



# Skilling for the Future

Skill Gap Assessment & Action Plan for Tamil Nadu

## District Skill Development Plan for Namakkal

November 2019



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S.No	Abbreviation	Expansion
1.	ASER	Annual Status of Education Report
2.	ASI	Annual Survey of Industries
3.	BFSI	Banking, Financial Services and Insurance Sector
4.	BPL	Below Poverty Line
5.	DDU-SKY	Deen-Dayal Upadhyaya Grameen Kaushalya Yojana
6.	DES	Directorate of Economics and Statistics
7.	DIC	District Industries Center
8.	DISE	District Information System for Education
9.	GDDP	Gross District Domestic Product
10.	GoTN	Government of Tamil Nadu
11.	GSDP	Gross State Domestic Product
12.	GVA	Gross Value Added
13.	HCSSC	Handicrafts and Carpet Sector Skill Council
14.	ITI	Industrial Training Institute
15.	IT-ITES	Information Technology and Information Technology Enabled Services
16.	LFPR	Labour Force Participation Rate
17.	Manuf.	Manufacturing
18.	NAPS	National Apprenticeship Promotion Scheme
19.	NASSCOM	National Association of Software and Services Companies
20.	NEET	Not in Education, Employment, or Training
21.	NIC	National Industrial Classification
22.	NSDC	National Skill Development Corporation
23.	NSQF	National Skills Qualification Framework
24.	NULM	National Urban Livelihood Mission
25.	PMKVY	Pradhan Mantri Kaushal Vikas Yojana
26.	PSU	Public Sector Undertaking
27.	Pub. Admin.	Public Administration
28.	QP-NOS	Qualification Pack – National Occupational Standards
29.	SIDCO	Small Industries Development Corporations
30.	SIPCOT	State Industries Promotion Corporation of Tamil Nadu
31.	SIPPO	Small Industries Product Promotion Organization
32.	SSC	Sector Skill Council
33.	TANSIDCO	Tamil Nadu Small Industries
34.	TNSDC	Tamil Nadu Skill Development Corporation
35.	TNSRLM	Tamil Nadu State Rural Livelihood Mission
36.	Tr. & Tou.	Trade and Tourism Sectors

**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 reinforcing and accomplishing the broader objectives of 'Vision Tamil Nadu 2023'. The policy focuses on 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. To attain this objective the State envisages training and skilling of 20 million persons by 2023<sup>1</sup>.

Tamil Nadu currently has the highest Gross Enrolment Ratio in Higher Education (48.6)<sup>2</sup>, among all the states in India. The state faces a mandate of developing and maintaining high quality human resources to deal with the evolving economy and ensuring social justice in the form of decent employment for its educated populace. Thus, it is essential to carefully analyse the industry demand, investment patterns, youth aspirations and re-align policy/ programmatic initiatives in that direction. Thus, taking youth aspiration and industry growth potential is critical to be able to avoid labour demand-supply mismatch, and support overall development of the State.

**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. 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 in the state's social and economic context, there was a need for a fresh assessment of the state's skill ecosystem. There is also a need to understand the needs of the youth from diverse geographical backgrounds across the state, especially reaching out to economically backward regions. It is expected that a contemporary estimation, using both quantitative and qualitative analysis would reveal more relevant insights and findings related to the demographic profile, socio-economic characteristics of the youth, emerging sectors and job roles, and the skill-sets in demand.

**The Present Study:** The Tamil Nadu Skill Development Corporation (TNSDC) has, through a competitive procurement process, engaged PricewaterhouseCoopers Private Limited (PwC) to carry out "Skill Gap Assessment and Action Plan" for 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 labour supply and estimating the existing and emerging skill gaps.

The Skill Gap study offers insights into: (i) which skills are required to support the State's economic 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 review of the state's demography, economy, labour market, educational and skill development profile. The second phase of the study comprised the following:

1. Youth aspiration survey: a quantitative survey covering 360 respondents in the district 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 the district were covered: Namakkal, Thiruchengode, Rasipuram, Paramathi, Erumaipatti, Namagiripet.
2. Quantitative employer survey: covering 45 in the district with adequate representation from Large, Medium, Small and Micro Industries across the key sectors defining the district economy.

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<sup>1</sup> Tamil Nadu Skill Development Corporation [<https://www.tnskill.tn.gov.in/index.php/link/abouttnsdc>]



<sup>2</sup> All India Survey on Higher Education 2017-18

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.

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 of the study:** The key findings are presented below:

 <b>Demographic Analysis</b>	<ul style="list-style-type: none"> <li>At 30 years, the median age of Namakkal is higher than the state average. It is estimated to increase further to 36.4 years by 2026 indicating a much older population.</li> <li>The district needs to invest in skill development immediately to reap benefits of the demographic dividend.</li> </ul>
 <b>Economic Analysis</b>	<ul style="list-style-type: none"> <li>Namakkal is one of the more industrialised districts and contributes to 3.2% of the state GDP.</li> <li>The economy of Namakkal grew at a CAGR of 11% between 2011-12 and 2016-17.</li> <li>Namakkal is known as the Egg Capital of the state and has a thriving poultry and egg production sector.</li> <li>The key industries include Spinning, weaving and finishing of textiles, Grain mill products, starches and starch products, Paper and paper products and other food products</li> <li>Services sector contributes to 36% of the GVA. The sector grew at a CAGR of 12% between 2011-12 and 2016-17.</li> </ul>
<b>Labour Market Analysis</b>	<ul style="list-style-type: none"> <li>The District's overall labour force participation rate and workforce/worker participation ratio are higher than the corresponding state figures, and for the youth population (15-29 years), the LFPR is slightly lower than the state figure.</li> <li>However, the youth unemployment rate is significantly lower than the state level.</li> <li>Around 40% of the labour force is in primary sector (Agriculture &amp; allied) followed by one-fifth in manufacturing.</li> </ul>
<b>Education &amp; Skill Development</b>	<ul style="list-style-type: none"> <li>Only 6.1% of the district population have undergone any kind of vocational training.</li> <li>Namakkal is home to secondary and higher secondary schools, in areas such as Thiruchengode, which produce top-ranking students in secondary and higher secondary examinations under the state board curriculum.</li> </ul>
<b>Findings from Primary Survey</b>	
<b>Youth Profile and Aspirations</b>	<ul style="list-style-type: none"> <li>The majority of college-educated respondents were engaged in salaried employment, skilled work, and petty business/ trade. Notably, around one-tenth of respondents with graduates and post-graduate education were in farm activities.</li> <li>Around 83% of the Not in Education Employment or Training (NEET) category respondents wished to work at some point in the future.</li> <li>Around 65% of the youth aspire for wage employment.</li> <li>Salary (wages), Job Security and Social Status were key determinants of selection of work.</li> <li>"Pressure related to getting married" figures as the most cited challenge with respect to getting a job, followed by "lack of jobs locally", "unsafe working environment" and "low financial strength".</li> <li>Basic and soft skills, years of work experience and relevant work experience in similar position or field were reported to be the key factors that determine employability and employment.</li> <li>Preferred sectors for employment were as follows: female respondents cited textiles, BFSI, education and skill development, other sectors and electronics and IT hardware.</li> </ul>

	<p>Male respondents cited transport and logistics, building and construction, telecommunications, auto and auto components, and tourism, travel and hospitality.</p> <ul style="list-style-type: none"> <li>• There is a requirement for further strengthening advice on how to look for jobs, and information on vacancies</li> </ul>
 <p><b>Employer &amp; Other Key Stake holder Perspective</b></p>	<p><b>Quantitative Survey</b></p> <ul style="list-style-type: none"> <li>• Lack of basic education requirement, lack of requisite soft skills and lack of requisite core skills are the major challenges faced by the employers in the recruitment and retention of workforce.</li> <li>• On average, 34% of workers on average in the units were skilled, 40% semi-skilled and 2% supervisory.</li> <li>• Around 87% indicated interest in medium to high technology adoption.</li> </ul> <p><b>Qualitative Inputs</b></p> <ul style="list-style-type: none"> <li>• Apart from sago processing, none of the other sectors had established linkages with ITI/ Polytechnic/ Engineering colleges – even within the former, only supervisors/ managers were taken from engineering colleges</li> <li>• Key challenges in recruiting from vocational programs was the skills mismatch of the youth and their lack of experience in working environment through internships and apprenticeships.</li> <li>• Technology adoption &amp; automation are being undertaken by the poultry and poultry-feed industries.</li> <li>• <u>Technical operators are needed to operate machineries (such as feed machineries)</u></li> </ul>
 <p><b>Incremental Demand</b></p>	<ul style="list-style-type: none"> <li>• Nearly <b>sixty-seven thousand</b> incremental skilled and semi-skilled workforce demand are expected to be in demand over the next 6 years.</li> <li>• Key sub-sectors driving the demand are manufacturing, education and health, repair of domestic goods, construction, financial activities and communication</li> </ul>

**Recommendations:** Based on qualitative, quantitative and secondary information findings and inferences, the following recommendations are made for due consideration:

- **Strengthening the local Skilling Eco-system:** Apprenticeship scheme must be popularized further, and priority given to local firms, so that they are able to recruit locally, and absorb vocationally trained youth in shop-floor roles.
- **Creating Awareness on Trades:** The qualitative and quantitative findings reveal that educated youth aspire for white-collar jobs. Creating awareness and encouraging youth to take up shop-floor jobs with appropriate incentives will solve labour shortage issues in sectors such as bus body building and food processing.
- **Creation of high-skill job roles:** Qualitative findings reveal that due to automation, employers may require skills in the areas of maintenance and repair, and in the operation of advanced machines. Training courses, which focus on imparting such skills, will ensure that local youth find such jobs, which can involve higher pay than semi-skilled job roles.
- **Development of a Quality Labour Force:** Wage Subsidies/ provisions for living wage can be designed, so that the current workforce is able to work on the shop-floor without major attrition issues. Workplace health and safety measures can be implemented in order to ensure lower attrition. Migrant Support Centres can be set up, which help them with accommodation, workplace related challenges, and up-skilling/ re-skilling.
- **Promotion of Entrepreneurship and development of incubation facilities:** Based on qualitative findings, young men and women wish to open their own businesses (especially ITI passouts), in the form of browsing centres, retail outlets, and tailoring. Promoting micro and small entrepreneurs will improve the scope for employment as well.



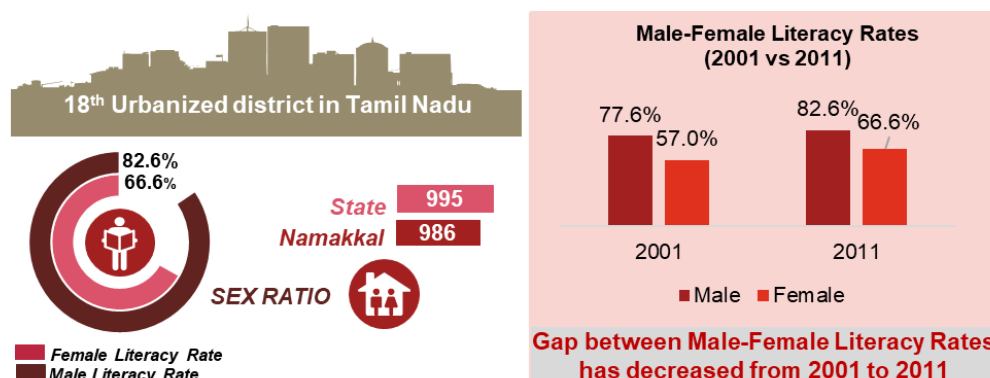
Namakkal district was carved out of Salem district in January 1997. The district covers an area of 3,363 square kilometres. The district comprises eight blocks and 454 revenue villages. Currently, the district is known for poultry and lorry body building industries. The district contains mountainous areas in the north and plains in the south.

*Table 1: Key Demographic Indicators– Namakkal vs Tamil Nadu<sup>3</sup>*

SN	Indicator	Namakkal	Tamil Nadu
1	Total population	17,26,601	72,147,030
2	Female Population	8,57,321	36,009,055
3	Population Density per sq.km (2011)	505	555
4	Urbanization	40.3%	48.4%
5	SC population (as % of total population)	20%	20.0%
6	ST population (as % of total population)	3.3%	1.1%
7	Differently abled population (as % of total population)	1.5%	1.6%
8	Population in age group 15-34 years (as % of total population)	33.9%	34.8%
9	SC population aged 15-34 years (as % of SC population)	33.9%	36.6%
10	ST population aged 15-34 years (as % of ST population)	34.8%	35.0%
11	Literacy rate	74.6%	80.3%

Source: Census 2011

### Snapshot of Namakkal's Demography



Source: Census 2011 and 2011

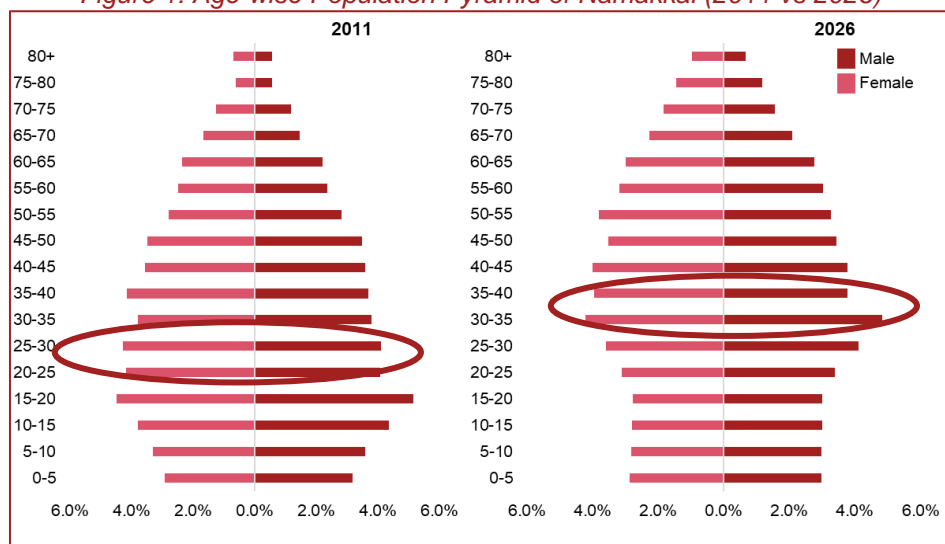
#### Key Highlights from the analysis of Census Data:

- Population Growth and Urbanization:** The Decadal growth rate of the population in the district was 15.2% between 2001 & 2011, compared to 15.6% at state level. The share of urban population has grown by 27.1% while the rural population has grown at a lower rate of 8.4%. An increasing urban population, and migration to urban areas from rural areas could be related to this phenomenon.
- Literacy:** The district had a female literacy rate of 66.6% while the male literacy rate of 82.6%. These are lower than the corresponding literacy rates at the state level. The literacy rates among males increased by 5 percentage points, while among females it increased by 9.6 percentage points, reducing the gap between them from 20 percentage points in 2001 to 16 percentage points in 2011. The reducing gap between the male and female literacy rates indicates a higher level of education attainment among females in the district.
- Youth Demography:** 33.9% of the population was between 15-34 years, in 2011, and the median age, 30 years. This is greater than the median age of the state, which was 29 years in 2011, indicating a relatively

<sup>3</sup> Census 2011 & 2011

older population in the district. The population is set to get much older with median age in 2026 expected to be around 36.4, increasing the share of dependent population as illustrated in the age-wise population pyramid of the district as seen below.

Figure 1: Age-wise Population Pyramid of Namakkal (2011 vs 2026)<sup>4</sup>

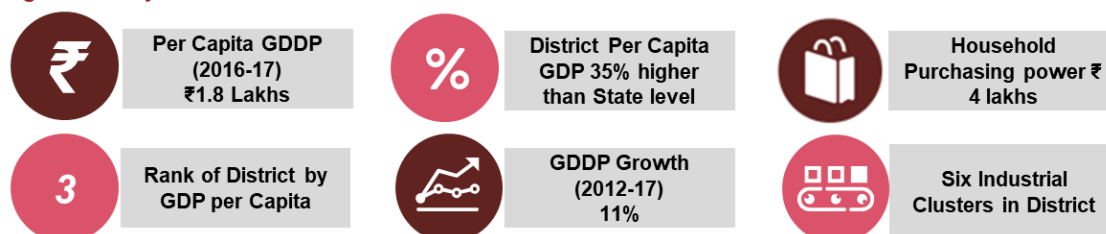


Source: Census 2011, and projection (PwC analysis)

**Namakkal has a relatively older population, and the literacy rate for females is relatively low. However, by virtue of being an industrial district and sharing borders with other industrialized districts, Namakkal can reap the benefits of development and focused interventions.**

Namakkal is one of the more industrialized districts of the state and contributes to 3.2% of the state's GDP.<sup>5</sup> The district has a flourishing food processing industry. Bus-body building, paper products, and textiles contribute to the local economy as well.<sup>6</sup> The district also has the potential to benefit from industrial growth in neighbouring districts, such as Coimbatore, Salem, Karur, and Tiruchirappalli in the form of employment and trade. The district has a per-capita GDP which is higher than the state level<sup>7</sup>.

Figure 2: Key Economic Indicators of Namakkal District



Source: Directorate of Economics and Statistics, Government of Tamil Nadu and Districtmetrics.in

<sup>4</sup> Age wise Population projected for 2026 based on age group wise life expectancy, birth and death rates

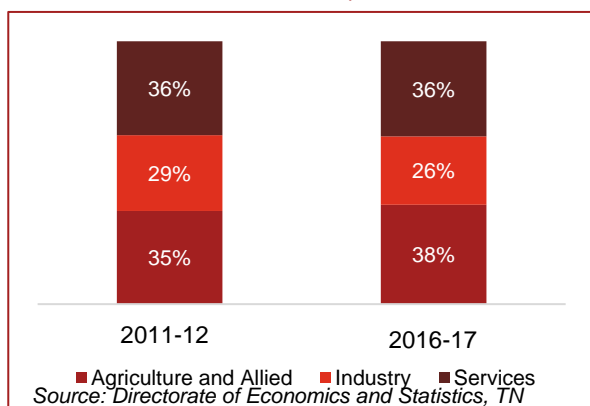
<sup>5</sup> D0ES, GoTN

<sup>6</sup> District Industries Profile, DC-MSME, 2015-16

<sup>7</sup> PwC – Akara Analysis

<sup>8</sup> 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 GSVA (2011-12 & 2016-17)



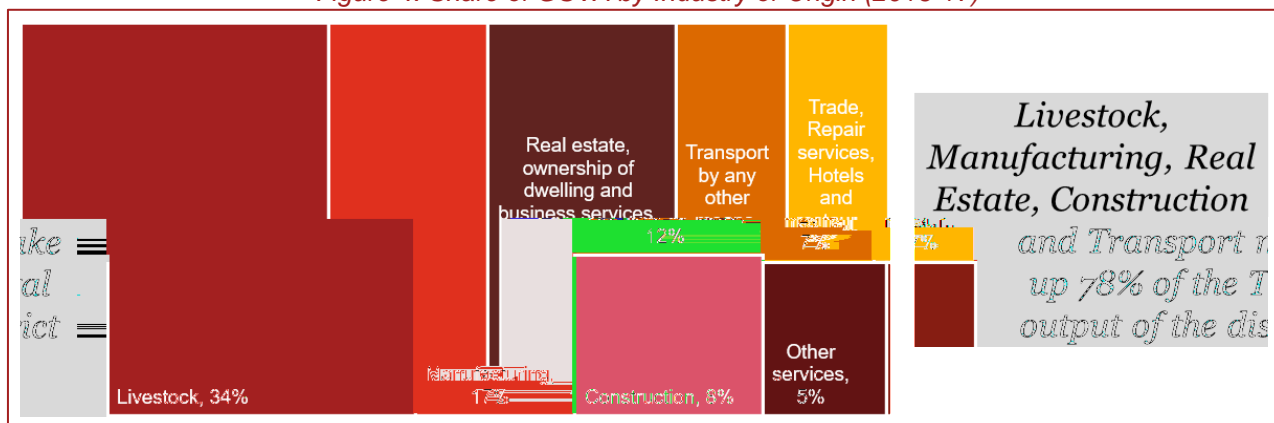
The economy of the district is dominated by the service and agriculture and allied sectors, which accounted for about 64% of the district output in 2017. The district has grown at a compounded annual growth rate of 11% largely driven by the Services sector, which grew at an average of 11% per annum across the same period. The agriculture and allied sector has seen a recent decline: -11% growth in 2016 to 2017. However, its share in the GDDP has grown by 3 percentage points from 2012 to 2017. The services sector has witnessed mildly fluctuating growth at 12% CAGR. At a sub-sector level, Livestock, Manufacturing, Real Estate, Trade & Tourism, Construction & Logistics are the major contributors to the district's economy.

Table 2: Sector wise- Annual Growth Rate in Namakkal

Sector	2012-13	2013-14	2014-15	2015-16	2016-17	CAGR
Agri & Allied	17%	1%	0%	2%	-11%	2%
Industry	14%	9%	3%	23%	9%	11%
Services	11%	13%	15%	10%	9%	12%

Source: Directorate of Economics and Statistics, TN

Figure 4: Share of GSVA by Industry of Origin (2016-17)

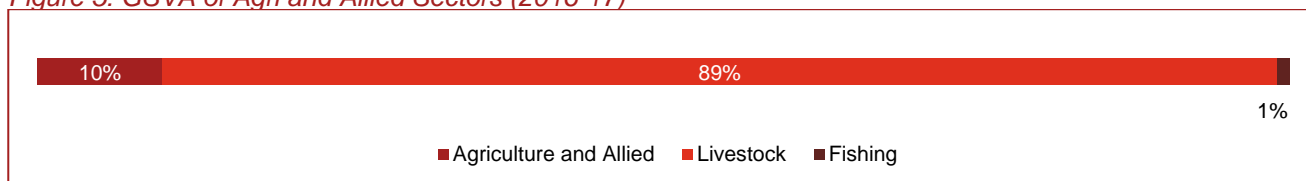


Source: Directorate of Economics and Statistics, TN

## Agriculture and Allied Sector

Namakkal is known as the Egg Capital of the state, and has a thriving poultry and egg production sector. Livestock and cultivation are major contributors to the GDDP. Major crops include: rice, pulses, millets, groundnut, coconut, and fruits.

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



Source: Directorate of Economics and Statistics, TN

## Industrial Sector

Recent growth in the manufacturing sector (13% between 2012 and 2017) has enabled a growth of the Industrial 11% per annum over the last 5 years. The sector is dominated by the Manufacturing and Construction sectors - they account for almost 99% of the output. Spinning, weaving and finishing of textiles, Grain mill products, starches and starch products, Paper and paper products and other food products are some of the key Industries in the district.

Figure 6: Industrial Sector GSV (2016-17)

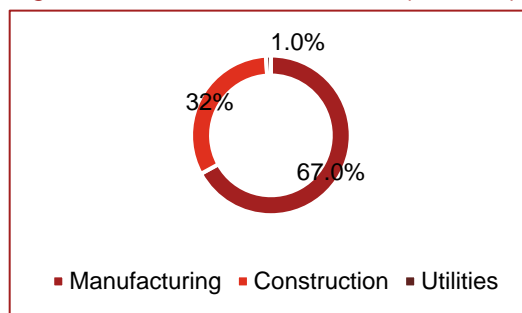


Table 3: Key Clusters and Traditional Industries

SIDCO Industrial Estates Paramathi and Thiruchengode blocks	Power Loom (Yarn and textile Manufacturing) Thiruchengode Block	Poultry Namakkal Block
Heavy Commercial Vehicle Body Building Namakkal Block	Sago (Sabudana) Production Rasipuram Block	

Source: DC-MSME District Profile

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

Industry	No of Units	Average Workers per Unit	Employees	Share of Total Employment	Share of GSVA
Spinning, weaving and finishing of textiles	467	36	17,030	54%	63%
Grain mill products, starches and starch products	210	11	2,207	7%	8%
Paper and paper products	37	69	2,572	8%	6%
Other food products	18	93	1,681	5%	5%
Other textiles	15	35	532	2%	4%
Plastics products	18	32	566	2%	3%
Prepared animal feeds	22	42	919	3%	2%
<b>TOTAL</b>	<b>997</b>	<b>31</b>	<b>31,347</b>	<b>81%</b>	<b>91%</b>

Source: Annual Survey of Industries 2014-15

According to the ASI 2014-15, more than 997 Industrial units were present in the district, directly employing 31,347 workers. Out of these, seven sectors contributed to 91% of the total Gross Value Added. Spinning, weaving and finishing of textiles, grain mill products, starches, paper products and other food products were the key industries as per employment. It can be seen that out of the four major contributors to the total GVA from industries (textiles, grain mill products, paper products and other food products), three have 69% of the total employment as recorded in the survey.

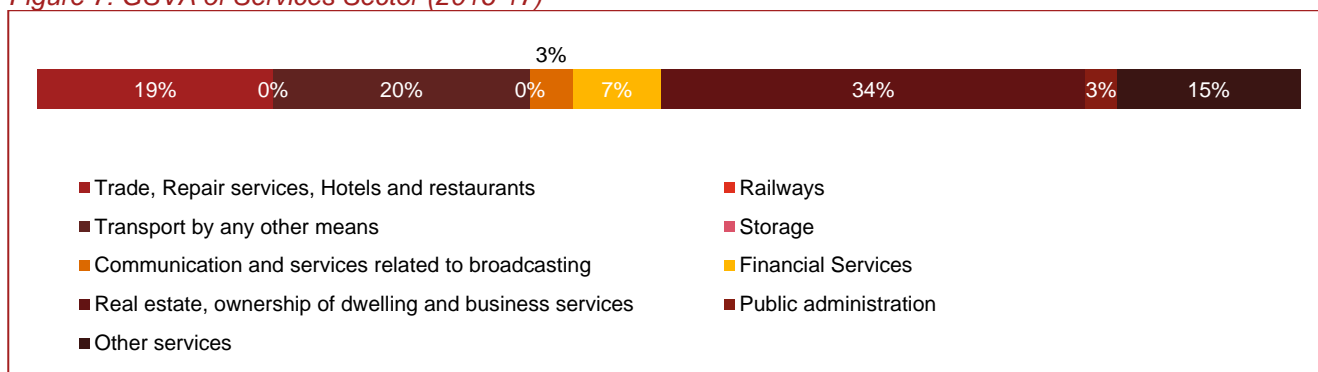
### Existing Industrial Estates

- SIDCO Industrial Estate, Paramathi
- SIDCO Industrial Estate, Thiruchengode

## Services Sector

The sector has witnessed a steady growth since 2012 to 2017 at around an average of 12% p.a. The share of the sector has stayed the same from 2012 to 2017. Important tourist attractions include Kolli Hills, Thiruchengode, Mohanur, Periyamanali and Kabilarmalai, which are known for temples and scenery. Real Estate has more than one-third share in the service sector GDDP.

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



## Traditional Sector

### Stone Sculpting

Stone sculpting is a traditional livelihood in Tamil Nadu which has a rich history – stone sculptors have worked for temples, making idols and embellishments. In Namakkal, Thandagoundapalayam and Namakkal town are known for sculpting workshops. Stone is procured from within the district, in Kolli Hills, and various religious idols made<sup>9</sup>. Sculptors from the district specialize in soft-stone carving. The tradition has its roots in the Pallava era, during which Namakkal and other areas part of 'Kongu Naadu' came under the Pallava Empire. The district is also known for 'kal chatti' – vessels made out of soapstone, which are used for cooking and storing food.

Sculpting has evolved to fit the requirements of a modern age: sculptors work with modern tools in order to produce more efficiently, and are aware of markets outside the state. Sculptures from Namakkal have been exported to states such as Karnataka, Kerala, Andhra Pradesh, and Uttar Pradesh. Kal Chatti is also being marketed as an alternative to metal/ plastic vessels for their benefits related to greater shelf-life of food<sup>10</sup>.

However, the sector is not without problems – workers with relevant skills are in demand, and employers are unable to find young, trained artisans. The current labour force is following sculpting as a family tradition, and is ageing out. Soapstone vessels can be promoted as a way to support artisans and the sector as a whole – this is also congruent with the overall emphasis on Khadi and Village Industries as seen through the Khadi and Village Industries Board, and non-profit action in the sector<sup>1112</sup>.

If adequate incentives can be given to promote sculpting among youth, with marketing/ mentoring support, sculpting can continue to thrive. Several options can be explored – the development of National Occupation Standards and Qualification Packs, Recognition of Prior Learning for artisans, and a comprehensive certification framework. The Handicrafts Sector Skill Council can also support in this regard.

<sup>9</sup> [<https://timesofindia.indiatimes.com/city/coimbatore/Thiruvalluvar-statue-made-in-Namakkal-taken-to-Haridwar/articleshow/52773026.cms>]

<sup>10</sup> [<https://nattumarunthukadai.com/p/kal-chattis/kal-chatti-mavu-chatti-3-ltrs>]

<sup>11</sup> [<http://www.kvic.org.in/kvics/index.php>]

<sup>12</sup> [<https://www.craftscouncilofindia.org/>]

Figure 8: Sector-wise growth of Credit off Take (2012-17) - RBI



Source: PwC-Akara Analysis based on RBI data

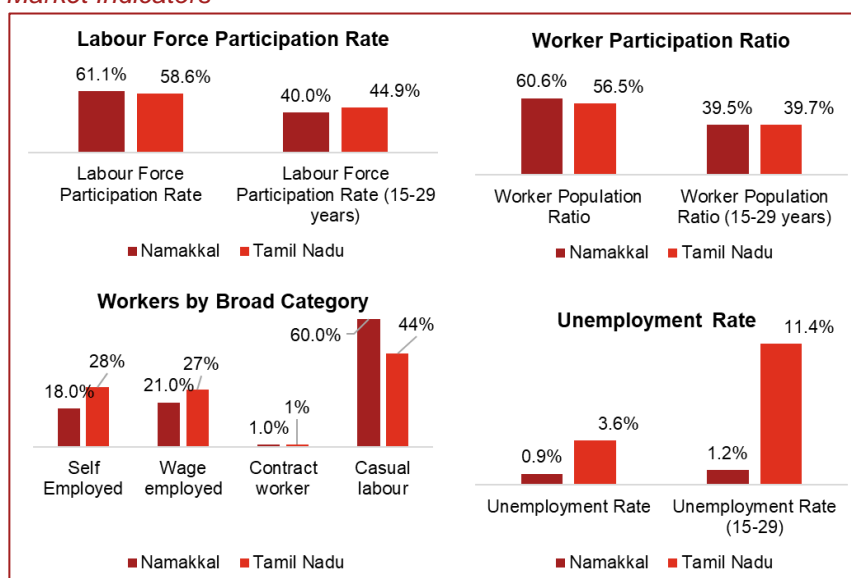
According to the data collected from the RBI, the District has seen recent growth in credit especially finance, transport, trade, personal loans and agriculture. Other key investments and sectors include<sup>13,14</sup>:

- IOT Infrastructure services has plans to expand its bio-CNG unit to produce fuel for automobiles. The investment is expected to be INR 25 Crores.
- Indian Oil Corporation has planned a Research and Development Institute in the district at a cost of INR 2,300 Crores. The institute is slated to have doctoral and research programs<sup>15</sup>.
- The Government of Tamil Nadu has completed a Dairy Plant project and construction of a four lane highway to Tiruchirappalli as well. In addition, private companies have invested in the construction of spinning mills, dairy, CNG production and solar energy.
- The Tamil Nadu Electricity Board has also begun the construction of the Hydro-electric power plant in Kolli Hills.

**Livestock, manufacturing, construction, food processing, and energy and utilities are sectors with potential for growth. Tourism and Hospitality can also grow based on promoting religious tourism.**

While overall labour force participation and worker population ratio are higher at the district level than at state, the same figures for youth (15-29 years) are lower. This could however be connected to the fact that youth may be in the education system. More than half of the workers in the district seem to be in casual labour, higher in proportion than at state level. Youth unemployment is low, at 1.2%.

Figure 9: Key Labour Market Indicators<sup>16</sup>



Source: Employment and Unemployment Survey (2013-14), Ministry of Labour and Employment

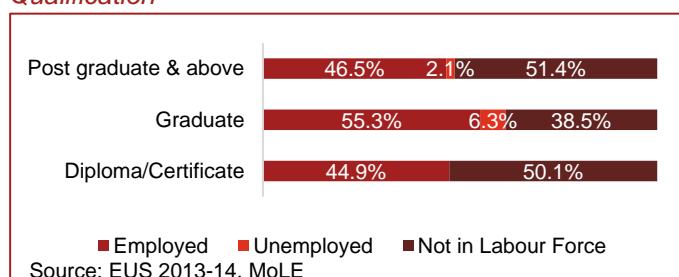
<sup>13</sup> Data collected from the CapEx database of the Centre for Monitoring Indian Economy. The list of projects have been announced since March 2017.

<sup>14</sup> Newspaper articles, and information from Global Investors' Meet also used.

<sup>15</sup> <http://www.newindianexpress.com/states/tamil-nadu/2018/dec/04/iocl-set-to-give-big-push-for-green-cng-in-tamil-nadu-1906977.html>

<sup>16</sup> District Level Estimates, EUS, 2013-14, Labour Bureau

Figure 10: Distribution of Working Status by Educational Qualification



The education-level classification of the sample reveals that among graduates and post-graduates, the unemployment share is comparatively low while those with diploma/ certificate qualifications do not have a share of unemployed. However, this does not immediately imply that there are adequate high-end jobs, since 60% of the labour in the district was engaged in casual labour (figure above).

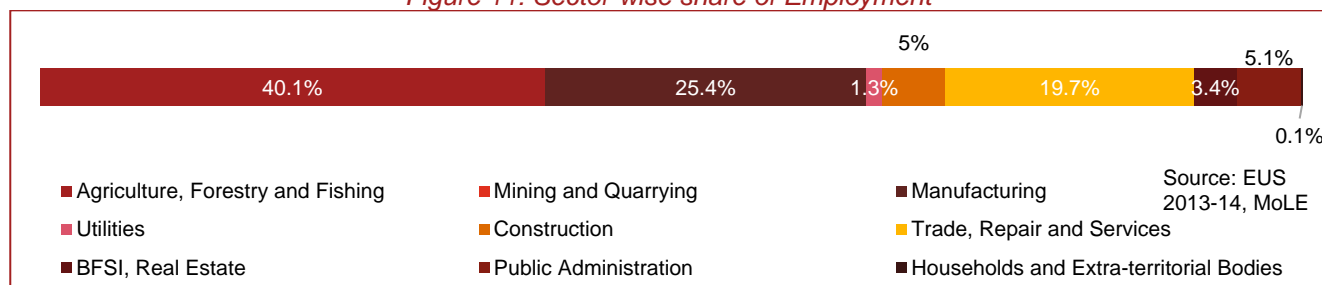
Table 5: LFPR and Unemployment Rate by Sex & Location

Sex	LFPR		Unemployment Rate	
	Rural	Urban	Rural	Urban
Male	79.9%	71.6%	3.6%	4.2%
Female	31.7%	26.3%	5.5%	33.9%
Total	56.3%	49.0%	4.1%	12.2%

Disaggregation by area and sex, it is found that females have an rural labour force participation rate 5 percentage points higher than the urban counterpart, and the male counterpart figure is eight percentage points higher than the urban figure<sup>17</sup>. The urban unemployment rate for females is 28

percentage points higher than the rural counterpart. Such a gap is not seen in the figures for males, indicating that urban women face a lack of employment opportunities. In addition, 65% of the employment was in casual labour in rural areas, while the urban figure was 51.3%. This may also be connected to higher rural labour force participation and low unemployment.

Figure 11: Sector-wise share of Employment



Around 40% of the workforce in the district is employed in the agriculture, forestry and fishing. Around a quarter are employed in manufacturing, and almost one-fifth in construction.

**A large share of the population is employed in agriculture, manufacturing and trade, repair and services. Labour participation among women (especially urban women) is a concern. However, the unemployment rate is lower at the district level than at the state level, and youth-related labour market indicators are at par with the state level.**

Namakkal is home to secondary and higher secondary schools, in areas such as Thiruchengode, which produce top-ranking students in secondary and higher secondary examinations under the state board curriculum<sup>18</sup>. Indicators related to education are presented below:

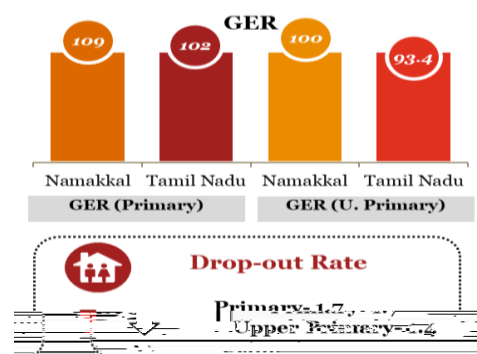
<sup>17</sup> District Level Estimates, EUS, 2013-14, Labour Bureau

<sup>18</sup> <http://www.newindianexpress.com/states/tamil-nadu/2017/may/21/after-dropping-ranking-system-in-tamil-nadu-schools-in-namakkal-take-neet-turn-1607207.html>

The Gross Enrolment Ratio<sup>19</sup> 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 drop-out rates are marginal at 1.7% at the primary level and 1.4% at the upper primary level.

Arts and science colleges are dominant in the district, and female enrolment in such colleges higher than the male counterpart, except that in in engineering, teacher training and veterinary colleges.

Figure 12: GER and Dropout Rates - DISE



Source: DISE 2016-17

Table 6: Institutions of Higher Education in Namakkal District<sup>20</sup>

Type of Institution	No. of Institutions	Students			Pupil- Teacher Ratio
		Male	Female	Total	
Teacher Training Colleges	31	10,578	2,242	12,820	11
Arts and Science Colleges	56	18294	32,677	50,971	33
Engineering Colleges	30	30,515	19,150	49,665	12
Veterinary College	1	250	186	436	5
Industrial Training Institutes	11	-	-	1,078	NA

Source: District Statistical Profile

The skill training infrastructure of the district include skill training centers implementing schemes like TNSDC, and Pradhan Mantri Kaushal Vikas Yojana (PMKVY). Under the PMKVY scheme, six training institutes offered courses in five sectors. The below table presents an overview of the short-term skill development centres in the district.

Table 7: Vocational Training under Short Term Skill Development Programs

S No	Scheme		Sector	Job Role	No. of Training Centres	Capacity/ Intake
1.	Pradhan Kaushal Yojana	Mantri Vikas	Agriculture	Dairy Farmer/ Entrepreneur	1	60
				Gardener	1	60
			Apparel	Self Employed Tailor	1	30
			Automotive	Chauffeur / Taxi Driver	1	60
			Logistics	Inventory Clerk	1	60
2.	Tamil Nadu Skill Development Corporation Programs	Skill	Media and Entertainment	Hairdresser	1	60
			Health care	General Duty Attendant (GDA)	1	40
				Bedside Assistant	1	150
			Garment making	Sewing Machine Operator	3	190
				Hand Embroider	1	40
				Apparel pattern making Basic	1	40
				Tailor (Basic Sewing Operator)	2	700
			Automotive	LMV Driver Level 3	1	1,000
				Commercial Vehicle Driver Level 4	1	1,800
			Banking & accounting	Accounting	1	90
			Beauty and Wellness	Assistant Beauty Therapist	1	90
				Beauty Therapy and Hair Styling level 1	2	360
			Capital Goods	Metal Inert Gas / Metal Active Gas /Gas Metal Arc Welder (MIG/MAG/GMAW)	1	40
			Construction	Assistant Electrician	1	40

<sup>19</sup> 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.

<sup>20</sup> District Statistical Handbook, Govt. of Tamil Nadu

3.	Deen-Dayal Upadhyay Grameen Kaushal Yojana	Electronics	CCTV Installation Technician	1	40
			Mobile Phone Hardware Repair Technician	1	20
		IT/ITES	Domestic Data entry Operator	1	40
		Tourism Hospitality and	Housekeeping Attendant (Manual Cleaning)	1	40
		NA	NA	5	1,685

Source: Data collected from Tamil Nadu Skill Development Corporation

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

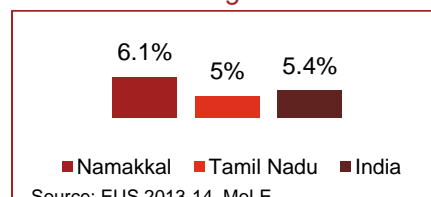
Table 8: Vocational Training under Long Term Skill Development Programs (ITI)

Sector	Job Role	Training Centres	Intake
Automobiles and Auto Components	Mechanic (Motor Vehicle)	8	147
	Mechanic Auto Body Repair	1	21
Capital Goods	Welder	1	21
	Draughtsman (Civil)	1	26
	Draughtsman (Mechanical)	1	21
Construction	Electrician	11	273
Electronics and Hardware	Wireman	5	105
	Mechanic Industrial Electronics	1	21
Infrastructure Equipment	Mechanic Diesel	2	42
IT/ ITeS	Computer Operator and Programming Assistant	2	130
	Desk Top Publishing Operator	1	52
Mining	Fitter	6	168
Plumbing	Plumber	1	26
Textile and Apparel	Sewing Technology	1	41

Source: National Council for Vocational Training - MIS

With respect to population aged 15 and above who have undergone vocational training, around 6.1% in Namakkal had undergone the same, while around 5% had undergone vocational training in the state. The All-India level is lower than the district-level figure<sup>21</sup>.

Figure 13: Population Undergone Vocational Training



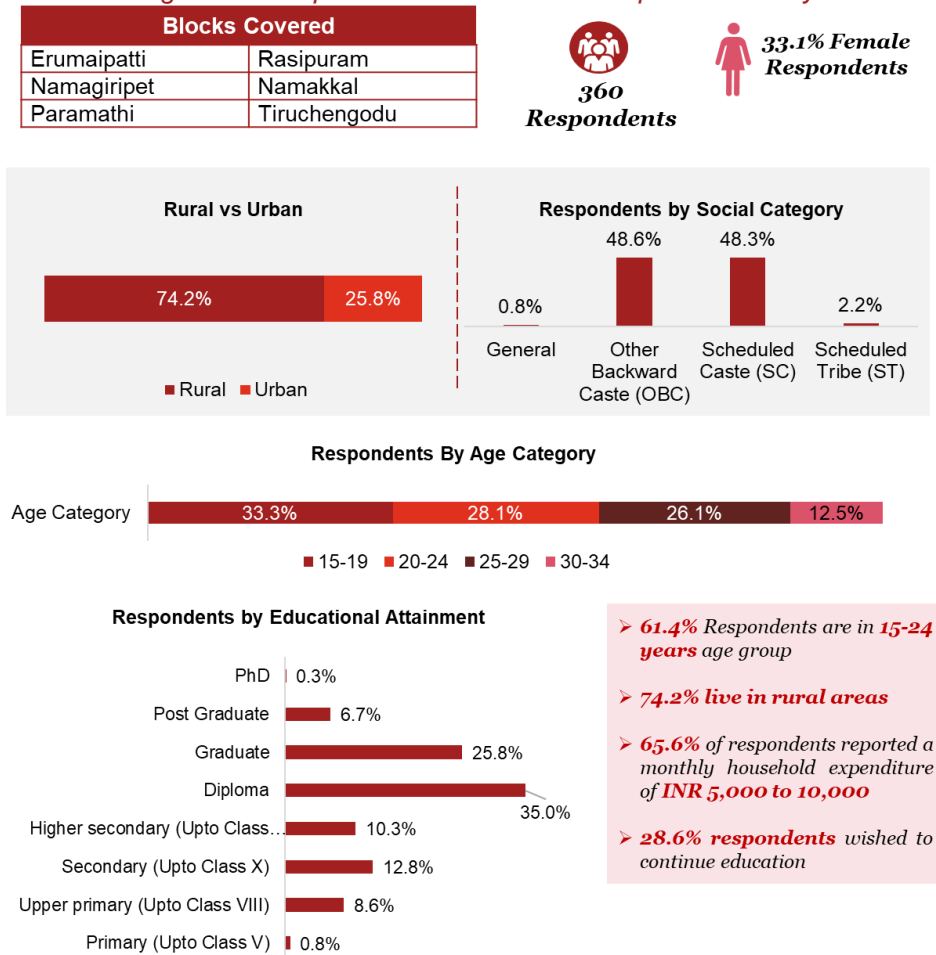
**The district has a high elementary enrolment rate, and a comparatively high proportion of those who have undergone vocational training.**

<sup>21</sup> Employment and Unemployment Survey, 2013-14, Ministry of Labour and Employment



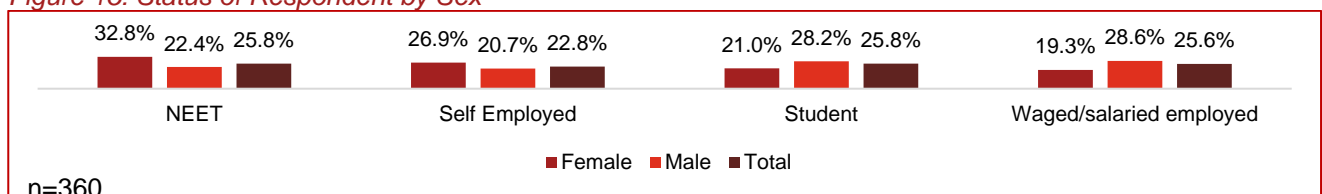
The structured household survey tool was administered with the 360 youth (young men and women in the age group of 15-34 years) from across six blocks. The below figure presents the respondent profile.

*Figure 14: Respondent Profile of Youth Aspiration Survey*



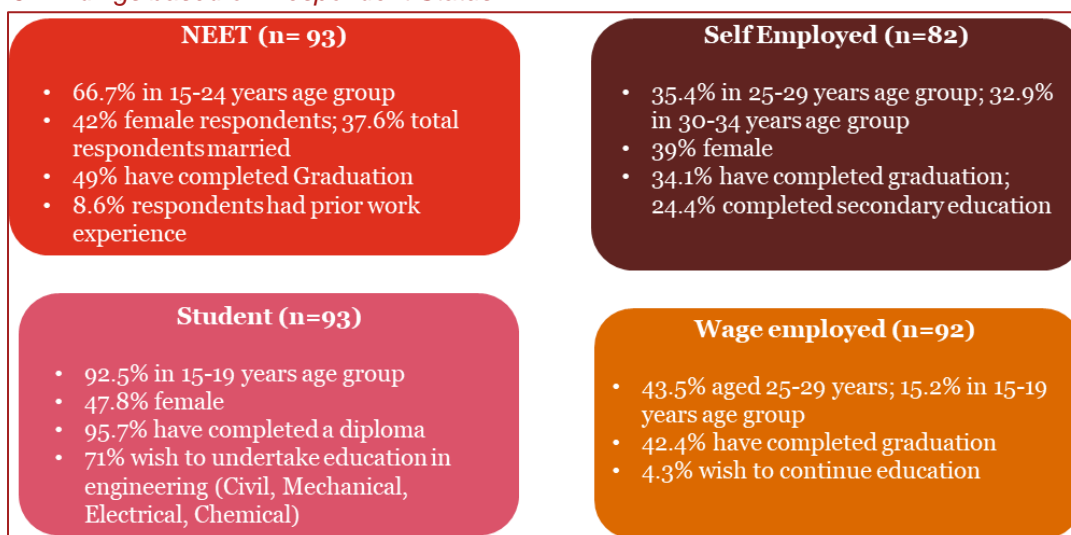
The figure below illustrates the gender wise classification (current status) of the respondents interviewed during the household survey. Around one-third of female respondents fell in the NEET category, and a quarter in self-employment. Around one-fifth of female respondents were in wage employment. Around 29% of male respondents were in wage employment, and 21% in self-employment. Less than half of both male (49.4%) and female respondents (46.2%) were engaged in economic activity.

*Figure 15: Status of Respondent by Sex*



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

Figure 16: Findings based on Respondent Status



Less than half of the total respondents were currently engaged in work, and 4.3% had previously worked and were currently not working. Almost all the respondents (95.1%) stated that their work was related to their training. The median monthly income of those who ever engaged in economic activity was ₹7,500. While it was ₹7,300 among females, it was ₹7,432 among males. 77.1% of female respondents had earned a monthly income of ₹10,000 or lesser. The overall median income was lower than the state level (₹9,968). The males earned substantially lower than state levels (₹11,713).

Figure 17: Distribution of Respondents across Monthly Income Category across Sex

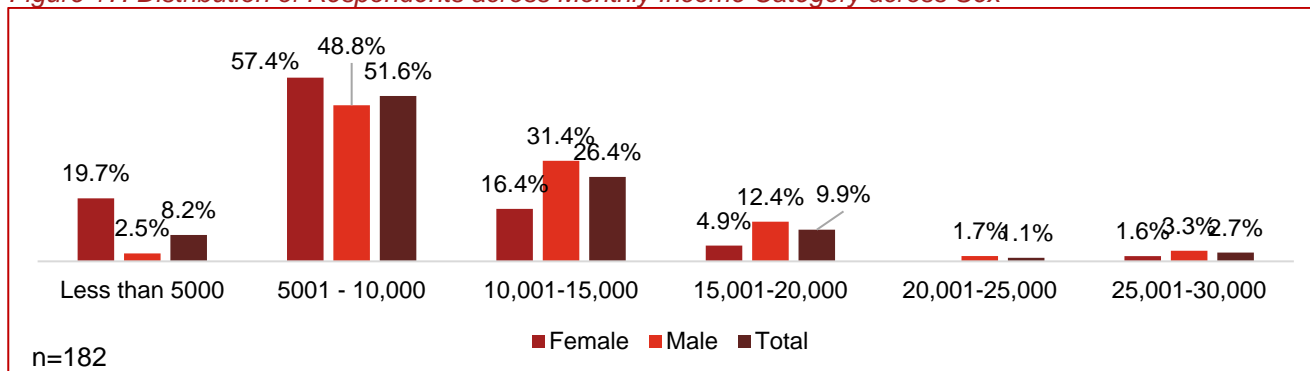


Table 9: Education Qualification of Respondents and Employment Type

Type of Employment	Upto Upper primary (Upto Class VIII)	Secondary (Upto Class X)	Higher secondary (Upto Class XII)	Diploma	Graduate	Post Graduate	Total
Farm Activities	3.6%	2.9%	13.0%	8.3%	11.3%	12.5%	15
Livestock					1.9%		1
Unskilled Worker	7.1%	0.0%	8.7%		1.9%		6
Salaried Employment (teacher, government official, etc.)	14.3%	14.3%	26.1%	29.2%	52.8%	43.8%	58
Skilled worker (tailor, mason, electrician, plumber etc.)	75.0%	60.0%	39.1%	54.2%	13.2%	12.5%	74
Petty Business/Trade/ Manufacturing	3.6%	22.9%	17.4%	12.5%	22.6%	31.3%	33

Number of respondents	31	35	23	24	53	16	182
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41% of working respondents were in skilled worker category, followed by salaried activities and petty business/ trade. The majority of college-educated respondents were engaged in salaried employment, skilled work, and petty business/ trade. Notably, around one-tenth of respondents with graduates and post-graduate education were in farm activities. Around 2.8% of the respondents had undergone vocational training previously (all were male). However, 12.2% of the respondents stated that they were aware of government-run skill training programs.

Almost 26% of the respondents were in Not in Employment, Education or Training (NEET) category. Within this category, 66.7% were in 15-24 years age group, and 42% were female. Around 49% had completed graduation. Around 31.2% reported being in NEET category for the previous 3 years or more and 82.8% of the respondents stated that they wished to work. A similar number of respondents stated that they were looking for a job at the time of the survey. Of those who were searching for a job, 89.7% stated that they had been searching for more than a year. The below table presents the frequency of respondents by duration in NEET category. Around 38% of the female NEET respondents reported to have been in the NEET category for more than five years.

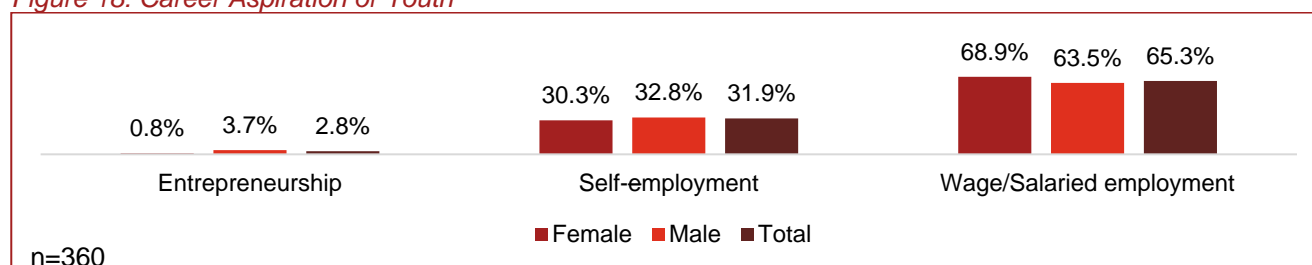
*Table 10: NEET Category Respondents*

Duration in NEET Category (n=93)			
	Female	Male	Total
Less than 6 months	0%	11.1%	6.5%
6 months- 1 year	10.3%	27.8%	20.4%
1- 2 years	23.1%	31.5%	28.0%
2- 3 years	12.8%	14.8%	14.0%
3- 4 years	7.7%	3.7%	5.4%
4-5 years	7.7%	3.7%	5.4%
More than 5 years	38.5%	7.4%	20.4%

N=93

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

*Figure 18: Career Aspiration of Youth*



The main factors determining the aspiration of the youth are Salary (wages)/ Income (98.3%), Job Security (94.4%) and Social Status (85.3%). About 67.2% of the youth (from the respondents who are not students or NEET) feel they are largely prepared for requirements for a job, and only 2.9% of the respondents felt they are unprepared for jobs. The reason commonly cited for feeling prepared is “adequately being skilled with understanding of job (66.2%)”. Around 20% felt that they had “adequately skilled in area of job” (66.5%), followed by “adequate work experience in area of job” (24%). Findings related to factors, preparedness for ideal job and perception of availability of jobs are presented below:

*Table 11: Career Aspiration - Factors, Preparedness and Availability of Jobs*

Factor Determining Aspiration* (n=360)	Responses	Perception of Preparedness for Job (n=174)	Responses
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Salary (wages) / Income	98.3%	Largely Prepared	67.2%
Job Security	94.4%	Moderately Prepared	22.4%
Social Status	85.3%	Somewhat prepared	6.3%
Flexible work arrangements (location, schedule)	80.8%	Not Prepared	2.9%
Closeness to Residence	76.4%	<b>Availability of Jobs (n=360)</b>	<b>Responses</b>
Opportunities for promotion and career development	72.2%	Neither adequate nor inadequate	16.9%
Employer provided benefits and perks	59.7%	Somewhat adequate	11.4%
Safety / Security	58.1%	Somewhat inadequate	66.4%
Gender suitable role	20.3%	Very inadequate	4.4%

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

Among the challenges which the youth see in pursuing their ideal careers, “pressure related to getting married” figures as the most cited challenge, followed by “lack of jobs locally”, “unsafe working environment” and “low financial strength”. The findings are presented below:

**Table 12: Career Aspiration – Challenges in pursuing desired career**

Challenges (n=360)	Responses*	Challenges (n=360)	Responses*
Pressure related to getting married	78%	Lack of Soft Skills	48%
Lack of jobs locally	75%	Lack of sufficient education qualification	26%
Unsafe working environment	75%	Lack of work experience	16%
Low financial strength	70%	Inadequate infrastructure to access work-place	16%
Lack of technical / vocational skills	64%	Lack of guidance / information on appropriate job available for skill levels	11%

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

The key factors determining their employability, according to the respondents were basic and soft skills, years of work experience and relevant work experience in similar position or field. Around 70% of respondents indicated interest in undergoing vocational/ skill training to achieve their aspirations. The responses are presented below:

**Table 13: Key Requirements to enhance employability and steps to achieve aspirations**

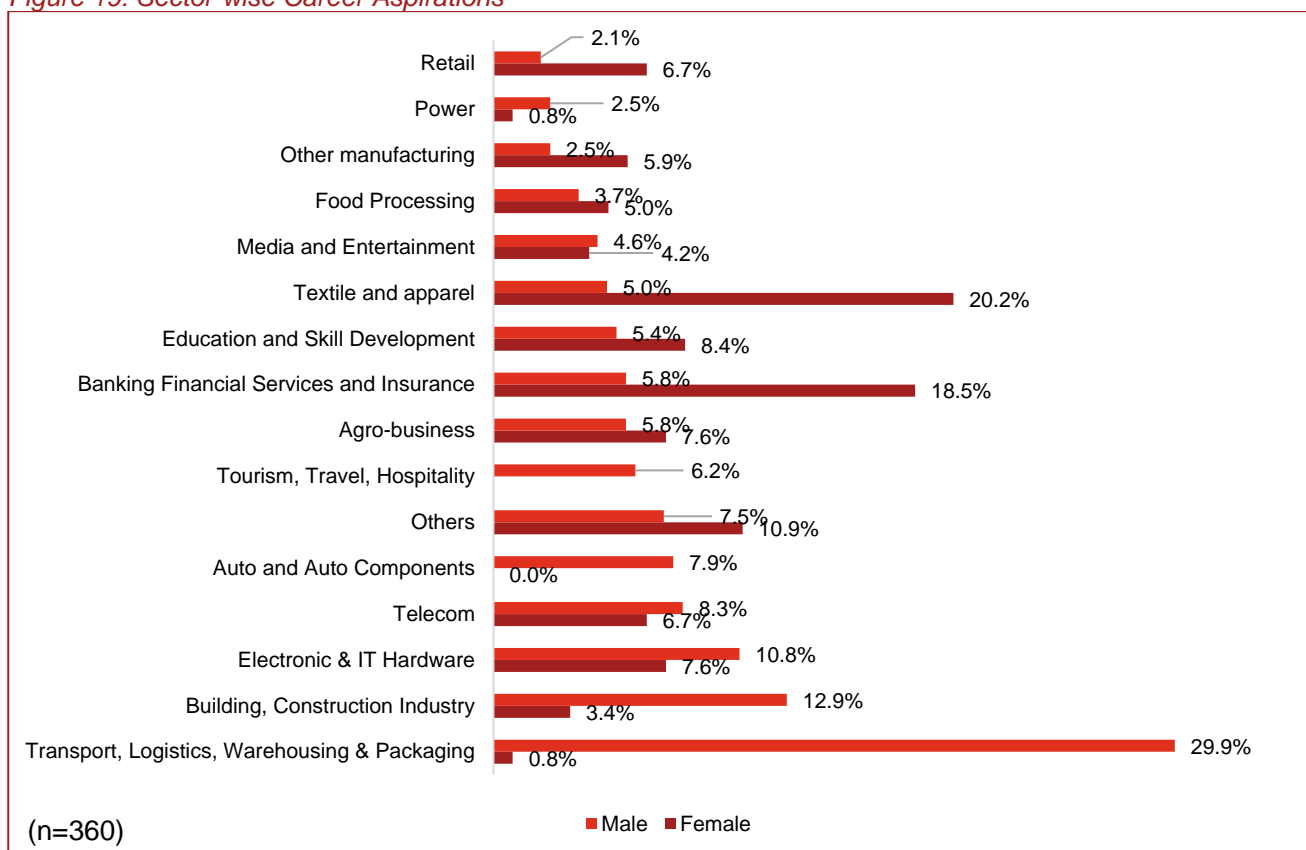
Key Requirements to enhance employability			
Requirements (n=360)	Responses	Requirements (n=360)	Responses
Basics and soft skills	52%	Institution of Education / Skill Training	1%
Years of Work Experience	28%	Education attainment (level of education)	1%
Relevant work experience in similar position or field	11%	References	1%
Certifications of Technical Skill	6%		
Key Skills Required for desired job* (n=360)			
Analytical thinking	86.1%	Creativity, originality and initiative	79.7%
Team work	63.1%	Coordination Skills	78.6%
Clear communication	93.9%	Attention to detail	68.1%
Complex problem-solving	43.6%	Time management	71.4%
Leadership	58.9%	Critical thinking and analysis	78.6%
Active listening	66.1%		
New Steps to achieve aspirations* (n=360)			

Vocational/ Skill Training	70.6%	Already Achieved	6.7%
Continuing Education	17.2%	Apprenticeship / Gathering Work Experience	73.3%

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

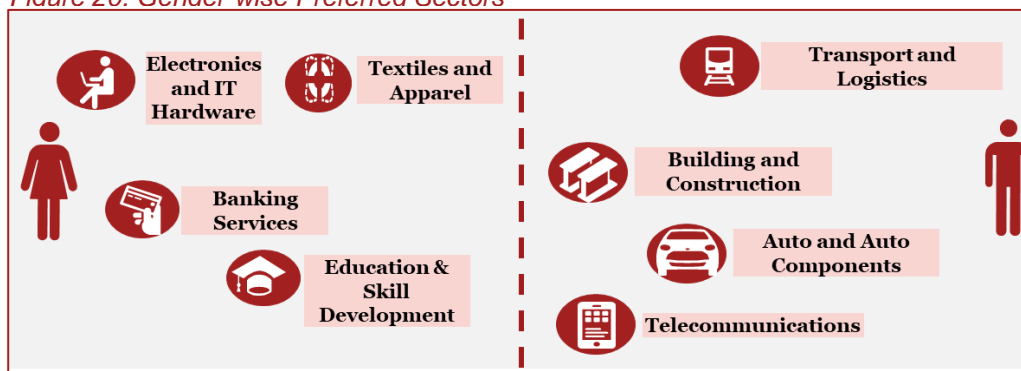
The transport, logistics, warehousing and packaging sector is the most popular and aspired sector among the respondents with 20% youth preferring it. Other Sectors include building and construction, textiles, BFSI, and electronic and IT hardware. The gender-wise responses reveal the following: female respondents cited textiles, BFSI, education and skill development, other sectors and electronics and IT hardware. Male respondents cited transport and logistics, building and construction, telecommunications, auto and auto components, and tourism, travel and hospitality.

Figure 19: Sector-wise Career Aspirations



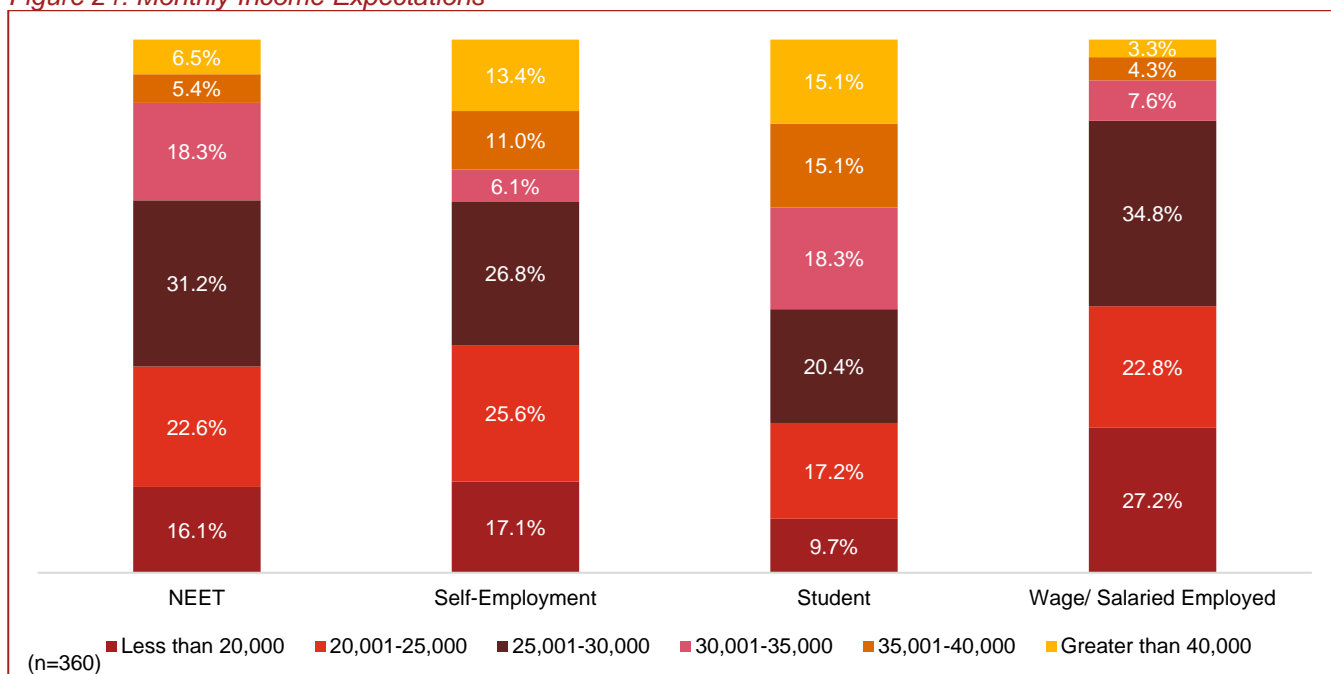
The below graphic presents the preferred sectors by gender.

Figure 20: Gender-wise Preferred Sectors



The median income expectation is around ₹27,380. Around 60.1% of the respondents have expectations of monthly income greater than INR 25,000. Disaggregation by respondent status shows that 69.9% of NEET respondents aspire for a salary between INR 10,000 and INR 30,000. 69.5% of self-employed respondents aspire for a salary between the same ranges. Around 52.7% of student respondents aspire for a salary above INR 30,000. Around half of wage-employed respondents aspire for income above INR 25,000.

Figure 21: Monthly Income Expectations



More than half of the respondents preferred a job within their hometown. Around 20.8% of the respondents were willing to migrate outside the district for work. Around 3.6% of respondents were willing to travel outside the state for employment. Female respondents mostly preferred jobs within their district, as did males.

The most common source of job-related information cited by the respondents is newspapers/ other media (80.6%), followed by Friends and Peers (73.3%). Around 65.8% stated that they get job-related information from the Online Job portals. The gender-disaggregated findings are presented below:

Figure 22: Location Preference for Work\*

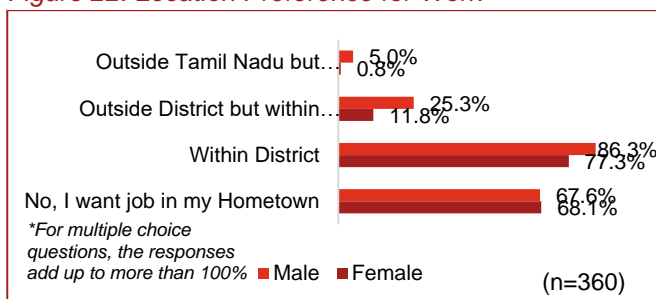
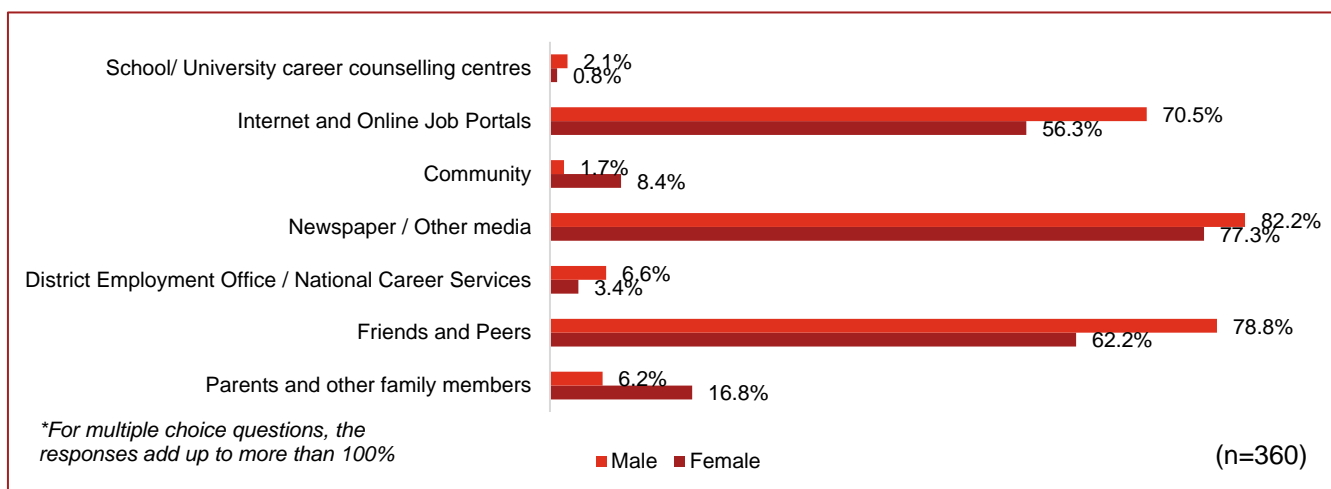


Figure 23: Sources for Job Information\*



Around 52.1% of female respondents and 40.2% of male respondents stated that counselling services were somewhat inadequate. In terms of their expectations from counselling services, more than 90% wanted advice on how to look for jobs, and information on vacancies. More than three-quarters wanted placement for jobs, and more than half, wanted placement in educational programmes.

Figure 24: Accessibility to Counselling Services

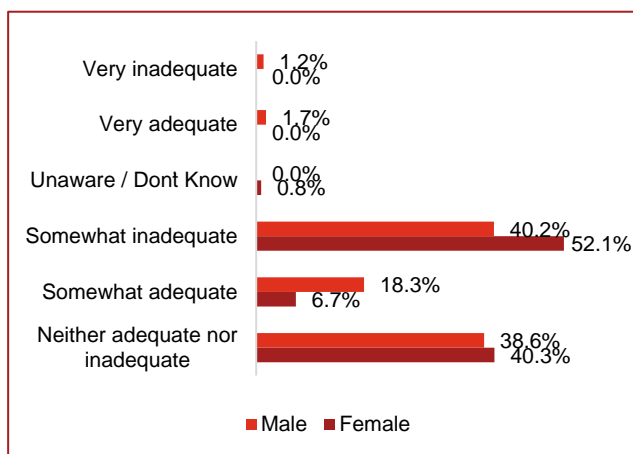
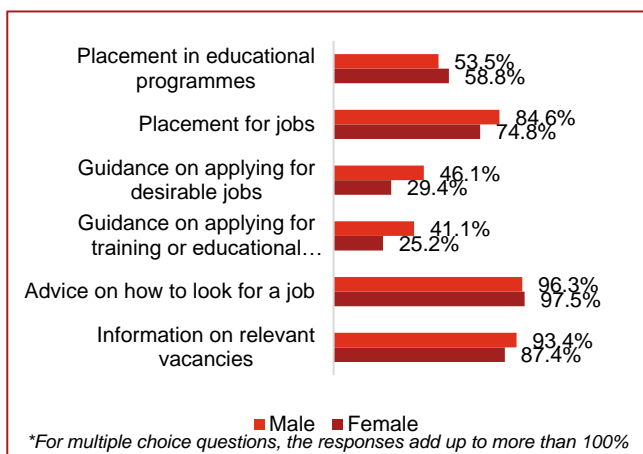


Figure 25: Preferences for Counselling Services



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

**Responses indicate that transport and logistics, textiles, auto and auto components, BFSI and electronics are sectors, which youth aspire to work in. However, the findings indicate that counselling services are inadequate, and guidance on applying to suitable jobs needs to be given to youth.**

Around 2.8% of the respondents had undergone vocational training previously (all were male). However, 12.2% of the respondents stated that they were aware of government-run skill training programs. Of those who had indicated interest in undergoing training for their ideal job (42%), Around 51% of respondents indicated a preference for part-time training, and 58% in short-term courses (duration of 6 months to 1 year). With respect to importance of reputation of training provider, reputation of certifying body, quality of training, practical exposure, and internship/ apprenticeship quality, more than 90% of the respondents stated that these were important.

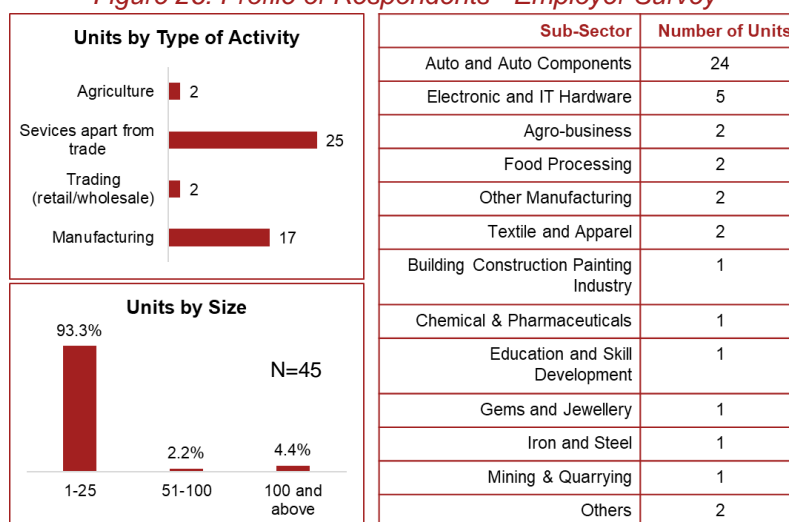


42% respondents are interested in undertaking vocational training



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 91% of the employers were in manufacturing. Overall, 42% of the employers were in textile and apparel sector. Around half of the employers were micro-enterprises, and one-fifth large. The profile of respondents is presented below:

**Figure 26: Profile of Respondents -Employer Survey**



On average, the units had 9% of female employees in their workforce. Common methods of recruitment were found to be local community (78.4%), employee referrals (54%) and manpower agencies (24.3%). Around 2.7% each mentioned campus recruitment in ITI/ Polytechnics, social networks and web portals. Challenges with respect to recruitment include: lack of basic education requirement (52%), lack of requisite soft skills (48%) and lack of requisite core skills (20%).

Around 36% of employers stated that they have recruited from skill training institutions/ programs. Within these, challenges with respect to such recruitment were thus: lack of quality resources (59.1%), and lack of experience with work environment (4.5%). Around 27.3% stated that they had not faced any specific challenge.

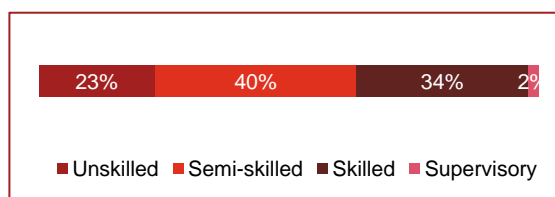
With respect to organization of the workforce by skill level, 34% of workers on average in the units were skilled, 40% semi-skilled and 2% supervisory. On average, 63% of workers were contractual. Around 3% of workers were from outside the state (and 5% from outside the district).

Questions on attrition yielded the following findings: annual attrition rates for male and female workers were 16.7% and 0% respectively. Causes for attrition included low wages (76%), low wages (50%), better opportunities (30%), and work hours (30%)

**Figure 27: Respondents by Key Causes of Attrition\***



**Figure 28: Respondents by Skill Level of Workers**



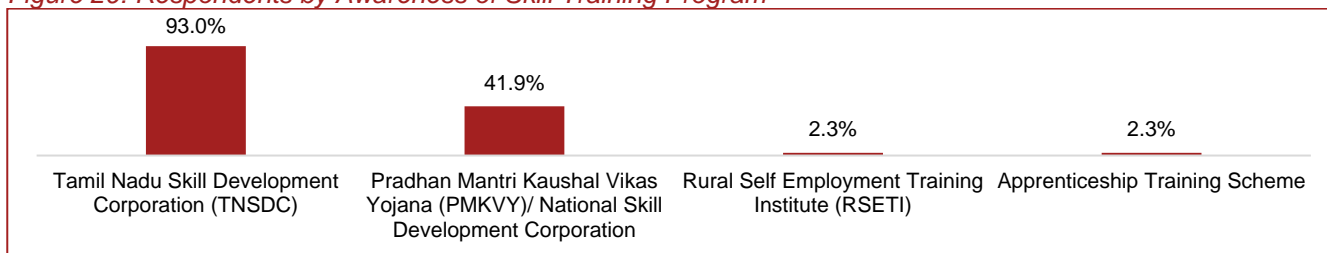
With respect to growth prospects and adoption of technology, the following findings emerged: nearly 65% of respondents felt that growth prospects were medium or high, and 87% indicated interest in medium to high technology adoption. However, only 19% had plans to adopt technology.

**Table 14: Growth Prospects and prospective adoption of technology**

Growth Prospects of Industry (n= 42)	%	Level of Technology adoption (n= 43)	%	Plans to adopt Technology (n=43)	%
High	36%	High	74%	Yes	19%
Medium	29%	Medium	13%		
Low	7%	Low	13%	No	81%
Can't Say	29%	Can't Say	0%		

Around 72.7% employers stated that there is high demand for minimally-skilled people in the next five years. However, demand for skilled labour and supervisors seems to be low (less than 5% responses). Questions on awareness of government-run skill training programs and possible partnerships yielded the following findings: 84.2% of respondents (n=38) stated that they were interested in working with government agencies or private training providers to source relevant workforce. Awareness regarding skill development programs was as follows: almost 93% of respondents were aware of the Tamil Nadu Skill Development Corporation.

**Figure 29: Respondents by Awareness of Skill Training Program**



**Responses indicate that there is medium to high demand for minimally-skilled labour perceived in the next five years.**

A focus group discussion was conducted with nine stakeholders from various organizations in sectors such as textiles, food processing, poultry, bus-body building and sago processing. The following were the major points of discussion:

**Table 15: Focus Group Discussion - Key Points**

S No	Topic	Findings
1.	Awareness of government skill training programs	Participants were not aware of government skill training programs
2.	Quality of ITI/ Polytechnics/ Engineering colleges in the district	<ul style="list-style-type: none"> <li>Apart from sago processing, none of the other sectors had established linkages with ITI/ Polytechnic/ Engineering colleges – even within the former, only supervisors/ managers were taken from engineering colleges</li> <li>Other sectors tend to recruit through employment fairs (at the District Employment Office) and train such workers</li> </ul>
3.	Candidate Attitudes/ Abilities	<ul style="list-style-type: none"> <li>Women workers tend to have lower attrition rates and are willing to work for lower pay; but they also have restrictions with respect to work timings, and tend to take time off for childcare and household responsibilities</li> <li>Men tend to have higher attrition rates due to low pay, and preference for white-collar jobs</li> <li>Workers in bus-body building have high rates of attrition, due to workplace safety issues (lack of safety equipment)</li> </ul>
4.	Migrant workers	<ul style="list-style-type: none"> <li>Almost all migrant workers are engaged in hard labour</li> <li>Migrants tend to be from Bihar, Odisha and West Bengal</li> </ul>
5.	Technological Transformation/ Automation	<ul style="list-style-type: none"> <li>Technology adoption &amp; automation are being undertaken by the poultry and poultry-feed industries.</li> <li>Technical operators are needed to operate machineries (such as feed machineries)</li> </ul>

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

**Representatives from Industry Associations and Major Employers:** Unskilled labour is in abundance, from both local communities and other states. However, attrition is a challenge. Employers are comfortable with skilling fresh recruits, and are also in the process of automating. This reduces their need for specialized labour. The poultry and feed manufacturing industries experience fluctuations due to changing fuel prices and water supply. However, they are among the more developed sectors. Bus-body building industry has undergone a recent downturn, due to skilled labour shortage and slowdown in government job-work. However, given the right stimulus, the sector can offer employment to a substantial number of people, in the job roles of fitter, turner, electrician and welder. The auto components sector can also provide employment to those trained in such job roles. Migrants work in poultry and egg farms, in unskilled job roles.

**Government Officials:** While recruiters (in job fairs) look for shop-floor workers, youth go for white-collar/ desk jobs in sales/ administration. Candidates registering for job fairs tend to be school or college educated, and only engineering graduates migrate out of the district for employment. Unmarried young women are hired in semi-skilled job roles in mobile phone assembly units based in Chennai.

**College/ ITI representatives:** Students in government ITI tend to go for self-employment: students passing out from Computer Operator and Programming Assistant, and Data Entry Operator courses open up browsing centres. If they are taken for apprenticeships, they go for administrative roles. Women tend to be interested in textiles.

***There seems to be a gap between the outlook of vocational training institutions and the local industry requirements. Bridging this gap would necessitate a dialogue between the former and the latter. In addition, manufacturing units in the district need to have improved work safety measures and ensure better pay and benefits to stop attrition.***



The district is witnessing a growing industrial sector. As per our methodology for estimating demand and supply, it can be seen that **manufacturing, education and health, repair of domestic goods, construction, financial activities and communication** show high levels of demand for both skilled and semi-skilled workers.

*Table 16: Sector wise Incremental Demand for Skilled and Semi-skilled Workers between 2019 and 2025*

Sector	Demand for Skilled Workers			Demand for Semi-skilled Workers			Total Demand
	2019-21	2022-25	Total	2019-21	2022-25	Total	
Allied Activities	150	218	368	1,053	1,526	2,579	2,947
Mining and quarrying	179	283	462	298	472	770	1,232
Manufacturing	2,877	4,069	6,946	5,754	8,138	13,892	20,838
Construction	567	838	1,405	1,418	2,096	3,514	4,919
Trade & Repair Services	320	448	768	1,106	1,551	2,657	3,425
Hotels and restaurants	164	230	395	318	446	765	1,160
Transportation and storage;	467	651	1,118	1,122	1,561	2,683	3,801
Communication and services related to broadcasting	818	1,270	2,089	409	635	1,044	3,133
Financial and insurance activities	1,078	1,684	2,762	539	842	1,381	4,142
Real estate, ownership of dwelling and business services	217	329	547	544	823	1,367	1,914
Education; Human health & Social Work Activities	2,312	3,467	5,779	1,849	2,774	4,623	10,402
Arts, entertainment and recreation	343	503	846	275	402	677	1,523
Activities of membership organizations; Repair of computers and personal and household goods & Other personal service activities	1,151	1,686	2,837	921	1,349	2,270	5,107
Other Services	545	799	1,344	436	639	1,075	2,419
<b>Total Demand</b>	11,190	16,475	27,665	16,042	23,254	39,296	66,961
<b>Total Supply</b>	6,700	8,934	15,634	11,176	14,901	26,077	41,712
<b>Skill Gap</b>	4,489	7,542	12,031	4,866	8,353	13,219	25,250

<sup>22</sup> 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.



The below table presents the summary of training projects:

*Table 17: Summary of Training Projects*

S No	Sector	Trades	Target (Persons)	Budget (₹)
1.	Textile and Apparel	<ul style="list-style-type: none"> <li>Industrial Sewing Machine Operator</li> <li>Power Loom Operator</li> <li>Packing Checker</li> <li>Knotting Machine Operator</li> </ul>	3,000	₹4.17 Crores
2.	Bus-Body Building	<ul style="list-style-type: none"> <li>Automotive Electrician Level 4</li> <li>Repair - Welder</li> <li>Vehicle Assembly Fitter/ Technician</li> <li>Maintenance Assistant</li> <li>Body Shop In-Charge</li> </ul>	3,000	₹7.06 Crores
3.	Training in Food Processing/ Poultry Processing Sector	<ul style="list-style-type: none"> <li>Dairy Processing Equipment Operator</li> <li>Cold Storage Technician</li> <li>Food Products Packaging Technician</li> <li>Grain Mill Operator</li> <li>Supervisor: Meat and Poultry Processing</li> <li>Corn Starch Manufacturing Technician</li> <li>Multi Skill Technician (Food Processing)</li> <li>Poultry feed, food safety and labelling supervisor</li> <li>Feed Technician</li> <li>Veterinary Field Assistant</li> <li>Veterinary Clinical Assistant</li> </ul>	5,000	₹9.87 Crores
4.	Stone Sculpting	<ul style="list-style-type: none"> <li>Sculptor</li> <li>Stone Cutter (Cutting machine operator)</li> <li>Stone Grinder (Grinding machine operator)</li> </ul>	500	₹0.77 Crores
5.	Domestic Appliance Services	<ul style="list-style-type: none"> <li>Helper Electrician</li> <li>Plumber (General)</li> <li>Solar Domestic Water Heater Technician</li> <li>Field Technician – AC</li> <li>Field Technician – Refrigerator</li> <li>Field Technician - Washing Machine</li> <li>Field Technician - Other Home Appliances</li> </ul>	3,500	₹7.01 Crores
6.	Logistics	<ul style="list-style-type: none"> <li>Warehouse Packer</li> <li>Inventory Clerk</li> <li>Warehouse Supervisor</li> <li>Reach Truck Operator</li> <li>Receiving Assistant</li> <li>Warehouse Quality Checker</li> <li>Loading Supervisor</li> <li>Material Handling Equipment (MHE) Maintenance Technician</li> <li>Goods Packaging Machine Operator</li> </ul>	3,000	₹4.74 Crores

7.	Retail	<ul style="list-style-type: none"> <li>• Cashier</li> <li>• Retail Sales Associate</li> <li>• Store Ops Assistant</li> <li>• Seller Activation Executive</li> <li>• Digital Cataloguer</li> <li>• Retail Trainee Associate</li> </ul>	3,000	₹3.64 Crores
8.	Construction	<ul style="list-style-type: none"> <li>• Foreman – Electrical Works (Construction)</li> <li>• Metal Inert Gas/Metal Active Gas/Gas Metal Arc Welder (MIG/MAG/GMAW)</li> <li>• Mason Marble, Granite and Stone</li> <li>• Foreman Wet Finishing and Flooring</li> <li>• Bar Bender and Steel Fixer</li> <li>• Assistant Electrician</li> </ul>	3,000	₹10.46 Crores
9.	Healthcare	<ul style="list-style-type: none"> <li>• General Duty Assistant</li> <li>• Blood Bank Technician</li> <li>• Cardiac Care Technician</li> <li>• Diabetes Educator</li> <li>• Emergency Medical Technician - Basic</li> <li>• Medical Records &amp; health Information Technician</li> </ul>	4,000	₹14.75 Crores
<b>Total Training Target and Training Cost</b>			28,000	₹62.45 Crore

**Note:**

1. 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 to reflect the market requirements.

3. An attempt was made to map each proposed job role with a QP NOS reference number. In the cases where accurate mapping has not been possible, we have mapped the job role with the nearest QP NOS reference number. In cases where we have proposed new job roles, we have indicated that a QP NOS reference is to be designed for the same.

4. The Cost of Training has been calculated using the following method: Each job role has training hours, training target (persons), and a cost category. The cost category has been determined by the National Skills Qualification Framework (NSQF) with respect to the level of capital expenditure and operational expenditure for imparting the course aligned to that specific job role. Therefore, each cost category corresponds to a particular cost norm calculated per trainee per hour. The calculations have been done as per the Government order (H-22011/2/2014-SDE-III) issued by MSDE on 4th January 2019. The categories are defined as follows:

- INR 42.40 for Category-I
- INR 36.30 for Category -II
- INR 30.30 for Category-III

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

Where:

Number of days of training = training hours / 8

Transportation costs per trainee per day = INR 100

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

The training projects are described below:

*Table 18: Training Project 1*

Name of the Project: Training in Textile and Apparel sector							
<b>Key Economic Drivers:</b>							
<ul style="list-style-type: none"> <li>The textile sector has potential to employ young women at reasonable salaries, and is already dominated by women</li> <li>Employers indicate interest in skilling/ partnering with skill training programs to ensure a quality supply of labour</li> <li>The local ITI runs courses related to Sewing Machine Operation, and can expand with help from government and private player collaborations</li> </ul>							
<b>Key Partners:</b> ITI, Textile Units in Namakkal							
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 <sup>th</sup> pass	600	₹0.9 Crores
Power Loom Operator	4	TSC/ Q2208	300	1	8 <sup>th</sup> pass	600	₹1 Crores
Packing Checker	4	TSC/ Q0501	300	1	10 <sup>th</sup> + 2yrs	600	₹1 Crores

Knotting Machine Operator	4	TSC/ Q2205	300	1	5 <sup>th</sup> + 2yrs	600	₹1 Crores
Total Training Cost						3,000	₹3.86 Crore
Total Assessment and Certification cost (₹ 1,000 per candidate)							₹0.3 Crore
Total Cost							₹4.17 Crores
<b>Key Considerations:</b> <ul style="list-style-type: none"> <li>Since the trainings will be focused on women, part-time and weekend training must be explored to allow women from different backgrounds to join</li> <li>Financial incentives can be given to trainees from low income and rural backgrounds</li> <li>Incubation can be given as an option for women who wish to set up their own businesses</li> </ul>							

Table 19: Training Project 2

Name of the Project: Training in Bus-Body Building							
<b>Key Economic Drivers:</b>							
<ul style="list-style-type: none"> <li>Namakkal is known for bus and lorry body building and maintenance</li> <li>The recent slowdown in the sector can be attributed to a lack of skilled labour</li> <li>With the right stimulus, ITI graduates can be engaged in several job roles in the sector</li> </ul>							
<b>Key Partners:</b> ITI, Lorry and Bus Body Builder companies, All India Motor Workshop Owners' Association							
Job Roles:	NSQF Level	NSQF Code	Duration of Training (hours)	Target Group	Training Target	Cost of Training	Cost Category
Automotive Electrician Level 4	4	ASC/ Q1408	400	12 <sup>th</sup> pass	600	₹1.32 Crores	1
Repair - Welder	4	ASC/Q1902	400	8 <sup>th</sup> pass	600	₹1.32 Crores	1

Vehicle Assembly Fitter/ Technician	4	ASC/Q3601	400	10 <sup>th</sup> pass	600	₹1.32 Crores	1
Maintenance Assistant	2	ASC/Q6806	300	ITI	600	₹1 Crores	1
Body Shop In-Charge*	7	ASC/Q1413	550	ITI	600	₹1.82 Crores	1
Total Training Cost					3,000	₹6.76 Crore	
Total Assessment and Certification cost (₹ 1,000 per candidate)						₹0.30 Crore	
Total Cost						₹7.06 Crores	
<b>Key Considerations:</b> <ul style="list-style-type: none"> <li>The trainings must include sessions on the shop-floor, and adequate worker safety measures in place</li> <li>While training women, special care must be taken to provide women friendly facilities – bathrooms, changing rooms, etc</li> </ul> Incubation/ mentoring support can be given if trainees decide to open up their own enterprises							

Table 20: Training Project 3

Name of the Project: Training in Food Processing/ Poultry Processing Sector							
<b>Key Economic Drivers:</b> <ul style="list-style-type: none"> <li>Food processing is a major sector in the district, and has scope for growth due to increasing incomes, population growth and urbanization</li> <li>Feed manufacturing is preferred by many youth due to the low level of skill required, suitable pay and working hours.</li> <li>Colleges can partner with industry and training providers to give certificate courses in dairy processing, food safety and quality assurance, and production of other food items like sago</li> <li>Poultry processing sector can also provide trainings, along with feed processing units</li> </ul>							
<b>Key Partners:</b> ITI/ Degree colleges, engineering colleges, sago, poultry and feed processing units							
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 <sup>th</sup> pass	300	₹0.4 Crores
Cold Storage Technician	4	FIC/Q7004	250	3	12 <sup>th</sup> pass/Diploma	300	₹0.33 Crores
Food Products Packaging Technician	5	FIC/Q7001	240	1	12 <sup>th</sup> pass	300	₹0.4 Crores
Grain Mill Operator	4	FIC/Q1003	240	1	8 <sup>th</sup> pass	300	₹0.4 Crores
Supervisor: Meat and Poultry Processing	5	FIC/Q3007	240*	1	10 <sup>th</sup> pass	300	₹0.4 Crores
Corn Starch Manufacturing Technician	4	FIC/Q1007	240	1	10 <sup>th</sup> pass	300	₹0.4 Crores
Multi Skill Technician (Food Processing)	4	FIC/Q9007	600	1	10 <sup>th</sup> pass	300	₹0.99 Crores
Poultry feed, food safety and labelling supervisor	5	AGR/Q4305	240	2	10 <sup>th</sup> pass	300	₹0.36 Crores
Feed Technician	4	AGR/Q5109	200	1	10 <sup>th</sup> pass	300	₹0.33 Crores
Veterinary Field Assistant	5	AGR/Q4801	1,034	1	10 <sup>th</sup> pass	300	₹1.71 Crores
Veterinary Clinical Assistant	5	AGR/Q4802	2,243	1	10 <sup>th</sup> pass	300	₹3.7 Crores

Sculptor*	NA	NA	400	2	5 <sup>th</sup> pass	200	₹0.4 Crores
Stone Cutter (Cutting machine operator)	3	HCS/Q14 02	220	2	5 <sup>th</sup> pass	200	₹0.22 Crores
Stone Grinder (Grinding machine operator)	3	HCS/Q14 03	220	2	5 <sup>th</sup> pass	100	₹0.11 Crores
Total Training Cost						500	₹0.76 Crore
Total Assessment and Certification cost (₹ 1,000 per candidate)							₹0.05 Crore
Total Cost							₹0.71 Crores
<b>Key Considerations:</b> <ul style="list-style-type: none"> <li>The trainings should focus on school drop-outs/ young men in NEET category</li> <li>Trainings can be accompanied by stipends</li> <li>Possibilities can be explored for mentoring/ incubation for entrepreneurs</li> </ul>							

Table 22: Training Project 5

Name of the Project: Training in Domestic Appliance Services Sector							
<b>Key Economic Drivers:</b>							
<ul style="list-style-type: none"> <li>Services sector plays a major role in the district economy</li> <li>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)</li> </ul>							
<b>Key Partners:</b> ITI/ Polytechnic							
Job Roles:	NSQF Level	NSQF Code	Duration of Training (hours)	Cost category	Target Group	Training Target	Cost of Training
Helper Electrician	3	CON/Q0601	350	1	ITI/ Polytechnic	500	₹0.97 Crores

					Students/12 <sup>th</sup> pass		
Plumber (General)	3	PSC/Q0104	410	1	ITI/ Polytechnic Students/12 <sup>th</sup> pass	500	₹1.13 Crores
Solar Domestic Water Heater Technician	4	SGJ/Q0601	400	1	ITI/ Polytechnic Students/12 <sup>th</sup> pass	500	₹1.1 Crores
Field Technician – AC	4	ELE/Q3102	300	1	ITI/ Polytechnic Students/12 <sup>th</sup> pass	500	₹0.83 Crores

Table 23: Training Project 6

Name of the Project: Training in Logistics Sector							
<b>Key Economic Drivers:</b>							
<ul style="list-style-type: none"> <li>Due to its expanding economy and trade, Namakkal will require more manpower in logistics, transportation and communications</li> <li>The sector is a major contributor to GDDP and has potential for growth and employment generation as per demand estimates</li> <li>The sector can accommodate semi-skilled labour</li> </ul>							
<b>Key Partners:</b> ITI, engineering and degree colleges, Tamil Nadu LPG Transport Owners' Association							
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 <sup>th</sup> pass	300	₹0.45 Crores
Inventory Clerk	3	LSC/Q2108	250	1	12 <sup>th</sup> pass	300	₹0.42 Crores
Warehouse Supervisor	5	LSC/Q2307	240	1	Diploma/ Engg.	300	₹0.4 Crores
Reach Truck Operator	4	LSC/Q2111	300	1	8 <sup>th</sup> pass	300	₹0.5 Crores
Receiving Assistant	3	LSC/Q2112	250	2	10 <sup>th</sup> pass	300	₹0.37 Crores
Warehouse Quality Checker	3	LSC/Q2313	300	3	10 <sup>th</sup> pass	300	₹0.39 Crores
Loading Supervisor	3	LSC/Q2314	270	2	10 <sup>th</sup> pass	400	₹0.53 Crores
Material Handling Equipment (MHE) Maintenance Technician	4	LSC/Q2315	280	1	10 <sup>th</sup> pass	400	₹0.62 Crores

Table 24: Training Project 7

Name of the Project: Training in Retail Sector							
<b>Key Economic Drivers:</b>							
<ul style="list-style-type: none"> <li>Urbanizing population will spur the growth of large retailers</li> </ul>							
<b>Key Partners:</b> Large retailers							
Job Roles:	NSQ F Level	NSQF Code	Duration of Training (hours)	Cost category	Target Group	Training Target	Cost of Training
Cashier	2	RAS/Q010 2	200	3	ITI/Diploma graduates/G raduates	500	₹0.43 Crores
Retail Sales Associate	4	RAS/Q010 4	280	3	12 <sup>th</sup> pass	500	₹0.6 Crores
Store Ops Assistant	1	RAS/Q010 1	200	3	12 <sup>th</sup> pass	500	₹0.43 Crores
Seller Activation Executive	4	RAS/Q030 1	280	3	12 <sup>th</sup> pass	500	₹0.6 Crores
Digital Cataloguer	4	RAS/Q030 2	280	3	12 <sup>th</sup> pass	500	₹0.6 Crores
Retail Trainee Associate	3	RAS/Q010 3	280	2	12 <sup>th</sup> pass	500	₹0.69 Crores
Total Training Cost						3,000	₹3.34 Crore
Total Assessment and Certification cost (₹ 1,000 per candidate)							₹0.30 Crore
Total Cost							₹3.64 Crores
<b>Key Considerations:</b>							
<ul style="list-style-type: none"> <li>Women can be targeted – but adequate facilities must be provided</li> <li>On the job training can be provided by local retailers</li> </ul>							

Table 25: Training Project 8

Name of the Project: Training in Construction Sector							
Key Economic Drivers:							
<ul style="list-style-type: none"><li>The district's construction sector is a major contributor to GDDP, and shows potential for employment generation</li></ul>							
Key Partners: ITI, 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 <sup>th</sup> pass	500	₹2.48 Crores
Metal Inert Gas/Metal Active Gas/Gas Metal Arc Welder (MIG/MAG/GMAW)	4	I/CSC/Q0209	600	1	10 <sup>th</sup> pass	500	₹1.65 Crores
Mason Marble, Granite and Stone	4	CON/Q0106	600	1	10 <sup>th</sup> pass	500	₹1.65 Crores
Foreman Wet Finishing and Flooring	5	CON/Q0109	800	1	10 <sup>th</sup> pass	500	₹2.2 Crores
Bar Bender and Steel Fixer	4	CON/Q0203	400	1	10 <sup>th</sup> pass	500	₹1.1 Crores
Assistant Electrician	3	CON/Q0602	400	1	10 <sup>th</sup> pass	500	₹1.1 Crores
	Total Training Cost					3,000	₹10.16 Crore
	Total Assessment and Certification cost (₹ 1,000 per candidate)						₹0.30 Crore
	Total Cost						₹10.46 Crores
Key Considerations:							
<ul style="list-style-type: none"><li>The trainings should be inclusive of school drop-outs/ young men in NEET category</li><li>Trainings can be accompanied by stipends</li><li>Trainings can focus on sustainable practices</li></ul>							

Table 26: Training Project 9

Name of the Project: Training in Healthcare Sector							
Key Economic Drivers:							
<ul style="list-style-type: none"><li>Madurai is growing and urbanizing, and hence would require an expanded healthcare system</li><li>Healthcare sector has scope for young men and women, and career mobility as well</li></ul>							
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	600	1	12 <sup>th</sup> pass	800	₹2.64 Crores
Blood Bank Technician	4	HSS/ Q2801	1,000	1	12 <sup>th</sup> pass/Diploma Graduate	800	₹4.4 Crores
Cardiac Care Technician	4	HSS/ Q0101	840	1	12 <sup>th</sup> pass/Diploma Graduate	800	₹3.69 Crores
Diabetes Educator	4	HSS/ Q8701	360	2	12 <sup>th</sup> pass/Diploma Graduate	800	₹1.41 Crores
Emergency Medical Technician - Basic	4	HSS/ Q2301	240	2	12 <sup>th</sup> pass/Diploma Graduate	400	₹0.47 Crores
Medical Records & health Information Technician	4	HSS/ Q5501	900	2	12 <sup>th</sup> pass/Diploma Graduate	400	₹1.76 Crores
	Total Training Cost					4,000	₹14.35 Crores
	Total Assessment and Certification cost (₹ 1,000 per candidate)						₹0.40 Crores
	Total Cost						₹14.75 Crores
Key Considerations:							
<ul style="list-style-type: none"><li>Residential training and part-time training modes should be explored to allow women of all backgrounds to attend</li></ul>							

**Strengthening the local Skilling Eco-system:** In order to bridge the skill-mismatch and difference in outlook between vocational training programs and industry demands, apprenticeship scheme must be popularized further, and priority given to local firms, so that they are able to recruit locally, and absorb vocationally trained youth in shop-floor roles. Fostering such linkages would help both manufacturers and services providers (healthcare, telecommunications, tourism and hospitality), along with vocational training institutions.

**Creating Awareness on Trades:** The qualitative and quantitative findings reveal that educated youth aspire for white-collar jobs. Creating awareness and encouraging youth to take up shop-floor jobs with appropriate incentives will solve labour shortage issues in sectors such as bus body building and food processing.

**Creation of high-skill job roles:** Qualitative findings reveal that due to automation, employers may require skills in the areas of maintenance and repair, and in the operation of advanced machines. Training courses, which focus on imparting such skills, will ensure that local youth find such jobs, which can involve higher pay than semi-skilled job roles. Training courses can also aim for gender inclusivity, and thereby increase opportunities for women.

**Development of a Quality Labour Force:** Based on insights arising from qualitative consultations, the following initiatives can be taken:

- Wage Subsidies/ provisions for living wage can be designed, so that the current workforce is able to work on the shop-floor without major attrition issues
- Workplace health and safety measures can be implemented in order to ensure lower attrition
- Workplace benefits can be provided based on government support for creches for working mothers can also help mitigate attrition
- Migrant Support Centres can be set up, which help them with accommodation, workplace related challenges, and up-skilling/ re-skilling

**Promotion of Entrepreneurship and development of incubation facilities:** Based on qualitative findings, young men and women wish to open their own businesses (especially ITI passouts), in the form of browsing centres, retail outlets, and tailoring. Promoting micro and small entrepreneurs will improve the scope for employment as well.

### ***Sampling Design for Youth Survey***

A total of 360 youth was 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***

We conducted the survey in six blocks in Namakkal with the following stratification - two high performing, two moderate performing and two low performing industrial blocks. To ascertain and rank the blocks into the categories, a multi-faceted approach was undertaken which is outlined as follows. It is to be noted that the ranking of the blocks is on a relative basis that is, ranked with respect to the district and not on a generalized scale.

For categorizing the blocks into High, Medium and Low, we used four data points. We chose variables such as the Count of MSME Clusters, the Number of SIDCO Industrial Estates, the Number of SIPCOT Industrial Estates and finally the outstanding credit annual data from the Aggregate Deposit and Bank Credit of Scheduled Commercial Banks (SCBs) at Centre-Level.

Geographic Information System (GIS) was used to capture the Latitude and Longitude of the individual locations of the Centre (RBI Centre – Credit data), MSME Clusters, SIDCO and SIPCOT Industrial Estates. The same were mapped to the respective blocks by overlaying the locations onto the block map of Tamil Nadu. For enabling aggregation of data at block-level and mapping the location, the block-level map of Tamil Nadu was digitised using in-house GIS technologies.

#### **a. RBI's centre level banking data**

The RBI's quarterly release of centre level banking data reports the volume of credit and deposits, and the number of accounts and branches for every centre consisting more than at least three branches in for every centre across India. A centre, as per the definition of the RBI, is a self-governing revenue generating body such as a Municipal Corporation and Municipal Council. Given that banking data serves as a good indicator for the level of economic development in a block, these centres shall be mapped to their respective blocks and the aggregates of the centre level data for every block shall be considered to determine the level of industrial performance.

#### **b. DCMSME Reports**

The Development Commissionerate of Micro Small and Medium Enterprises reports the industrial performance at the district level on a yearly basis. The DCMSME reports the prominent industrial clusters in these districts. The same was collected and mapped to the respective blocks in order to identify blocks with high industrial performance.

### c. Cluster Observatory Data for Tamil Nadu

The Cluster Observatory run by the Foundation of MSME Clusters (FMC), Ministry of SSI reports the prominent industrial, MSME, Handicraft, Handloom and Service clusters for all the states in India. The clusters reported for Tamil Nadu was used to identify the blocks with high industrial activity.

### d. List of SIDCO and SIPCOT estates in Tamil Nadu

In addition to the same, the presence of an industrial estate and its years of operation serve as good indicators for the level of industrial activity of a block. Hence, the list of SIPCOT and SIDCO estates across Tamil Nadu was obtained and was mapped to their respective blocks. As for the individual scores for the variables such as the Count of MSME Clusters, 'Number of SIDCO Industrial Estates' and 'Number of SIPCOT Industrial Estates', the scores were awarded based on the aggregate number with each number carrying a score of 10, 10 and 100, respectively.

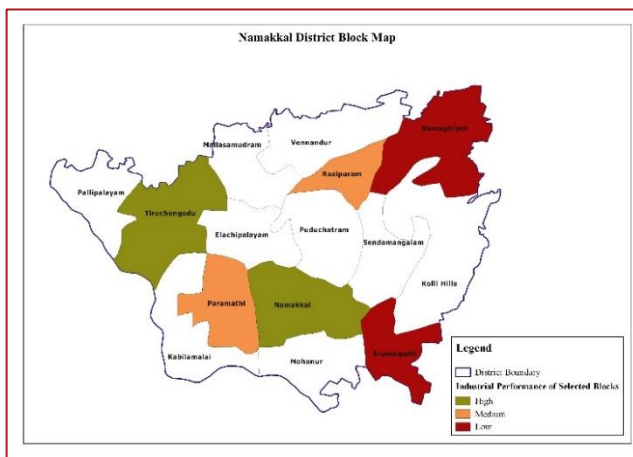
For 'credit data' variable, to accommodate regional differences, percentile calculation was employed at the district-level grouping. The final score of each block was arrived at by considering individual score weights. 25% weights was assigned to MSME and TANSIDCO clusters, 5% weights was assigned to SIPCOT industrial estate clusters and 45% weights was assigned to annual centre-level credit data post awarding of the scores. Based on the weights, the total score of each block was calculated. The total score was capped at 100.

The blocks were then categorized as High/Medium/Low, the total score was then converted into percentile values and was categorized into three groups – 0 to 33.33th percentile values for Low, 33.33 to 66.67 percentile value for Medium and 66.67 to 100 percentile values for High. The percentile values were calculated with respect to each district as the base, to accommodate for regional differences. These were triangulated using the Govt. of Tamil Nadu published list of backward blocks in each the district.

Following this, two blocks were randomly selected from each of the category, as per the mentioned classification. Based on this, the following blocks were selected in Namakkal.

- **Low – Erumaipatti, Namagiripet**
- **Medium – Paramathi, Rasipuram**
- **High – Namakkal, Tiruchengodu**

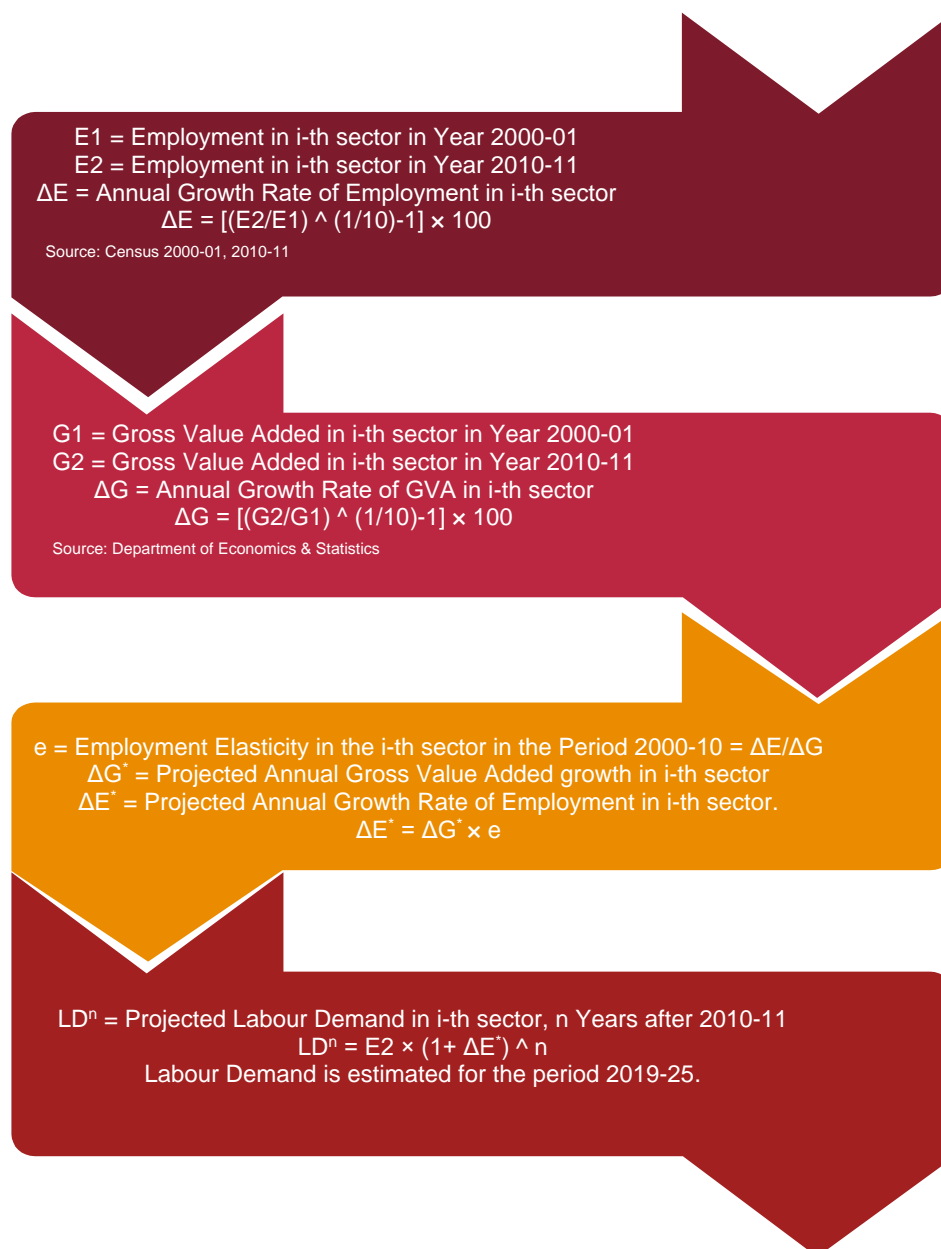
Figure 30: Blocks Selected for Survey in Namakkal



## 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 is another factor that is 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:

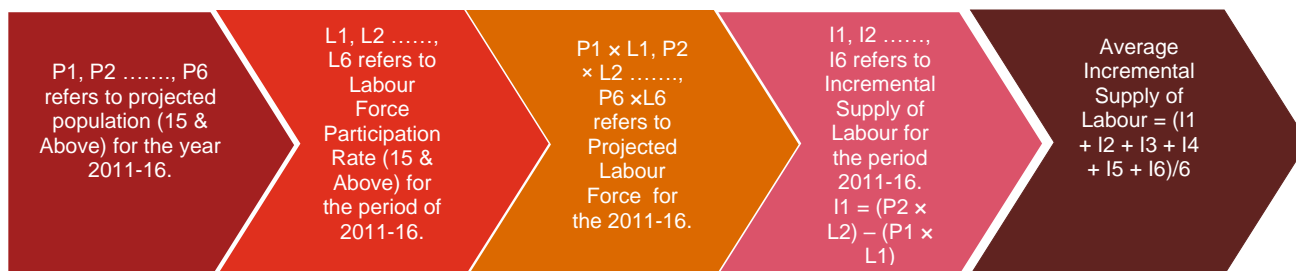
*Figure 31: Steps in Demand Estimation*



### 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 state<sup>23</sup>. 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



<sup>23</sup> Report on Employment-Unemployment Survey, 2011-12, 2012-13, 2013-14, 2015-16 & 2017-18.

*Table 27: List of Stakeholders*

S No	Stakeholder	Category
1.	General Manager, District Industries Centre	Govt. Official
2.	District Tourist Officer	Govt. Official
3.	Joint Director, Agriculture Department	Govt. Official
4.	Assistant Director, Agricultural Technology Management Centre	Govt. Official
5.	Officer, District Employment Office	Govt. Official
6.	Principal, Government ITI	Training Service Provider
7.	Secretary, All India Motor Workshop Owners' Association	Industry Association
8.	President, Poultry Feed Manufacturer's Cooperative Society	Industry Association
9.	Secretary, TN LPG Transport Owners' Association	Industry Association
10.	LMP Kumaresan Sculpture	Industry
11.	Rajashakthi Lorry Body Builders	Industry
12.	Sri Gopalakrishna Sago Industries	Industry
13.	Velavan Fire Works	Industry
14.	Mani Agro Industries	Industry
15.	S M Trailer Welding Works	Industry
16.	Madha Electricals	Industry
17.	Sri Palani Andavar Battery Works	Industry
18.	Bharathi Industrial -Tailoring Center	Industry
19.	New Glass Emporium	Industry
20.	SBG Rubber Works	Industry
21.	Madhavakumar Electronics Workers	Industry
22.	Kms Wheel Alignment	Industry
23.	Sri Kamatchi Auto Electrical Works	Industry
24.	Hariharan Water Services Station	Industry
25.	Senthil Velan Lorry Body Building	Industry
26.	Sri Murugan Arul Seat Makers	Industry
27.	Tamilan Power Printers	Industry
28.	Lorry Mechanical Works	Industry
29.	N.M.S. Stone Cutting	Industry
30.	Shree Gowriamman Industries	Industry
31.	Gayathri Electronics	Industry
32.	Sakthi Painting Works	Industry
33.	Lakshmi Lorry Body Builder	Industry
34.	Dhandapani Body Building	Industry

35.	Sri Ram Electronics	Industry
36.	Gayathri Tayloring Center	Industry
37.	Vinoth Mobile Service	Industry
38.	Dhanabakiyam Nickel Works	Industry
39.	Mini Lorry Body Building	Industry
40.	Kavipriya Tailoring Training Centre	Industry
41.	Chevro Body Works	Industry
42.	Mk Electronics	Industry
43.	Lorry Trailor Works	Industry
44.	Saw Mill Works	Industry
45.	House Wiring Works	Industry
46.	Arul Sakthi Lorry Body Builder	Industry
47.	KMK Sago Factory	Industry
48.	Murugan Arul Lorry	Industry
49.	Lorry Body Building	Industry
50.	V Sivaprakkash Dhanalakshmi Jewel Manufactures	Industry
51.	Rana Farms And Foods Pte Ltd.	Industry
52.	Velson Industries	Industry
53.	Soundararajan	Industry
54.	Ss Agrowtech (Broiler Industry)	Industry
55.	Thangam Lorry Body Builders	Industry
56.	Olive Oil Pet Bottle Manufacturers	Industry