



Skilling for the Future

Skill Gap Assessment & Action Plan for Tamil Nadu District Skill Development Plan for Madurai

November 2019



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

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 change

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 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: (i) whi 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 desk r 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:

 <p>Demographic Analysis</p>	<ul style="list-style-type: none"> • ... 2011 and is expected to increase to 34.7 years in 2026. • Around 61 • Madurai is well connected to other industrial centres such as Dindigul and Tiruchirappalli
 <p>Economic Analysis</p>	<ul style="list-style-type: none"> • Madurai is one of the more industrialized districts of the state and contributes to 3.6% of ... • It ranks 18th ... 13 Lakh (2017-18). • Industrial sector grew at 5% CAGR between 2011-12 and 2016-17. The sector is dominated by the Manufacturing and Construction sub-sectors • Textiles, food processing, rubber processing, chemicals and fertilizers are some of the key industries in the district • Services sector contributes to 66% of the GSDP. The sector grew at a CAGR of 5% between 2011-12 and 2016-17. • Trade and repair services sub-sector has 30% share in the GSVA, and Real Estate is the second largest contributor (23%) • The district is known for its higher educational institutions and religious tourist sites
 <p>Labour Market Analysis</p>	<ul style="list-style-type: none"> • D ... are lower than the state figures, and for the youth population (15-29 years). • Youth preference to pursue higher education could be a possible reason for the relatively lower level of labour force participation rate. • Around 49% of the labour in the district is in casual labour, which is slightly higher than the state level figure (44%).
 <p>Education & Skill Development</p>	<ul style="list-style-type: none"> • 2.4% of the ... have undergone any kind of vocational training. • The Central Institute of Plastics Engineering and Technology, an apex training institution in the field of plastics processing is in Melur, and offers short-term training programs to ITI and Polytechnic graduates • The Government ITI in K. Pudur has a Skill Enhancement Centre set up by Maruti Suzuki Limited, which offers training and placement to students as mechanics after a 2-semester program
<p>Findings from Primary Survey</p>	
 <p>Youth Profile and Aspirations</p>	<ul style="list-style-type: none"> • 88% of the youth respondents engaged in economic activity were working in a field unrelated to their education / training • More than 90% college-educated respondents were engaged in salaried employment, skilled work, petty and major business • Almost 52% of the Not in Education Employment or Training (NEET) category respondents stated that they wished to work. Out of these, 82% stated that they had been searching for a job. • Salary (wages)/ Income (89.2%), Job Security (82.5%) and Social Status (20.3%) are key factors determining aspirations • Challenges faced in terms of career were ... idance/ • Key factors determining employment were perceived to be basic and soft skills, and education attainment • Female respondents cited textile and apparel, retail, agro-business and building and construction as preferred sectors of employment. Male respondents cited electronic and IT hardware, iron and steel, building and construction, and tourism as preferred sectors of employment • Around 70% of the respondents have expectations of monthly income less than 15,000. • Respondents stated preferences for information on relevant vacancies, placement services and advice on how to look for a job as components in counselling
 <p>Employer & Other Key</p>	<p>Quantitative Survey</p> <ul style="list-style-type: none"> • Common methods of recruitment were found to be employee referrals, and local community • Around 2.2% of respondents stated that they had recruited from ITI

<p>Stakeholder Perspectives</p>	<ul style="list-style-type: none"> • Candidate disinterest and attitude (90%), high local wages (85%), requirement of strenuous physical labour (10%) and lack of requisite core skills (7.5%) were challenges in recruitment • 35% of workers on average in the units were skilled, 27% semi-skilled and 6% supervisory • Causes of attrition include: better job opportunities (100%), candidate disinterest (92.3%), and lower wages (88.5%) • Nearly 78% of respondents felt that growth prospects for their industry were high, and 92.3% indicated interest in medium-level technology adoption • More than 90% the respondents were aware of the Craftsman Traineeship Scheme (CTS) in ITI <p>Qualitative Inputs</p> <ul style="list-style-type: none"> • Youth in general aspire to join engineering courses, and graduates from ITI tend to migrate to Chennai and Coimbatore to work in large industries • The small and medium industries in the district used to rely on large units for job work; this has been declining over the past decade. • Training Service Providers, District officials, and Industries highlighted the youth preference for employment in white-collar jobs, service sector and large units • Though Industries are willing to partner with the Govt. in Skill Development and vocational initiatives, MSMEs felt that such programs should accommodate the needs of smaller units, since the district has a majority of MSMEs
<p> Incremental Demand</p>	<ul style="list-style-type: none"> • An incremental demand of nearly 1 lakh 71 thousand skilled and semi-skilled workers are estimated over the next 6 years • Key sub-sectors driving the demand are transportation and storage, manufacturing, construction, trade and repair services, communication and services related to broadcasting, education, human health and social work, and repair of household goods, along with other services

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

- **Promotion of large industries –**
Promotion of such large units will have a ripple effect and benefit the smaller players.
- **A unified job portal for job postings at all levels of skill across sectors** Both job-seekers and employers will benefit from a centralized, streamlined employment portal which accommodates listings from all sectors and skill levels. The need for the same has emerged as a finding from qualitative and quantitative aspects of the study.
- **Project-oriented apprenticeship/ internship programs** Qualitative consultations revealed that employers prefer that students are exposed to problems/ challenges in the industry. An internship program which focuses on problem-solving to address challenges would allow students to gain practical exposure and employers to successfully harness the abilities of students.
- **Promotion of service sector** retail and domestic appliance services can absorb large numbers of workers. Youth also show a preference for retail as a sector of employment. Both sub-sectors can develop based on urbanization and rising household incomes.
- **Promotion of traditional village and household industries** traditional and home-based businesses such as garment-making, food processing and sungudi saris can be supported to ensure their sustainability. This will encourage entrepreneurship as well.

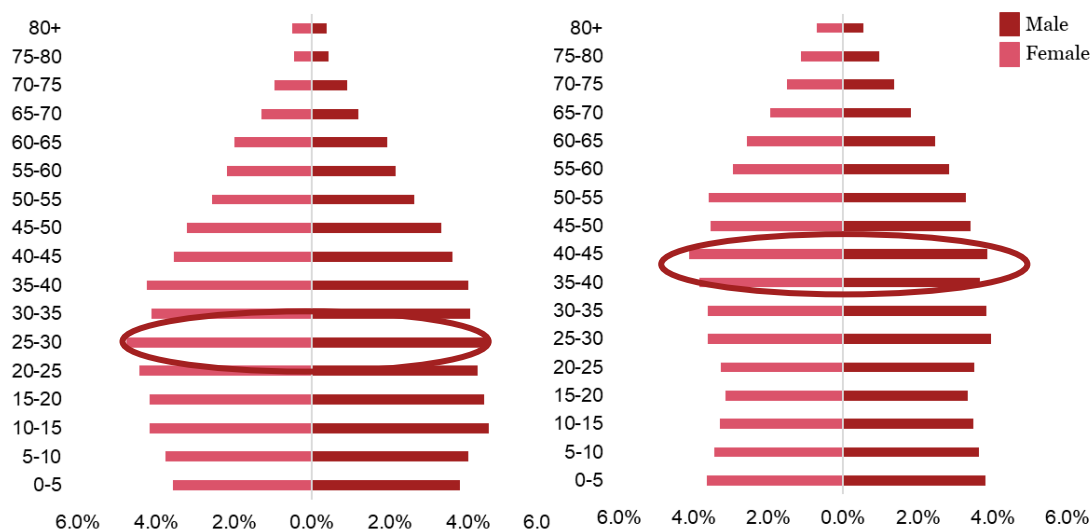
Madurai was annexed to the Madras Presidency in 1801 and became the district headquarters. Madurai city is currently the third largest in the state. In 1984, Dindigul district was carved out, and in 1997, Theni district. The district comprises 13 blocks. Industry (29%) and Service sector (66%) contribute to about 95% of the overall economy¹.

Table 1: Key Demographic Indicators– Madurai vs Tamil Nadu

SN	Indicator ²	Madurai	Tamil Nadu
1	Total population	30,38,252	72,147,030
2	Female Population	15,11,777	36,009,055
3	Population Density per sq.km (2011)	819	555
4	Urbanization	60.8%	48.4%
5	SC population (as % of total population)	13.5%	20.0%
6	ST population (as % of total population)	0.4%	1.1%
7	Differently abled population (as % of total population)	1.5%	1.6%

around 34.7, increasing the share of dependent population as illustrated in the age-wise population pyramid of the district as seen below.

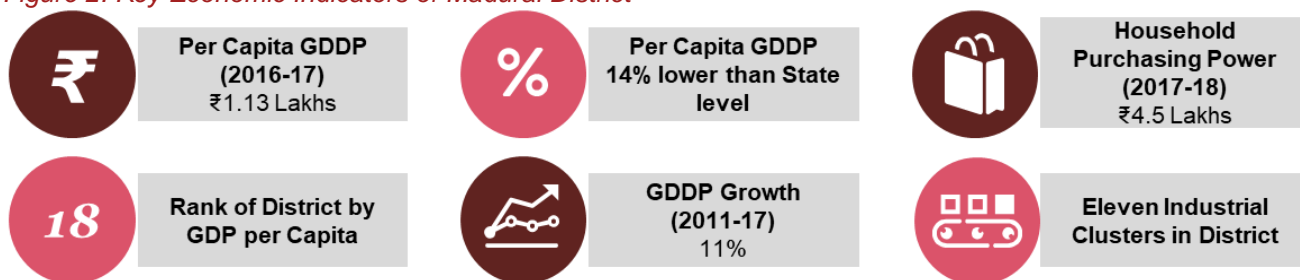
Figure 1: Age-wise Population Pyramid of Madurai (2011 vs 2026)³



Madurai's population has a similar median age to the state. In addition, the district is highly urbanized, with a large literate population. It is an industrial and tourist hub, connected to other major districts such as Dindigul and Tiruchirappalli.

Madurai is one of the more industrialized districts of the state and contributes to 3.6% of the states GDP⁴. The district has a flourishing textile industry, with food and rubber processing contributing to the economy as well⁵. The district is also connected to the industrial bases in Dindigul and Tiruchirappalli in the form of employment and trade. The district has a per-capita GDP which is slightly lower than the state level⁶.

Figure 2: Key Economic Indicators of Madurai District



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

³ Age wise Population projected for 2026 based on age group wise life expectancy, birth and death rates

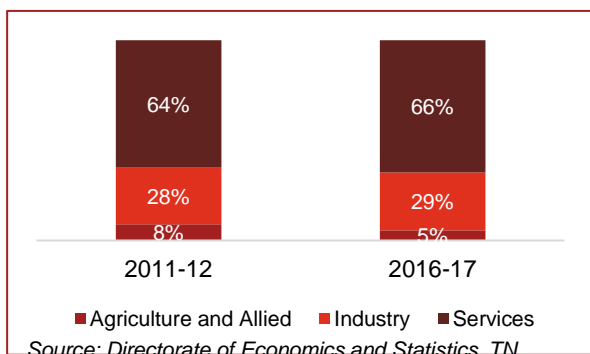
⁴ D0ES, GoTN

⁵ District Industries Profile, DC-MSME, 2015-16

⁶ PwC Analysis

⁷ 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.

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



⁸ in the year 2016-17 shows that the service sector contributes the most (around two-third) to the district economy, followed by the industrial sector (which contributes slightly less than one-third). This is similar to the break-up of the state-level GVA. In both cases, the agriculture sector only contributes less than one-tenth of the total economy. In 2016-GSDP was around 3.6%⁹. The economy has grown at a Compounded Annual Growth Rate (CAGR) of 5% between 2012-13 and 2016-17, which could possibly have been aided by the growth of the service sector, which grew at a CAGR of 5%. The table below presents the annual growth rates and

CAGR for each sector.

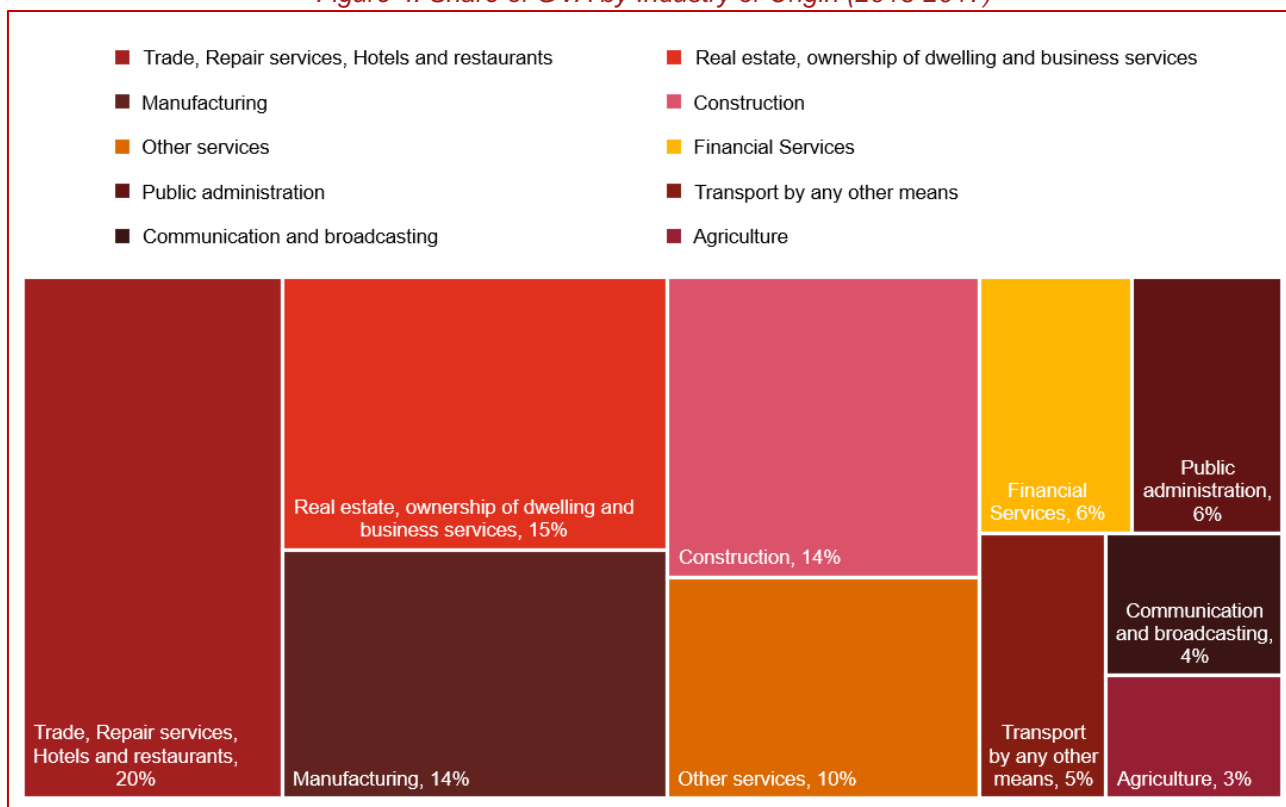
Table 2: Sector wise- Annual Growth Rate in Madurai

Sector	2012-13	2013-14	2014-15	2015-16	2016-17	CAGR between 2011-12 and 2016-17
Agri & Allied	-29%	32%	1%	4%	-11%	-2%
Industry	7%	7%	1%	14%	3%	5%
Services	7%	9%	8%	4%	4%	5%

Source: Directorate of Economics and Statistics, TN

Ten sub-sectors contribute to around 95% of the GVA. Trade, repair services, hotels and restaurants are the biggest contributor, followed by real estate, manufacturing, construction, other services and financial services.

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



Source: Directorate of Economics and Statistics, TN

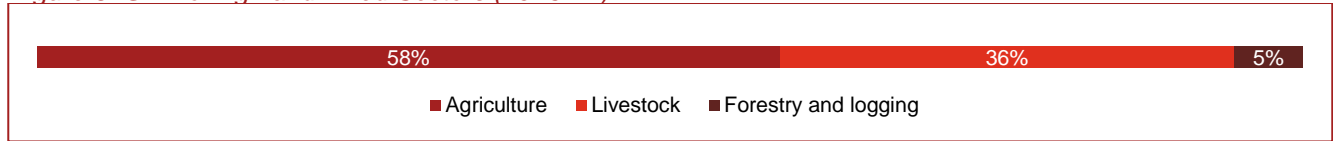
⁸ Directorate of Statistics and Economics, Department of Planning, Government of Tamil Nadu

⁹ State Income, Directorate of Statistics and Economics, Department of Planning, Government of Tamil Nadu [http://www.tn.gov.in/dear/State%20Income.pdf]

Agriculture and Allied Sector

The agriculture and allied sector is a major in the district is dominated by cultivation, livestock and and forestry and logging. Major crops include: paddy, millets, and redgram, greengram, groundnut, cotton, sugarcane and banana.

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



Source: Directorate of Economics and Statistics, TN

Industrial Sector

Recent growth in the manufacturing sector (9% between 2011-12 and 2016-17) has enabled a growth of the Industrial sector 5% per annum over the last 5 years. The sector is dominated by the Manufacturing and Construction sub-sectors - they account for almost 95% of the output. Textiles, food processing, rubber processing, chemicals and fertilizers are some of the key industries in the district.

Figure 6: Industrial Sector GVA (2016-17)

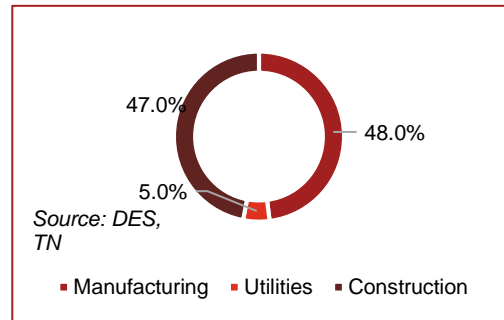


Table 3: Key Clusters and Traditional Industries

SIDCO Industrial Estate K. Pudur	SIDCO Industrial Estate Kappalur	Textile Testing and Development Centre Kappalur
Automobile Co-Operative Industrial Estate Kappalur	Madurai Hosiery Industrial Association Estate Uranganpatti	Madurai Rubber Park Virattipattu
Electrical & Electronic Industrial Estate Kappalur	CPS Milling Cluster Millakaranai	Gold and Imitation Jewellery Cluster Madurai Block
Paper Mache cluster Vilacheri	Plastic Processing Madurai block	Engineering Cluster Melur
Rice Mill Cluster Madurai Block	Industrial Park Kappalur	

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 GVA
Wearing apparel, except fur apparel	108	146	15819	25%	58.4%
Rubber products	101	100	10062	16%	14.5%
Spinning, weaving and finishing of textiles	170	41	6881	11%	5.8%
Other chemical products	66	55	3638	6%	2.8%
Dairy products	8	274	2194	3%	2.7%
Medical and dental instruments and supplies	3	249	774	1%	1.5%
Other textiles	23	87	1993	3%	1.3%
Total (all sectors)	1,619	39	62,875	100%	100%

Source: Annual Survey of Industries 2014-15

An analysis of data from Annual Survey of Industries (2014-15)¹⁰ shows that seven sub-sectors contribute 80% of the Gross Value Addition (GVA) in the industrial activity of the district. Textiles, food processing and chemicals are dominant.

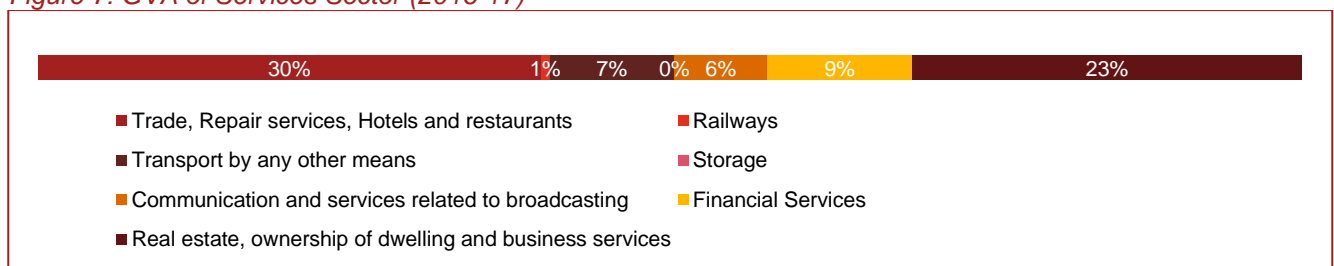
Existing Industrial Estates

- SIDCO Industrial Estate, K. Pudur
- SIDCO Industrial Estate, Kappalur
- Automobile Co-Operative Industrial Estate, Kappalur
- Electrical & Electronic Industrial Estate, Kappalur
- Madurai Hosier Industrial Association Estate. Uranganpatti

Services Sector

Trade and repair services contribute around one-third of the Service sector GVA, followed by Real Estate, Ownership of Dwellings, etc. Other sectors of note include Other Services, Public Administration, and Financial Services.

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



Source: Directorate of Economics and Statistics, TN

Traditional Sector

Sungudi Saris – Madurai town

The Saurashtra community in Madurai is known for their artisanal work. They specialize in a tie-and-dye technique known as sungudi which refers to circular designs on saris. The Sungudi technique has obtained Geographical Indications (GI) registration. The community develops both the dyes and the dyeing process, resulting in dyed cotton saris. Traditionally, the cotton saris are produced in handlooms, and the dyes made from natural ingredients. There are currently around 150 weavers specializing in this work.

Run by a group of weavers from the community, Sungudi Creations, a sari manufacturer in the city maintains the tradition of natural dyes and tie-and-dye techniques, which specializes in natural dyes, and tie-and-dye by hand. The home-based unit produces 30-50 saris a month, with 25 members (mostly women aged 40 and above). The saris are exported across India and to other countries, and the orders come through social media applications such as WhatsApp. The founder, AK Ramesh is the President of the Madurai Sungudi Producers and Retailers Federation, and gives week-long training programs in natural dye production to students in fashion design.

Figure 8: Hand-dyed Sungudi Saris



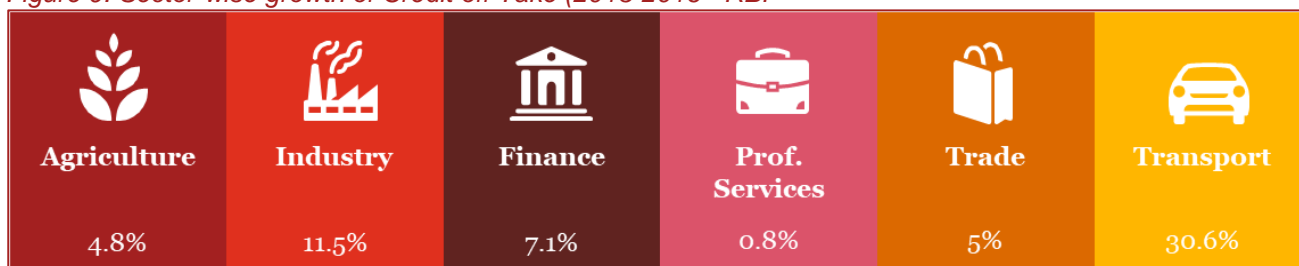
As with the handloom sector in Dindigul and other districts in Tamil Nadu, Sungudi saris have undergone mechanization - over the past few decades, sari production has shifted to power looms, and the dyes to chemical ingredients. Even the tie-and-dye method has gradually shifted to mechanized printing. These changes have occurred due to the following modernization of the textile sector and the subsequent rise of mass production of cheap garments, changing aspirations of the weaver communities, with later generations aspiring to expand to other careers/ sectors, and mass production of chemical dyes, making them cheaper and more cost-efficient than natural dyes.

[<https://www.thehindu.com/life-and-style/saving-the-madurai-sungudi-weave/article26213366.ece>]

The challenges faced by traditional Sungudi manufacturers include: low remuneration and profit margins per sari (each worker is paid ₹ 600 per sari, and each sari has at least 4,000 hand-made knots), longer process for making natural dyes, and price competition from mill-made saris. The workforce is also largely female, in the age group of 40 and above. Labour shortages exist for the job-roles of knotter and dye-maker, but workers face low wages and long hours.

Qualitative consultations revealed that the sector can be revived/ strengthened by conducting exhibitions, spreading awareness among fashion designers and retailers on natural dyeing techniques, and accessing new markets. Fashion designers are considered a crucial link between artisans and markets. Formation of a textile park with space for traditional processes can also help in scaling up the processes.

Figure 9: Sector-wise growth of Credit off Take (2013-2016 - RBI)



According to the data collected from the RBI, the District has seen recent growth in credit especially industry, transport, finance, trade and agriculture¹².

The upcoming All India Institute of Medical Sciences is expected to become functional in 2022¹³. The Madurai International airport is also a major subject of expansion, with an investment of ₹ 166 Crores¹⁴. In order to promote industrial development, SIPCOT has offered subsidized land in industrial parks in several southern districts, including Madurai. This benefits industries in food processing, Iron and Steel, Construction, and service sectors like two-wheeler repair. Information Technology Parks in the district are also getting incentives in the form of rental subsidies, free training to employees, and facilitation of tie-ups between Micro, Small and Medium enterprises and larger firms in the sector.

Another major driver of investment is the Madurai- Thoothukudi Industrial Corridor, which is aimed at providing ¹⁵. The Corridor is part of a larger project, the Chennai- Kanyakumari Industrial Corridor. The corridor is planned to contain industrial zones, residential townships, knowledge hubs and special tourism zones. The Government has identified 1,478 acres of land in Thirumangalam block for this purpose. The Indian Oil Corporation has commenced the Chennai Trichy Madurai pipeline project with an investment of ₹ 400 Crores.

The Tamil Nadu Food Processing Policy 2018 has several initiatives for the district: Modern Terminal Market Complexes for sale of agricultural produce and priority land allotment for food processing units in all SIDCO/ SIPCOT estates.

The Madurai City Corporation is focusing on the areas of water management, sewage management, intelligent public transport, street lighting, and tourism development for the Smart City Mission, with an initial investment of ₹ 527 Crores¹⁶. MADITSSIA, the largest MSME industry association in the district is promoting an engineering cluster in Thumbaipatti. The cluster is expected to span 50 acres and 25 units, providing employment for up to 500 workers¹⁷.

Service sectors, food processing construction, transportation and real estate are major sectors with growth potential and investments. The district has several industrial estates and clusters, which fall under the purview of multiple industrial promotion programs and industrial corridors.

Credit offtake is defined as an increase in credit growth, which happens when lenders mobilize funds to commercial sector in order to earn better returns compared to government bonds and securities. Data collected from districtmetrics.in

¹³<http://www.newindianexpress.com/states/tamil-nadu/2019/jan/31/japanese-agency-to-finance-aiims-madurai-centre-sources-1932331.html>

¹⁴ <https://timesofindia.indiatimes.com/city/madurai/runway-expansion-to-take-off/articleshow/63072196.cms>

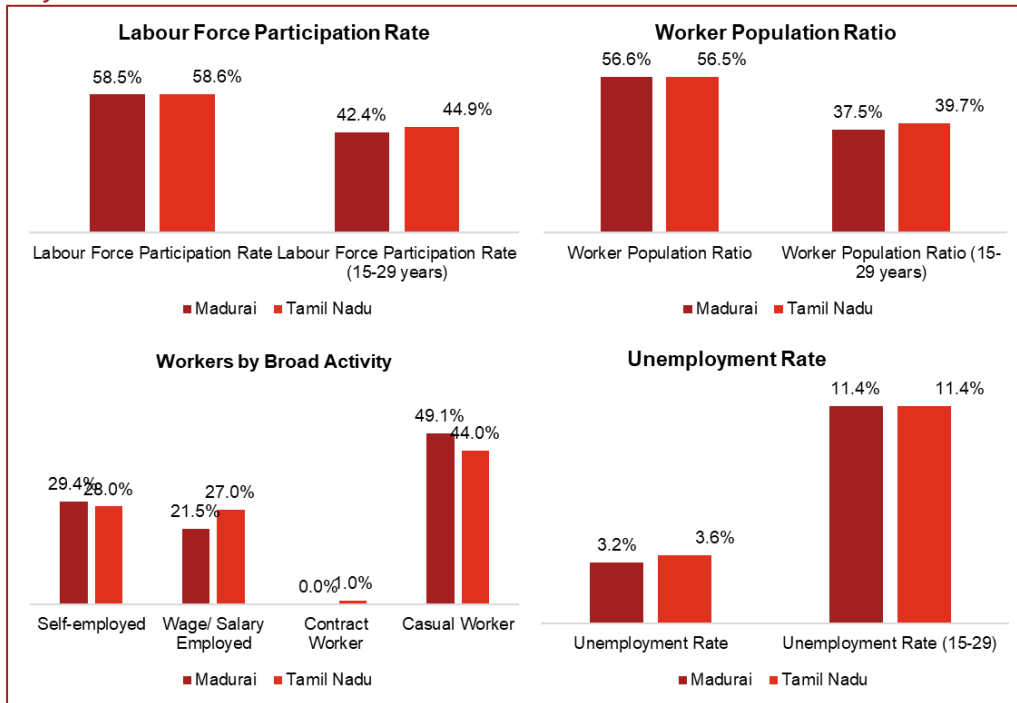
¹⁵ Industries Policy Note (2018-19), Government of Tamil Nadu

¹⁶ <http://www.maduraicorporation.co.in/madurai-smart-city-round-2.html>

¹⁷ <https://www.thehindu.com/news/cities/Madurai/industrialisation-holds-key-to-development/article24133259.ece>

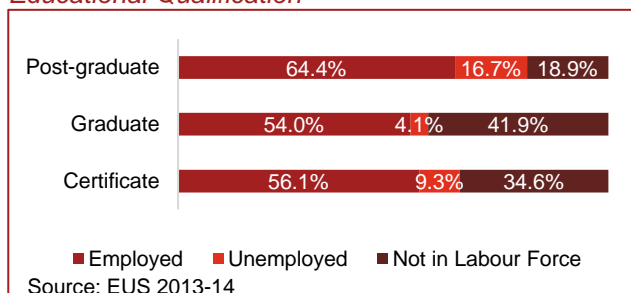
overall labour force participation and worker population ratio are lower than the state figures, and for the youth population (15-29 years). This could however be connected to the fact that youth may be in the education system. Almost half of the workers in the district seem to be in casual labour, higher in proportion than at state level. Youth unemployment is at par with the state level, at 11.4%.

Figure 10: Key Labour Market Indicators¹⁸



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

Figure 11: Distribution of working status by Educational Qualification



The education-level classification of labour market indicators suggests that among diploma holders and post-graduates, the unemployment share is higher than 10%, while graduates have a significantly lower share of unemployed (4.8%). More investigation would be required to unearth causes/ factors affecting the employment of diploma holders and post-graduates.

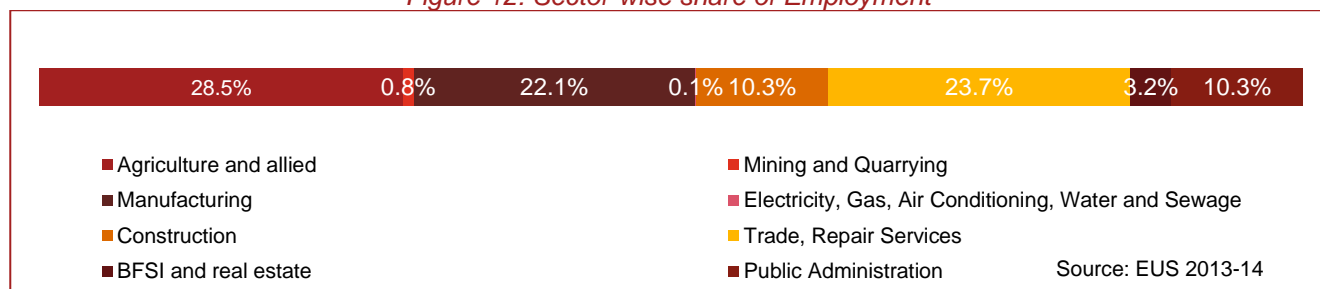
Table 5: LFPR and Unemployment Rate by Sex & Location

Sex	LFPR		Unemployment Rate	
	Rural	Urban	Rural	Urban
Male	79.7%	75.7%	2.2%	1.6%
Female	54.7%	28.7%	5.1%	6.6%
Total	67.4%	51.7%	3.4%	3%

Disaggregation by area and sex, it is found that females have a rural labour force participation rate about 26 percentage points higher than the urban counterpart. The urban unemployment rate for females is slightly higher than the rural counterpart.

¹⁸ District Level Estimates, EUS, 2013-14, Labour Bureau

Figure 12: Sector-wise share of Employment



Around 29% of the labour force is in the agriculture and allied sector, followed by 24% in trade and repair services. Around 22% are engaged in manufacturing, and 10% in construction.

A large share of the population is employed in in agriculture, and trade. A significant share is employed in manufacturing and construction. However, unemployment among those with post-graduate education is a concern.

Madurai is known for the Madurai Kamaraj University, a major state university. In addition, the degree and engineering colleges in the district get an influx of students from other districts and states. Indicators related to education are presented below:

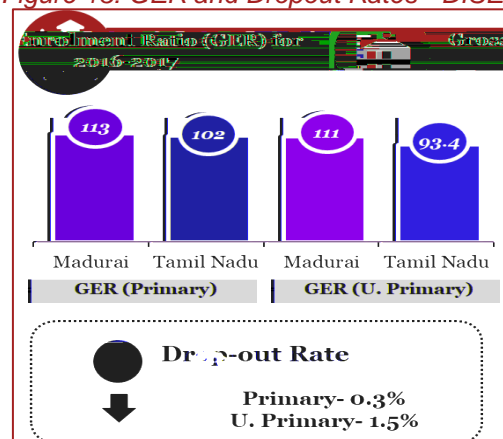
Table 6: Elementary Education Profile - DISE

Particulars	Number
Schools in 2017	2,149
Pub. Schools	1,264
Pvt. Schools	856
Enrolment in 2017	4,13,497
Enrolment in Public Schools	1,49,242
Enrolment in Private Schools	2,61,571

Source: DISE 2016-17

The Gross Enrolment Ratio¹⁹ at both Primary and Upper Primary are much higher than the state averages. The ratio indicates that the number of students in the district outstrip the expected population in the age cohort by a significant margin. The dropout rates are marginal at 0.3% at the primary level and 1.5% at the upper primary level.

Figure 13: GER and Dropout Rates - DISE



Engineering and teacher training colleges are dominant in the district. The table below presents the number, enrolment and pupil teacher ratio for higher education institutions in the state.

Table 7: Institutions of Higher Education in Karur District²⁰

Type of Institution	No. of Institutions	Students			Pupil- Teacher Ratio
		Male	Female	Total	
University	1	408	527	935	5
Engineering Colleges	16	13,053	6,727	19,780	11
Agricultural Colleges	2	111	144	255	27
Medical Colleges	1	266	986	1,252	164
B.Ed. Colleges	18	824	867	1,691	143
Polytechnic Colleges	9	6,236	1,949	8,275	415
General Arts and Science Colleges	6	6,065	6,886	12,951	460
Industrial Training Institutes	15	-	-	2,871	-

Source: District Statistical Profile (2016-17), NCVT - MIS

¹⁹ Total enrolment in elementary education, regardless of age, expressed as a percentage of the official age-group of the population which corresponds to the elementary education in a given school year. The GER shows the general level of participation per stage of school education.

²⁰ District Statistical Handbook, Govt. of Tamil Nadu

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). The table below 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 Kaushal Yojana	Agriculture	Gardener	1	10
		Organic grower	1	16
	Apparel	Self Employed Tailor	1	14
		Sewing Machine Operator	2	11
	Beauty and Wellness	Pedicurist & Manicurist	2	15
	BFSI	Accounts Executive - Accounts Payable and Receivable	1	25
	Electronics and Hardware	Field Technician - Computing and Peripherals	2	20
		Field Technician - Other Home Appliances	1	6
		Mobile Phone Hardware Repair Technician	1	17
	Handicrafts and Carpet	Bamboo Basket Maker	1	5
	Leather	Stitcher (Goods & Garments)	1	16
	Media and Entertainment	Hairdresser	1	9
		Sound Editor	1	24
	Retail	Retail Sales Associate	2	20
	Logistics	Documentation Assistant	1	52
Tamil Nadu Skill Development Programs	Textile And Apparel	Tailor (Basic Sewing Operator)	5	520
		Zardosi Work	1	20
		Jacket, Jodhpuri & Sherwani making	1	20
		Sewing Machine Operator	2	60
		Hand Embroiderer	1	60
	Plastic Processing	CNC milling programming & operation for plastics industries (CNC M)	1	160
		CNC lathe programming & operation for plastics industries (CNC L)	1	40
		Plastic Mould assistant for injection moulding	1	80
		Machine Operator Tool Room MO TR	1	80
		Machine Operator - Electrical Discharge Machine(MO - EDM)	1	40
		Machine Operator - Plastic Processing (MO - PP)	1	80
		Blow & Roto Moulding Machine Operations (BRMO)	1	80
		Testing & quality for plastics materials & products (TQC)	1	40
		Plastics product and mould design (PPMD)	1	160
		Auto and Auto Components	Basic Automotive Servicing 2 wheeler 3 wheeler	1
	Basic Automotive Servicing 4 wheeler		2	60
	Modeller		1	40
	Construction	Electrician Domestic	3	60
		Plumber	1	40
	Information and Communication Technology	Computer Network Assistant	1	20
		Computer Hardware Assistant	1	40
		Web Designing and Publishing Assistant	1	40
		Animation and Multimedia Assistant	1	20
		Accounts Assistant using Tally	1	40
	Medical And Nursing	General Duty Attendant (GDA)	1	190
		Pharmacy Assistant	1	20
		Basic Testing Equipments (Pharmacy)	1	20
		Therapeutic Massage Technician	1	20
		Basic of Anatomy & Physiology	1	20
		EMG Technician	1	20
Bedside Assistant		1	20	

		Nursing Aides	1	20
Gem And Jewellery		Jewellery in Organized Retail Management	1	20
		Foundation Course for Jewellery	1	20
		Kundan Jewellery Maker	1	40
		Appraiser and Valuer	1	20
Beauty and Wellness		Bridal Make up Artist	2	160
		Pedicurist and Manicurist	1	20
Fabrication		Arc and Gas Welder	1	20
Refrigeration & Air Conditioning		Repair and maintenance of Window and Split A.C	2	40
BFSI		Accounting	2	120
		Accounts Executive Receivables & Payable)	1	20
Retail		Sales Associate	1	70
Electronics		Mobile Phone Hardware Repair Technician	1	20
Agriculture		Dairy Worker	1	40
		Vermiculturing & Vermicomposting	1	20
Domestic Work		Child Care taker	1	20

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

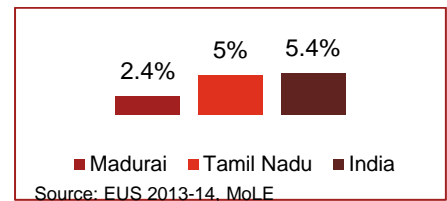
The long-term skill development programs are predominantly offered through Industrial Training Institutes, which offer one and two year programs in various sectors and trades. The table below presents the courses offered through ITI, and the number of such institutes offering each trade/ training for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

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

Sector	Trade	Number of institutions	Intake	
Automobiles and Components	Auto 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, Surveillance and Communication	Automation, and	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				

With respect to population aged 15 and above who have undergone vocational training, around 2.4% in Madurai 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 figures²¹.

Figure 14: Population Undergone Vocational Training

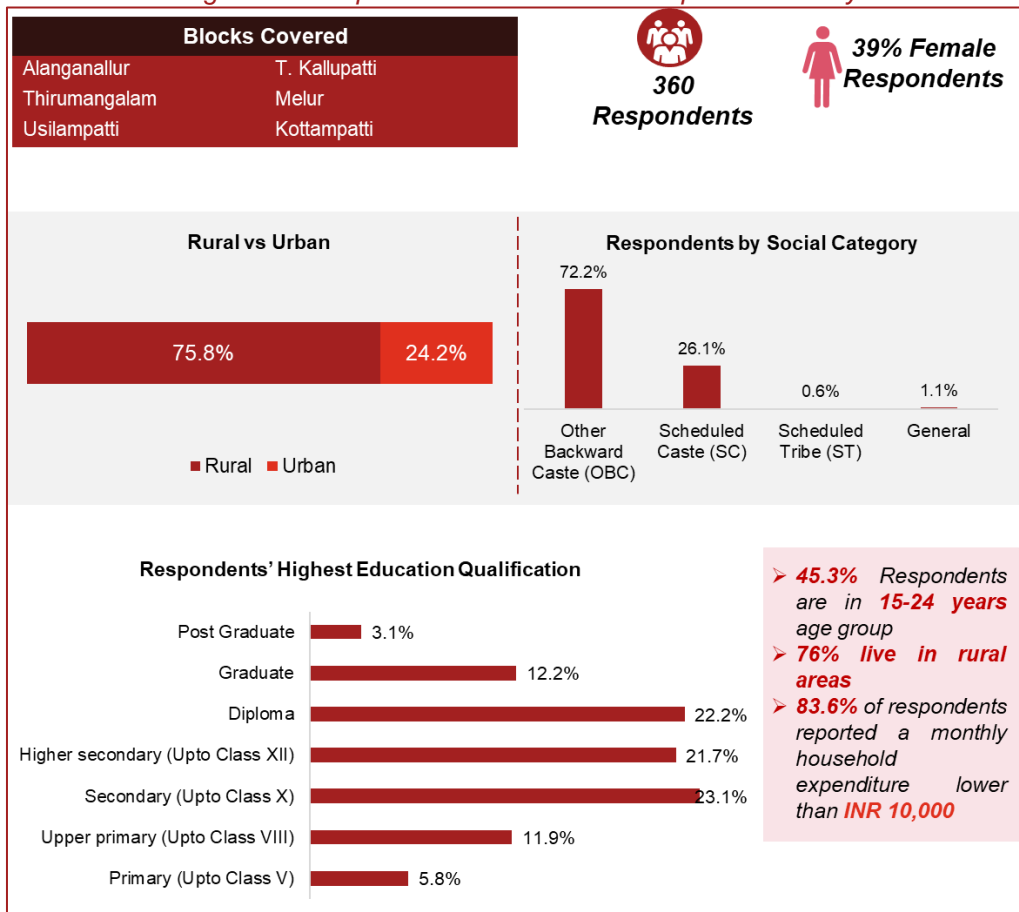


The district has an expansive education system. The vocational training infrastructure is supported by institutions such as the Central Institute of Plastics Engineering and Technology (CIPET), Meenakshi Mission Medical College, Tamil Nadu Agricultural University, and industrial training partners (TVS, Maruti, Fenner, etc).

²¹ Employment and Unemployment Survey, 2013-14, Ministry of Labour and Employment

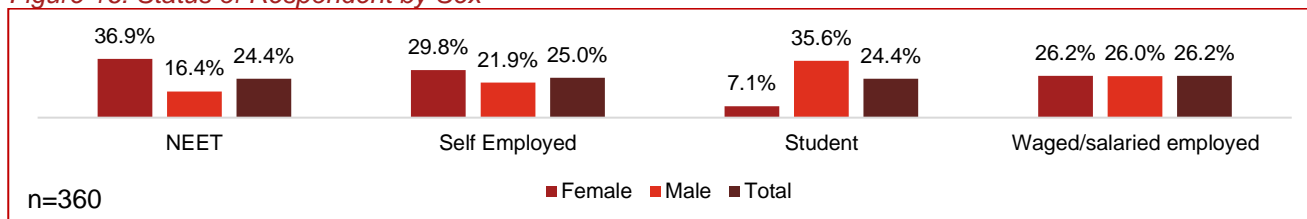
The structured household survey tool was administered with the 360 youth (young men and women in the age group of 15-34 years) from across six blocks. The figure below presents the respondent profile.

Figure 15: Respondent Profile of Youth Aspiration Survey



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 (36.9%) category, and the rest predominantly in self²² and wage employment. Around 36% of male respondents were students, and the rest in self and wage employment. Overall, 56% of female respondents and 48% of male respondents were engaged in economic activity.

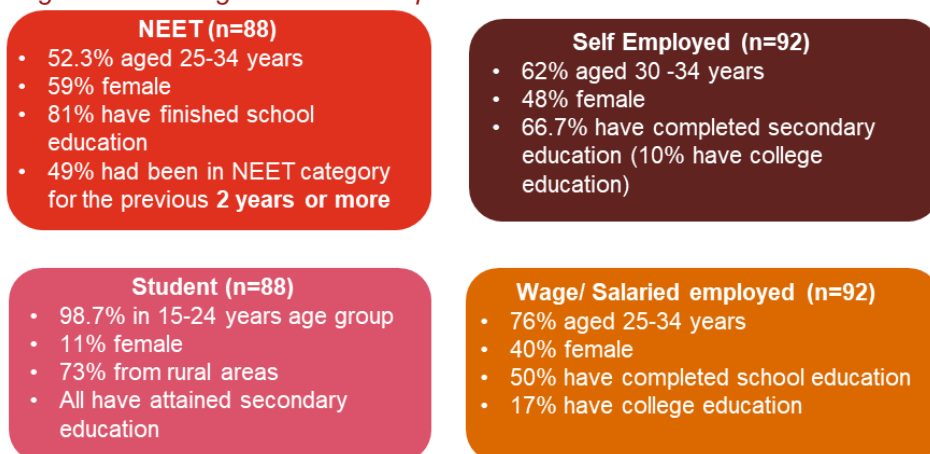
Figure 16: Status of Respondent by Sex



²² Traditionally self-employment includes both enterprises and engaging in a profession/ trade on own account (as defined in the National Sample Surveys on Employment and Unemployment [http://mospi.nic.in/sites/default/files/publication_reports/nss_report_554_31jan14.pdf]). However, in this study, it has emerged that youth prefer to be engaged independently in a trade/ profession on their own account more than setting up an enterprise.

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

Figure 17: Findings based on Respondent Status



Slightly less than half of respondents (52%) were currently engaged in work, and less than 13% had previously worked and were currently not working. Around 88% the respondents who had ever worked stated that their work was related to their training. The median monthly income of those who ever engaged in economic activity was 7,650. While it was 8,200 among males, it was 7,250 among females. 84% of female respondents had earned a monthly income of 0,000 or lesser. The overall median income was lower than the figure below presents the distribution of respondents by monthly income category:

Figure 18: Distribution of Respondents across Monthly Income Category across Sex

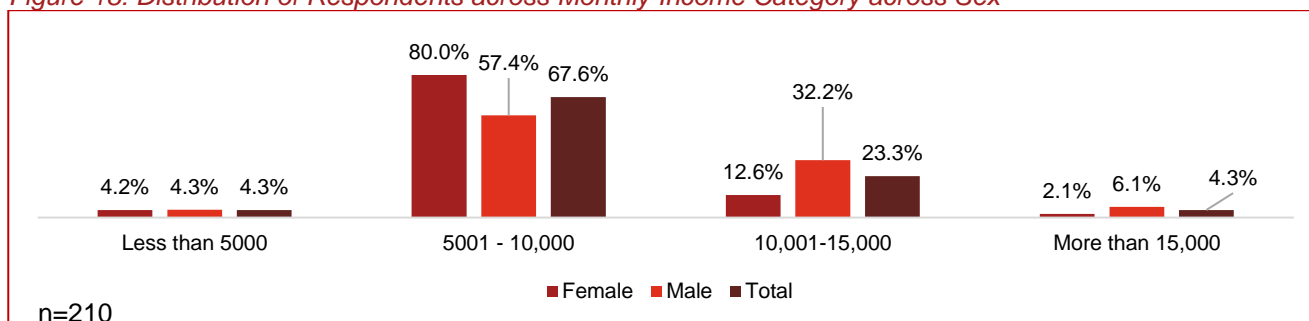


Table 10: Education Qualification of Respondents and Employment Type

Type of Employment	Primary (Upto Class V)	Upper primary (Upto Class VIII)	Secondary (Upto Class X)	Higher secondary (Upto Class XII)	Diploma	Graduate	Post Graduate	Total
Farm Activities	29.4%	18.9%	13.0%	8.7%		7.7%		25
Livestock			1.9%			3.8%		2
Unskilled worker	17.6%	40.5%	25.9%	32.6%	22.7%	15.4%	12.5%	57
Salaried Employment (teacher, government official, etc.)			3.7%	17.4%	13.6%	30.8%	25.0%	23
Skilled worker (tailor, mason, electrician, plumber etc.)	29.4%	13.5%	22.2%	10.9%	31.8%	26.9%	12.5%	42

Petty Business/Trade/Manufacturing	23.5%	29.7%	35.2%	32.6%	27.3%	15.4%	25.0%	61
Major Business/Trade/Manufacturing					4.5%	0.0%	25.0%	3
Total	17	37	54	46	22	26	8	210

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

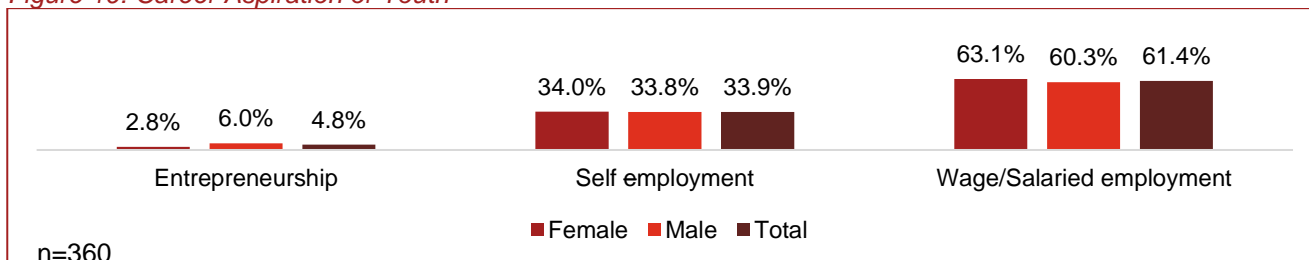
Around 24% of the respondents were in NEET category. Within this category, 52% were in 25-34 age group and 59% were female. Around 86.3% had finished college education. Around 49% had been in the NEET category for two years or more. Around one-tenth had been in the category for more than four years. Almost 52% the respondents stated that they wished to work, and out of these, 82% stated that they had been searching for a job. The table below presents the frequency of respondents by duration in NEET category.

Table 11: NEET Category Respondents

Duration in NEET Category (n=88)			
	Female	Male	Total
Less than 6 months	1.9%	19.4%	9.1%
6 months- 1 year	5.8%	33.3%	17.0%
1- 2 years	19.2%	33.3%	25.0%
2- 3 years	42.3%	2.8%	26.1%
3-4 years	15.4%	5.6%	11.4%
4-5 years	9.6%	0.0%	5.7%
More than 5 years	5.8%	5.6%	5.7%

Youth aspirations for type of employment seems to skew towards waged/ salaried employment, with both male and female respondents showing this pattern.

Figure 19: Career Aspiration of Youth



The main factors determining the aspiration of the youth are Salary (wages)/ Income (89.2%), job security (82.5%) and social status (20.3%). About 29.3% of the youth (those not in NEET or student category) feel they are largely prepared for requirements for a job, and only 9.8% of the respondents felt they are unprepared for jobs. The work experience in area of job (67.5%). Around 22.3%

Adequate educational qualification Around 54% of respondents felt that jobs were adequately available. Findings related to factors, preparedness for ideal job and perception of availability of jobs are presented below.

Table 12: Career Aspiration - Factors, Preparedness and Availability of Jobs

Factor Determining Aspiration (n=360)*	Responses	Perception of Preparedness for Job (184)	Responses
Salary (wages) / Income	89.2%	Largely Prepared	29.3%
Job Security	82.5%	Moderately Prepared	8.7%
Social Status	20.3%	Somewhat prepared	52.2%
Closeness to Residence	18.9%	Not Prepared	9.8%
Flexible work arrangements (location, schedule)	9.7%	Availability of Jobs (n=360)	
Safety / Security	5.0%	Very Adequate	54.2%
Gender suitable role	2.8%	Neither adequate nor inadequate	14.7%
Traditionally Acquired Skills / Family Business	1.1%	Somewhat inadequate	5%
Opportunities for promotion and career development	1.1%	Very inadequate	26.1%

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

Among the challenges, which the youth see in pursuing their ideal careers, unsafe working environment figures prominently. Other challenges include pressure related to getting married, lack of guidance/ information on appropriate jobs, lack of jobs locally. The responses are presented below:

Table 13: Career Aspiration – Challenges in pursuing desired career

Challenges (n=360)	Responses*	Challenges (n=360)	Responses*
Unsafe working environment	49.4%	Lack of work experience	1.7%
Pressure related to getting married	48.9%	Lack of sufficient education qualification	1.4%
Lack of guidance / information on appropriate job available for skill levels	13.9%	Lack of Soft Skills	1.4%
Lack of jobs locally	11.9%	Lack of technical / vocational skills	0.3%
Low financial strength	6.7%	Inadequate infrastructure to access work-place	0.3%
Lack of family support / social acceptance of girls being engaged in economic activity	1.9%	Others	0.3%

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

The key factors determining their employability, according to the respondents were basic and soft skills, and education attainment. The responses are presented below:

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

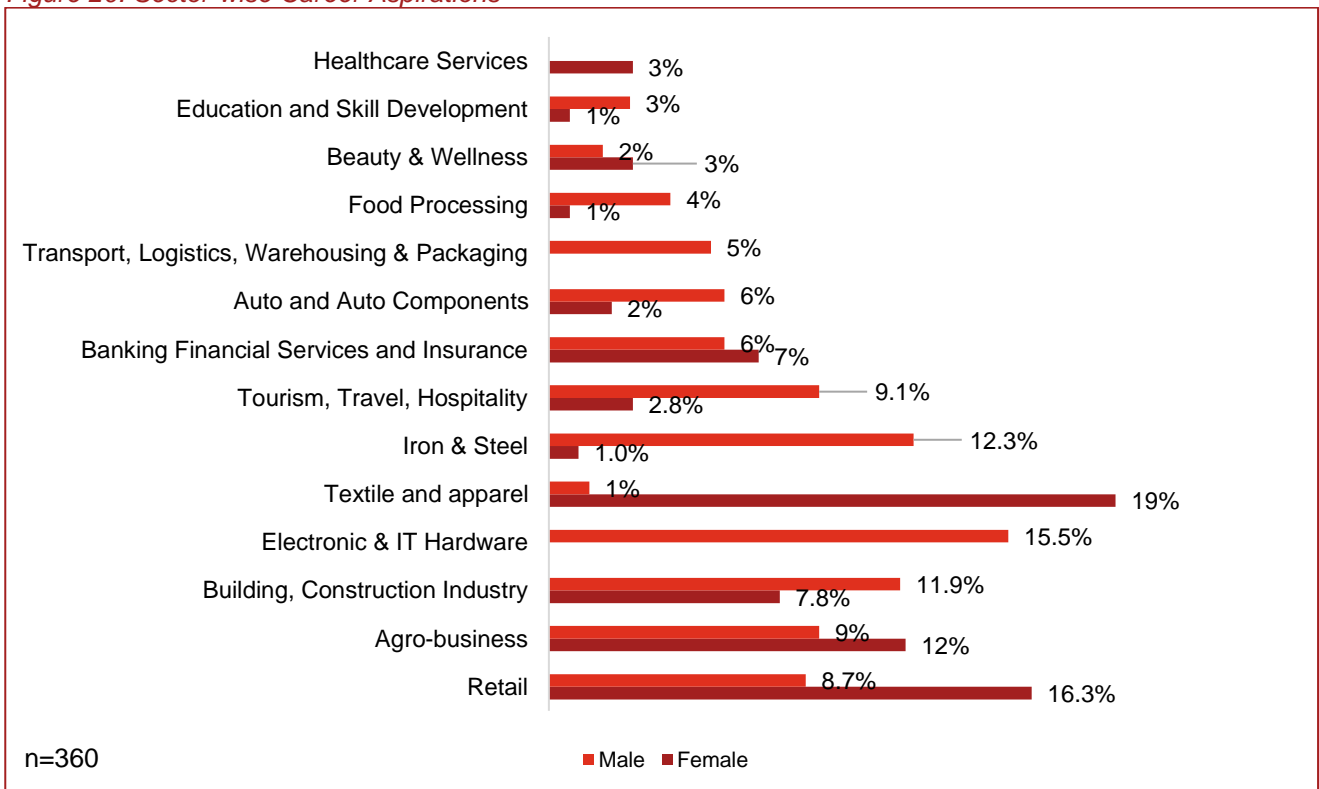
Key Requirements to enhance employability (n=360)			
Requirements	Responses	Requirements	Responses
Basics and soft skills	40.3%	Certifications of Technical Skill	6.9%
Education attainment (level of education)	25.8%	Performance in Interviews	3.3%
Years of Work Experience	18.1%	Relevant work experience in similar position or field	2.5%
Key Skills Required for desired job (n=360)*			
Clear communication	81.9%	Attention to detail	5.3%
Analytical thinking	48.3%	Coordination Skills	4.4%
Team work	23.6%	Critical thinking and analysis	3.1%
Time management	9.4%	Creativity, originality and initiative	2.8%

Active listening	7.2%	Complex problem-solving	1.4%
Leadership	5.8%		
New Steps to achieve aspirations (n=360)*			
Vocational/ Skill Training	43.3%	Already Achieved	25.6%
Continuing Education	29.2%	Apprenticeship / Gathering Work Experience	43.6%

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

The retail sector is the most popular and aspired sector among the respondents with 12% youth preferring it, followed by agro-business (10%), and building and construction (10%). Other Sectors include electronics and IT hardware, textile and apparel, and iron and steel. Around 69% of respondents indicated a preference for part-time training, and 80% in short-term courses (duration less than 6 months). The gender-wise responses reveal the following: female respondents cited textile and apparel, retail, agro-business and building and construction. Male respondents cited electronic and IT hardware, iron and steel, building and construction, and tourism.

Figure 20: Sector-wise Career Aspirations



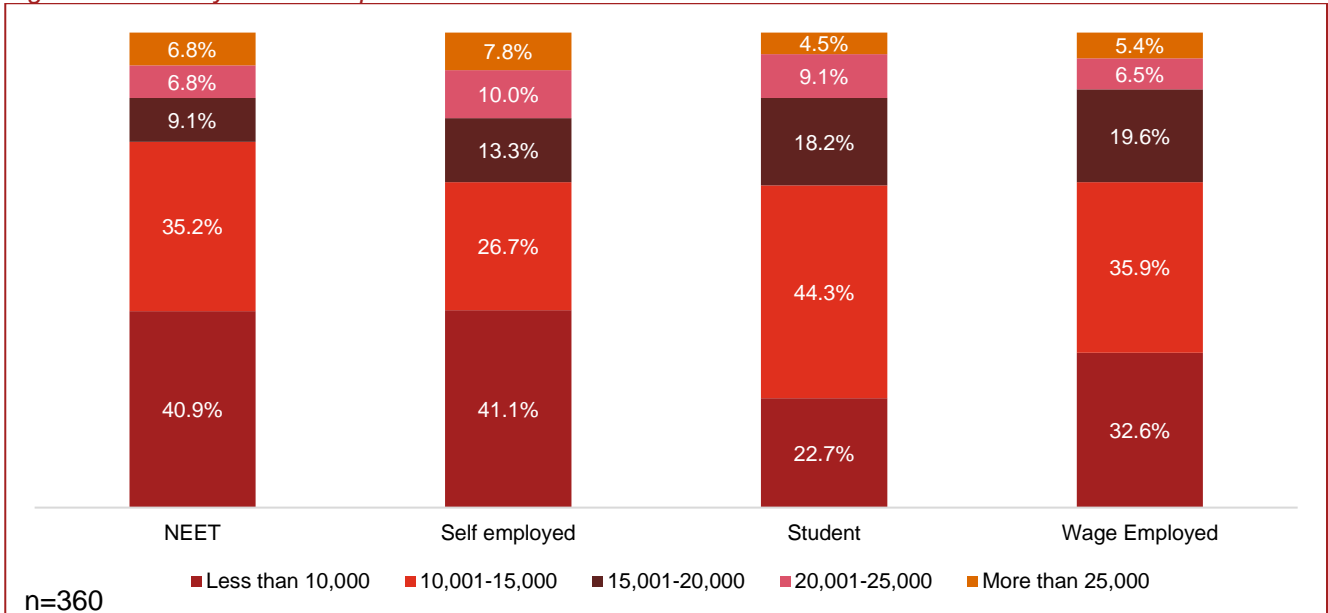
The below graphic presents the gender-wise preferred sectors.

Figure 21: Gender-wise Preferred Sectors



Around 70% of the respondents have expectations of monthly income less than 15,000. It can be seen from the figure below that the income expectations are similar across respondent categories.

Figure 22: Monthly Income Expectations



More than 90% of the respondents preferred a job within their hometown. Less than 6% were willing to migrate outside the district for work. Around two-thirds of the respondents were willing to move within the district for work.

The most common source of job-related information cited by the respondents is (81%), followed by newspaper/ other media (80%). Around 39% stated that they get job-related information from the District Employment Office/ National Career Services. The gender-disaggregated findings are presented below:

Figure 23: Location Preference for Work*

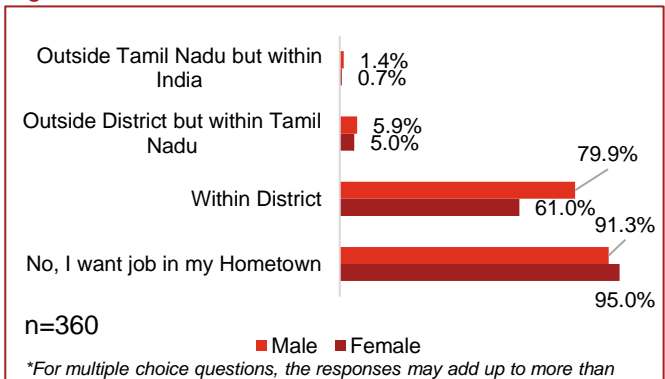
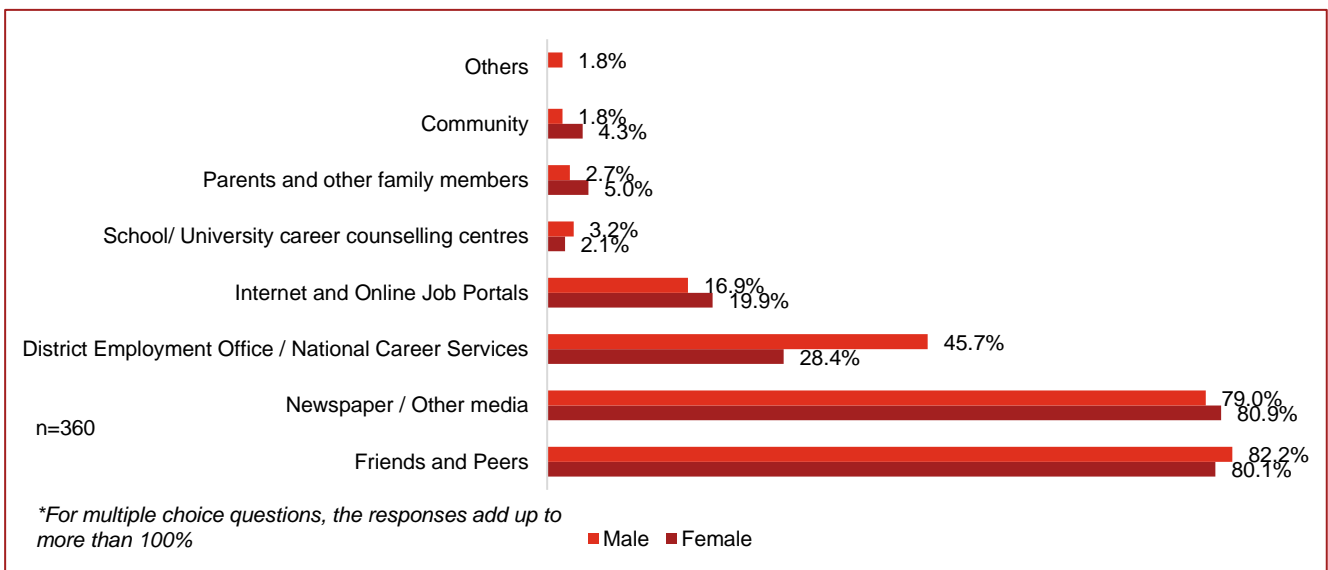


Figure 24: Sources for Job Information*



Around half the respondents stated that counselling services were somewhat adequate. In terms of their expectations from counselling services, more than half wanted information on relevant vacancies, placement services and advice on how to look for a job.

Figure 26: Accessibility to Counselling Services

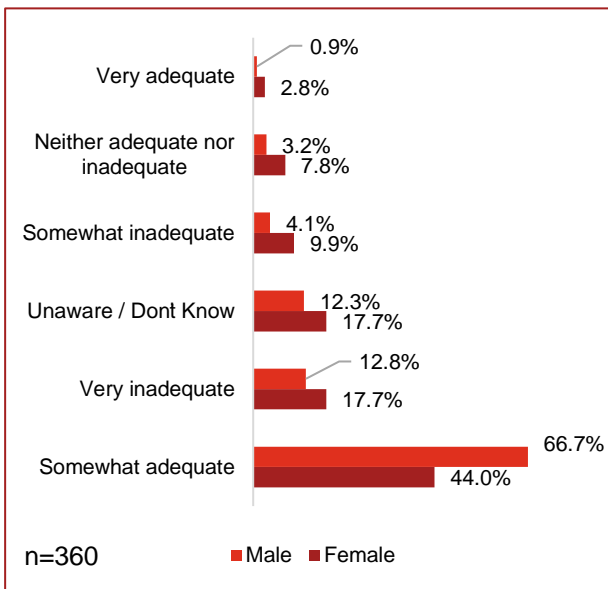
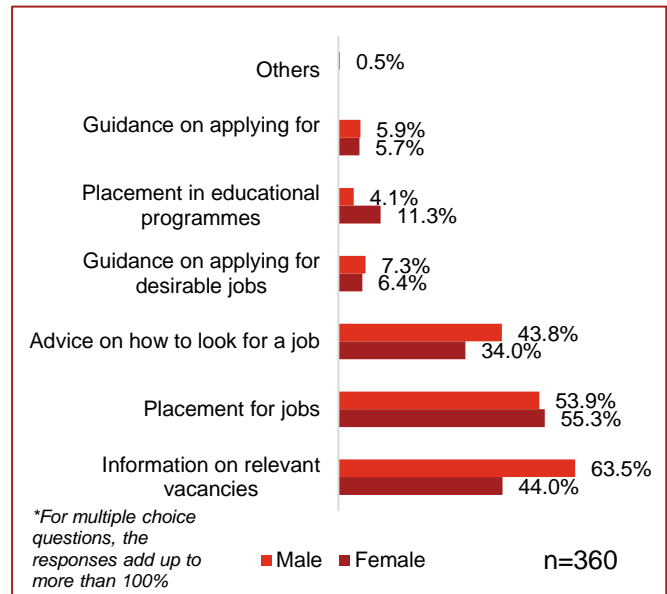


Figure 25: Preferences for Counselling Services

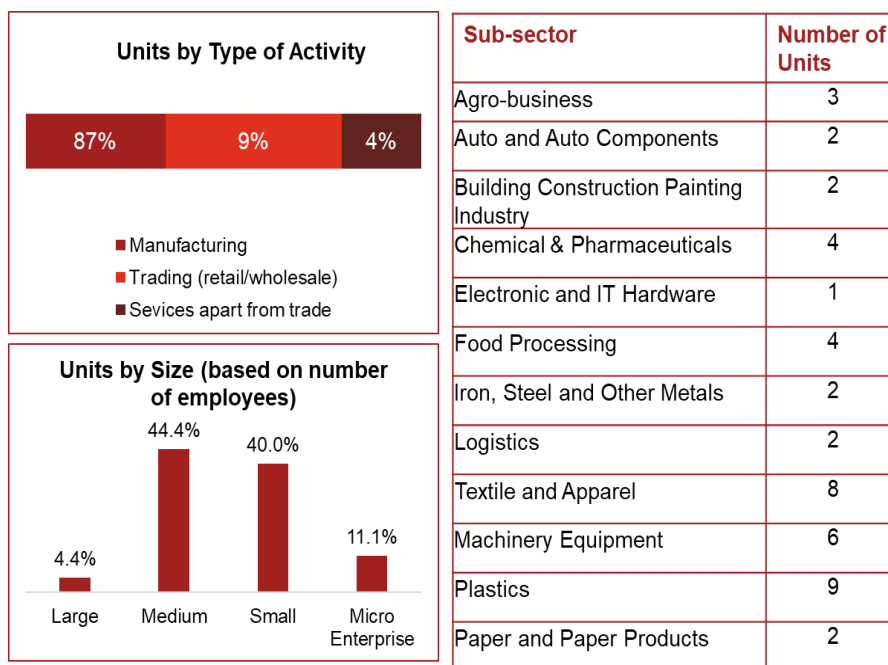


Around 2.2% of the respondents (eight in total) stated that they were aware of government-run training programs, and only two had undergone skill training in the past. Of those who had indicated interest in undergoing training for their ideal job (29.7%), Around 69.4% of respondents indicated a preference for part-time training, and 79.6% 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 internship/ apprenticeships, more than 80% of

Responses indicate that retail, agro-business, building and construction, electronics and IT hardware and textile and apparel are sectors in which youth aspire to work in. Youth have reported preferences for information on relevant vacancies and placement for jobs.

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 87% of the employers were in manufacturing, and 23% within these were in plastics sector. Slightly less than half of the employers were medium enterprises, 40% small enterprises and 11% micro-enterprises. The profile of respondents is presented below:

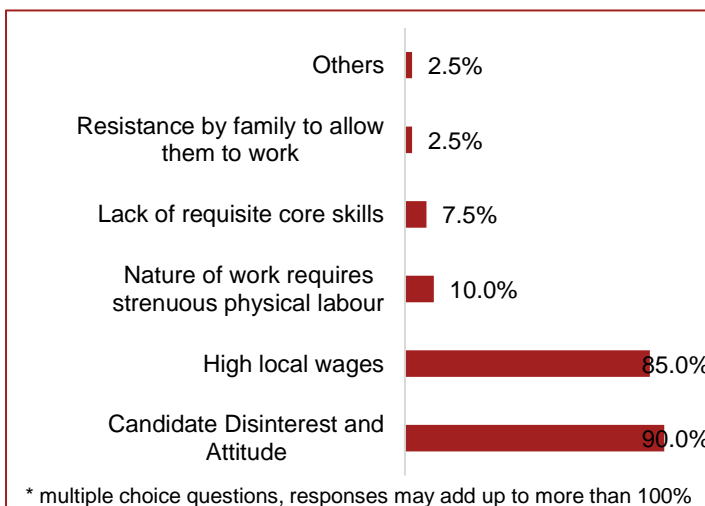
Figure 27: Profile of Respondents - Employer Survey



On average, the units had 29% of female employees in their workforce. Common methods of recruitment were found to be employee referrals (97.8%), local community (20%), campus recruitment in ITI/ Polytechnics (4.4%) and advertisements in newspapers (2.2%). Two respondents stated that they had recruited from vocational training institutions (ITI/ Polytechnics).

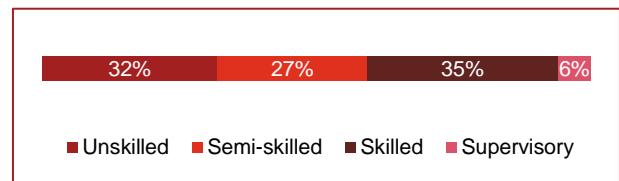
Challenges with respect to recruitment include: candidate disinterest and attitude (90%), high local wages (85%), requirement of strenuous physical labour (10%) and lack of requisite core skills (7.5%).

Figure 28: Respondents by Challenges in Recruitment*



With respect to organization of the workforce by skill level, 35% of workers on average in the units were skilled, 27% semi-skilled and 6% supervisory. On average, 86% of workers were daily wage workers. Around 89% of workers were from within the district, and the remaining from other states in the country. Questions on attrition yielded the following findings: annual attrition rates for male and female workers were 4.3% and 1.9% respectively. Causes for attrition included better job opportunities (100%), candidate disinterest (92.3%), and lower wages (88.5%).

Figure 29: Respondents by Skill Level of Workers



With respect to growth prospects and adoption of technology, the following findings emerged: nearly 78% of respondents felt that growth prospects were high, and 92.3% indicated interest in medium-level technology adoption. However, only 2.2% stated that they had plans for automation.

Table 15: Growth Prospects and prospective adoption of technology

Growth Prospects of Industry	%	Level of Technology adoption	%
High	17.5%	High	5.1%
Medium	77.5%	Medium	92.3%
Low	5.0%	Low	2.6%

Awareness regarding skill development programs was as follows: 92.7% of respondents stated that they were unaware of such programs. The rest reported awareness of the Craftsman Trainee Scheme, Pradhan Mantri Kaushal Vikas Yojana, and Tamil Nadu Skill Development Corporation.

A focus group discussion was conducted with stakeholders from various organizations in sectors such as plastic processing, chemicals, food processing, agro-processing, rubber processing and textiles. The following were the major points of discussion:

Table 16: Focus Group Discussion - Key Points

S No	Topic	Findings
1.	Awareness of Government-run skill development programs	<ul style="list-style-type: none"> MSME units are aware of schemes such as PMKVY, DDU-GKY and Amma Training Scheme. However, they feel that graduates of such schemes do not want to work in MSME units
2.	Perception ITI/ vocational training institutions	<ul style="list-style-type: none"> Students in general prefer engineering courses over ITI and Polytechnic courses Due to the low number of large industries in the district, local students wish to migrate to Chennai, Coimbatore and Hosur for work ITI can emphasize courses like carpenter and plumber due to the increased demand for such skills Institutions can expose students to the issues faced by industries an internship program which focuses on problem-solving and prototype-making will benefit both students and employers
3.	Migrant workers	<ul style="list-style-type: none"> Migrant workers work in unskilled job roles such as loading and packing They show high levels of attrition due to long absences each year Around one-fifth of migrant workers pick up skills and transition into skilled job roles
4.	Demand for labour	<ul style="list-style-type: none"> MSMEs require skilled labour in the areas of business development and marketing Rubber and plastic processing industries require molding operators The upcoming Southern District Textile Processing Cluster along the Madurai-Virudhunagar border²³ (promoted by MADITSSIA) would create demand for workers in stitching, dyeing and packing The engineering cluster promoted by MADITSSIA would also require skilled workers
5.	Areas requiring support/ strengthening	<ul style="list-style-type: none"> Capacity-building initiatives such as common facilities centres and training centres can be set up in clusters Large industries can be promoted to ensure that local skilled labour stays within the district

²³ [<https://www.thehindu.com/news/cities/Madurai/new-textile-processing-cluster-with-zero-discharge-units-virudhunagar-madurai/article27811324.ece>]

Interview with the District Tourist Officer revealed that youth with tourism and catering degrees can work with various organizations. Those with language proficiency in German, French, Chinese and other foreign languages can also find jobs managing foreign tourists. In recent years, catering in particular has potential, due to the growth in hotels and resorts. The Tourism department has trained over 100 youth to work as tour guides in various temples and tourist sites across the district, and undertakes this training for youth in Sivagangai district as well.

College/ ITI/ Training Institute representatives and Government Officials: The government Industrial Training Institute in K. Pudur conducts the Annual Apprenticeship Fair, wherein applicants in the National Apprenticeship Scheme interact with employing organizations. Discussions with the Principal and Placement Officer revealed the following: The ITI sends trainees to around 130 companies in the Madurai region. Female students work as Data Entry and DTP operators, and the other trades in demand are those in Mechanical and Electrical streams. The ITI also has a Skill Training Centre set up by Maruti, which has trained 80 students in the trades of Diesel Mechanic and Mechanic- Motor Vehicle. Maruti has set up six such centres in Government ITI, including Madurai, Coimbatore, Trichy, and Chennai.

latest technological developments and new models. The students are selected based on an aptitude test. Those who graduate the two-semester course are placed with Maruti. However, attrition rates after placement are high due to low salaries. The trainer stated that the practical ability of students was good, but they lacked theoretical learning.

only 70% of seat capacity was filled (150 out of 214 seats in four courses). The courses which are in demand are Computer Operator (COPA) and Electronics Mechanic, but only the former has enrolment. Since women face social and familial resistance, they refuse placement offers outside the district. COPA graduates take up apprenticeships in the Madurai Airport as Data Entry and Computer Operators. The Meenakshi Mission Hospital Medical College offers three BSc degrees in accident and trauma care technology, medical laboratory technology and medical records technology. Graduates and interns are currently placed within the Meenakshi Mission Hospital and Research Centre.

The district has a strong industrial base, as well as training institutions responsive to industry demands (within and outside district). Among ITI students, male students migrate to Chennai and Coimbatore for higher salaries. In the industrial sector, major challenges include: attrition, low wages, and preference for white-collar jobs. Notably, labour shortages are forcing industries to automate their processes. The service sector has the capacity to absorb youth, and is an aspirational sector, as evidenced by the interest in jobs in healthcare, food delivery, catering and hotel management.

The district is witnessing a growing industrial sector. As per our methodology for estimating demand and supply, it can be seen that **transportation and storage, manufacturing, construction, trade and repair services, communication and services related to broadcasting, education, human health and social work, and repair of household goods, along with other services**, show high levels of demand for both skilled and semi-skilled workers. The detailed methodology is presented in the Appendix (7.2).

Table 17: 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 ²⁷	48	66	114	336	461	796	910
Manufacturing	7,389	11,207	18,596	14,778	22,415	37,193	55,789
Utilities (Electricity, Gas)	78	110	188	156	221	376	565
Construction	1,446	2,177	3,623	3,615	5,442	9,057	12,679
Trade & Repair Services	1,045	1,470	2,515	3,618	5,089	8,707	11,222
Hotels and restaurants	546	768	1,315	1,058	1,489	2,547	3,862
Transportation and storage;	321	437	758	771	1,049	1,820	2,578
Communication and services related to broadcasting	2,968	4,750	7,718	1,484	2,375	3,859	11,577
Financial and insurance activities	2,540	3,886	6,426	1,270	1,943	3,213	9,639
Real estate, ownership of dwelling and business services	441	655	1,096	1,101	1,638	2,740	3,836
Public Administration	1,143	1,689	2,832	914	1,352	2,266	5,098
Education & Health	4,311	6,456	10,767	3,448	5,165	8,613	19,380
Arts and Entertainment	1,299	1,901	3,199	1,039	1,520	2,559	5,759
Repair of computers and personal and household goods	4,355	6,372	10,727	3,484	5,098	8,582	19,309
Other Services	2,063	3,019	5,081	1,650	2,415	4,065	9,146
Total Demand	29,992	44,965	74,956	38,723	57,671	96,394	1,71,350
Total Supply	14,223	18,964	33,188	19,412	25,883	45,296	78,483
Skill Gap	15,768	26,000	41,769	19,310	31,788	51,098	92,866

²⁶ 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.

²⁷ Agriculture & Allied Activities include Crop Cultivation, Animal Husbandry, Poultry, Fisheries and Forestry

The district level training projects below suggests the potential areas for skill development interventions and job opportunities in the future. It identifies the potential job roles mapped with NSQF linked QPs and the potential of employment opportunities over the next five years with a focus on youth. The job roles have been shortlisted based on the analysis of findings from the skill gap analysis, secondary research, youth aspiration survey, enterprise survey, district level consultations and discussions with industry associations.

Table 18: Summary of Training Projects

S No	Sector	Trades	Target (Persons)	Budget (₹)
1.	Textile and Apparel	<ul style="list-style-type: none"> Industrial Sewing Machine Operator Power Loom Operator Packing Checker Knotting Machine Operator Automatic shuttle loom operator Compacting Machine Operator Fabric Mender 	6,000	10.43 Crore
2.	Rubber Processing	<ul style="list-style-type: none"> Mill Operator Storage Assistant Compression Molding Operator Transfer Molding Operator Injection Molding Operator 	5,000	9.85 Crore
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 	6,000	11.24 Crore
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 Crore
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 	8,000	13.86 Crore

		<ul style="list-style-type: none"> Field Technician - Washing Machine 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 Crore
7.	Soft Skills Training	<ul style="list-style-type: none"> Training for Soft Skills and in spoken English 	4,000	7.83 Crore
8.	IT/ ITeS	<ul style="list-style-type: none"> Domestic Data Entry Operator Customer Care Executive (Call Centre) Associate - Desktop Publishing (DTP) Associate Operations Engineer Domestic Biometric data operator Hardware Engineer 	6,000	11.34 Crore
9.	Retail	<ul style="list-style-type: none"> Cashier Retail Sales Associate Store Ops Assistant Seller Activation Executive Digital Cataloguer Retail Trainee Associate 	4,000	6.42 Crore
10.	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	6.22 Crore
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 	6,000	20.92 Crore
Total Training Target and Training Cost			65,100	131.86 Crore

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 x training hours x per hour cost) + (training target x number of days of training x 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 x 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 19: Training Project 1

Name of the Project: Training in Textile and Apparel Sector							
Key Economic Drivers:							
Textile and Apparel are an important industry in the district							
Key Partners: Madurai Hosiery Industries Association, ITI, Polytechnic colleges							
Job Roles	NSQF Level	NSQF Code	Duration of Training (hours)	Cost Category	Target Group	Training Target	Cost of Training
Industrial Sewing Machine Operator	4	AMH/Q0301	270	1	5 th Pass	500	0.74 Crores
Power Loom Operator	4	TSC/ Q2208	300	1	5 th Pass	1000	1.65 Crores
Packing Checker	4	TSC/ Q0501	300	1	10 th Pass	500	0.83 Crores
Knitting Machine Operator	4	TSC/ Q2205	300	1	5 th Pass	1000	1.65 Crores
Automatic shuttle loom operator	4	TSC/Q2201	300	1	10 th Pass	1000	1.65 Crores
Compacting Machine Operator	4	TSC/Q5503	300	1	10 th Pass	1000	1.65 Crores
Fabric Mender	3	TSC/Q2302	300	1	10 th Pass	1000	1.65 Crores
Total Training Cost						6,000	
Total Assessment and Certification cost (1,000 per candidate)							0.60 Crores
Total Cost							10.43 Crore
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 20: Training Project 2

Name of the Project: Training in Rubber Processing Sector							
Key Economic Drivers:							
<ul style="list-style-type: none"> Rubber Processing is an important sector in the district 							
Key Partners: ITI, Polytechnic colleges, industry players							
Job Roles:	NSQF Level	NSQF Code	Duration of Training (hours)	Cost Category	Target Group	Training Target	Cost of Training
Mill Operator	4	RSC/Q0101	350	1	10 th Pass	1000	1.92 Crores
Storage Assistant	3	RSC/Q0104	300	1	10 th Pass	1000	1.65 Crores
Compression Molding Operator	4	RSC/Q0205	350	1	10 th Pass	1000	1.92 Crores
Transfer Molding Operator	4	RSC/Q0206	350	1	10 th Pass	1000	1.92 Crores
Injection Molding Operator	4	RSC/Q0207	350	1	10 th Pass	1000	1.92 Crores
Total Training Cost						5,000	9.35 Crores
Total Assessment and Certification cost (1,000 per candidate)							0.5 Crores
Total Cost							9.85 Crores
Key Considerations:							
<p>Adequate facilities must be provided if women are being trained bathrooms, changing rooms</p> <p>Industry partners must be made part of the process</p> <p>Training providers must be vetted based on instructor quality and infrastructure</p>							

Table 21: 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:							
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	500	0.95 Crores
Chef-de-partie	6	THC/Q0404	285	1	8 th Pass	500	0.78 Crores
Assistant Catering Manager	6	THC/Q5901	475	2	12 th Pass	500	1.16 Crores
Assistant Facility Manager	7	THC/Q5707	435	2	Diploma	500	1.06 Crores
Pest Controller	4	THC/Q5704	500	2	8 th Pass	500	1.22 Crores
Counter Sale Executive	4	THC/Q2903	240	2	12 th Pass	500	0.59 Crores
Duty Manager	7	THC/Q0106	300	2	12 th Pass	500	0.73 Crores
Facility Store Keeper	4	THC/Q5602	475	2	10 th Pass	500	1.16 Crores
Front Office Associate	4	THC/Q0102	280	3	12 th Pass	500	0.6 Crores
Guest House Caretaker	5	THC/Q0501	370	2	10 th Pass	500	0.91 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						6,000	10.64 Crores
Total Assessment and Certification cost (1,000 per candidate)							0.6 Crores
Total Cost							11.24 Crores
Key Considerations:							
Women and college graduates can be targeted Local employers can provide internships Language skills can also be imparted							

Table 22: Training Project 4

Name of the Project: Training in Healthcare Sector							
Key Economic Drivers:							
Madurai 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 Crore
Key Considerations:							
Residential training and part-time training modes should be explored to allow women of all backgrounds to attend							

Table 23: 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	2	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 24: 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 Level	NSQF Code	Duration of Training (hours)	Cost Category	Target Group	Training Target	Cost of Training
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
Food Products Packaging Technician	5	FIC/Q7001	240	1	12 th Pass	300	0.4 Crores
Grain Mill Operator	4	FIC/Q1003	240	1	8 th Pass	300	0.4 Crores
Supervisor: Meat and Poultry Processing	5	FIC/Q3007	240	1	12 th Pass	300	0.4 Crores
Corn Starch Manufacturing Technician	4	FIC/Q1007	240	1	10		

Table 25: Training Project 7

Name of the Project: Training in Soft Skills and English Communication							
Key Economic Drivers:							
<ul style="list-style-type: none"> • Communication skills are considered important qualities for employability in many sectors, including IT/ITeS, Tourism and Hospitality, and other service sectors • Madurai is fast emerging as secondary hub for IT/ITES sector in the state with establishment of ELCOT IT Park, which already houses firms such as HCL and Honeywell 							
Key Partners: Madurai Kamaraj University, Degree Colleges, British Council							
Job Roles:	NSQF Level	NSQF Code	Duration of Training	Cost Category	Target Group	Training Target (People)	Cost of Training
Training for Soft Skills and in spoken English	5	NA (proposed as new job role)	160	1	Graduates who have completed courses from Degree Colleges, Engineering Colleges	8,000	7.03 Crores
Total Training Cost						8,000	7.03 Crores
Total Assessment and Certification cost (1,000 per candidate)							0.8 Crores
Total Cost							7.83 Crores
Key Considerations:							
<ul style="list-style-type: none"> • Soft skills especially, communication skills, interpersonal skills, work ethics etc. has been identified as a major contributor towards the low employability for the youth. In addition, the IT-ITES Sector / Tourism & Hospitality sectors have highlighted the requirement for good communication skills in English. • Ski that have similar components of Soft Skill and English Communication 							

Table 26: Training Project 8

Name of the Project: IT/ ITeS Sector							
Key Economic Drivers:							
<ul style="list-style-type: none"> The IT/ITeS sector is a major employer in the district, currently employing around 6,000 workers in various job roles in the verticals of software development and business process outsourcing. HCL, Honeywell and Tessolve Services Pvt Ltd are major firms in the ELCOT IT park 							
Key Partners:							
Job Roles:	NSQF Level	NSQF Code	Duration of Training (hours)	Cost Category	Target Group	Training Target	Cost of Training
Domestic Data Entry Operator	4	SSC/Q2212	400	2	10th Pass	1,000	1.95 Crores
Customer Care Executive (Call Centre)	4	TEL/Q0100	200	2	10th Pass	1,000	0.98 Crores

Table 27: Training Project 9

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	800	0.78 Crores
Retail Sales Associate	4	RAS/Q0104	280	2	10 th Pass	800	1.09 Crores
Store Ops Assistant	1	RAS/Q0101	200	2	10 th Pass	800	0.78 Crores
Seller Activation Executive	4	RAS/Q0301	280	2	10 th Pass	800	1.09 Crores
Digital Cataloguer	4	RAS/Q0302	280	2	10 th Pass	800	1.09 Crores
Retail Trainee Associate	3	RAS/Q0103	280	2	10 th Pass	800	1.09 Crores
Total Training Cost						4,000	5.93 Crores
Total Assessment and Certification cost (1,000 per candidate)							0.58 Crores
Total Cost							6.42 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 10

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:	NSQF 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	600	0.89 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	600	0.74 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	400	0.53 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	5.82 Crores
Total Assessment and Certification cost (1,000 per candidate)							0.4 Crores
Total Cost							6.22 Crores
Key Considerations:							
Rural youth can be targeted							
Industry partners must be made part of the process							

Table 29: 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	1,000	4.95 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	1,000	4.39 Crores
Bar Bender and Steel Fixer	4	CON/Q0203	400	1	10 th Pass	1,000	2.2 Crores
Assistant Electrician	3	CON/Q0602	400	1	10 th Pass	1,000	2.2 Crores
Total Training Cost						6,000	20.32 Crores
Total Assessment and Certification cost (1,000 per candidate)							0.72 Crores
Total Cost							20.92 Crores
Key Considerations:							
Dropout and rural youth can be targeted Sustainability can be a focus in training							

- **Promotion of large industries:** Qualitative consultations revealed that job-work from large units have reduced, and MSME units are in a situation wherein they have to export outside the district and look for wider markets. Interventions can focus on market promotion, and the establishment of local large-scale units, which utilize the capacities of MSMEs.
- **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 have a preference for placement services, information on relevant vacancies, and 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.
- **Project-oriented apprenticeship/ internship programs:** Based on qualitative consultations, ITI and Polytechnics can develop internship programs which are organized around projects problem statements can be developed in consultation with industry players, and incentives given to students to solve them. The programs can end in competitions, or presentation of theses. Such a program would allow students to develop their practical skills while providing a tangible sense of achievement within an organized environment supervised by the training institutions and the industry.
- **Promotion of service sector:** 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. Qualitative consultations and secondary data analysis reveal that service sectors have great demand for both skilled and semi-skilled labour in the district. sing household incomes, both the retail and domestic appliance repair sectors (AC, refrigerator, washing machine, etc) will absorb self-employed or wage employed technicians and maintenance workers.
- **Promotion of traditional village and household industries:** The Small Industries Product Promotion Organization (SIPPO) promotes traditional industries which have availed credit schemes under the Prime EGP) of the Khadi and Village Industries Commission (KVIC). Consultations revealed that traditional artisans and home-based businesses face marketing challenges, which need to be overcome to ensure sustainability. Interventions can identify local partners for providing marketing and technical support to such beneficiaries, to ensure that traditional sectors such as sungudi saris, and modern home-based businesses such as cloth bags, garment-making and food processing are sustained. This would also encourage youth to take up entrepreneurship.

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 Block

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 Madurai 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:

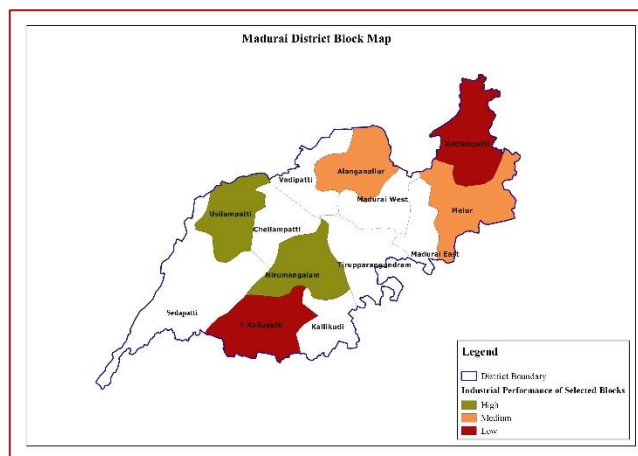
1. MSME Cluster 25%
2. SIDCO Cluster 25%
3. SIPCOT Industrial Estate 5%
4. Annual Centre-level Credit Data 45%

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:

- **0 to 33.33 percentile value: Low**
- **33.33 to 66.67 percentile value: Medium**

Figure 30: Blocks Selected for Survey in Madurai



- **66.67 to 100 percentile values: High**

After deriving the above values for the blocks, two blocks are randomly selected from each category.

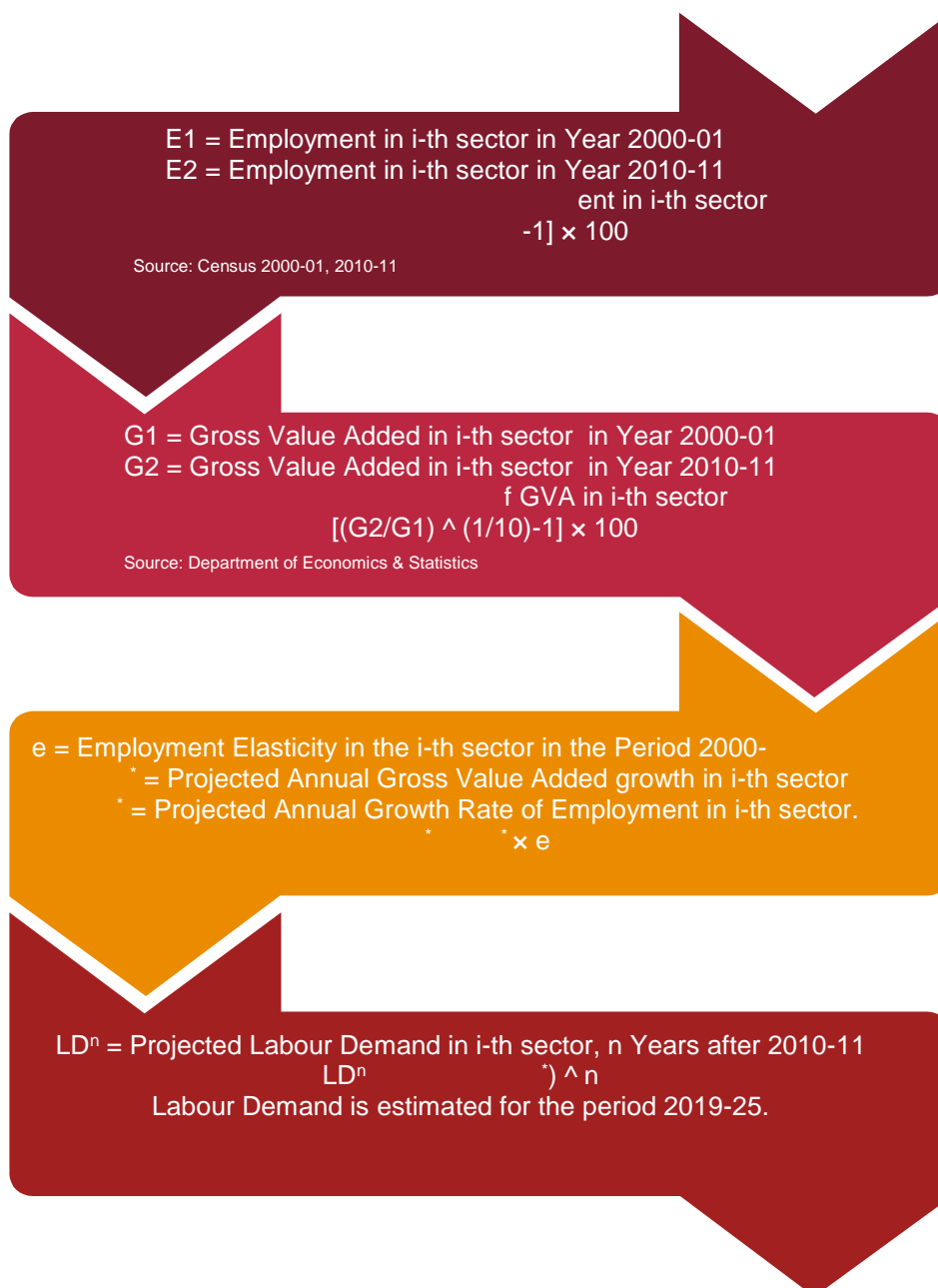
Based on this, the following blocks were selected

- Low: Kottampatti, T.Kallupatti
- Medium: Alanganallur, Melur
- High: Nirumangalam, Usilampatti

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:

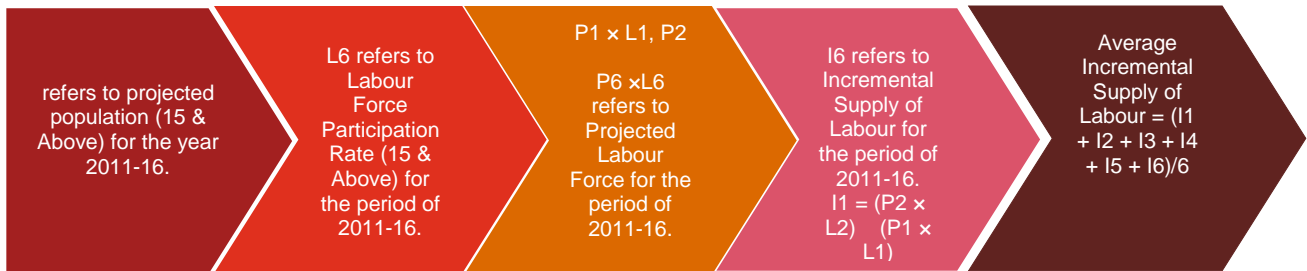
Figure 31: Steps in Demand Estimation



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 state²⁸. 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 32: Steps in Supply Estimation



²⁸ Report on Employment-Unemployment Survey, 2011-12, 2012-13, 2013-14, 2015-16 & 2017-18.

Table 30: List of Stakeholders

S No	Stakeholder	Category
1.	District Skills Officer, Directorate of Employment and Training	Govt. Official
2.	General Manager, District Industries Centre	Govt. Official
3.	General Manager, Small Industries Product Promotion Limited	Govt. Official
4.	Assistant Director, District Employment Office	Govt. Official
5.	Placement Officer, Government ITI	Training Service Provider
6.		Training Service Provider
7.	Trainer, Maruti Skill Enhancement Centre, Government ITI	Training Service Provider
8.	President, Madurai District Tiny & Small-Scale Industries Association	Industry Association
9.	Secretary, Society of Heating, Refrigerating and Air Conditioning Engineers Madurai Chapter	Industry Association
10.	Estate Manager, Madurai Hosiery Industries Association Estate	Industry Association
11.	President, Madurai Appalam Merchants Federation	Industry Association
12.	Secretary/ Proprietor, Sungudi Creations and Madurai Tie and Dye Federation	Industry Association
13.	Siva Motors Private Limited	Industry
14.	Thai Plastic	Industry
15.	R.P Plastics	Industry
16.	Ingersal Lime Stone	Industry
17.	Kamala Rubber Co.	Industry
18.	Asoka Plastic	Industry
19.	Sri Daithysudan Textiles	Industry
20.	ADR Cool Storage	Industry
21.	Zead Textiles Private Limited	Industry
22.	Jerry Poly Plast	Industry
23.	Sri Guruvayurappan Polymers	Industry
24.	Sri Nallandavar Perumal Plastic	Industry
25.	Aravind Chettinad Snacks	Industry
26.	Sri Gomathi Cotton Seed Oil Mill	Industry
27.	Tirumalai Textiles	Industry
28.	Coimbatore Paper Products	Industry
29.	Sri Tiripura Apparel	Industry
30.	ARR Packaging Industries	Industry
31.	Asmitha Polymer	Industry
32.	ADR Plastic	Industry
33.	Heinz India Private Limited	Industry

34.	Saraswathi Metal COnainer	Industry
35.	Sara Packaging	Industry
36.	Sri Saraswathi Crown Corg Industries	Industry
37.	Cenmark Agronomic Private Limited	Industry
38.	Ranga Rao and Sons Private Limited	Industry
39.	Designjit Weaving Private Limited	Industry
40.	Jagrit Polymers Private Limited	Industry
41.	Niranjana Weaving Private Limited	Industry
42.	Vijay Kalyan Vinayaka Weaving Private Limited	Industry
43.	Vee Pee Madurai Backery	Industry
44.	Madura Plastic	Industry
45.	RCM Life Science	Industry
46.	Micro Chemicals	Industry
47.	Hoot Safety System	Industry
48.	SPVPC Pvt Ltd	Industry
49.	Devarajan Flour Mills	Industry
50.	Ruby Food Products Pvt Ltd	Industry
51.	Bhargave Rubber Pvt Ltd	Industry
52.	S M T Dairy	Industry
53.	Thangavel Industries	Industry
54.	Malligai Sudarmark	Industry
55.	Standard Detergent	Industry
56.	Priya Fire Safety	Industry
57.	Ganapathy Metal Industries	Industry