

Analysis of labour markets and skill needs in selected districts of Odisha

Districts covered: Ganjam, Sambalpur



**International Labour
Organization**

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EXECUTIVE SUMMARY

1. This report is an outcome of a research study commissioned by the Government of Odisha and International Labour Organization to understand the labour market dynamics, employment linkages and skill needs in Ganjam and Sambalpur districts. In addition two value chain studies were also undertaken in Fisheries and Horticulture in these districts, the findings from which have been submitted separately.

2. A three stage approach was adopted for this study. Stage I was an economic and employment landscape study; Stage II a mix of primary research, on site surveys, value chain field visits and stakeholders' consultation; and Stage III a synthesis of findings. The overall project approach is in Figure 1 (Main Report) and the key findings are summarized below.

Survey of Students

3. The relevance of vocational education in the job market is still not widely recognized by the students in both the districts: Sambalpur and Ganjam. Multiple factors may account for the disinclination in vocational education:

- Low awareness of vocational training facilities, offerings and job opportunities
- An interest to pursue higher education for 'knowledge based' jobs.

Survey of Workers in Informal Enterprises

4. Daily, weekly and piece rate wage earners were interviewed in 18 informal segments. Their education levels were low and core skill needs were assessed on Financial Literacy, Occupation Health and Safety (OHS) Awareness and Knowledge of Cleanliness. Most were aware about *Jan Dhan* and basic banking operations. Regarding OHS, the general tendency was to adopt only minimum / obligatory measures without which the work itself cannot progress (such as safety goggles while welding) while ignoring others which did not immediately stop their works. Cleanliness awareness at the workplace had received a boost with the Swachh Bharat campaign. Most reported a need for sustained, 'regular income' generating livelihood options in rural areas to effectively address their compulsion for rural to urban migration.

Survey of Vocational Training Providers

5. A survey of 26 VTPs showed many courses struggling to attract sufficient number of students. The mismatch between industry demand and training imparted was evident. Sustaining profitability of existing operations was a challenge and none of these institutes were inclined to introduce new courses. Dearth of suitably trained instructors and updated curricula were also common challenges. The VTPs were also scored on six major dimensions.

Survey of Industries, MSMEs and Establishments

6. In all 1,299 valid responses were analyzed from a survey of Industries, MSMEs and Establishments using the following frames:

- i. Enterprises from the Annual Survey of Industries¹
- ii. Manufacturing and Services firms; mostly Small and Medium Enterprises (Business Register, Directorate of Economics and Statistics)
- iii. Shops and Establishments: Municipal Trade Licensees (MTL)

7. Though 80% of the industries surveyed reported confidence in either sustaining or increasing their business, only about 30% expressed their willingness to hire in future. About 41 sectors were likely to hire in the next 2-3 years and most of the demand would be high for crafts and related trade workers plant and for elementary occupations, technical skills, sales and marketing. The most serious skill gaps were perceived by employers in crafts and related trade workers. The practice of apprenticeship in MSMEs was almost non-existent.

8. The number of jobs that are projected to be generated in the formal sector in future will not be commensurate to the labour supply. This is likely to increase unemployment, out-bound migration as well as informality in the labour markets.

Survey of In-Service employees

9. A maximum of five in-service employees were interviewed from each of the enterprises and a total of 3,458 responses were obtained. Majority of respondents were poorly educated, with 8% having studied up to Class V, 16% having studied up to Class VIII and 42% were found not having passed Class X. Only 12% of employees had some form of social protection.

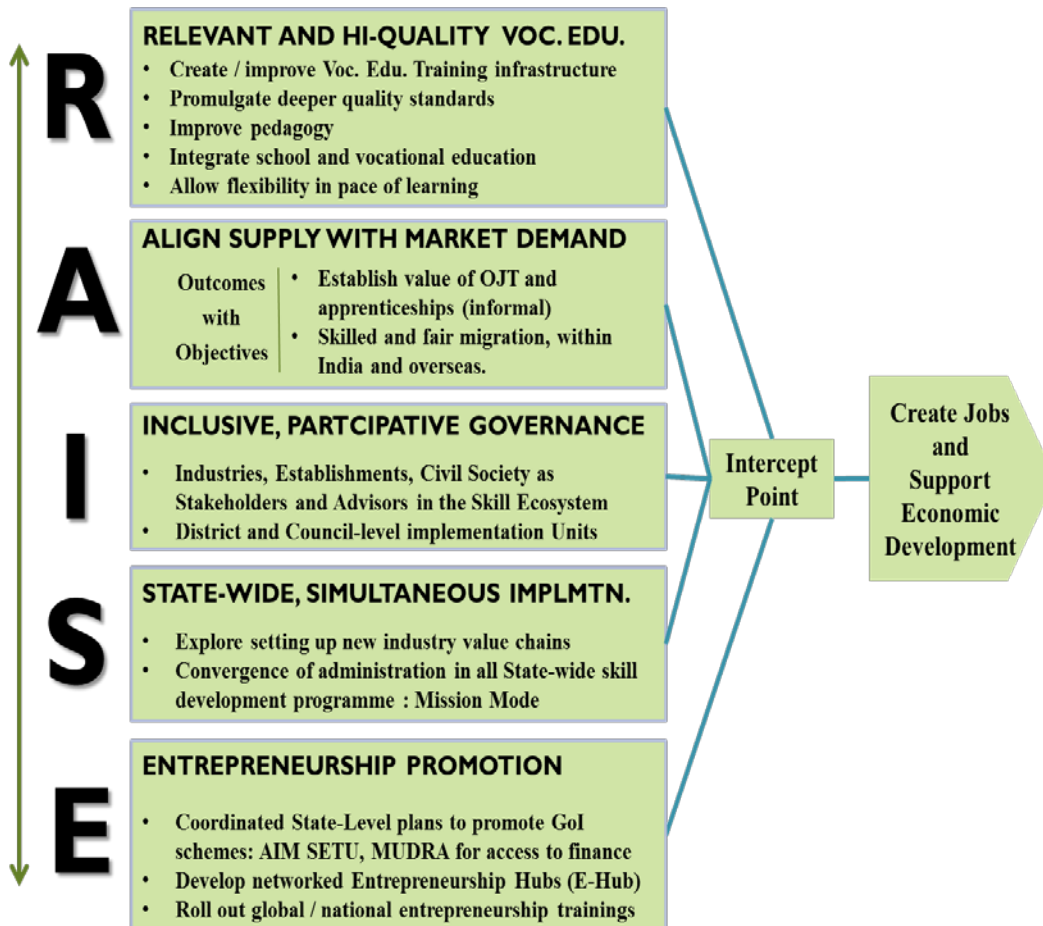
10. Similar to students' groups, even in-service employees did not seem to realize the importance of skill development in the job market. Moreover, they did not seem open discussing about skill mismatch between their job roles and skills required for the job (more than 50% did not respond to this question). Only 5% of in-service employees reported to having received vocational training. Even among the employees who had undergone formal vocational training, most of them require two months of OJT to start giving outputs.

¹ The sample of industries/ enterprises considered for survey have been selected from the databases of Annual Survey of Industries (ASI), Business Register (BR), Municipal Trade Licensees (MTL).

11. Wage differential statistics reveal the mismatch between employers' willingness to hike wages in future and employees' expectation of future hike in wages. Expected future wages surpasses employers' anticipated future wage increase.

Framework Suggestion

12. The major suggestions for improving the present system skilling ecosystem in Odisha can be based on the framework proposed below.



Ten Specific Suggestions

13. **Making vocational education aspirational:** Communication kits can be developed and made available in Oriya, Hindi and English (as needed). District town level camps can then be organised for further mobilization of job-seekers.

14. **Pilot project for selected schools:** A list of five schools in each district may be considered for a pilot project for vocationalization of school education. Lessons learnt can be used to scale-up the programme.

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15. **Establishing Employer-Educator-Trainee Linkages:** Effective implementation of Public-Private-Partnership models needed to ensure active participation of industry, assess and validate the labour market demand and provide market oriented trainings for employability.
16. **Improving pedagogy:** State Policy should provide for VTPs operating in Odisha to get their instructors certified. An Advanced Training Institute (ATI) for instructors training needs to be established soon in Odisha.
17. **Apprenticeships (formal and non-formal):** A State specific scheme for fresher (up to the age of 21) as well as ITI and MES apprenticeships needs to be developed aligned to the National Apprenticeship Promotion Scheme and implemented.
18. **Recognition of Prior Learning (RPL):** The informal workforce is amenable to being assessed under a RPL program that could be administered in conjunction with suitable bridge training courses. A pilot RPL program could be undertaken for 1,000 orchard workers in Sambalpur, Deogarh and Bargarh districts.
19. **Improving Career Service functions:** The study found the urgent need for improved computerization of the Employment Exchanges and get them aligned to the objectives set out in the National Career Service project.
20. **Promoting Entrepreneurship Development:** The study shows that, over the next 3 years, the number of jobs that can be projected to be created in the formal sector would be significantly less than the number of new entrants who are likely to join the workforce. Hence, entrepreneurship as a career option needs to be actively promoted by the State. ILO's Start and Improve Your Business (SIYB) is adopted by 80 countries to support Micro and Small Enterprises (MSEs). Rolling out the program in Odisha would be beneficial. ITI instructors as well as NABARD FPOs, and SHGs could be trained to adapt modules of this programme into the curricula.
21. **Job-focused linkages with value chains:** Two reports for Coastal Fisheries in Ganjam and Horticulture (fruits) in Sambalpur have been prepared as a part of this study. More such sector / value chain studies can be undertaken using these templates. Supporting and aligning the growth of MSMEs as a part of these existing or new value chains needs to be encouraged.
22. **Developing a Labour Market Information System:** The study needs to be replicated for the remaining districts in the State. The roll-outs may be structured into two phases, as deemed appropriate. The ILO is in the process of developing a State-Level toolkit for structured roll-out of such detailed Labour Market studies in India.

SECTION 1: INTRODUCTION

A. THE CONTEXT

1. In the next two decades, India would have the largest young workforce in the world and shall attain a low dependency ratio. The total workforce in India is estimated at to be 487.4 million of which about 249 million (51%) are in the non-farm sector. Official estimates show that only 10% of the non-farm workers (approximately 25 million) are formally trained and skilled, which is very low compared to other developed countries, such as, Japan (80%) and Germany (75%)². The number of people who are entering the workforce every year is estimated to be 26 million and by 2021, 64% of the population will be in the working age of 15-59 years.

2. Skilling new entrants into the workforce as well as the remaining 90% non-farm workers (around 225 million) and engaging them in an economically effective way poses a mammoth challenge for the country. The magnitude of ramp up required for skills development delivery systems in India, within limited time, is challenged by its diversity, vastness and administrative complexity in a federal structure. The country can reap dividends from this situation, if it can focus on four key dimensions:

- i. Impart more people with education and vocational skills
- ii. Attract investments to stimulate workforce demand
- iii. Methodically channelize the young workforce pool into productive economic activities
- iv. Increase the female labour force participation rate

3. The Annual Report to the People on Employment by Ministry of Labour, Government of India 2010 cited data³ and estimated that only 2 percent in the age group of 15-29 years received formal vocational training, and around 8 percent reported to have received non-formal vocational training. This indicates that a high proportion of the youth enter the world of work without any kind of vocational training. In order to enhance youth employability, concerted efforts have to be made to enhance the skill development infrastructure and provide its access to job-seekers.

4. The Government of India formed the Ministry of Skill Development and Entrepreneurship in November 2014 to recognize the urgency and scale of coordination efforts required across a large number of Central, State, parastatal and private agencies who are stakeholders in the skilling ecosystem. Subsequently, in July 2015, the Central Government launched the National

² Government of India, National Sample Survey 64th round

³ NSSO data 2004-2005

Policy on Skill Development and Entrepreneurship and followed it up by promulgating multiple new and revised schemes to support Skill Development, Entrepreneurship and Apprenticeships.

5. **Odisha State Overview:** The State of Odisha, situated in the eastern coastal plain of peninsular India, spans over an area of 1,55,07 sq.km (4.7percent of the total geographical area of India) and a coast line of 480 km. The State has 30 Districts, 58 Sub-Division, 317 Tehsils, 6,227 Gram Panchayats, 314 Community Development Blocks, 107 Urban Local Bodies and 51,349 villages. Odisha has a tropical climate, very high temperature in April and May and an average annual rainfall of 200cm. Based on factors like land, climate, elevation, water availability and other variables the State of Odisha is broadly divided into ten agro-climatic zones.

6. **Demographics:** Odisha's population at 41.97 million in 2011 was 3.47 percent of India's total population. The State has a unique mix of socio-cultural and ethnic diversity with 62 different tribes dwelling here. Scheduled tribes constitute 22.8 percent of the total population of the State (Census 2011). The State's decadal population growth rate of 14 percent was lesser than the national average growth rate of 17.68 percent. The population density (Census 2011) was 270 people per sq. km. About 83.3 percent of the State's population was rural which was higher than the corresponding national average of 69 percent. Of the total rural population of the State, the coastal district of Ganjam had the highest rural population (7.9 percent).

7. **Economy:** Odisha is primarily an agrarian State with 60 percent of its total population depending on agriculture for their livelihood. The State being blessed with abundant mineral, forest, marine and inland water resource. The economy of Odisha is changing with the contribution of the industry and services sector in GSDP. In the last two decades, Odisha has also witnessed a decrease in the share of the Agriculture of the total GDSP of the State, while correspondingly Industry and the Services Sector have shown an increase. The contribution of Agriculture fell from 29.07% in 1997-2002 (9th Five Year Plan) to 17.93% in 2012-2017 (12th Five Year Plan). During the same period, the share of Industry rose from 18.47% to 35.49% and that of the Service Sector also increased marginally from 39.16% to 41.14% percent, making it the largest contributor to the State's GDSP. However, the Human Development Index for Odisha recorded in 2011 was 0.442, lower than the national average of 0.504. About 32.59% of the population in Odisha below the poverty line compared to the national average of 21.92%⁴. The per-capita income levels in Odisha, at Rs. 52,516, are significantly lower than the national average of Rs. 72,889.

⁴ Annual Plan for 2016-17

8. **Literacy:** The literacy rate of the State shows a significant increase in literacy level, from 63.1 percent in 2001 to 72.9 percent in 2011 (Census 2001 and 2011 data). Ganjam district of recorded the highest number of rural literates (16,35,150). The male literacy rate at 81.6 percent was about the same as national average of 80.89 percent. Importantly, the female literacy rate at 64.0 percent, being much lower than national average in 2001, improved significantly to catch up with the national average of 64.64 percent in 2011.

Table 1: Decadal growth in literacy rates

Census Years	Odisha literacy rate (percentage)				India literacy rate (percentage)			
	Male	Female	Overall	Decadal increase	Male	Female	Overall	Decadal increase
2001	75.35	50.51	63.08	13.99	75.3	53.7	64.8	13.2
2011	81.59	64.01	72.87	9.79	80.89	64.64	72.99	9.24

(Source: Odisha Economic Survey 2014-15)

9. **Education:** The Education Development Index, which ranks States in India, shows a mixed picture. Between 2011-12 and 2014-15, the relative position of Odisha slightly improved from 26 to 22 for the 'Upper Primary' component but remained stagnant around 22 / 21 for the 'Composite' figure. However, during the same period, the ranking vis-à-vis the 'Primary' component went down from 16 to 18. The gross enrollment ratio in the upper primary schools increased from 104.93 in 2011-12 to 107.07 percent in 2015-16. The dropout in the secondary level in the year 2015-16 for boys was 6.84 and for girls was 5.18 which was less than corresponding figures in 2011-12 (boys 22.84 and girls 16.44). The percentage of successful candidates in State Secondary Level Examinations (BSE, Odisha) was lower than that of comparable Boards (CBSE and ICSE) but has been increasing consistently over the last five years, indicating some efforts to improve secondary education delivery systems.

Table 2: Candidate Success Percentage in Odisha Secondary Level Examinations

Year	Parameter	BSE Odisha	CBSE	ICSE Delhi
2011	Percentage of success	58.67	99.8	98.5
2012	Percentage of success	62.3	99.22	98.8
2013	Percentage of success	84.7	99.25	98.7
2014	Percentage of success	84.25	99.83	97.92
2015	Percentage of success	82.56	76.75	98.49

(Sources: Board of Secondary Education, Odisha; CBSE and ICSE Delhi)

10. The State has 11 universities and 2,203 general colleges including 96 Government colleges. There are 605 government aided colleges, 200 block grant colleges, 1001 non-government (unaided) colleges, 287 self-financing colleges and 14 other department colleges⁵. Higher Secondary education is imparted in junior colleges (Classes XI and XII), as a part of the Higher Education system which, from academic year 2017-18, would move into the domain of School and Mass Education.

Table 3: Candidate Success Percentage in Odisha Higher Secondary Level Examinations

Year	Parameter	Science	Arts	Commerce
2011	Percentage of success	58.67	99.8	98.5
2012	Percentage of success	62.3	99.22	98.8
2013	Percentage of success	84.7	99.25	98.7
2014	Percentage of success	84.25	99.83	97.92
2015	Percentage of success	80.31	76.31	69.48

(Sources: Council for Higher Secondary Education, Odisha)

11. **Employment Situation:** The Labour Force Participation Rate (LFPR) for rural Odisha was 503 (out of 1000), below the national average of 530; and the urban LFPR was 441 around the national average of 431.⁶ The percentage of total workers in the State increased from 38.8 percent in 2001 to 41.8 percent in 2011 (Census 2001 and 2011 data). However the percentage of main workers to total workers declined from 67.2 percent in 2001 to 61 percent in 2011 indicating decline in employment opportunities within the State. The total marginal workers of the State were 39.0 percent of which 81.9 percent were engaged for 3 to 6 months and 18.1 percent were engaged for three months only⁷.

12. At the same time significant unemployment persists as official Live Register data of the employment exchanges show, the total number of unemployed increased from 8.32 lakh in 2008 to 10.42 lakh in 2015. Placement was around 0.44 percent of the Live Registration Position and 1.92 percent of the registration made during 2008 which declined to 0.17 percent and 0.90 percent respectively in 2015. All these when analyzed together along with views obtained from stakeholder consultations during the preparatory stage of this study presents an urgent need give a major thrust for creating employment opportunities within the State.

⁵ Odisha Annual Plan, 2015-16

⁶ Labour Bureau, Employment Survey of 2015-2016

⁷ Odisha Economic Survey 2015-2016

B. Scope of the study

13. The Government of Odisha (GoO) requested ILO to conduct a detailed labour market study at the district level, the findings from which could support a medium to long-term human resource planning exercise. This study, inter alia, sought to identify employment linkages and assess skills needs at the district level. Insights and evidence based recommendations derived from this study could then be used by GoO to develop policy responses, plan State-led interventions, and help structure implementation programs.

14. Following this request, two missions to Bhubaneswar was undertaken by ILO/ DEFT representatives to define the coverage and the scope of the proposed study. Mission meetings were held with GoO officials across multiple Departments / Directorates and Institutions. This culminated in GoO identifying two representative districts (Ganjam and Sambalpur) for the pilot study. Inputs obtained from the mission meetings were considered to fine tune the scope of the proposed engagement given below:

- i. Understand the labour market conditions in the two selected districts of Odisha. Establish the linkage (existing and potential) between labour market demand and supply with a focus on medium to long term human resource planning.
- ii. Assess skill needs and training providers' constraints of the in these districts. Only 48 persons (per thousand persons) received vocational education in Odisha as compared to the national average of 68.⁸
- iii. Undertake one or two value chain studies in identified sectors which have growth prospects. Assess the employment potential that can emanate from growth and improvement of these value chains.
- iv. Develop and calibrate necessary labour market survey instruments that could be replicated to other districts of the State and eventually lead to establishing a responsive Labour Market Information System.
- v. Recommend possible State-led interventions, policy responses, and implementation programs that may emanate from the study.

15. GoO issued their Office Order on 20 October 2016 requesting ILO / DEFT to commence the study. An additional Office Order, identifying sectors for value chain studies, was issued by GoO on 19 December 2016. Odisha Rural Development and Marketing Society (ORMAS), under the Department of Panchayati Raj, were identified as the nodal agency for this study.

⁸ Labour Bureau, Education, Skill Development and Labour Force, Volume III 2014

C. Ganjam District Profile

16. The district of Ganjam located towards the south of the capital city of Bhubaneswar, was formed on 1st April, 1936. It is bordered on the south by Andhra Pradesh and on the east by the Bay of Bengal. The climatic condition of the district is generally hot with high humidity. The monsoon generally breaks during the month of June. It has a geographical area of 8,206.60 sq. km. with three sub-divisions: Chhatrapur, Berhampur and Bhanjanagar. The district has 22 blocks and 475 Gram Panchayats with district headquarters located at Chhatrapur.

17. Ganjam recorded a total population of 35,29,031 (Census 2011); and having 7.9 percent of the State's population, was the most populated district in Odisha. It's population density at 429 persons per sq. km. was higher than the State average. The male main workers in the district were 718,163 and male marginal worker were 271,864 while female main worker were 182,581 and female marginal workers were 329,164 (Census 2011). Though both Male and Female literacy rates for Ganjam showed a decadal increase between 2001 and 2011, the district averages were below overall State averages.

Table 4: Ganjam district literacy rates

Census Years	Ganjam literacy rate (percentage)			Odisha literacy rate (percentage)		
	Male	Female	Overall	Male	Female	Overall
2001	75.22	46.44	60.77	75.35	50.51	63.08
2011	81.85	61.84	71.88	81.59	64.01	72.87

(Source: Census 2011)

18. GoO has developed three industrial estates in this district which are located at Berhampur, Chatrapur and Bhanjanagar. Though both agriculture and industrial sectors contributed to the economy of Ganjam, about 75 percent of the workforce depended on agriculture for their livelihood. A paucity of jobs is forcing a large number of youth to migrate from Ganjam district to different cities of India which has affected its economy significantly⁹.

D. Sambalpur District Profile

19. Sambalpur district, situated in the western part of Odisha, shares its boundaries with Deogarh, Jharsuguda, Bargarh, Subarnapur, Boudh, Angul. It lies on the banks of river Mahanadi

⁹ Ganjam district portal, Govt. of Odisha accessed at http://www.ordistricts.nic.in/district_profile/economy.php

with a total area of 6,702 sq. km. It is the administrative, commercial and education hub of western Odisha. The district is divided into three sub-divisions - Sambalpur, Rairakhol and Kuchinda; has 9 blocks and 136 Gram Panchayats. The district headquarters are located in Sambalpur town.

20. Sambalpur district has a population of 10,41,099. It's population density 157 person per sq. km. (Census 2011). The district has an ethnically diverse population with Scheduled Castes population being 191,827 (about 17 percent of the district population) and Scheduled Tribes being 355,261 (about 35 percent of the district population). The number of main worker male was 2,08,837 and female was 73,337 and the number of marginal worker male was 48,363 and female was 90,809. Both Male and Female literacy rates in Sambalpur showed a decadal increase between 2001 and 2011, and the district averages were above overall State averages.

Table 5: Sambalpur district literacy rates

Census Years	Sambalpur literacy rate (percentage)			Odisha literacy rate (percentage)		
	Male	Female	Overall	Male	Female	Overall
2001	78.99	55.16	67.29	75.35	50.51	63.08
2011	85.17	68.47	76.91	81.59	64.01	72.87

(Source: Census 2011)

21. Sambalpur experiences extreme type of climate with hot and dry summer followed by humid monsoon and cold winter. The district is famous for its handloom textile works, popularly known as Sambalpuri Textile, and globally renowned for its textile bounded patterns and fabrics locally known as Baandha. It also has good forest cover which produces kendu leaves, which is one of the most important non-wood forest products of Sambalpur

22. With the commissioning of Hirakud dam in post-independence India, industrialization started in the district; power, alumina and steel units have been established. For decades, Sambalpur has been the education hub of Odisha: a very good Sambalpur University, general education colleges (Gangadhar Meher College, now converted into a University), reputed engineering and medical institutes (at Burla). This excellence continues as Sambalpur has recently been selected for locating the prestigious IIM in Odisha.

E. Review of Prior Studies

23. In 2008, MART (commissioned by GoO) conducted a study for detailed and systematic Livelihood Opportunity Analysis in 14 project divisions to suggest options for Income Generating Activities for forest dependent and other poor communities in these areas. The first phase

involved secondary data study and field visits to some selected Forest Divisions. In the second phase Value Chain Study for 20 potential products was conducted. Two Livelihood Promotion strategies emerged from the study. Initiating Collective Marketing of raw produce, combining aggregation and local value addition of no-change-in-form nature. And setting up Micro Projects for value addition (change in form) based enterprise for selected produce.¹⁰

24. Thereafter, in March 2009, MART submitted its report based on a Need Assessment Study of Popular Trades in Industrial Technical Institutes of Odisha. Recommendations from the study included offering market-led courses, opening new training centres; focus on emerging industrial trades, labour market assessment, and emphasis of visual modes for training.¹¹

25. Around the same time, through another initiative, MART also conducted a Value Chain Analysis and Feasibility Strategy of Product Clusters in TSP areas of Odisha. The objectives of the study were to conduct value chain analyses and market feasibility of products of entrepreneurial value in 118 Tribal Sub Plan blocks of Odisha and to develop the roadmap for promotion of product based clusters. The findings underscored the need for enhanced marketing efforts and extension services across all clusters, to enhance productivity and growth. A specialized agency for cluster promotion and implementation of intervention plans was also advocated.¹²

26. Subsequently, in 2012, Ernst & Young under the aegis of National Skill Development Corporation (NSDC) undertook a Skill Gap Assessment for all districts of Odisha¹³. Though the report attempted to project the employment generation potential by each district till 2026, it worked mostly on the basis of secondary data with limited amount of field surveys to collect primary data and labour market evidences. The reported findings for Ganjam and Sambalpur are summarized below:

- The total workforce demand for skilled jobs in Ganjam expected to grow from 7.3 lakhs in 2011 to 13.8 lakhs in 2026. Workforce demand expected for tertiary sector (87 percent), primary (10 percent) and secondary sector (3 percent). Sectors with major demand for skilled workforce: tourism, travel, hospitality & trade (2.9 lakhs); banking, financial services & insurance (1.9 lakh); education & skill development (1.6 lakh); healthcare (1.6 lakh) and IT & ITeS (1.6 lakh).
- The total workforce demand for skilled jobs in Sambalpur expected to grow from 2.4 lakhs in 2011 to 4.3 lakhs in 2026. The tertiary sector expected to account for 75% of the total

¹⁰ MART Livelihood Opportunity Analysis, 2008-2009

¹¹ MART Report on ITI Odisha Skill Development (OMGI), 2009

¹² MART Feasibility Strategy of Product Clusters in TSP areas of Odisha, 2009

¹³ NSDC, Ernst & Young: Skill Gap Assessment for the State of Odisha 2012

workforce demand, secondary sector (15%) and primary sector (10%). Sectors with high demand for skilled jobs: banking, financial services & insurance (0.7 lakh); tourism, travel, hospitality & trade (0.6 lakh); and unorganized (0.6 lakh) sector.

F. Our approach to this study

27. The study adopted a three stage approach. Stage I includes an economic and employment landscape study. Stage II includes a mix of primary research, on site surveys, field visits and stakeholders consultation. Stage III includes synthesis and validation of findings. The overall project approach is shown in Figure 1.

Stage I

28. Secondary data sources included, inter alia, databases from GoO Directorate of Economics and Statistics, Census of India, Labour Bureau Employment-Unemployment Survey, Economic Survey of Odisha, prior study reports and statistics from the Ministry of Human Resource Development. The secondary data was analyzed to identify the major industry sectors, trades, occupations based on which the survey instruments were prepared.

Stage II

29. Stage II included primary research using four simultaneous tracks. Activities of each track were structured to align outcomes with these respective objectives. Stage II spanned the longest part of the research, in terms of duration, and included field surveys, online surveys, stakeholder consultations, workshops, and focus group discussions, followed by data collation and analysis. The tracks focused on the following three modules, namely

- ***Track 1:*** Students of Educational Institutions, In-service Employees
- ***Track 2:*** Technical Training Institutes, Vocational Training Providers
- ***Track 3:*** Industries, Establishments, MSMEs, Urban Local Body trade licensees, Public Institutions, Own Account Enterprises, and informal enterprises
- ***Track 4:*** Value Chain study (Fishery and Horticulture)

Survey of Students of Educational Institutions and in-service employees

30. This activity involved consultation with civil society to obtain insights into the aspirations, opportunities and potential skill gaps. Two sets of questionnaires were designed for the purpose of the survey: one for the on-line, web-based survey of the students of different educational levels (Class IX-X, Class XI-XII and undergraduate), and the other for collecting primary data through face interviews of Principals / head of the institutions.

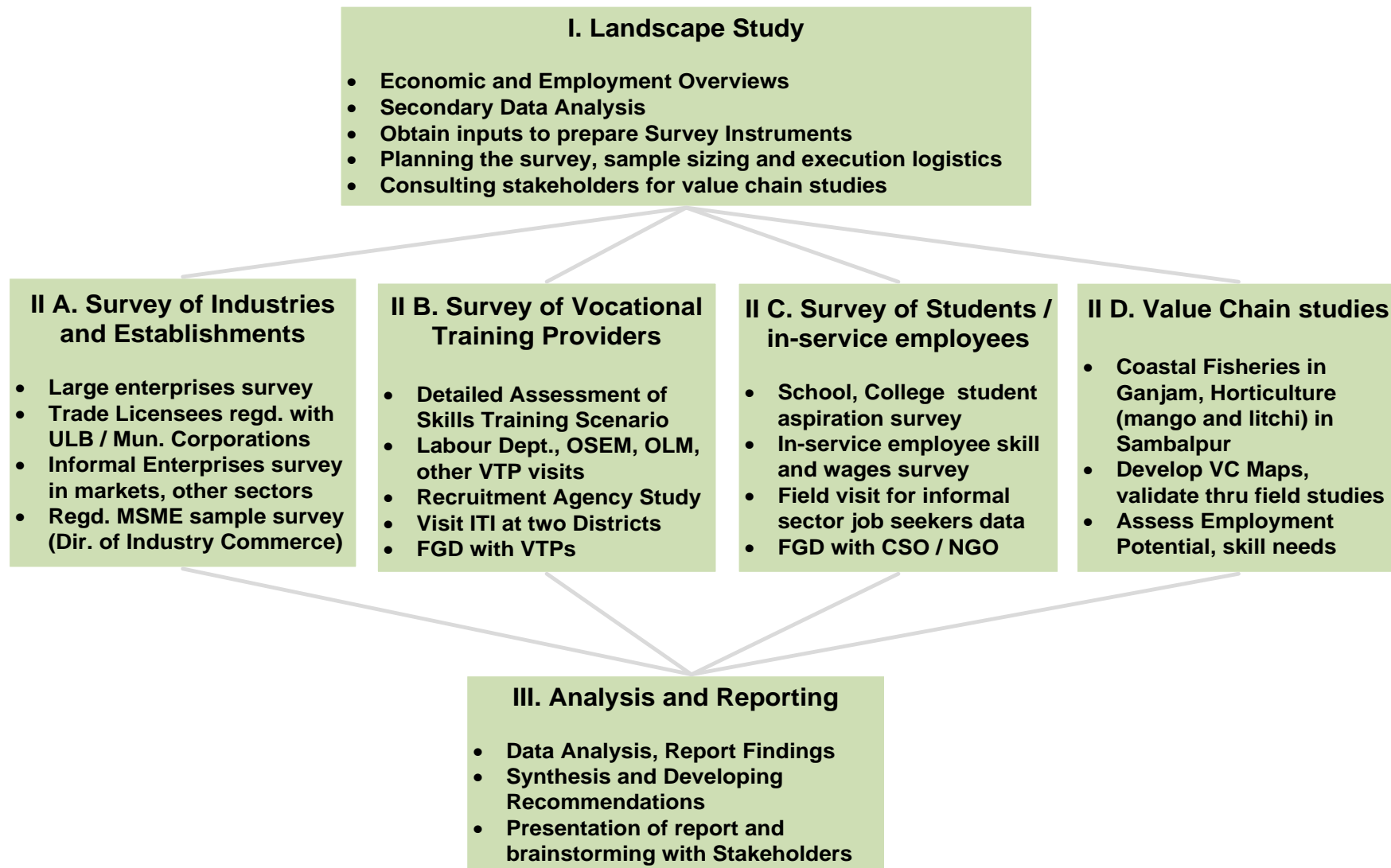


Figure 1: Overall approach to this Action Research study

31. For in-service employees, a three part questionnaire employed. Parts A and B aimed at drawing responses from the entrepreneur or employer whereas Part C focussed on collecting responses from the employees or workers. The survey covered 3458 employees from 37 sectors. The survey results were the compiled and analyzed by the team, to draw inferences.

Survey of Technical Training Institutes, Vocational Training Providers (VTPs)

32. An assessment of the skill development initiatives in Odisha (two districts) was undertaken, to arrive at a preliminary understanding of the supply side scenario. Formal and non-formal VTPs in Ganjam and Sambalpur district were identified and survey conducted.

Survey of Industries, Establishments, Micro-Enterprises and Informal Sector

33. For the assessment of the demand side scenario and to get the industries perspective on labour requirement and skill gap, questionnaire was designed and survey conducted. The data obtained from the questionnaire survey was analyzed to identify the industries with high growth potential and skilled workforce requirement. To understand the informal market scenario of Odisha, Sambalpur district, two set of questionnaires was designed, one for the informal enterprises and the other for the informal employee. Respondents across a gamut of trades were selected through random sampling and surveyed through a questionnaire customized for this study. Details related to migration status and reason for migration, wage and education levels, and aspirations for setting up business, were collated and analyzed to draw insights.

Value Chain Studies

34. Ganjam, located in the eastern coast of Odisha with a coastline of 60 kms, and where significant growth is possible for marine and brackish water produce, was chosen as a focus district for this study. Following a study of relevant value chain research and meetings with the stakeholder groups concerned, including Directorate of Fisheries, hatcheries, culture farms and fish landing centres, the research team conducted site visits to gather additional information. A survey questionnaire devised for this study was calibrated during these visits. The surveys were then duly conducted, and the responses collated, validated and analyzed, to draw insights and provide recommendations for skill improvement and employment generation. A detailed value chain map emerged as a result of the research. This was then analyzed to make suggestions for improvement and assess the employment potential of such suggestions.

35. The climatic condition of Sambalpur is suitable for fruit crops like litchi, guava, mango, pineapple, banana and papaya. While the production of litchi has stagnating of late because of multiple reasons, the area under cultivation for mango has been increasing. Hence the

employment potential of the fruit cultivation and processing sectors were chosen for undertaking a value chain study in this and adjoining districts. The team conducted surveys, visited orchards, analyzed available data, met Directorate of Horticulture officials and other stakeholders to make an assessment of these value chains and, if nurtured, their employment potential.

36. The above two Value Chain study reports have been submitted separately.

Stage III

37. Stage III involved the analysis of the primary and secondary data obtained from Stage I and Stage II. The findings from the analysis were synthesized to obtain insights and provide suggestions. Key stakeholders were consulted to achieve the right outcomes and the report was drafted after incorporating the feedback obtained in these meetings.

SECTION 2: STUDENTS SURVEY

38. The methodology followed by the DEFT research team for questionnaire design, sample selection, undertaking surveys for primary data collection, collation, cleansing and validation has been based on approaches taken for similar assignments in Mizoram and Assam. Localization requirements for Odisha have been done to calibrate the questionnaires, sample stratification, and conduct the surveys. The supply side stakeholder groups covered in the study comprise three high-level groups: students who constitute tomorrow's workforce, current in-service workforce in formal enterprises, informal sector workers and Vocational Training Providers (VTPs) who are important intermediaries in matching labour market supply with skill demand.

39. Multiple sets of surveys were undertaken to comprehensively assess the labour market supply conditions in these two districts. Each set of survey had its unique questionnaire and were administered adopting different methods appropriate to suit the needs of this study.

- i. the first set of surveys covered student groups: (i) school students of Classes IX-X, (ii) those of Classes XI-XII in junior colleges, and (iii) undergraduate college students. All data collected were entered by student respondents online using a web based, customized software that was made accessible to them in selected schools.
- ii. the second set of surveys covered 26 VTPs in Ganjam and Sambalpur, 13 institutes in each district. This data was collected through on-site visits by TVET expert from the study team by adopting a pen-and-paper-interview process.
- iii. the third set of surveys covered a range of informal sector workers

40. Following the questionnaire sets, the analysis of the labour market supply side has accordingly been divided into three consecutive Sections:

- Survey findings from students (discussed in this section)
- Survey findings from the informal sectors (discussed in Section 3)
- Survey findings from the VTPs (discussed in Section 4)

STUDENTS ASPIRATION SURVEY

41. **Survey Instrument:** In all four sets of questionnaire was prepared: one each of the three students groups and the other for principals. These structured questionnaires leveraged the method and questions developed by the research team for prior projects in Mizoram and Assam. This method of using anonymous surveys captured the profile, needs and aspirations of each student group. The questionnaires for the three student groups were broadly divided into the following sections:

- The first part of the questionnaire consists of questions related to the personal profile of the respondent. It included queries to determine the age group, location, and educational

qualification and educational stream preferred. Subjects opted for or planned to be studied by the respondent were also included.

- In the second part, questions were asked to capture the preference of the respondent towards Formal and / or Vocational Education. It includes questions related to perception about importance of vocational education and specifics of vocational courses, if any, already undertaken by the respondents.
- The third part, for Class IX-X students, was related to perception about employment prospects in the region, aspirational job mobility and awareness about vocational education networks. For Class XI-XII, undergraduate students, the third part of the questionnaire aimed to ascertain aspects such as the employment status of the respondents, sector, and wages.
- The fourth part, for Class IX-X students, consisted of questions about future employment aspirations. In the case of Class XI-XII as well as undergraduate students, the fourth part focused on self-perception about employability of respondents and attempts to determine motivators to pursue vocational training.
- The fifth part of the questionnaire, for Class XI-XII and undergraduate students, the questions were related to perception about educational environment, vocational training facilities and employment prospects in the region, aspirational job mobility and awareness about vocational education networks.
- For Class XI-XII and undergraduate students, the sixth part of the questionnaire was specifically designed to draw insights on future job role preferences and entrepreneurial aspirations of the respondents. It included questions to capture and expected income after considering vocational courses/ skills training.

42. One of the distinguishing features of this study was to include principals of schools as a separate stakeholder group. From across institutes covered in the survey for Ganjam and Sambalpur, a sample was chosen and the respective principals engaged. The questionnaire for principals focussed mainly on the following: the estimated percentage of slow learners amongst students, reasons for students dropping out, the subjects that students generally take more time to learn – particularly in secondary school, subject-wise shortage of teachers, and measures needed to improve pedagogy/ quality of teaching.

43. Taken together, the questionnaires across all the stakeholder groups provided appropriate options to capture multiple responses (nominal, ordinal and scale) using approaches such as Likert Scale, Multiple Response Checkboxes, and Multiple Choice Questions.

44. For reliability, the internal consistency method was used. The objectives here were to check internal consistency of the questions in any given survey and to confirm that they were measuring the characteristics or qualities they were objectively supposed to. This approach is typically applied to groups of items that are thought to measure different aspects of the same concept. The findings from the surveys were used to establish the general propositions about the population.

45. **Sample size:** The schools and colleges to be surveyed were chosen by respective District Education Officers and Regional Directorates of Education. In all 1,281 valid responses were obtained from the students through this survey: 914 respondents were from Sambalpur and 367 respondents were from Ganjam.

46. **Data collection:** The survey team visited schools and colleges for collecting basic data about the institutions as well as demonstrate the web-based software that were to be used as a students' survey instrument. Necessary coordination mechanisms were set up with Principals and faculty focal points in the schools and colleges. For each group, a link to the survey Online Form was provided and kept active for weeks, to collate maximum number of responses. Wherever required, a spread sheet was provided to the authorities at the institutes, to enter the relevant data centrally. The quality of the responses was scrutinized by the study team.

47. **Data validation and analysis:** The responses of the surveys for the larger set in Sambalpur were collated, validated and analysed to draw the key findings. These were then mapped against the responses collated from the survey sample for Ganjam. Common patterns and points of material difference were noted by the research team, and presented in this report. Data Analysis was done using Statistical Package for Social Science (SPSS) version 22.0 and Microsoft Excel 2010. Mean, Standard Deviation, Cross-Tabulations, Factor Analysis, Parametric and Non-Parametric Tests were used as statistical tools.

KEY FINDINGS

48. **Overage Students:** The incidence of overage undergraduate college students in Sambalpur was high at 15.1% when compared to Ganjam at 3.18%. However, to derive generalized insights on this parameter, a similar survey needs to be replicated across other districts in the State with bigger sample sizes. However, the age cohorts of Class IX-X, XI-XII were comparable between Sambalpur and Ganjam, and did not show any significant number of overage students in either district. This, in one way, validates that the findings from education

sector data analysis (Section 1 para 30) that the Secondary and Higher Secondary Education delivery systems in the State have been improving consistently over the last few years.

49. **Relevance of vocational education in the job market:** In Sambalpur, the relevance of vocational education in the job market is not widely recognized by the students; Class IX-X 64.94% recognition, Class XI-XII 58.18% recognition, and undergraduate college students 65% recognition. The findings also show that such realization does not get stronger as students move up the educational ladder. In the case of Ganjam, the corresponding figures are 66.66%, 19.58% and 43.94% for students of Class IX-X, Class XI-XII and colleges respectively, showing a distinct tilt away from vocational training. Both Sambalpur and Ganjam show figures that are significantly lower than similar data collected from other States where the survey team has worked in year 2016; both Assam and Mizoram show almost 80% of their students recognize the relevance of Vocational Education in the job market.

50. Multiple factors listed below may account for this finding, although none of these are unique to these districts and are seen across many Indian States:

- i. Low awareness of vocational training facilities, offerings and job opportunities
- ii. An interest, especially in Ganjam, to pursue higher education for 'knowledge based' jobs. This finding helped develop a hypothesis which was tested through responses to some of the subsequent questions.
- iii. Family or social or peer pressure to aspire for 'higher status', secure Government (such as qualifying in Civil Services), 'white collar jobs', which cannot be 'achieved' by pursuing vocational education.

51. **Pursuit of Vocational Education:** In the case of Sambalpur, there is a clear correlation between students' realization about the relevance of vocational education and their plan to pursue vocational education in the near future. Between 60-65% of the students across Classes IX-X, XI-XII and college undergraduates felt they would pursue vocational education in the next 1-2 years. These figures are in stark contrast to those received from Ganjam, where these percentages varied between 21-38% across the three student groups. This partially tested and confirmed the earlier finding that students in Ganjam have a distinctively higher preference for 'knowledge industry' jobs and lesser preference for pursuing vocational jobs.

52. **Sectors of Choice for Employment:** To re-confirm the above findings (para 12 and 14), the study team sought sector of employment choice responses from students. In Sambalpur, 40% - 50% respondents (across student groups) cited education and manufacturing as their sectors of choice for employment. In Ganjam, especially for Class XI-XII and College students, between

40 and 52% of respondents showed a preference for manufacturing and other sectors, while an interesting picture emerges regarding the respondents' preference for a career in the education sector. While a low 8.82% of respondents cited Education as the sector of their choice at the Class IX-X level, the figure shoots up tremendously to 60.82% for Class XI-XII students and then tapers down to 47.77% at the undergraduate level. This final figure is significant, given that represents the cohort of educated youth poised to join the workforce.

53. This data once again substantiates the hypothesis that students in Ganjam have a distinct preference for taking up 'knowledge industry' jobs. This led the research team to conclude that distinct regional variations in student aspirations exist. This learning could be carried forward for any subsequent replication of this study to other districts. Further, from a policy response perspective, each district needs to be appropriately studied to develop programme, which could be closer to match student choices to the extent it could be feasible to deliver such programmes successfully on a sustained basis.

54. **Location of Employment:** In Sambalpur, across student groups, a high proportion of respondents have cited their preference in seeking employment within the State (Class IX-X 91%, Class XI-XII 94% and college undergraduates 87%). The figures do not show any significant decrease for respondents up the education ladder. For Ganjam, the corresponding figures were Class IX-X 77%, Class XI-XII 63% and college undergraduates 87%. Across the two districts, there seems to emerge a pattern of reluctance to seek employment opportunities the State. On the other hand, there is out migration from Odisha.

55. One explanation that reconciles these two aspects is that the outbound migration in Odisha is primarily that for that of employment, sometimes in the nature of a seasonal or 'distress' migration, but even in these instances, it is largely interstate. According to Census 2011 data, out of every 100 migrants from Odisha – for the purpose of employment, 83.8% migrate to a location within the state. The figures for education-related migration are even higher – 94.3% are interstate. But a sustained growth rate and public investment in Odisha are leading to the perception of increased employment opportunities amongst the educated youth. However, this may be confirmed after replicating the surveys in other districts of Odisha.

56. **Findings from Survey of Principals:** As stated before, this study attempted a survey of School Head Masters and College Principals which was not done in prior works in Assam and Mizoram. The key findings from the survey have been listed below:

- i. Reasons for students' drop out: need to enter the labour market to supplement family income was a key reason cited by dropping out students. Some drop outs also cited other social challenges in the family.

- ii. Mathematics and Science were found to be the two subjects where some students struggled, particularly at the Secondary grade.
- iii. Across the various schools, teaching staff vacancies were identified in Computer Science, Mathematics and Languages (Oriya and English). In two instances, the position of 'Head Master' itself was found to be vacant. Respondents felt that it was **critically important** to address the issue of **shortage of teachers**.

Concluding Remarks

57. The surveys indicate that across the student community at the high school and college level, there is low awareness of the relevance of vocational training as well and likewise low exposure to practical vocational work and general lack of provisions for vocational learning at the current institutes.

58. There is a likely correlation between the dearth of organizational, logistic and infrastructural dearth of vocational training arrangements and the reluctance of students to pursue a career in a vocational domain. There is likewise a reluctance to relocate outside Odisha, for pursuing one's career. In both districts covered under the study but more notably in Ganjam, there is a distinct preference for 'knowledge-based careers' as compared to vocational jobs. Studies conducted for other regions in Odisha may confirm this as a common phenomenon across the State.

SECTION 3: INFORMAL SECTORS

59. In the context of labour economics, informality has two dimensions: the informal sector and informal employment. The 15th ICLS¹⁴ laid down the criteria for defining employment in the informal sector. This criteria was primarily an enterprise based concept and included all jobs in informal sector enterprises, households (i.e. privately owned), and unincorporated enterprises (excluding quasi-corporations).

60. The 17th ICLS¹⁵ stressed the need to widen the scope of informal employment which would complement the enterprise-based concept of employment in the Informal Sector (IS) with a broader job-based concept of Informal Employment (IE). Going forward, Informal Employment was to be classified by (i) type of production unit (ii) type of job. The components of informal employment as mentioned in 17th ICLS included:

- Own-account workers and employers employed in their own informal sector enterprises,
- Own-account workers engaged in production of goods exclusively for own final use by their household,
- Members of informal producers / cooperatives not formally established as legal entities,
- Employees holding informal jobs, whether employed by formal sector enterprises, informal sector enterprises, or as paid domestic workers by households.

61. The 17th ICLS guideline has been taken as the frame of reference for this study. For this project the research team focussed only on Sambalpur, to study employment in the informal sector. The operational criteria used to define informal job of employees were

- Lack of coverage by social security system
- Lack of entitlement to paid annual or sick leave
- Lack of written employment contract
- Casual/temporary nature of work

APPROACH

62. A Focus Group Discussion (FGD) was held with twenty Community Service and Non-Governmental Organizations in Sambalpur on 23 December 2016. The focus of the discussions was to obtain inputs that would help stratification of the informal sector where majority of the

¹⁴ In 15th ICLS 1993, a resolution concerning statistics of informal employment was passed.

¹⁵The 17th ICLS, 2003 was an improvement on 15th ICLS definition and put forward guidelines on a statistical definition of informal employment. Hussmanns, Ralf. "Defining and Measuring Informal Employment". ILO: Geneva. Available at <http://www.ilo.org/public/english/bureau/stat/download/papers/meas.pdf>

workforce is engaged in Sambalpur, understand the nature of informal sector employment and have an overview of the current set of challenges.

63. Thereafter, based on inputs obtained from the workshop as well as consultations with other project stakeholders, a list of informal sector occupations was identified. The shortlist comprised rickshaw pullers, auto-rickshaw drivers, bus drivers, bi-cycle repairing outlets, carpenters, small scale construction workers, local-shop electricians, domestic workers (part-time maids), road-side fabrication shop workers, grocery store workers, electronic hardware repairing, Kabaadi (disposal collectors), low-skilled small time masons, and general mechanics for two-and-three wheelers. This list was then discussed with social research experts working in Sambalpur who estimated the sectors to be engaging more than 50% of the informal sector workforce in the city.

64. A total sample size of 90 was selected, based on a stratified sampling process. Surveyors covered areas under Sambalpur Municipal Corporation (SMC) viz: Dhankauda, Mathapati, also Amsadha Katapali, Burla and Hirakud. A separate instrument was devised, calibrated and deployed for conducting questionnaire-based survey across various trades. The informal sector covered a wide range of occupations, as shown in the table below. The survey captured details of the respondents' profile, through parameters such as education and wage levels.

KEY FINDINGS

65. **Age:** Some common patterns of age emerged across the occupations surveyed. The workers in the informal sector belonged to the relative younger age group, with more than 85% being 38 years or younger. This was reflective of the Indian workforce in general.

- i. 40% of the respondents belong to the age group of 19-28 years
- ii. 45.5% belonged to the age group of 29-38 years
- iii. and only 14.5% belonged to the age group of 39-48 years

66. **Education:** While the level of education was low compared to formal sectors, it could be noted that there were negligible percentage of illiterates, 83% had studied up to at least Class VIII (cut off for Right to Education), and 61% had completed 10 years of schooling. Experts in the study team felt that such education levels for the informal sector workforce in Sambalpur may not have been there till about 10-15 years ago (though no baseline data had then been captured) and the present status could be reflective of some success achieved by the sustained efforts of

successive missions on Literacy, Primary (Sarva Shiksha Abhiyan), Secondary (Rashtriya Madhya Shiksha Abhiyan), Adult and Girl Child Education across the country.

- i. 2% of the respondents were illiterate
- ii. 15% had studied up to class V
- iii. 22% had studied up to class VIII
- iv. 19% appeared in class X exam but did not pass
- v. 29% passed class X
- vi. 6% enrolled in H.S but did not pass class XII
- vii. 3% passed class XII
- viii. 4% were graduates

67. **Income level:** Low, with a small proportion securing any steady income on a sustained basis or had earnings above Rs. 10,000/- per month.

- i. 24% were monthly income earners, wages between Rs. 1,500 - 10,000
- ii. 11% were weekly income earners, wages between Rs. 600-800
- iii. 49% were daily income earners, their wages between Rs. 150-500
- iv. 16% were piece rate earners, monthly income between Rs. 6,000-7,000

68. **Trade-Specific Earnings:** Through the analysis of the survey data, the research team drew some insights regarding the relationship between trades of the respondents and their monthly earnings. The wage range corresponding to each trade can be further supported through detailed surveys in other regions of the State. The notable trade-wage patterns to emerge are summarized below:

- i. Transport sector jobs around Rs 4,500 per month for rickshaw pullers, Rs7,000 for auto drivers and Rs 8,000 for bus drivers
- ii. Construction sector around Rs 6,000 per month for casual labours and Rs 8,000 for skilled masons (Raj Mistry)
- iii. Carpenters between Rs 6,000 and Rs 7,000 per month
- iv. Repairing, welding, plumbing, mechanics between Rs 6,000 and Rs 9,000 per month
- v. Beauty care between Rs 6,000 and Rs 9,000 per month, depending on skills
- vi. Shop and grocery helpers between Rs 3,000 and Rs 4,000
- vii. Maids and Domestic Servants between Rs 3,000 and Rs 4,000 per month

69. **Social Security Benefit:** The survey showed that only 44% of the respondents had a ration card, ensuring some measure of food security which also served as an identity proof. None of the respondents surveyed received any benefits of full-term employment such as

provident fund and health / accident insurance, or by themselves had availed of any such Government promoted insurance cover.

70. **Core Skill Needs** requirement were assessed on three dimensions: Financial Literacy, Occupation Health and Safety (OHS) Awareness and Knowledge of Cleanliness. The findings on Financial Literacy indicate that most respondents had knowledge of the workings of banks (opening and operating Jan Dhan and other savings accounts), while others have an awareness of digital payment methods and the campaign around it but have not begun using them. Almost all prefer saving their money in banks, post office and cooperatives, but very few wanted to keep their savings only in cash. For OHS, only 29% had good knowledge about the safety measures to be adopted in their work place such as helmet, safety gear. The general tendency was to adopt measures without which the work itself cannot progress such as safety goggles while welding. With respect to cleanliness, the survey results were more positive and almost all were aware of Government's Swacch Bharat campaign: 13% of the respondents had very good knowledge, 60% had good knowledge, 22% had some knowledge, and only 5% with poor knowledge.

71. **Migrants:** Sambalpur has a much higher proportion of the workforce from outside Odisha (35%) as compared to Ganjam where hardly 2% reported to be from outside the State. Hence a specific survey on migrants in the informal sector was taken up in Sambalpur. Around 54% of those surveyed in Sambalpur's informal sector were found to be in-bound migrants into urban area from villages in this district or adjoining districts. The survey attempted to explore the key reasons for migration as well as any aspiration the migrants may have on the kind of enterprise they would like to start in future. The results of the survey (captured in the Table 6 below) show a majority of migrants cited no work in their villages and also perceived a source of more regular income in the urban areas. This underscores the need for providing better livelihood opportunities in the rural areas to stem the increasing rural-to-urban migration.

72. **Concluding Remarks:** For the informal sector, the study reveals a large proportion of the respondents to be rural to urban migrants. There is a need to generate livelihood in the rural areas. The survey results also show that a majority of respondents have some kind of entrepreneurial aspiration to set themselves up in the same trade that they are currently working in. To that extent, the skill need identified by them is really an extension of their existing competency, and not the addition of a totally new or different skill. This makes such informal workforce amenable to being assessed under a Recognition of Prior Learning Programme that could be administered in conjunction with suitable bridge training courses. This could also be the beginning of a transitioning process into formalization of such an informal workforce.

Table 6: Analysis of informal sector workforce

Present Job	Reason for Migration	Type of business respondents wants to start in the future	Skill Need
Rickshaw puller	No work in village, for employment	Owner of rickshaw, auto rickshaw	Driving skill
Auto driver	for employment	Own four wheeler	Driving skill
Bus helper	For regular jobs	Bus driver	Heavy vehicle driving
Painter	for employment	Paint job contractor	Colour mixing and design painting
News paper hawker	No work in village, for employment	Own grocery shop	Marketing training
Rag and waste paper picker	No work in village, for employment	Own kabaadi shop	Making of paper bag
Carpenter	Easy to get jobs	Own work shop	New design and technique of modern furniture making
Motor mechanic	for employment	Own Garage	Car and bike repairing
Welder	for employment	Own workshop	Fabrication and design
Tent house worker	For regular jobs	Agriculture work	Communication skill, agriculture technique
Saloon worker	For regular jobs	Own saloon	Hair dressing, beauty concepts
Domestic worker	No work in village, for employment	Own business	Cattle rearing
Electrician	for employment	Set up grocery shop	Electric wiring
Construction worker	More jobs in town	Own small business, become raj mistry, supplier of construction material	Masonry, contractor
Bi-cycle repairer	for employment	Own cycle repairing shop	Business idea and equipment handling
Plumber	More plumbing work available in town	contractor	Training on latest plumbing skills and use of modern equipment
Travel office boy		Mobile repairing shop	Knowledge of mobile repairing

SECTION 4: VOCATIONAL TRAINING PROVIDERS

73. Skill level and education attainment of the workforce determines the productivity and the ability to adapt to various changes in the industry and business environment. A number of past studies have shown that much of the Indian workforce lack skills required by the industry, which becomes an impediment for them getting employment. Compounding this challenge is the general preference of pursuing vocational training among the candidates in India is low (68 per 1000 persons) compared to many other advanced industrial nations, that in Odisha is even lower (48 per 1000 persons)¹⁶.

74. In this context, Vocational Training Providers (VTPs) not only play a crucial role in bridging the skill gaps, but also function as important intermediaries who try to effectively match the labour market supply with skills demand. Sought-after VTP institutions, and their instructors, provide not only good pedagogy but also counsel students on good vocational options, career pathways and effective placement linkages. As part of this study, the study team conceptualized the study to capture key elements of VTP operations (courses, through-puts, infrastructure, pedagogy, placements, etc.) and other dimensions that could make them as better labour market intermediaries.

75. **Survey Instrument:** The survey instrument (structured questionnaire) was developed by experts with vast TVET delivery experiences leveraging on prior learning in Mizoram and Assam. The instrument was calibrated for Odisha and had the following components:

- The first part of the questionnaire comprised questions related to VTP specific information and its operations.
- The second part focussed on Type of Training provided by the VTP. It included questions related to the courses, throughput, as well as the number of faculty members, certification, duration and fees of courses and funding of the courses.
- The third part was aimed at obtain insights about the Future Plans of the VTPs. It included questions related to new courses planned in coming years, fees, duration, along with any associated plans for funding, affiliation and certification.
- The fourth part attempted to capture information on the Workings of the VTPs. This included questions on mobilisation of trainees, recruitment and training of trainers as well as operational challenges faced by the VTPs.
- The fifth part addressed the Post Training Scenario of the trainees. It consisted of questions on candidates taking more time to learn; pre-enrolment skill gap assessments, qualification rate and placements of the candidates.

¹⁶ Labour Bureau "Education, Skill Development and Labour Force, Volume III 2013-14"

76. **Data collection, codification and cleansing:** The VTP survey was conducted for 13 institutes in Sambalpur (during December 2016) and for another 13 institutes in Ganjam (during January 2017). The study team deployed a TVET specialist, with more than 30 years' experience in the domain, for the survey. The specialist, adopting a pen-and-paper-interview process interacted with the training provider administrators, instructors and students: interviewing them, assessing facilities at the centres, and gathering additional insights. Reliability checks and cleansing were completed based on procedures similar to those followed for the other stakeholder groups.

77. Following his site visits, the specialist performed an additional analysis based on a scoring method used in previous projects. Each institute was assessed on 6 major dimensions: Admission Process, Training Process, Trainer/ Faculty Performance, Trainer Performance (practical), Practical Area & Infrastructure, and Practical Equipment and Tool Kit. The data thus collected were codified, digitized and quality assured.

78. Each of the dimensions mentioned above were further classified into sub-parameters, and scoring individually. Following this, the scores for these individual sub-parameters within every dimension were rolled up, and then totalled across dimensions, to arrive at a consolidated score for the enterprise. For each dimension, the scale used a total of 25 points across sub-parameters. The break-up of each dimension was devised as follows:

- i. Admission Process – merit at the State level, written test at institute, quota allotted by State, on the basis of reservation policy, and donation.
- ii. Training Process – lesson plan and syllabus, daily report, practical assessment sheet, training record book, and training attendance performance.
- iii. Trainer / Faculty Performance – lesson study plan, trainee daily report, training record book, trainee attendance performance, and making of safety chart.
- iv. Trainer / Faculty Performance (Practical) – getting to understand the quality of practical training imparted by trainers, methods adopted for demonstration of safety norms and practical work, and communication skills.
- v. Practical Area, Workshop and Infrastructure – layout plan of workshops and practical training areas, quality of infrastructure available, safety equipment, related aids and facilities; and their periodic inspection reports.
- vi. Practical Equipment and Toolkit – quality of equipment, quality of toolkit, operation of safety equipment, facility of first-aid box and quality of practical material

KEY FINDINGS

79. Analysis of the VTP survey data shows that for Ganjam as well as Sambalpur, the courses that have attracted the largest enrolment and throughput between 2012 and 2016 have been for Electrician, Fitter and Civil Work trades (Table 7). These are general craftsmanship occupations, perceived by the students to have a base demand across economic cycles, hence could be construed as a proxy for labour market demand. That said, VTPs across these two districts are recorded to offering a wide range of other courses, including Wireman, Draftsman Civil, Draftsman Mechanical, Stenography, IT Services Management, Computer software and hardware, Computer Networking, Book Keeping using accounting software (Tally), and Motor Vehicle-related courses. However, many of these courses have struggled to attract sufficient numbers of students.

Table 7: Preference Ranking of VTP Courses (indicator of job seekers' demand)

Ganjam

Course	Corresponding NCO code	Duration	Course Fees (Rs.)	Throughput				Total for 4 years
				2012-13	2013-14	2014-15	2015-16	
Electrician	74	2-3 year	23,475	0	370	593	430	1393
Fitter	74	2 year	23,555	0	451	650	356	1457
Civil works	21	3 year	16,500	0	66	132	60	258
Welder	72	1 year	5,500	0	75	15	94	184

(Source: DEFT Survey Analysis)

Sambalpur

Course	Corresponding NCO code	Duration	Course Fees (Rs.)	Throughput				Total for 4 years
				2012-13	2013-14	2014-15	2015-16	
Electrician	74	2-3 year	20,780	141	366	494	144	1145
Fitter	74	2 year	21,300	132	289	284	91	796
Mechanical work	21	3 year	15,600	59	73	84	59	275
Civil work	21	3 year	15,600	57	70	73	64	264
Electronic and Info. Technology	31	3 year	15,600	59	73	84	43	259

(Source: DEFT Survey Analysis)

80. **Key challenges for VTP operations:** The training institutes were asked about the factors that are constraining expansion of their businesses. They were given the option to record multiple choices for this question. Based on the responses received, it was evident that the VTPs are faced with a number of challenges to maintain profitability of operations. There is a clear need for interventions to make this sector attractive to private players which will be crucial for sustaining their interest in the skill development business.

81. An analysis of the profitability data segregated by Government (as their funding patterns were different) and private institutes across the two districts reveals that 86% of private institutes have either made real or nominal profits or have broken even on their investments. This finding is in contrast to the survey results from similar projects in Mizoram and Assam; where enterprises were found to be struggling to break even to sustain their operations.

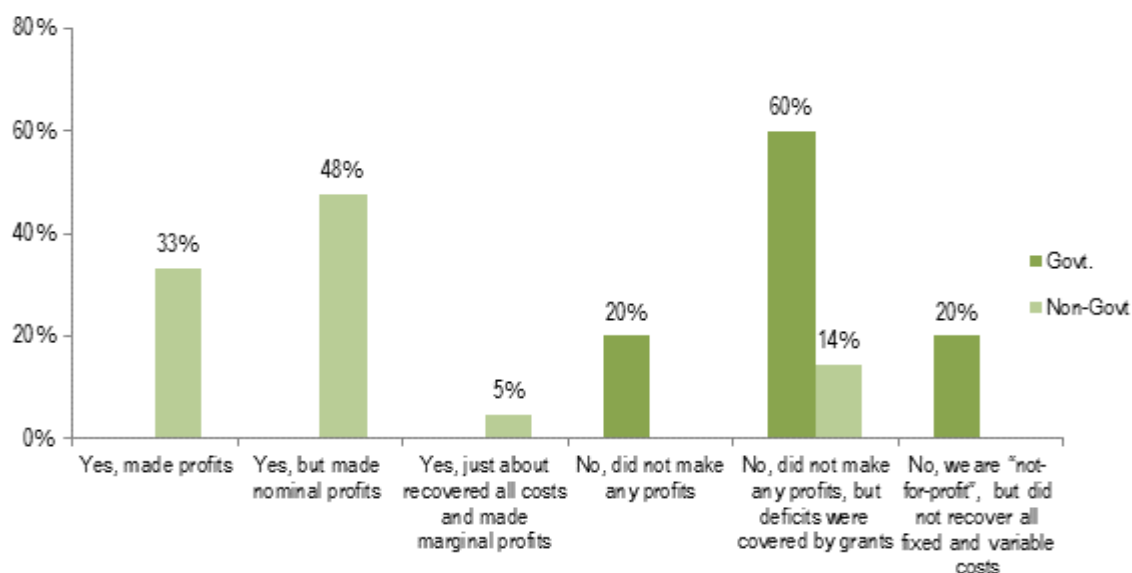


Figure 2: Profitability analysis of private VTP operations

(Source: DEFT Survey Analysis)

82. The survey also showed VTPs faced another set of challenges differing in their nature across the two districts. Whilst "how to continue profitability of operations amidst difficulties in the economic environment" was a common concern across both Ganjam and Sambalpur, in the case of the former, attracting and enrolling trainees was an additional challenge. Getting on board suitably trained instructors, updating curricula were also listed as common operational challenges in both districts.

83. **Introduction of new courses:** None of the 26 institutes surveyed had any plan for introducing new courses in the near future. While it was understandable that Govt. ITI would follow their lengthy, multi-year official processes for introduction of new courses, such intent by the private sector was of research interest. Whilst surveys in other districts of Odisha may confirm if this could be a State-wide pattern, some reasons may be hypothesized at this stage:

- i. In time of challenging economic condition, most of the private sector VTPs has been financially weakened and many are just about making nominal profits. Introducing new courses would require investments, albeit to varying degrees that would be specific to trade and course requirement. Lack of tangible Governmental support on easier terms, commitment from employers for absorption of new course pass-outs (if introduced), and

access to capital from Banks / Financial Institutions for such works are may be deterrents to launch any new course that involve investments.

- ii. In the absence of a well-functioning and updated labour market information system, and employers participation (especially MSME) in the TVET ecosystem for curriculum updates, teaching support, providing apprenticeships (under the Act or even informally as OJT), the VTPs have struggled with placements of their existing batches (apart from 3-4 courses). Hence, there is less 'appetite' for introducing new courses which is perceived could become evangelical venture without sponsorships. At the same time, the lack of vibrancy on the part of job-seekers, a meagre throughput of students across many courses being offered, raises uncertainty about VTPs being able to attract the requisite number of students for any new course to become self-sustaining.

84. **Mobilization of candidates:** The respondents were asked about mobilization channels of candidates and given the option to record multiple choices (Figure 3 below). Newspaper and similar media campaign were found to be the most preferred channels to mobilize candidates. This was followed by local councils and personal contacts, particularly for Sambalpur. Alumni network (or "word-of-mouth") was not strong as it was initially thought to be. In the absence of large scale smart phone penetration and connected user, effectiveness of social media as a mobilizing channel seemed limited as seemed still in its nascent stages.

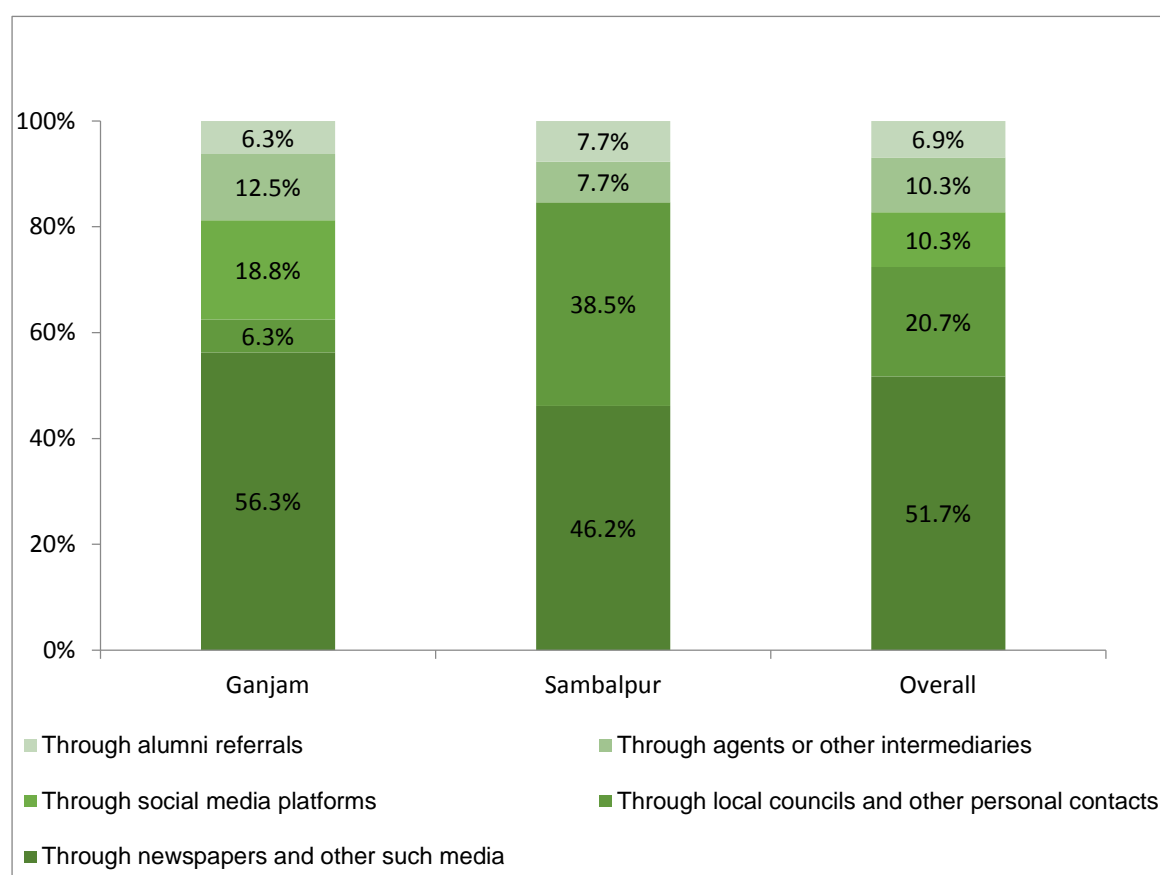
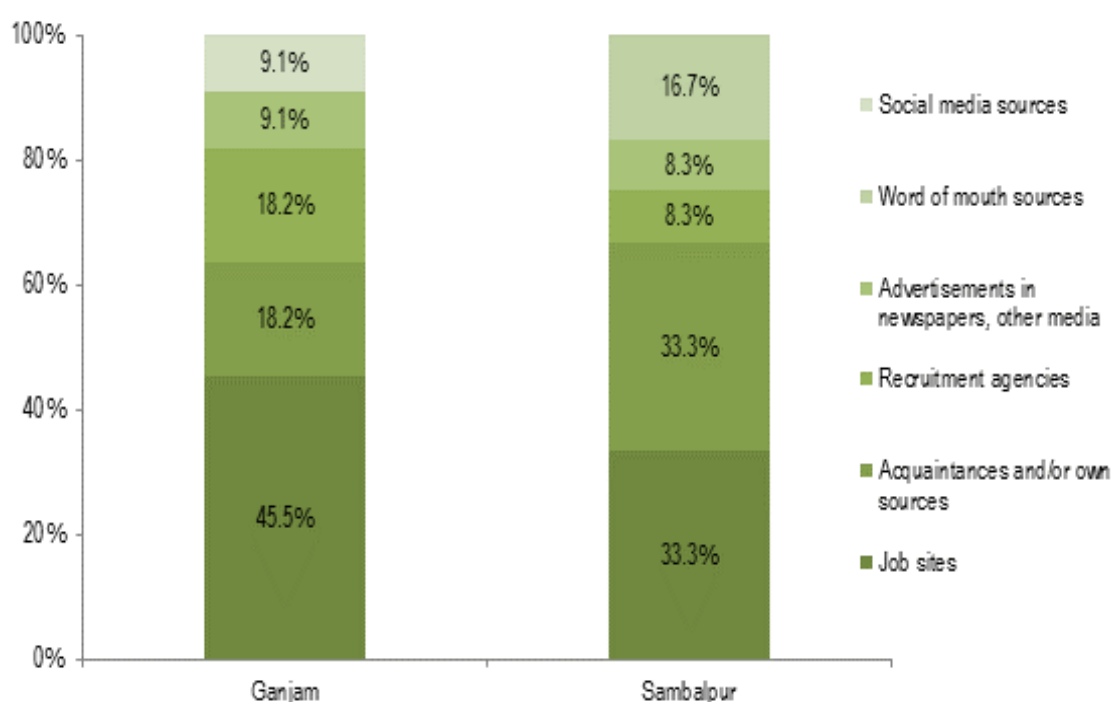


Figure 3: Methods adopted for student mobilization

(Source: DEFT Survey Analysis)

85. **Sourcing of Faculty / Instructors:** The respondents were asked about mobilization channels of faculty members at their institutes. Across Ganjam and Sambalpur, the use of job sites, acquaintances and own sources account for the majority of faculty sourcing channels. The use of social media remains relatively limited (Figure 4 below). The data points to the fact that across both the districts, VTPs use own personalized sources, “word-of-mouth” and traditional marketing methods, rather than more broad-based, generalized, and professional recruitment processes.

**Figure 4: Preferences for faculty sourcing channels**

(Source: DEFT Survey Analysis)

86. **Faculty training methods:** Multiple methods are adopted by the VTPs to train their faculty members. ‘Train the Trainer’ programmes were identified as being the preferred mode of training across most institutes surveyed. This was followed by ‘Periodic Workshops’ and ‘Peer Reviews’. Deputation to seminars, conferences and for other value-addition opportunities was rare. It is evident that these avenues of faculty training were implemented in a mutually exclusive fashion, so that instructors who, for example, attended a train-the-trainers program were not exposed to other methods, such as being deputed to seminars and conferences.

87. Also, in the case of Sambalpur, there was considerable reliance on peer reviews at the expense of other methods that could have been more effective. Across both districts, though,

there is clearly a need to deploy multiple methods of training, to ensure a continual skilling and value addition of instructors.

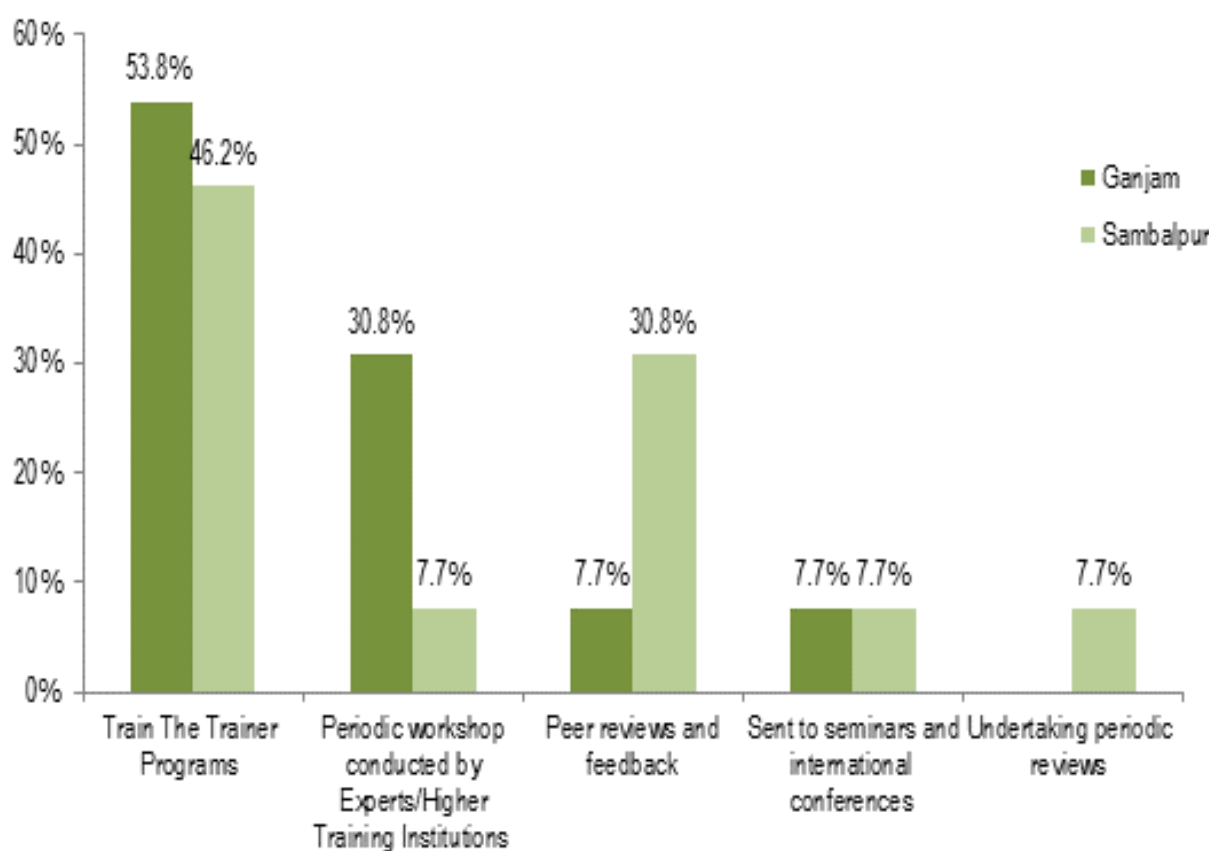


Figure 5: Methods of Training Faculty Members

(Source: DEFT Survey Analysis)

88. **Skill-Gap Assessment during Enrolment:** The training institutes were asked about the extent to which they conducted skill gap assessment of candidates during enrolment as well as the parameters used to conduct the assessment. Around 92% of institutes in Ganjam and 69% in Sambalpur conducted skill gap assessment, using marks and merit as the parameters.

89. Whilst the VTPs were seen to be consistent in the skill gap assessment approach, other parameters, such as practical examinations, and tests to evaluate psychomotor functions, hand-eye coordination, prior practical exposure to tools and implements or interest in working with them, if deployed during the assessment, may give useful additional insights.

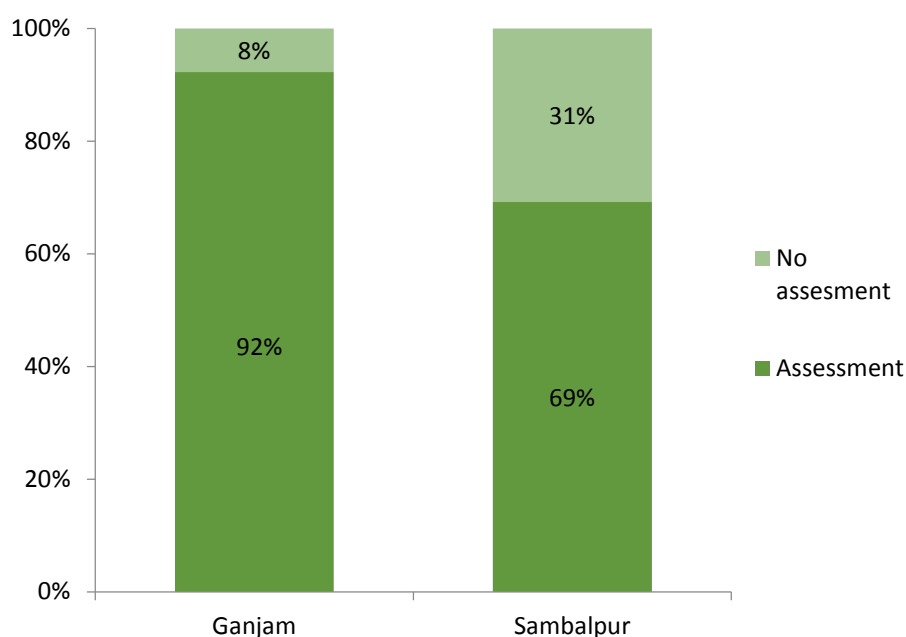


Figure 6: Skill-Gap Assessment undertaken during enrolment
(Source: DEFT Survey Analysis)

90. **Slow Learners:** The findings from the survey show the across Ganjam and Sambalpur, for the 2012-2016 and with regard to the courses with the maximum throughput, the incidence of slow-learners is quite low (1-2% in Ganjam, 3-5% in Sambalpur, during 2015-16).

Table 8: Candidates who take more time to learn

Ganjam

Course Name	VTP combined throughput	Percentage of candidates taking more time to learn		
		2013-14	2014-15	2015-16
Electrician	1393	4%	3%	2%
Fitter	1457	2%	2%	2%
Welder	184	2%	2%	1%

Sambalpur

Course Name	VTP combined throughput	Percentage of candidates taking more time to learn		
		2013-14	2014-15	2015-16
Electrician	1145	4%	4%	4%
Fitter	796	5%	5%	5%
Mechanical works	275	4%	3%	3%
Civil works	264	3%	3%	3%
Electronic and Info. Technology	259	3%	3%	-

91. **Drop-outs:** The overall dropout rates are reasonably low. However, in comparison, Sambalpur shows a higher drop-out rate than Ganjam. In an exceptional case, a particular Sambalpur-based VTP recorded 20% dropout for their Fitter course. In general, the survey

respondents cited a few reasons (such as family financial condition and opting for higher education) for dropping out of the courses. These corroborated with the findings from the survey of school and college Principals (Section 2 para 55).

Table 9: Dropout rates of VTP students

Course Name	Percentage of dropouts		Reason for dropouts
	Ganjam	Sambalpur	
Electrician	1% to 5%	8% to 12%	i. Pursue higher studies
Fitter	1% to 6%	8% to 10%	
Civil Engineering	-	4% to 10%	ii. Poor family financial condition, need to start earning soon
Mechanical Engineering		5% to 10%	
Electronic and Technology		1% to 10%	iii. Urgent job need of the candidate, driven by social / peer pressure
Computer Networking	2% to 5%	-	

(Source: DEFT Survey Analysis)

92. **Student counseling and placements:** A large number of VTPs (77% in Ganjam and 69% in Sambalpur) have stated that they provide counseling to students enrolled with them. Similar high figures (77% in Ganjam and 54% in Sambalpur) stated that they provide placement services to the students.

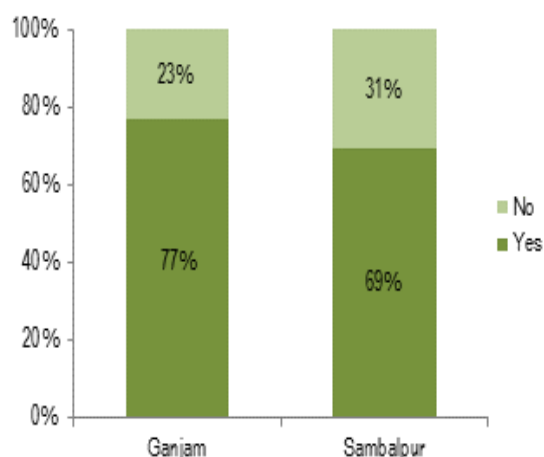


Figure 7: Provision of counseling to students

(Source: DEFT Survey Analysis)

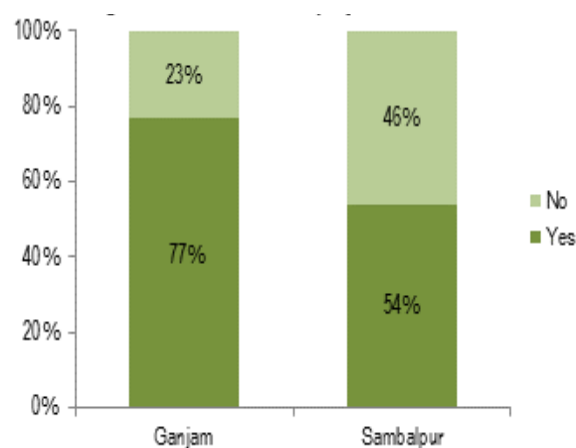


Figure 8: Provision of placement service to students

(Source: DEFT Survey Analysis)

93. **Government and private VTP comparison:** The analysis by the VTP specialist shows that across both Ganjam and Sambalpur, the government-run VTPs fared significantly better across all the dimensions of the study. For dimensions such as Practical Area & Infrastructure and Practical Equipment and Tool Kit, scores as high as 21 were recorded for individual state-run VTPs. Amongst the poor performers, of the 26 institutes surveyed, the 5 with the lowest overall score were from Sambalpur.

94. The data also shows that across the six dimensions studied those registering the lowest scores pertained to the Admission Process, Practical Area and Infrastructure, Practical Equipment and Toolkit. Whilst the latter two dimensions are capital-intensive, relatively lower cost Admission Process when effectively addressed can help in increasing throughput and providing students with a better experience.



Figure 9: Average of assessment scores for Govt. and Non-Govt. VTPs
(Source: DEFT Survey Analysis)

95. The study undertaken for Ganjam and Sambalpur reveals clear patterns of the performance, where Government institutes have significantly scored over the private institutes. It also underscores the need for establishing a detailed and comprehensive framework for improving the performances of private run institutes (which would have profit motives), also implementing common minimum standards of screening, pedagogy and quality of training. In general, the linkages of VTPs with the industry in the Vocational Educational and Training ecosystem, either for instructional design, or sourcing master trainers, or engaging apprentices are weak. Enhancing awareness among vocational trainees for seeking employability while emerging from these institutes, and ensuring that the VTPs develop stronger linkages with students and industry could be drivers for implementing such a framework.

SECTION 5: DEMAND SIDE ANALYSIS

96. The economy of Odisha has been undergoing a process of structural transformation in the recent years from a predominantly agrarian economy to more of an industry and service oriented one. Odisha's economic growth rate has been subject to fluctuations and has been less than the corresponding national average primarily owing to its low industrial growth¹⁷. The slow diversification and growth rate of the economy and development gap is visible in its employment and human development indicators.

97. The worker to population ratio was 41.8 percent in 2011 (Census 2011) and the proportion of main workers was 61 percent which had declined from 67 percent in 2001 (Census 2001). Although the share of agriculture in the state's GSDP had declined, agriculture is still the mainstay of more than 60 percent of the population (Census 2011). The diversification from farm to non-farm sectors in Odisha has been extremely slow. The per-capita value added of the manufacturing sector in Odisha has been less than the corresponding national average. The handicrafts and cottage industries sector which provides employment to lakhs of artisans, especially from weaker sections of the society is also on the decline, partly because consumers' choices have diversified to more technically advanced alternatives. Employment generation in cottage industries declined from 36,900 in 2001-02 to 1500 in 2013-14¹⁸. Upgrading technology in this sector to establish a sustainable market linkage has commenced.

98. The State Government has been making all efforts to create a pro industry environment for generating more employment and in the State. The enactment of Industrial Policy resolution 2007 and Industries (Facilitation) Act 2004 are some cases in point. Also, new ITIs are being set up and old ITIs revamped with the aim of skill-upgrade for the youth¹⁹.

99. Under this backdrop, a primary survey of industries and MSMEs was conducted in two districts of the state, Ganjam and Sambalpur. The objective of the survey is to assess industry-employment linkages, identify sectors of potential growth, and assess the employability and skill improvement needs of the workforce.

SURVEY WORK

100. **Survey Instruments:** Thereafter questionnaires were designed to capture responses of entrepreneurs / employers as well as their in-service employees. Structured questionnaires prepared for entrepreneurs consist of two parts: Part A and Part B. The third part i.e., Part C has

¹⁷ Odisha Annual Plan 2016 – 17

¹⁸ Government of Odisha, Odisha Economic Survey, 2014-15, Chapter 4, The Industry Sector, (4/10- 4/11)

¹⁹ Odisha Economic Survey 2014-15, and Annual Plan 2015-16

been designed to collect responses from in-service employees. In this section, Part A and Part B of the questionnaire are discussed. Part C is discussed subsequently in this Section on in-service employees. These were validated by experts and academicians.

101. Part A of the questionnaire broadly aims to capture the industry/ enterprise profile; present workforce composition, job roles and skilling challenges, compensation, owner's perception towards business growth and future hiring plans. Part B deals with entrepreneurs' observations on quality of the workforce, training and skill needs of employees.

102. The questionnaires provided appropriate options to capture multiple responses i.e. nominal, ordinal and scale using approaches such as Likert Scale, Multiple Response Checkboxes, and Multiple Choice Questions. Responses were collected through site visits and one-to-one interviews with either the enterprise owners or their senior managers. For reliability, internal consistency method was used. The theory development was through method of inductive reasoning. The findings from the sample were used to establish the general propositions about the industries and establishments population of the districts.

103. For both Ganjam and Sambalpur districts, the sample of industries and establishments were selected through multi-stage, stratified random sampling process. Units in the following databases constituted the sampling frame:

- i. Enterprises from the Annual Survey of Industries²⁰
- ii. Manufacturing and Services firms; mostly Small and Medium Enterprises (Business Register, Directorate of Economics and Statistics)
- iii. Shops and Establishments: Municipal Trade Licensees (MTL)

104. The economic activities of industries and establishments have been grouped according to the standard National Industrial Classification of Industries, 2008 (NIC-2008). The NIC-2008 is a revised version of NIC-2004 which followed the identical structure of UN- International Standard Industrial Classification- ISIC Rev 4. NIC-2008 is comparable with ISIC Rev.4 till 4-digit classes in totality. To prevent loss of information in data collection, the survey collected information on economic activities based on 2-digit classification of NIC- 2008.

105. The distribution of samples drawn from the above databases is given in Table 10.

²⁰ The sample of industries/ enterprises considered for survey have been selected from the databases of Annual Survey of Industries (ASI), Business Register (BR), Municipal Trade Licensees (MTL).

Table 10: Distribution of samples drawn from the databases

Database	Sample sizes for the districts		Total
	Ganjam	Sambalpur	
Annual Survey of Industries database	70	74	144
Business Register (manufacturing)	347	160	507
Business Register (services)	135	125	260
Municipal Trade Licensees	142	246	388
	Grand Total		1,299

106. **Data collection, cleaning and codification:** The survey of industries and establishments was done over eight weeks (November 2016 to January 2017) by visiting the industry premises and collecting the data through interviews. After data cleansing, 1299 valid responses were taken on record digitized and uploaded into the centralized data repository. Codification was done to group various types of responses to a particular question. Numeric values were assigned to the nominal and ordinal data.

107. **Types of organizations covered in the survey:** At an overall level (Table 11), 67% of the total enterprises were proprietary or partnership establishments and 8% were single owner / Own Account Enterprises (OAE). In Sambalpur, 75% of the enterprises were proprietary or partnership establishments while in Ganjam, the corresponding figure was 59%. Among the non-household sectors, cooperative society comprised 32% of the total number of enterprises in Ganjam while in Sambalpur there is no cooperative society. Only 7% of the sample comprised private limited companies, majority of which were in Sambalpur.

Table 11: Types of organization covered in the survey

Type of organizations surveyed	Ganjam	Sambalpur	Overall
Proprietary Establishment (Micro and Small Enterprises)	54%	68%	61%
Own Account Enterprise	4%	13%	8%
Private Ltd, Public Ltd., Cooperative, Partnership	42%	19%	31%
Total	100%	100%	100%

(Source: DEFT Survey Analysis)

FINDINGS: OWN ACCOUNT ENTERPRISES

108. Own Account Enterprises (OAE), having no hired workers, comprised 8% of the total survey sample. The mean age of OAE workers is found to be 44 years. OAEs were higher in Sambalpur (13%) as compared to Ganjam (4%). About 62% of the OAEs were reportedly engaged in the NIC-2008 sector 'Retail Trade except of Motor Vehicles' with Sambalpur district itself having a higher share (79%) in retail trade as compared to Ganjam (20%). A summary of responses to the key questions asked in the survey is given in Table 12.

Table 12: OAE views on the business climate

	Response	Ganjam	Sambalpur
Confidence about increasing business in future	Yes	11%	40%
	No	89%	60%
More education is necessary to move up the skill ladder in the job market/ business	Yes	14%	44%
	No	86%	56%
Whether they can earn more if they take up new business/ job	Yes	4%	56%
	No	96%	44%
Mismatch between income and consumption	Yes	11%	49%
	No	89%	51%

(Source: DEFT Survey Analysis)

109. About 90% in Ganjam were somewhat confident about maintaining or slightly increasing their business in the near future. Most of them did not believe the more education (general or vocational) was needed to upgrade their skills to succeed in their businesses. Although an overwhelming majority of 96% realized they cannot increase incomes unless they take venture outside their 'comfort zones'. Most OAEs appeared to be risk averse (more than 85%) and reported satisfaction with 'status-quo' and did not perceive significant mismatch between income and consumption in near future.

110. In contrast, however, Sambalpur OAEs were not very optimistic about the business climate. About 60% of the OAEs reported 'not confident' about increasing their business in future. Unlike in Ganjam, they considered education as an important factor for acquiring skills and succeeding in business/ job market. Majority (56%) among them show the inclination to move up the job market and felt that they could increase incomes by taking up new businesses / job. A significant 51% of the OAEs stated dissatisfaction with their current incomes. The survey found that the average monthly income of OAEs in Ganjam was INR 14,000 approx. which was higher than their corresponding average in Sambalpur at INR 10,000 approx.

FINDINGS: INDUSTRIES, MSMEs, ESTBALISHMENTS

111. The large and MSME sector respondents were profiled. A total of 67 sectors (NIC categories) were surveyed. In Ganjam, 21 industry sectors engage 70% of the workforce, whereas in Sambalpur 17 sectors do that. The top three labour force engaging sectors in Ganjam were water collection, treatment and supply (20% of total sample), followed by Manufacture of food products (14% of total sample) and Manufacture of fabricated metal products, except machinery and equipment (10% of total sample). Correspondingly the top three labour force engaging sectors in Sambalpur were Retail trade, except of motor vehicles and motorcycles (28% of total sample), followed by Manufacture of food products (16% of total sample), Food and beverage service activities (6% of total sample).

112. The survey questionnaire categorized the workforce in job role/ occupations based on the nine broad divisions of National Classification of Occupations (the first digit of NCO-2015). The largest category in the sample comprised workers in elementary occupations (38%), followed by service workers, shops and market sales workers (19%) and crafts and related trade workers (14%). In Ganjam, the proportion of workers in elementary occupations is higher than that in Sambalpur while the proportion of 'crafts and related trade workers' and 'service workers and shops and market sales workers' are comparatively much higher in Sambalpur than in Ganjam (Table 13)

Table 13: Skill composition of the existing workforce

NCO-2015	Skill Levels	Ganjam	Sambalpur	Overall
1	Chief Executives, Senior Officials and Legislators	2.9%	5.3%	4.2%
2	Professionals	10.2%	1.9%	5.6%
3	Associate Professionals	6.2%	2.6%	4.2%
4	Clerks	4.6%	7.7%	6.3%
5	Service Workers & Shop & Market Sales Workers	8.8%	28.0%	19.3%
7	Crafts and Related Trade Workers	9.4%	17.2%	13.7%
8	Plant and Machine workers and assemblers	11.0%	6.4%	8.5%
9	Elementary Occupations	46.7%	31.0%	38.1%
	Total	100%	100%	100%

(Source: DEFT Survey Analysis)

113. **Years of experience:** In the three most common NCO categories mentioned above viz., workers in elementary occupations, 'service workers, shops and market sales workers' and crafts and related trade workers, in Sambalpur majority are midlevel workers having 3-10 years of experience. In Ganjam on the other hand, majority of the workers in elementary occupations have less than 3 years of experience.

114. **Nature of job contract:** The proportion of regular workers was higher in Sambalpur for all occupational categories vis-à-vis Ganjam. In case of workers in elementary occupations, 37 percent are working on a temporary basis in Ganjam while in Sambalpur, only 16 percent have been reported to be temporary/ casual workers. In case of sales and service workers, the proportion of mostly regular and mostly temporary workers in Ganjam are equal (48.5%). The practice of outsourcing is still infrequent in both Ganjam and Sambalpur although some odd instances are visible for elementary occupations.

115. **Channels of sourcing workforce:** The data shows that sourcing workers from formal channels like ITIs, other formal training institutes and recruitment agencies is still not a common practice in either of the districts. About 88% in Ganjam and 80% in Sambalpur hire through reference from existing workers. Industry sectors which hire a part of the workforce from ITIs:

- Manufacture of food products.
- Manufacture of rubber and plastics products..
- Manufacture of basic metals
- Manufacture of fabricated metal products, except machinery
- Manufacture of motor vehicles, trailers and semi-trailers
- Civil engineering.
- Financial service activities, except insurance and pension funding
- Education

116. Industry sectors which hire a part of the workforce through recruitment agencies:

- Financial service activities, except insurance and pension funds.
- Education
- Social work activities without accommodation.
- Retail trade, except of motor vehicles and motorcycles

117. **Basis of assessing competence of workers:** Most of the industries did not follow a formal process of assessing competence of workers. 54 percent industries reported that they relied on references to recruit employees. The proportion of industries relying on references to recruit workers is higher in Ganjam than in Sambalpur. On an average, it appears that the practice of reviewing competence of workers on the basis of formal assessment like assessing school leaving certificates, interview and theoretical assessments, In-house evaluation through practical assessments is more visible in Sambalpur than in Ganjam.

Table 14: Assessing competence of workers

Basis of Assessing Competence of Workers	Ganjam	Sambalpur	Overall
Certificate ITI	4%	3%	3%

Polytechnic certificate/ Diploma	1%	5%	3%
School leaving certificate	7%	14%	11%
No certificate but with references	61%	45%	54%
Interview and Theoretical Assessments	7%	13%	10%
Practical assessments evaluated in-house	9%	13%	11%
Assessments by Third Party Assessors	3%	1%	2%

(Source: DEFT Survey Analysis)

118. Practice of assessing School leaving certificates and interview and theoretical assessments are found in sectors such as 'Manufacture of food products', Retail trade, except of motor vehicles and motorcycles, education and human health activities. Instances of practical assessment have been reported in publishing, human health activities and education.

119. **Assessing skill gaps and shortages:** The industries were asked to rank personnel shortage and skill shortage among present job roles and forecast their prioritization of future recruitment. The respondents were asked to rank in an ordinal scale of 1-5 beginning with rank 1 as "not a problem" then escalating up to rank 5 being "most serious shortfall".

- According to the ranking, Serious (Rank 4) and most serious (Rank 5) shortage was prominent among crafts and related trade workers, followed by elementary occupations. Shortage of people also exists among service and sales workers and among plant and machine workers and assemblers.
- Similar to person shortage, skill shortage is also the most common among Crafts and Related Trade Workers, workers in elementary occupations, 'plant, machine workers and assemblers' and Service Workers & shops and market sales ,workers.
- Highest priority for recruitment in future has been given to elementary occupations, followed by crafts and related trade workers and Service Workers & shops and market sales workers

120. **On-Job-Training of vocationally trained recruits:** About 20% of the industries stated that there is a mismatch between industry requirement for skilled workers and training given by ITIs and similar vocational institutes. The On-Job-Training (OJT) time required for new vocationally trained recruits to become productive varies between Sambalpur (27%) and Ganjam (55%). About 68% of enterprises in Sambalpur stated that nearly 2 months of OJT is required to make new vocationally trained recruits to start giving outputs. Majority of the respondents stated that candidates are directly trained on-the-job through in-company trainers. External training providers were seldom used. The barriers to achieve success in such OJT programmes were more behavioural and to an extent related to psychomotor skills rather than they being academically challenged. The most important barriers to OJT were reported as:

- Candidates' attitude to work or motivation problems

- Lacking interest to learning
- Lacking adequate psychomotor skills
- Communication challenges
- Reliability, punctuality, diligence, and similar others

ESTIMATING THE EMPLOYMENT POTENTIAL IN DISTRICTS

121. **Analysis of Business Climate perception:** Though about 80% of industries in both Ganjam and Sambalpur were optimistic of either sustaining or increasing their business in future, only 39% in Ganjam and 21% in Sambalpur reported that they were likely to hire in future. This means that, at the overall level, almost 70% of the industries were operating at sub-optimal levels and there is was scope of improving capacity utilization (both assets and labour). From a sector perspective, of the respondents across 67 sectors surveyed, 41 showed employment generation potential albeit in varying degrees.

122. The two most important constraining factors to expansion are high capital investment and low market access, outreach and transport connectivity. While in Ganjam, inadequate skills of the workforce was ranked third as a constraining factor, in Sambalpur limited resources like land and water posed greater hindrance than skill gaps of the workforce.

Table 15: Constraining factors to Expansion of Business

Barriers to expansion	Ganjam	Sambalpur	Overall
High capital investment	38.8	30.8	34.7
Low market access, outreach and transport connectivity	23.5	33.0	28.4
Inadequate digital connectivity, stable broadband and mobile	2.4	7.7	5.1
Limited resources like land and water	4.7	14.3	9.7
Lack of skilled workforce	12.9	7.7	10.2
Challenges associated with adoption of improved production	9.4	3.3	6.3
Inadequate supply of quality power	4.7	0.0	2.3
Lack of storage facilities and warehouses	3.5	3.3	3.4

(Source: DEFT Survey Analysis)

123. **Employment potential:** As mentioned, future employment generation is likely to occur in 41 sectors which reported that they are going to hire in the next 3 years. The projected district-wise formal sector jobs for 41 sectors is shown in Table 16.

124. Survey shows that in-migrant workers are higher in Sambalpur than in Ganjam. It may be predicted that a number of migrants could be added to the job-seekers competing for future job-

roles. The number of jobs that are projected to be generated in the formal sector in future will not be commensurate to the labour supply. This is likely to increase unemployment, out-bound migration as well as informality in the labour markets. Increased attrition from present jobs would add to the pool of job-seekers' which would make getting future jobs more competitive.

Table 16: District-wise Projected Employment (next 3 years)

	Ganjam	Sambalpur
New entrants to the labour force born between 1996-2001 (Approx. based on LFPR as per NSSO 68 th Round- UPS)	141,622	45,109
Formal Sector jobs expected to be generated in the next 3 years (combination of industry & Mun. Trade Licensees)	42,318	26,720
Surplus labour (projected)	99,304	18,389
Migrant labour (as per sample) expected to join as job-seekers	1,787 (@ 1.80% approx)	9,473 (@ 21 % approx)

LFPR (UPS) 68th Round: Ganjam (60.4%) and Sambalpur (57.7%)

(Source: DEFT Survey Analysis)

125. The study team adopted the following four step approach to estimate the employment potential and their wage movements in the districts.

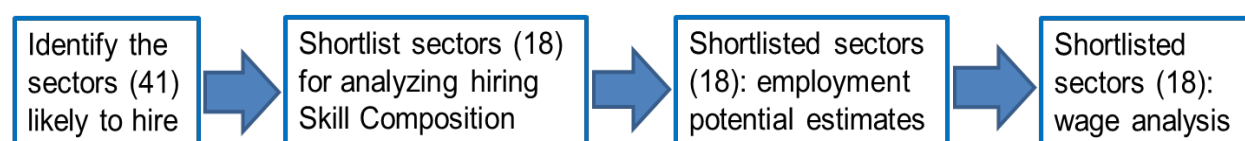


Figure 10: Four step method to estimate employment potential
(Source: DEFT Survey Analysis)

126. **Step 1:** The survey revealed that 41 industry sectors are likely to hire in the next three years. The sector wise skill level composition of these sectors is represented in Table 16. Elementary occupations constitute the largest share of the workforce (46.8%) followed by Crafts and Related Trade Workers (18%) and Service Workers, Shops and Market Sales Workers (11.7%). The proportion of elementary occupations in Ganjam is 12% higher than that of Sambalpur while in Sambalpur, crafts and related trade workers and shops and market sales workers are much higher in Ganjam. Sample respondents under (NCO-2015 codes: 1 to 4) have been grouped under 'Others' which constitutes about 11% of sample respondents.

Table 17: Skill level composition of workforce to be hired (41 sectors)

Skill levels	Ganjam	Sambalpur	Overall
Service Workers & Shop & Mkt Sales Workers (NCO-2015 code: 5)	7%	21%	12%
Crafts and Related Trade Workers (NCO-2015 code: 7)	16%	22%	18%
Plant and Machine workers and assemblers (NCO-2015 code: 8)	16%	5%	13%

Skill levels	Ganjam	Sambalpur	Overall
Elementary Occupations (NCO-2015 code: 9)	51%	39%	47%
Others (NCO-2015 codes: 1, 2, 3, 4)**	10%	13%	11%

** NCO Codes pertain to: Chief Executives, Senior Officials; Professionals; Associate Professionals; Clerks

(Source: DEFT Survey Analysis)

127. **Step 2:** From these 41 sectors, 18 were shortlisted on the basis of the sample of units surveyed. Taking a conservative approach, the shortlisting process followed at least three units in each sector confirming they were likely to hire. One or two units giving an affirmative response were considered not to have a strong concordance and hence were dropped during the shortlisting process. The skill level composition of 18 shortlisted sectors across districts is shown in Table 18.

Table 18: Skill level composition of workforce to be hired (18 shortlisted sectors)

Skill levels	Ganjam	Sambalpur	Overall
Service Workers, Shop & Mkt Sales Workers (NCO-2015 code: 5)	5%	31%	12%
Crafts and Related Trade Workers (NCO-2015 code: 7)	17%	19%	17%
Plant and Machine workers and assemblers (NCO-2015 code: 8)	14%	2%	11%
Elementary Occupations (NCO-2015 code: 9)	56%	31%	49%
Others (NCO-2015 codes: 1, 2, 3, 4)**	8%	17%	11%

** NCO Codes pertain to: Chief Executives, Senior Officials; Professionals; Associate Professionals; Clerks

(Source: DEFT Survey Analysis)

128. A detailed breakup of sector-wise skill level composition of workforce for 18 selected sectors is presented in Table 19. Elementary workers (NIC-2015 code: 9) comprised the largest group of the workforce in the selected sectors followed by crafts and related trade workers (NCO-2015 code: 7), service works, shops and market sales workers (NCO-2015 code: 5) and Plant and Machine workers and assemblers (NCO-2015 code: 8).

Table 19: Skill composition of the workforce likely to be hired in shortlisted sectors

NIC-2008	Industry Sectors	Avg num of employees per unit	NCO-2015 categories				
			5	7	8	9	Others
25	Manufacture of fabricated metal products, except machinery and equipment	4		48.7%	3.6%	46.2%	1.5%

NIC-2008	Industry Sectors	Avg num of employees per unit	NCO-2015 categories				
			5	7	8	9	Others
10	Manufacture of food products	17	5.8%	21.4%	11.8%	57.1%	3.8%
47	Retail trade, except of motor vehicles and motorcycles	29	83.3%	7.1%		9.5%	
42	Civil engineering	3		25.8%	32.3%	19.4%	22.6%
23	Manufacture of other non-metallic minerals	10			5.3%	91.2%	3.5%
16	Manufacture of wood and products of wood and cork	8		23.0%	3.4%	72.4%	1.1%
66	Other financial activities	6	26.1%	8.7%		39.1%	26.1%
56	Food and beverage service activities	14	38.6%	22.7%		27.3%	11.4%
13	Manufacture of textiles	5	18.5%	18.5%	3.7%	51.9%	7.4%
33	Repair and installation of machinery and	4	25.0%	20.8%		37.5%	16.7%
55	Accommodation	15	49.5%		1.1%	32.3%	17.2%
86	Human health activities	11	43.3%		10.0%	16.7%	30.0%
21	Manufacture of pharmaceuticals, medicinal, chemical and botanical products	10	40.8%			14.3%	44.9%
64	Financial service activities except insurance and pension funding	8	15.6%			6.3%	78.1%
85	Education	14	2.2%			15.2%	82.6%
6	Extraction of crude petroleum, natural gas	13	71.4%				28.6%
22	Manufacture of rubber and plastics products	42	0.9%		69.8%	26.4%	2.8%
90	Creative, arts, and entertainment activities	3				100.0%	

(Source: DEFT Survey Analysis)

129. Sectors where proportion of reported elementary workers was large (above 50%) were creative arts and entertainment activities, manufacture of non-metallic mineral products, manufacture of wood products (except fuel) and manufacture of food products.

130. The highest proportion of crafts and related trade workers was reported in 'manufacture of fabricated metal products, except machinery (49%), followed by wood and products of wood and cork, except fuel (23%), food and beverage service activities (23%), and manufacture of food products (21%). Sectors with high proportion (50% and above) of service and related sales workers were retail trade (83%), extraction of crude petroleum and natural gas (71%) and human health activities (50%). The highest proportion of Plant and Machine workers and assemblers were reported in civil engineering (32%) trades and manufacture of rubber and plastic products (70%).

131. **Step 3:** Projected future employment potential of the shortlisted 18 sectors is shown in Table 20. In Ganjam, sectors like manufacture of food products, manufacture of wood and wood products (except furniture), other financial activities were likely to hire more workers in future while in Sambalpur sectors like manufacture of fabricated metal products, except machinery and equipment, education etc., were likely to lead employment generation sectors.

Table 20: Sector-wise projected employment growth in the districts

NIC-2008	Industry Sectors	Percentage employment growth: next 3 years		
		Ganjam	Sambalpur	Overall
25	Manufacture of fabricated metal products, except machinery and equipment	21%	29%	21%
10	Manufacture of food products	65%	8%	45%
47	Retail trade, except of motor vehicles, motorcycles	0%	6%	6%
42	Civil engineering	41%	0%	41%
23	Manufacture of other non-metallic minerals	23%	14%	23%
16	Manufacture of wood and products of wood and cork, except furniture	101%	15%	87%
66	Other financial activities	44%	7%	21%
56	Food and beverage service activities	0%	11%	11%
13	Manufacture of textiles	19%	0%	19%
33	Repair and installation of machinery and	13%	11%	12%
55	Accommodation	14%	5%	6%
86	Human health activities	26%	17%	18%
21	Manufacture: pharmaceuticals, medicinal, chemical and botanical products	17%	0%	17%
64	Financial service activities, except insurance and pension funding	10%	8%	8%
85	Education	25%	19%	22%
6	Extraction of crude petroleum and natural gas	0%	2%	2%
22	Manufacture of rubber and plastics products	7%	0%	7%
90	Creative, arts and entertainment activities	0%	11%	11%

(Source: DEFT Survey Analysis)

132. **Step 4 (Industries' Willingness to Pay for Future Hires):** The present and expected salaries that industries are willing to pay have been analysed for 18 sectors (Table 21). These represent the monthly average present and expected salary of (NCO-2015: Code 5, 7, 8, 9). The reported present monthly average salary was high for sectors like financial service activities, accommodation, human health activities and manufacture of rubber and plastic products. The differential of present and expected future salary was the highest for the sector 'Manufacture of wood and products of wood and cork'. On an average, industries were reportedly willing to increase the wages of (NCO-2015: Code 5, 7, 8, 9) by 29%. In Ganjam, the increment in wages was expected to be higher (37%), as compared to Sambalpur (9%).

Table 21: Present and Future (expected) salaries / wages across shortlisted sectors

NIC-2008	Industry Sectors	Average Monthly Salaries in (INR)		
		Present Salary	Future Salary	Differential (%)
25	Manufacture of fabricated metal products, except machinery and equipment	13,604	16,456	21%
10	Manufacture of food products	7,808	11,527	45%
47	Retail trade, except of motor vehicles, motorcycles	12,262	13,024	6%
42	Civil engineering	7,350	9,804	41%
23	Manufacture of other non-metallic minerals	17,121	21,130	23%
16	Manufacture of wood and products of wood and cork, except furniture	12,571	23,560	87%
66	Other financial activities	6,824	8,176	21%
56	Food and beverage service activities	8,864	9,764	11%
13	Manufacture of textiles	11,384	13,476	19%
33	Repair and installation of machinery and	10,250	11,550	12%
55	Accommodation	20,097	21,273	6%
86	Human health activities	25,429	30,143	18%
21	Manufacture: pharmaceuticals, medicinal, chemical and botanical products	6,156	7,244	17%
64	Financial service activities, except insurance and pension funding	6,500	7,214	11%
85	Education	10,250	10,625	3%
6	Extraction of crude petroleum and natural gas	5,200	5,400	2%
22	Manufacture of rubber and plastics products	20,570	21,948	7%
90	Creative, arts and entertainment activities	18,000	20,000	11%
	Average wage	11,789	15,186	29%

(Source: DEFT Survey Analysis)

133. **Wage movement forecasts across skill levels:** The present and expected salary is shown across skill levels (NCO-2015 code: 5), (NCO-2015 code: 7), (NCO-2015 code: 8) and (NCO-2015 code: 9) which comprise more than 80% of the workforce. Table 22 presents both the employer's and employee's perspective with respect to wages. The wage statistics reported by the employer pertains to Part A of the questionnaire while those of the employee pertain to Part C of the questionnaire. For each of the skill categories mentioned, the employer/ industry

reported figures of monthly salary is higher than corresponding employee provided figures. However, except for the category of elementary workers, the expected rate of change in wages between present and future is higher with respect to employee reported figures as compared to employer anticipated ones. This because the industry anticipated figures for increment in salary for elementary occupations was a massive 55% expected jump in Ganjam.

Table 22: Expected wage movements across selected skill categories

NCO - 2015	Skill Levels	Employer's anticipation (over 3 years)	Employee's expectation (over 3 years)
		Wage increase differential (%)	Wage increase differential (%)
5	Service Workers, Shop Mkt Sales Workers	11%	34%
7	Crafts and Related Trade Workers	17%	31%
8	Plant and Machine workers, assemblers	9%	24%
9	Elementary Occupations	47%	27%
	Average	29%	29%

(Source: DEFT Survey Analysis)

SECTION 6: IN-SERVICE EMPLOYEES

134. The objective of the survey of in-service employees discussed in this Section was to understand the existing labour market conditions. These on-site, pen-and-paper interviews of in-service workers were conducted when the survey team visited the enterprises for demand-side analysis. Of the three parts of the enterprise questionnaire, analysis of the responses obtained for Part A and Part B has been discussed in Section 5. Part C was aimed at collecting responses from in-service employees. A maximum of five employees were interviewed from each of the enterprises. This section analyses the findings from these interviews. For reliability, internal consistency method was used.

135. The first set of questions in this component of the enterprise survey aimed to capture the demographic, educational and occupational profile of the in-service respondents. The second set of questions sought to understand their emoluments and social protection, while the third set captured data on technical and vocational skills. The questions were close-ended and appropriately coded to capture both single and multiple responses which could then be categorized into nominal, ordinal and ratio scale. Only a few were open-ended questions.

136. The survey sample was 3,458 employees across 37 sectors. The sample size distribution of the workforce in these sectors is shown in Table 23.

Table 23: Respondent sample of in-service employees

Database	Sample sizes for the districts		Total
	Ganjam	Sambalpur	
Annual Survey of Industries database	589	348	144
Business Register (manufacturing)	1,337	540	507
Business Register (services)	673	398	260
Municipal Trade Licensees	859	548	388
	Grand Total		3,458

(Source: DEFT Survey Analysis)

KEY FINDINGS

137. Majority of the respondents were in the age-group of 35 to 44 years, with mean of their age being 36 years (Ganjam: mean age 37 years, Sambalpur: mean age of 35 years). About 92% of the respondents were males, and 8% were females. The distribution of sectors where approximately 70% in-service employees were engaged is shown in Table 24.

Table 24: Sectors where approx. 70% of respondents were engaged

Ganjam		Sambalpur	
Sectors (based on NIC-2008 codes)	Respondents' percentage	Sectors (based on NIC-2008 codes)	Respondents' percentage
Manufacture of food products	19.9%	Manufacture of food products	23.3%
Water collection, treatment and supply	12.4%	Retail trade, except of motor vehicles and motorcycles	16.0%
Manufacture of fabricated metal products, except machinery	11.1%	Food and beverage service activities	5.9%
Manufacture of other non-metallic mineral products	6.1%	Manufacture of tobacco products	5.4%
Civil engineering	5.7%	Accommodation	5.1%
Education	4.7%	Manufacture of basic metals	4.1%
Manufacture of wood and products of wood and cork, except fuel	3.6%	Wholesale trade, except of motor vehicles and motorcycles	2.8%
Wholesale and retail trade and repair of motor vehicles and	2.7%	Human health activities	2.7%
Retail trade, except of motor vehicles and motorcycles	2.5%	Repair and installation of machinery and equipment	2.4%
Social work activities without accommodation	2.3%	Manufacture of other non-metallic mineral products	2.1%
Percentage of total respondents (rounded off)	71%		70%

(Source: DEFT Survey Analysis)

138. The largest group of in-service employees in the sample consisted of workers in elementary occupations (26% in NCO 2015: code 9), followed by service workers and shops and market sales workers (18% in NCO 2015: code 5), Crafts and Related Trade workers (14% NCO 2015: code 7) and Plant and machine workers and assemblers (13% NCO 2015: code 8). The share of workers belonging to (NCO 2015: code 5) category in Sambalpur district at 27% is much higher than that in Ganjam at 9%. Most of the workers in Sambalpur in this category are engaged in retail trade sector.

139. The survey found that a majority of respondents were poorly educated. However, as with informal workers (Section 3 of this report), there were hardly any instance of respondents being illiterates, a reflection of the progress of Government's sustained literacy missions like SSA. About 8% had studied up to class V and 16% had studied up to Class VIII. There was a substantial drop-out thereafter, as 42% were found not having passed Class X (Figure 11). Overall, only 22% had passed Class X but some of them did not study further as only 14% were educated up to (and may not have passed) Class XII.

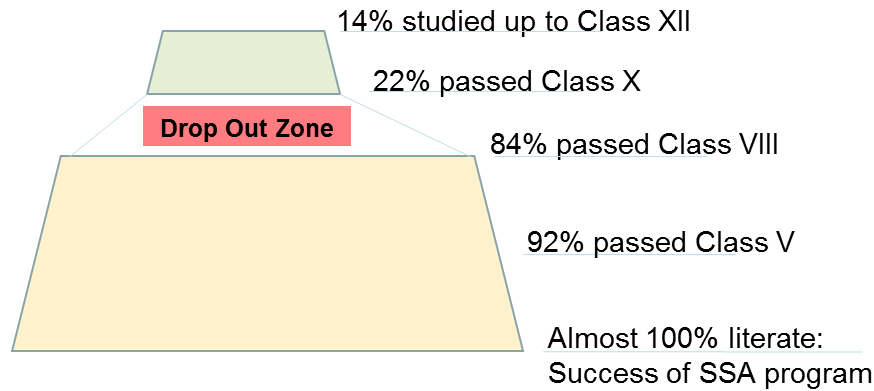


Figure 11: In-service employees' education profile (engagement of drop-outs)
(Source: DEFT Survey Analysis)

140. The percentage of reported regular employment is reasonably high at 72%. Although such a high percentage reported 'regular employment', only 29% said they were eligible for paid leave and just 12% of respondents reported that they receive some kind of social security benefits. The low coverage of social protection measures exposes the vulnerability of the workers to economic crisis which is likely to have an adverse socio-economic impact at the macro level. In the long run social protection measures are crucial for sustained inclusive growth and greater labour market participation.

141. The mismatch between education qualification and occupation is essentially of two types

- i. Mismatch between required educational qualification and job role
- ii. Mismatch between skills required for a particular job and job role

142. Employees did not seem open discussing about skill mismatch between their job roles and skills required for the job. More than 50% in both Ganjam and Sambalpur did not respond to this question. Hardly 2% admitted having skill mismatch between the skills required and the job they were presently doing.

143. Only 5% of in-service employees reported receiving vocational training. Within this, about 40% (which was 2% of the total workforce) reported obtaining it through On-The-Job (OJT). The rest (3% of the total workforce) reported receiving formal vocational training from private institutes. Of these who admitted skill gaps, 15% reported that they were planning to receive vocational training in future.

144. At the same time, employers did not think the skill gap among clerks or other higher officials was not as acute as compared to the jobs requiring lower skills (elementary occupations) or crafts and related trade skills. More than 85% employers ranked the skill gap among higher officials and clerks as not serious. On the other hand, about 11% of employers ranked skill gap among crafts and related trade workers as serious and 3.6% employers ranked them as very serious. Similarly with regard to elementary occupations, 8.2% employers ranked skill gap as serious and 3.3% as very serious.

SECTION 7: SUMMARY OF FINDINGS AND SUGGESTIONS

SUMMARY OF FINDINGS

145. **Business Climate Perception:** Though 80% of the industries reported confidence in either sustaining or increasing their business, such confidence did not translate into their planning for creation of new jobs. Among those who had an optimistic outlook, only about 30% expressed their willingness to hire in future. This could mean that a large number of industries were operating at sub-optimal levels and there was a scope for them to improve capacity utilization (both assets and labour). For those who perceived business climate was less than favourable, the two most important constraining factors to expansion were (i) high capital investment and (ii) low market access, outreach and transport connectivity.

146. **Employment potential:** Future employment generation is likely to occur in 41 sectors which reported that they are going to hire in the next 3 years. The number of jobs that are projected to be generated in the formal sector in future will not be commensurate to the labour supply (Section 5, Table 16). This is likely to increase unemployment, out-bound migration as well as informality in the labour markets.

147. **Expected sectors for hiring growth:** The survey revealed that 41 industry sectors are likely to hire in the next three years. Taking a conservative approach, 18 sectors were shortlisted on the basis of concordance of responses. Growth in employment of top 10 sectors by districts is shown in Table 25.

Table 25: Projected employment growth across districts (top 10 sectors)

SL. No	NIC-2008	Industry Sectors	Projected employment growth: next 3 years	NIC-2008	Industry Sectors	Projected employment growth: next 3 years
Ganjam				Sambalpur		
1	16	Manufacture of wood and products of wood and cork, except furniture	100%	25	Manufacture of fabricated metal products, except machinery, equipment	29%
2	10	Manufacture of food products	65%	85	Education	19%
3	66	Other financial activities	44%	86	Human health activities	17%
4	42	Civil engineering	41%	16	Manufacture of wood and products of wood and cork, except furniture	15%
5	86	Human health activities	26%	23	Manufacture of other non-metallic minerals	14%
6	85	Education	25%	56	Food and beverage service activities	11%
7	23	Manufacture of other non-metallic minerals	23%	33	Repair and installation of machinery and	11%

SL. No	NIC-2008	Industry Sectors	Projected employment growth: next 3 years	NIC-2008	Industry Sectors	Projected employment growth: next 3 years
Ganjam				Sambalpur		
8	25	Manufacture of fabricated metal products, except machinery, equipment	21%	90	Creative, arts and entertainment activities	11%
9	13	Manufacture of textiles	19%	10	Manufacture of food products	8%
10	21	Manufacture: pharmaceuticals, medicinal, chemical and botanical products	17%	64	Financial service activities, except insurance and pension funding	8%

(Source: DEFT Survey Analysis)

148. **Demand for Skilled Workers:** The most serious skill shortage was found among crafts and related trade workers. More than 85% employers ranked the skill gap among higher officials and clerks as not serious. On the other hand, about 11% of employers ranked skill gap among crafts and related trade workers as serious and 3.6% employers ranked them as very serious. The industry demand for job roles was found to be high for elementary occupations, technical skills, sales and marketing (Table 26).

Table 26: Industry sectors with high demand for craft and related trade workers (top five) (NCO-2015: Code 7)

NIC-2008	Industry Sectors	Demand Rank
25	Manufacture of fabricated metal products, except machinery and equipment	1
42	Civil engineering	2
16	Manufacture of wood and products of wood and cork	3
56	Food and beverage service activities	4
10	Manufacture of food products	5

(Source: DEFT Survey Analysis)

149. **In-service employees:** In-service employees interviewed (about 3,500) were found to be poorly educated with 42% not having passed Class X. Elementary workers comprised the largest category (26%) of in-service employees, followed by as plant, machine workers and assemblers and crafts and related trade works. Coverage of social protection measures among in-service employees was very low (12%) both in Ganjam and Sambalpur.

150. Employees did not seem open discussing about skill mismatch between their job roles and skills required for the job. More than 50% in both Ganjam and Sambalpur did not respond to this question. Only 5% of in-service employees reported receiving vocational training. Within this, about 40% (2% of the total workforce) reported obtaining it through OJT. The rest (3% of the total workforce) reported receiving formal vocational training from private institutes. Of those who admitted skill gaps, 15% reported they were planning to receive vocational training.

151. **Mismatch in wage expectation and willingness to pay:** There is considerable differential between wage expectation of in-service employees and employers' willingness to pay (Table 27). However, the employers anticipated higher wage demand from their elementary workers. Especially, in Ganjam, the employers expected a massive 55% jump in wage demand.

Table 27: Expected wage movements across selected skill categories

NCO - 2015	Skill Levels	Employer's anticipation (over 3 years)	Employee's expectation (over 3 years)
		Wage increase differential (%)	Wage increase differential (%)
5	Service Workers, Shop Mkt Sales Workers	11%	34%
7	Crafts and Related Trade Workers	17%	31%
8	Plant and Machine workers, assemblers	9%	24%
9	Elementary Occupations	47%	27%

152. **Informal sector workforce:** Significant in-migration has contributed to building the informal sector economy of Sambalpur. Informal sector workers were interviewed across 18 sectors. About 49% were daily income earners, 11% were weekly income earners, 24% were monthly income earners and 16% were piece rate earners. The education level among informal sectors is low with 83% reported having studied up to at least Class VIII but a negligible percentage of them were illiterates reflective of some success achieved by the sustained efforts of successive missions on Literacy, Primary Education (Sarva Shiksha Abhiyan).

153. The core skill needs of the Informal sector workers were assessed on three dimensions- Financial Literacy, Occupation Health and Safety (OHS) Awareness and Knowledge of Cleanliness. Most of the respondents were aware about the workings of *Jan Dhan* and other savings account. Regarding OHS, the general tendency was to adopt only measures without which the work itself cannot progress (such as safety goggles while welding) ignoring many others. Cleanliness awareness at the workplace had received a boost with the *Swachh Bharat* campaign and almost all the workers were aware about that. Most reported a need to generate sustained, 'regular income', livelihood options in rural areas.

154. **Students Survey:** An aspiration survey was conducted among three student cohorts viz., Class IX-X, Class XI-XII and Undergraduate (college) students to understand how the future labour market is being shaped, their orientation towards vocational education and their perception about skills needs. The survey clearly shows that the relevance of vocational education in the job market is not widely recognized by the students. Both Sambalpur and Ganjam show figures that are significantly lower than similar data collected from other States where the survey team has worked in year 2016; both Assam and Mizoram show almost 80% of their students recognize the relevance of Vocational Education in the job market. Multiple factors may account for the disinclination in vocational education which are not unique to these districts and are seen across many Indian States:

- Low awareness of vocational training facilities, offerings and job opportunities
- An interest to pursue higher education for 'knowledge based' jobs. This finding helped develop a hypothesis which was tested through responses to subsequent questions.
- Family or social or peer pressure to aspire for 'higher status', secure Government (such as qualifying in Civil Services), 'white collar jobs', which cannot be 'achieved' by pursuing vocational education.

155. **Vocational Training Providers:** A survey was conducted among 26 VTPs in Sambalpur and Ganjam. The courses that have attracted the largest enrolment were for Electrician, Fitter and Civil Work trades. None of these institutes showed interest to introduce new courses. This may be attributed to the interplay of demand and supply, and challenges to maintain profitability of existing operations. Getting on board suitably trained instructors, updating curricula were also listed as common operational challenges in both districts. Ganjam faced additional challenges in attracting and enrolling trainees as compared to Sambalpur. The absence of a well-functioning labour market information system, and employers' participation in the TVET ecosystem impacted curriculum updates, teaching support, providing apprenticeships (under the Act or even informally as OJT) and placements (apart from 3-4 courses).

156. **Assessment of VTP operations:** In addition analyzing information provided by VTPs, a TVET specialist also performed an assessment of VTP operations by surveying their facilities and interviewing administrators and instructors on six major dimensions: Admission Process, Training Process, Trainer/ Faculty Performance, Trainer Performance (practical), Practical Area and Infrastructure, and Practical Equipment and Tool Kit. The analysis shows that across both Ganjam and Sambalpur, the Government-run institutes fared better across all the dimensions. Those registering lower scores pertained to the Admission Process, Practical Area and Infrastructure, Practical Equipment and Toolkit. Whilst the latter two dimensions are capital-

intensive, relatively lower cost Admission Process when effectively addressed can help in increasing throughput and providing students with a better experience.

157. **Quality of vocational education imparted:** About 20% of the industries stated that there is a mismatch between industry requirement for skilled workers and training given by ITIs and similar vocational institutes. Also the practice of apprenticeship in MSMEs was almost non-existent. Even among the employees who had undergone formal vocational training, most of them require two months of OJT to start giving outputs. The barriers to achieve success in OJT programs were more behavioural. Some of them were reported as:

- Candidates' attitude to work or motivation problems
- Lacking interest to learning
- Lacking adequate psychomotor skills
- Communication challenges
- Reliability, punctuality and diligence

FRAMEWORK SUGGESTIONS

158. The major suggestions for improving the present system skilling ecosystem in Odisha can be based on the framework proposed below (Figure 12):

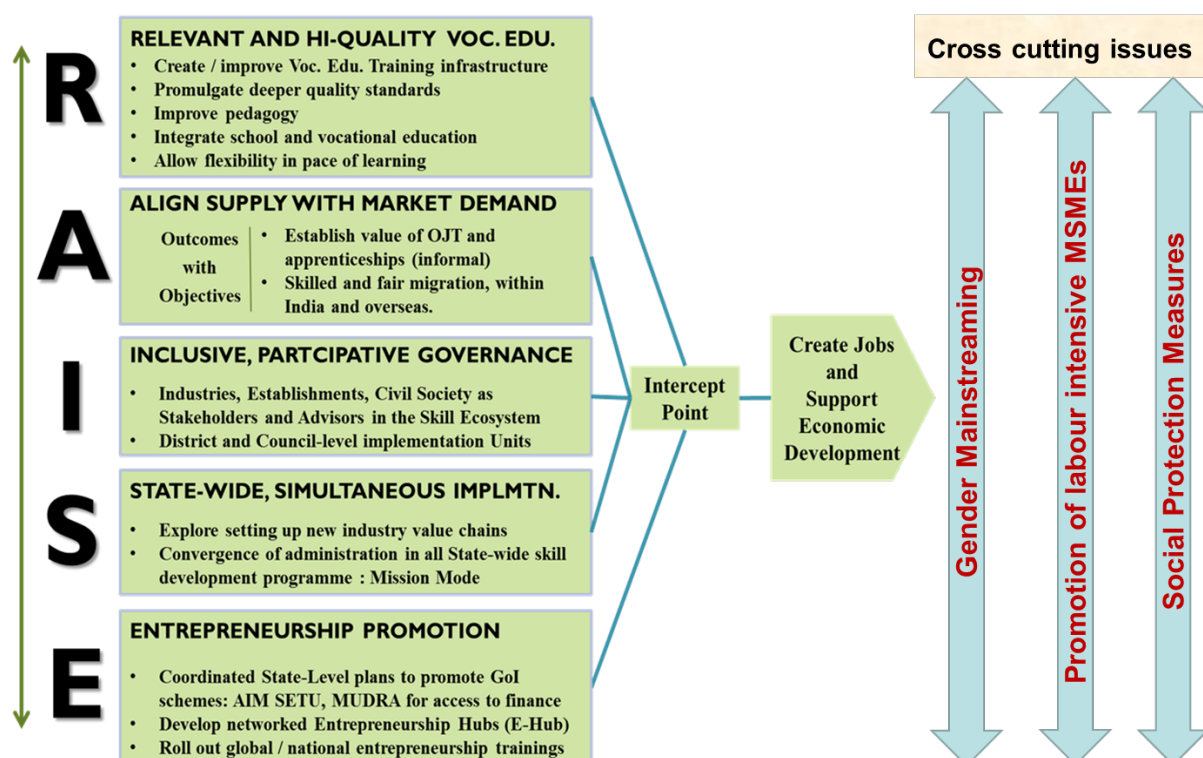


Figure 12: Suggested framework for improving skill ecosystem in the State

SPECIFIC SUGGESTIONS

159. **Pilot project for selected schools.** There is a need to systematically integrate vocational education into schools to initiate students into acquiring skills along with their general education. Such integrated education system will allow the students to initiate acquiring skills along with their general education and make skill development more aspirational to the youth than it is today. Based on the survey of schools, a list of five schools in each district may be considered for a pilot programme. Some flexibility can be designed in this pilot to accommodate the differential pace of learning between student groups; provide extended window of opportunity to students / trainees, who take more time to learn and develop skills.

160. **Making vocational education aspirational:** Findings show there is need to increase awareness among civil society / job-seekers and students on new areas of vocational study and skill acquisition. It is suggested that a State-wide skills promotional campaign should be launched

to create awareness among students and civil society (as many parents often influence the students' career choices). Communication kits can be developed and made available in Oriya, Hindi and English (as needed). District town level camps can then be organised for further mobilization of job-seekers.

161. **Establishing Employer-Educator-Trainee Linkages.** The absence of high-quality private institutions, wider recognition of standards and certification of skills makes it difficult for employers to differentiate between skill levels. The study indicates that job-seekers are looking to obtain formal vocational education certification from organizations that are credible, institutionally recognized and have wider acceptability in the labour market of the State and beyond. Effective implementation of a Public-Private-Partnership model is needed to ensure active participation of industry, assess and validate the labour market demand and provide market oriented trainings for employability.

162. **Improving pedagogy.** State Policy should provide for VTPs operating in Odisha to get their instructors certified. The establishment of an Advanced Training Institute (ATI) for instructors training has been envisioned for Odisha. The VTPs can also benefit from the establishment of an ATI and source master trainers from the institute. Emphasis can be given on improving expert faculty sourcing from outside the State, creating a common pool of specialist master trainers for faculty training, building partnerships between National players and State VTPs for running specific courses.

163. **Apprenticeships (formal and non-formal).** It is now widely recognized that apprenticeships are able to reduce youth unemployment, improve the transition from school-to-careers, upgrade skills and achieve positive returns both for the employers and workers. Another recent survey showed there is more enthusiasm within industries / employers (as well as within the State Governments) to implement 'National Apprenticeship Promotion Scheme' (NAPS) which has become effective from 1st October, 2016. Taking advantage of this development, a State specific scheme for fresher (up to the age of 21) as well as ITI and MES apprenticeships needs to be developed and implemented.

164. **Recognition of Prior Learning.** Also the skill needs identified by them is really an extension of their existing competency, and not the addition of a totally new or different skill. This makes such informal workforce amenable to being assessed under a Recognition of Prior Learning program that could be administered in conjunction with suitable bridge training courses. This could also be the beginning of a transitioning process into formalization of such an informal

workforce. A pilot RPL program could be undertaken for 1,000 orchard workers in Sambalpur, Deogarh and Bargarh districts. Lessons learnt could be used for program scale-up.

165. **Improving Career Service functions.** The study found the urgent need for improved computerization of the Employment Exchanges and get them aligned to the objectives set out in the National Career Service project. Within the various functions of the Exchanges, a key step would be to prioritize digitization of job-seeker records. With improved mobile telephony, this would ensure better communication of the Exchanges with the job-seekers and responsiveness in a dynamic environment of opportunities. The Employment Exchanges for graduates and below could be taken up for the first phase of work.

166. **New courses:** At a macro-level, the courses offered by the VTPs need to be in accordance with the industry's future hiring plan. The business imperatives of VTPs amidst difficult economic conditions and continuing sustenance of their operations, guides them to introduce courses that are popular among job-seekers irrespective of their labour market outcomes. As a result, mismatch exists between the skills acquired by the job-seekers and those required by the industry. If left unaddressed, this gap could widen.

167. **Establish the value of on-the-job training:** The study findings show that apprentices (including on-job-trainees who do not always follow structured programs) constitute only about 1% of the present industry workforce. This limits employment opportunities for young who have no work experience. The Government of India has now approved 'National Apprenticeship Promotion Scheme' (NAPS)²¹ with target to provide apprenticeship training to 50 lakh youth by 2020. Building on NAPS, the State Government can push an apprenticeship scheme by incentivizing industry to take certified pass-outs from ITIs and recognized VTPs as apprentices in the on-the-job roles where the demand is high. This will create opportunities for industry to hire more recruits as apprentices and the youth will also get benefitted through increased employment opportunities to gain industry experience which will further improve their chances to be hired as experienced craftsmen / professionals in future.

168. **Supporting Entrepreneurship Development:** The study shows that, over the next 3 years, the number of jobs that can be projected to be created in the formal sector would be significantly less than the number of new entrants who are likely to join the workforce. Hence, entrepreneurship as a career option needs to be actively promoted by the State. ILO's Start and Improve Your Business (SIYB) is adopted by 80 countries to support Micro and Small Enterprises

²¹ Government of India, National Apprenticeship Promotion Scheme, Notification of Guidelines, 19 August 2016

(MSEs). Rolling out the program in Odisha would be beneficial. ITI instructors as well as NABARD FPOs, and SHGs could be trained to adapt modules of this programme into the curricula.

169. **Job-focused linkages with value chains:** Two reports for Coastal Fisheries in Ganjam and Horticulture (fruits) in Sambalpur have been prepared as a part of this study. More such sector / value chain studies can be undertaken using these templates, such as flowers and vegetables (in Horticulture), inland freshwater Fisheries, transport-logistics, healthcare, fabrication, food processing. The findings from these studies can be implemented for improved functioning of their associated labour markets. Some more new areas could be further explored for such job-focused new value chain creation. Supporting and aligning the growth of MSMEs as a part of these existing or new value chains needs to be encouraged.

170. **Developing a Labour Market Information System.** The study needs to be replicated for the remaining districts in the State. The roll-outs may be structured into two phases, as deemed appropriate. The ILO is in the process of developing a State-Level toolkit for structured roll-out of such detailed Labour Market studies in India. Labour Market information flowing in from such studies would help the State develop a comprehensive and responsive Labour Market Information System.

171. **Evaluation of Skill Development Programs.** There is a need to design and conduct evaluations of the skill development programs implemented in the State. Such evaluation could assess the process of implementation, effectiveness of the delivery systems and impact of the schemes and programs on the intended beneficiaries. The evaluation work will identify the successes and failures at different stages of execution, analysis of reasons for these successes and failure, and deriving lessons for future improvement in the formulation and implementation of the new schemes / programs.