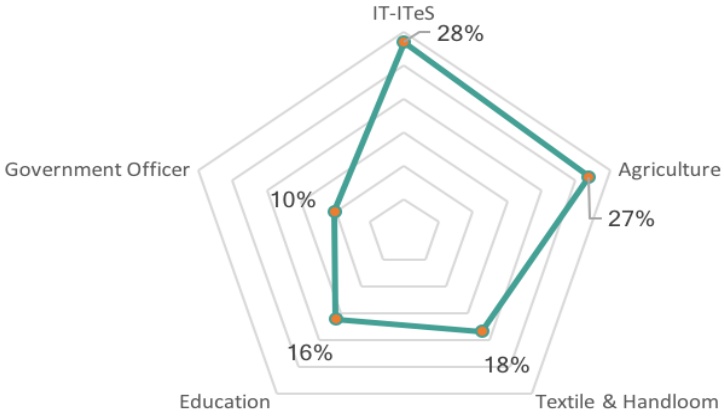
4.2 Sectoral Aspirations

As mentioned in the previous section, it is important to be able to map aspiration to demand requirements. The EAP survey primary data on aspirations, in a standalone manner, also offers key action points. For example, the data informs which sectors require skill development on a priority basis, if aspiration-led skilling was the process being followed. Even in demand-led skilling, room can be made for considerations on aspirations. From the surveys, the age distribution of respondents for each sector can also be determined. This can aid in deciding the skill development approach for that sector, i.e. short term training versus recognition of prior learning. The hypothesis here is that aged population would possess more work experience and should be targeted through RPL, while the youth can be trained through ITI or PMKVY.

The first figure maps out the top five sectors, which garnered 54% of all the responses. The next two figures provide a gender-specific insight into aspirations. The sectors mentioned in the figures represent the top five sectors as expressed by respondents (all the sectors are not included). Other than choices selected on the basis of being perceived as stable by the respondents, like Education and Government, IT-ITeS, Agriculture and Allied Activities, and Automotive sectors were top choices.







Government support with initiatives like Start-up India and Digital India, growth in the number of internet users, rise of ecommerce are factors that contribute to the demand for IT jobs. This is coupled with the existing perception that these are highly respectable jobs, with competitive pay and safe working conditions.

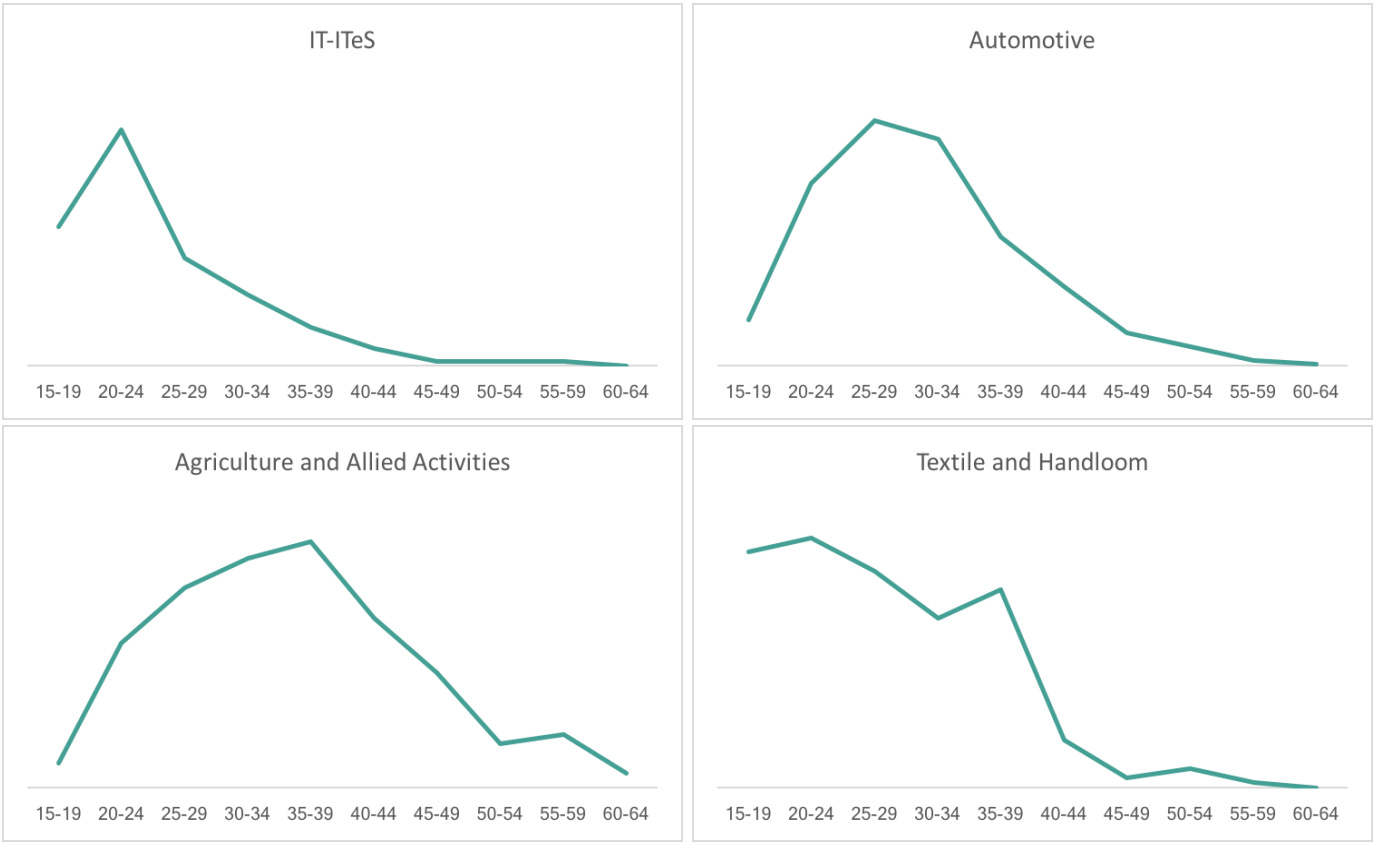
But these sectors are at the forefront of technology and thus most susceptible to rapid developments. A McKinsey presentation in 2017 said that nearly half of the workforce in IT services will be irrelevant by the next 3-4 years. To continue meeting the aspirations of youth in this sector, skills imparted have to evolve with the changing nature of this industry.

In the case of the automotive sector, a combination of qualitative interviews and quantitative insights reveal that the wide-scale awareness about automobile manufacturing in districts like Haridwar and Udham Singh Nagar plays a big role in driving aspirations in these districts. The prospect of entrepreneurship, by starting service and repair centres, of which there is high demand across districts,

also promotes the appeal of the sector. A similar line of reasoning applies for textile manufacturing sector, given dedicated industrial parks for textile industries.

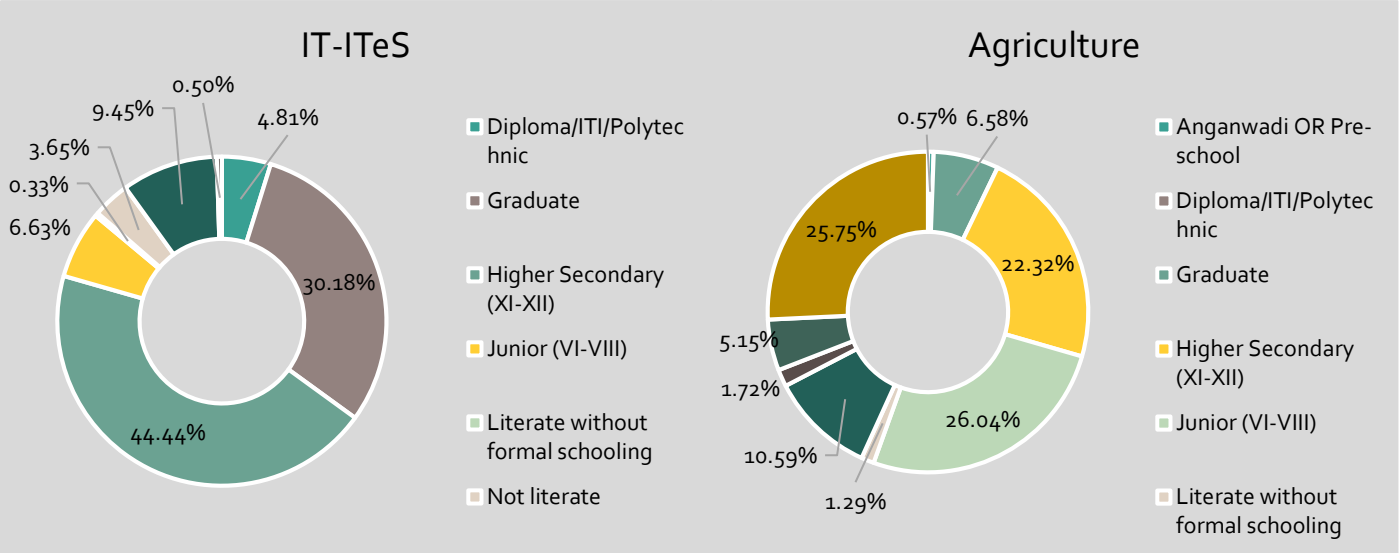
When looking at aspirations through the lens of gender, it can be noticed that women tend to aspire to sectors like textiles and apparel that have a high percentage of women. Similar to textile, education also employs a relatively high percentage of women and continues to be an aspirational profession for women. Through one-on-one conversations during field visits, the surveyors informed that many women respondents cited safe working spaces as a priority for work environment. Being present in a female-dominated work environment satisfies this safety requirement.

Furthermore, as the age distribution of respondents for sectors was analysed, distinct patterns can be observed for each sector. While aspiration for IT-ITeS is mostly concentrated around the age group of



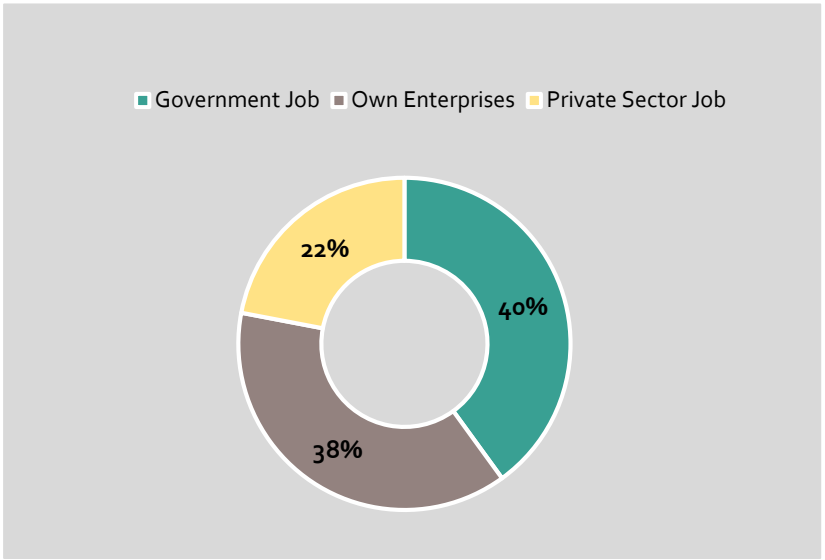
20-24 years, agriculture and allied activities is spread across the age spectrum, with peak values centred around 35-39 years. Even Automotive is positively skewed like IT-ITeS, but with the highest frequency of values being centred around the age group of 25-29 years. Textile and Handloom shows a sharp decline in aspiration after the age group of 35-39 years.

In adding education as another variable to draw a comparison, it is notable that in agriculture sector, only 8.3% of the respondents are graduates or above. Whereas, we find that the corresponding number for IT-ITeS is 31.9%. So, at least in this case, formal education levels are influencing sectoral aspirations. Given the above age distributions, there should be focus on short-term trainings for a target audience below the age of 25 years for the IT-ITeS sector. For agriculture, RPL should be the focus for a target audience whose age is centred around 35-39 years as majority of these already have work experience



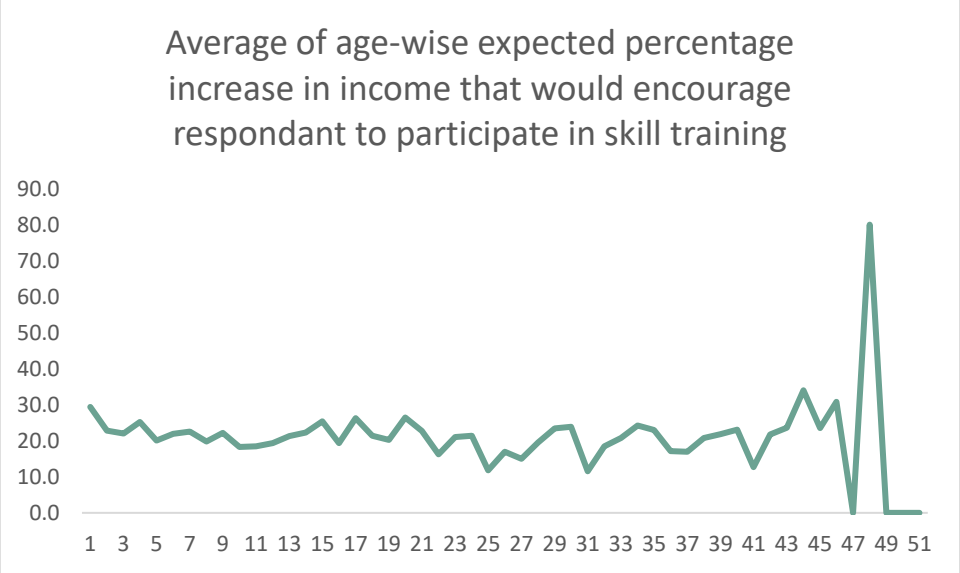
in the sector. For the automotive sector, it should be a healthy mix of both short-term training and RPL given its relatively high popularity across ages. Out of the four, textile sector alone has a healthy aspiration from the age group of 15-19. Therefore this sector can become a priority sector for ITIs that formally train people in this age group.

In terms of preferences between government job, own enterprise, and private sector jobs, the private sector ranks at the bottom (as shown in the chart below). Government jobs are perceived to have higher job security, better benefits, and increased social recognition that gives this option the highest preference. It can be seen that more people are opting for own enterprises over private sector jobs. If self-employment aspirations are utilized properly, it can prove to be a division favourable towards economic and employment growth in the state. It could help close the gap between the hill districts and plain districts, provided that necessary technical and managerial skills are provided to these budding entrepreneurs, because self-employment is the fastest and most cost-effective employment generation tool for difficult terrains. Moreover, the respondents have cited lack of funds and lack of knowledge as the most common reasons when inquired about obstacles to setting up enterprises.



Out of all the respondents, it was found that only 9.3% had gone through a skill training programme of any sort. This includes government training programmes as well as certificate courses provided by private institutes. Out of those that underwent training, IT-ITeS seems to be the most popular choice. It indicates that sectoral aspiration plays a crucial role in determining the sector that candidates opt to receive training in. ITIs seem to be popular choice for undergoing training. Out of those who underwent training, 83% believe that it was useful for them and they would recommend it to others. They also believe that coursework that lays more emphasis on imparting hands-on experience and soft skills would have resulted in better outcomes.

Also, when the respondents were enquired about enhancement in earning potential because of training, there was no particular trend in answers apart from the fact that respondents beyond 60 didn't particularly fancy the idea of training and expected really high returns. .



These inputs are to be integrated into skill development programmes to further incentivise youth to engage in skill training, and to resolve issues that demotivate candidates from obtaining formal training. The key takeaway from our study on aspirations is that there exists a fundamental gap in terms of information and awareness about the opportunities. Most respondents were unaware of the specific benefits of training and skilling. To get candidates to grow their employability and become skilled, the most effective way is to disseminate information about better employment opportunities that arise post the training completion. Another effective way is mentorship or encouragement provided by supervisors who can inform them more about the opportunities that might arise. Relatively, physical proximity to skill centres figures quite low as a persuasive element to attend training programmes.

Aspirations shape supply in the long run, and implementing measures to mitigate the aspiration-demand mismatch will play out over a period of time to ensure a reduction in the mismatch between supply and demand. This section qualitatively analysed perceptions of youth regarding employment

opportunities and the section that follows compares demography, education, economic and industrial data across districts; thus allowing for a disaggregated picture of skilling and employment prospects.

5. DISTRICT COMPARISONS

5.1 Demography

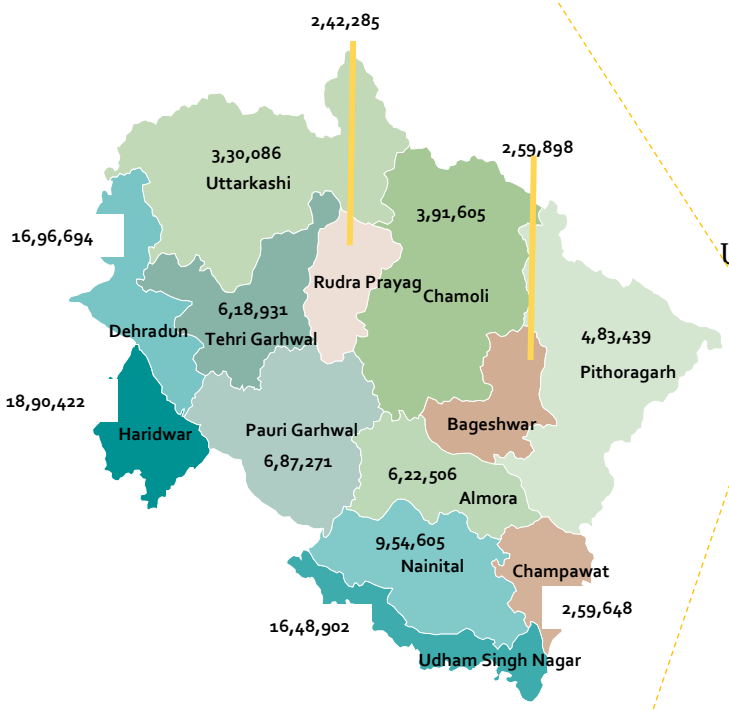
Uttarakhand is one among the five Himalayan states of India, and was formed in November 2000. At the time of formation, it had a population of around 84.9 lakh according to Census 2001, which has grown to approximately 1.01 crore in Census 2011. The state has 13 districts organised into 2 divisions. Of the districts, Haridwar has the highest population, followed by Dehradun and Udham Singh Nagar. Population across districts vary from about 19 lakhs in Haridwar to less than 2.5 lakhs in Rudraprayag. This variation can be attributed to the varying terrain and uneven distribution of forest cover across districts. With regards to population growth, the state has seen a decadal rise of 18.81% or a CAGR of 2%. This rise has been contributed to primarily by districts in the plains, which have witnessed rapid population growth. Udham Singh Nagar has witnessed the highest decadal population growth at 33.44% between 2001 and 2011, followed closely by Haridwar and Nainital. At the same time, hilly districts of Pauri Garhwal and Almora have witnessed a decline in population growth over the past 10 years. This is part of a larger trend witnessed in the hilly districts, where mass out-migration of youth has been identified as one of the factors contributing to low population growth of the hill districts. As per the latest study carried out by the Rural Development and Migration Commission, titled Palayan Aayog, hill districts like Pauri Garhwal, Tehri Garhwal and Almora witness very high migration numbers.[xvi] The study identify that youth (between the ages of 15 and 35), leave the hilly districts for the plains, or even to neighbouring states, in search of better employment and higher education opportunities. The cause for such distressed out-migration lies in the decline of agriculture as a lucrative profession, as well as in the poor infrastructural development in the region.

A comparison of the demographic profile in urban and rural districts provides an insight into the causes of migration. An analysis of the population composition in each of the districts posits the possibility that industrialisation has a pull- role to play in such rural-urban migration. Urban population is the highest in manufacturing hubs such as Dehradun and Udham Singh Nagar (touching almost 60%) and lowest in the predominantly rural Bageshwar district (less than 10%), thereby illustrating the push-pull factors in play.

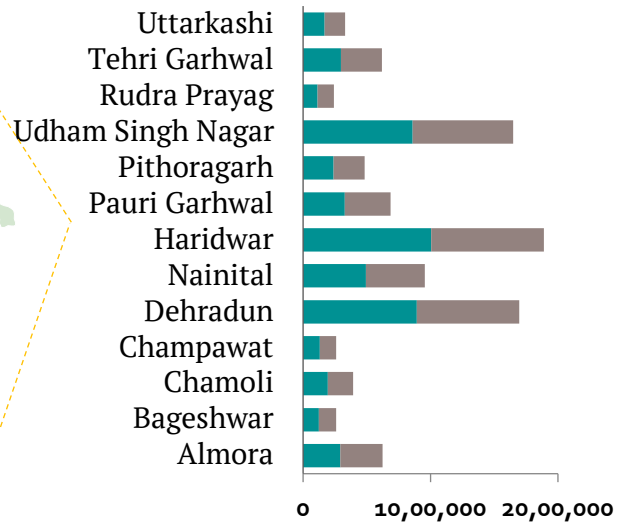
In terms of caste demographics, the state of Uttarakhand has a distribution of 78% general category, 19% SCs, 3% STs. This does not vary dramatically, with the exception of a few districts. Tehri Garhwal records the highest number of domiciles in the general category (83%). Meanwhile, Bageshwar has the highest proportion of SCs at 28%, and Dehradun has the highest ST population at 7%.

A similar pattern emerges in the gender demographic where Uttarakhand has a relatively favourable sex ratio of 963, as compared to the national average of 940. Almora district leads the pack at 1139 females to 1000 males. A total of seven districts have sex ratios higher than 1000 while the other six districts follow with figures just below the 1000 mark. However, this favourable sex ratio does not translate to female literacy. In a district-wise comparison, the gap between male and female literacy in Uttarakhand stands at 17.63%, which is marginally higher than the national difference of 16.68%. At a district level, the female literacy rate is lowest in Uttarkashi and Tehri Garhwal.

Demographic Figures



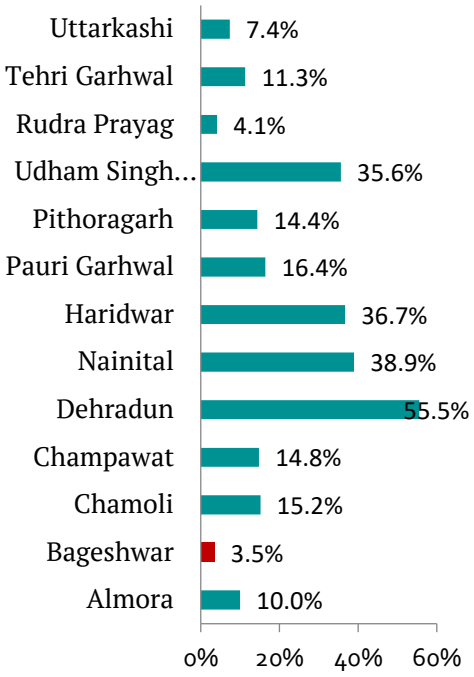
Male Female Population



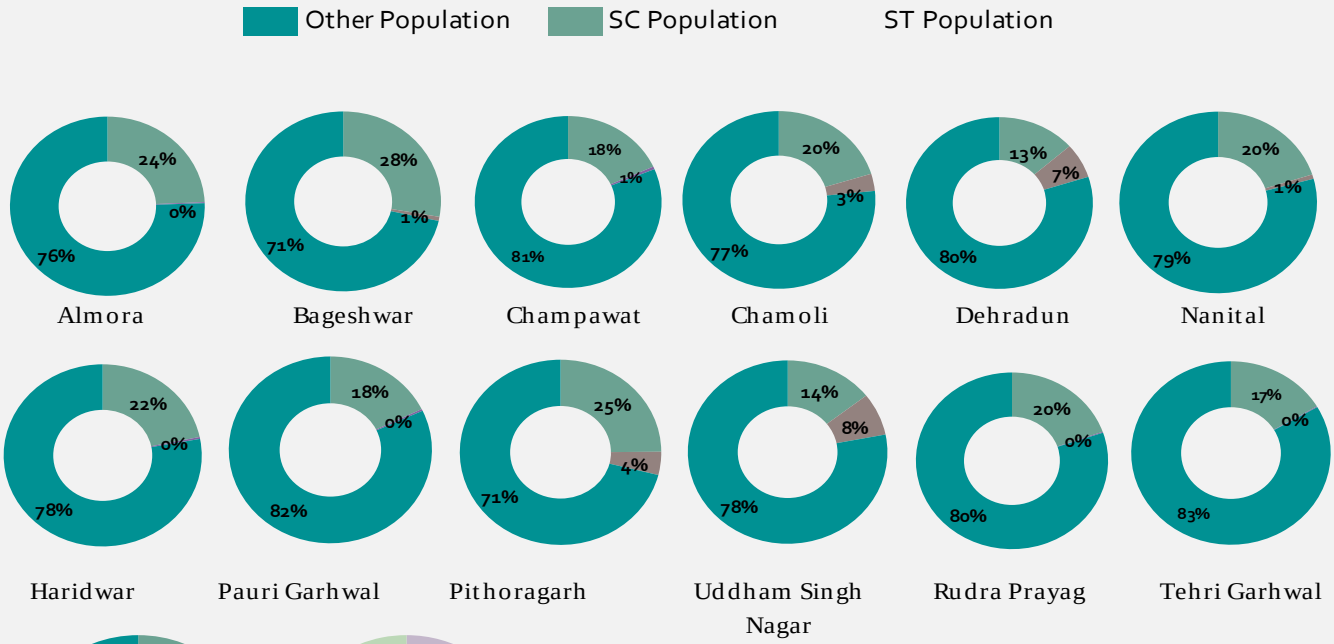
Population Decadal Growth from 2001 to 2011 (%)

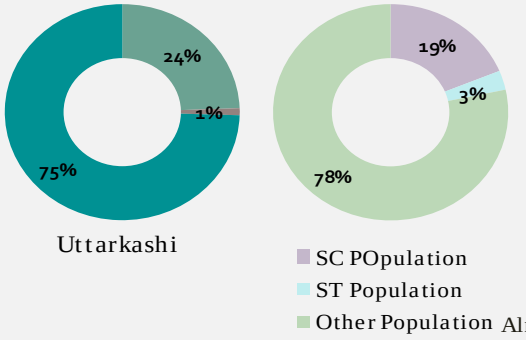
1	**Udham Singh Nagar**	33. 44
2	Dehradun	32. 33
3	Haridwar	30.63
4	Nainital	25.13
5	Champawat	15.63
6	Uttarkashi	11.89
7	Rudraprayag	6.53
8	Chamoli	5.74
9	Bageshwar	5.5
10	Pithoragarh	4.58
11	Tehri Garhwal	2.35
12	Pauri Garhwal	-1.41
13	**Almora**	-1.64

% of Urban Population

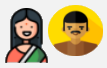


District wise Population by Social Group



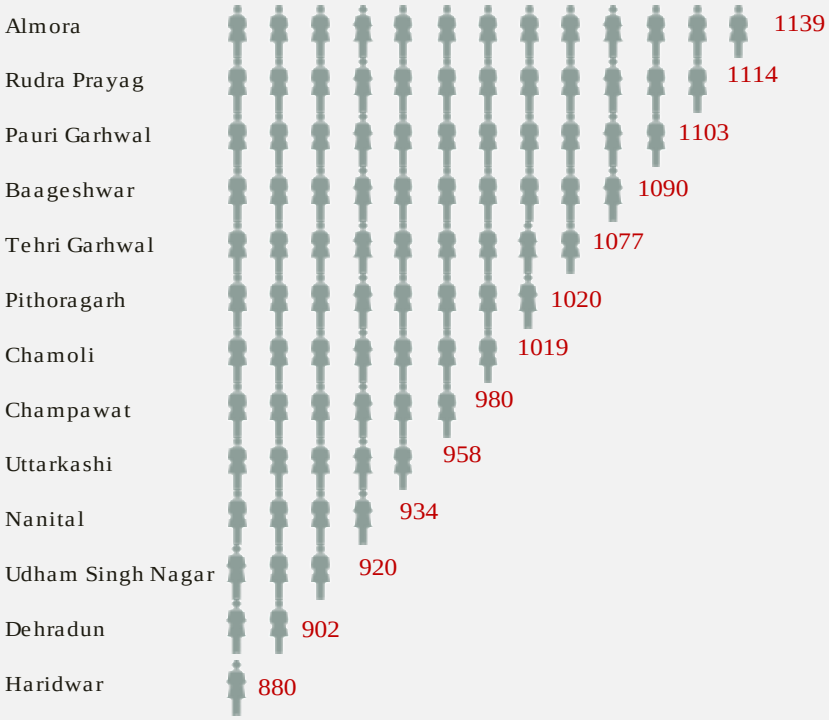


Uttarakhand

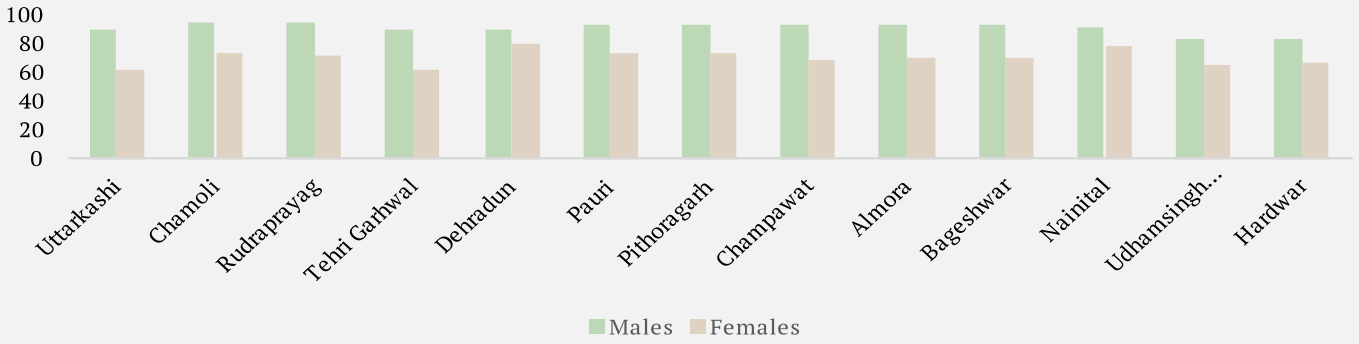


District wise Sex Ratio

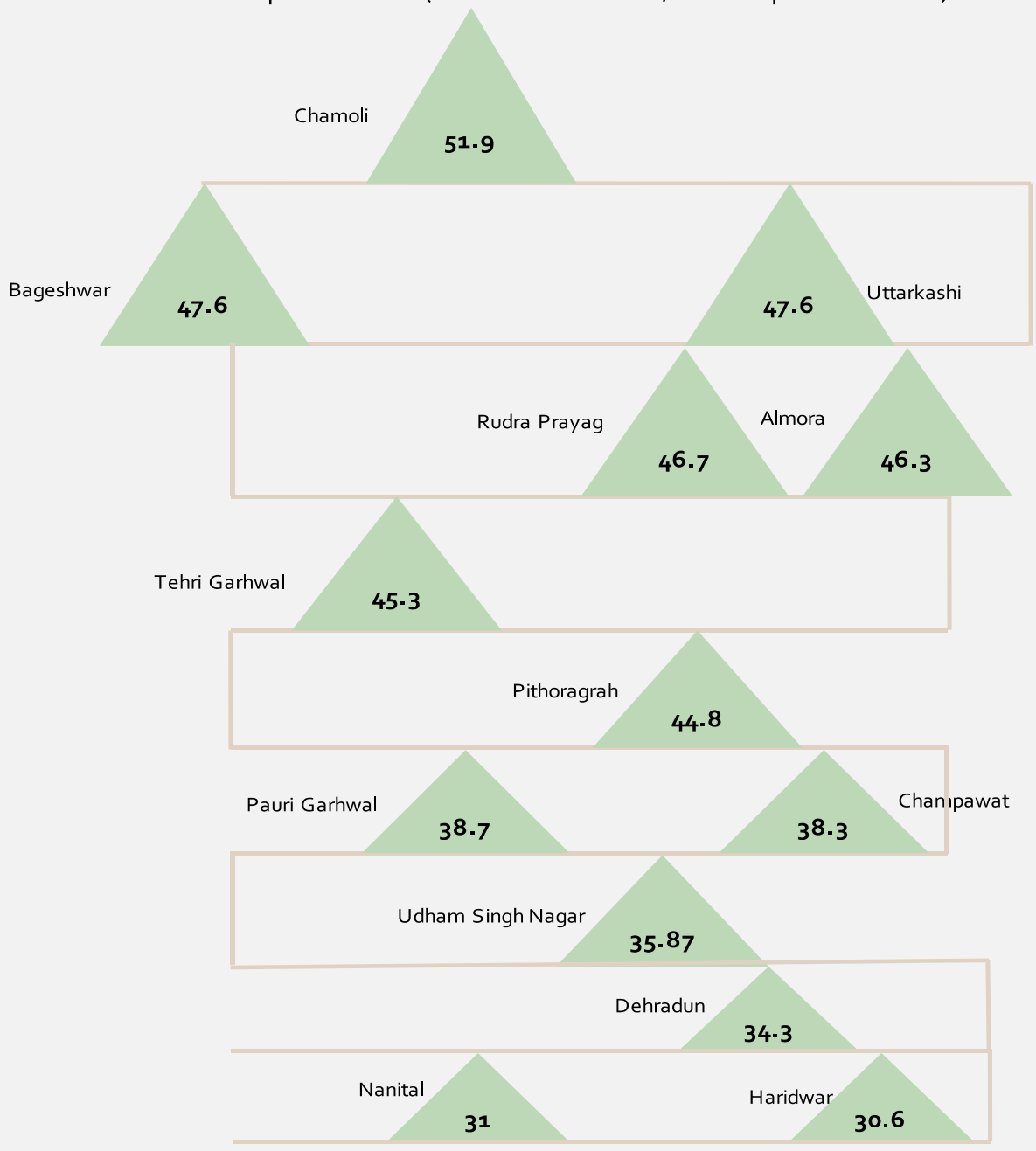
Number of Females per 1000 males



District Wise Literacy Rate



Worker Participation Rate: (Number of Workers/Total Population *100)



Labour force participation rate (LFPR) is an important measure of supply pool for employment in the economy. This is defined as the participation rate of the population in the age group 15 and above who are available for work (working or seeking work during the reference period). However, a better metric for measurement of population's economic activity is the worker population ratio (WPR), which measures the participation of those who are reported to be employed in the reference period. This also signals the utilization of demographic dividend by the market, thus providing an indicator of the extent of economic activity as well. Notably, WPR is the highest in the hilly districts, with Chamoli leading at 52%. Meanwhile, predominantly urban and industrial districts in the plains occupy the bottom rung, with Haridwar recording the lowest WPR of 31%. There could be multiple reasons behind the phenomenon, in urban areas women's LFPR has been declining across the years from 16.5 % in 1993-94 to 15.5 % in 2011-12[xvii], higher per capita incomes in plain areas and low employment opportunities could also contribute to low WPR.

The population of any state is not uniform and it is clear that Uttarakhand is no exception. Accounting for intra-district variations in the state is very important in closely understanding the demography and its needs. Given the variation in geographic conditions, investment trends and the changing patterns of migration that the state has witnessed, strategies and policies must be formulated within this context, in order to achieve required targets.

5.2 Education

It is important to examine the status of education in the state in order to determine a very important component of the skilling potential of the population. Apart from skilling potential, employability of a person is directly linked to his/her level of education. In fact, 40% of respondents in the EAP survey believed that they have to get a professional degree for achieving career growth. . In education, both accessibility and quality is key to ensuring high enrolment, and retention of students across levels. Retention is particularly important, as higher education is critical in ensuring the requisite profiles for employment.

The team examined secondary data on education infrastructure and enrolment across the state and within districts. The study was conducted primarily through secondary data sources, namely the Statistical Abstract of Uttarakhand for the year 2015-16, released by the Uttarakhand Directorate of Economics and Statistics. This was supplemented with enrolment numbers from the Uttarakhand Department of Education and census data where required. Where relevant, some qualitative insights at a primary level have also been included, based on the surveys conducted across the state.

With the state being home to a number of prestigious schools and colleges, education is a policy priority for the state government. As per Census 2011, the state has a literacy rate of 79.6%, higher than the national average of 74.04% literacy. Uttarakhand has also made several efforts to provide high standards of education through state-wide initiatives like *Uttarakhand Sabhi Ke Liye Shiksha Parishad*, which aims at increasing enrolment rates at the primary level. In addition to this, recently launched schemes such as the DEEKSHA scheme for improved quality of education illustrates the government's focus on raising education levels, both quantitatively as well as qualitatively.

A notable observation made during the course of data analysis was the difference in performance of urban and rural districts within the state. While literacy rates in urban areas are higher, on geo-mapping, a pattern emerged where urban areas performed poorly on most education metrics, as compared to rural regions. Rural areas of Almora, Chamoli and Pithoragarh were the leaders across metrics such as pupil-teacher ratio and population served per school. Meanwhile, other districts with a majority of urban population recorded consistent low figures across all domains, with Haridwar and Udham Singh Nagar ranking poorly on many metrics.

Such a finding is counter-intuitive to the assumption that rural areas perform poorly in education in comparison to urban regions due to paucity of resources. This hilly nature of rural regions of Uttarakhand along with a high rate of out-migration from these regions, as suggested by primary survey, are potential reasons behind this analysis. In order to ensure last mile coverage in sparsely populated hilly regions, public infrastructure caters to a smaller population as compared to hilly areas. Out-migration further reduces the quantum of population served per school. Moreover, the increase in population density in urban regions increases stress on existing resources and leads to fewer schools and teachers for the student population. Since this migration is recent, this also explains why literacy is still higher in urban areas, as it is a more long-term metric, while the other education metrics provide a more contemporary picture of the current status. The following sections will provide a detailed analysis of the status of literacy, school infrastructure, and vocational and skill training institutes in the state.

5.2.1 Education Profile: Literacy

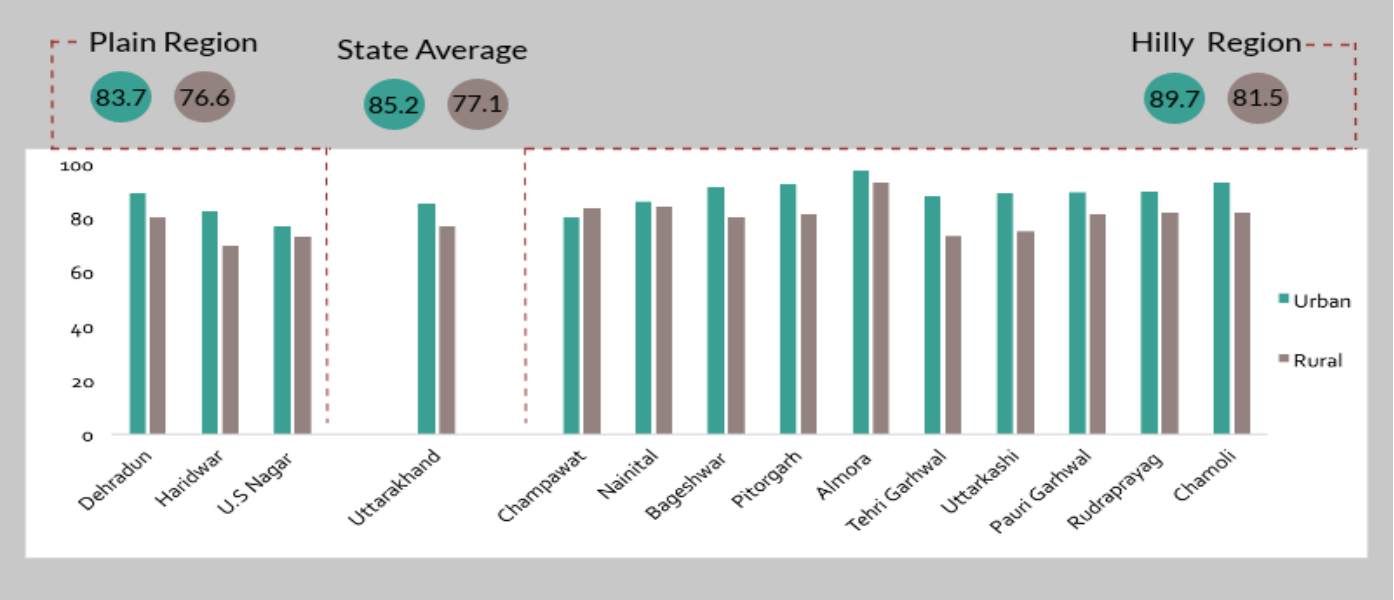
Uttarakhand has a literacy rate of 79.6%, which is higher than the national average of 74%. The state is ranked 17th in India in terms of literacy. The rate has seen an 8% increase from the rate of 71.6% recorded in 2001, which is lower than the national-level increase of 10%. The infographic below provides an overview of literacy rates across gender, caste and region. It is clear from this data that both female literacy and rural literacy require special attention.

When looking through the Census Report (2011) for Uttarakhand, it was observed that there were stark differences in literacy rates for certain sections of the demography. These differences in literacy levels across district, gender, region, and division could impact the varying employment figures across the state. An analysis of these differences would provide an indication of broad areas that need an educational focus.

At a district-level, Dehradun and Nainital record the highest literacy rates at approximately 85% and 84% respectively. Meanwhile, Udham Singh Nagar and Haridwar report low literacy levels of around 74%.

Urban areas record a literacy rate of 85.2, almost 8% higher than rural areas at a state level. Districts namely Almora and Chamoli have the highest rates of urban literacy, while Champawat and Haridwar record the lowest figures.

Literacy rates for men are consistently higher than women, both at the state level and across all districts. Literacy rate for women in the state is 70.7. Tehri Garhwal has the lowest female literacy at 61.7, while



the district of Dehradun registers the highest literacy rate of 79.6. Notably, female literacy is much lower amongst the SC/ST population, at around 6% less than the national average standing at 56.50%, while the male SC/ST literacy rate is only 3% lower than the average standing at 75.20 %

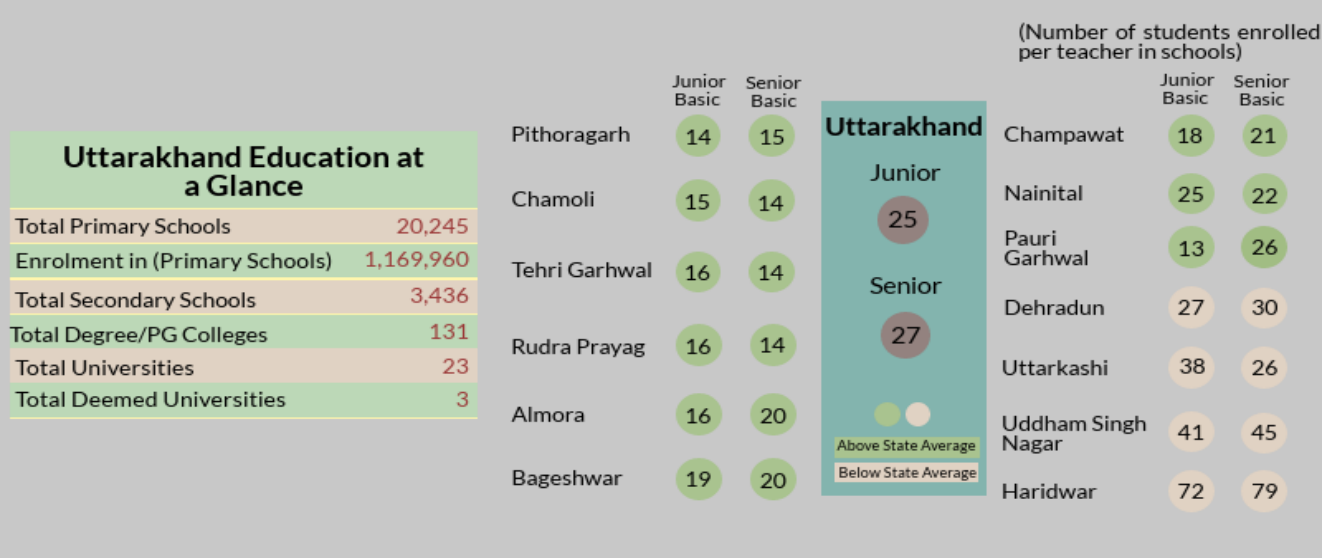
Literacy Rates	Total	Male	Female	Urban	Rural
Total Population	79.63	87.4	70	85.2	77.11
Scheduled Caste	74.4	84.3	64.1		
Schedule Tribe	73.9	83.8	62.5		

On analysis of specific regions shows that literacy levels are much higher in the hilly districts when s, compared to their plain counterparts. The percentage points difference between the two is 7% and 5% for urban and rural areas respectively. Through the survey conducted and the qualitative feedback received, a possible hypothesis relates to the trend of migration from hilly to plain areas, leading to overcrowding and a strain on resources in schools in the plains. This trend becomes clearer in subsequent district-comparisons on Pupil Teacher Ratio, and school infrastructure. These metrics are examined further in subsequent sections of this report.

Moving from regional literacy to division-wise literacy, an examination of the two divisions in the state show that since 2001, the Kumaon division has been recording higher literacy (81.3) rates compared to Garhwal (79.8).

5.2.2 School and College Education: Overview

While literacy is an important metric in providing a holistic understanding of the levels of education of a population, a more up-to-date picture is provided by examining the status of enrolment and infrastructure. The team conducted secondary analysis on the accessibility of schools, human resource availability and enrolment figures across states, to better understand the present status.



5.2.2.1 Infrastructure

Physical infrastructure is a key indicator in understanding the level of accessibility of schools across regions and districts. Proximity to schools plays an important role in determining enrolment, especially at the primary level. Further, it is essential to understand the facilities attach to the school infrastructure. This factor also determines the enrolment and attendance in the schools. Recognizing this, the team examined secondary data to map the number of schools across the state, and within each district.

The education infrastructure in Uttarakhand is widespread with a number of primary, secondary and high schools located in all the districts.

As per the District Elementary Education Report card 2016-17, there are a total of 15,297 primary schools, 3,417 upper primary schools, 906 upper primary with secondary schools in the state. Further, as per AISHE 2015-16, there are 6491 colleges with 26 colleges per lakh population and 28 universities (including deemed universities) in the state. The average enrolment per college in the state is 920.

The facilities available in some districts especially at the Primary Level are satisfactory. As per the U-DISE Report 2015-16, primary schools in Almora, Garhwal, Chamoli and Rudraprayag have 100% coverage of toilets for girls. In addition to this, districts such as UdhamSingh Nagar (99.1%), Dehdradun (99.8%), Chamoli (98.1%) and Rudraprayag (98.1%) have close to 100% of coverage of drinking water facilities in the primary schools. Similarly, for Upper Primary Schools, Chamoli, Dehradun, Garhwal and Rudraprayaghave 100% coverage of toilets for girls.

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On comparison the number of schools across divisions, Garhwal division has a significantly higher number of junior basic, senior basic and higher education institutes, while both divisions are at par in terms of the number of secondary schools.

In terms of school infrastructure for the given population, Chamoli and Pauri Garhwal report the most number of junior basic schools in proportion to the population, with each junior basic school serving 37 children. Urban districts of Haridwar and Udham Singh Nagar have the lowest number of schools per population by a large margin, serving 194 and 150 children respectively. As highlighted before, this disparity between infrastructure and population may be attributed to the high levels of migration from rural hilly areas, to the plains.

At the senior basic level, schools of Uttarkashi serve the lowest population (121) while Haridwar and Udham Singh Nagar again record the worst numbers (395 and 389 respectively). The most number of senior basic schools are located in Chamoli, with each serving 167 children, while Haridwar and Udham Singh Nagar rank the lowest in terms of senior basic school coverage. Pauri Garhwal records the highest number of colleges, serving 3627 of youth.

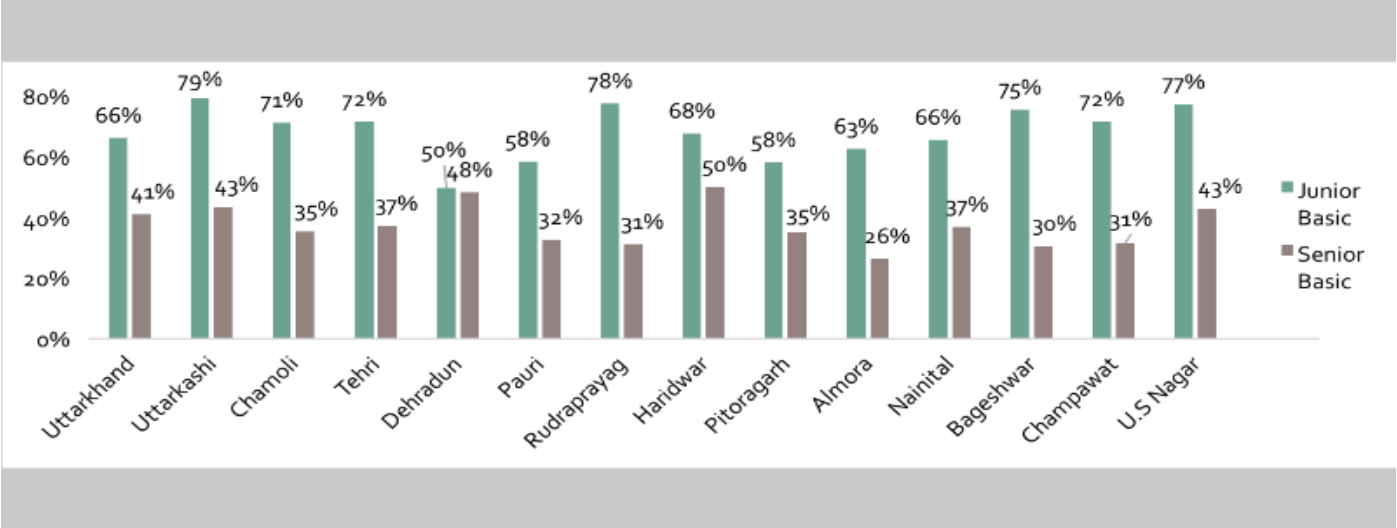
An observation made during the survey revealed that while infrastructure in schools was adequate, the quality of education was lacking. Interviews with stakeholders revealed poorly curated curricula, leading to a lack of quality education and sub-optimal learning outcomes.

5.2.3 Enrolment

Enrolment is crucial to ensuring that the youth attains education levels high enough to facilitate employment. Also, a minimum level of education up to either the senior basic or secondary level is necessary for enrolment in vocational training courses. In Uttarakhand, the trend shows high enrolment rates recorded at the junior levels, with a high drop-out rate at the senior basic level.

Enrolment rates for the Junior Basic level do not vary by a large margin at the inter district level, with the rates lying between 65-75 % of the population. Outliers are Uttarkashi with 79% enrolment, and Haridwar on the lower end, with 50% enrolment. Most districts exhibit a considerable drop in enrolment from Junior Basic level to Senior Basic Level, an analysis which has corroborated by ground level observations and discussions.

An overview of the enrollment rates at the Senior Basic Level reveals that plain districts record higher enrollement rates at the Senior Level. Haridwar records the highest enrolment, while Almora records the lowest. The steepest drop is witnessed in Rudraprayag (47 percentage points), while the lowest change is seen in Dehradun (2 percentage points). In the past ten years, Uttarakhand has seen a substantial drop in enrolment at the junior basic level, from 1,072,697 children in the age group of 5 to 9 years in 2004-05, to 772,144 children in 2014-15. Enrolment at all other levels have increased in this time period. Drop-out rates in junior basic schools are lowest in Chamoli (1.54), and highest in Haridwar (9.16). Further, the dropout rate at the senior basic level is lowest in Pithoragarh (0.19), and highest is Champawat (3.69).



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5.2.3.1 Enrollment across Males & Females

An examination of the retention rate by gender provides a picture of the future demographic profile of employable youth in the state. The enrolment ratio of girls to boys represents how many girls are

enrolled for every 100 enrolled boys. There is a gender gap in favor of boys in primary (basic) school enrolment. This gap decreases from junior basic to senior basic schools.

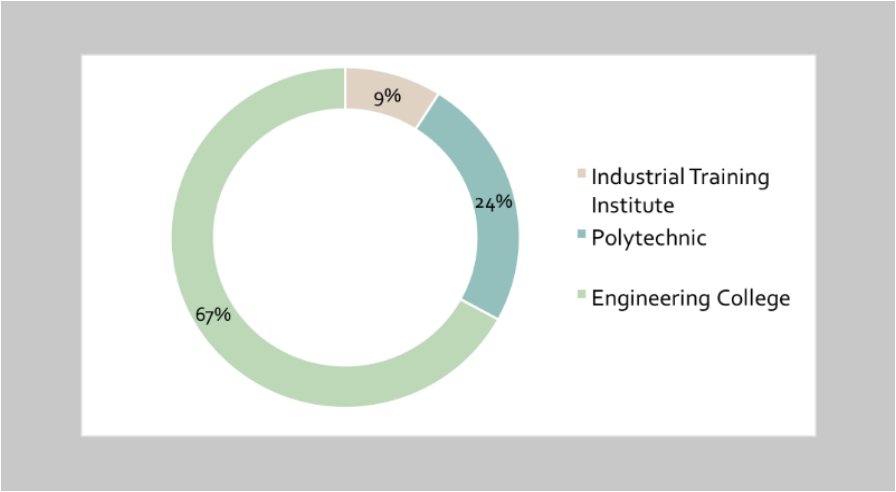
In Uttarakhand, the enrolment ratio of girls to boys is 0.89 at the junior basic level which is lower than the national average of 0.93. At the senior basic level, the state's ratio is 0.92, which although higher than the junior level, is still lower than the national average of 0.95. Thus, there are a higher number of boys at higher levels of education, potentially resulting in a skewed employment ratio between males and females.

In order to gauge the quality of human resource, it is also important to assess the skill development landscape after analyzing the Education ecosystem. This provides a deeper understanding of the available opportunities for skill development in the region.

5.2.4 Vocational and Skill Training

The presence of vocational and skill training institutes has a direct relationship with the employment levels in a region. The availability of Skill Development institutions, as well as the number of admissions into each type of institute, determines the level of skill training of the youth of the state. This section examines the skill training landscape in the state across both these metrics, to determine the interests of the youth, as well as the present capacity of the state to cater to these.

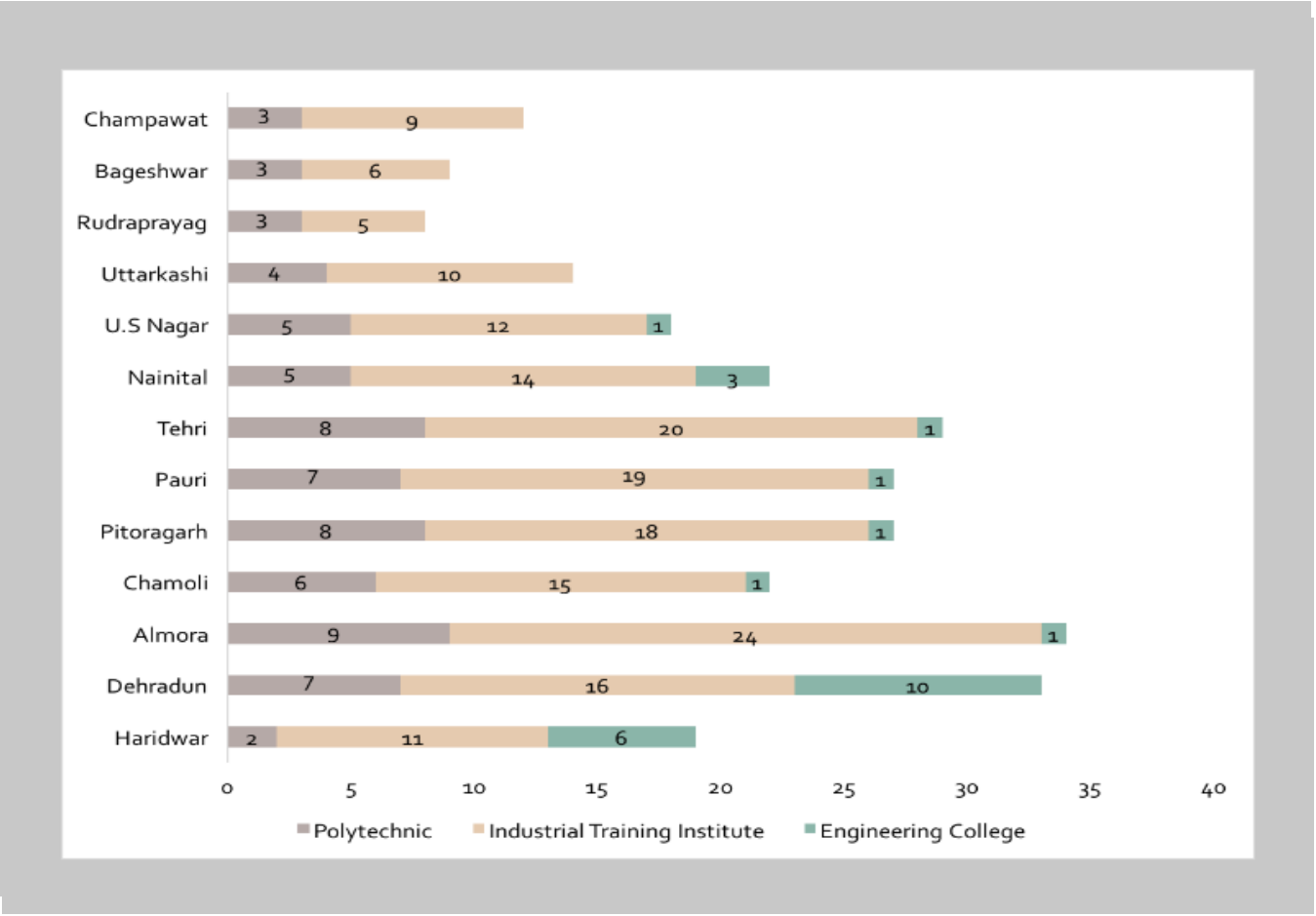
The Skill Development Infrastructure in the state comprises of a number of institutions, including engineering colleges, industrial training institutes (ITI) and polytechnics. Data from the Uttarakhand Directorate of Statistics shows that of these three types of institutions, 67s% of youth in Uttarakhand attend engineering colleges, while 24% attend polytechnics, with the remaining 9% receiving training at ITIs.



5.2.4.1 Infrastructure

There are a total of 25 Engineering colleges, 179 Industrial Training Institutes and 70 polytechnics located in Uttarakhand. Understanding the distribution of these institutions across districts provides an assessment of the physical accessibility of higher educational institutions across the state.

Engineering colleges are found largely in the Garhwal division. It can also be seen that they are concentrated in districts with a high urban population, with Dehradun leading with 10 colleges, followed by Haridwar and Nainital. The Indian Institute of Technology (IIT), Roorkee is also situated in Haridwar. Meanwhile, rural areas have a higher number of polytechnics, with districts with a high rural population such as Almora, Pithoragarh and Tehri Garhwal recording the highest number of polytechnics in the state. These three rural districts also have the highest number of Industrial Training Institutes (it is). In order to grasp a clearer picture of how this distribution affects the accessibility to training received by youth in each district, it is important to look at the district-wise admissions into each type of institution.



5.2.4.2 Opportunities of entry

Admissions into these institutions have varied widely in the past decade. Admissions into polytechnics have increased 300%, going from 3292 in 2004-05 to 10383 in 2014-15[xviii]. This increase can be attributed to the fact that the number of institutions doubled in this time, with 28 new polytechnics being opened up across the state, and a corresponding increase in the number of seats.

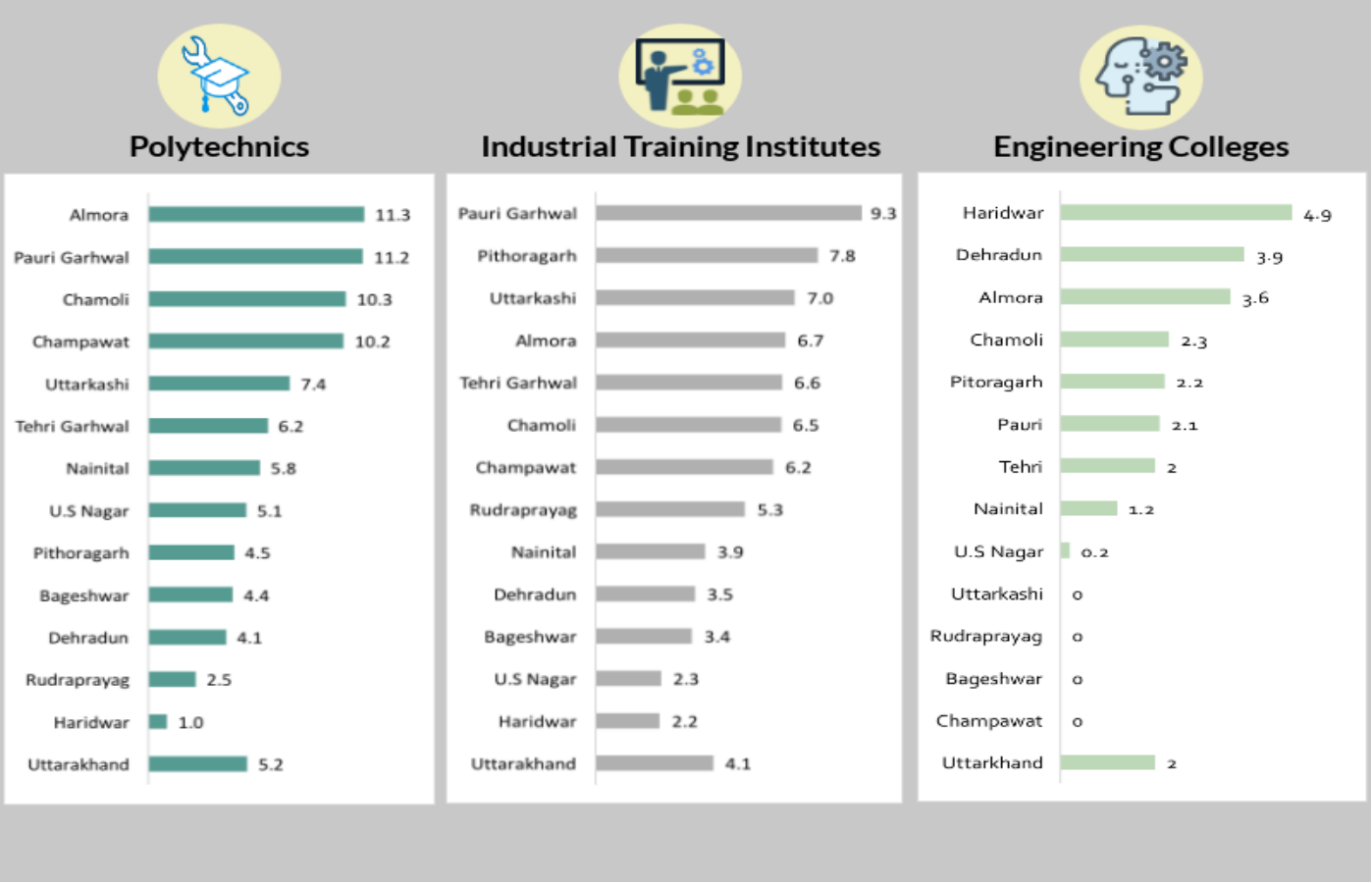
In this same time period, admissions into engineering colleges increased approximately 1000%, from 528 to 5445. At the same time there was an increase of only 7 colleges in this decade.

Interestingly, admissions into ITIs has reduced marginally (19 less people admitted in 2014-15 compared to 2004-05), despite an addition of 101 more institutions in this time. This shows an overall increased interest of the youth in engineering colleges, while interest in ITIs has fallen. This decrease in ITI enrollment could be also be accounted by the pessimistic perception of skilling which is held by the majority of the population, while conducting the primary survey the team was witness to such an attitude towards skilling. In later sections, specifically in the District wise reports the district wise attitude towards skilling will be further discussed.

As far as the enrollment into the type of ITIs, preference for government ITIs was found to much higher. One reason for the preference of government ITIs was that, placement opportunities were found to be better there vis.a.vis private ITIs.

In terms of absolute figures, in 2014-15, Dehradun saw the highest number of admissions across the three institutions (5294), while Rudraprayag saw the lowest (430). In terms of the two divisions of the state, admissions are largely equal for polytechnics across Garhwal and Kumaon, while Garhwal displays the higher admissions into engineering colleges and industrial training centers.

Moving from absolute admission numbers to an analysis of admission rate provides a comprehensive



picture of the proportion of the population being admitted into vocational training institutions. Admission rate is calculated as the number of people admitted per 1000 population (between the ages of 19-34). In terms of district performance, the admission rate is highest in Almora for polytechnics (11.3), while Pauri Garhwal witnesses the highest admission rate in ITIs (9.3).

Haridwar records the lowest admission rate across polytechnics and ITIs. However, it emerges as an engineering education hub, recording the highest rate of almost 5 persons per 1000 population, due to the presence of several engineering colleges in the district. Dehradun also records a high rate in engineering colleges (1.9). However, despite a large number of engineering colleges, Nainital's admission rate is below the national average.

Across all the types of institutions, Chamoli and Pauri Garhwal have admission rates that are higher than the national average. Meanwhile, Udham Singh Nagar and Bageshwar record admissions below the state average across the board.

This differentiation in admissions is largely dependent on the number if such institutions locted in each district. It also provides an insight into the accessibility of such institutions. For example, engineering colleges are largely located in urban districts. Except for the district of Nanital, the admission rate for engineering colleges in plain district is relatively high. For ITIs, the admission rate is high in both Almora and Pauri Garhwal, where there are a higher number of ITIs located.

5.2.5 Conclusion

Analyzing time period data about infrastructure growth and enrolment, t is clear from the above findings that the education sector is continuously growing, with in increasing number of institutions coming up, as well as a rising admission rate across institutions at all levels. For school education, the state, has a whole, stands above the national average for metrics of literacy and pupil-teacher ratio, while it lags in terms of female enrolment.

Despite the consistent growth across the state, districts have progressed at disparate rates, leading to a situation where they display largely differing performances across education metrics. Despite having the highest proportion of youth population, Haridwar and Udham Singh Nagar still report poor literacy rates and weak Pupil Teacher Ratio (PTR).As discussed, migration of people from the hilly regions to the plains has contributed significantly to this disparity. However, some districts also have unique strengths. For example, if we take the example of Haridwar again, the district performs consistently poorly on most metrics, yet it has the highest senior basic enrolment rates, and is also the hub for engineering colleges and admissions in the state Another example is Almora, which despite being a hilly district, enjoys the most robust skill development infrastructure in the state leading to favourable admission rates.

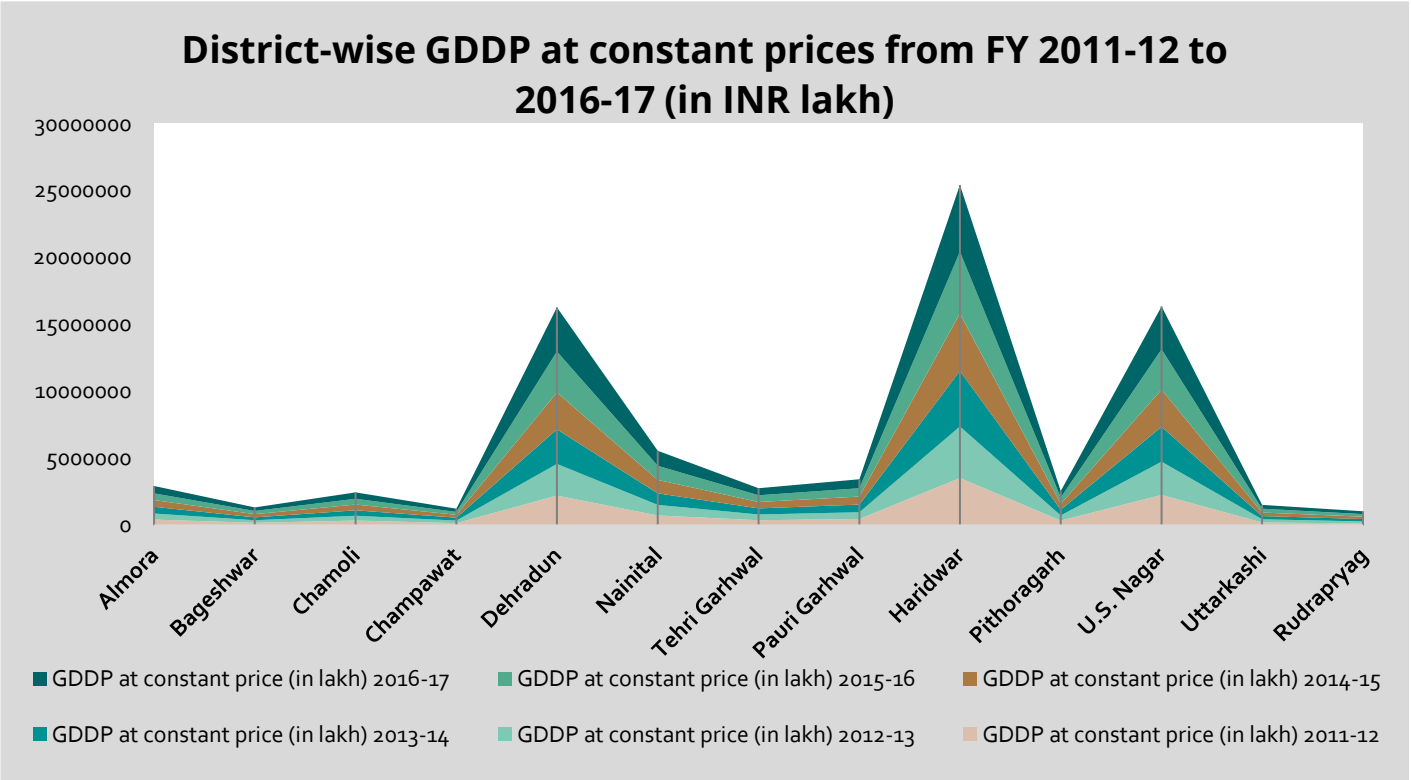
Primary research indicates an overall preference for education when compared to skill development. As affirmed by the National on Policy Skill Development and Entrepreneurship 2015, nationally there is over emphasis on education when compared to other mediums of employment. In a state like Uttarakhand, this emphasis on education as *only* means of economic and self-development leads to extra pressure on infrastructure. This pressure has an impact on heavily populated districts like Haridwar, Udham Singh Nagar (recording low literacy rates) and in hilly regions with low connectivity like Bageshwar, Uttarkashi (recording low admission rates in engineering colleges).

For skill development, interest of the population in ITIs and Polytechnics needs to be examined, to determine the causes for the decline in admissions. In line with this need, more focus is required on improving distribution of skill training centers, to ensure adequate accessibility for youth in all districts.

5.3 Economy

Uttarakhand has witnessed a healthy economic growth with a GSDP growth rate of 7% for the year 2016-17 as compared to 5.29% in the year 2014-15. It has been attracting long-term investment because of its key industrial and sector specific polices focusing on MSME, hydropower electricity among others. While the new initiatives have provided a boost to the industrial and service sectors, the agriculture sector did not witness much growth. The repercussion of the downfall or expansion of the sectors determine the trend of employment opportunities and the need for skilling among workforce within these sectors. As per Census 2011, the workforce participation rate is higher (41.0) in rural Uttarakhand as compared to urban region of Uttarakhand (32.36). This implies that a large number of workforce in the state is attached to the agriculture and allied activities, i.e. the primary sector. However, the recent data highlights that in past few year, the secondary and tertiary sector have witnessed higher growth as compared to primary sector. Thus, it is important to analyze the growth in the economy across sectors, trend in employment creation and the need for skilling among this workforce.

In this context, this section aims to study the macro-level contribution made by the districts towards the growth of the State's economy; undertake a comparative analysis with respect to the Gross District Domestic Product (GDDP), Per Capita Income (PCI), sector-wise contribution made by each district towards the State's development; and provide insights on sector specific requirements to skill the workforce in Uttarakhand. The analysis undertaken is based on secondary data extracted from the



following reports, 'Estimates of District Domestic Product of Uttarakhand Report, 2018', 'The Statistical Abstract Uttarakhand Report, 2015', Census 2011, National Sample Survey and District Handbooks, 2011.

The Gross District Domestic Product (GDDP) acts as an important economic indicator and provides a holistic picture of the regional growth and the contribution made by each district towards the economic development of the State. The figure above highlights the district-wise GDDP contribution made at constant prices from the Financial Year (FY) 2011-12 to 2016-17 (PE) (Provisional Estimate). The GDDP estimate is based on the new base year 2011-12.

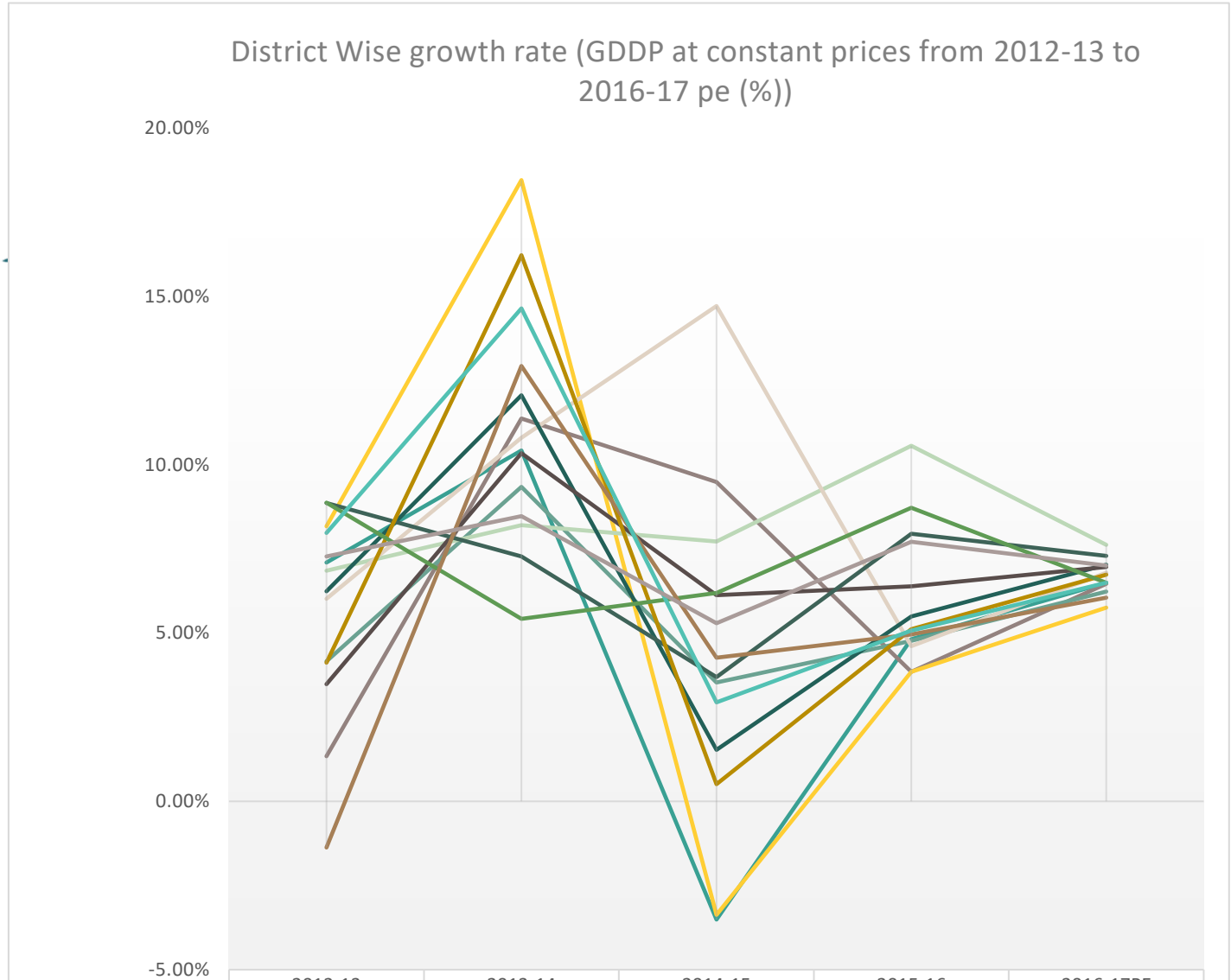
With respect to the above figure , Haridwar has the highest GDDP at constant prices i.e. INR 49,66,149 lakh, contribution to the State for FY 2016-17PE, followed by Dehradun at INR 32,91,255 lakh and Udham Singh Nagar at INR 32,07,441 lakh. These districts as observed have contributed greatly toward primary, secondary and tertiary sectors in the State as compared to other districts, as will be discussed in later sections.

Further, in terms of the regional division with respect to Kumaon and Garhwal, districts under the Garhwal division, namely Haridwar and Dehradun, have contributed more towards the economic growth of the State as compared to districts under Kumaon division - their GDDP at constant price and PCI contribution have been greater as compared to the latter division. However, Rudraprayag, which falls under Garhwal division contributed the lowest with respect to the GDDP at constant price at INR 2,02,279 lakhs, followed by Champawat, which falls under Kumaon division.

From the above figure, it is also observed that in the year 2016-17 (PE), 4 districts falling under the Plain region (Haridwar, Dehradun, Udham Singh Nagar and Nainital) have contributed 3.39 times as much as the 9 districts under the Hilly Region (Almora, Bageshwar, Chamoli, Champawat, Tehri Garhwal, Pauri Garhwal, Pithoragarh, Uttarkashi and Rudraprayag) with respect to GDDP at constant price.

While GDDP is an overall measure of the economy of the State, it is predisposed towards districts that were performing well at the time of their formation due to their comparative resource advantage. Therefore, to present an accurate picture of the economy, we also need to examine the growth of the GDDP of individual district.

The below figure, provides the district-wise growth rate and Per Capita Income (PCI) from the year 2012-13 to 2016-17PE.

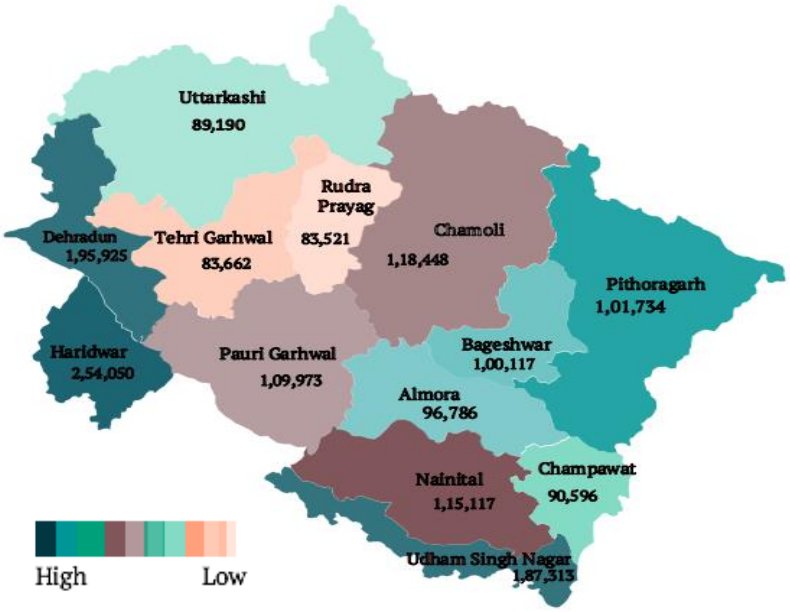


	2012-13	2013-14	2014-15	2015-16	2016-17PE
Almora	7.09%	10.42%	-3.51%	4.82%	6.49%
Bageshwar	1.34%	11.37%	9.48%	3.85%	6.46%
Chamoli	4.16%	9.34%	3.53%	4.77%	6.23%
Champawat	8.17%	18.45%	-3.37%	3.85%	5.75%
Dehradun	6.85%	8.20%	7.72%	10.56%	7.62%
Nainital	6.02%	10.80%	14.71%	4.61%	6.79%
Tehri Garhwal	6.24%	12.06%	1.53%	5.49%	7.03%
Pauri Garhwal	3.48%	10.34%	6.12%	6.39%	6.96%
Haridwar	8.86%	7.27%	3.69%	7.95%	7.29%
Pithoragarh	4.12%	16.22%	0.51%	5.11%	6.73%
U.S. Nagar	8.87%	5.42%	6.19%	8.72%	6.49%
Uttarkashi	-1.37%	12.93%	4.27%	4.96%	6.05%
Rudrapryag	7.97%	14.64%	2.94%	5.07%	6.49%
Uttarakhand	7.27%	8.47%	5.29%	7.71%	7.00%

As per the above figure, Uttarakhand's growth rate in District Domestic Product (DDP) at constant prices stands at 7.00% for the year 2016-17 (PE). Dehradun has been the fastest growing district in the FY 2016-17 (PE) with the growth rate of 7.62% and Champawat has been the slowest growing district with a growth rate of 5.75%. Dehradun, Haridwar (7.29%) and Tehri Garhwal (7.03%) have a higher growth rate than the State average. Further, an important observation can be derived from the low growth rate across districts for the year 2014-15. The natural calamity that occurred around June 2013 in Uttarakhand in form of flash flood drastically affected the economy of the State. The major fall in growth was witnessed by Almora district at -3.51%, followed by Champawat at -3.37 %. Districts other than Nainital and Udham Singh Nagar witnessed a steep fall in the growth rate for the year 2014-15.

The below figure shows the District-wise Per Capita Income (PCI) for the FY 2016-17 PE. The Per Capita Income measures the average income (unearned and earned) per person in a given area in a specified year and determines the quality of living conditions. During the FY 2016-17 PE, the PCI has been highest for Haridwar district i.e. INR 2,54,050 and lowest for Rudraprayag district i.e. INR 83,521. PCI for Uttarakhand stand at INR 1,60,795. Udham Nagar (INR 1,87,313), Dehradun (INR 1,95,925) and Haridwar have higher PCI than the state average.

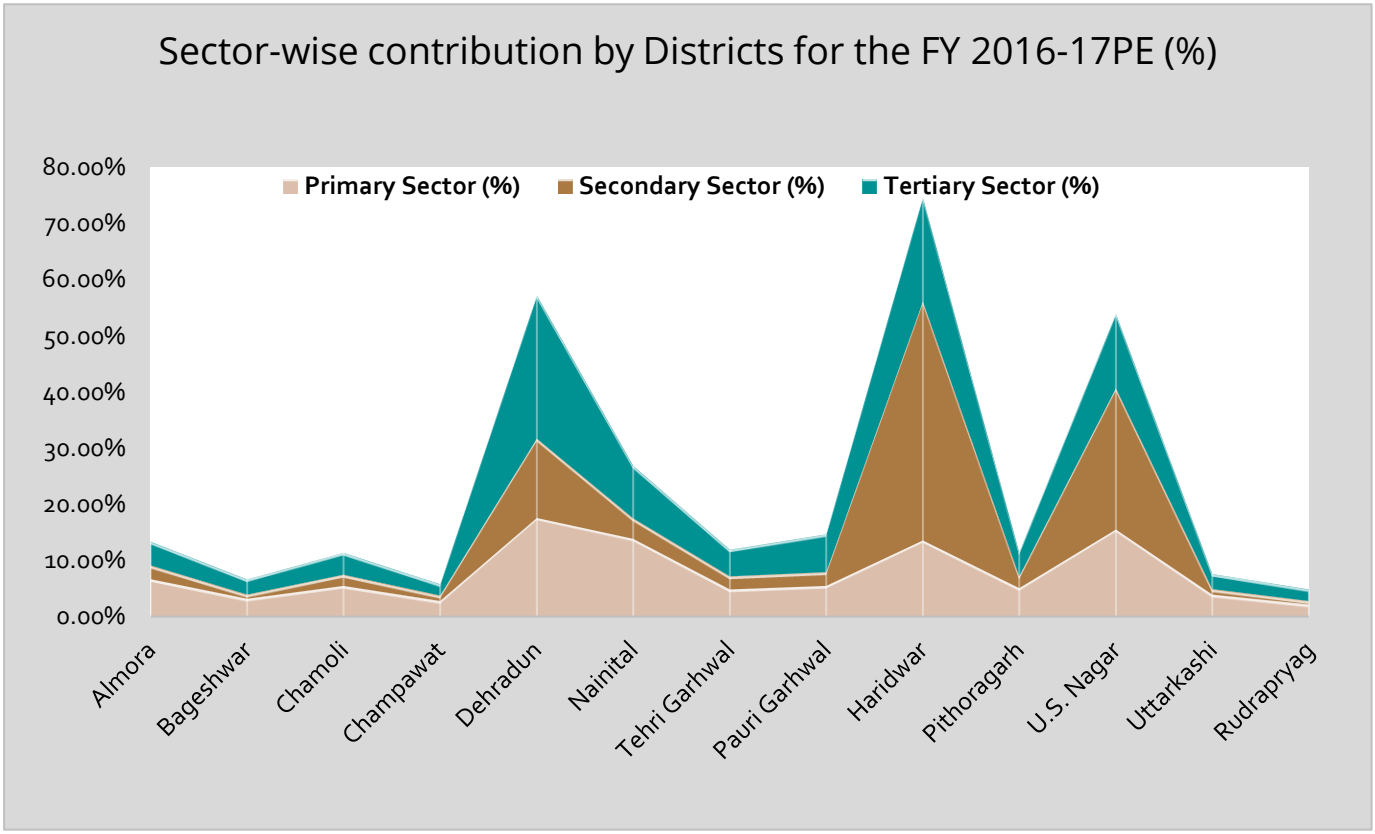
District-wise Per Capita Income for the FY 2016-17 PE (in INR)

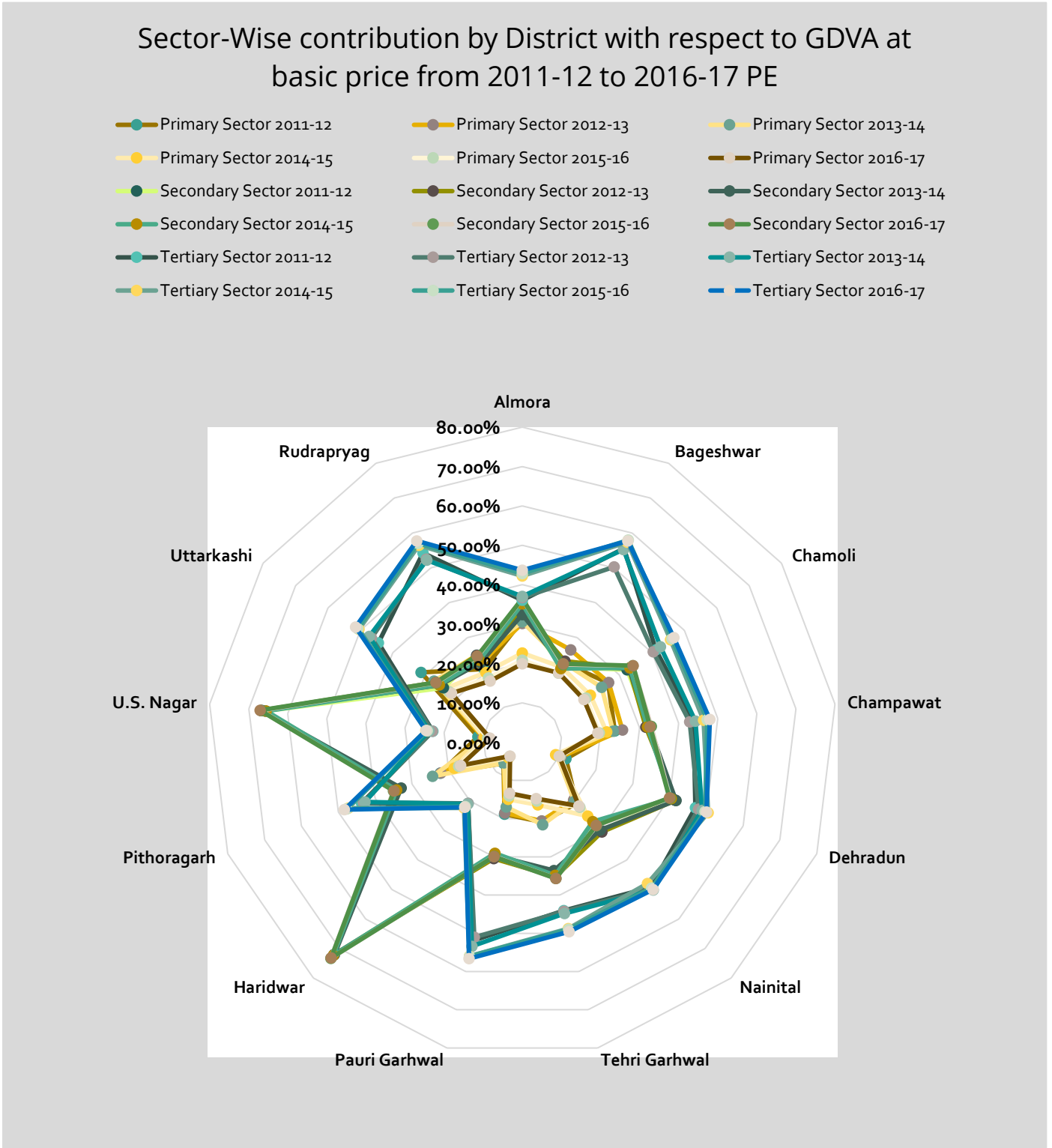


With respect to growth rate (GDDP at constant prices) of the district, Tehri Garhwal witnessed the third highest growth at 7.03% for the year 2016-17 (PE). However, with respect to PCI, Tehri Garhwal stood the second lowest in the State at INR 83,662. Further, Champawat witnessed the lowest growth at 5.75% in the district and with respect to district-wise PCI, the district was ranked among the lowest four.

From the above analysis, it can be concluded that with respect to growth rate and PCI, districts like Dehradun, Haridwar and Udham Nagar have witnessed progress. Similarly, district like Nainital, Almora, Tehri Garhwal have shown potential for growth in the State. Given the economic growth and absolute GDDP, the above mentioned districts have a higher potential capacity to absorb worker population, creating suitable employment opportunities.

It is important to examine the sector-wise (primary, secondary and tertiary) contribution made by the districts, which accounts for the actual progress in the State's economy. This will also aid in understanding the quantum of job creation across these three sectors. The figure below focuses on the sector-wise contribution made by each district for the year 2016-17 PE.





The above two figures highlight the sector-wise contribution by 13 districts of Uttarakhand and each sector consists of sub-sectors/economic activities that adds up to provides the GDDP of the state. It is essential to understand the sector-wise composition as it provides a macro-picture of the economic growth witnessed by the region. Therefore, analyzing the contribution made by each sector provides a detailed understanding of the progress made by the region with respect to its geographical terrain, natural resources, and workforce.

5.3.1 Primary Sector

The economic contribution of Primary Sector has been steadily declining in Uttarakhand. The Compound Annual Growth Rate (CAGR) for FY 2015-16 stood at 2% for primary sector. The primary sector consists of agriculture and allied activities, livestock, forestry & logging, fishing and related activities and provides employment opportunities to a large part of the population. This section studies the contribution made by each district towards the primary sector for the year 2016-17.

Dehradun has contributed the highest towards the Primary Sector, accounting for 17.56% of the total contribution in this sector, followed by Udham Singh Nagar at 15.49% and Nainital at 13.87%. Dehradun's contribution can be attributed to its production of cereals, pulses, oilseeds and livestock. Further, Udham Singh Nagar makes the highest contribution in fish production at 2074.8 production M.T, whereas Nainital produces one of the highest quantity of fruits at 210.74 production M.T in the state. Rudraprayag has contributed the lowest towards the Primary Sector, accounting for 2.17%, followed by Champawat at 2.79%. This sector has the potential to provide employment opportunities for minimally skilled population in the state.

An analysis of district-wise contribution towards the primary sector has observed a downfall. For the year 2011-12, Almora contributed the highest toward the primary sector in terms of its GDVA. However, Almora's percentage share has fallen considerably to 19.91% in 2016-17 (PE). Surprisingly, only Nainital showed an increasing trend where its sectoral contribution towards primary sector stood at 21.60% in 2016-17 compared to 20.79% in 2011-12.

Thus, a general decline can be observed among districts with respect to their contribution towards primary sector across the years. Recognizing that the proportion of rural workforce is more than urban, it is important to support the workforce by providing accurate skills.

5.3.2 Secondary Sector

The secondary sector contributes the second highest to the economic growth of Uttarakhand. The CAGR for FY 2015-16 was 6.6% for secondary sector. Here, for the district-wise figures, the annual growth rate is calculated to have the workforce estimation for each year and then these workforce estimates are used to derive the GVA of different economic activities under the secondary sector.

Haridwar has contributed the highest towards the secondary sector, accounting for 42.52% of the total contribution by all districts for the FY 2016-17, followed by Udham Singh Nagar at 25.13% and Dehradun at 14.11%. Both Haridwar and Udham Singh Nagar have a large number of Large Scale Industries and Micro, Medium and Small Enterprises (MSMEs) set up as compared to other districts.

As on 2015-16, Udham Singh Nagar has 148 established and operational industries with an investment capital of INR 13,339.18 crore, employing 39,059 people, whereas Haridwar has 103 established and operational industries with an investment capital of INR 17,493.6 crore, employing

53,396 people. The major industries are cement, pharmaceuticals, textile industries, food processing, electrical etc.

Further, Haridwar registers the highest number of MSMEs at 511 with an investment capital of INR 206.545 crore, employing 5204 people. Similarly, Udham Singh Nagar has 484 MSMEs, followed by Dehradun which has 365 MSMEs. Further, the basic skill set required for the above mentioned industries varies from entrepreneurship skill to being a power loom operator. Districts such as Almora and Chamoli have 115 units and 102 units of Khadi and Village Industries, which are among the highest in the State.

The secondary sector has witnessed an increase in district-wise contribution between the year 2011-12 and 2016-17 (PE). Haridwar contributed the highest (72.0%) to GDVA at basic price for the year 2011-12 and continued the trend at 73.32% in the year 2016-17 PE. However, despite adding to the growth of the secondary sector in the past, Dehradun has seen a decreasing growth in its contribution with respect to the GDVA at basic price from 41.12% in 2011-12 to 39.97% in 2016-17 (PE).

Therefore, a general rise can be observed for specific districts namely Dehradun, Udham Singh Nagar and Haridwar, with respect to their contribution towards secondary sector across the years. It is essential to understand that such expansion would eventually create demand for semi-skilled and skilled labour in this sector in the upcoming years.

5.3.3 Tertiary Sector

The tertiary sector is not only the dominant sector, but has also attracted significant foreign investment flows that has also created large-scale job opportunities for the people of Uttarakhand. This is also evident from the growth stated by CAGR for FY 2015-16. The CAGR was 9.4% for the tertiary sector, the highest amongst the three broad sectors.

Dehradun has contributed the highest towards the Tertiary sector, accounting for 25.52% of the total contribution across districts, followed by Haridwar at 18.55% and Udham Singh Nagar at 13.32%. Dehradun witnessed the highest Net Deposit in National Small Savings, a form of household savings that constitutes an important component under banking and financial services, at INR 34,348 lakh, followed by Nainital at INR 14,498 lakh and Haridwar at INR 12,370 lakh. Further, Dehradun also has the highest influx of tourists, which contributes to the tertiary sector. Champawat has contributed the lowest to this sector at 2.01%, followed by Rudraprayag at 2.08%. Rudraprayag has the lowest Net Deposit in National Small Savings in the State. This implies that the banking facilities and financial literacy are poor in the region of Rudraprayag, whereas the sectoral expansion in form of trade, hotels and restaurants is yet to occur in Champawat in large scale.

As can be noticed, there has been an expansion of the tertiary sector across districts. All districts witnessed an increase in the tertiary sector with respect to GDVA at basic price between the year 2011-12 and 2016-17 PE. Among all the districts, Uttarkashi has witnessed more growth in the tertiary sector from 44.42% in 2011-12 to 51.45% in 2016-17 (PE). Further, being close to the mountain range, the region witnesses a huge influx of tourists and has seen a boom in the tourism industry. The Government of Uttarakhand is also focusing on Gramin Paryatan Uthan Yojnana to help villagers in generating products and services to promote tourism in the state.

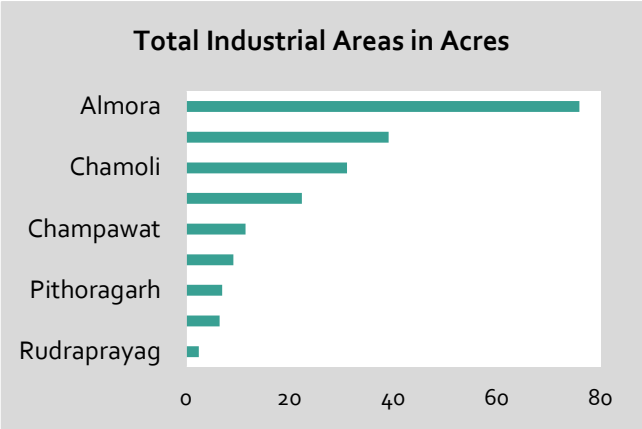
The service sector has developed as the main and fastest growing sector across districts in Uttarakhand. From the above analysis, it is clear that the share of tertiary sector has increased over years and will maintain this momentum in the upcoming year. Thus, it is important that with such expansion, the sector is able to absorb highly skilled labor to maintain the growth.

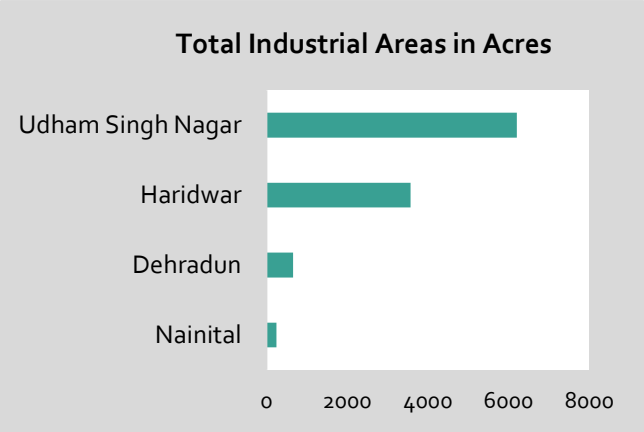
5.4 Industry

Total Industrial Area Acquired

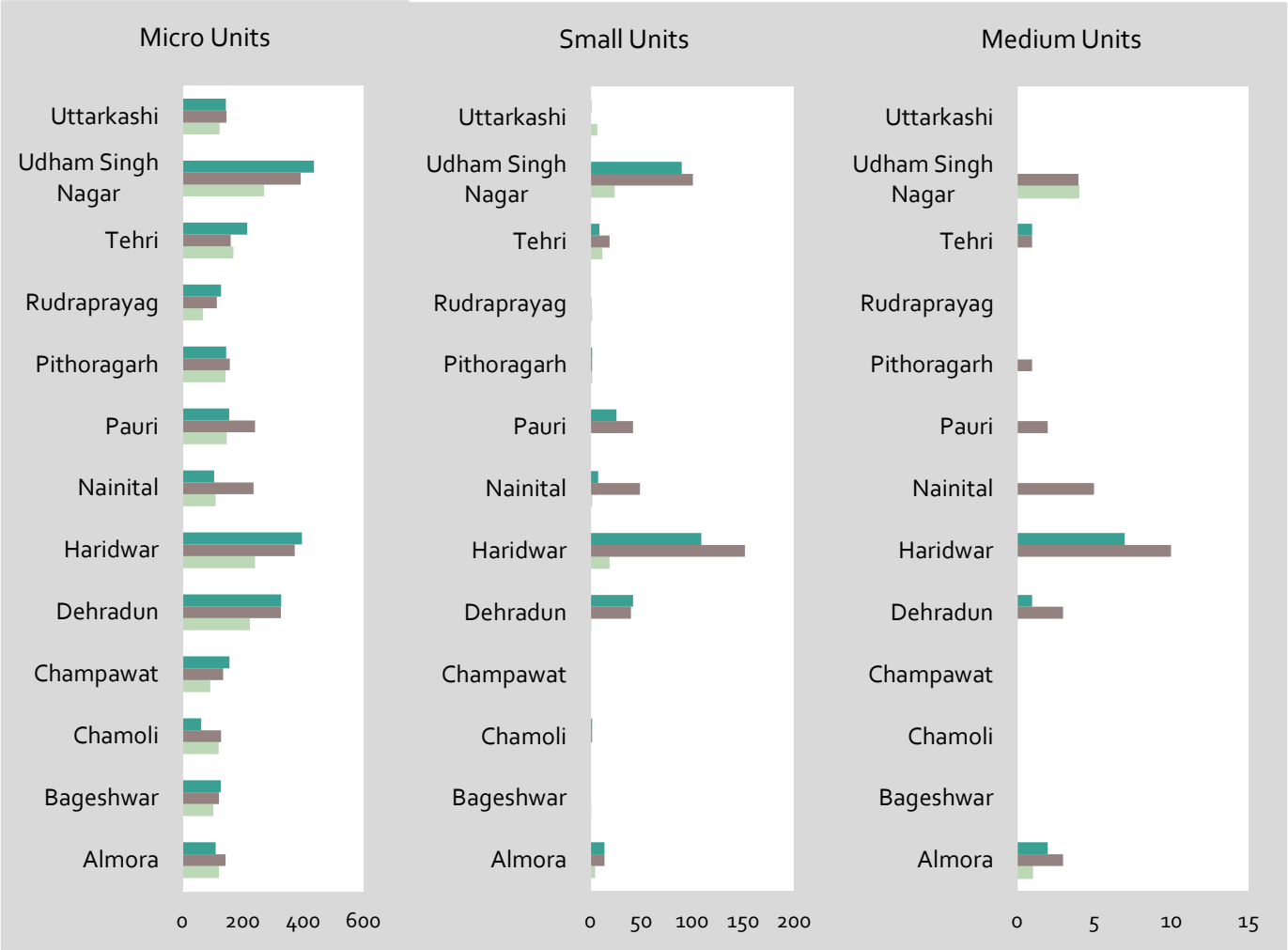
205 acres — Hill Districts

Plain Districts — 10692 acres





MSME Registrations



The presence of manufacturing and services industries in a region creates demand for semi-skilled and skilled labour. In this regard, examining industrial activity across the state is central to the Skill Gap Study.

A district-wise analysis of the state reveals pattern about the setting up of industries in the state, especially across metrics of geographical distribution and spread of units based on size. Estimation on the basis of area covered highlights that the plain region of the state have 50 times as much area under industries compared to the hilly regions i.e. 10692 acres under plain region compared to 205 acres under the hilly region. Of the plain districts, Udham Singh Nagar has 6210 acres, followed by Haridwar, which has 3570 acres, Dehradun and Nainital. Of the hilly districts, Almora has 76 acres, followed by Tehri and Chamoli at 39.15 and 31.135 acres respectively.

This trend is due to obvious reasons of terrain and ease of transport. Additionally, the plains have most of the manufacturing- intensive industries that require land to set up the unit, such as textile and construction, thus causing merely four districts to comprise of more land under industrial activity than the nine hill districts put together. The hill districts on the other hand typically have food and beverages processing industries and other small scale industries such as handicrafts.

This delineation is made clearer when examining the size of each industry in each district. Across the state, the number of industries in the MSME sector is higher than that of Large Scale Industries (LSIs). Within MSMEs, micro enterprises are largest in numbers. In districts like Udham Singh Nagar, Haridwar, Dehradun and Almora, there are a high number of medium units, and an equally high number of small and micro units. As stated in the above figure, the number of small units is higher than that of medium units, implying that in the MSME sector, micro enterprises dominate in numbers across all districts.

Over the years, some variations have been displayed in the growth of industries. Across districts, there are wide variations in the rate of growth of industries in the year. However, most industries seem to have increased in numbers in 2016-17 (PE). This trend could be connected to the slew of incentives and sops announced in the run-up to the State Assembly Election of 2017.

LSIs contribute more to the economy than MSME, in terms of output and products. However, MSMEs remain the second largest employer in the state, followed by agriculture, and this makes their activities extremely relevant to the economic well-being of Uttarakhand. Notably, access to credit remains an issue for the setting up the MSME units, especially in hilly region, where this issue is exacerbated by lack of easy resources or skilled manpower. In order to provide meaningful and gainful employment to the domiciles and contain out-migration in the state, focus must be centred on the development of the industrial sector in these regions. As previously outlined, this goal is included within the action plan of the state, and will be examined and addressed in this Skill Gap Study.

6. DISTRICT FINDINGS

6.1 Almora

Population (15-60 yrs)	356847
Rank based on contribution to GSDP in 2016-17 (constant prices)	6
Per Capita Income (2016-17)	96786
Sex Ratio (Census 2011)	1,139
% of Urban Population (Census 2011)	10%

6.1.1 Overview of Incremental Supply

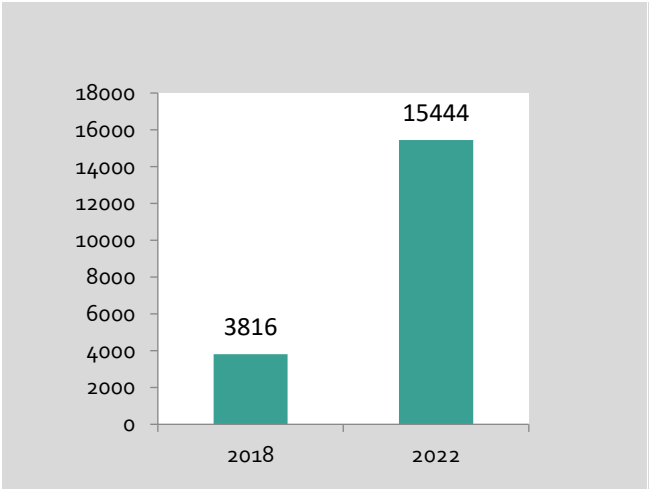
Almora has significant potential in terms of its skilled population, with 29% of the present labour force being categorized as skilled. Amongst the labour force, the perception of skilling is positive, which results in a robust infrastructure for further up gradation of skilling programmes. The next sections provide an overview of the district, along with the quantity and quality of labour supply.

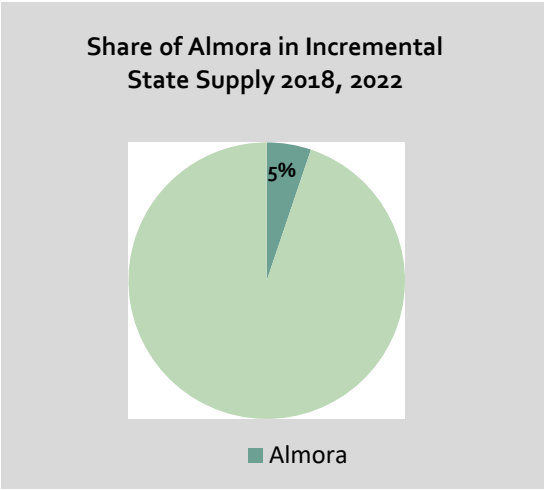
Almora is one of the hilly districts in the Kumaon division. It is situated at an elevation of 1642 m, making it one of the highest districts in the country. Almora contributes to 3% of the GSDP at current prices (2016-17) and has a population of 6.87 lakhs. More than half of the district's area is occupied by forests and this hampers road and rail connectivity. Irrespective of these connectivity issues, the district boasts of medium, small and micro enterprises in the hilly region. Adding to the economic opportunities available within the district are diverse educational opportunities as well. The GB Institute of Himalayan Environment and Development is located in the district. Essentially, based on its economic and educational opportunities, Almora encourages a robust educational and skill development ecosystem. It is also a tourist hub and a religious centre, thus opening-up sector-specific skill development, in the context of better-developed infrastructure as compared to the rest of the region. Therefore, despite being a hilly district, Almora has developed on many economic indicators as compared to the rest of the region, thereby providing an aspirational model for the hilly areas. A detailed overview of the education, skill development and labour supply conditions of the district is provided in the ensuing sections

The district has a favourable Pupil Teacher Ratio (PTR) i.e. 1:16 for Junior Basic and 1: 20 for Senior Basic schools. The PTR is higher than the State average of 1:25 and 1:27 for Junior Basic and Senior Basic respectively. The literacy rate (81.06 %) of the district is higher than the State level (79.63 %) and the second highest in the Kumaon division after Nainital. The district is also well empowered in terms of skilling infrastructure, with the highest number of it is (24) and Polytechnic Colleges (9) found in the state. In fact, the district has the highest number of persons (11) per 1000 population (19-34 years) admitted into a Polytechnic College, as compared to other districts of the state. Almora hosts the only other Girls Polytechnic College in the State apart from Dehradun.

6.1.1.1 *Quantity: Incremental Labour Supply 2022*

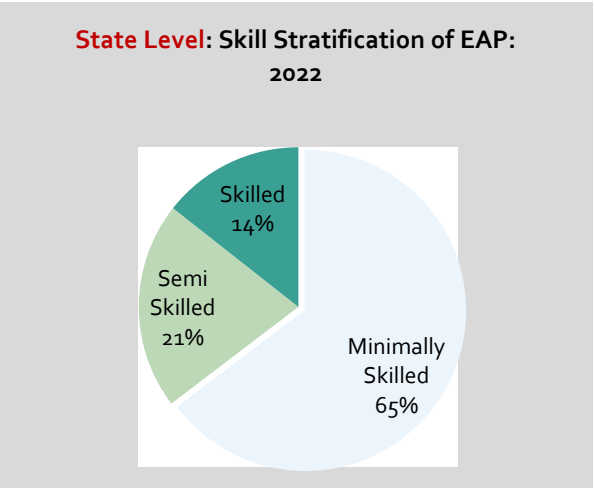
Being the sixth most populated district, the district of Almora would provide for 3816 and 15444 as incremental labour force in 2018 and by 2022 respectively, with respect to 2017. The incremental supply would account for 5% of the total incremental labour force in the state for 2018, 2022.



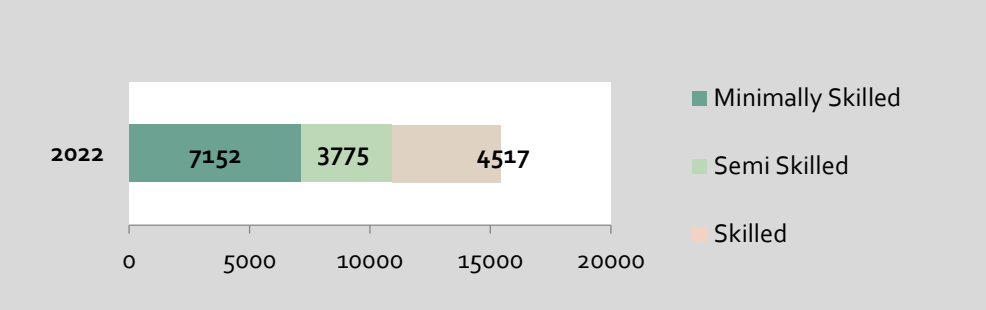


6.1.1.2 *Quality: Skill Profile of the District*

The well-formed skilling infrastructure of the state promotes a high percentage of skilled population, and consequently a lower percentage of minimally skilled population as compared to the state average.



Within Almora, a significant portion of the population i.e. 29% lies in the skilled category. The district performs well compared to state figures, which place 14 % of population in the referred age groups in the skilled category. Almora is also one of the only districts where the percentage of skilled population is more than the semi-skilled population, which creates immense potential for carrying out Recognition of Prior Learning (RPL) under PMKVY. In 2022, the number of skilled, semi-skilled and skilled population stands at 7152, 3775, 4517 additional persons in the labour force.



Key Takeaways: An adequate skilling infrastructure ensures skilling outcomes in terms of percentage of skilled, semi-skilled population. The district is a prime example of how increasing accessibility to skill infrastructure has a positive impact on increasing skilled numbers. The district also performs well in terms of attitudes towards skilling, with almost 71 % of the economically active population perceiving formal skill training as a means of career progression. This robust infrastructure can be utilized for a crucial, but not so popular (amongst labour force) programme, under skill development i.e. Recognition of Prior Learning. Given the dominance of agriculture and tourism in the district, RPL exercises can be carried out both in high potential sectors like Tourism, as well as in traditional sectors of agriculture. This can bridge the gap between the semi-skilled and skilled population, thereby giving a further boost to skilled numbers and a corresponding increase in productivity.

6.1.2 Overview of Incremental Demand

Almora ranks 7th in jobs projected to be created overall in the state. Following are the salient details of a sector wise breakdown on the same.

Sector	Incremental Demand
Agriculture and Allied Activities	2422
Automobiles	72
Beauty & Wellness	67
BFSI	197
Chemicals	46
Construction	123
Electronics	98
Food Industry	285
Furniture & Fittings	74
Handicrafts & Carpets	67
Healthcare	62
Iron & Steel	161
IT-ITeS	114
Life Sciences	73
Retail	46

Telecom	57
Textile & Apparel	300
Tourism And Hospitality	1278
Others	809
Grand Total	**6351**

The total incremental demand for the district of Almora is 6,351, which is 3.32% of the total incremental demand from the state. Following are additional points to be considered:

- Almost 67% of this demand is coming from Agriculture and Allied Activities, and Tourism and Hospitality.
- Heavy industries have a minimal presence in this district, with around 50 acres of developed industrial land and 23 acres of semi-developed industrial land.
- Though large and medium scale industries do not show much of a promise in this district, given its terrain, small enterprises engaged in tourism and hospitality activities have immense potential.
- Based on our estimations, Almora has about 6% of total hotels in Uttarakhand. Yet, it still accounts for the highest share of incremental jobs in tourism and hospitality in the state. This shows that a large share of these jobs are being created because of restaurants, eco-tourism, and adventure sport activities.
- Popular eco-tourism destinations like Binsar and Koshi are present here.

As seen above, Tourism and Hospitality, and Agriculture and Allied Activities are the sectors with high potential in this district.

6.2 Bageshwar

Population (15-60 yrs)	148875
Rank based on contribution to GSDP in 2016-17 (constant prices)	11
Per Capita Income (2016-17)	100117
Sex Ratio (Census 2011)	1090
% of Urban Population (Census 2011)	3.49%

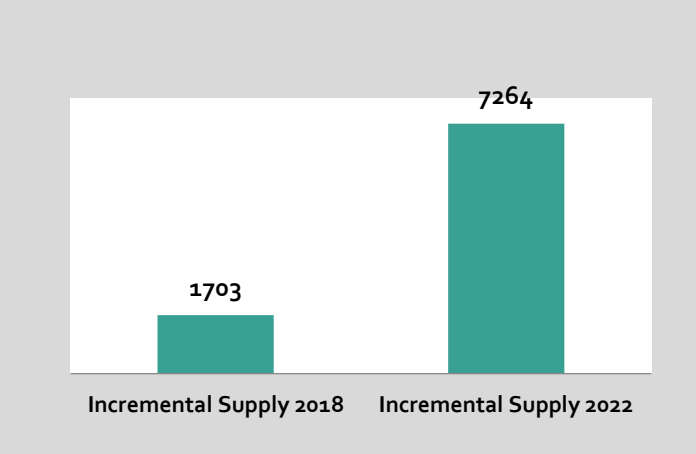
6.2.1 Overview of Incremental Supply

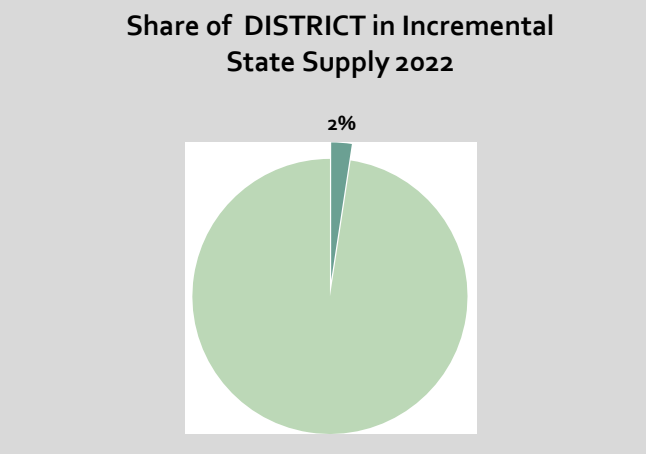
Bageshwar is one of the least populated districts in the state. Located at an elevation of 1004 metres, connectivity to the district is a consistent problem. Lack of sufficient railway, road, and telecom infrastructure has impacted the development trajectory of the district, especially as it relates to education and skill development infrastructure. Consequently, the supply of labour force in 2022 has been impacted by the present lack of skill and education infrastructure. In this section, an overview has been provided of the skill and education infrastructure, along with district specific number for incremental labour supply (2022) and the Skill stratification of the district.

Bageshwar is located in the Kumaon region. The district enjoys a higher literacy rate (80.69%) as compared to State level figures (79.63%). Bageshwar also has a favourable Pupil Teacher Ratio (PTR) at 1:19 for Junior Basic and 1: 20 for Senior Basic schools. The PTR is higher than the State average of 1:25 and 1:27 for Junior Basic and Senior Basic schools respectively. The district fares adequately well with one Junior Basic School available for every 38 children in the age group of 5-9 years. Only one Senior Basic School is available for every 176 children in the age group 10-13 years and only one Secondary school is available for every 230 children in the age group of 14-18. The lack of infrastructure also extends to skill development which falls short in comparison to other districts. There are only 6 ITIs located in Bageshwar, which is the lowest number of ITIs in the Kumaon division. Neighbouring districts of Almora and Pithoragarh boast of a higher number of ITIs i.e. 24 and 18 respectively. Lack of infrastructure also has an impact on private participation in Skill Development, as evidenced by the fact that there are no Private Training Providers available under PMKVY in the region. For skill development, both soft infrastructure i.e. Curriculum, Trainers and hard infrastructure i.e. buildings, class rooms, are important and the next sections survey the impact of skilling infrastructure on the quality and quantity of labour supply.

6.2.1.1 Quantity: Incremental Labour Supply 2022

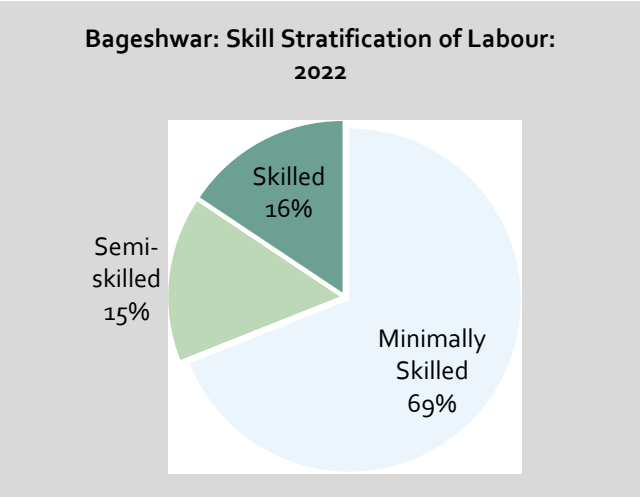
As per the Supply Side methodology, the population of the district is a key determinant of the incremental labour supply. The district of Bageshwar would provide 1703 and 7264 persons as incremental labour force in 2018 and by 2022 respectively. Out of the total state incremental supply, Bageshwar contributes 2%.

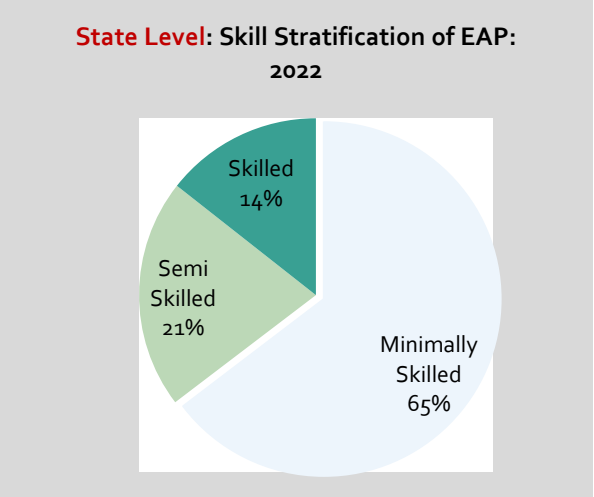




6.2.1.2 *Quality: Skill Profile of the District*

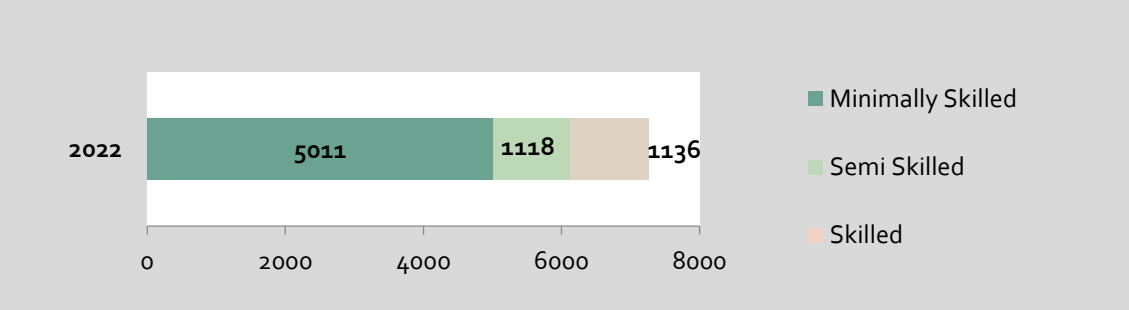
The lack of skilling facilities and education infrastructure has led to a higher proportion of Minimally





Skilled Population, when compared to state level figures.

As evident from the figure above, the share of Minimally Skilled Population in the state stands at 69%, which is higher than the state cumulative figures at 65%. However, the percentage of skilled population



is higher in Bageshwar when compared to state cumulative figures i.e. 14 % (state) and 16%

(Bageshwar). Amongst the hill districts, Bageshwar performs relatively well in terms of skilled population, with Champawat and Chamoli having only 8% and 5% of skilled population, respectively.

Key Takeaway: In 2022, the number of skilled, semi-skilled and minimally skilled population would stand at 1136, 1118 and 5011 respectively. Lack of Skilling facilities as well as poor connectivity in the region contributes to the high difference between the Skilled and Minimally Skilled population. For the district of Bageshwar to reach its potential, it is important to further build on skilling infrastructure to meet the upcoming demands from the workforce. Below are the skill break-down of the labour force in 2022.

6.2.2 Overview of Incremental Demand

Bageshwar ranks 13th in jobs projected to be created overall in the state. Following are the salient details of a sector wise breakdown on the same.

Sector	Incremental Demand
Agriculture and Allied Activities	1021
Automobiles	105
Beauty & Wellness	66
BFSI	82
Electronics	60
Food Industry	321
Furniture & Fittings	96
Handicrafts & Carpets	69
Iron & Steel	144
IT-ITeS	148
Mining	60
Telecom	71
Textile & Apparel	256
Tourism And Hospitality	265
Others	152
Grand Total	**2916**

The total incremental demand for the district of Bageshwar is 2,916, which is 1.53% of the total incremental demand from the state. Following are additional points to be considered:

- Around 37% of this demand will be generated from agriculture and allied activities. Backyard Poultry Farming and Integrated Hill Farming System have been successfully carried out.
- Horticulture is the most critical sub-activity in this district. Therefore, the demand from food industry, which processes fruits, is also comparatively high.
- The entirety of this incremental demand is from micro and small enterprises. A meagre amount, 0.35 acre in Garur, is the only area developed as an industrial area in the district.

- Almost all of the micro or small enterprises are situated either in Garur or Bageshwar blocks.

As seen above, Agriculture and Allied activities and Food Industry seem to be sectors with high potential in this district.

6.3 Champawat

Population (15-60 yrs)	149340
Rank based on contribution to GSDP in 2016-17 (constant prices)	12
Per Capita Income (2016-17)	90596
Sex Ratio (Census 2011)	980
% of Urban Population (Census 2011)	14.77%

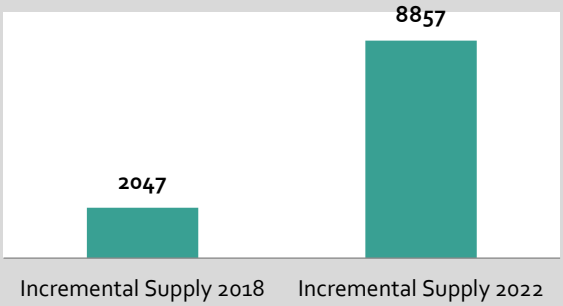
6.3.1 Overview of Incremental Supply

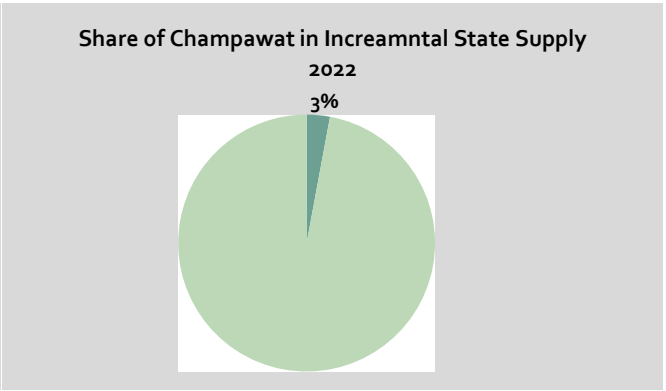
The international border (Indo-Nepal) occupies the eastern boundary of the district. Bordered by Bageshwar and Pithoragarh, the district like other hilly districts in the state also faces the issue of road and rail connectivity. More than 50% of the land is covered by forest which is a deterrent to intra-district connectivity. Another similar pattern which Champawat follows with other hilly districts is the low percentage contribution to state's GSDP. The district contribution to GSDP (2011-12 – 2016-17) stands at less than 2%. All these factors impact the skill development ecosystem in the region. Lack of connectivity discourages the participation of private players in skill development. Slow economic development deters the creation of new, varied and voluminous employment which removes incentive for skill development within the district. The quantity and quality of labour force is also impacted by the factors mentioned above as well as low population of the district. Champawat is one of the least populated districts in the state. After taking such factors into account, the next sections provide an overview about the more immediate factors for skill development, i.e. education and skill infrastructure as well as quantity and quality of labour supply.

The literacy rate of the district (80.73%) stands higher than the state average (79.63%). Champawat enjoys a favourable Pupil Teacher Ratio (PTR) at 1:19 for Junior Basic and 1: 20 for Senior Basic schools. The PTR is higher than the State average of 1:25 and 1:27 for Junior Basic and Senior Basic schools respectively. For school infrastructure, the district fares adequately well for all educational facilities. At the junior basic level, one school is available for every 51 children in the age group of 5-9 years while one senior basic school is available for every 227 children (10-13) years. The child population pressure per school is higher in the district when compared to other neighbouring hilly districts of Pithoragarh and Bageshwar. A somewhat similar district variation is observed in the skill development infrastructure as well. While 9 ITIs are located in Champawat, the numbers of ITIs stand at 6 and 18 for Bageshwar and Pithoragarh respectively. Hence, while Champawat performs better than Bageshwar in terms of number of ITIs, it lags significantly behind Pithoragarh on the same metric. No private participation under PMKVY is registered in this district. In the succeeding sections we review the impact of the demographic profile as well as the skill and education infrastructure on the labour supply.

6.3.1.1 Quantity: Incremental Labour Supply

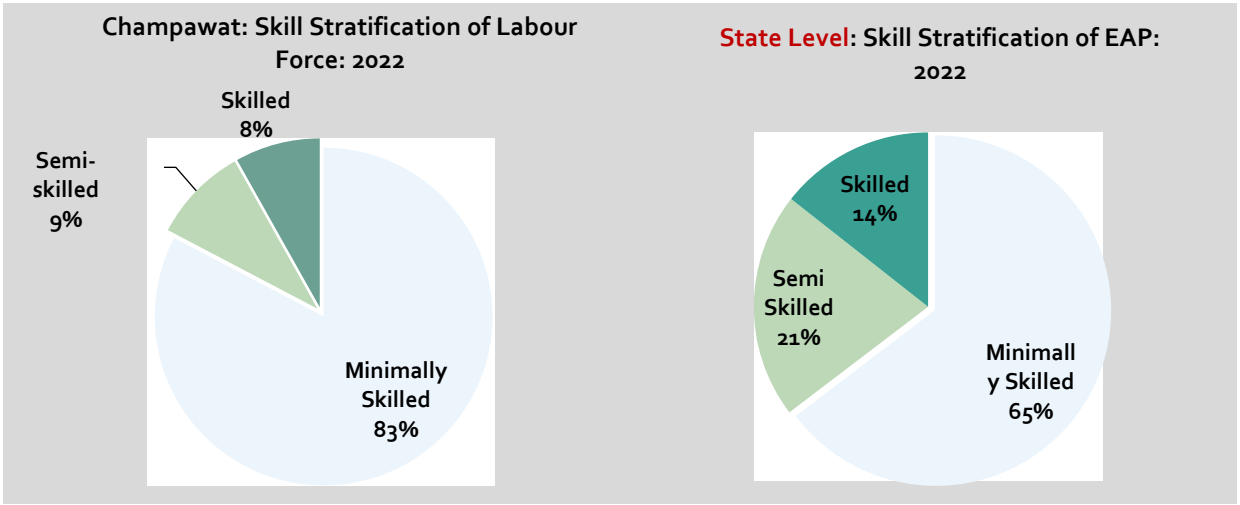
As per the supply-side methodology, the population of the district is a key determinant of the incremental labour supply. The district of Champawat would provide 2047 and 68857as incremental labour force in 2018 and by 2022 respectively. Out of the total state incremental supply, Champawat contributes 3 %.



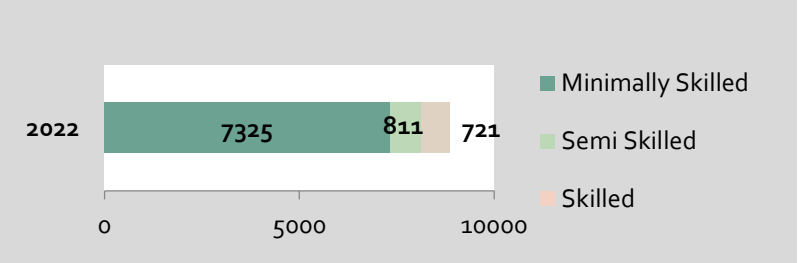


6.3.1.2 Quality: Skill Profile of Labour Force

Lack of connectivity and a consequent shortage of varied economic opportunities has contributed to a low proportion of skilled population in the district. Only 8% of the labour force in Chamoli lies in the skilled category as compared to 14% at the state level. The percentage of minimally skilled population is significantly higher when compared to state-level figures.



As mentioned above, lack of varied and voluminous employment as well the non-existent level of large and medium enterprises have acted as deterrents for incentivizing skill development. In 2022, the number of skilled, semi-skilled and minimally skilled population would stand at 7325, 811 and 721persons to the labour force respectively.



Key Takeaway:

The Industrial Profile of Champawat prepared by the Department of Micro, Small and Medium enterprises points out lack of human resource as one of the issues faced by the Industrial Association. While this holds true on the basis of ground interviews, lack of adequate employment also has an impact on the reducing incentive for skill development which consequently has an impact on the quality of human resource. Due to lack of opportunities within the district, sections of the labour would prefer to avail education and skill development activities outside the district. Therefore even though 93% of the survey respondents acknowledged formal training as a means to progress in their career, only 42% are aware about PMKVY. Hence the positive outlook towards skill training can be utilized to further the development of skill ecosystem within the district.

6.3.2 Overview of Incremental Demand

Champawat ranks 12thin jobs projected to be created overall in the state. Following are the salient details of a sector wise breakdown on the same.

Sector	Incremental Demand
Agriculture and Allied Activities	914
Automobiles	98
Beauty & Wellness	39
BFSI	103
Chemicals	37
Construction	83
Electronics	166
Food Industry	578
Furniture & Fittings	113
Gems And Jewellery	33
Iron & Steel	126

IT-ITeS	38
Life Sciences	63
Retail	129
Rubber	46
Telecom	65
Textile & Apparel	217
Tourism And Hospitality	125
Others	413
Grand Total	**3386**

The incremental demand for the district of Champawat is 3,386, which is 1.77% of the total incremental demand from the state. Following are the additional points to be considered:

- Large scale industries are completely absent given poor connectivity of the district.
- Scope exists only for food processing industry at a small or micro scale. Under Agriculture and Allied Activities, it is mostly floriculture and horticulture that has potential.

As seen above, Food Industry and agriculture are sectors with potential in this district.

6.4 Chamoli

Population (15-60 yrs)	232503
Rank based on contribution to GSDP in 2016-17 (constant prices)	9
Per Capita Income (2016-17)	118448
Sex Ratio (Census 2011)	1019
% of Urban Population (Census 2011)	15.17%

6.4.1 Overview of Incremental Supply

Chamoli is the second largest district in the state of Uttarakhand and makes up 2.69% of the GSDP. It maintains high literacy rates supported by strong educational infrastructure. However, the positive outputs do not spill over to skilling. Located to the north of Uttarakhand, Chamoli shares an international boundary with China, and domestic boundaries with six other hilly districts. It is part of the Garhwal division, and is situated at an elevation of 1550 m. In contrast to its proximate districts such as Almora and Pauri Garhwal, Chamoli has extremely hilly terrain, with 69% of the area under forests. This makes connectivity a huge problem, and infrastructural development is laggard because of tough conditions.

Agriculture is the main occupation of the roughly 3.92lakh population of the district. The paucity of infrastructure has caused Chamoli to have little industry, as there is a significant gap felt in education and skilling measures for the population. Its strategic location as an international boundary district also has several roles to play in the development of the region. Therefore, an overview of the district's education and skilling status would provide insights into the potentials of the prevalent labour supply and demand, which will be undertaken in the subsequent sections.

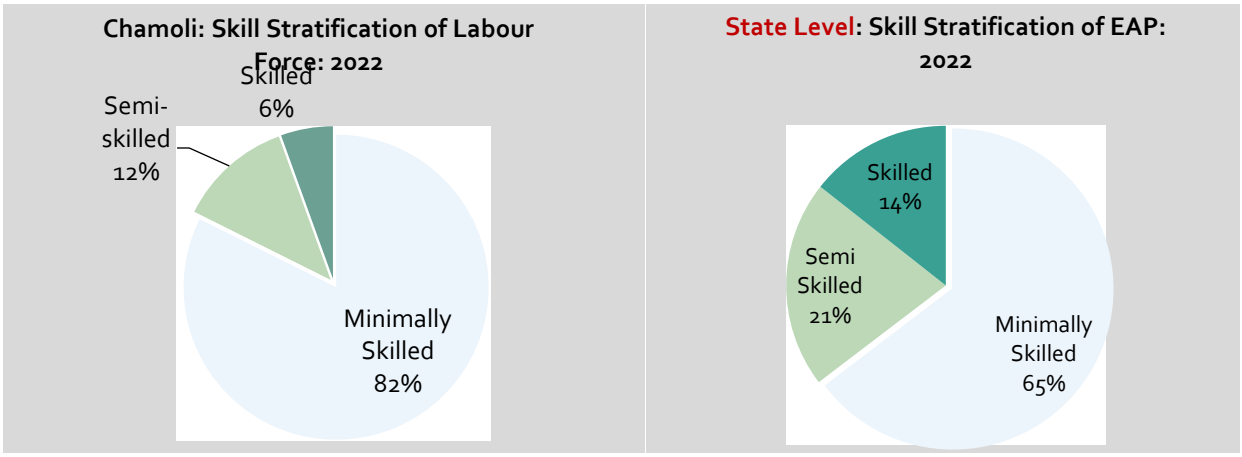
As already mentioned, the district boasts of a literacy rate (83.48%) which is higher than the state level figures (79.63%) and also second highest in Garhwal division. Chamoli also enjoys a favourable Pupil-Teacher Ratio (PTR) i.e. 1:19 for Junior Basic and 1: 20 for Senior Basic schools. The PTR is higher than the State average of 1:25 and 1:27 for Junior Basic and Senior Basic schools respectively. The Institute of Technology, Gopeshwar was set up in 2013 as the district's first engineering college under the Uttarakhand Technical University. A total number of 15 ITIs and 6 Polytechnic Colleges are located in the district. The number of ITIs and Polytechnic colleges are higher in Chamoli when compared to neighbouring districts of Bageshwar and Rudraprayag.

6.4.1.1 Quantity: Incremental Labour Supply

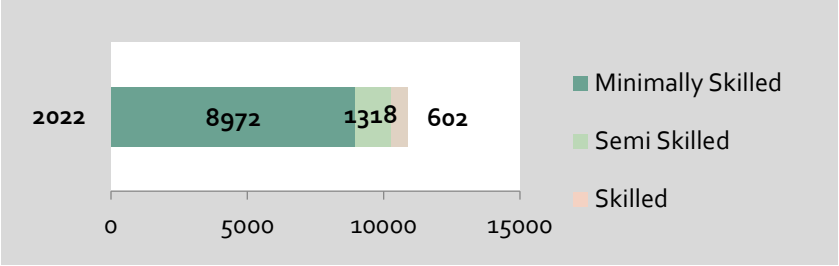
The district of Chamoli would provide for 2336and 10892persons as incremental labour force in 2018 and by 2022 respectively, with respect to 2017. The incremental supply would accounts for 4% of the total incremental labour force in the state for 2022.

6.4.1.2 Skill Profile of the District

The district of Chamoli is one of the lowest contributors to the Gross State Domestic Product (GSDP).Its share in 2016-17 was only 2.86% of GSDP in constant process. Lack of connectivity and a consequent shortage of varied economic opportunities could be counted as few of the factors for low proportion of skilled population in the district. Only 6 % of the labour force in Chamoli lies in the skilled category as compared to 14 % at the state level.



In 2022, the number of skilled, semi-skilled and minimally skilled population would stand at 8972, 1318 and 602 persons to labour force respectively.



Key Takeaway: Being one of the largest districts in Uttarakhand (area wise), Chamoli boasts of a comparatively higher number of ITIs (15) as against its neighbours, Rudraprayag (5) and Bageshwar (6). This is a positive factor which would encourage accessibility to skill development for all sections of the population. However, only 61% of the labour force within the district looked upon formal training as a means for career progression. The numbers when compared to the same neighbouring, Rudraprayag (76%) and Bageshwar (81%) districts are considerably lower. Hence apart from infrastructure, softer determinants of skill development like perception of skilling also need to evolve over time through information dissemination as well as community mobilization.

6.4.2 Overview of Incremental Demand

Chamoli ranks 9th in jobs projected to be created overall in the state. Following are the salient details of a sector wise breakdown on the same.

Sector	Incremental Demand
Agriculture and Allied Activities	1184
Automobiles	137
Beauty & Wellness	40
BFSI	176
Construction	118
Electronics	98
Food Industry	533
Furniture & Fittings	60
Gems And Jewellery	46
Handicrafts & Carpets	201
Iron & Steel	243
IT-ITeS	124
Life Sciences	44
Mining	40
Rubber	37
Telecom	133
Textile & Apparel	254

Tourism And Hospitality	361
Others	415
Grand Total	**4244**

The incremental demand for the district of Chamoli is 4,244, which is 2.22% of the total incremental demand from the state. Following are additional points to be considered:

- Chamoli's distribution of demand is similar to that of Bageshwar, albeit at higher quantities.
- Being the site of the Badrinath Temple, Chamoli is an important centre for religious tourism. The temple, combined along with the Valley of Flowers and Nanda Devi National Park, are the main tourist attractions in this district.
- Within the Food Industry, flour milling, grain grinding, fruit processing, and manufacture of bakery products are the main activities being engaged in.

As seen above, Agriculture and Allied Activities and Food Industry are sectors with high potential in this district.

6.5 Dehradun

Population (15-60 yrs)	1080379
Rank based on contribution to GSDP in 2016-17 (constant prices)	1
Per Capita Income (2016-17)	195925
Sex Ratio (Census 2011)	902
% of Urban Population (Census 2011)	55.52%

6.5.1 Overview of Incremental Supply

The district of Dehradun is situated in a valley, and shares its boundaries with Uttar Pradesh and Himachal Pradesh the West and Haridwar to the South. This positions it strategically in terms of connectivity and geographic proximity to business centres. As the administrative centre of the state, Dehradun is a hub of economic activity, contributing 19.62 % to the GSDP. Dehradun witnesses a high degree of industrial manufacturing, due to the amenable geographic conditions. Textile and cosmetics manufacturing are a few of the many industries that have manufacturing plants in the district, apart from the SIIDCUL facility at Selaqui. Dehradun also has a higher number of MSME units that offer services than products.

Apart from administrative and geographical reasons, demography also contributes to the heightened economic activity in the region. It is the second most populous district, with 16.97 lakh inhabitants, and has the highest urban population in the state, at over 60%. Dehradun has the second worst sex ratio in the state, with 902 women for 1000 men, which can be arguably attributed to large-scale male in-migration from other hilly districts. These statistics are a part of a larger trend exhibited by the plain districts, where human development indices are often lower compared to their economic prosperity. The reasons for such a phenomenon relate to the labour demands of the manufacturing sector, which act as a pull factor in male migration, thus leading to higher number of incoming rural males to the district. This pull factor has a positive impact on the labour supply, which will be covered in the next few sections, along with the skill development and education infrastructure, and the quality of labour supply.

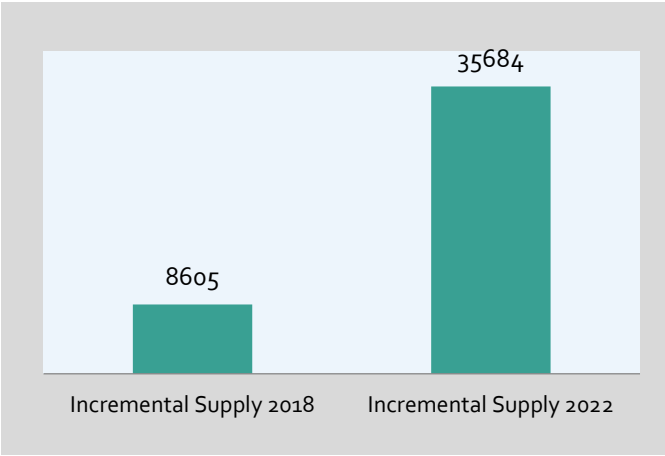
Dehradun is well endowed with widespread education infrastructure. The literacy rate of the district (85.24 %) is considerably higher than the State literacy rate (79.6 %). This is in contrast to the trend of plain districts performing badly on social indicators. The district ranks highest in the state for female literacy as well (79.6 %). The enrolment rate in Dehradun stands at just 50 % at the Junior Basic Level,

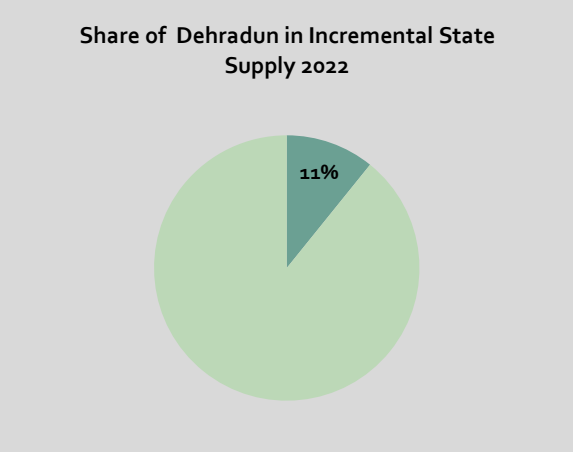
but it only reduces by 2 percentage points for the Senior Basic Level. Even in terms of higher education, the district performs well, with a total of 10 engineering colleges located in the region.

Well renowned institutes of learning like the University of Petroleum and Energy Studies and the Forest Research Institute are located in the district. However, the skilling infrastructure of the district is not at the same level as the educational infrastructure. There are 16 ITIs and 7 Polytechnic Colleges located in the district. Due to the high population of the state, the admission rate (number of people admitted per 1000 population between the ages of 19-34) is low for ITIs (3.5) and Polytechnic College (4.1). However due to the district being an economic centre there is visible private participation in skill development, with 8 TPs being registered in Dehradun. The demographic profile and skill development infrastructure have an impact on the quantity and quality of labour supply, which will be discussed in subsequent sections.

6.5.1.1 Quantity: Incremental Labour Supply

Dehradun, being an administrative and economic hub attracts population, especially in the working age category (15-65). Being a populous district, the incremental labour supply provided by Dehradun is high



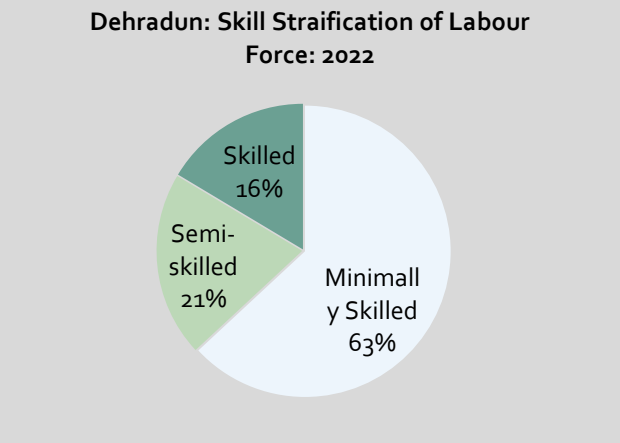


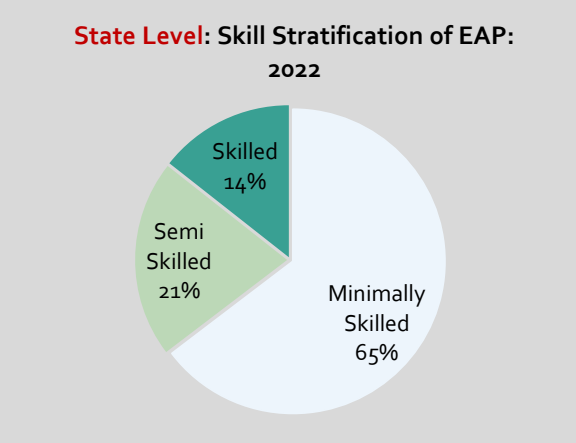
at 8605 and 35684 in 2018 and 2022 respectively. Out of the state level incremental labour supply, Dehradun accounts for 11 %.

6.5.1.2 Quality: Skill Profile of the District

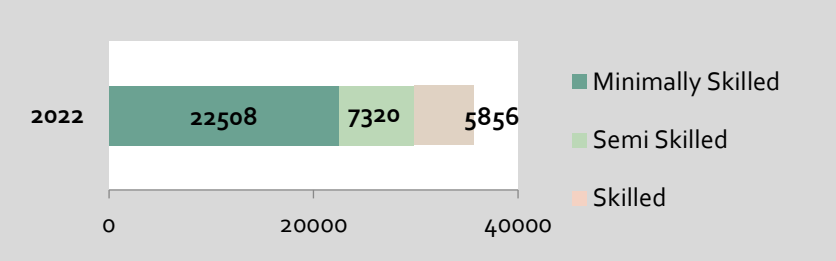
The overall infrastructure including economic growth, education and skill development infrastructure contributes to a relatively higher percentage of skilled population, 16 % in the district compared to State level figures of 14 %.

In 2022, the number of minimally skilled, semi-skilled and skilled population would stand at22508, 7320 and 5856 additional persons to the labour force respectively.





Key Takeaway: While Dehradun boasts of a credible education infrastructure, the skilling infrastructure



in schools is lacking. Ground interviews reveal that while some government ITIs are extremely sought after, their intake and consequently placement is too low to significantly impact the percentage of skilled population. This is due to the populous nature of the district, as well as the low number of ITIs. Along with infrastructure, the perception of skilling also requires some attention, as 41 % of the labour force feels that skilling is a means of career progression.

In essence, though the percentage of skilled population is high, it is a result of varied economic opportunities (incentivize skilling) and educational facilities (key factor contributing to skilling). The skilling infrastructure remains inadequate. It poses a problem, as the skilled population percentage is not a result of targeted policies but a by-product of the overall ecosystem. In order to sustain the skilled percentage, or possibly to enhance it, considerable human resource is required to access adequate skilling facilities, as well as to overhaul skilling perceptions held by both employers and labour force.

This section provides an overview of the incremental supply and skill categorization of labour force by 2022. The next section will comprise of sector specific employment created by 2022

6.5.2 Overview of Incremental Demand

Dehradun ranks 3rd in jobs projected to be created overall in the state. Following are the salient details of a sector wise breakdown on the same.

Sector	Incremental Demand
Agriculture and Allied Activities	2803
Automobiles	701
Beauty & Wellness	631
BFSI	1509
Capital Goods	997
Chemicals	1161
Construction	569
Electronics	1597
Food Industry	2404
Furniture & Fittings	351
Gems And Jewellery	243
Green	72
Handicrafts & Carpets	237
Healthcare	422
Iron & Steel	584
IT-ITeS	5097
Leather	305
Life Sciences	2670
Logistics	56
Mining	1038
Paint & Coating	31
Power	27
Retail	1213
Rubber	660
Telecom	282
Textile & Apparel	3975
Tourism And Hospitality	968
Others	699
Grand Total	**28445**

The total incremental demand for the district of Dehradun is 32,096, which is 16.80% of the total incremental demand for the state. Following are additional points to be considered:

- The most important sector is IT-ITeS, which accounts for 18% of the total demand. The IT park in Dehradun is a major reason for the demand. However, along with this, there is a lot of potential for Information Technology services in this district, given its engineering colleges.

- The small and medium businesses mostly cater to ERP solutions, custom application development, data analytics, and MIS for financial and healthcare industries.
- Other than those with expertise in programming languages, there is a demand for data entry operators, but the demand is volatile and varies according to size and requirement of individual projects.
- There is also plenty of scope for BPOs to successfully run in this district, and across the state, given the high literacy levels. B2R (Business 2 Rural) is a case in point for a successfully run BPO.
- Life Sciences is also going to emerge as a major employment generator in the upcoming years. The PharmaCity in Dehradun will a hub for these jobs.

As seen above, IT-ITeS, Textile and Apparel, Life Sciences, and Food Industry are sectors with high potential in this district.

6.6 Haridwar

6.6.1 Overview of Incremental Supply

Population (15-60 yrs)	698953
Rank based on contribution to GSDP in 2016-17 (constant prices)	1
Per Capita Income (2016-17)	254050
Sex Ratio (Census 2011)	880
% of Urban Population (Census 2011)	36.66%

A plain district in the Garhwal division, Haridwar is best known in the tourism circuit. Haridwar holds significance for being a religious pilgrimage. It is also an important base camp and major connectivity centre in adventure tourism and mountaineering. A hub of economic activity, Haridwar leads the state in its contribution to GSDP (at 30.63%) and has a high concentration of Small, Medium and Large Industries. Patanjali Ayurveda Limited, Hindustan Unilever Limited and Mahindra & Mahindra have manufacturing plants located in Haridwar. Industries in Haridwar are varied and range from the small-scale manufacture of religious artefacts and paraphernalia to the mass production of FMCG and cosmetics goods. The unique advantage of the district is that the raw materials produced and gathered by the agriculture sector can be immediately processed in plants and industrial clusters in Haridwar, leading to many avenues opening up in job creation and skill development. Human Resources add to the economic prosperity of the region, as it is the recipient of both skilled and unskilled labour from all over the state.

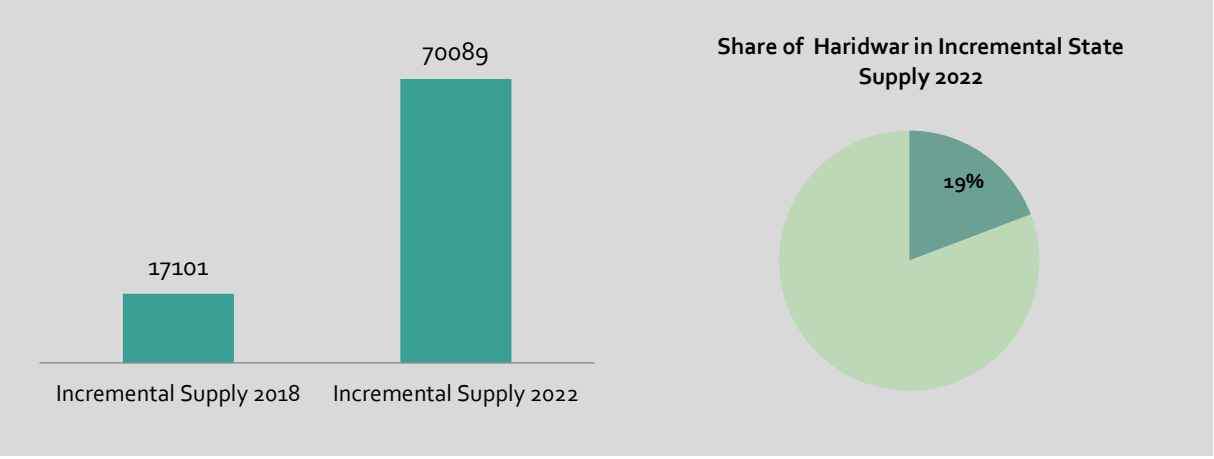
The district is an urban centre and has the highest population in the state, at 18.9 lakh inhabitants. The other demographic features of the region are in line with some of the larger trends found in the plain districts. In essence, plain districts do not perform well on social indicators when compared to the hilly counterparts and especially in contrast to the economic prosperity they exhibit. While Haridwar is the biggest contributor to the GSDP it also fares the poorest, with a sex ratio of only 880 females to 1000 males, a literacy rate of 73.43% with a gap of 16.25% between males and females, and a Work Force Participation Rate of just 30.6%. In order to understand more about the labour conditions, the next few sections undertake an assessment of the education and skill level of the district, to evaluate the scale of policies required to effect these shifts, following an assessment of the current skilling and educational scenario.

Keeping in line with the larger trend of the plain districts underperforming on social indicators, the literacy rate of the district stands at 74.62 % which is lower than the state-level literacy rate of 79.62 %. The enrolment rate at the Junior Basic Level stands at 68% and drops to 50% at the Senior Basic Level, which indicates a paucity of resources due to high population pressure which the district faces. However in terms of higher education, the district performs well with 6 engineering colleges of varied strengths, located in the district. In fact, the highest admission rate in the state (number of people admitted per 1000 population between the ages of 19-34) for engineering colleges is found in Haridwar at 4.9 people. In contrast the admission rate for ITI stands at 2.2% and Polytechnic (1.0%), which are the second lowest admission rates in the state for these institutions. Hence, the skilling infrastructure does not perform as well as education infrastructure by a significant margin.

There are 11 ITIs and 2 Polytechnic Colleges located in the district, with the highest number of ITIs standing at 24 in Almora. However due to the district being an economic centre there is visible private participation in skill development with 6 TPs being registered in the district. The demographic profile and skill development infrastructure have an impact on the quantity and quality of labour supply which will be discussed in the next sections

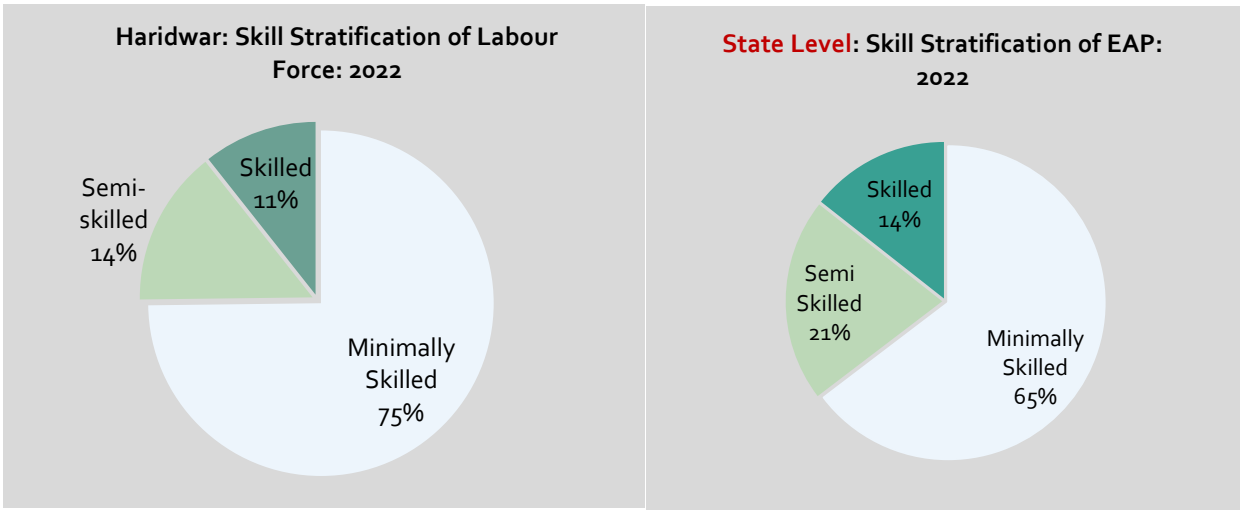
6.6.1.1 Quantity: Incremental Labour Supply

Haridwar, being an economic hub attracts population especially in the working age category (15-65). Being a populous district, the incremental labour supply provided by Haridwar is high standing at 17101 and 70089 in 2018 and 2022 respectively. Out of the state-level incremental labour supply, Haridwar accounts for a significant 19%.



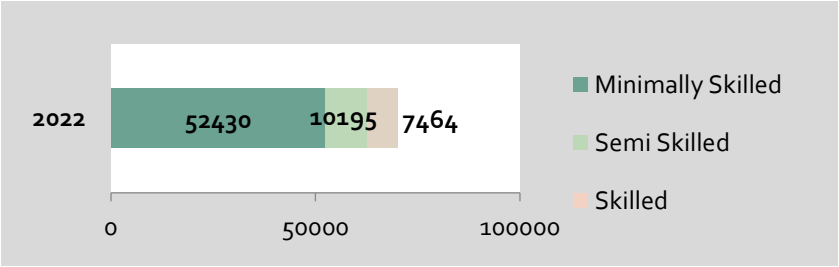
6.6.1.2 *Quality: Skill Profile of the District*

The lack of adequate skilling infrastructure has had an adverse impact on the skill makeup of the labour force, with only 11% of labour force categorized as skilled. It is lower than the state-level skilled percentage by four points. However other plain districts like Nanital and Udham Singh Nagar have comparable proportion of skilled population i.e. 11% and 10% respectvely.



The strength of the minimally skilled population at 75% which is significantly higher than the state level figures i.e. 65%, is cause for concern. As Haridwar contributes significantly to the overall labour supply, a high percentage of minimally skilled population has repercussions for the entire labour force of the state.

In 2022, as per the projection the number of minimally skilled, semi-skilled and skilled population would stand at 52430, 10195 and 7464 persons to labour force respectively.



Key Takeaway: While Haridwar is one of the employment creating districts in the state, the skill development infrastructure has not been adequately developed. However, considering the economic prosperity and high connectivity of the region, targeted public and private efforts can lead to fast paced infrastructure development. The perception towards skilling is concerning though. Only 21% of the labour force believes that skilling is a means for career progression. Ground interviews with hiring managers at big plants revealed a similar perception of skilling. They considered formal training to be of inadequate quality leading to in-house training of almost all new recruits. This insight is pertinent as it leads us to answers regarding developing the skilling potential of highly populated and urbanized

areas like Haridwar. Large industries could be encouraged to get involved in private skill training to ensure the employability of the skilled personnel. Moreover from the labour perspective, there needs to be significant wage differentiation between skilled and unskilled labour as this will improve and perhaps enhance the outlook towards skilling, which is held by the labour force.

6.6.2 Overview of Incremental Demand

Haridwar ranks 1st number in jobs projected to be created overall in the state. Following are the salient details of a sector wise breakdown on the same.

Sector	Incremental Demand
Agriculture and Allied Activities	4809
Automobiles	4653
Beauty & Wellness	519
BFSI	1913
Capital Goods	1439
Chemicals	2443
Construction	1382
Electronics	4141
Food Industry	4945
Furniture & Fittings	871
Gems And Jewellery	97
Green	63
Handicrafts & Carpets	265
Healthcare	2208
Iron & Steel	2310
IT-ITeS	1422
Leather	440
Life Sciences	4482
Logistics	188
Mining	65
Paint & Coating	56
Power	82
Retail	888
Rubber	1045
Telecom	995
Textile & Apparel	2540
Tourism And Hospitality	970
Others	8895

Grand Total	55310

The total incremental demand for the district of Haridwar is 33,310, which is 28.95% of the total incremental demand for the state. Following are additional points to be considered:

- The major sectors that contribute to this demand are automobiles, food industry, electronics, and life sciences.
- Mahindra & Mahindra, Bajaj Auto, and Hero MotoCorp, all have manufacturing plants in Haridwar. It is also filled with plenty of auto parts manufacturers (like auto control cables and transmission gears).
- Food processing industry is gaining a lot of traction because of the Patanjali Food and Herbal Park, which has close to 10,000 workers engaged in food processing and varied natural cosmetic products. The food-processing vertical of Patanjali brings in the largest share of revenue.

As seen above, Automobiles, Food Industry, Electronics, Life Sciences, Iron and Steel, and Textile and Apparel are the sectors with high potential in this district.

6.7 Nainital

Population (15-60 yrs)	592867
Rank based on contribution to GSDP in 2016-17 (constant prices)	4
Per Capita Income (2016-17)	115117
Sex Ratio (Census 2011)	934
% of Urban Population (Census 2011)	38.94

6.7.1 Overview of Incremental Supply

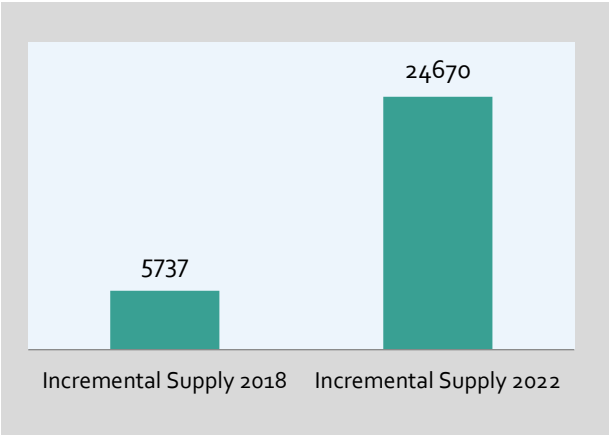
Situated along Almora, Champawat and Udham Singh Nagar, Nainital is often touted as the most beautiful and popular of tourist destinations in Uttarakhand. The district has features of both plain and hill districts as some parts of the district are part of the plain regions. For example, in spite of hilly terrain located in the district, it is well- connected through roads and rail network. It falls under the Kumaon division and is the fourth largest district in terms of population in the state at 9.55 lakhs. A significant percentage of the population resides in the urban areas i.e. 38.9 %. With a sex ratio of 934 females per 1000 males, the region follows a similar pattern with other plain districts i.e. high percentage of urban population and low sex ratio.

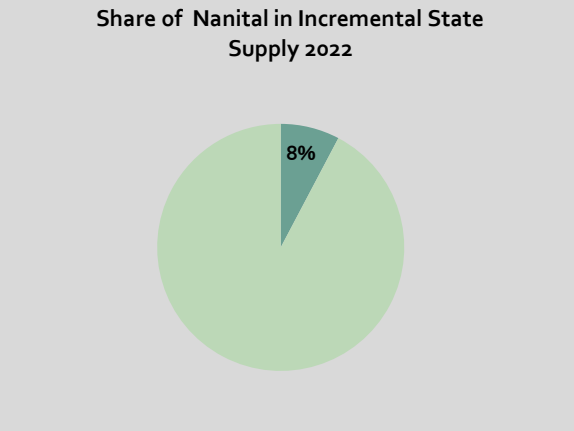
Nainital industries focus on handmade products, food processing and gems & jewellery, and these units are situated away from town. Haldwani and Ranibagh have industrial clusters and the presence of SIIDCUL, which enables job creation and propels growth. In 2016-17, the district contributed 7 % to the GSDP at current prices. This is fourth largest contribution to the GSDP (2016-17), and this position has been consistently maintained by Nainital for the last couple of years. Both demographic profile and economic performance impact the quality and quantity of labour supply which will be discussed in the ensuing sections along with skilling and educational infrastructure.

The literacy rate of the districts (84.44 %) is considerably higher than the State literacy rate at (79.6 %). This is in contrast to the trend of plain districts performing badly on social indicators. Nainital also enjoys a favourable Pupil Teacher Ratio (PTR) i.e. 1:16 for Junior Basic and 1: 14 for Senior Basic schools. The PTR is the same as the State figures for both these levels. The higher education infrastructure follows a similar pattern, the district is well endowed, with 3 engineering colleges located in the district. Even with the skill development infrastructure, the district performs well as there are 14 ITIs and 5 Polytechnic Colleges. There is visible private participation in skill development as well, with 5 TPs being registered in the district.

6.7.1.1 Quantity: Incremental Labour Supply

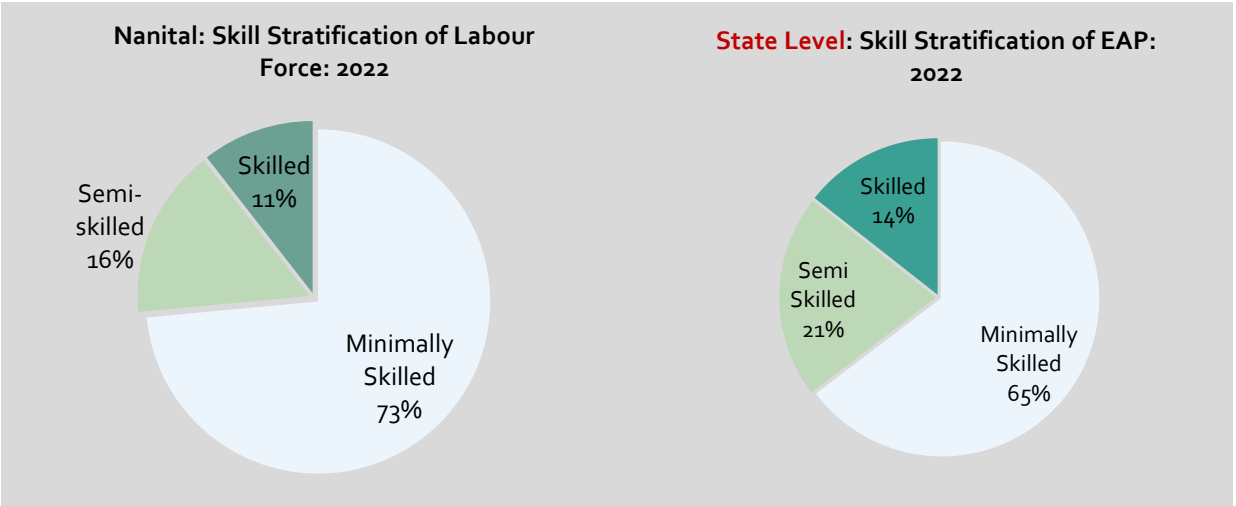
Nainital being an economic hub attracts population especially in the working age category (15-65). Being a populous district, the incremental labour supply provided by Nainital is high standing at 5737 and 24670 in 2018 and 2022 respectively. Out of the state level incremental labour supply, Nainital accounts for 8 %.

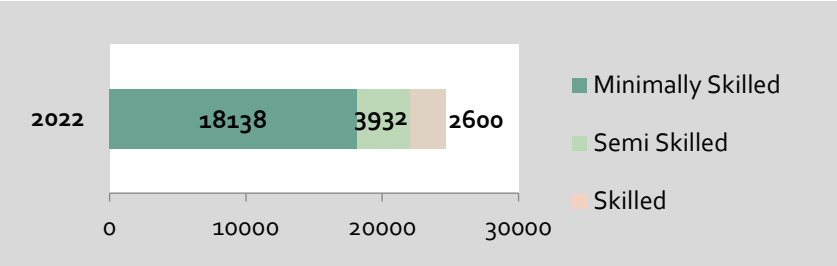




6.7.1.2 Quality: Skill Profile of the District

The percentage of Skilled and Semi Skilled population stands at 11 % and 16 % respectively. Inspite of having a number of ITIs, Polytechs and PMKVY centres, the population pressure on skilling infrastructre leads to a relatively lowe skilled percentage 11 % compared to State level skilled percIn 2022 as per the projection, the number of minimally skilled, semi-skilled and skilled population would stand at 18138, 3932 and 2600 persons respectively.





Key Takeaway: While Nainital boasts of a considerable skilling infrastructure, perhaps one of the best amongst the plain districts the percentage of skilled population is low. About 67 % of the labour force believes that skilling is one of the means for career progression. In such a positive atmosphere skilling, it is important to increase access to skilling centres by creating more infrastructures. For example, as Nainital fares very well in terms of tourism development, big hotel chains can be encouraged to be involved in skilling the labour force through PMKVY. This will increase the number of skilling options available and also ensure employability of the skilled personnel. In essence, skilling infrastructure has to be increased to improve overall access but also to ensure economic viability for the specific job roles.

6.7.2 Overview of Incremental Demand

Nainital ranks 4th in number of jobs projected to be created overall in the state. Following are the salient details of a sector wise breakdown on the same.

Sector	Incremental Demand
Agriculture and Allied Activities	2654
Automobiles	171
Beauty & Wellness	74
BFSI	875
Chemicals	58
Construction	174
Electronics	66
Food Industry	1301
Furniture & Fittings	360
Gems And Jewellery	57
Iron & Steel	383
IT-ITeS	499
Life Sciences	91
Mining	203
Paint & Coating	59
Power	44
Retail	282
Rubber	44

Telecom	64
Textile & Apparel	372
Tourism And Hospitality	1066
Others	3958
Grand Total	**12855**

The total incremental demand for the district of Nainital is 12,855, which is 6.73% of the total incremental demand for the state. Following are additional points to be considered:

- Tourism and Hospitality is a major contributor to this demand, which is unsurprising considering Nainital is popularly known as the lake district of Uttarakhand.
- After Dehradun, Nainital district has the highest number of hotels in the state (19.85% for Nainital and 35.50% for Dehradun).
- Nainital is also a commercial hub, primarily centred around Haldwani.
- MSMEs engaged in food processing are present in large numbers. It is also a major vegetable and fruit market.

As seen above, Food Industry, and Tourism and Hospitality are sectors with high potential in this district.

6.8 Pauri Garhwal

Population (15-60 yrs)	398978
Rank based on contribution to GSDP in 2016-17 (constant prices)	5
Per Capita Income (2016-17)	109973
Sex Ratio (Census 2011)	1103
% of Urban Population (Census 2011)	16.40%

6.8.1 Overview of Incremental Supply

Pauri Garhwal shares its border with Uttar Pradesh and the four planar districts of Uttarakhand. It is the most prosperous hilly district and contributes to 4.15% of the GSDP. It has enormous tourist potential, which is supplemented by good basic infrastructure - village roads and electricity supply - and a robust working population. Both these factors, together with the presence of industries in the district, make it an important hub for manufacturing and development in the state.

In addition to this, being a cultural and religious hub, as well as a connected transportation centre, Pauri can leverage its unique geographic position to boost its importance in the region. This capacity, as well as the general infrastructural advancement of the district, makes it uniquely positioned to achieve greater goals in skill development and education. The subsequent sections evaluate the current status of labour supply and demand, both in terms of quality and quantity.

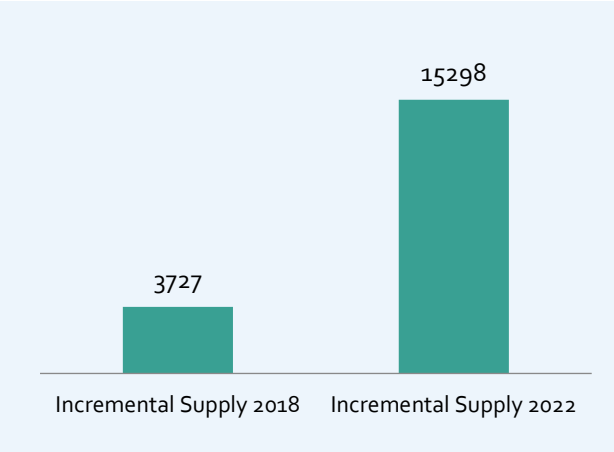
The district boasts of a literacy rate (83.48) which is higher than the State level figures (79.63) and also third highest in Garhwal division. Pauri Garhwal has a favourable PTR i.e. 1:13 at the Junior Basic level, and 1: 26 for Senior Basic schools. The PTR is higher than the State average of 1:25 and 1:27 for Junior Basic and Senior Basic schools respectively. Although it is the fifth most populated district in the state (just below the plain districts), it has low child population pressure per institute when compared to lesser populated neighbouring hill districts of Almora and Tehri Garhwal.

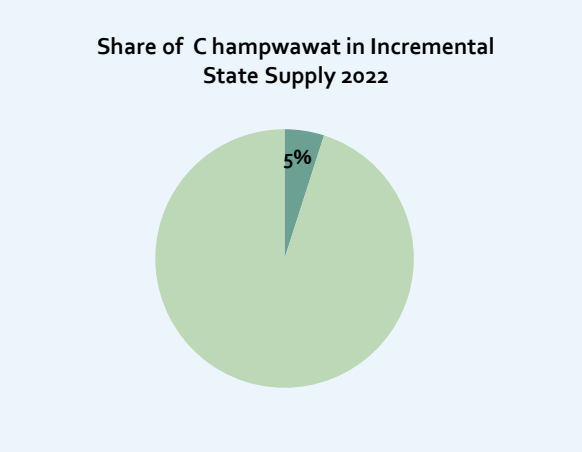
At the primary level, one junior basic school is available for 38 children (5-9 years). The number increases at the middle school level with one senior basic school available for 169 children (10-13 years). While in Almora availability of schools at both primary and middle level stands at 1: 40 and 1:231 respectively, Tehri's figures for the same levels of schools stands at 1:40 and 1:147. This trend of higher development in Pauri is repeated in the case of higher education. The Govind Ballabh Pant Institute of Engineering & Technology is located in the district, which offers courses in engineering at the undergraduate and graduate level.

This intra-district variation in educational inputs is not sustained when it comes to skill development. While a considerable number of ITIs are located in the district (19), other districts of Tehri Garhwal (with a similar Gross District Domestic Product) and Almora (with a similar population) boast of a higher number of ITIs i.e. 20 and 24 respectively. However private participation in skill development is observed in the district under PMKVY with 2 Training Partners registered in the region. This is in contrast to dominant trend amongst hill districts, where private partners under PMKVY are found only in a few districts. Adequate education infrastructure, as well as developing skilling infrastructure, has contributed to the quantity and quality of labour, of which there will be an overview in the next sections.

6.8.1.1 Quantity: Incremental Labour Supply

As mentioned above, Pauri Garhwal is the one of the most populated hill districts. The demographic dividend has an impact on the labour supply of the region. The district would provide for 3727 and

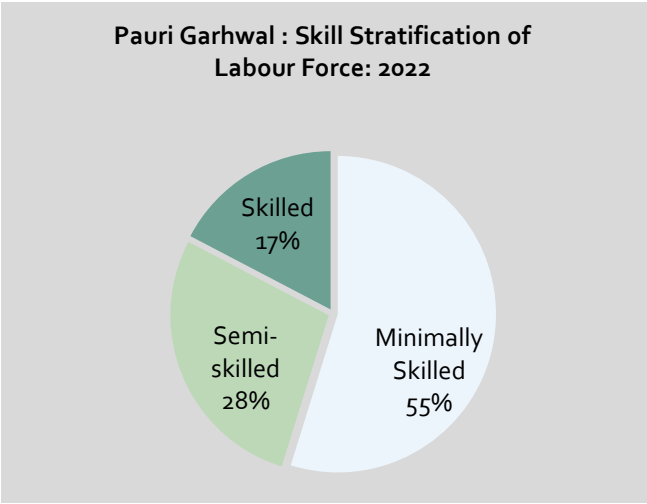


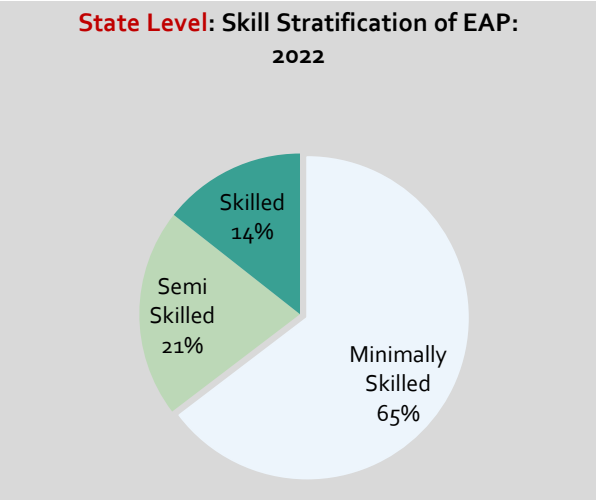


15298 persons as incremental labour force by 2018 -2022 respectively. This incremental supply would account for 4% of the total incremental labour force in the state for 2022.

6.8.1.2 Quality: Skill Profile of Labour Supply

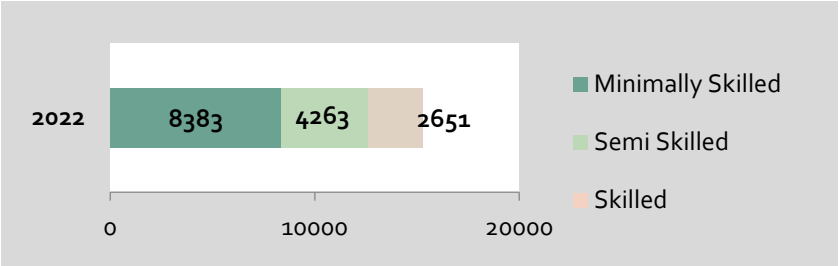
The presence of ITIs and a well formed education infrastructure in the district has had a positive impact on the skill makeup of the labour force. Pauri Garhwal has one of the highest skilled population in the





state, with 17 % of the labour force categorized as skilled. This is high compared to state level figures of 14 % of labour force as skilled.

In 2022, the number of skilled, semi-skilled and minimally skilled population would stand at 8972, 1318 and 602 persons to the labour force respectively.



Key Takeaway: As mentioned above, existence of well-formed and comparatively adequate education infrastructure and skill development centres has had a positive impact on the skill breakup of the labour force. The awareness about skill development programmes i.e. PMKVY is also high with 80 % of the labour force being aware of the scheme. However, only 26 % of the labour force acknowledges formal training as a means of career progression, which is a worrying trend. Outlook towards skilling impacts skilling programmes in the long run, with negative attitudes leading to non-retention and low enrolment of skilling programmes. Hence they need to be tackled through engagement with MSMEs and community mobilization.

6.8.2 Overview of Incremental Demand

Pauri Garhwal ranks 5th in the number of jobs projected to be created overall in the state. Following are the salient details of a sector wise breakdown on the same.

Sector	Incremental Demand
Agriculture and Allied Activities	2169
Automobiles	184
Beauty & Wellness	196
BFSI	300
Chemicals	53
Construction	108
Electronics	1368
Food Industry	901
Furniture & Fittings	336
Gems And Jewellery	53
Handicrafts & Carpets	71
Healthcare	58

Iron & Steel	695
IT-ITeS	274
Life Sciences	169
Logistics	59
Mining	41
Retail	69
Rubber	48
Telecom	403
Textile & Apparel	541
Tourism And Hospitality	488
Others	1058
Grand Total	**9642**

The total incremental demand for the district of Pauri Garhwal is 9,642, which is 5.05% of the total incremental demand for the state. Following are additional points to be considered:

- Apart from agriculture, electronics sector and Iron & Steel will generate a substantial share of the total incremental jobs in the district.
- The Jasodharpur Industrial Park houses around 20 steel production plants.
- In tourism, two new entry gates into Jim Corbett National Park have been constructed in the Kotdwar region of the district. This will spur some employment opportunities for the locals.

As seen above, Agriculture and Allied Activities and Electronics are sectors with high potential in this district.

6.9 Pithoragarh

Population (15-60 yrs)	285249
Rank based on contribution to GSDP in 2016-17 (constant prices)	8
Per Capita Income (2016-17)	101734
Sex Ratio (Census 2011)	1020
% of Urban Population (Census 2011)	14.40%

6.9.1 Overview of Incremental Supply

The Indo-China and Indo-Nepal border are situated on the eastern side of Pithoragarh. On the western side, the district is bordered by Almora, Bageshwar & Champawat districts. It is located at an elevation of 1645 metres and the land comprises of principally hilly terrain. The geographical terrain of the region has an impact on the economic activity. No major industrial cluster is located in the district. There is not much presence of large and medium scale industries. In 2016-17, the district contributed 2% to GSDP at current prices, similar to its neighbouring districts of Bageshwar and Champawat. Connectivity and availability of human resource impact the economic performance of the district. While there is no railway station located within the district, it is still well connected by roads to economic hubs like Almora and Nainital. As far as population is concerned, the district is relatively more populated as compared to its neighbours i.e. Bageshwar and Champawat at 4.83 lakh inhabitants. Cottage industries display potential in the region, especially in the sector of food processing. Both economic activity and demographic overview impact the labour supply of the region, which will be covered in the next section. This will be accompanied by an overview of one of the key determinants of the quality of labour supply i.e. skilling and education infrastructure.

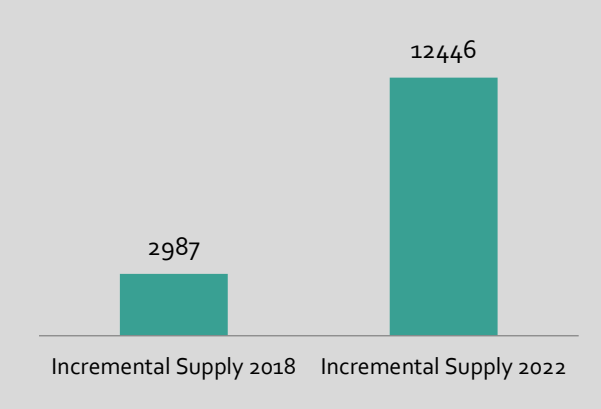
Located on the Kumaon division, the district enjoys a higher literacy rate (82.93 %) as compared to State level figures (79.63). Pithoragarh also enjoys a favourable Pupil Teacher Ratio (PTR) i.e. 1:14 for Junior Basic and 1: 15 for Senior Basic schools. The PTR is higher than the State average of 1:25 and 1:27 for Junior Basic and Senior Basic level. The PTR of the district is the most favourable in the state, indicating adequate human resource at the school level. For school infrastructure, the district also fares well with one Junior Basic School available for every 38 children (5-9 years) in the district while one Senior Basic school is available for every 148 children (10-13 years). These are good figures indicating adequate infrastructure at the school level. For higher education, there are options available within the district. The Seemant Institute of Technology (Uttarakhand University) is located in the district, which offers courses at the undergraduate level for engineering.

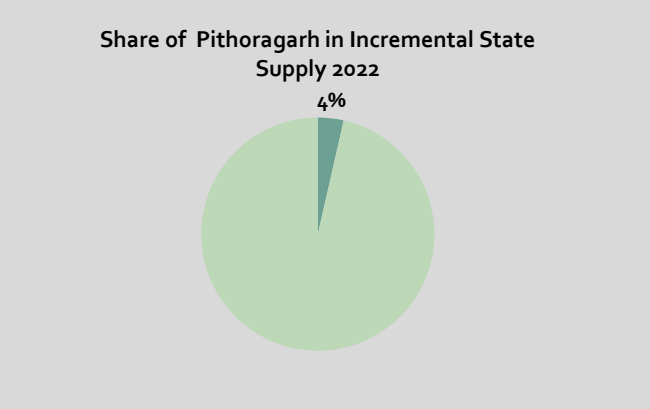
Even the skill development infrastructure of the districts is noteworthy. There are 18 ITIs and 8 Polytechnic Colleges located in the district, which are some of the highest figures in the state. This is

contrast to both Champawat and Bageshwar (similar population) which house a lower number of ITIs i.e. 9 and 6 respectively.

6.9.1.1 Quantity: Incremental Labour Supply

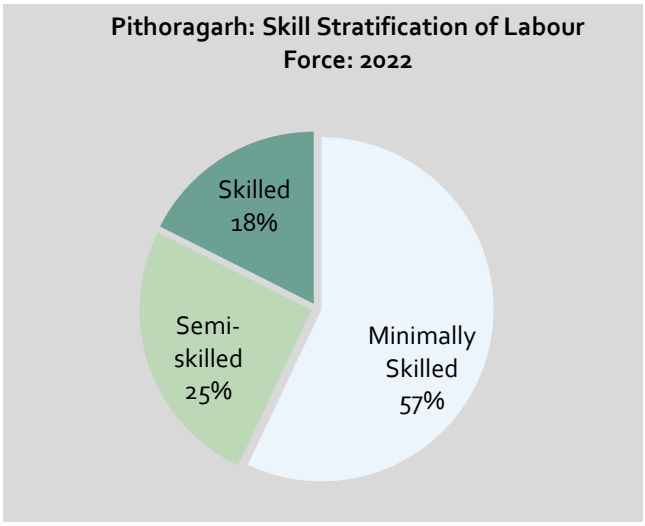
The overall population of the district leads to projection of labour supply. The district of Pithoragarh would provide for 2987 and 12446 persons as incremental labour force in 2018 and by 2022 respectively. The incremental supply would accounts for 4% of the total incremental labour force in the state for 2022.

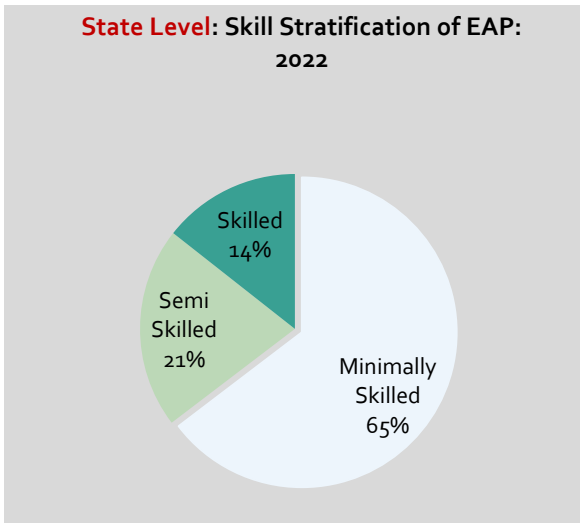




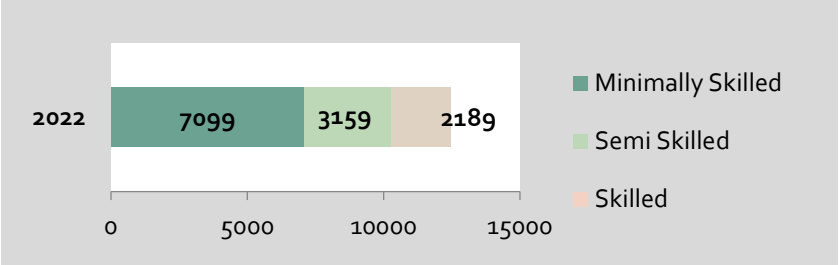
6.9.1.2 Quality: Skill Profile of the District

Even though the district lacks rail and connectivity and diverse economic opportunities, the adequate skilling infrastructure has led to a considerable percentage of skilled population. The skill break down of the labour force indicates 18 % of the labour force lying in the skilled category which is higher compared to State level figures of 14 %. Even the percentage of minimally skilled population (57 %) is lower than the state level figures of 65 %.





In 2022, as per the projection the number of skilled, semi-skilled and minimally skilled population would stand at 7099, 3159 and 2189 persons respectively.



Key Takeaway: Like Almora, Pithoragarh is also one such district which benefits from an adequate skilling infrastructure, which leads to high percentage of skilled population. It also impacts awareness and perception of skilling, about 64.4 % of labour force considers formal training as a means of career progression and 83.9 % of labour force is aware about PMKVY is some form or the other. It is important to utilize this environment for skilling, through focusing on skilling for job roles which are economically viable, especially in the sectors of tourism and food processing. Taking advantage of the skill ecosystem, RPL can also be encouraged in the area.

6.9.2 Overview of Incremental Demand

Pithoragarh ranks 8th in number of jobs projected to be created overall in the state. Following are the salient details of a sector wise breakdown on the same.

Sector	Incremental Demand
Agriculture and Allied Activities	2088
Automobiles	50
Beauty & Wellness	46
BFSI	200
Construction	142
Electronics	66
Food Industry	612
Furniture & Fittings	131
Gems And Jewellery	52
Handicrafts & Carpets	173
Healthcare	70
Iron & Steel	94
IT-ITeS	40
Mining	38
Telecom	43
Textile & Apparel	670
Tourism And Hospitality	149
Others	264

Grand Total	4928

The total incremental demand for the district of Pithoragarh is 4,664, which is 2.58% of the total incremental demand for the state. Following are additional points to be considered:

- Pithoragarh is the eastern most Himalayan district in the state. Almost 50% of the incremental demand comes from Agriculture and allied activities.
- 13.1% of the demand comes from the Food industry and 14.3% is from Textile & Apparel.
- Pithoragarh is very rich in flora and fauna, owing to an abundance of natural resources. This results in an active, growing food industry.
- Pithoragarh is particularly known for its production of peaches, pears and potatoes.

As seen above, Agriculture and Allied Activities, Textile and Apparel and Food Industry are sectors with high potential in this district.

6.10 Rudraprayag

Population (15-60 yrs)	113231
Rank based on contribution to GSDP in 2016-17 (constant prices)	12
Per Capita Income (2016-17)	83521
Sex Ratio (Census 2011)	1114
% of Urban Population (Census 2011)	4.10%

6.10.1 Overview of Incremental Supply

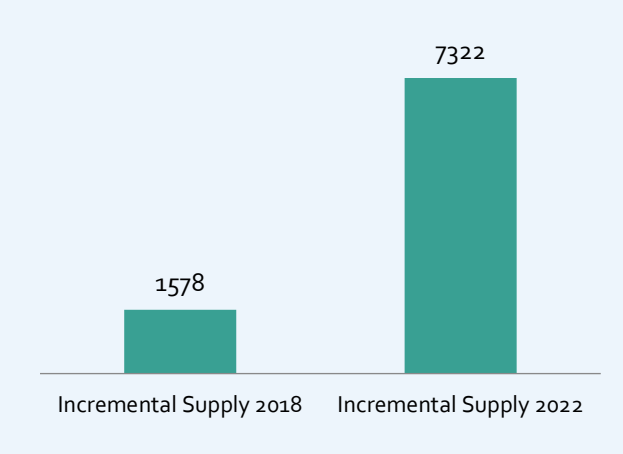
Rudraprayag is surrounded by the districts of Tehri, Pauri, Chamoli and Uttarkashi, and is situated at an elevation of around 900m. The district is home to the famous Kedarnath temple, and the Mandakini is the most important river in the region. With a population of only 2.42 lakh, it is the least populated of all districts in the state. Of the population, more than 95% live in rural areas, which highlights the topographic and demographic challenges involved. The district contributes the lowest to the state economy, at 1 % of GSDP at current prices (2016-17). A major impediment to economic activity is its poor terrain, which does not permit the expansion of transport and connectivity infrastructure. Additionally, access to credit and electricity remain poor. This leads to sustained difficulties for industrial growth. However, as is common with some of the other hilly districts, religious tourism holds potential in the district because of the popular temples located within the region. In the successive sections, the impact of the demographic profile and economic activity on the labour force will be discussed in the form of quality and quantity of the labour, along with an overview of the skilling and education infrastructure.

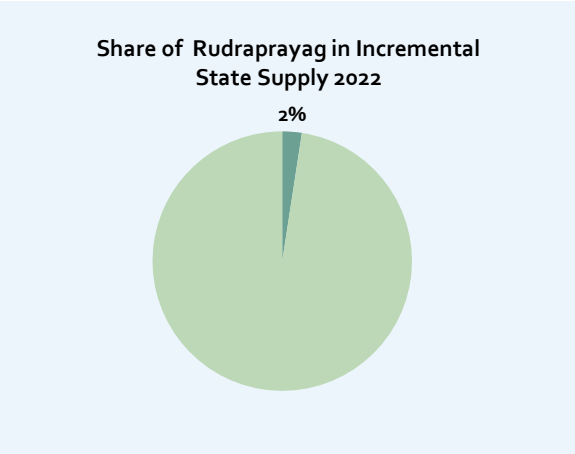
Rudraprayag is in the Garhwal region. The district has a high literacy rate (82.09 %) compared to State level figures (79.63). Rudraprayag also has a favourable Pupil Teacher Ratio (PTR) of 1:16 for Junior Basic and 1: 14 for Senior Basic schools. The PTR is higher than the State average of 1:25 and 1:27 for Junior Basic and Senior. The PTR of the district is one of the best in the state, indicating adequate human resource at the school level. For school infrastructure, the district also fares well with one Junior Basic School available for every 38 children (5-9 years, while one Senior Basic school is available for every 153 children (10-13 years). Also, one Secondary school can be accessed by 177 children (14-18 years). These are the some of the best figures in the state in terms of accessibility to school infrastructure.

However the Skill Development infrastructure in the district is not adequate. There are only 5 ITIs in the district along with 3 Polytechnic Colleges. This is contrast to both Champawat and Bageshwar (with a similar population) which house a higher number of ITIs i.e. 9 and 6 respectively.

6.10.1.1 Quantity: Incremental Labour Supply

The low population of the district leads to low labour supply strength. The district of Uttarkashi would

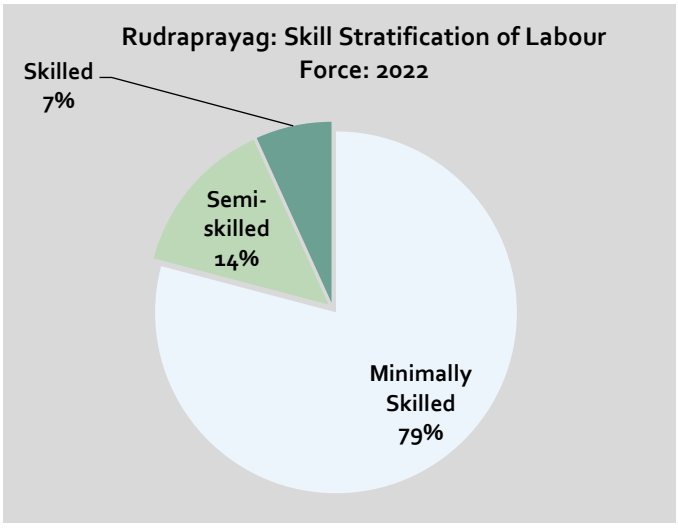


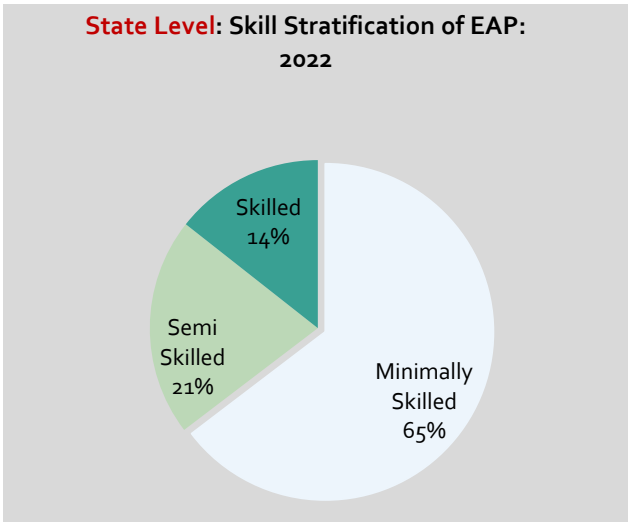


provide for 1578and 7322persons as incremental labour force in 2018 and by 2022 respectively. The incremental supply would accounts for 2% of the total incremental labour force in the state for 2022.

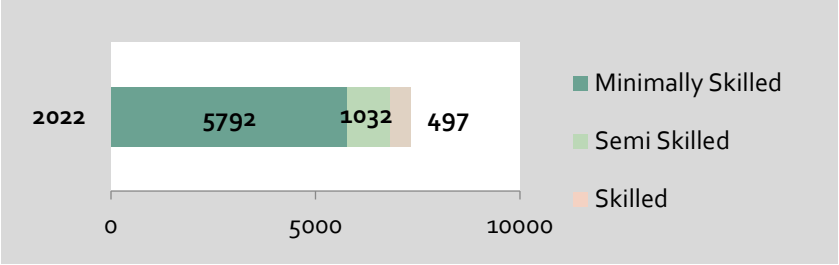
6.10.1.2 Quality: Skill Profile of the District

The lack of large scale employment opportunities and skilling infrastructure contributes to low percentage of skilled population. Only 7 % of the labour force is skilled as compared to 14 % at the State level. The minimally skilled population percentage is higher than the State level by a significant margin, 79 % at the district level vis-à-vis 65 % at the state level.





In 2022, as per the projection, the number of skilled, semi-skilled and minimally skilled population would stand at 5792, 1034 and 497additional persons to the labour force respectively.



Key Takeaway: While the lack of skilling infrastructure impacts the skill makeup of the population, what could be utilized to enhance skilling is the positive perception of skilling. About 76.5 % of the labour force (third highest in the state) believe that skilling is required for career progression. Moreover, about 80 % of the labour force is aware of PMKVY. The awareness levels are higher when compared to similarly populated districts like Bageshwar (35 %) and Champawat (42.6 %). However, in such a positive atmosphere, only 5 batches are run under PMKVY for the whole district. This positive perception about skilling needs to be channelized through increasing access to public and private skill development centres, which offer courses as per the economic profile of the region.

This section provides an overview of the incremental supply and skill categorization of labour force by 2022. The next section will comprise of sector specific employment created by 2022.

6.10.2 Overview of Incremental Demand

Rudraprayag ranks 11th in jobs projected to be created overall in the state. Following are the salient details of a sector wise breakdown on the same.

Sector	Incremental Demand
Agriculture and Allied Activities	765
Automobiles	107
BFSI	105
Chemicals	62
Electronics	111
Food Industry	551
Furniture & Fittings	182
Iron & Steel	144
IT-ITeS	109
Life Sciences	98
Rubber	40
Telecom	103
Textile & Apparel	307

Tourism And Hospitality	440
Others	521
Grand Total	**3645**

The total incremental demand for the district of Rudraprayag is 3,062, which is 1.91% of the total incremental demand for the state. Following are additional points to be considered:

- Rudraprayag is renowned as one of the PanchPrayags, and lies at the confluence of rivers Mandakini and Alaknanda. The background leads to tremendous attraction for tourists and a possible source of jobs.
- Kedarnath is also part of the district and will continue to remain a major revenue contributing and employment generating destination.
- Rudraprayag is also home to some ethno-botanical resources and lesser known wild edible fruits. Surveys conducted identified around 280 species, which were found to be economically important.
- Further development and initiatives in this area would lead to job creation in food and life sciences sectors.

As seen above, Agriculture and Allied Activities and Food Industry are the sectors with high potential in this district.

6.11 Tehri Garhwal

Population (15-60 yrs)	352665
Rank based on contribution to GSDP in 2016-17 (constant prices)	7
Per Capita Income (2016-17)	83662
Sex Ratio (Census 2011)	1077
% of Urban Population (Census 2011)	11.33%

6.11.1 Overview of Incremental Supply

Tehri Garhwal is situated in the northwest region of the state of Uttarakhand, and is flanked by Pauri Garhwal, Rudraprayag, Uttarkashi and Dehradun. Nestled in the foothills of the Mussourie range, the district is relatively more populated than other hill districts, with a total population of 6.18 lakh inhabitants. Economically, Tehri performs better than the other hilly districts, contributing 3 % to the GSDP in 2016-17 (current prices), as compared to neighbouring districts of Uttarkashi (2%) and Rudraprayag (1%).

However, the per capita income of the district is the second lowest in the state, standing at INR 83662 (2016-17). This indicates a low standard of living, with relatively higher contribution to GSDP. To an extent, Tehri also suffers from a connectivity issue, which has an impact on market linkages and other economic activities. The region does not boast of any large or medium scale enterprises. However, tourism has been considered as one of the most promising sectors of the district.

The Tehri Hydro Development Corporation Ltd., a major PSU, is a significant source of government employment and private contracting employment in the district. Both demographic and economic factors have an impact on the skill and education infrastructure of the region, as well as the quantity and quality of labour supply. This will be discussed in the ensuing sections.

The district has a favourable Pupil Teacher Ratio (PTR) i.e. 1:16 for Junior Basic level and 1: 14 for Senior Basic level. The PTR is higher than the State average of 1:25 and 1:27 for Junior Basic and Senior Basic levels respectively. Tehri Garhwal is one of the few districts where the PTR is lower at the Senior Basic level from the Junior Basic level. This could be due to low enrolment rates at the Senior Basic Level, with enrolment standing at 72 % for Junior Basic schools, and dropping to 37 % at the senior level.

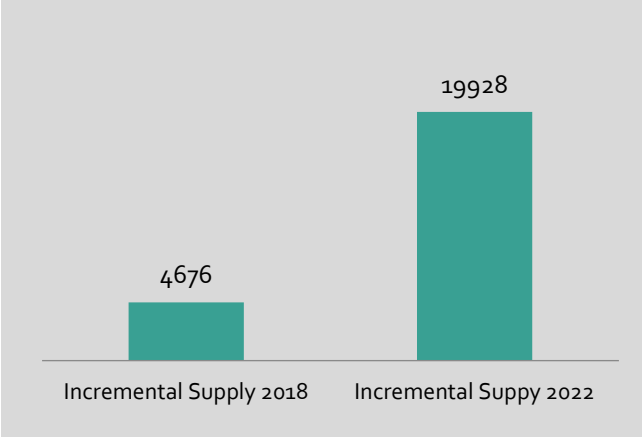
The literacy rate of the district (75.1%) is lower than the State average (79.63 %), and the lowest amongst the hilly districts. The child population pressure for educational institutes stands at 40 children (5-9 years) per Junior Basic Level and 147 children (10-13 years) at the senior basic level. Assessing the child population per institute, Tehri performs better than Pauri Garhwal (a neighbouring district with similar population strength) and Rudraprayag (neighbouring district with lower population).

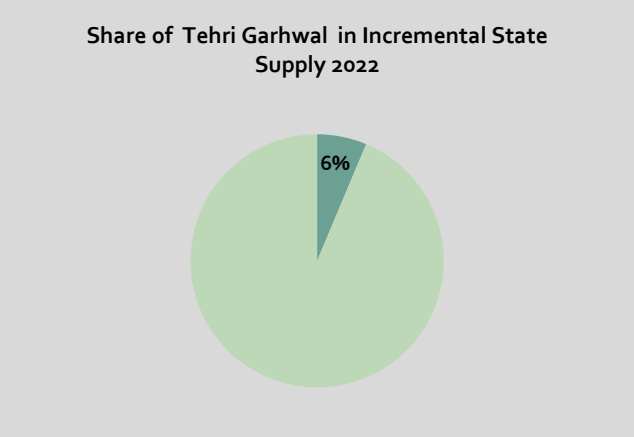
This positive trend continues for skill development infrastructure, with the district recording the second highest number of ITIs (20) and Polytechnic Colleges (8) located in the district. Subsequent sections

provide an overview about the impact of the skill and education infrastructure on the quality of labour supply i.e. skill categorization as well as the quantity of labour force.

6.11.1.1 Quantity: Incremental Labour Supply

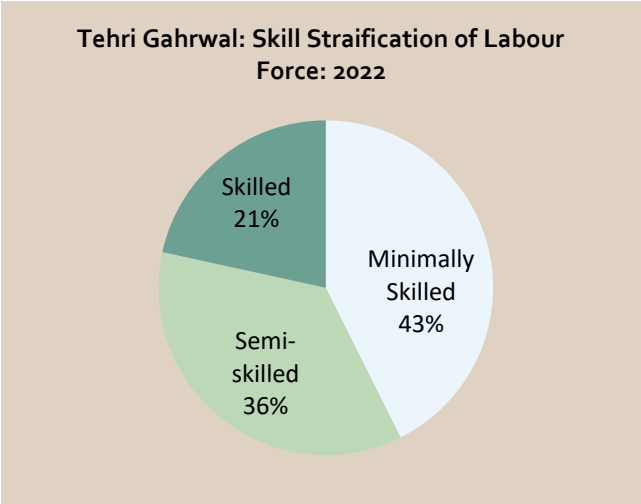
Enjoying relatively higher population strength (compared to other hilly districts), Tehri Garhwal would provide 4676 and 19928 additional persons to the labour force by 2018 and by 2022 respectively. The incremental supply would account for 5% of the total incremental labour force in the state for 2018 and 2022.

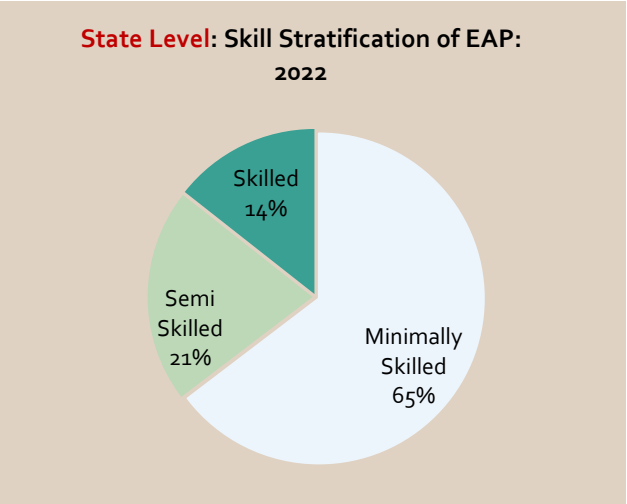




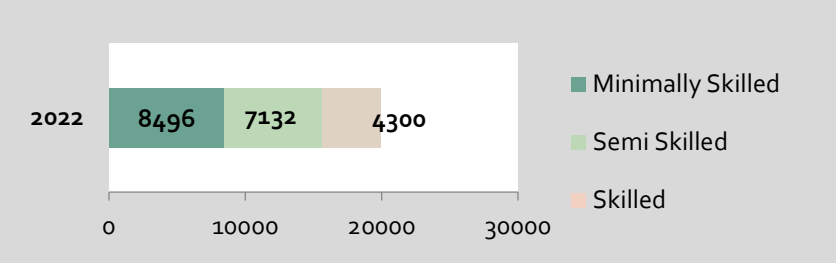
6.11.1.2 Quality: Skill Profile of the District

As compared to the state average, the well-formed skilling infrastructure of the district promotes a high percentage of skilled population and consequently a lower percentage of minimally skilled population.





A significant portion of the district population i.e. 21 %. lies in the skilled category. The district performs well in comparison to state figures, which place 14 % of population in the referred age groups in the Skilled category. As per projections, in 2022, the number of skilled, semi skilled and skilled population stands at 8496, 7132, and 4300 respectively.



Key Takeaway: The adequate skill infrastructure has had a positive impact on the skill makeup of the population. With a low percentage of minimally skilled population, the district displays immense potential for providing a boost to its skilled numbers, especially for sectors like Tourism. In the district, the State Government has specifically been promoting adventure and eco-tourism. Both these sub sectors require trained human resource in soft skills as well as technical knowledge. As tourism is also privately driven, private partners need to be involved in skill training. Presently there is only one Training Provider registered in the district under PMKVY. Private participation in skill training needs to increase to provide Tourism with adequate and quality human resource. Development of sector specific skilling would contribute to overall economic development of the district.

6.11.2 Overview of Incremental Demand

Tehri Garhwal ranks 6th in jobs projected to be created overall in the state. Following are the salient details of a sector wise breakdown on the same.

Sector	Incremental Demand
Agriculture and Allied Activities	1883
Automobiles	155
Beauty & Wellness	86
BFSI	236
Chemicals	55
Construction	100
Electronics	169
Food Industry	682
Furniture & Fittings	294
Gems And Jewellery	69
Handicrafts & Carpets	92
Iron & Steel	272
IT-ITeS	168
Life Sciences	87
Logistics	29
Mining	38

Retail	39
Rubber	45
Telecom	85
Textile & Apparel	591
Tourism And Hospitality	913
Others	376
Grand Total	**6435**

The total incremental demand for the district of Tehri Garhwal is 6,435, which is 3.37% of the total incremental demand for the state. Following are additional points to be considered:

- Tehri Garhwal is one of the largest districts in the state. Almost 31% of this demand comes from Agriculture and Allied Activities, followed by 15% from Tourism and Hospitality.
- The Tehri Lake Festival is Asia's biggest lake festival and is conducted for 3 days.
- Water, aerial and land adventure sports are being developed rapidly in Tehri, in a bid towards making it a top tourist destination of the state.

As seen above, Tourism and Hospitality and Agriculture and Allied Activities are the sectors with high potential in this district.

6.12 Udham Singh Nagar

Population (15-60 yrs)	882908
Rank based on contribution to GSDP in 2016-17 (constant prices)	3
Per Capita Income (2016-17)	187313
Sex Ratio (Census 2011)	920
% of Urban Population (Census 2011)	35.58%

6.12.1 Overview of Incremental Supply

Located in the southernmost tip of Uttarakhand, Udham Singh Nagar (USN) is bordered with Uttar Pradesh, Champawat and Nainital. It is one among the plain districts that have a significant role to play in the economic advancement of the state. Primarily an industrial district, most of the units are clustered in the government instituted Integrated Industrial Estates of Pantnagar and Sitarganj. Based on the industries and other economic activities, the district contributes to 19.7 % of GSDP, the second largest contribution in Uttarakhand. Apart from terrain conditions conducive to the setting up of industries, Udham Singh Nagar also has a population of 16.9 lakhs, with the second highest urban population in the state. This provides critical human resource for economic growth. The highest district level decadal population growth at 33.44% has also been witnessed in Udham Singh Nagar, with a high proportion of the population in economically active age group of 15-65 years.

Assessing the socio economic characteristics of the population reveals interesting trends symptomatic of the other plain districts as well. The plain districts do not perform well on social indicators when compared to their hilly counterparts. For example, the sex ratio for the district stands at 920 women for 1000 men, with the highest sex ratio standing at 1139 women for 1000 men (Almora). This disparity is visible in female literacy rates as well, which remain significantly lower at 60%, compared to the males' at 82%. As plain districts are subject to in-migration from the higher hill districts, the increased population puts excess pressure on the resources of the district, especially on the social infrastructure. The pull factors for most of the plain districts are primarily relatively better employment opportunities and infrastructure.

Udham Singh Nagar, as already discussed, is predominantly an industrial area, focusing on the expansion of the textile and FMCG manufacturing sector in the state. The SIIDCUL facility in Rudrapur houses some of the largest production plants in the state. Availability of economic opportunities has had a great impact on the demographic profile of the region, which is expressed in the exponential decadal growth. In turn, the demographic bulge has had an impact on the quantity of labour force, which will be overviewed in the next section, along with the education and skilling infrastructure as well as the quality of labour supply.

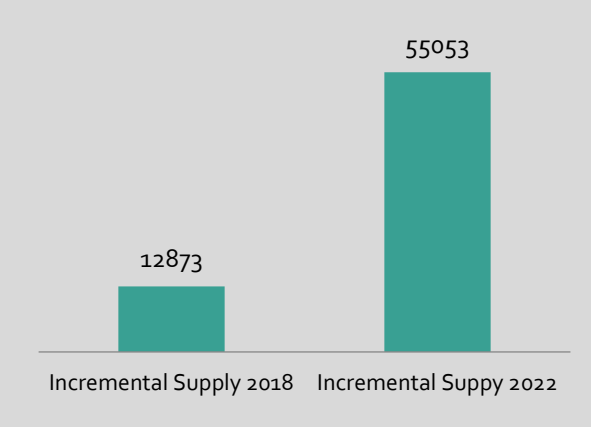
Overall the district performs poorly on many indicators like literacy rate, PTR, and enrolment rates for primary, middle and secondary schools. The literacy rate of the district (75.44%) is the lowest in the state. It is considerably lower than the State level figures of 79.6%. The child population pressure for

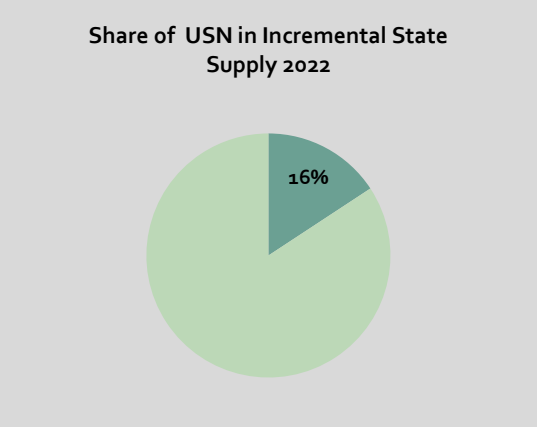
educational facilities is higher than the State average for all levels of schooling, ranging from primary, middle and secondary schools. The generally high population in the state has an impact on all social indicators, as resources are stressed.

The Skilling infrastructure in the district follows a similar pattern. There are 12 ITI s located in the district, which is lower than other districts like Nainital (14) and Dehradun (16). There are also 5 Polytechnic Colleges located in the district. The well-known College of Technology under the Govind Ballabh Pant University of Agriculture & Technology is located in Pantnagar. Being a plain district with negligible connectivity issues, private participation under PMKVY is high, with 7 TPs located in the region, the second highest in the state. In the next two sections, we discuss the labour supply and skill profile of the district.

6.12.1.1 Quantity: Incremental Labour Supply

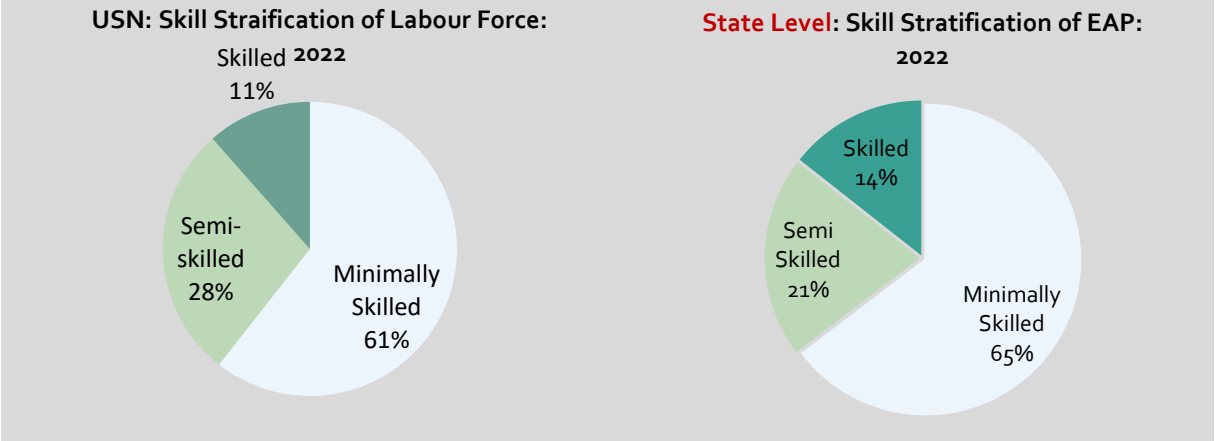
Being a populous district, the incremental labour supply provided by USN is high standing at 12873 and 55053 by 2018 and 2022 respectively. Out of the total state level incremental supply, the districts share would account for 16 %.



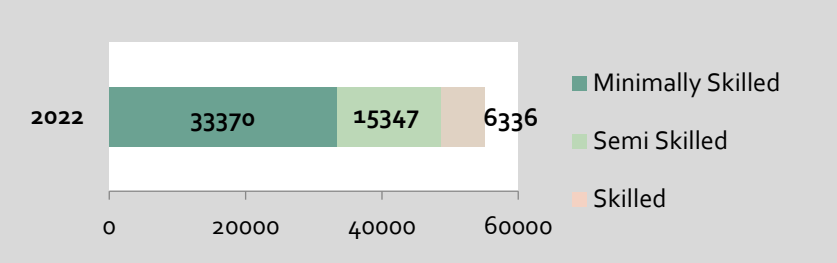


6.12.1.2 Quality: Skill Profile of the District

The ITI, Polytechnic Colleges and Engineering College as well as educational and econmic opportunities contribute to the skilled population. What is notable is that while the Skilled population percentage



(11%) might not be that high, the percentage of Minimally Skilled population in the district (61%) is lower than the State level figures (65 %).



In 2022, the number of minimally skilled, semi-skilled and skilled population stands at 33370, 15347, and 6336 additional persons to the labour force respectively.

Key Takeaway: As mentioned above, plain districts do not perform well on social indicators, leading to the low skilled percentage of the population. However, what is notable is that despite the pressure on skilling centres (12 ITIs, 5 Polytechnics and 7 Training Partners), the percentage of skilled population is still higher than that other plain district of Nainital (10 %) and Haridwar (10 %). This could be alluded to the varied employment opportunities in the district, which act as incentives for skill development. However, the district does not perform well in terms of perception of skilling, with only 60 % of the labour force believing that skill development can contribute to career progression. Hence, apart from increasing skilling infrastructure, which would contribute to better skilling output, it would also be optimum to change the perception of skilling. This could be carried out through targeting employers at MSMEs as well as large enterprises, as they value skilled and unskilled labour differently.

6.12.2 Overview of Incremental Demand

Udham Singh Nagar ranks 2nd in jobs projected to be created overall in the state. Following are the salient details of a sector wise breakdown on the same.

Sector	Incremental Demand
Agriculture and Allied Activities	4214
Automobiles	5694
Beauty & Wellness	162
Capital Good	1494
Chemicals	2504
BFSI	3368
Construction	425
Electronics	2378
Food Industry	6620
Furniture & Fittings	398
Gems And Jewellery	203

Handicrafts & Carpets	350
Healthcare	147
Iron & Steel	1811
IT-ITeS	510
Leather	456
Life Sciences	2952
Mining	32
Paint & Coating	30
Power	32
Retail	500
Rubber	1540
Telecom	186
Textile & Apparel	2024
Tourism And Hospitality	434
Others	5084
Grand Total	**44777**

The total incremental demand for the district of Udham Singh Nagar is 44,777, which is 23.44% of the total incremental demand for the state. Following are additional points to be considered:

- It is one of the important employment-generating districts in the state.
- Almost 19% of this demand comes from the Food Industry, followed by 17% from automobile industry.
- One of the major drivers in the food industry is the Himalayan Mega Food Park, which has been inaugurated in April 2018 and is expected to benefit around 25,000 farmers in the district, as well as neighbouring districts.
- The Park is expected to provide direct and indirect employment to 5000 persons.
- Udham Singh Nagar is already known to be an automobile hub. Recently, Ashok Leyland has expressed interest to further invest in their state-of-the-art Pantnagar plant.

As seen above, Automobiles, Textile and Apparel, Food Industry, and Life Sciences are the sectors with high potential in this district.

6.13 Uttarkashi

Population (15-60 yrs)	191901
Rank based on contribution to GSDP in 2016-17 (constant prices)	10th
Per Capita Income (2016-17)	89190
Sex Ratio (Census 2011)	958
% of Urban Population (Census 2011)	7.36%

6.13.1 Overview of Incremental Supply

Uttarkashi shares its border with Himachal Pradesh in the North, China in the Northeast, and with Rudraprayag, Tehri and Dehradun districts. With an elevation of around 1150m, the district is home to the sources of Bhagirathi and Yamuna. As a result, the district is a prime destination for pilgrimage tourism, attracting hordes of pilgrims every year. However, due to the seasonal nature of the tourism sector, it is not able to uplift the economic performance of the district.

Uttarkashi is among the economically weaker districts, contributing only 2% to GSDP, 2016-17 (current prices). The primary sectors of the region include tourism, horticulture and agriculture. There are no medium or large enterprise in the district. There are, interestingly, some artisanal clusters for woodwork and textile located in the region.

Uttarkashi's economic development is impacted by connectivity and human resource. Though well-connected by road, frequent landslides hamper the connectivity of the region. As far as human resource is concerned, the district is one of the relatively low population areas of the state with a total population of 3.3 lakhs. Both connectivity and availability of human resource impact the quantity and quality of human resource which will be covered in the next few sections along with the skilling and education infrastructure.

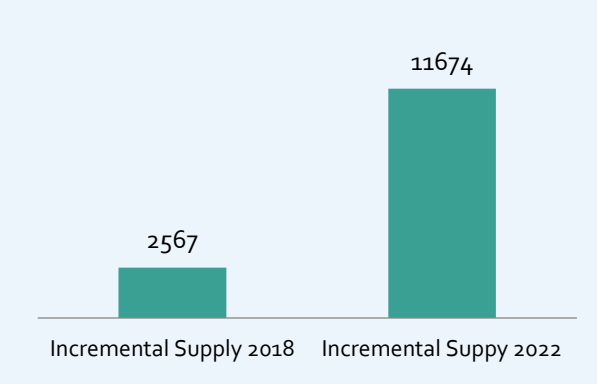
Contrary to the dominant pattern of hill districts performing better on social indicators, the literacy rate of the districts stand at 75.81 % which is lower than the State level figures of 79.63 %. In fact, Uttarkashi is the only hill district in which the Pupil to Teacher Ratio is lower than the state average of 1: 38 for Junior Basic and 1: 26 for Senior Basic Level, indicating a severe lack of infrastructure.

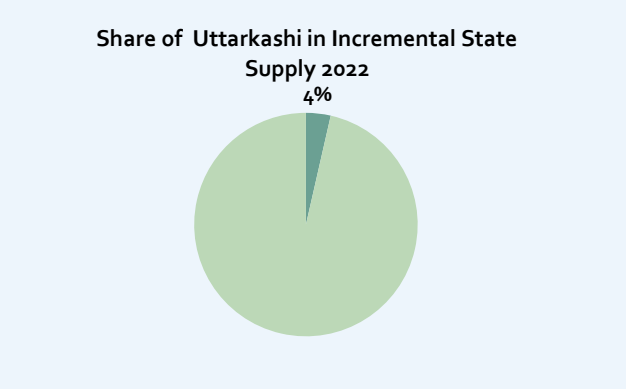
Even with the district sharing a border with the capital Dehradun, there has not been much growth of infrastructure for higher education. There is no government engineering college located in the district. The skilling ecosystem in the state suffers from the same lack of infrastructure. There are 10 ITIs located in the region along with 4 Polytechnic Colleges.

Compared to the neighbouring districts like Chamoli (15 ITIs & 6 Polytechnics) Tehri Garhwal (20 ITIs and 8 Polytechnics) the number of skill training institutes within the districts is low. No private participation under skill training is registered in the district.

6.13.1.1 Quantity: Incremental Labour Supply

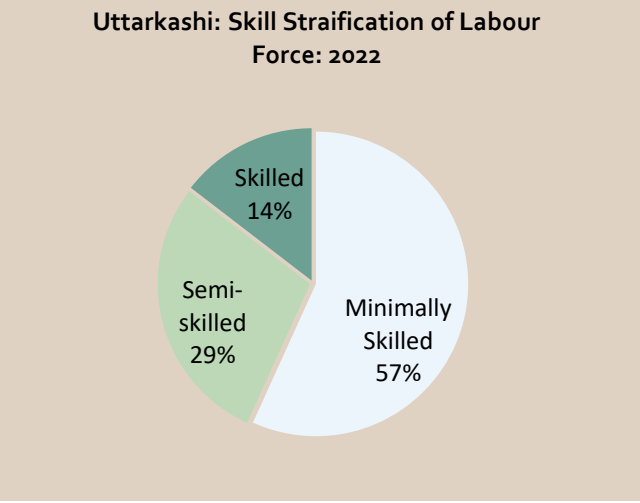
The low population of the state leads to low labour supply strength. The district of Uttarkashi would provide for 2567 and 11674 persons as incremental labour force in 2018 and by 2022 respectively. The incremental supply would accounts for 4% of the total incremental labour force in the state for 2022.

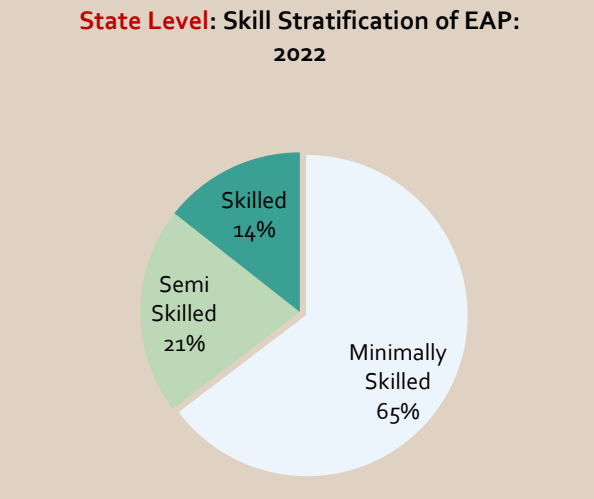




6.13.1.2 Quality Skill Profile of the District

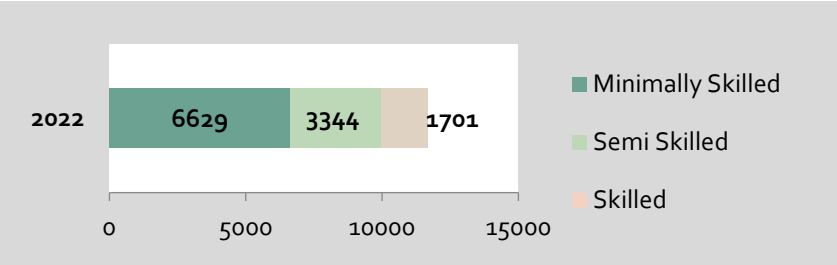
Even though the district suffers from lack of connectivity and human resource, tourism being one of the primary drivers of the district promotes self-entrepreneurship in the region. Lack of both private and public full time employed encourages entrepreneurship in the region which leads to a relatively high percentage of skilled population (14 %) comparable to State level figures.





In 2022, the number of skilled, semi-skilled and minimally skilled population would stand at 6629, 3344 and 1701 persons to the labour force respectively.

Key Takeaway: Due to high level of micro and small entrepreneurs, the skilled percentage of the labour force is relatively high. However, there is low private participation in skill development and very few



training courses available for job roles under Tourism. Even for artisanal centres which are located in the region i.e. wood work and textile, there are no specific courses. In a nutshell, positive perception of skilling exists within the district, 60 % of labour force perceives skilling as a means of career progression and there are skilled groups within the labour force. However, the hard infrastructure is inadequate, especially in terms of training courses offered, which are not concomitant with the economic requirements of the region. The courses as well as accessibility to skill centres need to be upgraded for large scale productive skilling to take place.

6.13.2 Overview of Incremental Demand

Uttarkashi ranks 10th in jobs projected to be created overall in the state. Following are the salient details of a sector wise breakdown on the same.

Sector	Incremental Demand
Agriculture and Allied Activities	1086
Automobiles	54
Beauty & Wellness	61
BFSI	142
Construction	44
Electronics	117
Food Industry	324
Furniture & Fittings	193
Handicrafts & Carpets	56
Iron & Steel	65
IT-ITeS	42
Mining	29
Retail	97
Telecom	82
Textile & Apparel	512
Tourism And Hospitality	334
Others	471

Grand Total	3680

The total incremental demand for the district of Uttarkashi is 3,680, which is 1.93% of the total incremental demand for the state. Following are the points to be considered:

- Almost 33% of this demand is coming from Agriculture and Allied Activities and 15% of the demand is from Textile & Apparel.
- Dunda, known as one of the most backward regions in the district has been developed as an integrated handloom cluster, providing direct and indirect employment to 2000 people. More such clusters are planned in the district.
- The Nelong valley in Uttarkashi is equivalent to Leh-Ladakh in beauty and can create lot of job opportunities. However, the restrictions and cumbersome entry procedures act as a major barrier for tourism growth in this region.

As seen above, Agriculture and Allied Activities and Textile and Apparel are the sectors with high potential in this district.

7. WAY FORWARD

7.1. Stakeholders: Assessment

Skilling is intimately connected to employability, as the goal of all skilling programmes is to enhance the employability of the trainee. As both industry and government carry out skilling and are also the principal job creators, they are the chief agents of bringing about or enhancing affinity between skilling and employment. The roles of all stakeholders i.e. industries as well as the government need to be etched out very well, for them to be able to fulfil their mandate. These roles entail certain responsibilities which are specific in nature, but also some which require a certain amount of convergence from policy makers and job market drivers to move towards effective outcome-based skilling.

This section outlines the present roles and responsibilities of key bodies with regard to the Uttarakhand skill ecosystem, while also suggesting future roles that agencies could take up.

7.1.1. Ministry of Skill Development and Entrepreneurship (MSDE)

The MSDE is the chief nodal agency for the implementation of the National Skill Development Mission (NSDM), 2015. It is the principal agency for formulating skill development norms and standards in the Skill India ecosystem. It also plans and executes the various skill development frameworks, which are pan sectoral in nature. As the key body for enhancing the skill levels of the working population, the MSDE carries out a whole host of functions from coordinating skill development programmes of other ministries to overseeing private sector participation in skill development and carrying out research on the best pedagogical tools for skill-training. The chief and crucial role for the ministry is to stimulate all forms of skill development in the country, which are demand-specific; but also to ensure their adherence to the common guidelines so that skill recognition and accreditation as per national standards are regularized.

Under the Ministry, three main bodies are responsible for various functions (i) National Skill Development Corporation (NSDC) (ii) National Skill Development Agency (NSDA) and (iii) Sector Skill Council (SSC). The NSDC is responsible for encouraging private initiative in skill development, while the NSDA is responsible for setting quality standards in skill training and accreditation through the National Skill Qualification Framework (NSQF). SSCs are industry bodies which are responsible for designing and maintaining standards for all job roles.

7.1.2. National Skill Development Corporation (NSDC)

Skill is intimately related to employability. In the country, the private sector accounts for more than 90 % in overall employment. Hence private participation in skill development is imperative in order to ensure the employability of skilled persons. The NSDC, a first and perhaps only of its kind body i.e. a Public Private Partnership (PPP) set up under the Government of India (GoI) in 2009 is a catalyst as well as a facilitator to encourage and streamline private participation in skill development

Private participation in Skill Development is carried out through two principal channels (i) Pradhan Mantri Kaushal Vikas Yojana (PMKVY), the flagship incentive based skill development scheme of the GoI

and (ii) Industry Partnership through Corporate Social Responsibility (CSR). Under PMKVY, NSDC provides financial incentives in the form of equity/loans/grants to private partners for becoming Training Partners (TPs) and imparting formal skill education to the population.

Accreditation is also provided to the informally skilled after testing through Training Partners. In a sense, NSDC formalizes and streamlines the entire skill ecosystem with respect to private partners and skilled/unskilled personnel. Through industrial partnerships, NSDC facilitates the channelization of CSR funds into skilling programmes either by directly obtaining funding for its activities or by organising support for setting up of Skill Centres/Model Skill Centres. In essence, NSDC offers end-to-end support for all types of private players in the skilling ecosystem.

7.1.3. State Governments, Skill Development Mission: Demand Driven Skilling

Skilling is one of the key national agendas for harnessing the demographic dividend of the country. State Governments play an incredibly important role in shaping this national agenda to regional requirements. Demand-driven skilling will not only lead to enhanced employment but would also contribute to economic development of the region. The state government provides a localized and need-specific direction to the skilling efforts in the region.

State governments not only channelize and structure the skilling efforts at the state level but also replicate the Centre's activity at the regional level, which includes coordinating activities between all government skilling activities. Skill Development Missions have been set up by most State Governments to plan, execute and monitor the skill development activities in the State. Skill Development Missions have been set up in the form of a society (Maharashtra) or a non-profit company (Kerala).

The Uttarakhand Skill Development Mission (UKSDM) has been set up as government body to fulfil the State Government's objective in skill development. The body coordinates the activities under PMKVY with regard to private TPs and encourages entrepreneurship. Like other government departments, this body is also responsible for administration of skill development within Uttarakhand. Hence in a recent move in 2017, in order to create more synergy between skilling programmes and employment, District-level Employment Exchanges have been converted into District Skill Development & Employment Information Centres in order to provide a single window outlet for all skilling and employment related information.

7.1.4. Large Enterprises

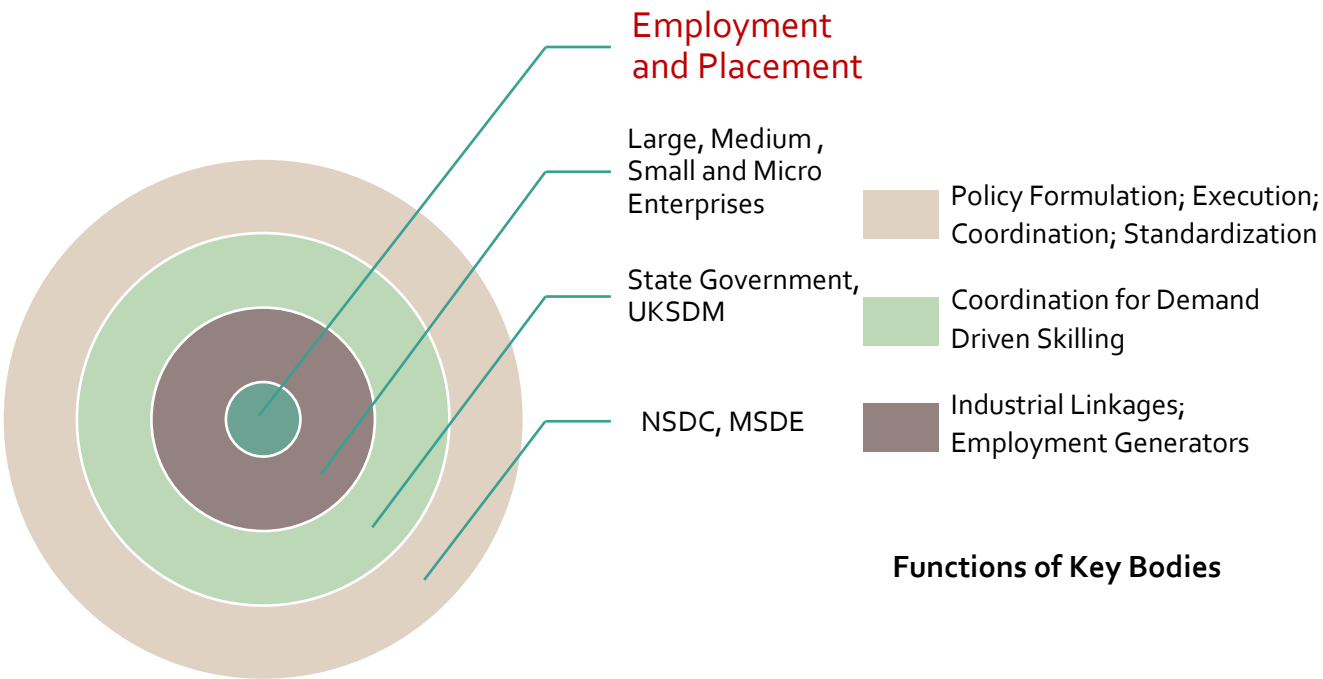
Large Enterprises are key employers with regard to sustainable employment. Both private companies and large scale Public Sector Undertakings (PSUs) employ a large number of people in various roles. Their involvement in the skilling programmes is highly valued as they provide the crucial component of industrial linkage to skill development programmes.In order to satisfy this requirement of a strong correlation between skilling and employment, industry-led bodies like SSC design the curriculum and Qualification Packs (QPs) for the various job roles.

Within the state, large enterprises are found in a few districts like Haridwar, Udham Singh Nagar, Dehradun and Nainital. They are limited to the sectors of automobile parts, food processing, cosmetic manufacturing and plastics. As per interviews carried out on the ground, most of the large scale enterprises carry out in-house training of all personnel, especially entry level workers, before they are formally employed regardless of the background of the prospective worker. Independent apprenticeship programmes are also run by these enterprises so as to cultivate the appropriate human resource for their establishment. This clearly presents the premium which large enterprises attach to formal training. In order to integrate the in-house industrial trainings with the larger job market, the job roles for which the enterprises carry out training could be popularized in the larger skill development ecosystem of the state through PMKVY.

7.1.5. Medium, Small, Micro Enterprises (MSMEs): Behavioural Change

MSMEs are the majority employers in the private sector. They offer opportunities for both self and wage employment. In the last few years, MSMEs registrations have increased all over the state with the plain districts exhibiting noticeable growth.

Unlike large enterprises, MSMEs are found in the hilly districts of the state which is a testament to their growth and reach. With this spread in hand, MSMEs can also contribute towards change in the attitude towards skilling. As widely accepted and pointed out by the NSDM, skilling has always been accorded a lower status than formal education. This attitude not only discourages participation in skill development but also leads to undifferentiated wages between formally skilled and unskilled. However, a change in the perception of the employers/owners of MSMEs i.e. could lead to change in the community and administrative mind-set about skilling. This would impact the attitude towards skilling in a positive manner contributing to demand-driven skilling based on the needs of the working age population.



Skilling Ecosystem

7.1.6. District Level Skill Development and Employment Exchange

The erstwhile District-level Employment Exchanges enjoy access to data bases about youth profiles in the district (applications for State Government jobs have to register at District Level Employment Exchanges). Based on this information, targeted messaging for encouraging skill development could also be carried out by District level bodies. With the convergence of the Skilling and Employment departments, the District Level Skill Development and Employment Exchange can function as nodal bodies for disseminating information about skill development to the working age population. As a local administrative body, the District Level bodies could also periodically review the skill infrastructure (both private and public) which is available in the district and make suitable suggestions.

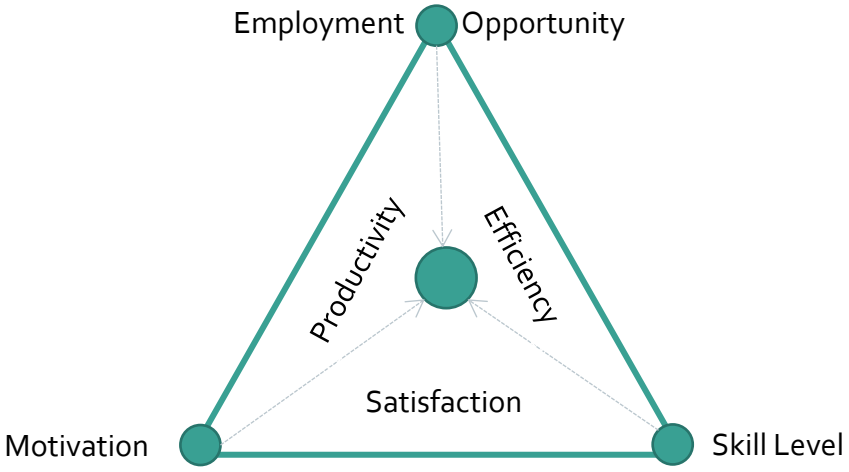
As the key government body on the ground, they can play the role of information disseminator and monitoring for skill development activities. Over the last couple of years, the skill ecosystem in India has changed massively; however monitoring mechanisms which are suited for all entities are not available on the ground. The convergence of the department allows for ground-level monitoring of Training Centres which is especially relevant in this state as the hilly terrain impedes connectivity and has an adverse impact on M&E activities.

Each of the stakeholders mentioned above play a key role as stakeholders. They can support the efforts towards reducing the skill gap in specific ways. Thus it is important to be mindful of these stakeholders and ensure that they work in synergy with each other.

7.2 Key Takeaways

In a comprehensive study where all three aspects of skilling - labour demand, supply and aspirations are analysed, this section combines the three parts to provide recommendations regarding skilling alongside its sub-components of employment and infrastructure. The forthcoming recommendations are provided for various stakeholders in order to improve the attitude towards skilling and also for course-correcting granular level of skills being provided. It is important for the policy makers, monitoring agencies and employers to match the skillsets and expectations of people. In this regard, the recommendations have been planned on the basis of responses to primary surveys, on-ground stakeholder interviews, results from study and research on Government policies since formation of the state in 2000.

As this study has focused on a data driven bottom-up approach for calculating skill gap, the recommendations have also been prepared from the perspective of the eventual beneficiary i.e. the employees or to-be employees and employers or entrepreneurs. As such, skilling ecosystem comprises of three factors: availability of employment opportunities, motivation level of workforce and employable skills among the population. The middle region in the diagram below represents the ideal ecosystem where the available job vacancies are filled with skilled and motivated population and the regions to the side of the centroid represent the result of combination of any two factors out of the three. When making recommendations for strengthening the employment and skilling eco-system in Uttarakhand, the centroid has been a core consideration. The first part of the recommendation section,



Skilling Ecosystem

began by examining how people perceived he notion of skilling employment and subsequently dug deeper.

7.2.1 Employer perception

The skill ecosystem is incomplete unless the employers believe in the efficacy of the trainings being provided. In order to get employers' perception of skill among their workforce, 100 surveys were conducted in each district. In an analysis of surveys conducted with employers, 72% of employers responded positively about increasing the salary of a person if the person has better technical skills. Although, only about 2% of them mentioned formal training as a source for enhancing technical skills. Around 40% of the employers believed that providing in-house training is sufficient for enhancing skills of their workforce. Remaining 58% were split in the ration of 2:1 for work experience and college education as source of skill.

When asked about formal skilling, 41% of employers considered formal skill training as an added benefit while hiring a person, but almost none of them consider it enough to hire somebody as formal skill certificate was always accompanied with either degree from a good college or sufficient relevant work experience. The survey clearly reveals that employers, especially small and medium level employers are not fully convinced by the skilling ecosystem.

Recommendation: There is an urgent need to ensure participation of companies of all scale in the skill ecosystem. Apart from improving industrial linkage, UKSDM and NSDC have to work towards building a positive image of skilling among the employers.

7.2.2 Labour-force Perception

As is evident, two out of three factors in the triangle above are dependent on the labour-force and hence acceptance of skill training among the masses is of utmost importance. As such, apart from value of a skill certification, the real motivator for youth is their increased expectations from wages once they get certified. In this scenario, almost 52% of employers surveyed mentioned that they might increase the salary of their employees if they received short term skill training. But, there is a wide disconnect between quantum of salary increase by employers and those being expected by the labour-force. On an average people expect an increase of 21% in salary, while employers believe that they might increase the wages by 5-6%. Overall people expect to earn at least 15,000 INR post skill training.

Around 21% of employers cited availability of skilled labour force as an important factor in expansion of enterprise and almost 30% believed that the lack of skilled labour is the biggest hindrance in expanding their enterprise. 72% of population surveyed displayed awareness towards short-term skill training initiatives by the state and central government. But, in terms of unwillingness to attend a skill training program, 41% of respondents have mentioned lack of skill centres nearby as the biggest factor in not receiving skill training. Among the promising aspects, 73% of respondents have mentioned that if skill centres provide knowledge about better employment opportunities, then they will be willing to get formally skilled. Lastly, 70% of the total surveyed population that had attended some form of formal skill training mentioned that they would have liked to have more practical hours in their training course

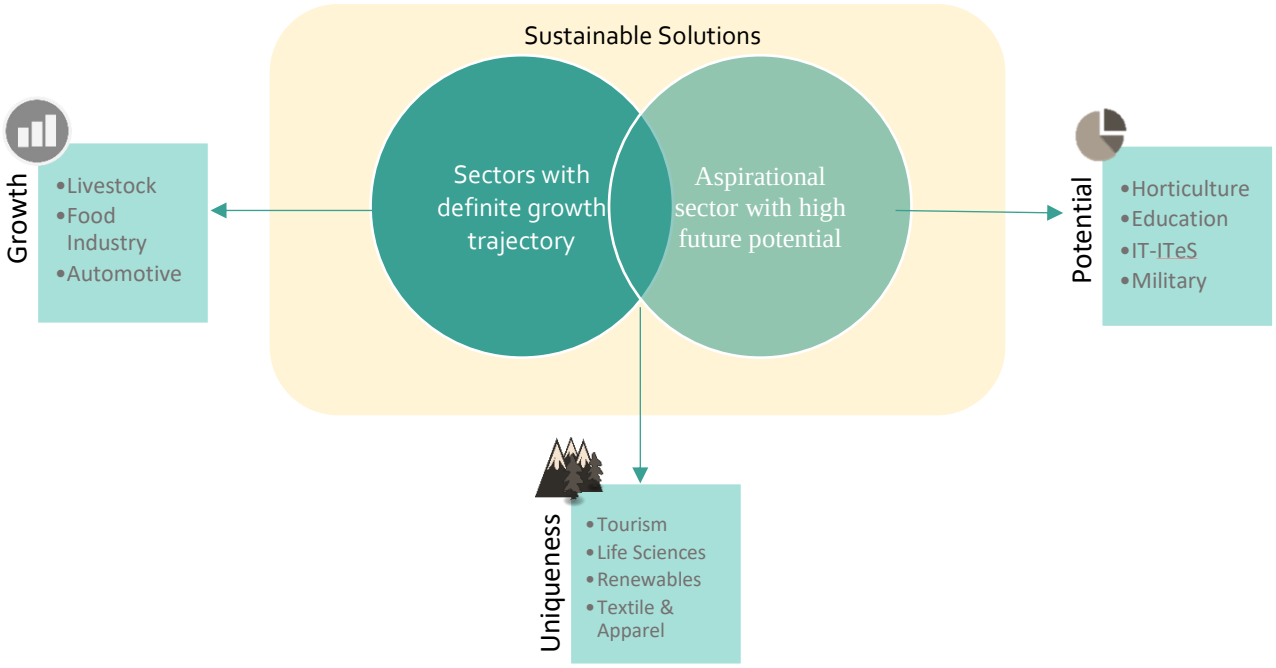
Recommendation: These statistics represent willingness of population to receive skill certification if it either increases their outlook about job opportunities or if it links them to some form of employment opportunity. This provides for an inquisitive labour-force in the state that can be tapped through proper awareness and employment channels for contributing to the overall development of the state.

With employer and labour-force perception of skilling in mind, the following section will provide an overview of sectoral and generic sustainable recommendations.

7.2.3 Sector specific Insights

Based on an analysis of the skill gap paper, the growth of sectors within Uttarakhand can be divided into sector that have

- Definite growth trajectory and showcase opportunities for growth in skill level
- Displayed high potential because of either aspirations or because of interviews with the relevant stakeholders from districts.
- Potential on the basis of crude demand numbers as well as from an analysis of natural advantages of the state.



Following are details in to each of the sections mentioned.

7.2.3.1 Growth Sector

Definite growth opportunities within the state come from three sectors: Automotive, Food Industry and Agriculture (livestock). Automotive and Food Processing industries on one hand have grown within the state with provision of special tax and land incentives from the state government. Apart from this, these sectors also enjoy relevant market opportunities because of proximity to business centres in National Capital Region and other growing populous regions of Uttar Pradesh. On the other hand, livestock (sub-sector of agriculture and allied activities) has grown because of intrinsic demand coming from the state with increase in income levels and awareness regarding consumption of protein rich food. In order to link these growing sectors to incremental supply of skills, the state should focus on:

1) Encouraging big industries within the sector to train workforce beyond current capacities.
2) Ensuring relevant messaging to shape aspirations of people towards these sectors.

3) Including courses relevant to these sectors in the core-curriculum of skill training.
4) Enrolling more training partners from these sectors and ensuring industry partnership.

Overall, for the sectors with definite growth the state should ensure that the skills demanded for the sectors are being met by the current and future population.

7.2.3.2 Aspirational Sectors:

A number of sectors, even though they are not growing with a definite trend like the sectors in previous section, can be considered for future job roles. This is because these sectors are most talked about by either prospective employees, state government officers or NGOs. These sectors include horticulture, education, IT-ITeS and military. The upcoming section provides additional details in to each of the sectors.

Almost all the hill districts displayed an inclination towards **horticulture**. It is considered a sector which was traditionally very productive. Rural population in the state also possess skills in the sector that have been passed on by older generation. In a specific case in Tehri Garhwal, the District Employment Officer during his interview, spoke in length about floriculture and apple cultivation for utilizing the potential of the district population. Thus highlighting yet again how people aspire to work in these sectors and/or help it grow.

While the knowledge passed down from generations is valued, there is tremendous focus on education as well. Education is highly aspirational among the female population of the district and is perceived as a sector that provides job security. Almost all unemployed women who are either studying or are looking for job after completing their higher education aspire to be employed in education sector itself.

Other than the education sector, with the high level of literacy in the state, IT-ITeS is also seen as the most aspirational sector. Regardless of gender, almost 28% of all respondents aspire to practice work in the IT-ITeS sector. While considering the aspiration towards IT-ITeS, it has to be kept in mind that the average population also considers electronics and telecom sector also as part of IT-ITeS.

Second to IT-ITeS, military/army is seen as an aspirational career amongst men in the age group of 18-23. Army is also perceived as a stable career opportunity as the border regions present several examples for people in order to make this sector aspirational.

In order to ensure that "aspirational sectors" are also beneficial towards overall growth of the economy, the relevant stakeholders should focus on aspects that:

1) Encourage entrepreneurship in the sectors mentioned above by having prospective entrepreneurs gain a strong understanding of finance and business development. Therefore, one of the first steps to be taken should be to strengthen the bases of prospective entrepreneurs by educating them in finance and business development.
2) Enhance multi-skilling opportunities so that the aspirational skills can be practiced alongside other skills with higher returns.

3) Incentivise large industries in setting up rural BPOs and other technology support centres within the state so as to encourage IT-ITeS firms within Uttarakhand (especially given how high it is on aspirations).
4) Align government schemes like Mudra, Start-up India, Rashtriya Krishi Vikas Yojana and Integrated Horticulture Mission towards population that either aspire to entrepreneurship or possess relevant skills in horticulture.

While the growth sectors are encouraged, special focus has to be on sectors with in consideration as these sectors have the potential to shape the future job roles in the state of Uttarakhand.

7.2.3.3 Miscellaneous Sectors

Among all the other remaining sectors, the most important category of sectors is the one that lies at the intersection of growth and potential. This means that in specific sectors the government has decided to invest heavily through schemes and yet they have not reached their fullest potential. These sectors include tourism, life sciences, renewables and textile & apparel. In the following section, each sector is discussed in further detail.

In terms of tourism, the state's focus is apparent from the tourism policy of the state and its ubiquitous comparison with Himachal Pradesh by all stakeholders. Tourism was growing at a good pace before 2013 floods of Uttarakhand. The floods adversely impacted tourism in the state and it is yet to exploit its tourism potential to its fullest.

One of the major reasons behind slow growth of tourism as revealed from the survey is lack of aspirations among the locals to work in the sector. Less than 2% of the entire population aspires to work in the tourism sector. However the government in the recent past has launched flagship programs like the 13 District, 13 Destinations program that would further nudge the tourism potential. Unfortunately with low aspirations for the Tourism sector, much of the skilling and employment opportunities remain unexplored.

Similar to tourism, the government has also invested significantly in life sciences through schemes on Pharmaceutical and medicinal plantation. As evident from the employment numbers in Section 3, this sector is among the top ten employment generators in the state. Schemes like AYUSH and Herbal village have been introduced to commercialize medicinal plantation. On one hand this will provide raw material and on the other it provides avenues for medicinal tourism. However, the sector does not employ and skill as aggressively. Along the same lines, the government has also set-up pharma Industrial areas that can contribute significantly to the growth of sector in the state. Life sciences presents tremendous potential in terms of employment and skilling.

Owing to rich flora and fauna along with difficult mountainous terrain in the state, another growing sector of renewables present a promising opportunity. Solar and hydropower have displayed significant potential in the state. Environment related issues with hydropower have kept the growth of the sector in check, but at the same time solar power has progressed in pockets within the state. With adequate support and entrepreneurship, renewables can be harnessed to its full potential in the state.

Lastly, the textile and apparel sector also falls within this category as it is an aspirational sector among the women and has showcased high potential in terms of demand numbers as well. While, the population has substantial skills in this sector, the corresponding growth in employment has taken a toll because of technological innovation and presence of large industries.

In order to ensure that the real potential of these sectors are realised, all the stakeholders have to align their goals and work towards sustainable targets.

1) The state Government focus needs to shift towards implementation through district and block level governance.
2) Big private players have to be involved in providing a real boost to the sectors.
3) NSDC's focus has to shift towards RPL so that the population that is already skilled in these sectors can be certified.
4) The training partners have to include more course on soft skills and other tourism related activities like adventure sports.

The following section will provide generic sustainable solutions for improving the skill ecosystem of the state.

7.2.3.4 Sustainable Solutions

Apart from the above mentioned sector specific recommendations, the following observations presented below have been compiled with the overall skill ecosystem in mind for all stakeholder. These are derived from field observations and analysis of primary data.

1) Location of Skill Centres

As was evident from the team's visit to the different district headquarters, there exists a mismatch between the location of skill centres and courses on offer. Specifically the courses offered do not match the presence of jobs that require these skills. This led to cases such as when training on IT-ITeS was conducted in a region with no existing IT-ITeS industry or allied jobs. Aligning the courses on offer in every district with the high growth sectors in the region, as elaborated in the district reports, would aid in plugging this disparity between courses on offer and the local jobs available.

Another key takeaway was regarding the placement of the training centres. The closer the training centres were to the centres of economic activities, (industrial parks and/or major economic hubs) the higher was the respondent's satisfaction in the training as well as their likelihood of receiving meaningful employment post-training. Strategically locating training centres closer to the industrial parks and economic hubs assists in creating an ecosystem for skilling with much brighter prospects of employment opportunities.

2) Convergence with Industrial Parks and Large Companies

A vast majority of the large companies based in Uttarakhand operate out of the three industrial parks in the state. A common concern for all these companies, as revealed during the team's visit to these centres, was the availability of a skilled labour force. Due to the poor employability of new employees,

these companies are forced to invest heavily in skilling new recruits. Programs such as NEEM and Ashirwad aid industries in providing on-the-job training for prospective employees who can be absorbed by the companies themselves post-training.

This has been a successful model of skill development with trainees as well as companies showing a very positive response to these programs. This existing capacity of large companies for training of prospective employees can be further harnessed by creating PMKVY centres in collaboration with these companies. This helps the industries get funds for their training programs and helps them in grooming a captive talent pool for future employment opportunities. The candidates also stand a much better chance to gain meaningful employment due to a superior exposure at training and the proximity to social networks in the industry.

3) Self-Employment Opportunities

One of the more surprising revelations from the primary survey was the inclination of respondents to starting one's own enterprise. A third of the respondents wished to start their own enterprise, a proportion greater than those coveting a government job, a perennial favourite in the country. When asked as to what the impediments were in starting's one's own business, the top concerns flagged were the lack of capital/credit and of business knowledge. The latter is a gap waiting to be solved by various skill development programs. Thus, there exists a tremendous potential in entrepreneurship in our society which, if tapped, can lead to massive gains in employment generation.

As the team found in its field visits, there also existed a latent desire amongst many of the formally skilled to achieve successful self-employment. However as mentioned above, the twin challenges of lack of capital/credit and of business knowledge were present. In case of the formally skilled, their domain expertise was negated by their inability to grasp the nitty-gritties of launching an enterprise. Incorporating self-employment and soft skill modules in the training course curriculum would aid in plugging this gap. Even in the absence of any entrepreneurial ambitions amongst the trainees, these modules would aid an employee in their regular workplace.

Moreover, to overcome the capital inadequacy challenge training centres could provide cover letters to their trainees and aid them in the loan application process. Loan applications with cover/recommendation letters attached by quasi government bodies such as the training centres have a higher likelihood of a successful sanction.

4) Incorporating Primary Sector Skills

The primary sector is still undoubtedly the mainstay of the Uttarakhand economy with rural employment largely hinging on agriculture, horticulture and animal husbandry. However, there exist a plethora of challenges that impede the full development of this sector. The typical challenges of small and fragmented land holdings are further exacerbated by the destruction caused by wildlife and climate change especially in the upper hill districts of the state.

To counter the declining incomes earned from agriculture, efforts must be concentrated on bringing the state's niche strengths – horticulture, aromatic and medicinal herb farming and sheep rearing – into

the mainstream skilling curriculum. The consumption of fruits per capita has been increasing at a breakneck pace in the country.

Similarly, the demand for wool and woollen products, medicinal herbs for traditional as well as pharmaceutical use and aromatic plants for culinary purposes has been increasing in the country leading to increasing dependence on imports. Countering this with increasing the skill base for these domains can result in massive employment gains in the local market.

While the importance of horticulture and animal husbandry has been mentioned in sections before, it is important to reiterate the contribution these sectors can have towards sustainable growth and employment creation.

5) Partnership with IIT Roorkee

One of the foremost impediments for the higher uptake of skilling programs is the lack of trust and credibility in training centres and programs. Short term vocational training programs are valued lesser and seen as the more inferior alternative as compared to more conventional educational programs. This marginalisation of vocational training vis-à-vis conventional education is perhaps the biggest challenge that has to be overcome to increase the acceptance of skilling programs. One of the methods through which the perception of such programs can be improved is by partnering with premier educational institutions like IIT Roorkee.

We propose that the common institutional courses on production and industrial engineering, taught in the first year of the undergraduate programme, be undertaken to a certain extent in a PMKVY. These course teaches the basics of industrial production, like working a lathe machine or operating a CNC machine. If the workshop component of this course can be carried out in a PMKVY centre that has modules of similar nature, it will help establish the credibility of the PMKVY training centres. It will also act as a convergence between formal education and vocational education. Additionally, it will improve the perception of skill training in the minds of candidates, by making training canters more aspirational.

6) Convergence with Government Schemes

Both central and state governments run a slew of poverty alleviation programs under various departments. National Urban Livelihood Mission (NULM), National Rural Livelihood Mission (NRLM), Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS), Pradhan Mantri MUDRA Yojana (PMMY) are some examples of schemes that hold great promise in generating employment opportunities by collaborating with skill development initiatives.

The flagship livelihood schemes focussing on livelihoods – NRLM and NULM envision the creation of self-help groups (SHGs) and SHG federations – a cluster of SHGs. A notable observation during the team's engagement in the state was the excellent condition of self-help groups in many districts. Most SHGs formed under NULM and NRLM were successfully practicing the five principles outlined under panchsutra. The natural progression for most of these SHGs would be to create micro credit plans and form enterprises for income generation. However, here too exist the twin challenges of capital and business knowledge. In case of SHGs, regular savings leads to steady accumulation of capital and the

banks provide credit to SHGs more readily than they do to individuals.

However, the lack of business knowledge is the bottleneck for SHGs and one that can be bridged by the training centres. For example, women members of SHG federations can be trained on processing of coarse grains or on creating jams from local fruits. By focussing on the skilling needs of self-help groups and their federations, the training centres can widen their target base and help launch the entrepreneurial ambitions of SHGs. With favourable policy treatment meted out to SHGs and the extent of the entrepreneurial undercurrent present amongst these women members as revealed by data and field interviews, tailoring courses to address the self-employment needs of this eager audience is of utmost importance. This collaboration must be undertaken at the district level with the District Development Offices to ensure smooth convergence in last mile delivery.

While heavily relying on our ground experience, these recommendations are also based on key data insights from the survey. All stakeholders have been taken into account from employers (large enterprises and MSMEs), government bodies to labour force. Particular attention has been paid to the perception of skilling held by both labour force and employers as it is one of the critical determinants of skill development, along with employability as well as accessibility. The Sustainable Solution section outlines certain suggestions for policy initiatives keeping mind the macro policy framework of both State and Central Government. These solutions are also formed on the basis of inherent potential of the state like the high number of entrepreneurs and location of prestigious institutions i.e. IIT Roorkee. The envisaged impact of these solutions can rectify certain bottlenecks of the State skilling ecosystem while unlocking the inherent potential of state's human resources.

8. ANNEXURE

8.1 Questionnaire for Primary Surveys

Name of District/Block	जिलेब्लाक/ का नाम (कृपया ब्लाक २ बार चुनें)
Name of gram panchayat	ग्राम पंचायतशहर का नाम/
Name of village/habitation	गाँवबस्ती/तोक/ का नाम
Location	स्थान एस.पी.जी) द्वारा(
Name of Respondent	जानकारी देने वाले व्यक्ति का नाम
Gender of Respondent	जानकारी देने वाले व्यक्ति का लिंग
Contact number of respondent	जानकारी देने वाले व्यक्ति का फ़ोन नम्बर
Age of Respondent	जानकारी देने वाले व्यक्ति की उम्र
What is your highest education level?	आपके द्वारा प्राप्त उचत्तम शिक्षा स्तर क्या है ?
What is your present status?	आप वर्तमान में क्या करते है?
How many years of work experience do you have?	आपके पास कितने सालों का काम करने का अनुभव है?
If presently full time or part time employed, how much time have you spent at job?	अगर आप वर्तमान में कोई कामनौकरी कर रहे हो तो / इसे करते हुए कितना समय हुआ?
Which sector are you employed in ?	अप किस शेत्र सेक्टर में/रोज़गार हैं?
What was your job role/title?	आप किस प्रकार का कार्य करतें हैं
Write a bit about the respondents job role and sector	प्रतिवादी के कार्य के प्रकार और ज़िम्मेदारी एवं सेक्टर के बारे में लिखिए
Do/did you have to read and write documents on a day to day basis for work? (If no, enter o) If yes, enter number of hours)	हर दिन, क्या आपको अपने काम के लिए दस्तावेजों को पड़ना और लिखना पड़ता हैं ?(यदि नहीं तब ० डालिए, अगर हाँ तब घंटों की संख्या डालिए (
Do/Did you have to carry our basic mathematical calculations for your job?	क्या आपको अपने काम के लिए सरल गणितीय करना पड़ता हैं
Do you have to communicate (written & oral) to carry out thet tasks for the job?	आपको अपने काम के लिए संवाद लिखित और) करना पड़ता हैं (मौखिक?
What percentage of your work day is spent in carrying out a routine number of tasks?	आप एक दिन में कितना समय सामान्य कार्य करने में गुज़रते हैं ? (प्रथिशत(
Do you have to carry out unexpected/new tasks every day?	क्या आपको अपने काम के लिए अप्रत्याशित कार्य हर दिन करने पड़ते हैं
Do you frequently face and solve problems for your work?	क्या आपको अपने काम के लिए मुश्किलों कार्य) का सामना करना पड़ता हैं (संबंधित
Do you have to use technology for your work?	क्या आपको अपने काम के लिए प्रौद्योगिकीटेक्नोलॉजी / का प्रयोगकरना पड़ता हैं
Do you have people working directly under you on a day to day basis?	क्या आप कुछ लोगों को मैनेजसुपेर्विसे करतें हैं/

If yes, how many?	**यदि हाँ, तो कितने लोग**
On a day to day basis do/did you carry out all tasks under the direct supervision of your boss or some tasks are carried out independently?	हर दिन के आधार पर क्या आप अपने बॉसप्रभंधक की/सुपरवाइजर/मेनेजर/ निगरानी के अंतर्गत सभी कार्यों को पूरा करते हैं या कुछ कार्य स्वतंत्र रूप से किए जाते हैं?
What is the percentage of your tasks which you carry out independently?	कितने प्रतिशत कार्य आप स्वतंत्र रूप से करतें हैं ? (प्रति दिन के आधर पर (
Do you believe that you have acquired skills through your last employment	क्या आप मानते हैं कि अपने वर्तमान नौकरी से आपके हुनरस्किल्स की वृद्धि हुई है/
If previously employed, how much time did you spend at that job ? (months)	अगर आप पहले इसको छोड़कर कोई और रोज़गार करते थे , तब आपने कितना समय उस नौकरी पर बिताया था
When previously employed, which sector did you work in ?	आपकी पिछली नौकरी, आपने किस क्षेत्रसेक्टर/ में काम किया था ।
What was the your job role/title?	
Write a bit about the respondents job role and sector	प्रतिवादी के कार्य के प्रकार और ज़िम्मेदारी एवं सेक्टर के बारे में लिखिए
Do/did you have to read and write documents on a day to day basis for work? (If no, enter o) If yes, for how many hours?	हर दिन, क्या आपको अपने काम के लिए दस्तावेजों को पड़ना और लिखना पड़ता हैं ?(यदि नहीं तब ० डालिए, अगर हाँ तब घंटों की संख्या डालिए (
Do/Did you have to carry our basic mathematical calculations for your job?	क्या आपको अपने काम के लिए सरल गणितीय करना पड़ता हैं
Do you have to communicate (written & oral) to carry out thet tasks for the job?	आपको अपने काम के लिए संवाद लिखित और) करना पड़ता हैं (मौखिक?
What percentage of your work day is spent in carrying out a routine number of tasks?	आप एक दिन में कितना समय सामान्य कार्य करने में गुज़रते हैं ? (प्रथिशत(
Do you have to carry out unexpected/new tasks every day?	क्या आपको अपने कम के लिए अप्रत्याशित कार्य हर दिन करने पड़ते हैं
Do you frequently face and solve problems for your work?	क्या आपको अपने काम के लिए समस्याओं (कार्य संबंधितको सुलझाना (पड़ता हैं
Do you have to use technology for your work?	क्या आपको अपने काम के लिए प्रौद्योगिकीटेक्नोलॉजी / का प्रयोग करना पड़ता हैं
Do you have people working directly under you on a day to day basis?	क्या लोग आपके लिए काम करते हैं
If yes, how many?	यदि हाँ, तो कितने लोग
On a day to day basis do/did you carry out all tasks under the direct supervision of your boss or some tasks are carried out independently?	हर दिन के आधार पर क्या आप अपने बॉस की निगरानी के अंतर्गत सभी कार्यों को पूरा करते हैं या कुछ कार्य स्वतंत्र रूप से किए जाते हैं?

If yes, What is the percentage of your tasks which you carry independently?	**अगर हाँ, कितने प्रतिशत कार्य आप स्वतंत्र रूप से करतें हैं ? (प्रति दिन के अधर पर (**
Do you believe that you acquired sufficient training through the work experience at your present job?	क्या आप मानते हैं कि अपने पूर्व नौकरी ने आपके हुनरस्किल्स की वृद्धि हुई है/
Have you ever received any formal skill training?	क्या आपको कभी फॉर्मल ट्रेनिंग मिली हें? (आईआई.टी ., प्राइवेट ट्रेनिंस सेंटर, आर(टी.स.ए.
Which course did you study?	अपने कौनसा कोर्स पढ़ा हैंथा/?
Where did you receive your skill training?	आपको ये ट्रेनिंग कहाँ प्रदान हुई
Do you believe the skill training was useful, would you recommend it to others?	क्या आपको लगता हैं की ट्रेनिंग आपके काम में आईउपयोगी थी/?
What would you want to improve in the skill training received?	आपको क्या सुधारने का मन हैं फॉर्मल स्किल ट्रेनिंग में?
Why are not interested in Skill Training?	आप स्किल ट्रेनिंग में रूचि क्यूँ नहीं रखते?
What would persuade you to under go skill training?	आपको स्किल ट्रेनिंग करने के लिए इनमें से क्या प्रोत्साहित कर सकता है?
What percentage an increase in income would encourage you participate in skill training?	प्रति महीने कितनी प्रतिशत आमदनी की बढोत्री पर आप फॉर्मल स्किल ट्रेनिंग करने के लिए जायेंगे?
How long was the skill training for?	आपकी ट्रेनिंग कितनी लम्बी थी ? (महीने(
Are there any other skills you aspire to possess through skill training? Please specify.	ऐसा कोई कौशल हुनर है जो आपको प्राप्त करना हैं/?
What is the minimum monthly salary you expect if you receive formal extensive skill training? (in thousands/month)	अगर आपको ट्रेनिगं मिली तो आप अपनी मासिक न्यूनतम वेतन कितनी होने का उम्मीद रखते हैं) ०००(महिना/
Would you consider yourself skilled, semiskilled or unskilled?	आप अपने आपको कुशल, अर्धकुशल या अकुशल में से क्या मानते हैं?
What are your future career aspirations?	आपकी भविष्य की व्यवसाय आकांक्षाओं क्या हैं
What is stopping you from starting your own enterprise ?	आपको खुद का एंटरप्राइजबुसिनेस्से शुरू करने में /उद्यम/ क्या बाधा आ रही हैं?
What is your average monthly income? (last six months)	आपका औसत मासिक वेतन क्या हैं ? (पिछले छह महीने(
How do you believe you can achieve career growth in your current job?	आपको अपने व्यवसाय मे सफलता पाने के लिया क्या चाहिये?
Which sector would you want to work in?	आप किस सेक्टर में काम करने की दिलचस्पी रखते हैं?
What is your preferred job location?	आपको किस जगह काम करना का मन है
At what income level would you consider farming or allied activites as a primary occupation?	सालाना कितनी आय पर आप खेती बाढ़ी अपना मुख्य रोज़गार बना लेंगे?
Have you or anyone in your family migrated for work in the last one year?	पिछले एक साल में क्या आपने या किसी परिवार सदस्य ने पलायन किया है?
Why did you/they migrate?	आपनेपरिवा/ सदस्य ने पलायन क्यूँ किया ?

How many months in the last year have you/they migrated for?	**परिवार सदस्य / आपना कितने महीने काम के लिए पलायन किया था ?**
Where did you/they migrate?	परिवार सदस्य / आपने कहाँ पलायन किया था ?
How much money could you/they send back every month?	हर महीने परिवार सदस्यआप कितने पैसे भे /जते थे
At what salary would they consider returning home?	किस वेतन स्तर पर आपपरिवार सदस्य वापस आ / जायेंगे? (प्रति माह(
Do you want to migrate elsewhere for higher incomes?	भविष्य में ज्यादा वेतन स्तर)के लिए क्या आप परिवार/ सदस्य पलायन करंगे?
Total land owned by family?	आप या आपके परिवार के पास कितनी ज़मीन है?
Unit of land	ज़मीन की इकाई
Have you heard about Pradhan Mantri Kaushal Vikas Yojana	क्या आप प्रधान मंत्री कौशल विकास योजना या कौशल विकास केंद्र के बारे में सुने हैं?
Does the surveyor believe the respondent answered the questions honestly?	क्या सर्वेक्षक का मानना है कि उत्तरदाता ने ईमानदारी से सवालों का जवाब दिया?

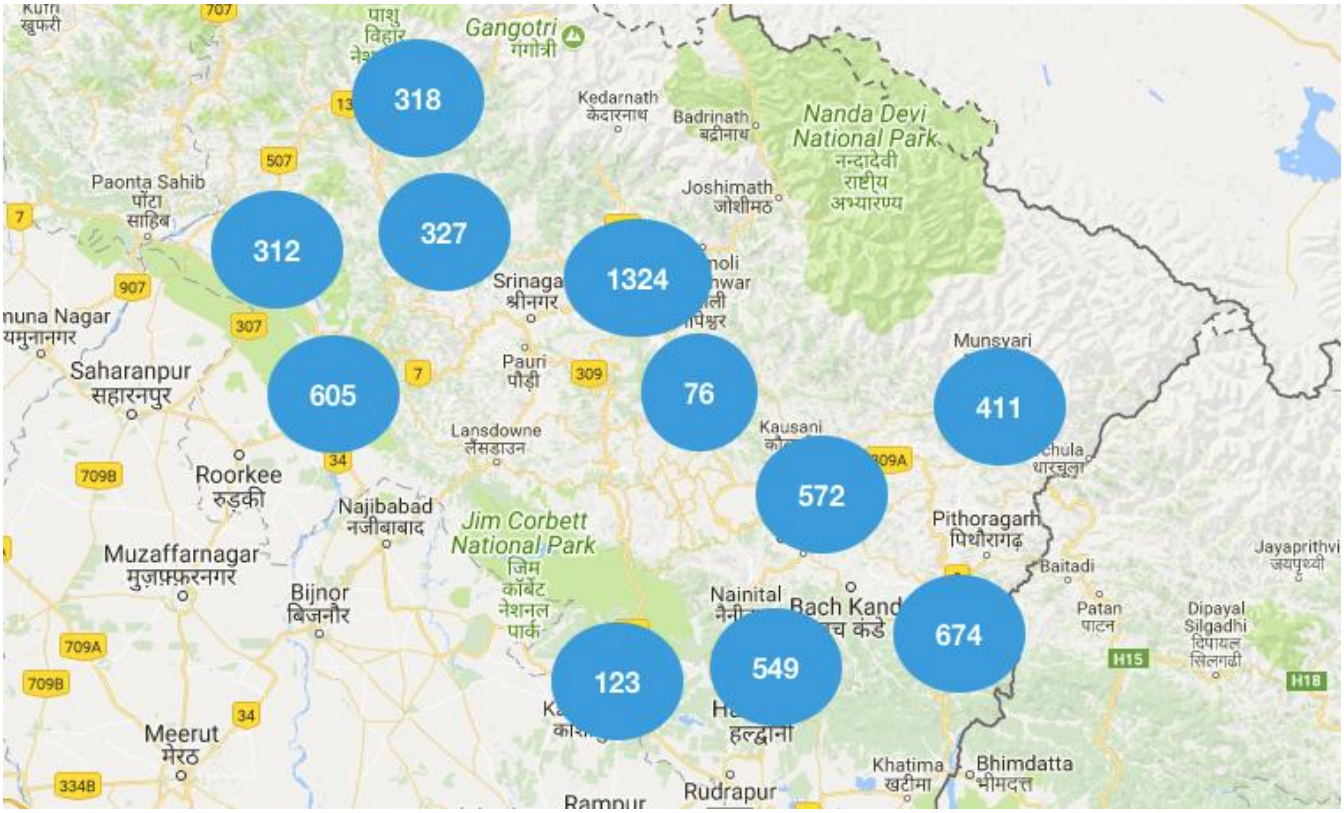
Question	S_Qn
Name of the district	जिले का नाम
Name of Town/Village	गांवकस्बे का नाम/
GPS	जीपीएस रीडिंग
Name of Enterprise	प्रतिष्ठानकंपनी का नाम/
Name of the respondent	उत्तरदाता का नाम
Contact number of respondent	उत्तरदाता का मोबाइल नंबर
Position/Role of respondent in the establishment?	उत्तरदाता की इस कंपनी में भूमिका?
Name of owner	मालिक का नाम
What is the nature of your enterprise?	प्रतिष्ठानआदि/विपणन/उत्पादन - कंपनी का प्रकार/
Describe the product/service offered by your enterprise.	अपने प्रतिष्ठानआदि का/विपणन/कंपनी के उत्पादन/ संक्षेप में वर्णन करें.
What is the extent of market for the product/service that you offer?	आप उत्पादों सेवाओं को कहाँ बेचते या उपलब्ध करवाते / हैं?
Is your enterprise registered?	क्या आपकी कंपनी पंजीकृत है?
Which of these registrations does the enterprise possess?	इनमें से कौनसे पंजीकरण (रेजिस्ट्रेशन)आपके उद्यम के पास हैं?
Is your enterprise a family run business?	क्या आपका व्यापारउद्यम आपके परिवार जनों के द्वारा/ ही चलाया जा रहा है ?
How many family members (excluding owner) of the owner are full time involved in the day to day operations of your enterprise?	मालिक के परिवार के कितने सदस्य इस (मालिक को छोड़कर) व्यापार की रोज़ाना कार्यों में भाग लेते है?
Total number of employees in your organization (full time + part time + family workers)	आपकी संस्था में कुल कितने लोग कार्यरत हैं ? (फुल टाइम +पार्ट टाइम पूर्णकालिक व अल्पकालिक /(परिवार सदस्य + ..मिलाकर
How many of your employees are from outside the district but within the state?	आपके कितने कर्मचारी ऐसे है जो इस ज़िले से नहीं लेकिन उत्तराखंड के अन्य जिलों से है?
How many of your employees are from outside the state?	आपके कितने कर्मचारी उत्तराखंड के बाहर से हैं?

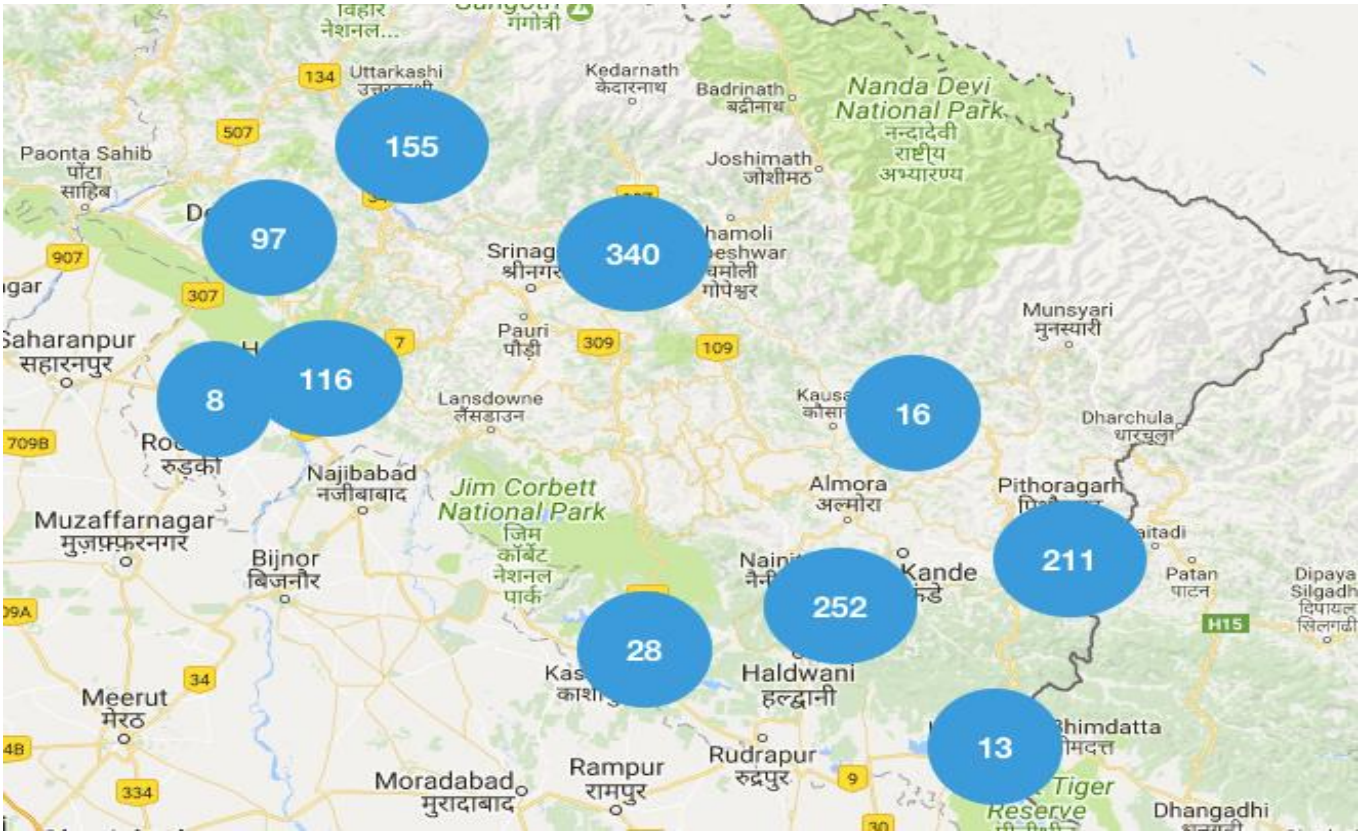
How many of your employees are full-time/permanent?	कितने कर्मचारी फुलहैं (पूर्ण कालिक) टाइम-
How many of your employees earn more than INR 8,000 per month?	आपके उद्यम कम्पनी में/कितने कर्मचारी है जो रू 8000/. से अधिक कमाते हैं।
What is your principal source of hiring employees?	आपके कर्मचारी धुँड़ने का मुख्य स्त्रोत क्या है?
Have the number of employees changed over the last 12 months?	संस्था कम्पनी में पिछले/12 महीनों में कर्मचारियों की संख्या में कोई बदलाव हुआ है ?
Specify the change in exact number of employees in 2017 compared to 2016	2016 की तुलना में 2017 में कर्मचारीयों की संख्या कितनी बढ़ीघटी है/?
Is your enterprise's sale seasonal?	क्या आपका व्यवसाय विक्री कुछ महीनों/तक ही सीमित (सीसनल है (?
How many days in a year does your enterprise experience high sales/season?	आपके व्यवसाय के सबसे लाभदायक समय कितने (सीज़न) दिन का होता है ?
How many additional temporary/seasonal employees do you hire during the high sales season?	इन लाभदायक व्यापार के दिनों में आप कितने (सीज़न) अधिक कर्मचारीयों को काम देते है?
Number of Job Roles	इस उद्यम में कार्य प्रकार की संख्या
Type of Job Role	सामान्य काम का प्रकार
Number of employees in this job role	इस कार्य प्रकार में कर्मचारियों की संख्या
How many of these would you considered well trained/skilled?	इस कार्य प्रकार में कितने कुशल कर्मचारी हैं ?
How many of these trained/skilled workers already had the skill before you hired them?	इस कार्य प्रकार में कितने प्रशिक्षित कुशल वर्कर / नौकरी के पहले ही कुशल थे?
Out of skilled, how many had formal skill training (Graduate/ITI/PMKVY)?	इस प्रकार के काम में कुशल वर्कर में से कितनों नै फॉर्मल स्किल ट्रेनिंग प्राप्त की हैं
Out of skilled, how many were skilled based on their work experience?	इस प्रकार के काम में कितने कुशलकर्मी ऐसे है जो अपने अनुभव से कार्य में पारंगत हो गये हैं ?
Average monthly wage of this job role.	इस प्रकार के काम के लिए औसत मासिक वेतन
Is there a shortage of workers in this job role?(If no then 0, if yes then state a number)	क्या इस प्रकार के काम में वोर्केरों की कमी है यदि नहीं), तो 0, यदि हां तो संख्या बताएं(
Are you planning to hire for this job role in the coming year? If yes, how many?	आने वाले वर्ष में इस प्रकार के काम के लिए आपको और करमचारियों वोर्केरों की अव्शयाकता हैं/? (यदि नहीं फिर ०, यदि हाँ फिर संख्या बतायें(
How many daily wage workers do you have?	आपके बिज़नसकंपनी में डेली वेतन/एंटरप्राइज/व्यापर/ श्रमिकदेहरी करने वाले कितने लोग हैं/
What is the wage of daily wage workers ?	दैनिक वेतन कर्मचारी का दैनिक वेतन कितना रूपया है ?
What are your monthly sales (in Rs.)?	आपके कंपनीव्यापर की कुल मासिक विक्री /एंटरप्राइज/बिज़नस/ कितने रू है?

What percentage of your monthly sales is spent on labour/salaries?	आपकी मासिक बिक्री का कितना प्रतिशत कर्मचारिओं वोर्केरों / की वेतन पर खर्च होता है?
What reasons will get you to increase your employees' salary?	किस कारन के अनुसार आप अपने करमचारियोंवोर्केरों का / वेतन बढ़ागे?
Is it difficult to fill positions in the enterprise with skilled labour?	क्या आपको अपने बीसिनेसव्यापर के लिए/ कौशलट्रेनड / कर्मचारियों को खोजने में कठिनाई आती हैं'
What would be the important factors while you consider hiring a person?	जब आप किसी व्यक्ति को काम पर रखने का विचार करते हैं, तो सबसे महत्वपूर्ण कारण क्या होता हैं?
Among education, formal skill training and work experience what do you value the most from your prospective employees?	शिक्षाइन -- काम का अनुभव /फॉर्मल ट्रेनिग/ तीनो में से सबसे ज्यादा मूल्य किसका है, अगर आपको किसी को नौकरी देनी हो
Would you consider increasing an employee's income if she/he were to receive short term skill training ?	क्या आप किसी वर्कर का वेतन बढ़ाने की सोचेंगे अगर वह फॉर्मल ट्रेनिंग प्राप्त करता हैं
Would you consider increasing the wage of your employees if s/he were to receive formal skill training or acquired more work experience?	क्या आप अपने कर्मचारियों के वेतन में वृद्धि करने पर विचार करेंगे, यदि उन्हें फॉर्मल ट्रेनिंग कौशल प्रशिक्षण प्राप्त हुआ या / अधिक कार्य अनुभव प्राप्त हुआ?
In case of increase, by what percentage?	वृद्धिबढ़ाने के मामले में/, किस प्रतिशत से?
What factors according to you contribute to the expansion of your enterprise?	आपके अनुसार कौन से कारण आपके उद्यमबिज़नस के/ विस्तारबढ़ने में योगदान हैं/
What are the biggest challenges which hinder the growth of your enterprise?	सबसे बड़ी चुनौतियां क्या हैं जो आपके उद्यम की वृद्धि में बाधा डालती हैं?
Does the surveyor believe the respondent answered the questions honestly?	क्या सर्वेक्षक का मानना है कि उत्तरदाता ने ईमानदारी से सवालों के जवाब दिया हैं?

8.2 Survey Responses

The image below showcases the number of responses from each district for both the primary surveys.





8.3 QNSQF

Skill Qualification Framework Methodology

Employability is largely derived from a person's skill not only in his/her core area of expertise but also her/his ability to progress further in through learning and problem solving. In recent times, skill has been considered a much more concrete determinant of employability rather than education. However the education levels have been considered as a proxy for skill for a long period of time which is inaccurate and leads to an overt emphasis on Education in categorizing skilled or unskilled population. Hence for the purpose of the Skill Gap Study, it is important to evolve a system which taken into account all the qualifications of the person be it work experience, Formal Training, Education and Informal Training. Hence, a 12point based system has been evolved based on the National Skill Qualification Framework (NSQF) to sort the Economically Active Population (EAP) into the categories of (i) Minimally Skilled (ii) Semi Skilled and (iii) Skilled.

Background

Skill is defined as the ability to carry out tasks well or with some amount of expertise. The tasks can range from technical to communication to managerial. For a considerable period of time skill was considered to be concomitant with education. Most, if not all skill gap reports have relied on Education as a proxy for Skill and sorted populations into skill category like Minimally Skilled, Semi- Skilled, and Skilled and so on and so forth based on the education degree. However as employment and skilling data becomes more readily available it has become increasingly clear that education does not ensure appropriate employment opportunities for all. Lack of industrial linkages with education can be accounted as one of the reasons for this phenomenon. More skill development can be an outcome of work experience, formal training programmes, informal skilling and other activities. Hence in order to accurately estimate the categories of skilled, unskilled labour it is important to evolve a framework which takes into account the various forms of skilling and their outcmome.

The National Skill Qualification Framework (NSQF) marks out ten levels of skill categorization and accreditation. The Framework is inclusive, as each level is split across four core components which are, Professional Knowledge, Professional Skill, Core Skill and Responsibility. Terminology as well as the provisions described in these sub-components is inclusive descriptors for all kinds of job roles spanning across sectors. This is because the sub components cover qualities which are derived from education, work experience or skill training. Hence, utilization of the NSQF facilitates the assortment and accreditation of workforce populati0n into various levels. Job roles sector wise have been sorted into NSQF levels and correspondingly Qualification Packs (QPs).

Breakdown of NSQF framework into Sub Components and their Sources

As evident, NSQF has theoretically set in a very broad and inclusive framework. However a theoretical framework does not provide quantified levels through which one NSQF levels can be determined from

the next. Hence, a quantifiable system based on the NSQF level has been developed in order to divide the workforce population into certain skill categories.

National Skill Qualification Framework

LEVEL	Process required	Professional knowledge Formal Skill Training	Professional skill/ Application of Skill and]Knowledge	Core skill/ Knowledge Education	Responsibility / Application of Skill and Knowledge
Level 1	Prepares person to/carry out process that are repetitive on regular basis require no previous practice	familiar with common trade terminology, instructional words meaning and understanding g	Routine and repetitive, takes safety and security measures.	Reading and writing, addition subtraction personal financing, familiarity with social and religious diversity, hygiene and environment	**No responsibility y always works under continuous instruction and close supervision**
Level 2	prepares person to/carry out process that are repetitive on regular basis with little application of understanding, more of practice	Material tools and application in a limited context, understands context of work and quality	limited service skill used in limited context, select and apply tools, assist in professional works with no variables differentiate s good and bad quality	receive and transmit written and oral messages, basic arithmetic personal financing understanding of social political and religious diversity, hygiene and environment	**No responsibility y works under instruction and close supervision**
Level 3	person may carry put a job which may require limited range of activities routine and predictable	Basic facts, process and principle applied in trade of employment	recall and demonstrate practical skill, routine and repetitive in narrow range of application	Communication written and oral, with minimum required clarity, skill of basic arithmetic and algebraic principles, personal banking, basic	**Under close supervision Some Responsibility for own work within defined limit.**

				understanding of social and natural environment	
Level 4	work in familiar, predictable, routine, situation of clear choice	factual knowledge of field of knowledge or study	recall and demonstrate practical skill, routine and repetitive in narrow range of application, using appropriate rule and tool, using quality concepts	language to communicate written or oral, with required clarity, skill to basic arithmetic and algebraic principles, basic understanding of social political and natural environment	**Responsibility tee for own work and learning**
Level 5	job that requires well developed skill, with clear choice of procedures in familiar context	knowledge of facts, principles, processes and general concepts, in a field of Work or study.	a range of cognitive and practical skills required to accomplish tasks and solve problems by selecting and applying basic methods, tools, materials and information	Desired mathematical skill, understanding of social, political and some skill of collecting and organizing information, communication.	**Responsibility for own work and learning and some responsibility y for other's works and learning**
Level 6	demands wide range of specialized technical skill, clarity of knowledge and practice in broad range of activity involving standard nonstandard practices	factual and theoretical knowledge in broad contexts within a field of work or study	a range of cognitive and practical skills required to generate solutions to specific problems in a field of work or study	Reasonably good in mathematical calculation, understanding of social, political and, reasonably good in data collecting organizing information, and logical communication	**Responsibility for own work and learning and full responsibility y for other's works and learning**

Level 7.	requires a command of wide ranging specialized theoretical and Practical skill, involving variable routine and non-routine context.	wide ranging , factual and theoretical knowledge in broad contexts within a field of work or study	wide range of cognitive and practical skills required to generate solutions to specific problems in a field of work or study	good logical & mathematical skill understanding of socio political and natural environment good in collecting and organizing information, communication & presentation skill	**full responsibility y for output of group and development t**
Level 8	Comprehensive, cognitive, theoretical knowledge and practical skills to develop creative solutions, to abstract problem. Undertakes self-study, demonstrates intellectual independence, analytical rigor and good communication.			**Exercise management and supervision in the context of work/study having Unpredictable changes, responsible for development of self and others.**	
Level 9.	Advanced Knowledge and skill Critical understanding of the subject, demonstrating mastery and innovation, completion of substantial research and dissertation.			**Responsible for decision making in complex technical activities, involving Unpredictable study/work situations.**	
Level 10.	**Highly specialized knowledge and problem solving skill to provide original contribution to knowledge through research and scholarship.**			**Responsible for strategic decisions in unpredictable complex situations of Work/study.**	

8.4 Error Calculations

MSME Projection Error Margins	
Almora	-2.63%
Bageshwar	-3.22%
Chamoli	0.26%
Champawat	1.63%
Dehradun	-50.44%
Haridwar	-31.15%
Nainital	-28.43%
Pauri Garhwal	6.63%
Pithoragarh	-5.79%
Rudraprayag	13.58%
TehriGarhwal	1.36%
USN	-52.53%
Uttarkashi	-15.03%

To establish the level of accuracy of our projections for the MSME employment creation, we ran the following exercise:

1. EM-II filings formed our base data, both for setting up a sampling frame and for categorization of enterprises into sector skill councils. This step helped created a SSC profile for each district.
2. Three years of data from EM-II filings (2012-13, 2013-14, 2014-15) was used to project for the next three years, i.e., 2015-16, 2016-17, 2017-18.
3. Udhyog Aadhar Memorandum filing data was obtained for the same three-year time period, at a district level.
4. The difference in our projections and the filing data is what we assume to be our error margin.
5. For most districts, we have what we believe to be an acceptable error margin (around 5%).
6. But for certain districts, the industrial districts in particular, our estimates seem to be much lesser (almost half in some cases) than the filings.
7. Two possibilities exist:
    a. Higher numbers of MSMEs registered as ancillary units to large industries. But for this there must be a sharp increase in large industrial activity in the select districts. Through analysing electricity supply over the year to industrial zones, we conclude that no such multiplier phenomena took place.
    b. Large number of fake memorandum filings, similar to that reported in Bihar.

Having eliminated the first possibility, we assume that it is the second scenario.
Therefore, no corrections were made to any projections. The high level of accuracy for the remaining districts further cemented our conviction.

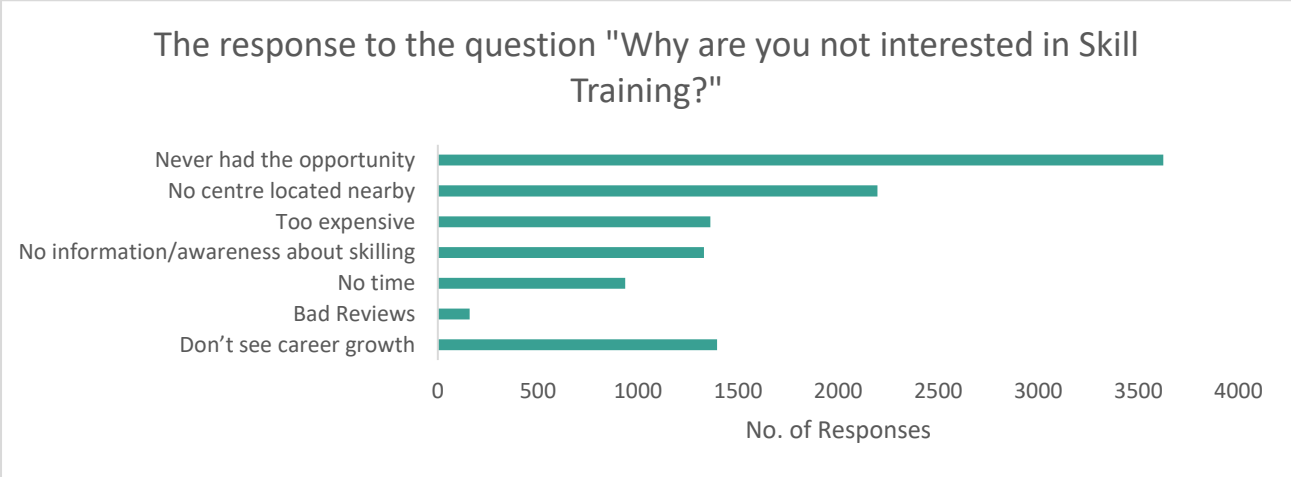
8.5 SSC wise Employment Projection Approach

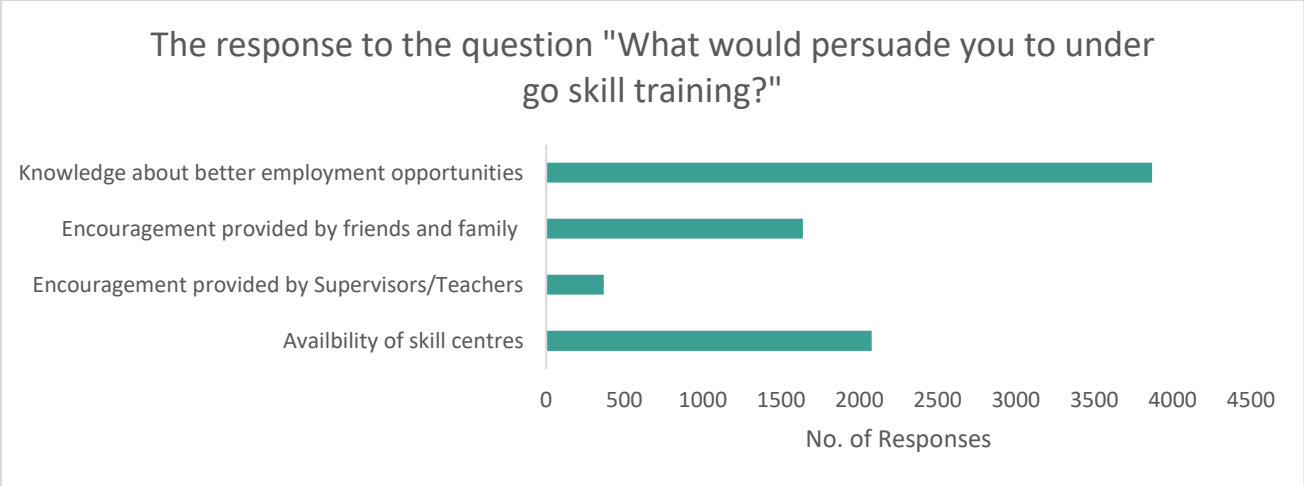
S.NO.	SSC	Rationale	Approach	Primary Data Supplement
1	Chemical	Demand for labor is generated through interaction of public and private investments, government policies and consumer demand. Consumer demand in turn is a result of quantum of disposable income in the hands of people within the economy and demand for local produce in other economies. In lack of significant data on investment and consumption at a distrcit level, wherever possible we decided to follow a bottom-up approach where we projected the growth in employment based on actual realisation of all the factors that impact employment. Based on an analysis of Qualification Packs offered by Sector Skill Councils, it could be seen that this group of sectors could be categorised as a combination of large and small scale manufacturing alongside small scale services. As such, all yearly data pertaining to companies within the sectors was explored. It is further explained in approach.	These sectors included large and small establishments. 1) For large scale manufacturing , Annual Survey of Industries data for five years (2011-2016) was utilised. This data provided for number of units as well as personnell employed. NIC code was used to distribute ASI data into SSC data. Further, employement trend across 5yr ASI data was used to project the trend for 2022. This data was divided into districts on the basis of number of industrial units present withing each district. Industrial units were collected from District Industrial Profiles provided by Development Commissioner - MSME, Uttarakhand. 2) For MSMEs, EM2 registration data from Directorate of Industries Uttarakhand was utilised. Company Name and Product description from this data was used for categorising companies into SSCs. EM2 data for the same corresponding period as ASI was used for projecting number of new establishements being registered year on year. Further, EM2 also provided number of employees at the time of registration. This data was aggregated at SSC level and its anuual average was used against projection numbers for newly added industries to get employment numbers. Primary survey was also used.	Wherever possible, the projections were also triangulated with primary data or methodology was supplemented by primary data: 1) Primary MSME surveys provided an average employee number per company within each skill sector based on size of company. This was also traingulated against average number of employees through EM2 registrations. 2) The EM2 registration projections total for 2015-2018 was used against Udyog Aadhar data for the same period. This also provided us with error in projection of number of MSME units. 3) Primary MSME surveys also provided a ratio of registered to unregistered MSMEs. This ratio was used to supplement the registered projection numbers.
2	Apparel Made-ups and Home Furnishing			
3	Automotive Skills Development Council			
4	Electronics Sector			
5	Food Industry Capacity and Skill Initiative			
6	Furniture and Fittings			
7	Handicrafts and Carpet			
8	Indian Iron and Steel			
9	Infrastructure Equipment			
10	Leather			
11	Life Sciences Sector			
12	Power			
13	Rubber			
14	Skill Council for Green Jobs			
15	Telecom			
16	Textile			
17	Capital Goods	These two skill sector categories were classified together based on QPs of the two SSCs.All the companies in Uttarakhand within this sector are large scale manufacturing.	These sectors only include large industries. As a result, 5yr ASI employment data was analysed for employment projection. The methodology for ASI projection was same as above.	NA
18	Strategic Manufacturing			

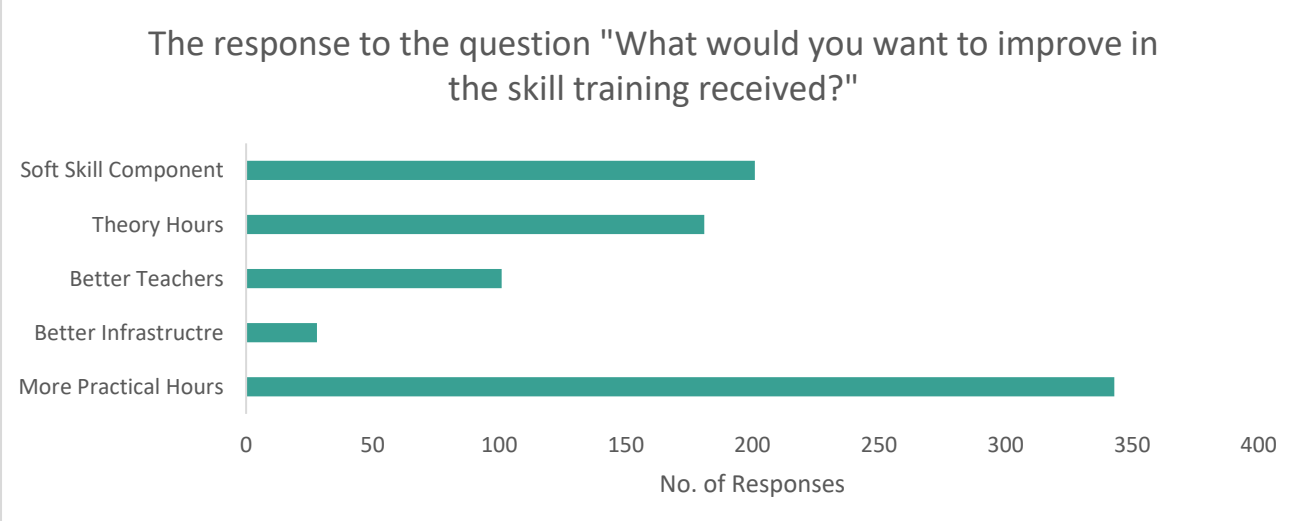
19	Gem and Jewellery	Gems and Jewellery consists of large scale and small scale manufacturing and services companies. Large scale gems and jewellery manufacturing based on ASI did not display a growing trend, hence it was discrded. Small scale manufacturing and services were accounted for in the EM2 MSME data. The last bit was large scale franchise store, which were covered through primary survey.	Along with ASI and MSME projections as explained above, retail stores (in gems and jewellery) were contacted to understand seasonal growth and average growth in requirement of employees.	In lack of any direct reliable data sources, primary interviews were conducted with Company owners/managers from companies like Tanishq belonging to this skill sector council. This provided us with data on large scale service providers in the sector.
20	Retailers Association's of India	This sector consists of MSMEs engaged in retailing activities and also franchise stores like Westside, Lifestyle, Big Baazar, Spencers, etc. So we projected employment in the MSMEs and arrived at estimates for requirements from franchise retail stores.	MSME projections, as explained above, formed one component of this sector. The projections done via MSME growth were triangulated against GVA/worker approach, and coincided. This component was clubbed with seasonal growth and average requirement of employees from franchise stores.	In lack of any direct data sources, primary interviews were conducted with large scale company owners/managers belonging to this sector skill council.
21	Construction	Given the highly informal nature of the sector, an approach similar to large industry and MSMEs couldn't be followed. Hence, a macro level approach of using GVA contribution per person had to be adopted. In this approach, we noticed that GVA of commercial constructions sub-component was the only one which displayed growth. So employment was estimated for this sub-component only.	GVA per worker was arrived at based on GVA data and Economic Census data for 2013. This data was used with GVA projections to derive employment.	Qualitiative Insights from Primary interviews.
22	BFSI	For BFSI, while infrastructural and other transactional data is available, there is lack of granular data on establishments. This sector does not show up in EM2 filings or ASI data, therefore a macro level approach had to be adopted.	GVA per worker was arrived at based on GVA data and Economic Census data for 2013. This data was used with GVA projections to derive state level employment. The state level employment was distributed across districts based on the credit disbursement targets for each districts, as obtained from the state level banking committee reports. Also added to these were small scale firms engaged in mutual fund distribution and insurance services from the MSME list.	Average number of employees (as stated in the first approach) engaged in BFSI were estimated from primary survey findings of MSMEs and other big firms.

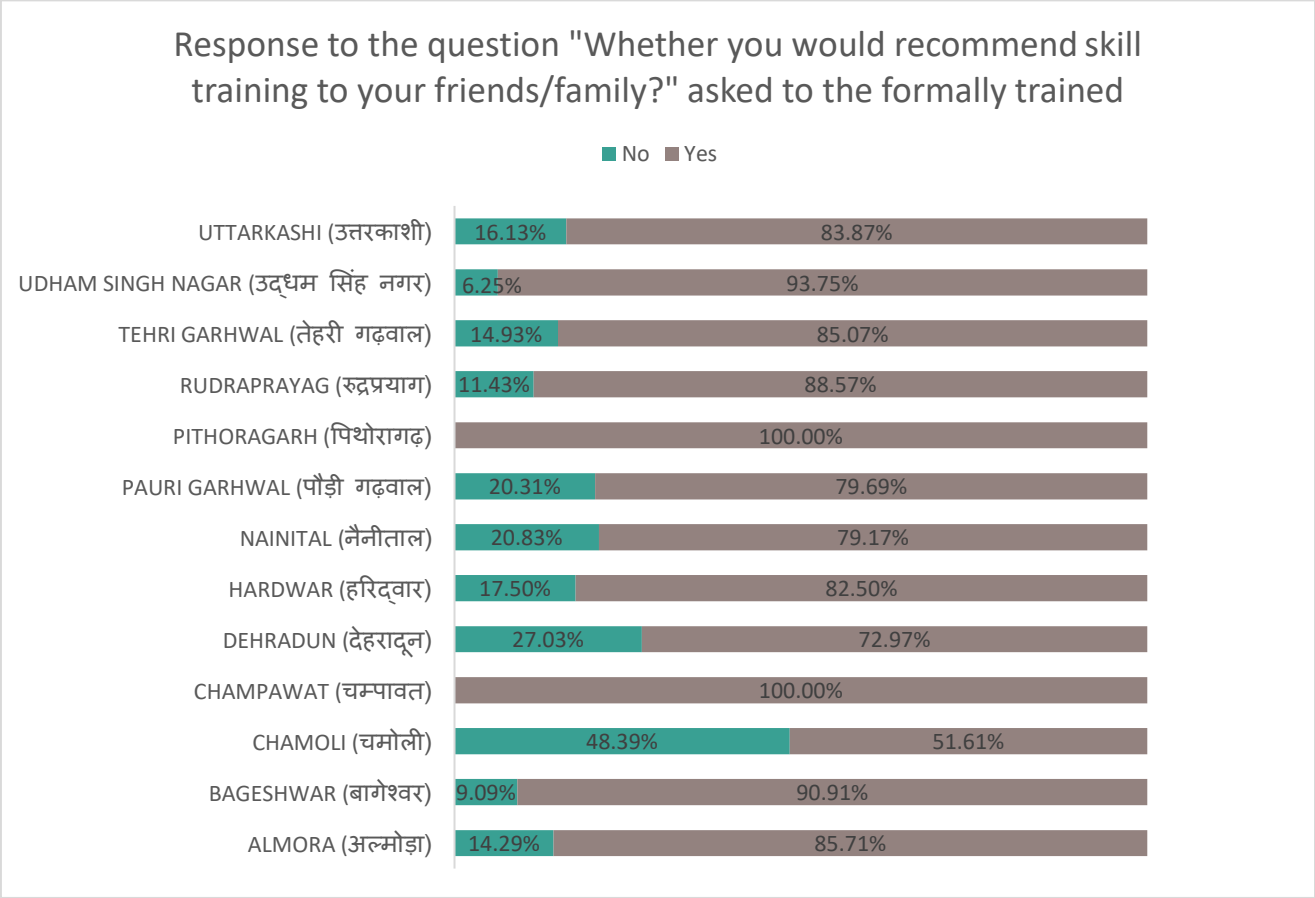
23	Agriculture	No baseline estimation exists for people employed in this sector. Census is outdated. Economic census does not report on crop production activities. Tracking land cropping pattern and the average need per unit measure of land could a possibility. But the GVA trends at the state level show a continous decline in agriculture and allied activities. The only exception is the livestock sub-sector. Therefore employment was estimated only for this sub-sector, using production data for livestock and employees engaged in production.	Livestock emerged as the only growth sub-sector through GVA and Economic Census analysis. Milk, Eggs, Wool and Meat production data was used alongwith livestock employment data from Economic Census to derive Production/worker. Production was projected based on 5 year data and the production/worker ratio was utilized for employment. This was triangulated against GVA projection method as well.	NA
24 25 26 27 28 29 30 31	Beauty and Wellness Healthcare Indian Plumbing Logistics Media and Entertainment Paints and Coatings Mining Sports, Physical Education, Fitness and Leisure	In Uttarakhand, these sectors are limited to manufacturing and services at a Medium and Small scale. Therefore, a single channel approach was adopted where employment is estimated purely on the basis of growth rates of MSMEs.	EM2 registration data from Directorate of Industries Uttarakhand was utilised. Company Name and Product description from this data was used for categorising companies into SSCs. Further, EM2 also provided number of employees at the time of registration. This data was aggregated at SSC level and its annual average was used against projection numbers for newly added industries to get employment numbers. Primary survey was also used.	Average number of employees (as stated in the first approach) in MSMEs engaged in the respective sectors was estimated from the primary survey that was administered to MSMEs.
32 33	IT-ITeS Tourism and Hospitality	According to our understanding of SSCs, both these sectors are purely on the service side. The manufacturing component under IT-ITeS is accounted for under Electronics Sector. So we extracted enterprises engaged in service activities in these two sectors from EM2 filings and MCA registrations. What we noticed in MCA registrations for these two sectors is that most of the entreprises also carry out the economic activity in the state only. So we included both MSMEs and MCA enterprises.	Apart from MSME projections, MCA registration data for new establishments and telephonic surveys for number of employees in new establishments was used for projecting employment.	Average number of employees in MSMEs for each sector was estimated from primary survey for MSMEs and interviews conducted with owners of firms registered under MCA.

8.6 Responses to questions related to skill perception









[i] http://www.esopb.gov.in/Static/PDF/GSDP/Statewise-Data/StateWiseData.pdf

[ii] AnkAha Supply Methodology => EAAG*(y)* = EAAG$_{Census2011}$ + Entrants*(15 – (y - 2011))* - Retirees*(65 – (y - 2011))* – Out Migrants - Age wise deaths $_{SRS\ 2015}$

[iii] EUS Survey Table 16: Labour Force Participation Rate (per 1000) for persons aged 15 years & above according to Usual Principal & Subsidiary Status Approach (ps+ss) for each State/UT

[iv] LFPR * Projected population on 1st July 2015 based on gender wise decadal growth rate (Census 2001 to 2011) of population above 15yrs. Table A1 and Table A2 in Annexure III of 1st Part of EUS 5.

[v] Reference: http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0107042#ack

[vi] https://msme.gov.in/sites/default/files/Udyog_Aadhar_Booklet.pdf

[vii] Difference calculated from Male and Female Literacy Rates, Census 2011.

[viii] Calculated from STATE DOMESTIC PRODUCT OF UTTARAKHAND [2011-12 TO 2016-17PE (DISAGGREGATED DATA 2011-12 TO 2015-16RE) WITH BASE YEAR, 2011-12]; Page 27

[ix] Calculated from STATE DOMESTIC PRODUCT OF UTTARAKHAND [2011-12 TO 2016-17PE (DISAGGREGATED DATA 2011-12 TO 2015-16RE) WITH BASE YEAR, 2011-12]; Page 27

[x] Compiled from 1st and 5th EUS Reports: Ministry of Labour and Employment

[xi] India State Briefs- Uttarakhand; Jobs http://documents.worldbank.org/curated/en/600141504250457271/pdf/119332-BRI-P157572-Uttarakhand-Jobs.pdf

[xii] Key Statistics: http://dget.nic.in/content/institute/key-statistics.php

[xiii] Economic Times Analysis

[xiv] Population Projection Report 2006 by RGI

[xv] World Population Projections 2012

[xvi] Palaya Ayog: Page 24: http://www.uttarakhandpalayanayog.com/pdf/Report_Palayan%20Ayog.pdf

[xvii] ILO Policy Briefs: http://www.ilo.org/wcmsp5/groups/public/---asia/---ro-bangkok/---sro-new_delhi/documents/genericdocument/wcms_342357.pdf
[xviii] Page 125; Statistical Abstract 2015-16

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About National Skill Development Corporation (NSDC): National Skill Development Corporation, working under the aegis of Ministry of Skill Development & Entrepreneurship, is a unique public-private-partnership which aims to catalyze creation of quality vocational training ecosystem in India. The organisation provides funding to build scalable and profitable vocational training initiatives. Its mandate is also to enable support system which focuses on quality assurance, information systems and train-the-trainer academies either directly or through partnerships. Since establishment in 2009, NSDC has trained more than 2 crore people through its partnership with 600+ training partners, wide a robust network of 11,000+ training centers spread over 600 districts across the country. NSDC has institutionalized 37 Sector Skill Councils and is also implementing Government's flagship skill development schemes such as Pradhan Mantri Kaushal Vikas Yojana (PMKVY), Pradhan Mantri Kaushal Kendra (PMKK), National Apprenticeship Promotion Scheme (NAPS), among others.

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