



Skilling for the Future

Skill Gap Assessment & Action Plan for Tamil Nadu

District Skill Development Plan for Tiruchirappalli

November 2019



Tamil Nadu Skill Development Corporation,
Integrated Employment Offices Campus (1st Floor)
Thiru. Vi.Ka Industrial Estate,
Guindy, Chennai-600 032

**Tamil Nadu Skill Development Corporation (TNSDC)
Integrated Employment Offices Campus (1st Floor)**

Thiru. Vi Ka Industrial Estate,
Guindy, Chennai-600 032
T +044 2250 0107
E dettnsdm@gmail.com
W <https://www.tnskill.tn.gov.in>
Published by
TNSDC, Chennai

Disclaimer

The Report includes projections, forecasts and other predictive statements which are based on assumptions and expectations in the light of currently available information. These projections and forecasts are based on industry trends, circumstances and factors which involve risks, variables and

Acknowledgement

We extend our thanks to district officials of Tiruchirappalli, youth, employers, industrial associations and training service providers who participated in focus group discussions and surveys, for their support in conducting research and drafting this report.

Table of Contents

Executive Summary	11
1. District Profile	15
1.1. Demographic Profile.....	15
1.2. Economic Profile	16
1.2.1. Sector wise Analysis.....	17
1.2.2. Traditional Sector	19
1.2.3. Investments and key economic drivers	20
1.3. Labor Market Profile.....	21
1.4. Education and Skill Development Profile	22
1.4.1. Education Profile	22
1.4.2. Vocational Education and Skill Development Profile	23
2. Youth Perspective	25
2.1. Profile of Respondent Youth	25
Economic Engagement Status.....	25
2.3. Economic Engagement of Youth	26
2.4. Youth Under NEET Category.....	27
2.5. Youth Career Aspirations	27
2.6. Skill Training Preferences of Youth.....	31
3. Employer and Other Stakeholder Perspectives	33
3.1. Quantitative Employer Survey.....	33
3.2. Focus Group Discussion with Industry Representatives	34
3.3. Other Stakeholder Perspectives	35
4. Skill Gap Analysis	37
4.1. Skill Gap Assessment - Incremental Demand for Skilled & Semi Skilled Manpower	37
5. District Skilling Action Plan and Recommendations	38
5.1. District Skilling Action Plan Key Training Projects	38
5.2. Key Recommendations	52
Appendix	53
A.1 Methodology for Block Selection in Youth Aspiration Survey.....	53
A.2 Methodology for Present and Future Labour Demand Supply and Gap Estimation	55
A.3 List of Stakeholders	57

List of Tables

Table 1: Key Demographic Indicators Tiruchirappalli vs Tamil Nadu	15
Table 2: Sector wise- Annual Growth Rate in Tiruchirappalli	17
Table 3: Key Clusters and Traditional Industries	18
Table 4: Profile of Manufacturing Sector from ASI (2014-15)	18
Table 5: LFPR and Unemployment Rate by Sex & Location	21
Table 6: Elementary Education Profile - DISE.....	22
Table 7: Institutions of Higher Education in Karur District	22
Table 8: Vocational Training under Short Term Skill Development Programs	23
Table 9: Vocational Training under Long Term Skill Development Programs (ITI).....	24
Table 10: Education Qualification of Respondents and Employment Type	26
Table 11: NEET Category Respondents	27
Table 12: Career Aspiration - Factors, Preparedness and Availability of Jobs	27
Table 13: Career Aspiration Challenges in pursuing desired career.....	28
Table 14: Key Requirements to enhance employability and steps to achieve aspirations (n=360)	28
Table 15: Growth Prospects and prospective adoption of technology	34
Table 16: Demand for workers by Skill Level and type of training provided to workers.....	34
Table 17: Focus Group Discussion - Key Points.....	34
Table 18: Sector wise Incremental Demand for Skilled and Semi-skilled Workers between 2019 and 2025.....	37
Table 19: Summary of Training Projects	38
Table 20: Training Project 1.....	41
Table 21: Training Project 2.....	42
Table 22: Training Project 3.....	43
Table 23: Training Project 4.....	44
Table 24: Training Project 5.....	45
Table 25: Training Project 6.....	46
Table 26: Training Project 7.....	47
Table 27: Training Project 8.....	48
Table 28: Training Project 9.....	49
Table 29: Training Project 10	50
Table 30: Training Project 11	51
Table 31: List of Stakeholders	57

List of Figures

Figure 1: Age-wise Population Pyramid of Tiruchirappalli (2011 vs 2026).....	16
Figure 2: Key Economic Indicators of Tiruchirappalli District	16
Figure 3: Sectoral Share of GVA (2011-12 & 2017)	17
Figure 4: Share of GSVA by Industry of Origin (2016-2017).....	17
Figure 5: GVA of Agri and Allied Sectors (2016-17).....	17
Figure 6: Industrial Sector GVA (2016-17)	18
Figure 7: GVA of Services Sector (2016-17)	19
Figure 8: Korai Mat Weaving Unit in Musiri	19
Figure 9: Gold Jewellery Pieces in Mettupalayam	19
Figure 10: Sector-wise growth of Credit off Take (2013-16) - RBI	20
Figure 11: Key Labour Market Indicators	21
Figure 12: Distribution of working status by Educational Qualification	21
Figure 13: Sector-wise share of Employment.....	22
Figure 14: GER and Dropout Rates - DISE	22
Figure 15: Population Undergone Vocational Training.....	24
Figure 16: Respondent Profile of Youth Aspiration Survey	25
Figure 17: Status of Respondent by Sex.....	25
Figure 18: Findings based on Respondent Status	26
Figure 19: Distribution of Respondents across Monthly Income Category across Sex	26
Figure 20: Career Aspiration of Youth	27
Figure 21: Sector-wise Career Aspirations.....	29
Figure 22: Gender-wise Preferred Sectors.....	29
Figure 23: Monthly Income Expectations	30
Figure 24: Location Preference for Work*	30
Figure 25: Sources for Job Information*	30
Figure 26: Preferences for Counselling Services	31
Figure 27: Accessibility to Counselling Services	31
Figure 28: Profile of Respondents - Employer Survey	33
Figure 29: Respondents by Challenges in Recruitment*	33
Figure 30: Respondents by Institutional Recruitment*	33
Figure 31: Respondents by Skill Level of Workers.....	34
Figure 32: Blocks Selected for Survey in Tiruchirappalli	53
Figure 33: Steps in Demand Estimation	55
Figure 34: Steps in Supply Estimation.....	56

List of Abbreviations

S.No	Abbreviation	Expansion
1.	BFSI	Banking Financial Services and Insurance Sector
2.	BHELSIA	BHEL Small and Medium Industries Association
3.	DDU-GKY	Deen-Dayal Upadhyaya Grameen Kaushalya Yojana
4.	DES	Directorate of Economics and Statistics
5.	DISE	District Information System for Education
6.	GDDP	Gross District Domestic Product
7.	DIC	District Industries Centre
8.	GVA	Gross Value Added
9.	ITI	Industrial Training Institute
10.	IT-ITES	Information Technology and Information Technology Enabled Services
11.	LFPR	Labour Force Participation Rate
12.	Manuf.	Manufacturing
13.	MIS	Management Information System
14.	NCVT	National Council for Vocational Training
15.	NEET	Not in Employment, Education or Training
16.	NIC	National Industrial Classification (2008)
17.	NSDC	National Skill Development Corporation
18.	NSQF	National Skills Qualification Framework
19.	NULM	National Urban Livelihood Mission
20.	PMKVY	Pradhan Mantri Kaushal Vikas Yojana
21.	PSU	Public Sector Undertaking
22.	Pub. Admin.	Public Administration
23.	QP-NOS	Qualification Pack National Occupational Standards
24.	SIDCO	Tamil Nadu Small Industries Development Corporation Limited
25.	SIPCOT	State Industries Promotion Corporation of Tamil Nadu
26.	SSC	Sector Skill Council
27.	TIDCO	Tamil Nadu Industrial Development Corporation
28.	TIDISSIA	Tiruchirappalli District Small Scale and Tiny Industries Association
29.	TN-GIM	Tamil Nadu Global Investors Meet
30.	TNSDC	Tamil Nadu Skill Development Corporation
31.	TNSRLM	Tamil Nadu State Rural Livelihood Mission
32.	Tr. & Tou.	Trade and Tourism Sectors

Executive Summary

Background: The Vision 2023 of Tamil Nadu envisages shaping its future by empowering the youth in the state, through imparting market relevant skill training; to become responsible and participating citizens who drive a new era of development, growth, and productivity. Tamil Nadu has formulated a State Youth Policy, which aims at

upgrading the human capital of the state by building on the intellectual and creative potential of youth in various fields, thereby transforming Tamil Nadu into the innovation hub and knowledge capital of India. It also aims at enabling Tamil Nadu to collaborate with other States in the country and the rest of the world on multiple dimensions: increasing the flow of workforce and goods/services, enhancing the levels of exchange of ideas and culture, and facilitating the movement of people to and from Tamil Nadu for opportunities.

Context for Present Study: In 2012, The National Skill Development Corporation commissioned a skill gap study for Tamil Nadu. The study covered 12 districts, based on which an extrapolation was done for the remaining districts and the State as a whole. The study adopted a mix of secondary and primary research and relied largely on focus group discussions with various stakeholder groups such as youth, employers, industry associations, government officials, and skill training providers. Skill gaps were estimated for a period of 10 years, up to FY 2022. Given the rapid c

verse geographical backgrounds across the state, especially reaching out to economically backward regions. It is expected that a contemporary estimation, using both quantitative and qualitative analysis would reveal more relevant insights and findings related to the demographic profile, socio-economic characteristics of the youth, emerging sectors and job roles, and the skill-sets in demand.

The Present Study: The Tamil Nadu Skill Development Corporation (TNSDC) has engaged PricewaterhouseCoopers Private L the state. This is the first time such a comprehensive State-wide skill gap study taking into consideration block-level information from each district has been conducted in Tamil Nadu. The study aims at identifying sources for self and wage employment in all 32 districts, estimating the sector-wise current and future labour demand (over the next six years) by industry, and assessing the overall the labour supply and estimating the existing and emerging skill gaps. The Skill Gap study offers insights into: (growth, while also catering to the career aspirations of the youth; and (ii) how to design appropriate interventions that will enable active collaboration between various stakeholders for the common good. Workforce demand-projection for the upcoming years, disaggregated as skilled and semi-skilled workforce requirement has been estimated at the district level.

Methodology for Study: Mixed-method research design was adopted encompassing a blend of quantitative and qualitative data collection techniques, and desk research on secondary data sources. Structured into two phases, the first phase of the study comprised a comprehensive market, educational and skill development profile. The second phase of the study comprised the following:

1. **Youth aspiration survey:** a quantitative survey covering 360 youth across the following groups engaged in economic activity (self-employed, wage-employed, entrepreneurs), students in formal education, vocational and skill training institutions (Polytechnics, ITI), and those who fall under the Not in Education, Employment or Training (NEET) category. Six blocks in each of the districts were covered.
2. **Quantitative employer survey:** covering 45 employers with adequate representation from Large, Medium, Small and Micro Industries across the key sectors defining the district economy.
3. **Focus- Group Discussions (FGD's) and stakeholder consultations** across a wide group of stakeholders including, representatives from Industrial units (with additional focus on MSME sector), district-level Industry Associations across priority sectors, officials from various government departments, representatives from various higher education institutions, and training service providers. In all, more than twenty-five focus group discussions and nearly five hundred individual consultations have been conducted across the state.

Estimation of labour demand and supply were undertaken based on the analysis of data sourced from the Census of India, the Department of Economics and Statistics of Government of Tamil Nadu, the Reserve Bank of India, the National Sample Survey Organisation and the Bureau of Labour and Employment under the Ministry of Labour and Employment, Government of India. Estimates were further refined based on the data pertaining to the proposed investments (pragmatically rationalised and considered), and the anticipated developments within key sectors; in addition, due consideration is given to the emerging sectors and job roles. The sectors and job roles in demand have been organized into training projects, which are informed by the demand estimations, and validated through quantitative survey findings and qualitative consultations. Budgetary requirements for the

training projects have been estimated based on the cost categories as defined within the recent Common Cost Norms published by the Ministry of Skill Development and Entrepreneurship, Government of India.

Key Findings: Key findings of the study are presented hereunder:

Demographic Analysis	<ul style="list-style-type: none"> • 2011 and is expected to increase to 35.4 years in 2026. • This ageing population could drive the demand for palliative care and the growth of insurance sector in the district. •
Economic Analysis	<ul style="list-style-type: none"> • Tiruchirappalli is one of the more industrialized districts of the state and contributes to 4.6% of the state s GDP. • It ranks 8th in terms of GD .65 Lakh (2017-18). • Crop cultivation has been adversely affected by vagaries of weather conditions in the last decade. However, it has showed recent recovery growing at 2% between 2012-13 and 2016-17. • Livestock has emerged as an alternative form of income within the sector. • Industrial sector grew at 8% CAGR between 2011-12 and 2016-17. The sector is dominated by the Manufacturing and Construction sectors • Metal processing, non-metallic mineral products, beverages and auto components are some of the key manufacturing industries in the district • Services sector contributes to 60% of the GVA. The sector grew at a CAGR of 12% between 2011-12 and 2016



Employer & Other Key Stakeholder Perspectives

Quantitative Survey

- Common methods of recruitment were found to be employee referrals, local community, advertisements and man-power agencies.
- All respondents stated that they had recruited from ITI. Around 90% stated that they had recruited from Polytechnics, and less than half had recruited from short-term skill development programs. Around 75% had not faced any challenges in recruiting from such institutions, and the rest cited a lack of quality resources.
- High local wages (56%), lack of prior experience (42%) and lack of requisite core (28%) and soft skills (14%).
- 35% of workers on average in the units were skilled, 31% semi-skilled and 16% supervisory
- The prevailing competition on wages is a major driver of attrition. Workers leave their jobs even at a marginal increase in monetary benefits, even at the expense of losing other benefits like Insurance and Provident Fund.
- Around 95% indicated interest in high technology adoption. Around 91% stated that they had plans for automation.
- All the respondents were aware of the Craftsman Traineeship Scheme (CTS) in ITI

Qualitative Inputs

- ITI, Polytechnic and college graduates show preference for public sector jobs, and are interested in applying to local PSUs
- The Government ITI and Polytechnic colleges in Tiruchirappalli and Srirangam were considered to be of high quality. However, private institutions were considered to be of low quality. Across the board, fresh recruits were perceived to lack soft skills.
- The small and medium industries in the district rely on PSUs for job work; any decline in the growth of the PSUs will have a ripple effect, and stakeholders from the BHELSEA indicated the need to shift away from job work into independent manufacturing and distribution
- The youth also found the harsh working conditions and lack of amenities including sanitation and transport as in many industries (private companies) as a major deterrent to work in the manufacturing sector.
- Training Service Providers, District officials, and Industries highlighted the youth preference for employment in PSUs, and aversion to working in private companies.
- Though Industries are willing to partner with the Govt. in Skill Development and vocational initiatives, simplification of processes was urgently required in apprenticeship and short-term skill development programs.



Incremental Demand

- Nearly 1 lakh 29 thousand skilled and semi-skilled workforce demand are expected to be in demand over the next 6 years
- Key sub-sectors driving the demand are Education, human health and social work, manufacturing, communication, repair of domestic goods, construction, trade and repair services, and transportation and storage

Recommendations: Based on qualitative, quantitative and secondary information findings and inferences, the following recommendations have been identified for consideration:

- **Creating awareness on local opportunities in private industries:** qualitative and quantitative findings reveal that youth prefer public sector employment, or migration for work. However, local industries show growth potential, and can absorb local youth. In order to improve perceptions on both sides, the apprenticeship scheme must be popularized further, and priority given to local private firms, so that they are able to recruit locally.
- **A unified job portal for job postings at all levels of skill across sectors:** qualitative consultations with industry representatives revealed that there is a mismatch between placement practices in vocational training institutions and recruitment practices among employers. A portal for jobs/ apprenticeships open to both employers and jobseekers would enable both sides to minimize time and effort in finding suitable vacancies and profiles.
- **Targeted interventions to align worker aspirations and abilities with local small and medium industry needs and capacities:** Qualitative and quantitative consultations revealed the following: (i) wage mismatch between industrial shop-floor jobs and youth aspirations, (ii) inadequate technical skills in workers (apart from boiler industry) and (iii) lack of soft-skills among graduates from ITI and Polytechnics (across public and private institutions). To address these challenges, the following initiatives can be taken:
 - Wage Subsidies/ provisions for living wage can be designed, so that the current workforce is able to work on the shop-floor without major attrition issues.

- Private ITI and Polytechnics can be subjected to more rigorous approval procedures, to ensure that they have appropriate infrastructure, facilities and quality faculty.
- Soft-skill training for spoken English, communication skills, team work and inter-personal skills can be imparted in the form of pre-placement or pre-apprenticeship workshops/ programs, or as weekly modules to develop the abilities of students to adapt to a work environment.
- **Promotion of service sector opportunities among youth:** Private activity in the hospitality, tourism and retail sectors can be fostered to provide local employment to youth at a livable wage. Hospitality, retail and logistics can absorb local youth in significant numbers, and also provide jobs suited to the needs of young women.

1. District Profile

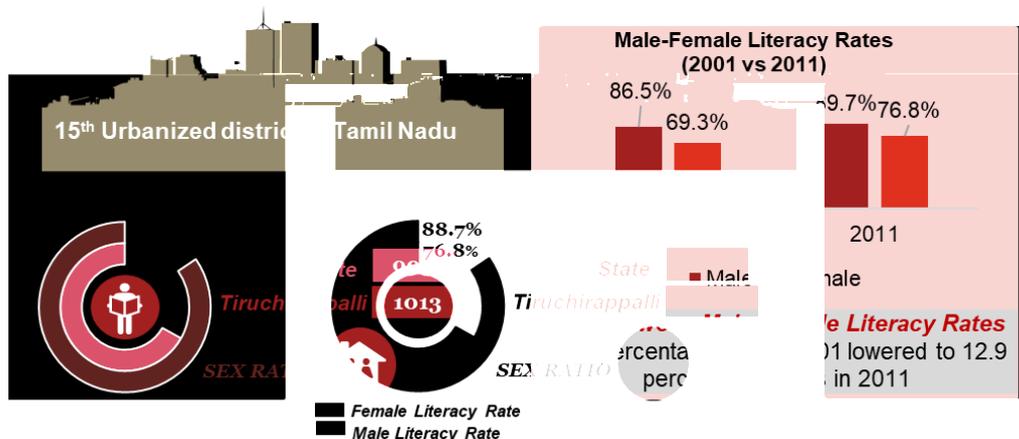
Tiruchirappalli is a centrally located district, and a major economic centre in the state since colonial times. The district came into existence in the year 1801 as the Trichinopoly district. After Independence, the district was trifurcated into Tiruchirappalli, Karur and Perambalur districts in 1995. The district is known for the presence of major Public Sector Undertakings, such as the Bharat Heavy Electricals Limited, Heavy Alloy Penetrator Project and the Ordnance Factory.

1.1. Demographic Profile

Table 1: Key Demographic Indicators– Tiruchirappalli vs Tamil Nadu¹

SN	Indicator	Tiruchirappalli	Tamil Nadu
1	Total population	27,22,290	72,147,030
2	Female Population	13,70,006	36,009,055
3	Population Density per sq.km (2011)	604	555
4	Urbanization	49.2%	48.4%
5	SC population (as % of total population)	17.1%	20.0%
6	ST population (as % of total population)	0.7%	1.1%
7	Differently abled population (as % of total population)	1.1%	1.6%
8	Population in age group 15-34 years (as % of total population)	34%	34.8%
9	SC population aged 15-34 years (as % of SC population)	35.6%	36.6%
10	ST population aged 15-34 years (as % of ST population)	36.7%	35.0%
11	Literacy rate	83.2%	80.3%

Snapshot of Tiruchirappalli's Demography



Key Highlights from the analysis of Census Data:

- **Population Growth and Urbanization:** The Decadal growth rate of the population in the district was 12.6% between 2001 & 2011, compared to 15.6% at state level. The share of urban population has grown by 17.4% while the rural population has grown at a lower rate of 7.6%. An increasing urban population and migration to urban areas from rural areas could be related to this phenomenon.
- **Literacy:** The district had a female literacy rate of 76.8% while the male literacy rate of 89.7%. These are higher than the corresponding literacy rates at the state level. The literacy rates among males increased by 3.2 percentage points, while among females it increased by 7.5 percentage points, reducing the gap between them from a 17.2 percentage points in 2001 to 12.9 percentage points in 2011. The reducing gap between

¹ Census 2011 & 2011

the male and female literacy rates indicates a higher level of education attainment among females in the district.

- **Youth Demography:** 35.6% of the population was between 15-34 years, in 2011, and the median age, 29 years. This is at par with the median age of the state, which was 29 years in 2011, indicating a relatively older population in the district. The population is set to get much older with median age in 2026 expected to be around 35.4, increasing the share of dependent population as illustrated in the age-wise population pyramid of the district as seen below.

Figure 1: Age-wise Population Pyramid of Tiruchirappalli (2011 vs 2026)²

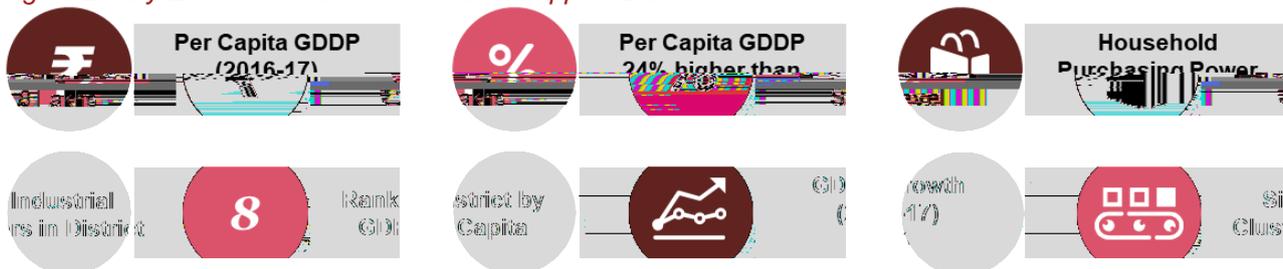


Tiruchirappalli is young, and has high levels of literacy. It also has proximity to other industrialized districts such as Karur, Dindigul, and Madurai. It is also a major centre for education and employment for people from districts such as Perambalur, Ariyalur and Pudukottai.

1.2. Economic Profile

Tiruchirappalli is one of the more industrialized districts of the state and contributes to 4.6% of the states GDP³. The district has a flourishing boiler industry, with mineral products and beverage production contributing to the economy as well⁴. The district also has the potential to benefit from industrial growth in neighbouring districts, such Coimbatore, Erode, Tiruppur and Karur in the form of employment. The district has a per-capita GDP which is slightly lower than the state level⁵.

Figure 2: Key Economic Indicators of Tiruchirappalli District



Source: Directorate of Economics and Statistics, TN, PwC – Akara analysis

² Age wise Population projected for 2026 based on age group wise life expectancy, birth and death rates

³ D0ES, GoTN

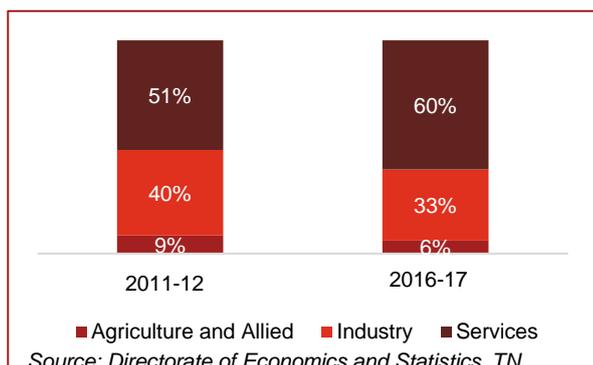
⁴ District Industries Profile, DC-MSME, 2015-16

⁵ PwC Analysis, data from districtmetrics.in

⁶ Household Purchasing Power is calculated from the total purchasing power (disposable income after savings/ investments) of the district, divided by the projected number of households (savings/ investment data calculated from RBI database on savings). Data downloaded from districtmetrics.in, and calculated based on data from Reserve Bank of India, NSSO and Census of India, 2011. A strong correlation exists between the Per Capita GDP, the Banking Sector indicators (adjusted to population) and the consumption expenditure (disposable income) reported under NSSO at the national and state level. This relationship was further verified with data over several years. The state level purchasing power is then further broken down to the district level based on the district level banking data (savings and deposits) and the district level consumption estimates of the NSSO.

1.2.1. Sector wise Analysis

Figure 3: Sectoral Share of GVA (2011-12 & 2017)



The economy of the district is dominated by the service and Industrial sectors, which accounted for about 93% of the district output in 2016-17. The district has grown at a compounded annual growth rate of 11% largely driven by the services sector, which grew at an average of 12% per annum across the same period of time. The share of the agriculture sector in the district output decreased by 3 percentage points over the same period. At sub-sector level, Manufacturing, Real Estate, Trade & Tourism, Construction & Trade and Repair Services are the major contributors to

Source: Directorate of Economics and Statistics, TN
2018⁷.

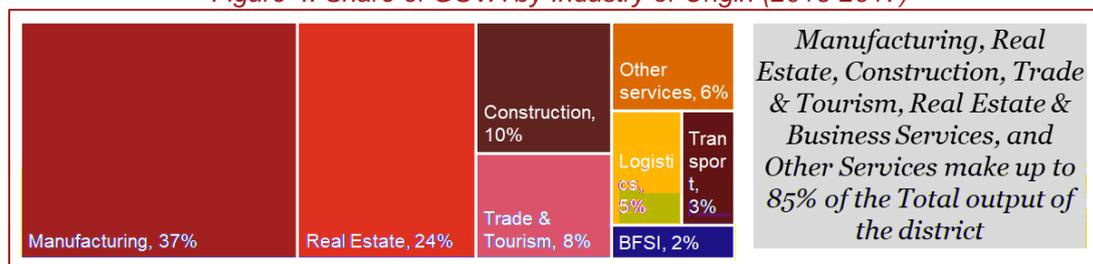
affected by irregular rainfall in the years of 2016, 2017 and

Table 2: Sector wise- Annual Growth Rate in Tiruchirappalli

Sector	2012-13	2013-14	2014-15	2015-16	2016-17	CAGR
Agri & Allied	17%	1%	0%	2%	-11%	2%
Industry	14%	9%	3%	10%	9%	8%
Services	11%	13%	15%	10%	9%	12%

Source: Directorate of Economics and Statistics, TN

Figure 4: Share of GSVA by Industry of Origin (2016-2017)

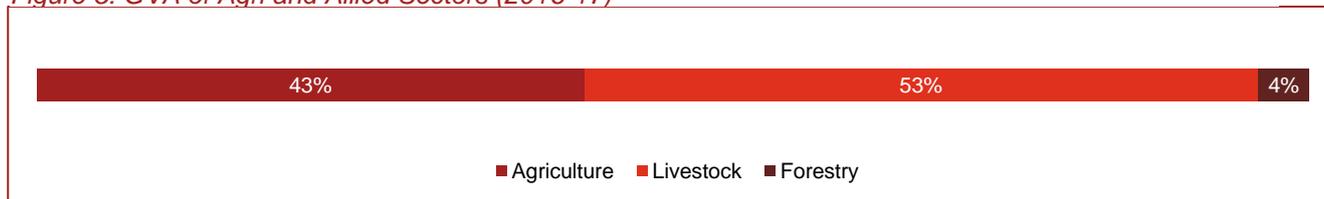


Source: Directorate of Economics and Statistics, TN

Agriculture and Allied Sector

The livestock sub-sector is a major agriculture GVA. Agriculture in the district is dominated by cultivation, livestock and fishing. Major crops include: Paddy, Millets, Pulses, Banana, Sugarcane, and Cotton.

Figure 5: GVA of Agri and Allied Sectors (2016-17)



Source: Directorate of Economics and Statistics, TN

⁷ [<https://thewire.in/agriculture/farmers-tamil-nadus-tiruchirappalli-life-death-lies-drought>]

Industrial Sector

Recent growth in the manufacturing sector (13% between 2011-12 and 2016-17) has enabled a growth of the Industrial 11% per annum over the same period. The sector is dominated by the Manufacturing and Construction sectors - they account for almost 98% of the output. Metal processing, non-metallic mineral products, beverages and auto components are some of the key Industries in the district.

Table 3: Key Clusters and Traditional Industries

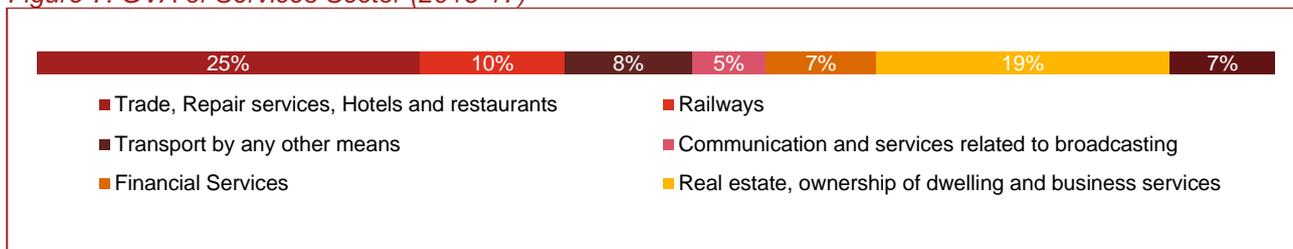
Fabrication Cluster Thuvakudi	Engineering Cluster Thuvakudi	Gold Jewellery Mettupalayam
Artificial Gem Cutting Lalgudi and Manachanallur	Korai Mat Weaving Santhapalayam	Readymade Garments Tiruchirappalli City

Source: DC-MSME District Profile

Table 4: Profile of Manufacturing Sector from ASI (2014-15)

Industry	No of Units	Average Workers per Unit	Employees	Share of Total Employment	Share of GSVA
Structural metal products, tanks, reservoirs and steam generators	305	63	19228	49%	71%
Non-metallic mineral products n.e.c.	68	35	2400		

Figure 7: GVA of Services Sector (2016-17)



Source: Directorate of Economics and Statistics, TN

1.2.2. Traditional Sector

‘Korai Mats’ - Reed Mats in Musiri

Reed mats are manufactured in and around the town of Musiri. The grass korai, also grows in the surrounding areas along the banks of the Cauvery river), and is processed by around 300 units in the area⁸. The mats originally used to be woven using handlooms, but with time the process has shifted to power looms. Mat-making has also shifted from being a traditional livelihood to mass production in factories, which are said to provide employment to about 5,000 families. However, the workforce is localized and ageing. Korai cultivation continues to be a traditional livelihood. Korai Mats are used for a variety of functions in households – sleeping, flooring, curtains and décor. The mats are made of natural grass and cloth, and are hence environment-friendly. They are marketed all over the state and country.

Figure 8: Korai Mat Weaving Unit in Musiri



In the last few years, the industry has been beset by problems: korai cultivation has been affected by water shortage issues, changes in the price of produce and mats, fluctuations in market demand, etc. If such conditions are rectified through sustained marketing support, technological support to farmers, and capacity-building for efficient production, mat weaving can continue and gain strength as a lucrative livelihood.

Gold Jewellery Making in Mettupalayam

In Mettupalayam Town, around 40 families are engaged in traditional gold jewellery making. The gold is procured from Namakkal for new pieces, and molten from the old pieces given by customers for re-making. The families have been engaged in this sector for centuries, and continue to get a wide (albeit shrinking) range of clientele. Reasons for the decline include: competition from jewellery retailers who sell factory-made products, rising costs of gold, transport, and other expenses, lack of interest in later generations in making this a full-time occupation, and the seasonal nature of work, wherein orders only come in certain months of the year (which are considered auspicious).

Figure 9: Gold Jewellery Pieces in Mettupalayam

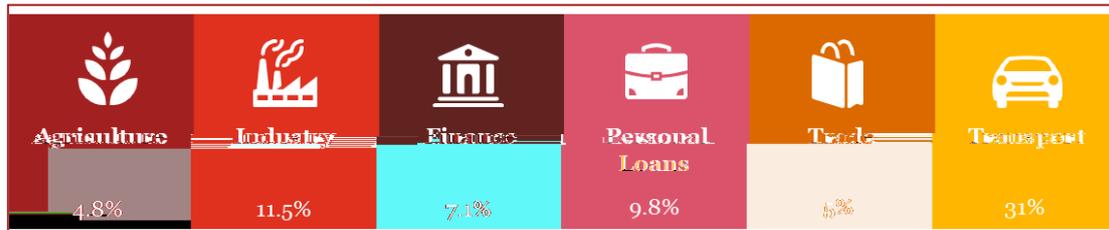


Traditional gold jewellery has the potential for a market revival due its niche status, and year-round work can fetch satisfactory income, based on qualitative insights gained from the field. Interventions, which focus on technological upgradation, income subsidies, vocational training and entrepreneurship support. However, breaking the seasonal nature of market demand will require long-term strategies.

⁸ [<https://www.thehindu.com/news/cities/Tiruchirapalli/korai-mat-makers-are-now-daily-wage-earners/article22832526.ece>]

1.2.3. Investments and key economic drivers

Figure 10: Sector-wise growth of Credit off Take (2013-16) - RBI



According to the data collected from the RBI, the District has seen recent growth in credit especially industry, finance, professional services, trade and transport. Data from the Capital Expenditure database of Centre for Monitoring Indian Economy shows that key investments and sectors include:

- The Tiruchirappalli Tiny and Small-Scale Industries Association (TIDISSIA) has planned a Textile Park in Manapparai housing at least ten units, with government subsidy. The park is aimed at serving garment manufacturers around Manapparai town⁹.
- The Tamil Nadu Defense Industry Corridor is expected to attract investments worth 3,123 Crores. As part of the same, the Ordnance Factory Board has planned to invest 2,305 Crores in the state. Private players such as TVS, Alpha Designs, Data Patterns and Lockheed Martin are also expected to invest in units in the corridor¹⁰.
- Airport Expansion (Airports Authority of India), Rail Line Electrification (Central Organization for Railway Electrification) and Oil Pipeline (Indian Oil Corporation) projects have been announced in the district since April 2018¹¹. The Indian Oil Corporation has commenced the Chennai Trichy Madurai pipeline project with an investment of 400 Crores. Around 23 Crores have been sanctioned for the Trichy area for the same.
- The Tiruchirappalli Smart City Mission has commissioned 14 projects to improve the transport system in the city. The projects include the construction of Smart Roads, bus stands, and road over-bridges¹².

Construction, textiles, agri-business, light manufacturing and trade are sectors with potential for growth. Tourism and Hospitality can also grow based on promoting religious tourism.

⁹ [https://in.fashionnetwork.com/news/Mini-textile-park-to-be-set-up-in-Tamil-Nadu-s-Manapparai_937167.html#.XK7QzpgvPIU]

¹⁰ [<https://www.hindustantimes.com/india-news/tamil-nadu-defence-industrial-corridor-connecting-5-cities-inaugurated/story-DVKxRI2zGTxJhowR3DfzhN.html>]

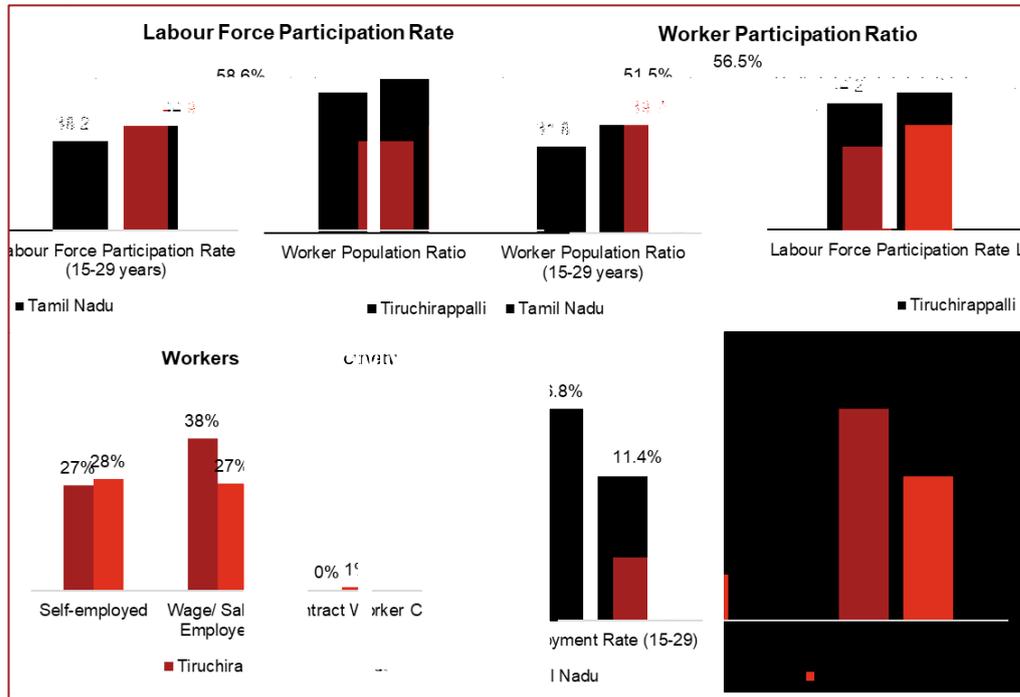
¹¹ Capital Expenditure Database, Centre for Monitoring Indian Economy

¹² [<https://timesofindia.indiatimes.com/city/trichy/smart-cities-mission-trichy-corporation-moots-14-more-proposals/articleshow/70247194.cms>]

1.3. Labor Market Profile

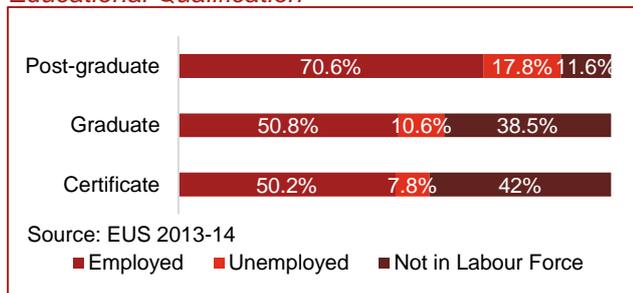
overall labour force participation and worker population ratio are lower than the state figures, and for the youth population (15-29 years). This could however be connected to the fact that youth may be in the education system. Less than half of the workers in the district seem to be in casual labour, lower in proportion than at state level. Youth unemployment is also high, at 16.8%.

Figure 11: Key Labour Market Indicators¹³



Source: Employment and Unemployment Survey District Estimates, 2013-14

Figure 12: Distribution of working status by Educational Qualification



The education-level classification of the sample reveals that among graduates and post-graduates, the unemployment share is higher than 10%, while those with diploma/ certificate qualifications have a significantly lower share of unemployed (7.8%). This could point to a lack of high-skill jobs (congruent with college education). Unemployment among college graduates can manifest in their taking up jobs in the informal sector, like street vending¹⁴. Reportage on the same highlights the issues of lack of jobs and low

salaries as factors which lead to educated youth taking up petty businesses such as street vending and small retail shops.

Table 5: LFPR and Unemployment Rate by Sex & Location

Sex	LFPR		Unemployment Rate	
	Rural	Urban	Rural	Urban
Male	75.8%	73.1%	3.4%	4%
Female	32.9%	33.2%	4.6%	11.7%
Total	55.2%	53.1%	3.8%	6.4%

Disaggregation by area and sex, it is found that females have an rural labour force participation rate slightly lower than the urban counterpart. The urban unemployment rate for females is 9 percentage points higher than the rural counterpart. Such a gap is not seen in the figures for males, indicating that

urban women face a lack of employment opportunities. This requires further investigation.

¹³ District Level Estimates, EUS, 2013-14, Labour Bureau

¹⁴ [<https://www.edexlive.com/news/2019/jul/26/job-crisis-unemployment-forces-mba-graduates-engineers-to-become-street-vendors-in-tiruchy-7230.html>]

Figure 13: Sector-wise share of Employment

Around 30% of the labour force is in the agriculture and allied sector, followed by 25.6% in trade and repair services. Around 15% are engaged in manufacturing, and 10% in public administration.

1.4. Education and Skill Development Profile

1.4.1. Education Profile

Tiruchirappalli is known for its higher education institutions such as the Bharathidasan University, National Institute of Technology, St . Such institutions get students from across the country, and the world. Indicators related to education are presented below:

Table 6: Elementary Education Profile - DISE

Particulars	Number
Schools in 2017	2,090
Pub. Schools	1,332
Pvt. Schools	751
Other (unrecognized, Madrassas)	7
Enrolment in 2017	3,43,367
Enrolment in Public Schools	1,58,522
Enrolment in Private Schools	1,84,620
Enrolment in other schools	225

Source: DISE 2016-17

The Gross Enrolment Ratio¹⁵ 54 Tf7ro(S)4(t)-13(h)-[(g)4(r)-3(i)][(m)-21ntry 2and 2grimy

1.4.2. Vocational Education and Skill Development Profile

The skill training infrastructure of the district include skill training centers implementing schemes like TNSDC, Pradhan Mantri Kaushal Vikas Yojana (PMKVY) and Deen Dayal Upadhyay Grameen Kaushal Yojana (DDU-GKY). Under the PMKVY scheme, one training institute offered courses on self-employed tailor. The below table presents an overview of the short-term skill development centres in the district.

Table 8: Vocational Training under Short Term Skill Development Programs

Scheme	Sector	Job Role	No. of Training Centres	Capacity/ Trained	
Pradhan Mantri Kaushal Vikas Yojana	Apparel	Self Employed Tailor	1	30	
Tamil Nadu Skill Development Programs	Apparel	Sewing Machine Operator	13	840	
		Tailor (Basic Sewing Operator)	8	580	
		Hand Embroider	3	140	
		Zardosi Work	1	40	
		Ornamentalist Bead work for Garments	2	100	
		Self Employed Tailoring	1	20	
	Beauty and Wellness	Pedicurist and Manicurist	1	40	
	Capital Goods	CNC Operator - Turning	Milling	1	20
			Turning	1	20
			Turning	1	20
	Construction	Assistant Electrician	Bar Bender and Steel Fixer	1	20
			Mason General	1	20
			Domestic Electrician	1	20
			TIG Welder	2	180
	Fabrication	Arc and Gas Welder	Arc and Gas Welder	2	120
			Arc and Gas Welder	2	120
	Gems and Jewellery, Handicrafts	Kundan Jewellery Maker	Pattern & Mold Maker (Soft Toy)	2	60
			Jute braided Product Maker	1	160
			Hand Rolled Agarbatti Maker	1	20
			Healthcare	Health Care Multipurpose Worker	1
	Healthcare	Operation Theatre (OT) Technician	Operation Theatre (OT) Technician	1	80
			Midwifery Assistant	1	40
			Nursing Aides	1	20
			Laboratory Assistant	1	20
			Home Health Aide	1	20
			Tourism and Hospitality	Kitchen Helper	1
	Tourism and Hospitality	Cook (General)	Cook (General)	2	150
			Food & Beverage Service Steward	1	20
			IT/ ITeS	Accounts Assistant using Tally	2
	IT/ ITeS	Domestic Data entry Operator	Domestic Data entry Operator	2	120
			Associate Desktop Publishing(DTP)	1	20
			Field Sales Executive	2	60
			Animation and Multimedia Assistant	1	20
			Web Designing and Publishing Assistant	1	20
			Computer Hardware Assistant	1	40
			Hardware Engineer	1	40
			Plumbing	Plumber (General)	1
	Retail	Sales Associate	1	120	
	Deen-Dayal Upadhyay Grameen Kaushal Yojana	-	-	16	506

Source: Data collected from Tamil Nadu Skill Development Corporation, TNSRLM

The long-term skill development programs are predominantly offered through Industrial Training Institutes, which offer one and two year programs in various sectors and trades. The below table presents the courses offered through ITI, and the number of such institutes offering each trade/ training for job role.

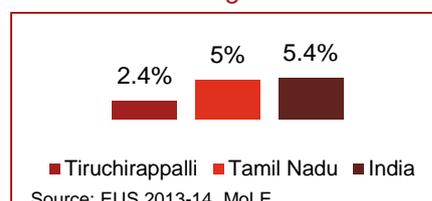
Table 9: Vocational Training under Long Term Skill Development Programs (ITI)

Sector	Trade	Number of Centres	Intake
Automobiles and Auto Components	Foundryman	1	42
	Mechanic (Motor Vehicle)	12	651
Capital Goods	Instrument Mechanic	2	104
	Sheet Metal Worker	1	42
	Welder	12	693
	Welder	1	21
	Turner	3	160
Construction	Carpenter	1	26
	Electrician	18	1134
Electronics & Hardware	Wireman	4	168
	Mechanic (Refrigeration and Air-Conditioning)	3	208
Furniture and Fittings	Interior Design & Decoration	1	26
Healthcare	Hospital House Keeping	1	52
Infrastructure Equipment	Electronics Mechanic	3	104
	Mechanic Diesel	7	315
Instrumentation, Automation, Surveillance and Communication	Mechanic Mechatronics	1	42
Iron and Steel	Machinist	2	176
	Machinist (Grinder)	1	32
IT/ ITeS	Computer Operator and Programming Assistant	3	156
	Desk Top Publishing Operator	1	52
Management and Entrepreneurship & Professional	Secretarial Practice (English)	1	52
	Stenographer & Secretarial Assistant (English)	1	52
Media and Entertainment	Multimedia Animation & Special Effects	1	52
Mining	Fitter	17	1008
Plumbing	Plumber	2	78
Textile and Apparel	Fashion Design & Technology	1	21
	Sewing Technology	2	84
	Surface Ornamentation Techniques (Embroidery)	1	42
Tourism and Hospitality	Food Production (General)	1	52
	Travel & Tour Assistant	1	26

Source: National Council for Vocational Training – MIS

With respect to population aged 15 and above who have undergone vocational training, around 2.4% in Tiruchirappalli had undergone the same, while around 5% had undergone vocational training in the state. The All-India level is higher than both district and state level figures¹⁷.

Figure 15: Population Undergone Vocational Training



The district is known for the Government Polytechnic College in Thuvakudimalai, which emerged as a major vocational training institution in focus group discussions and qualitative consultations. The district's general and technical education infrastructure accommodates students from surrounding districts, including Ariyalur, Perambalur and Karur.

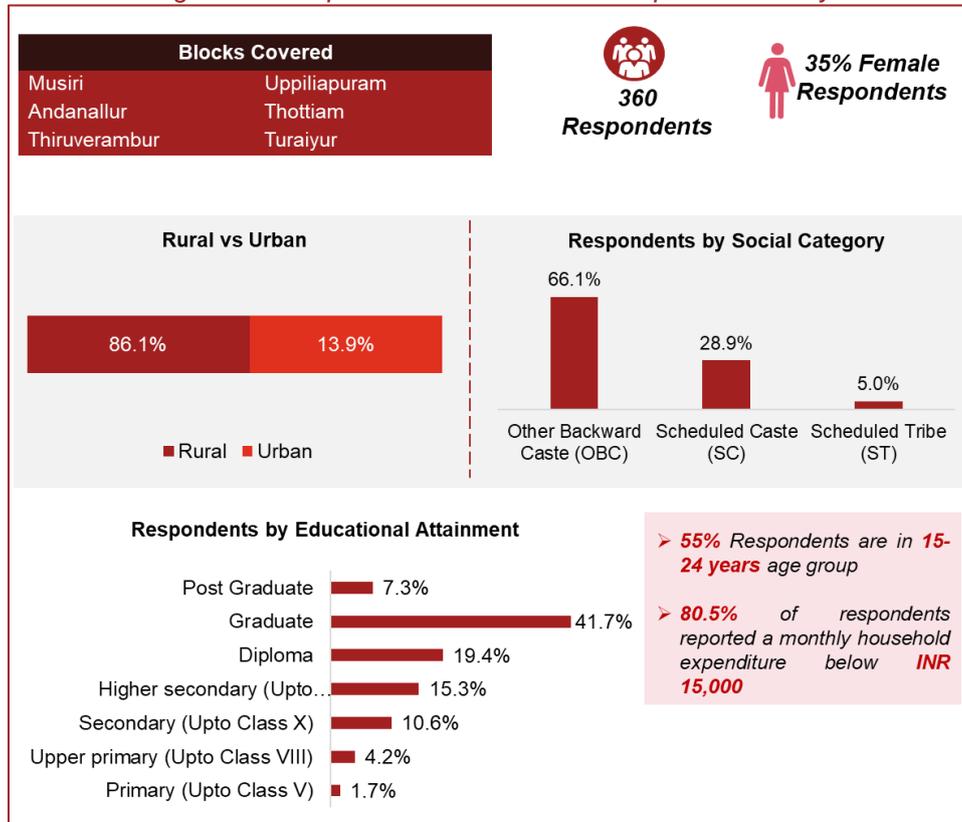
¹⁷ Employment and Unemployment Survey, 2013-14, Ministry of Labour and Employment

2. Youth Perspective

2.1. Profile of Respondent Youth

The structured household survey tool was administered with the 360 youth (young men and women in the age group of 15-34 years) from across six blocks. The below figure presents the respondent profile.

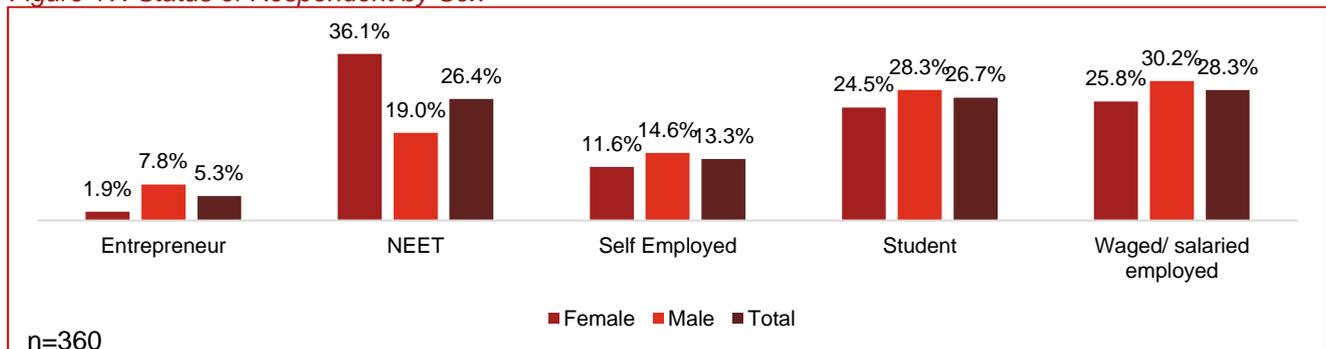
Figure 16: Respondent Profile of Youth Aspiration Survey



2.2. Youths' Educational and Economic Engagement Status

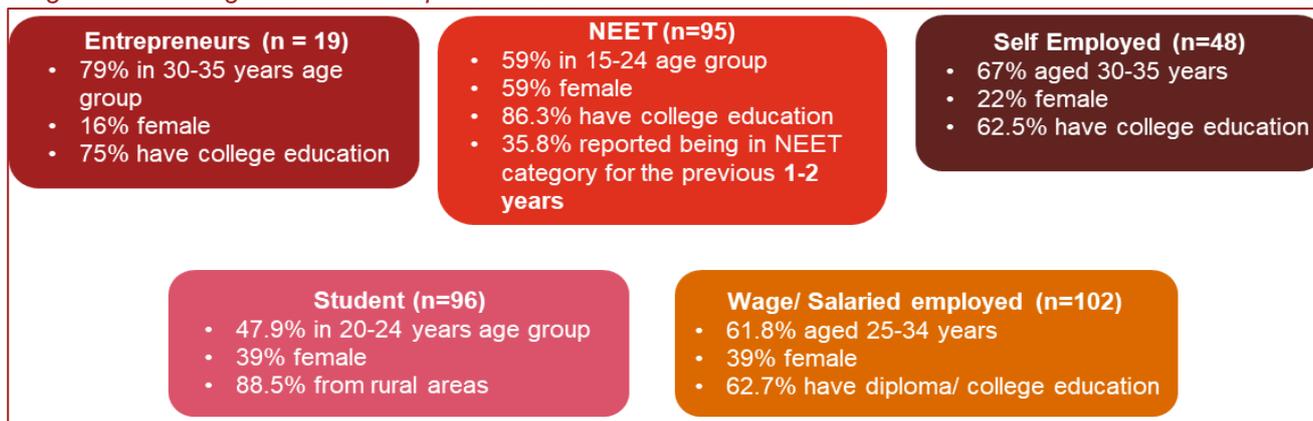
The figure below illustrates the gender wise classification (current status) of the respondents interviewed during the household survey. One-third of female respondents were falling in the NEET (36%) category, and the rest predominantly in wage employment and education/ training. Around 73% of male respondents fell in wage employment, education/ training and self-employment. Overall, 39% of female respondents and 53% of male respondents were engaged in economic activity.

Figure 17: Status of Respondent by Sex



The below graphic presents the key findings based on the status of respondents.

Figure 18: Findings based on Respondent Status



2.3. Economic Engagement of Youth

Slightly less than half of respondents (46%) were currently engaged in work, and less than 18% had previously worked and were currently not working. Around 82% the respondents who have ever worked stated that their work was related to their training. The median monthly income of those who ever engaged in economic activity was 2,500. While it was 11,200 among females, it was 12,700 among males. 70% of female respondents had earned a monthly income of 5,000 or lesser. The overall median income was higher than the state level

Figure 19: Distribution of Respondents across Monthly Income Category across Sex

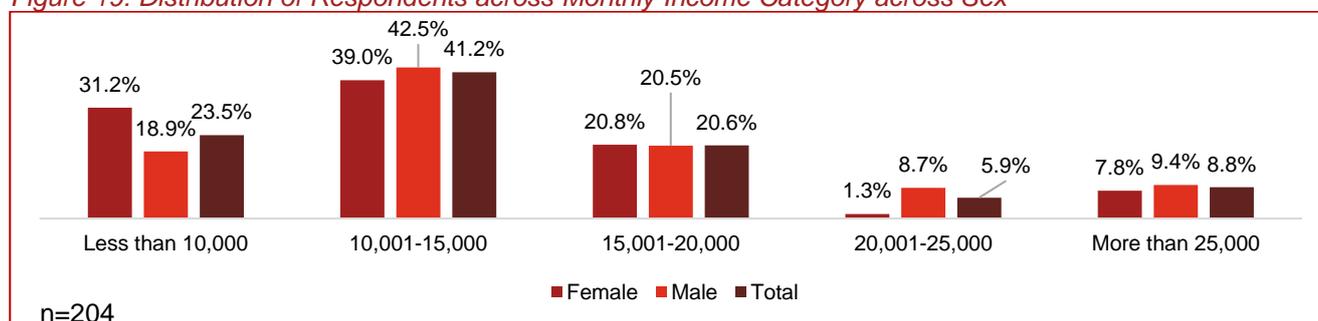


Table 10: Education Qualification of Respondents and Employment Type

Type of Employment	Below Upper primary	Secondary (Upto Class X)	Higher secondary (Upto Class XII)	Diploma	Graduate	Post Graduate and above	Total
Farm Activities	23.0%	24.0%	30.6%	16.7%	6.7%		35
Livestock		8.0%	8.3%	10.4%	3.3%		12
Unskilled worker	28.6%	16.0%	27.8%	12.5%	6.7%		28
Salaried Employment (teacher, government official, etc.)	7.1%		2.8%	14.6%	48.3%	92.3%	52
Skilled worker (tailor, mason, electrician, plumber etc.)	33.0%	12.0%	25.0%	41.7%	25.0%		53
Unskilled work (MGNREGA, construction labour, mining, brick kiln, household, etc.)		12.0%	8.3%	4.2%	3.3%		10
Petty Business/ Trade/ Manufacturing	20.0%	40.0%	13.9%	10.4%	11.7%	7.7%	31
Other			2.8%	2.1%	0.0%		2
Number of respondents	20	25	36	48	60	15	204

The majority of working respondents were in skilled worker and salaried employment categories, followed by farm activities and petty business. The majority of college-educated respondents were engaged in salaried employment, skilled work, and petty business.

2.4. Youth Under NEET Category

Almost 26% of the respondents were in NEET category. Within this category, 59% were in 15-24 age group and 59% were female. Around 86.3% had finished college education. Around 35.8% reported being in NEET category for the previous 1-2 years. Over 32% of females in NEET had not engaged in any economic activity for more than

Challenges (n=360)	Responses*	Challenges (n=360)	Responses*
Flexible work arrangements (location, schedule)	6.7%	Very Adequate	61.4%
Opportunities for promotion and career development	4.7%	Neither adequate nor inadequate	18.1%
Gender suitable role	3.6%	Somewhat inadequate	10.3%
Closeness to Residence	3.6%	Very inadequate	1.9%
Retirement Plans	3.3%		

*For multiple-choice questions, the responses add up to more than 100%

Among the challenges which the youth see in pursuing their ideal careers, guidance/ information on appropriate jobs, lack of jobs locally, support for girls, and pressure from family. The responses are presented below:

Table 13: Career Aspiration – Challenges in pursuing desired career

Challenges (n=360)	Responses*	Challenges (n=360)	Responses*
Lack of guidance / information on appropriate job available for skill levels	19.2%	Lack of sufficient education qualification	2.8%
Lack of jobs locally	8.6%	Lack of technical / vocational skills	1.9%
Lack of family support / social acceptance of girls being engaged in economic activity	6.9%	Unsafe working environment	1.1%
Pressure related to getting married	6.1%	Inadequate infrastructure to access work-place	0.8%
Lack of work experience	4.2%	Lack of Soft Skills	0.6%
Low financial strength	3.6%		

*For multiple-choice questions, the responses add up to more than 100%

The key factors determining their employability, according to the respondents were education attainment and years of work experience. The responses are presented below:

Table 14: Key Requirements to enhance employability and steps to achieve aspirations (n=360)

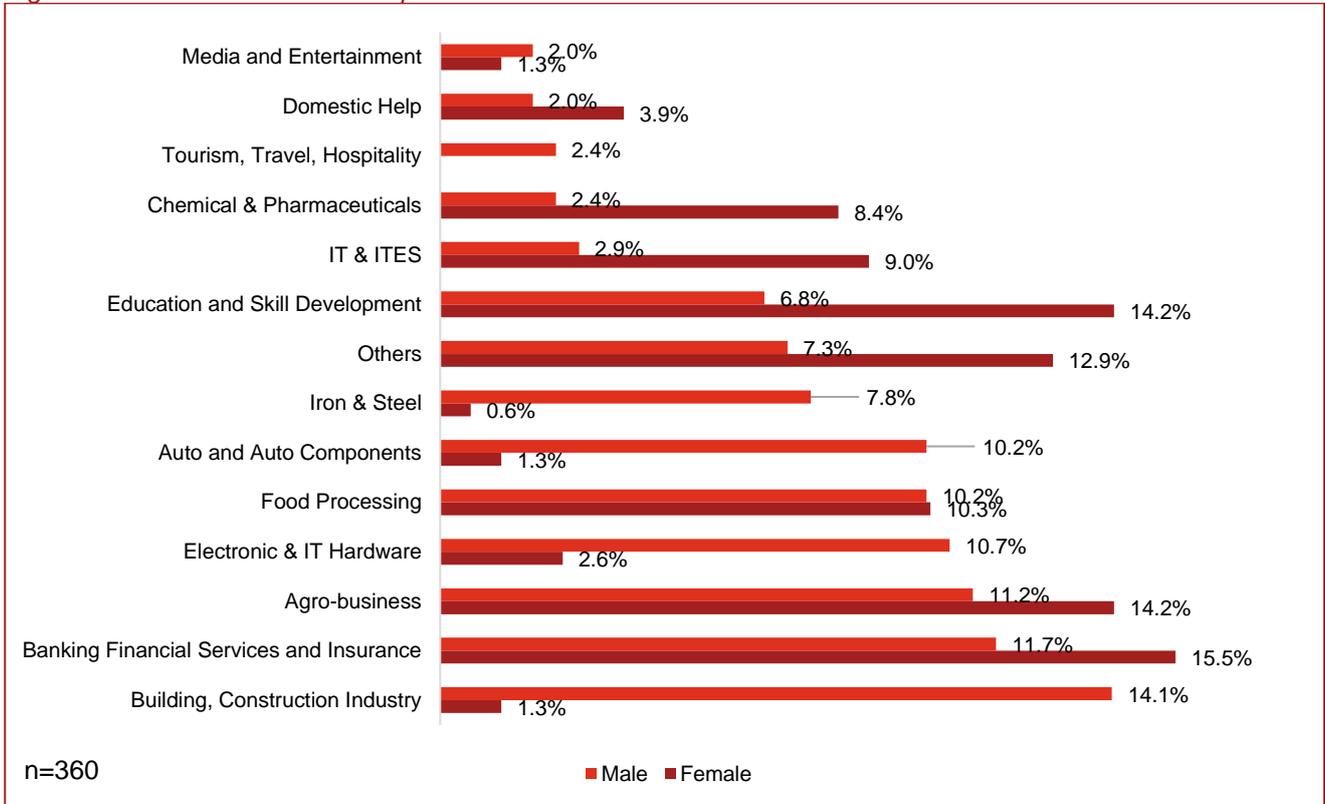
Key Requirements to enhance employability (n=360)			
Requirements	Responses	Requirements	Responses
Education attainment (level of education)	39.4%	Certifications of Technical Skill	8.6%
Years of Work Experience	33.6%	Relevant work experience in similar position or field	0.8%
Basics and soft skills	17.2%	References	0.3%
Key Skills Required for desired job (n=360)*			
Time management	73.6%	Analytical thinking	16.9%
Team work	60.3%	Active listening	16.9%
Clear communication	48.1%	Complex problem-solving	10.3%
Leadership	31.7%	Coordination Skills	7.5%
Creativity, originality and initiative	24.2%	Critical thinking and analysis	6.9%
Attention to detail	19.7%		
New Steps to achieve aspirations (n=360)*			
Vocational/ Skill Training	19.4%	Already Achieved	26.9%

Continuing Education	33.6%	Apprenticeship / Gathering Work Experience	25.8%
----------------------	-------	--	-------

*For multiple-choice questions, the responses add up to more than 100%

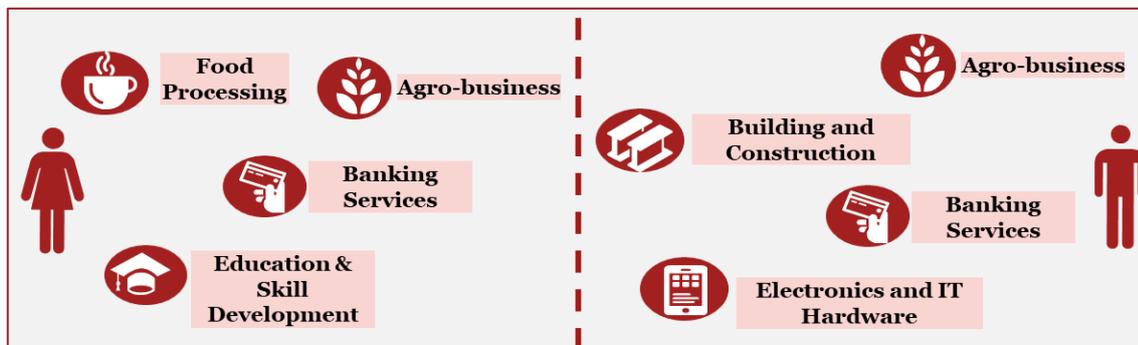
The BFSI sector is the most popular and aspired sector among the respondents with 13% youth preferring it, followed by agro-business (13%), and education and skill development (10%). Other Sectors include food processing, building and construction, and electronics and IT Hardware. Around 71% of respondents indicated a preference for part-time training, and 74% in short-term courses (duration less than 6 months). The gender-wise responses reveal the following: female respondents cited BFSI, agro-business, education and skill development and food processing. Male respondents cited building and construction industry, BFSI, agro-business, electronics and IT hardware, and food processing.

Figure 21: Sector-wise Career Aspirations



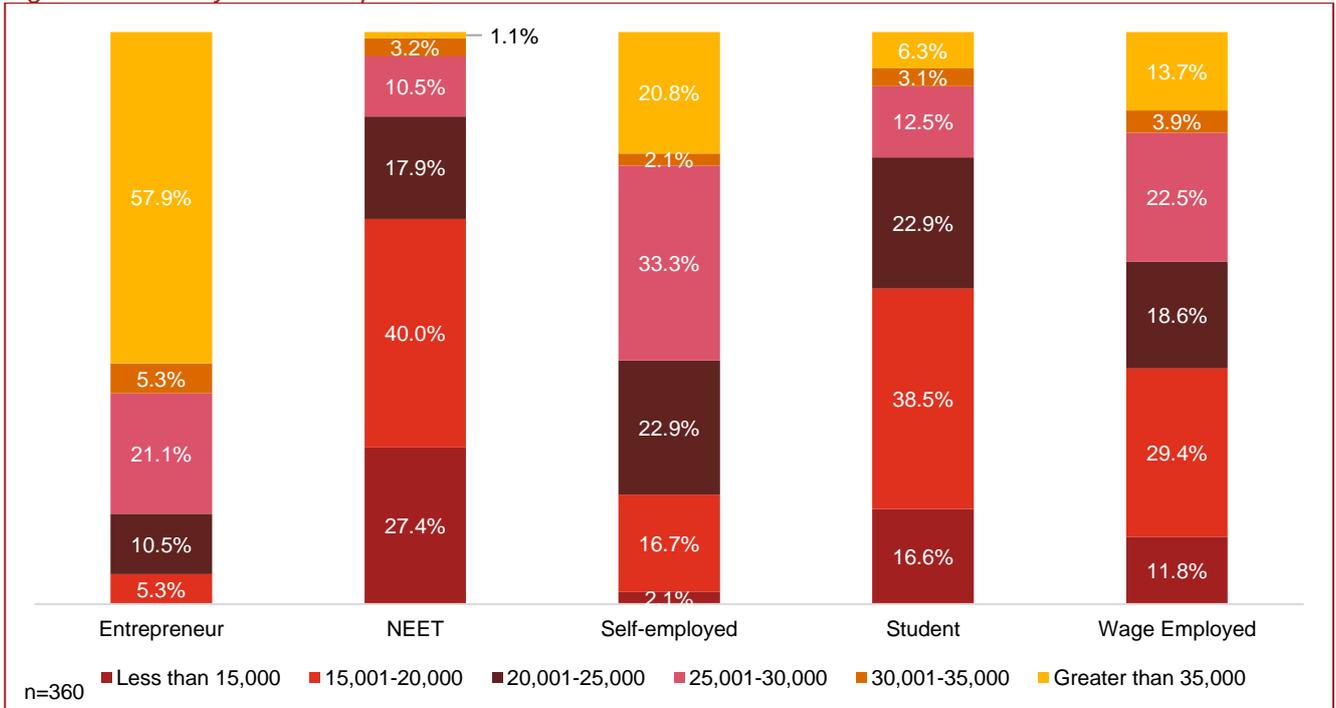
The below graphic presents the gender-wise preferred sectors.

Figure 22: Gender-wise Preferred Sectors



The median income expectati 22,380. Around 53.1% of the respondents have expectations of monthly income greater than 20,000. It can be seen from status-wise responses that entrepreneurs dominantly have income expectations above 35,000, and self-employed have income expectations greater than 20,000, similar to wage employed respondents.

Figure 23: Monthly Income Expectations



More than half of the respondents preferred a job within their hometown. Around half of the respondents were willing to migrate outside the district for work. Around 3.4% were willing to migrate to other states, and another 2.4 to other countries.

The most common source of job-related information cited by the respondents is (57.5%), followed by (54.2%). Around 20.3% stated that they get job-related information from the District Employment Office/ National Career Services. The gender-disaggregated findings are presented below:

Figure 24: Location Preference for Work*

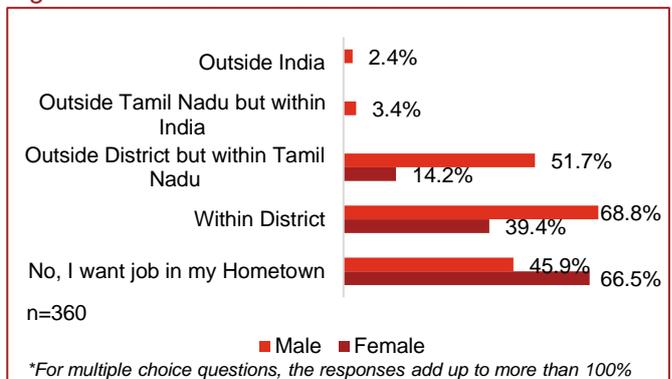
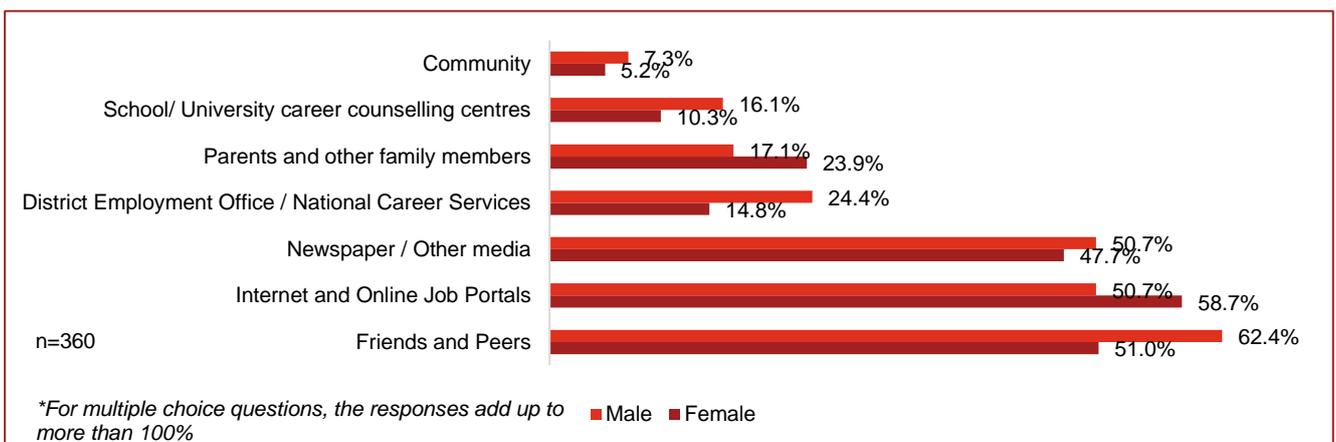


Figure 25: Sources for Job Information*



Around 25% of female respondents and 33% of male respondents stated that counselling services were neither adequate nor inadequate. Around a quarter of both male and female respondents stated that they were very somewhat adequate. In terms of their expectations from counselling services, more than half wanted placement services, and information on relevant vacancies. Around one-fifth wanted guidance on applying for jobs.

Figure 27: Accessibility to Counselling Services

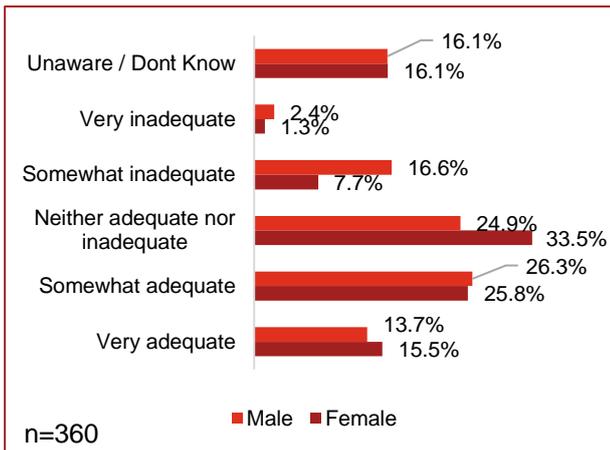
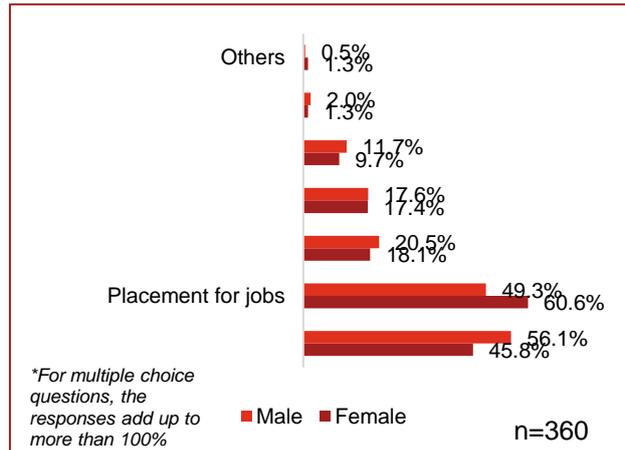


Figure 26: Preferences for Counselling Services



2.6. Skill Training Preferences of Youth

None of the respondents stated that they were aware of government-run training programs. Of those who had indicated interest in undergoing training for their ideal job (34.7%), Around 71% of respondents indicated a preference for part-time training, and 74% in short-term courses (duration less than 6 months). With respect to ranking training content, quality of instructor, reputation of training provider, practical exposure and quality of

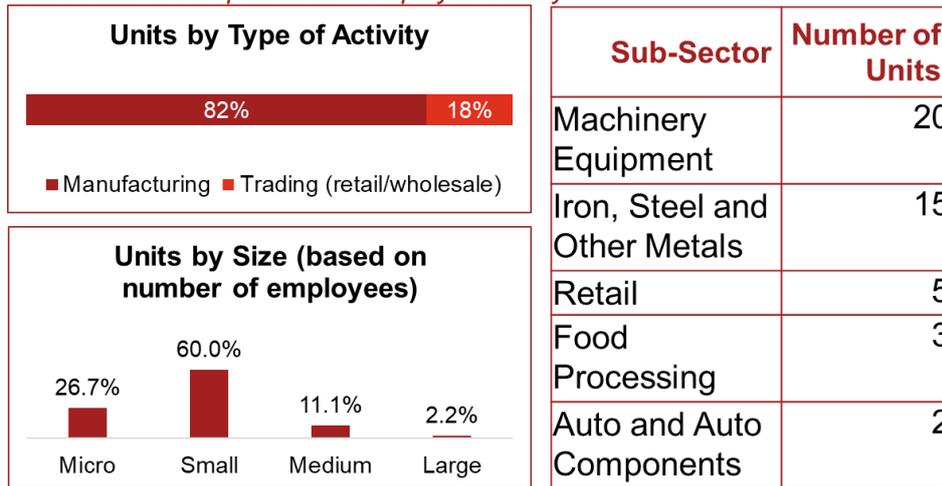
Responses indicate that BFSI, agro-business, education and skill development, food processing and electronics and IT hardware are sectors in which youth aspire to work in. However, youth have also reported preferences for placement services and information on relevant vacancies.

3. Employer and Other Stakeholder Perspectives

3.1. Quantitative Employer Survey

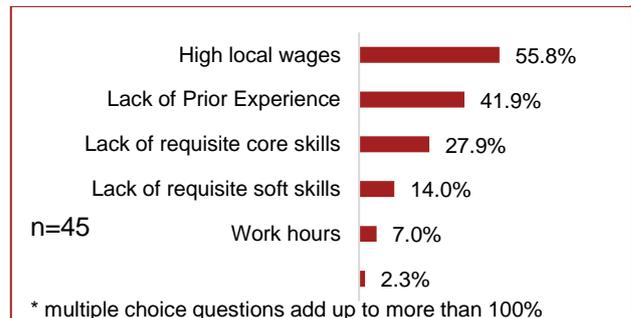
The quantitative employer survey covered 45 employers in various sectors. A focus group discussion was also conducted with industry representatives, associations, etc. to shed light on aspects such as demand, perception of skill level of local workforce, and challenges faced by industries. Around 82% of the employers were in manufacturing, and 57% within these were in machinery equipment sector. More than half of the employers were small enterprises, and one-quarter micro-enterprises. The profile of respondents is presented below:

Figure 28: Profile of Respondents - Employer Survey



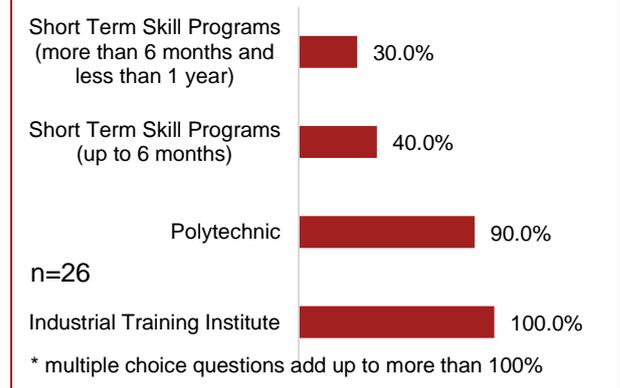
On average, the units had 17% of female employees in their workforce. Common methods of recruitment were found to be employee referrals (71%), local community (52.3%), advertisements (47.7%) and man-power agencies (13.3%). Challenges with respect to recruitment include: High local wages (56%), lack of prior experience (42%) and lack of requisite core (28%) and soft skills (14%).

Figure 29: Respondents by Challenges in Recruitment*



Questions on recruitment from skill training institutions yielded the following results: all respondents stated that they had recruited from ITI. Around 90% stated that they had recruited from Polytechnics, and less than half had recruited from short-term skill development programs. Around 75% had not faced any challenges in recruiting from such institutions, and the rest cited a lack of quality resources.

Figure 30: Respondents by Institutional Recruitment*



With respect to organization of the workforce by skill level, 35% of workers on average in the units were skilled, 31% semi-skilled and 16% supervisory. On average, 32% of workers were contractual. Around 2% of workers were from outside the state (and 11% from outside the district).

Questions on attrition yielded the following findings: annual attrition rates for male and female workers were 0% and 16.7% respectively. Causes for attrition included better job opportunities (100%).

With respect to growth prospects and adoption of technology, the following findings emerged: nearly 80% of respondents felt that growth prospects were high, and 95.6% indicated interest in high technology adoption. Around 91% stated that they had plans for automation.

Figure 31: Respondents by Skill Level of Workers

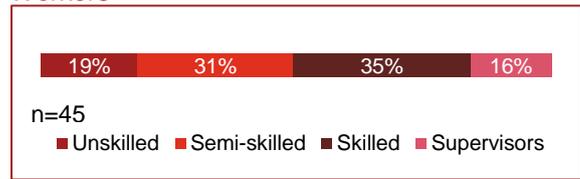


Table 15: Growth Prospects and prospective adoption of technology

Growth Prospects of Industry	%	Level of Technology adoption	%
High	80%	High	95.6%
Medium	17.8%	Medium	2.2%
Low	2.2%	Low	2.2%

Questions on perception of future demand for workers yielded the following findings: 88.6% of respondents expressed high demand for skilled workers, 33.3% for minimally skilled workers, and 71.8% for supervisory workers. The below table presents the demand for each type of labour.

Table 16: Demand for workers by Skill Level and type of training provided to workers

Demand for Workforce in next 5 years			
	Minimally Skilled	Skilled	Supervisory
High Demand	33.3%	88.6%	71.4%
Medium Demand	33.3%	2.9%	17.1%
Low Demand	27.8%	2.9%	8.6%
None	5.6%	5.7%	2.9%

Awareness regarding skill development programs was as follows: all respondents were aware of the Craftsman Trainee Program (ITI).

3.2. Focus Group Discussion with Industry Representatives

A focus group discussion was conducted with sixteen stakeholders from various organizations in sectors such as boiler manufacturing, auto components, agro-processing, and food processing. The following were the major points of discussion:

Table 17: Focus Group Discussion - Key Points

S No	Topic	Findings
1.	Awareness of government skill training programs	<ul style="list-style-type: none"> High level of awareness regarding long-term skill development programs ITI, Polytechnic Low level of awareness regarding short-term skill development programs
2.	Quality of ITI/ Polytechnics/ Engineering colleges in the district	<ul style="list-style-type: none"> The Government ITI and Polytechnic colleges in Tiruchirappalli and Srirangam were considered to be of high quality Private ITI and Polytechnic colleges were considered to be of low quality in terms of practical application of skills Responses indicated that there is scope for providing training which is more market-oriented, and local industry players were willing to collaborate/ offer inputs to ITI/ Polytechnic colleges
3.	Candidate Attitudes/ Abilities	<ul style="list-style-type: none"> Apprentices were considered to have unsuitable attitudes and inadequate soft-skills Fresh recruits in boiler manufacturing and auto components had the requisite skills, but the same in other sectors did not
4.	Migrant workers	<ul style="list-style-type: none"> Growing demand for migrants from other states recruitments are currently made from Jharkhand and Bihar, with more such recruitment expected to happen Migrant workers are not as skilled, but have lower attrition, and are willing to work for lesser pay (contractual roles). However, they do not possess the skills of the local populace The district also sees migration from Ariyalur and Perambalur, albeit in daily-wage and contractual roles

5.	Technological Transformation/ Automation	<ul style="list-style-type: none"> • Auto components and food processing sectors have potential for automation • Automation may reduce the number of semi-skilled job roles, but create scope for maintenance staff (who have to be highly skilled, at a caliber currently not seen)
----	--	--

Responses indicate that there is high demand for skilled labour perceived in the next five years. However, challenges faced in recruitment in general and from institutions need attention in order to improve the quality of the work force.

3.3. Other Stakeholder Perspectives

In-depth Interviews with other stakeholders were conducted, with the discussion points summarized below:

Representatives from Industry Associations and Major Employers: The Tiruchirappalli District Small Scale and Tiny Industries Association (TIDITSSIA) has planned to introduce a unified recruitment mechanism for its member organizations, and provide training/ induction programs in this regard, as there is demand for tailors, welders, CNC machine operators, fitters and turners in the small industries and SIDCO estates. However, the association lacks funding for implementation. Fabrication industries in general have demand for Electricians, Instrumentation technicians, Fitters and Welders. In GK industrial Park in Lalgudi, large industries (in fabrication and auto components) bring in skilled workers from Coimbatore and Chennai. Medium and small industries recruit from the local community and local polytechnic college graduates for job roles such as CNC Machine Operator, AutoCAD operators. Some medium units also train local women to work in skilled and semi-skilled roles, due to women having lower attrition rates and wage aspirations. In rural areas, men tend to migrate for better pay, but the workforce is still male-dominated in the industrial clusters. Migrants mostly tend to be from within the state. In the fabrication industry, workers come from Ariyalur, Perambalur and Pudukottai.

Major challenges include high attrition rates, and a lack of a centralized recruitment mechanism for all levels of jobs: a suggestion which emerged was a government-run free accessible job postings portal for employers, as traditional recruitment methods are costly, and do not aggregate applicants at various levels. Such portals exist in countries such as Canada and Australia.

The district also has a flourishing hospitality industry due to the volume of business travelers, and proximity to tourists spots (mostly religious). Hotels hire college graduates and hotel management graduates for roles such as receptionist, billing executive, food and beverage production management, and administrative support roles. Hotels also provide internship and part-time work to college students/ school graduates. The industry is also connected to local travel agencies, which employ cab drivers. Thus, they indirectly provide business for such agencies as well. However, hotel management institutions in the district send their students abroad, and recruits are made from migrants (a significant number of women migrate for the same) from other districts. BSc Hotel Management and Catering courses are in demand. Hotels in general prefer candidates with fluency in at least three languages (English, Tamil and Hindi/ other regional language), to be able to serve guests.

College/ ITI/ Training Institute representatives and Government Officials: ITI, Polytechnic and college graduates show preference for public sector jobs, and are interested in applying to local PSUs: Bharat Heavy Electricals Limited (BHEL), Ordnance Factory, Tamil Nadu State Transport Corporation, Tamil Nadu Electricity Board, Southern Railways, etc. If youth do not get apprenticeships in such organizations, they wish to move to Chennai. Within and outside the district, trades with employment potential are: Instrument Mechanic, Machinist, Fitter, HVAC Repair, and Electrician. With respect to short-term courses, retail, data entry, hardware repair and appliance repair are chosen.

Short-term course graduates are more willing to work in private enterprises, as they are usually unemployed, with inadequate job prospects based on their previous degrees (most are college graduates, with very few school graduates). Students from engineering backgrounds tend to go for courses in beauty and wellness, domestic appliance repair, and hardware repair. After apprenticeships, there is no mechanism to track students. Mechatronics has scope in industries in northern states, but students are not willing to migrate due to low pay and language concerns.

The Welding Research Institute within the BHEL campus gives need-based, upskilling programs on the request of various industries, and individual applications. Over 20,000 professionals have been trained as part of various such programs so far. At least 5,000 welders are needed across the country for various jobs – structural welding, fabricated welding and machine operation. Opportunities are in Hosur, Chennai, Coimbatore, Neyveli, Salem, Cuddalore, Southeast Asia, Gulf countries and north India. Welders have opportunities in ship-building industry as well. Women have scope, but most factories do not provide washrooms or changing rooms.

The district has a strong industrial base, as well as training institutions responsive to industry demands (within and outside district). However, preference for government jobs, attrition, and perceptions of low pay are challenges faced by local industries.

4. Skill Gap Analysis

4.1. Skill Gap Assessment - Incremental Demand¹⁸ for Skilled & Semi Skilled Manpower

The district is witnessing a growing industrial sector. The sectors of **Education, human health and social work, manufacturing, communication, repair of domestic goods, construction, trade and repair services, and transportation and storage**, show high levels of demand for both skilled and semi-skilled workers. The detailed methodology is presented in the Appendix (7.2).

Table 18: Sector wise Incremental Demand for Skilled and Semi-skilled Workers between 2019 and 2025

Sector	Incremental Demand for Skilled Workers			Incremental Demand for Semi-skilled Workers			Total Demand
	2019-21	2022-25	Total	2019-21	2022-25	Total	
Allied Activities	129	184	313	904	1,290	2,193	2,506
Mining and quarrying	52	75	127	87	125	212	339
Manufacturing	2,599	3,754	6,354	5,198	7,509	12,707	19,061
Construction	1,087	1,631	2,717	2,717	4,077	6,794	9,511
Trade & Repair Services	894	1,270	2,163	3,093	4,395	7,488	9,651
Hotels and restaurants	539	766	1,304	1,044	1,483	2,527	3,831
Transportation and storage;	1,161	1,658	2,818	2,786	3,978	6,764	9,582
Communication and services related to broadcasting	2,722	4,404	7,126	1,361	2,202	3,563	10,689
Financial and insurance activities	1,912	2,939	4,852	956	1,470	2,426	7,277
Real estate, ownership of dwelling and business services	525	795	1,320	1,313	1,988	3,301	4,621
Public Administration	385	535	920	308	428	736	1,656
Education, Human Health & Social Work Activities	5,867	9,174	15,040	4,693	7,339	12,032	27,072
Arts, entertainment and recreation	889	1,325	2,214	711	1,060	1,771	3,985
Activities of membership organizations; Repair of computers and personal and household goods & Other personal service activities	2,982	4,442	7,424	2,385	3,554	5,939	13,363
Other Services	1,412	2,104	3,517	1,130	1,683	2,813	6,330
Total Demand	23,155	35,054	58,210	28,687	42,579	71,266	1,29,475
Total Supply	8,803	11,738	20,541	13,528	18,038	31,566	52,106
Skill Gap	14,352	23,317	37,669	15,159	24,542	39,701	77,369

¹⁸ Incremental Demand Estimates the additional stock of workforce that are to be created given the expected Economic Conditions in the period of study. This may help in estimating requirement for fresh trainings.

5. District Skilling Action Plan and Recommendations

5.1. District Skilling Action Plan–Key Training Projects

Table 19: Summary of Training Projects

S No	Sector	Trades	Target (Persons)	Budget (₹)
1.	Fabrication	<ul style="list-style-type: none"> Fitter Fabrication Fitter Mechanical Assembly Assistant Manual Metal Arc Welder Assistant Oxy fuel gas cutter CNC Setter cum operator Turning Draughtsman Mechanical Fitter Electrical and Electronic Assembly Forger 	5,000	13.22 Crores
2.	Auto and Auto Components	<ul style="list-style-type: none"> Assembly Line Machine Setter Auto Body Technician Level 3 Auto Component Assembly Fitter Automation Specialist Automotive Engine Repair Technician Level 4 Automotive Paint shop Assistant Automotive Service Technician (Two and Three Wheelers) Customer Relationship Executive 	5,000	10.9 Crores
3.	Tourism and Hospitality	<ul style="list-style-type: none"> Billing Executive Chef-de-partie Assistant Catering Manager Assistant Facility Manager Pest Controller Counter Sale Executive Duty Manager Facility Store Keeper Front Office Associate Guest House Caretaker Guest Relations Manager Kitchen Helper Laundry Machine Operator Meeting, Conference and Event Planner 	5,000	9.31 Crores
4.	Healthcare	<ul style="list-style-type: none"> General Duty Assistant Blood Bank Technician Cardiac Care Technician Diabetes Educator Emergency Medical Technician - Basic Medical Records & health Information Technician 	8,000	24.08 Crores
5.	Domestic Appliance Services	<ul style="list-style-type: none"> Helper Electrician Plumber (General) Solar Domestic Water Heater Technician Field Technician AC Field Technician Refrigerator Field Technician - Washing Machine 	8,000	13.86 Crores

		<ul style="list-style-type: none"> Field Technician - Other Home Appliances 		
6.	Food Processing	<ul style="list-style-type: none"> Dairy Processing Equipment Operator Cold Storage Technician Food Products Packaging Technician Grain Mill Operator Supervisor: Meat and Poultry Processing Corn Starch Manufacturing Technician Multi Skill Technician (Food Processing) Poultry feed, food safety and labelling supervisor Feed Technician Veterinary Field Assistant Veterinary Clinical Assistant 	3,300	9.7 Crores
7.	Iron and Steel	<ul style="list-style-type: none"> Battery Anchorage Regulator Battery Operator Belt conveyor maintenance Cast House Junior Operator Conveyor and Other Bulk Material Handling Technician 	2,000	4.03 Crores
8.	Retail	<ul style="list-style-type: none"> Cashier Retail Sales Associate Store Ops Assistant Seller Activation Executive Digital Cataloguer Retail Trainee Associate 	4,000	5.28 Crores
9.	Logistics	<ul style="list-style-type: none"> Warehouse Packer Inventory Clerk Warehouse Supervisor Reach Truck Operator Receiving Assistant Warehouse Quality Checker Loading Supervisor Material Handling Equipment (MHE) Maintenance Technician Goods Packaging Machine Operator Cold Storage Technician 	4,000	6.21 Crores
10.	Traditional Reed Mat Making	<ul style="list-style-type: none"> Power loom operator 	500	0.88 Crores
11.	Construction	<ul style="list-style-type: none"> Foreman Electrical Works (Construction) Metal Inert Gas/Metal Active Gas/Gas Metal Arc Welder (MIG/MAG/GMAW) Mason Marble, Granite and Stone Foreman Wet Finishing and Flooring Bar Bender and Steel Fixer Assistant Electrician 	4,000	13.86 Crores
Total Cost			48,800	111.28 Crores

Note:

- The intended target groups are different from the eligibility criteria prescribed as part of the Qualification Pack. Target Group refers to the preferred set of youth who stakeholders have identified are most likely to benefit from the training. This could come from the Aspirations expressed in the Quantitative Survey, feedback from Industry and Govt. Stakeholders. For instance, though a training in handicrafts might require only 5th grade as an eligibility- criteria, the target group would be rural women in a cluster. TNSDC and the TSPs can continue to use the minimum criteria as mentioned in the Qualification Pack; however, qualifications that may constrain an interest-group may appropriately considered on a case-to-case basis (as approved by TNSDC).

2. The QP NOS reference numbers and the training hours have been taken as per the latest QP NOS compilation (as on 17th October 2019). However, in the same compilation, some job roles do not have training hours mentioned. **In such cases, we have taken the average training hours for the sector and NSQF level within the sector and applied those as notional hours.** We have also used insights from field consultations to arrive at training hour estimates which we believe are reasonably accurate.
3. An attempt was made to map each proposed job role with a QP NOS reference number. **In the cases where accurate mapping has not been possible, we have mapped the job role with the nearest QP NOS reference number.** In cases where we have proposed new job roles, we have indicated that a QP NOS reference is to be designed for the same.
4. The Cost of Training has been calculated using the following method: Each job role has training hours, training target (persons), and a cost category. The cost category has been determined by the National Skills Qualification Framework (NSQF) with respect to the level of capital expenditure and operational expenditure for imparting the course aligned to that specific job role. Therefore, each cost category corresponds to a particular cost norm calculated per trainee per hour. The calculations have been done as per the Government order (H-22011/2/2014-SDE-III) issued by MSDE on 4th January 2019. The categories are defined as follows:
 - INR 42.40 for Category-I
 - INR 36.30 for Category -II
 - INR 30.30 for Category-III

The Cost of training in the project shelves represents the calculation of: (training target × training hours × per hour cost) + (training target × number of days of training × INR 100).

Where:

Number of days of training = training hours / 8

Transportation costs per trainee per day = INR 100

To the figures arising from the above formula, the training and assessment costs (INR 1,000 per trainee × training target for the whole project) has also been added. The total training cost for each project arrived through such a process has been added to the summary table above.

Table 20: Training Project 1

Name of the Project: Training in Fabrication Sector							
Key Economic Drivers:							
Fabrication is a key sector it provides employment in both PSUs and private organizations The sector has export potential across the country and globe Existing training institutions have the capacity to meet skilling needs							
Key Partners: ITI, Polytechnics, Welding Research Institute, TIDITSSIA, BHELSEA, BHEL, and other private players							
Job Roles:	NSQF Level	NSQF Code	Duration of Training (hours)	Cost Category	Target Group	Training Target	Cost of Training
Fitter Fabrication	3	CSC/Q0303	500	1	10 th Pass	625	1.72 Crores
Fitter Mechanical Assembly	3	CSC/Q0304	500	1	10 th Pass	625	1.72 Crores
Assistant Manual Metal Arc Welder	3	CSC/Q0204	500	1	10 th Pass	625	1.72 Crores
Assistant Oxy fuel gas cutter	3	CSC/Q0203	300	1	5 th Pass	625	1.03 Crores
CNC Setter cum operator Turning	4	CSC/Q0120	600	1	10 th Pass	625	2.06 Crores
Draughtsman Mechanical	4	CSC/Q0402	400	1	10 th Pass	625	1.37 Crores
Fitter Electrical and Electronic Assembly	4	CSC/Q0305	500	1	Diploma	625	1.72 Crores
Forger	3	CSC/Q1101	400	1	10 th Pass	625	1.37 Crores
Total Training Cost						5,000	12.71 Crores
Total Assessment and Certification cost (1,000 per candidate)							0.5 Crores
Total Cost							13.22 Crores
Key Considerations:							
Adequate facilities must be provided if women are being trained bathrooms, changing rooms Industry partners must be made part of the process Training providers must be vetted based on instructor quality and infrastructure							

Table 21: Training Project 2

Name of the Project: Training in Automotive Sector							
Key Economic Drivers:							
Auto and auto components sector is a major sector in the district The sector has growth and export potential Due to investments expected as part of the Defense Manufacturing Corridor, the sector may get a boost							
Key Partners: ITI, Polytechnic, TIDITSSIA, local industry partners							
Job Roles:	NSQF Level	NSQF Code	Duration of Training (hours)	Cost Category	Target Group	Training Target	Cost of Training
Assembly Line Machine Setter	6	ASC/Q3603	450	1	DME, BSc	625	1.55 Crores
Auto Body Technician Level 3	3	ASC/Q1410	300	1	10		

Table 22: Training Project 3

Name of the Project: Training in Tourism and Hospitality Sector							
Key Economic Drivers:							
The district has a growing hospitality sector due to economic growth and tourism							
Key Partners: Hotels in the city, State Institute of Hotel Management and Catering Technology, local colleges							
Job Roles:	NSQF Level	NSQF Code	Duration of Training (hours)	Cost Category	Target Group	Training Target	Cost of Training
Billing Executive	4	THC/Q5801	390	2	Graduate	400	0.76 Crores
Chef-de-partie	6	THC/Q0404	285	1	8 th Pass	400	0.63 Crores
Assistant Catering Manager	6	THC/Q5901	475	2	12 th Pass	400	0.93 Crores
Assistant Facility Manager	7	THC/Q5707	435	2	Diploma	400	0.85 Crores
Pest Controller	4	THC/Q5704	500	2	8 th Pass	400	0.98 Crores
Counter Sale Executive	4	THC/Q2903	240	2	12 th Pass	400	0.47 Crores
Duty Manager	7	THC/Q0106	300	2	12 th Pass	400	0.59 Crores
Facility Store Keeper	4	THC/Q5602	475	2	10 th Pass	400	0.93 Crores
Front Office Associate	4	THC/Q0102	280	3	12 th Pass	400	0.48 Crores
Guest House Caretaker	5	THC/Q0501	370	2	10 th Pass	400	0.73 Crores
Guest Relations Manager	6	THC/Q0108	350	2	12 th Pass	300	0.51 Crores
Kitchen Helper	2	THC/Q3303	260	2	5 th Pass	300	0.38 Crores
Laundry Machine Operator	4	THC/Q0205	240	2	5 th Pass	300	0.35 Crores
Meeting, Conference and Event Planner	5	THC/Q4401	500	3	Diploma	100	0.21 Crores
Total Training Cost						5,000	8.8 Crores
Total Assessment and Certification cost (1,000 per candidate)							0.6 Crores
Total Cost							9.31 Crores
Key Considerations:							
Women and college graduates can be targeted Local employers can provide internships Language skills can also be imparted							

Table 23: Training Project 4

Name of the Project: Training in Healthcare Sector							
Key Economic Drivers:							
Tiruchirappalli is growing and urbanizing, and hence would require an expanded healthcare system Healthcare sector has scope for young men and women, and career mobility as well							
Key Partners: Hospitals, Nursing Colleges, Meenakshi Mission Hospital and Research Centre							
Job Roles:	NSQF Level	NSQF Code	Duration of Training (hours)	Cost Category	Target Group	Training Target	Cost of Training
General Duty Assistant	4	HSS/ Q5101	240	2	10 th Pass	1,500	1.76 Crores
Blood Bank Technician	4	HSS/ Q2801	1,000	1	12 th Pass	1,500	8.24 Crores
Cardiac Care Technician	4	HSS/ Q0101	840	1	12 th Pass	1,500	6.92 Crores
Diabetes Educator	4	HSS/ Q8701	240	2	12 th Pass	1,500	1.76 Crores
Emergency Medical Technician - Basic	4	HSS/ Q2301	240	1	12 th Pass	1,000	1.32 Crores
Medical Records & health Information Technician	4	HSS/ Q5501	600	1	12 th Pass	1,000	3.29 Crores
Total Training Cost						8,000	23.28 Crores
Total Assessment and Certification cost (1,000 per candidate)							0.8 Crores
Total Cost							24.08 Crores
Key Considerations:							
Residential training and part-time training modes should be explored to allow women of all backgrounds to attend							

Table 24: Training Project 5

Name of the Project: Training in Domestic Appliance Services Sector							
Key Economic Drivers:							
<ul style="list-style-type: none"> Services sector plays a major role in the district economy The city is growing and urbanizing, and hence would require servicepersons who can work in domestic appliance repair and maintenance (household incomes are also bound to increase with growth) 							
Key Partners: ISHRAE, ITI/ Polytechnic							
Job Roles:	NSQF Level	NSQF Code	Duration of Training (hours)	Cost Category	Target Group	Training Target	Cost of Training
Helper Electrician	3	CON/Q0601	350	1	12 th Pass	1,000	1.92 Crores
Plumber (General)	3	PSC/Q0104	410	1	5 th Pass	1,000	2.26 Crores
Solar Domestic Water Heater Technician	4	SGJ/Q0601	200	1	8 th Pass	1,000	1.1 Crores
Field Technician AC	4	ELE/Q3102	300	2	8 th Pass	1,500	2.2 Crores
Field Technician Refrigerator	4	ELE/Q3103	300	2	8 th Pass	1,000	1.47 Crores
Field Technician - Washing Machine	4	ELE/Q3106	300	2	8 th Pass	1,000	1.47 Crores
Field Technician - Other Home Appliances	4	ELE/Q3104	360	2	8 th Pass	1,500	2.64 Crores
Total Training Cost						8,000	13.06 Crores
Total Assessment and Certification cost (1,000 per candidate)							0.8 Crores
Total Cost							13.86 Crores
Key Considerations:							
<ul style="list-style-type: none"> Adequate facilities must be provided if women are being trained bathrooms, changing rooms Industry partners must be made part of the process Training providers must be vetted based on instructor quality and infrastructure 							

Table 25: Training Project 6

Name of the Project: Training in Food Processing Sector							
Key Economic Drivers:							
Beverage production is a key sector in the district The district is part of the Cauvery delta, and hence can support a food processing sector based on local produce							
Key Partners: ITI/ Polytechnic colleges, engineering and degree colleges, local industry players							
Job Roles:	NSQF	NSQF Code	Duration	Cost	Target	Training	Cost of
Dairy Processing Equipment Operator	4	FIC/Q2002	240	1	10 th Pass	300	0.4 Crores
Cold Storage Technician	4	FIC/Q7004	250	3	12 th Pass	300	0.32 Crores

Table 26: Training Project 7

Name of the Project: Training in Iron and Steel Sector							
Key Economic Drivers:							
Iron and Steel processing is a significant sector in the district The Defense Manufacturing Corridor has the potential to give the sector a boost							
Key Partners: ITI/ Polytechnic colleges, engineering and degree colleges, local industry players							
Job Roles:	NSQF Level	NSQF Code	Duration of Training (hours)	Cost Category	Target Group	Training Target	Cost of Training
Battery Anchorage Regulator	4	ISC/Q0202	500	1	Diploma	400	1.1 Crores
Battery Operator	5	ISC/Q0201	500	1	ITI/ Diploma	400	1.1 Crores
Belt conveyer maintenance	3	ISC/Q0904	390	1	10 th Pass	400	0.86 Crores
Cast House Junior Operator	2	ISC/Q0406	150	1	10 th Pass	400	0.33 Crores
Conveyor and Other Bulk Material Handling Technician	3	ISC/Q0103	200	1	10 th Pass	400	0.44 Crores
Total Training Cost						2,000	3.83 Crores
Total Assessment and Certification cost (1,000 per candidate)							0.2 Crores
Total Cost							4.03 Crores
Key Considerations:							
Adequate facilities must be provided if women are being trained bathrooms, changing rooms Industry partners must be made part of the process Training providers must be vetted based on instructor quality and infrastructure							

Table 27: Training Project 8

Name of the Project: Training in Retail Sector							
Key Economic Drivers:							
Urbanizing population will spur the growth of large retailers							
Key Partners: Large retailers							
Job Roles:	NSQF Level	NSQF Code	Duration of Training (hours)	Cost Category	Target Group	Training Target	Cost of Training
Cashier	2	RAS/Q0102	200	2	Graduate	1,000	0.98 Crores
Retail Sales Associate	4	RAS/Q0104	280	2	10 th Pass	500	0.68 Crores
Store Ops Assistant	1	RAS/Q0101	200	2	10 th Pass	500	0.49 Crores
Seller Activation Executive	4	RAS/Q0301	280	2	10 th Pass	500	0.68 Crores
Digital Cataloguer	4	RAS/Q0302	280	2	10 th Pass	500	0.68 Crores
Retail Trainee Associate	3	RAS/Q0103	280	2	10 th Pass	1,000	1.37 Crores
Total Training Cost						4,000	4.88 Crores
Total Assessment and Certification cost (1,000 per candidate)							0.4 Crores
Total Cost							5.28 Crores
Key Considerations:							
Women can be targeted but adequate facilities must be provided							
On the job training can be provided by local retailers							

Table 28: Training Project 9

Name of the Project: Training in Logistics Sector							
Key Economic Drivers:							
Due to growing trade and manufacturing, logistics (transportation and warehousing) will grow as well							
Key Partners: ITI, Polytechnic colleges, engineering and degree colleges							
Job Roles:	NSQ F Level	NSQF Code	Duration of Training (hours)	Cost Category	Target Group	Training Target	Cost of Training
Warehouse Packer	3	LSC/Q2303	270	1	8 th Pass	400	0.59 Crores
Inventory Clerk	3	LSC/Q2108	250	1	12 th Pass	400	0.55 Crores
Warehouse Supervisor	5	LSC/Q2307	240	1	Diploma	400	0.53 Crores
Reach Truck Operator	4	LSC/Q2111	300	1	8 th Pass	400	0.66 Crores
Receiving Assistant	3	LSC/Q2112	250	2	10 th Pass	400	0.49 Crores
Warehouse Quality Checker	3	LSC/Q2313	300	3	10 th Pass	400	0.52 Crores
Loading Supervisor	3	LSC/Q2314	270	2	10 th Pass	800	1.06 Crores
Material Handling Equipment (MHE) Maintenance Technician	4	LSC/Q2315	280	1	10 th Pass	400	0.61 Crores
Goods Packaging Machine Operator	4	LSC/Q2216	360	1	10 th Pass	400	0.79 Crores
Total Training Cost						4,000	5.8 Crores
Total Assessment and Certification cost (1,000 per candidate)							0.33 Crores
Total Cost							6.21 Crores
Key Considerations:							
Rural youth can be targeted Industry partners must be made part of the process							

Table 29: Training Project 10

Name of the Project: Training in Traditional Reed Mat Making Sector							
Key Economic Drivers:							
The district is a base for both reed cultivation and mat production this can be harnessed Reviving the sector can spur rural employment, especially for women							
Key Partners: Reed mat makers							
Job Roles:	NSQF Level	NSQF Code	Duration of Training (hours)	Cost Category	Target Group	Training Target	Cost of Training
Power Loom Operator	4	TSC/Q2208	300	1	10 th Pass	500	0.83 Crores
Total Training Cost						500	0.83 Crores
Total Assessment and Certification cost (1,000 per candidate)							0.05 Crores
Total Cost							0.88 Crores
Key Considerations:							
Training must be part of a holistic program which focuses on improving livelihoods and entrepreneurship Women can be targeted							

Table 30: Training Project 11

Name of the Project: Training in Construction Sector							
Key Economic Drivers:							
Due to urbanization, economics growth and trade, construction sector will also grow							
Key Partners: ITI, Polytechnic colleges, engineering colleges							
Job Roles:	NSQF Level	NSQF Code	Duration of Training (hours)	Cost Category	Target Group	Training Target	Cost of Training
Foreman Electrical Works (Construction)	5	I/CON/Q0604	900	1	10 th Pass	500	2.47 Crores
Metal Inert Gas/Metal Active Gas/Gas Metal Arc Welder (MIG/MAG/GMAW)	4	I/CSC/Q0209	600	1	10 th Pass	1,000	3.29 Crores
Mason Marble, Granite and Stone	4	CON/Q0106	600	1	8 th Pass	1,000	3.29 Crores
Foreman Wet Finishing and Flooring	5	CON/Q0109	800	1	10 th Pass	500	2.2 Crores
Bar Bender and Steel Fixer	4	CON/Q0203	400	1	10 th Pass	500	1.1 Crores
Assistant Electrician	3	CON/Q0602	400	1	10 th Pass	500	1.1 Crores
Total Training Cost						4,000	13.45 Crores
Total Assessment and Certification cost (1,000 per candidate)							0.4 Crores
Total Cost							13.86 Crores
Key Considerations:							
Dropout and rural youth can be targeted Sustainability can be a focus in training							

5.2. Key Recommendations

- **Creating awareness on local opportunities in private industries:** qualitative and quantitative findings reveal that youth prefer public sector employment, or migration for work. However, local industries show growth potential, and can absorb local youth. They are constrained by issues of low wages and inadequate facilities for women. In order to improve perceptions on both sides, the apprenticeship scheme must be popularized further, and priority given to local private firms, so that they are able to recruit locally. Government-support in terms of wage subsidies or stipends would also facilitate local employment. Fostering such linkages would help both manufacturers and services providers (healthcare, logistics, tourism and hospitality), along with vocational training institutions.
- **A unified job portal for job postings at all levels of skill across sectors:** qualitative consultations with industry representatives revealed that there is a mismatch between placement practices in vocational training institutions and recruitment practices among employers. A portal for jobs/ apprenticeships open to both employers and jobseekers would enable both sides to minimize time and effort in finding suitable vacancies and profiles. Youth aspiration findings also indicate that youth prefer placement services/ guidance with respect to applying for suitable jobs. It would act as a platform to enable active connect between the employers and prospective employees, as well as prospective apprentices or internees. A common portal would fulfil this need as well.
- **Targeted interventions to align worker aspirations and abilities with local small and medium industry needs and capacities:** Qualitative and quantitative consultations revealed the following: (i) wage mismatch between industrial shop-floor jobs and youth aspirations, (ii) inadequate technical skills in workers (apart from boiler industry) and (iii) lack of soft-skills among graduates from ITI and Polytechnics (across public and private institutions). To address these challenges, the following initiatives can be taken:
 - Wage Subsidies/ provisions for living wage can be designed, so that the current workforce is able to work on the shop-floor without major attrition issues. Workplace benefits can be provided based on government support for creches, changing rooms and adequate bathrooms for working women can encourage female work force participation
 - Private ITI and Polytechnics can be subjected to more rigorous approval procedures, to ensure that they have appropriate infrastructure, facilities and quality faculty. Industry linkages can be encouraged in the form of workshops, CSR-funded skill enhancement centres (the Government ITI has a Maruti Skill Enhancement Centre), and state and district-level curriculum review mechanisms which include industry inputs.
 - Soft-skill training for spoken English, communication skills, team work and inter-personal skills can be imparted in the form of pre-placement or pre-apprenticeship workshops/ programs, or as weekly modules to develop the abilities of students to adapt to a work environment.
- **Promotion of service sector opportunities among youth:** Private activity in the hospitality, tourism and retail sectors can be fostered to provide local employment to youth at a livable wage. Hospitality, retail and logistics can absorb local youth in significant numbers, and provide jobs suited to the needs of young women. Qualitative consultations and secondary data analysis reveal that service sectors have great demand for both skilled and semi-skilled labour in the district. Hospitality in particular can absorb workers from different education levels – college graduates can work in administration, school graduates and dropouts can work in catering, security, housekeeping and transportation.

Appendix

A.1 Methodology for Block Selection in Youth Aspiration Survey

Sampling Design for Youth Survey

A total of 360 youth were surveyed in the District, which included youth in both self-employment and wage-employment, unemployed youth, youth on education system, and youth under NEET category to get a balanced representation of various socioeconomic and demographic characteristics of the population.

1. Students from educational and training institutions:

The list of General arts/science/commerce colleges, engineering colleges, polytechnic colleges and Industrial Training Institutions was obtained. A list of educational institutions was randomly sampled from the list. Of the selected institutions, a list of randomly selected students were interviewed.

2. Household Level Survey:

In the selected blocks, few villages and wards were randomly selected. After consultation with the head of the village/ward, a sample of households was selected.

3. Self – Employed Youth:

To cover Self Employed Youth in the sample, a roster of beneficiaries from the Pradhan Mantri Employment Generation Programme (PMEGP) shall be randomly selected from the list which will be obtained from the concerned authority at the District level.

4. Employed in the informal sector:

The youth from unorganized sector were identified at the cluster-level after obtaining and examining the list of enterprises that are not registered and those workers were doing job-work type of activities

Selection of Blocks

The block selection methodology involved the identification of blocks by categorizing them into High development, Medium development and Low development. The adjacent picture shows the blocks in Tiruchirappalli selected for the survey. The methodology is explained below:

To categorize blocks, the following data points were used.

1. Count of MSME Clusters (based on DC-MSME Report)
2. Number of SIDCO Industrial Estates
3. Number of SIPCOT Industrial Estates
4. Credit Outstanding, 2017-18 at Centre-level (Annual Data published by the Reserve Bank of India)

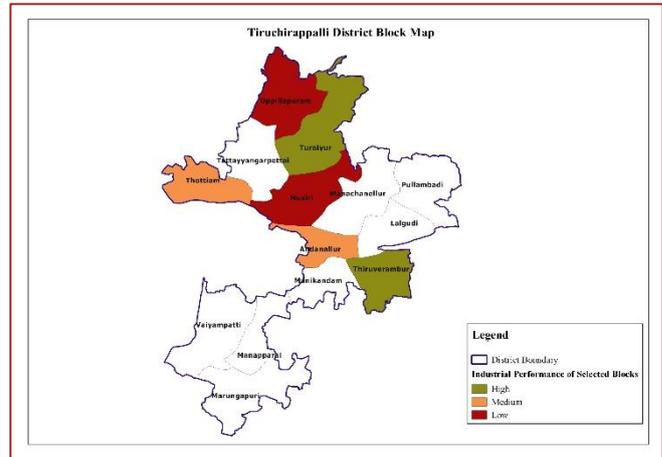
The following weights were assigned post award of marks:

1. MSME Cluster 25%
2. SIDCO Cluster 25%
3. SIPCOT Industrial Estate 5%
4. Annual Centre-level Credit Data 45%

Based on the above weights, the total score of each block was calculated. The total score was capped at 100. To classify the block as High/Medium/Low, the total score was converted into percentile values and categorized into three groups 0-33.33th percentile values, 33.33 to 66.67 percentile value and 66.67 to 100 percentile values. The percentile values are calculated with respect to each district as the base.

Based on the percentile classification obtained, blocks were classified as follows:

Figure 32: Blocks Selected for Survey in Tiruchirappalli



- **0 to 33.33 percentile value: Low**
- **33.33 to 66.67 percentile value: Medium**
- **66.67 to 100 percentile values: High**

Three selected blocks were-

High- Thiruverambur, Thuraiyur

Medium- Andanallur, Thottiam

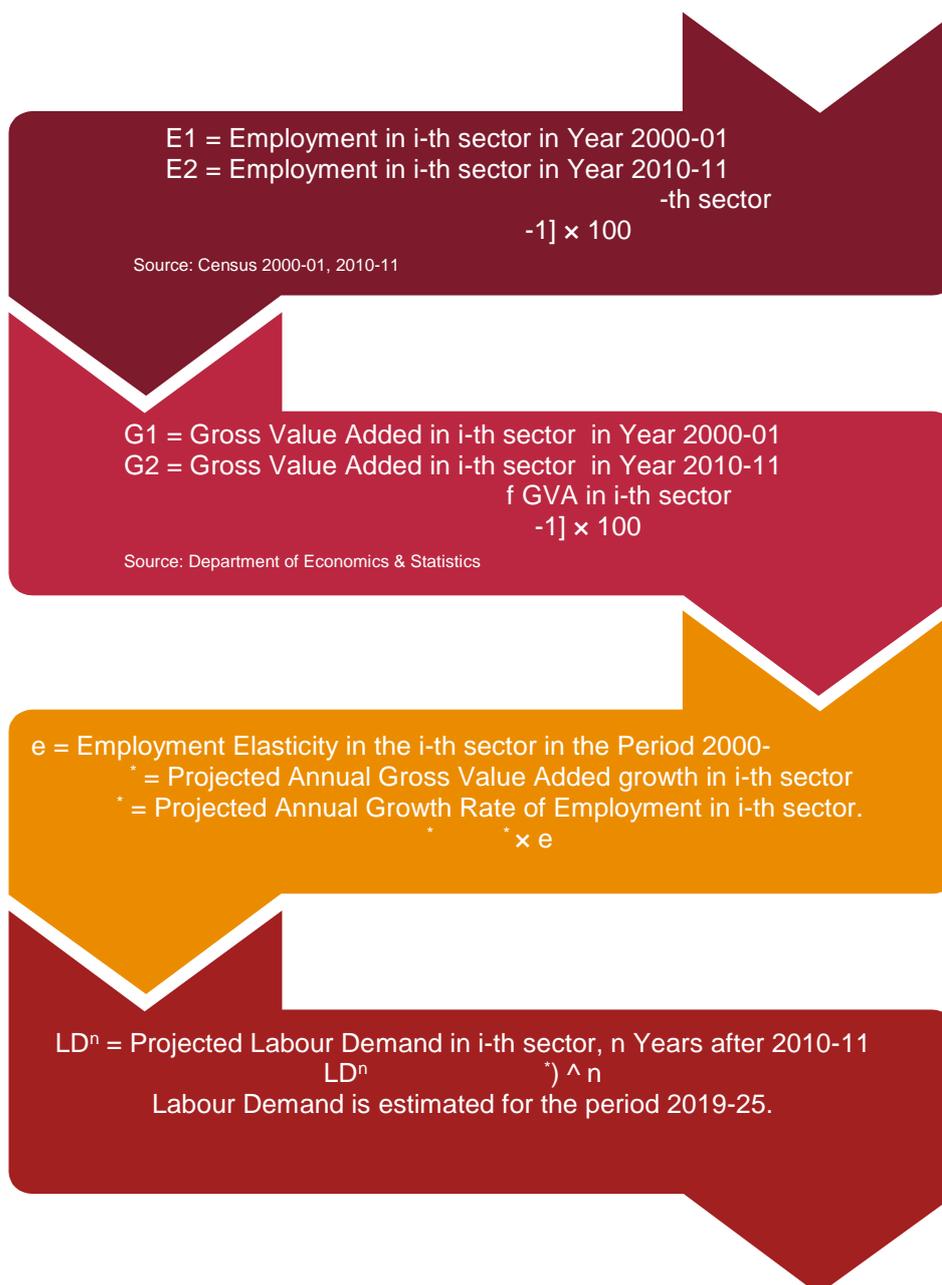
Low- Musiri, Uppiliapuram

A.2 Methodology for Present and Future Labour Demand – Supply and Gap Estimation

Demand Estimation

We adopted employment elasticity approach to forecast the labour demand. Employment elasticity is the measure of percentage change in employment associated with one percentage change in economic growth. The employment elasticity approach indicates the ability of an economy to generate employment opportunities. We estimated sector specific employment elasticity using historical data and assumed it to remain constant in the near future. If the estimated sector specific elasticities at district level varied significantly with national and state level estimates, we rationalized the estimated elasticities based on national and state level trends. Automation and sector-specific investments are other factors that are considered before arriving at the final labour demand estimates in different sectors. While some jobs may become obsolete with the technological advancement, new opportunities will arise for professionals who understand technology. Therefore, demand estimates were further revised based on employer consultation. The flowchart below explains the step involved:

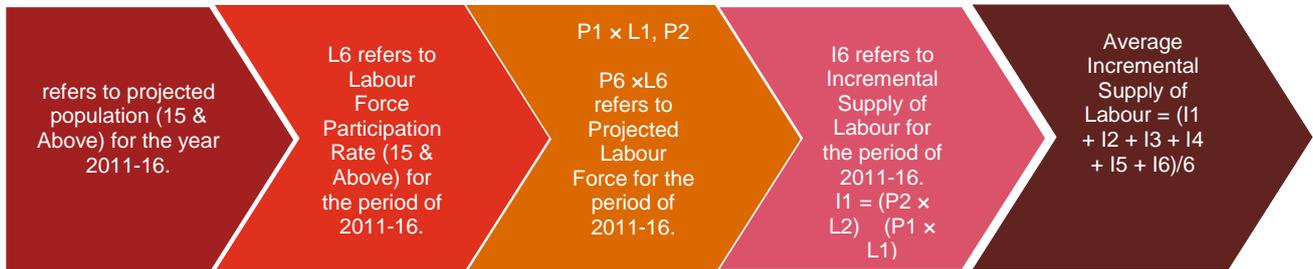
Figure 33: Steps in Demand Estimation



Supply Estimation

We estimated the average incremental supply of labour for the period 2011-16 and assume it to remain constant for the period of 2019-25. Although the population (15 & above) is increasing, the labour force participation is decreasing in the state¹⁹. The labour force participation rate may continue to follow the decreasing trend, especially for the age category 15-29 years, primarily because of increasing economic well-being, high educational aspiration and higher salary expectations. The flowchart below explains the step involved in supply estimation:

Figure 34: Steps in Supply Estimation



¹⁹ Report on Employment-Unemployment Survey, 2011-12, 2012-13, 2013-14, 2015-16 & 2017-18.

A.3 List of Stakeholders

Table 31: List of Stakeholders

S No	Stakeholder	Category
1.	District Assistant Director, Training Office, DET	Government Official
2.	Training Officer, Govt ITI, Thiruverumbur	Training Service Provider
3.	Skill Development Program In-charge, Welding Research Institute	Training Service Provider
4.	Trainer, Maruti Automobile Skill Enhancement Centre	Training Service Provider
5.	Plazza Hotel	Industry
6.	Administrative Officer, State Institute of Hotel Management and Catering Technology	Training Service Provider
7.	Joint Secretary, Tiruchirappalli District Small Scale Industry Association	Industry Association
8.	Secretary, Indian Welding Society	Training Service Provider
9.	Chief Operating Officer, GK Industrial Park	Industry
10.	AFEX Technologies	Industry
11.	Apex Industrial Products	Industry
12.	VB & Sons	Industry
13.	Sundaram Jewellery Workshop	Industry
14.	Pudur Cooperative Handloom Society	Industry
15.	Emperor Engineering Works	Industry
16.	Cethar Energy Limited	Industry
17.	Placement Head, Periyar EVR Government College	Higher Education Institution
18.	Bharathidasan University	Higher Education Institution
19.	Metal Engineering Unit 1	Industry
20.	KMS Hakkim Biriyan	Industry
21.	Sri Vijayalakshmi Engineering Works	Industry
22.	Amarnath Engineering Industries	Industry
23.	Ambika Industries	Industry
24.	Guru Engineering Works	Industry
25.	Hotel J2S	Industry
26.	Jagannathan Engineering Works	Industry
27.	Jai-Raj Engineering Industry	Industry
28.	Lakshmiteja Engineering Enterprises	Industry
29.	Maheswara Engineering	Industry
30.	Metal Engineers Unit 2	Industry
31.	Orient Engineering Works	Industry
32.	Padma Machine Shop Allied Industries	Industry
33.	Pioneer Engineering	Industry

34.	Power Tech Engineering Industries	Industry
35.	Precitech Manufacturing Pvt Ltd	Industry
36.	Ramsun Fabitecs	Industry
37.	Regional Engineering Enterprises	Industry
38.	Regional Engineering Works	Industry
39.	RV Enterprises	Industry
40.	Santhi Engineering Industries	Industry
41.	Sri Lakshmi Industries	Industry
42.	Sri Vijayalakshmi Industries	Industry
43.	Super Shapers	Industry
44.	Trichy Engineering Works	Industry
45.	Trichy Metal Engineers	Industry
46.	Uma Fabricators	Industry
47.	Anand Engineering Products Pvt Ltd	Industry
48.	Indofan Private Ltd	Industry
49.	Kumar Engineering Industries	Industry
50.	Sri Rajeshwari Engineering Enterprises	Industry
51.	DPJ Fuels	Industry
52.	Esskay Enterprises	Industry
53.	Sree Vigneswara Gas Agency	Industry
54.	FSM Super Market	Industry
55.	D-mart Trichy	Industry
56.	Paragon Boiler Vessels Pvt Ltd	Industry
57.	Paragon Industries	Industry
58.	Bramas Industrial Service Association	Industry
59.	Rockfort CNC	Industry
60.	SK Honda	Industry