Skilling for the Future

Skill Gap Assessment & Action Plan for Tamil Nadu

District Skill Development Plan for Thanjavur

November 2019

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Disclaimer

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List of Abbreviations

S.No	Abbreviation	Expanded Form
1.	ASER	Annual Status of Education Report
2.	ASI	Annual Survey of Industries
3.	BFSI	Banking Financial Services and Insurance Sector
4.	BHEL	Bharat Heavy Electrical Limited
5.	CFC	Common facilities centre
6.	DDU-GKY	Deen Dayal Upadhyaya Grameen Kaushalya Yojana
7.	DES	Directorate of Economics and Statistics
8.	DISE	District Information System for Education
9.	GDDP	Gross District Domestic Product
10.	GSVA	Gross State Value Add
11.	DIC	District Industries Centre
12.	GVA	Gross Value Added
13.	ITI	Industrial Training Institute
14.	IT-ITES	Information Technology and Information Technology Enabled Services
15.	LFPR	Labour Force Participation Rate
16.	Manuf.	Manufacturing
17.	MIS	Management Information System
18.	MSME	Micro, Small and Medium Enterprises
19.	NCVT	National Council for Vocational Training
20.	NEET	Not in Education, Employment, or Training
21.	NIC	National Industrial Classification (2008)
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.	RURBAN	Rural and Urban
30.	SIDCO	Tamil Nadu Small Industries Development Corporation Limited
31.	SIPCOT	State Industries Promotion Corporation of Tamil Nadu
32.	SSC	Sector Skill Council
33.	TANSIDCO	Tamil Nadu Small Industries Development Corporation Limited
34.	TIDCO	Tamil Nadu Industrial Development Corporation
35.	TNAU	Tamil Nadu Agricultural University
36.	TN-GIM	Tamil Nadu Global Investors Meet
37.	TNSDC	Tamil Nadu Skill Development Corporation
38.	TNSRLM	Tamil Nadu State Rural Livelihood Mission
39.	TRIPS	Trade Related Intellectual Property Rights
40.	Tr. & Tou.	Trade and Tourism Sectors
41.	UNESCO	United Nations Educational, Scientific and Cultural Organization
42.	WPR	Worker Population ratio

Executive Summary

Background: The Vision 2023 of Tamil Nadu envisages shaping its future by empowering the youth in the state, through imparting market relevant skill training; to become responsible and participating citizens who drive a new era of development, growth, and productivity. Tamil Nadu has formulated a State Youth Policy, which aims at 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[1].

Tamil Nadu currently has the highest Gross Enrolment Ratio in Higher Education (48.6)[2], 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 establish "District level Skill Development Action Plans for Tamil Nadu". 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:

- Youth aspiration survey: a quantitative survey covering 360 youth across the following groups – engaged in economic activity (self-employed, wage-employed, entrepreneurs), students in formal education, vocational and skill training institutions (Polytechnics, ITI), and those who fall under the Not in Education, Employment or Training (NEET) category. Six blocks in the district were covered: Kaveripakkam, Nemili, Alangayam, Peranambattu, Gudiyattam and Walajapet

[1] Tamil Nadu Skill Development Corporation [https://www.tnskill.tn.gov.in/index.php/link/abouttnsdc]
[2] All India Survey on Higher Education 2017-18

- Quantitative employer survey: covering 33 employers with adequate representation from Large, Medium, Small and Micro Industries across the key sectors defining the district economy.
- 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:

Key findings of the study are presented hereunder:

Demographic Analysis	• The district is ranked 14th in terms of the highest population in the state with more than one-third of its population residing in urban areas. • The overall literacy rate of the district is 82.6%, which is higher than state average of 80%. • The district has recorded Sex Ratio as 1035, the 2th highest among the districts in the State. • 34.4% of the overall population in the district are in the age group of 15-34 years. The median age is set to increase from 29 years in 2011 to 36 years in 2026 indicating ageing population and hence we need to propose targeted interventions to meet their requirements. • The district has also seen an increasing trend in literacy among females indicating greater chances to improve female labour force participation.
Economic Analysis	• Thanjavur also known as the 'Rice bowl of Tamil Nadu' is the most fertile district in the state and is the largest producer of coconut in Tamil Nadu. • Apart from this, farmers grow paddy and sugarcane in the district. • The district has an array of agro-based industries, rice mills, coir making units, sugar mills apart from numerous ancillary units serving BHEL. • SIPCOT and SIDCO industrial estates have declined in growth in the last 10 years owing to high attrition and unavailability of skilled labour force besides reduced order from BHEL. • The district is famous for traditional handicrafts and industrial clusters involved in the production of Thajavur gold paintings, musical instrument-veena, Thanjavur bronze idol making, coir products, metal ware, brass utensils, silk weaving handloom, bell metal products, icon and art plate works which significantly contribute to the economy of the district. • Due to lack of promotion and marketing facilities, these clusters are dying off even though it has high potential to boost the economy of the district. **Upcoming investments in the district include:** • Thanjavur-Madurai Greenfield Project - Melur-Karaikudi (NH-338, 36 & 383 Extension) Four Lane Highway Project for an investment of INR 7,676 crores • 50 km road from Sethiyathoppu to Cholapuram has been proposed to be widened into four lanes at the cost of INR 1,128 crores, while the 48-km-long Cholapuram-Thanjavur section at INR 1,176 crores • Thanjavur Dairy Plant Project proposed at an estimated investment of INR 750 crores • Construction of four new parks has been sanctioned at an estimated cost of INR 308. Four more (Mullai Nagar, Sathiyakrishna Nagar, Royal City and Alamelu Nagar Park) is proposed for improvement work • Thanjavur Smart city project
Labour Market Analysis	• The overall labour force participation (63%) and worker population ratio (60%) are higher at the district level compared to the state level. • More than half of the workers in the district are in casual labour as against the state average of 44%. • Youth Unemployment Rate (15-29 years) in the district is 5 percent points higher that of the state average (11%)

Education & Skill Development	• Thanjavur is home to the Saraswati Mahal Library, which dates back to the end of the 16th century era and contains over 30,000 rare manuscripts. • There are 1121 Primary schools, 265 Middle schools, 202 High schools, 212 Higher secondary schools functioning in the district • Training on traditional skills required to be imparted to youth. • There are 32 Arts and Science Colleges are functioning in the district, out of which six are government colleges, five are aided college, 21 are unaided College. • Apart from this, the district has 15 engineering colleges and 14 polytechnic colleges in the district. Thanjavur has four universities - Tamil University, Periyar Maniammai University, PRIST University and SASTRA University. • There are several famous colleges including the Thanjavur Medical College and RVS Agricultural College. • There are also many research centres, including the Indian Institute of Crop Processing Technology and Soil and Water Research Centre. • The district houses five Agricultural Research Institutions
Findings from Primary Survey	
Youth Profile and Aspirations	• The youth have high salary expectation at a median amount of INR 22,000 per month for entry-level jobs, and 41% of youth in the survey were interested in undergoing skill training. • Women aspired to be employed in Textile, Education and Retail sectors where else young men are keen to join Banking and financial services, construction, transport & logistics and electronics and IT sectors. • 65% of the youth respondents aspired to be engaged in wage employment activities compared to 25% of total respondents in self-employment activities and rest wanted to become entrepreneurs. • The main factors determining the aspiration of the youth are Salary (wages) / Income (90%), Job Security (69%) and Social Status (42%). • 34% of the youth feel there is a lack of adequate employment opportunities available in the district. • Lack of sufficient education qualification was the major challenge faced by youth in pursuing their career aspiration. Other factors include lack of family support (14.4%). • 11% of the youth highlighted the lack of technical and vocational skills as a challenge in pursuing their career aspiration. • 88% of the total respondents preferred a job within their hometown • Only 5% of the total respondents had any awareness of Government run vocational programs while around 2% had undergone any vocational training previously. • 41% of the respondents were interested in undertaking any vocational training. • Of these respondents 41% wanted the trainings to be short term certificate courses and 82% wanted the courses to be part time in nature.
Employer & Other Key Stake holder Perspective	**Quantitative Survey** • The survey covered 33 Industries from primarily five sectors, with highest representations from the auto and auto components, food processing and building construction which are highest contributors to the local economy. • 48% of the industries were in operations for more than 10 years. • 70% of the industries surveyed reported to be in the Small Industries category. • Majority of the employers (68%) recruited through employee reference, from either existing employees or known sources as a mode of recruitment • The most common challenge they face by employers was candidate disinterest and attitude (35%), followed by high local wages (31%) and lack of requisite core skills (10%). • The employers estimate 25% attrition annually from their workforce. • Better job opportunities (84%) and lower wages (72%) were the dominant cause of attrition **Qualitative Inputs** • Candidate demand for higher wages leads to attrition in the industries • The Attrition rate is high in the industries due to high demand of wages and outward migration trend. • Artisans are ready to provide skill training to the youths irrespective of educational qualification. • Students studying architecture are generally do their internships with these artisans informally. • Artisans are willing to pass on their skills, if there is a structured program supported by Tamil Nadu Skill Development Corporation • To improve their business, the marketing strategies should be introduced. • Unskilled labourers are mostly employed in the rice and sugar mills. Even though they are largely unskilled, they are trained on the job to take up semi-skilled activities. • Welder, Fitter, CNC operator and electrician are the most in demand job profiles preferred by recruiters • Unemployed youth who join short-term training programs are more willing to work in private companies. • Swiggy and Zomato delivery agents are in high demand in the district town of Thanjavur

Incremental Demand	• As per the skill gap estimation, the overall demand for skilled and semi-skilled workforce over the next six years is 97,051 • Key sub-sectors driving the demand are manufacturing, construction, trade and repair services, education; transportation and storage, telecommunication, real estate, human health and social work activities, and repair of computers and personal and household goods

Key Recommendation:

Collaboration between training centres and MSME associations:

Thanjavur houses many small and micro enterprises catering to BHEL. To enhance the quality of workers, students require quality education and practical knowledge exposure. Faculty workshops to be conducted every three months. MSME associations in collaboration with training institutes can conduct the workshops where they suggestions and training will be imparted to improve and upgrade the technical skills of the faculties as per latest industry demand. Special should be given to practical knowledge. District MSME associations can certify the faculties on successful completion of the workshops.

Promote Thanjavur as the 'Cultural Capital of Tamil Nadu':

Enhancement of tourism, heritage and public space imagery should be prioritized. Local economies (indigenous art and craft forms) will have to be reinforced and improvement of livelihood avenues can be done through diversification of tourism activities including Agro-tourism, Sericulture tour, Heritage Walk, etc.

The tourism activities can be further diversified through engaging tourists in handicraft making workshops, display of art and culture, offering local cuisine. These activities can be offered together under one platform by setting up a recreational centre and package tours can be offered to tourists. Skilled workforce will be required to operate and run such tourist centres.

Tourism sector is the major thrust area for growth in the district. There is a demand of 34 thousand skilled and semi-skilled workforce in the next six years. Tourist guides, chefs, tour drivers will be require quality skilling in soft and communication skills.

Digital Marketing of traditional handicrafts in Thanjavur:

Digital marketing of traditionally made handicrafts should be introduced. Tapping potential of commercializing the local handicrafts and enhancing earning potential of artisans through e-commerce portal will boost the growth of the sector. Promotion, enhancement and development of talent to preserve the indigenous art and craft forms is of utmost importance in the district.

Development of training infrastructure:

Development of training centres and introduction of courses for training youth for the Silk Industries and Metal manufacturing.

Training centres can be developed to impart skills on traditional sectors too. Artisans can be engaged to train the new generation. TNSDC can collaborate with interested artisans and set up training courses to instil interest in youth and revive the rich art forms in the district.

Convergence and coordination:

Convergence and coordination is required between various departments of the Government especially between the Training & Employment wings of the Dept. of Labour, Employment and Training, the District industries Centre, other line Departments implementing skill development including the RURBAN Mission which is implementing both the DDU-GKY and the NULM scheme in the state.

Government-support to artisans:

- Government assistance and subsidies can be provided to the artisans to set up focused skill development centres
- A better working environment needs to be provided to the artisans
- The export market will have to be strengthened

1. District Profile

1.1. Demographic Profile

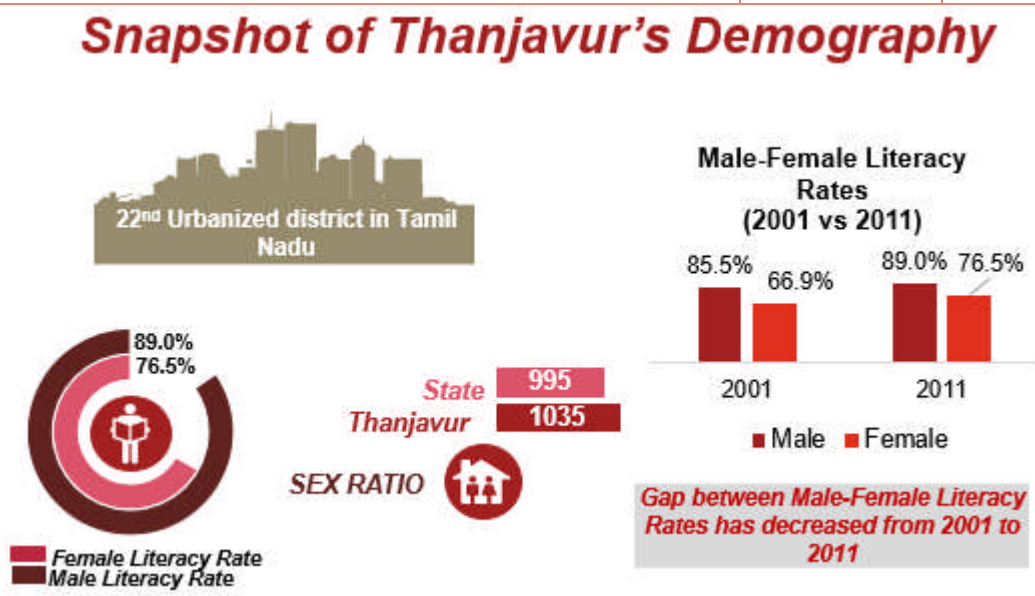
Thanjavur district lies in the Kaveri delta, the most fertile region in the state. The district is the main rice producing region in the state and hence known as the Rice Bowl of Tamil Nadu. Thanjavur is famous for the "*Saraswathi veena*" (the national instrument), Thanjavur art plates, Thanjavur oil paintings and *Thalaiyatti Bommai* (dancing dolls). It is one of the 35 UNESCO World Heritage Sites in India.

Thanjavur district is ranked 14th in terms of the highest population. It contributes to 3% of the total population of Tamil Nadu. 65.6% of its population falls is in the working age group (15-59 years) and 35.4% of its population resides in urban area, which is lower than the state average (48.4%).

The district has recorded Sex Ratio as 1035, which is 2nd highest in the state.

Table 1: Key Demographic Indicators– Thanjavur vs Tamil Nadu[3]

SN	Indicator	Thanjavur	Tamil Nadu
1	Total population	2,405,890	72,147,030
2	Population Density per sq.km (2011)	705	555
3	Urban Population	35.4%	48.4%
4	SC population (as % of total population)	18.9%	20.0%
5	ST population (as % of total population)	0.1%	1.1%
6	Differently abled population (as % of total population)	1.5%	1.6%
7	Population in age group 15-34 years (as % of total population)	34.4%	34.8%
8	SC population aged 15-34 years (as % of SC population)	35.5%	36.6%
9	ST population aged 15-34 years (as % of ST population)	34.1%	35.0%
10	Literacy rate	82.6%	80.3%



Key Highlights from the analysis of Census Data:

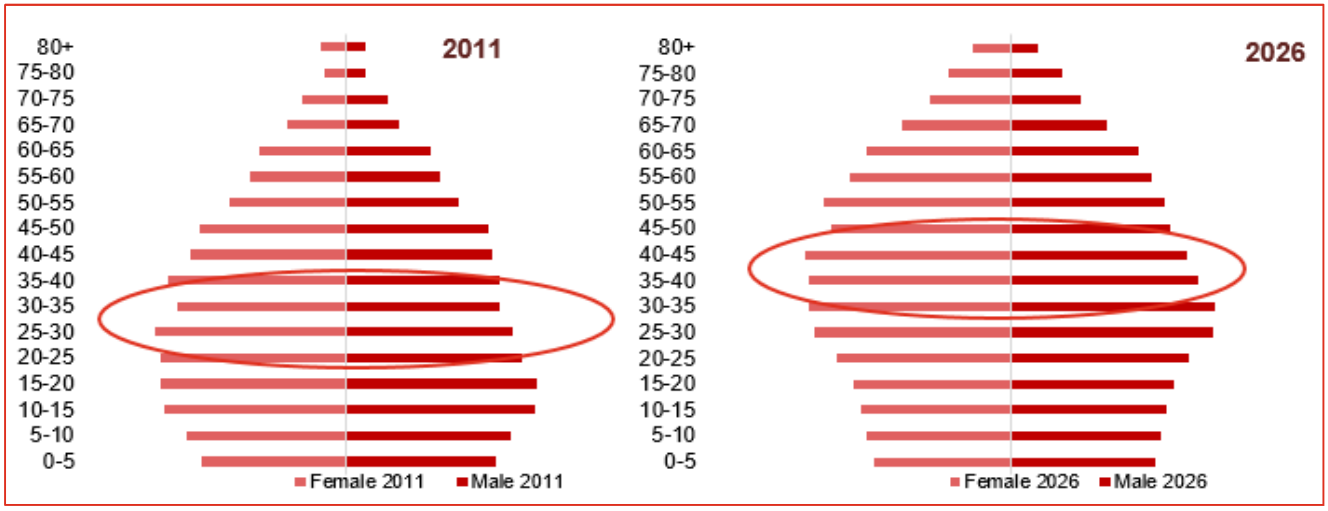
- **Population Growth and Urbanization:** The Decadal growth rate **of the population in the district** was **8.6%** between 2001 & 2011, compared to **15.6%** at the state level. During the same period, the share of **urban population has grown by 13.6%** while the **rural population has grown at a rate of 5.8%**.

[3] Census 2011

- **Literacy:** The district had a female literacy rate of 76.5% while the male literacy rate of 89.0%. These are higher than the corresponding literacy rates at the state level. The literacy rates among males increased by 4% while among females it increased by 14%, reducing the gap between them from a 27% in 2001 to 16.3% in 2011. The reducing gap between the male and female literacy rates indicates an increasing level of education attainment among females in the district.

- **Youth Demography:** More than **one-third** of the population was between 15-34 years in 2011. The median age during this period was **29 years**, which is same as the median age of the state (29 years in 2011). The population is set to get older with median age in 2026 expected to be around 36, increasing the share of dependent population as illustrated in the age-specific population pyramid of the district as seen below.

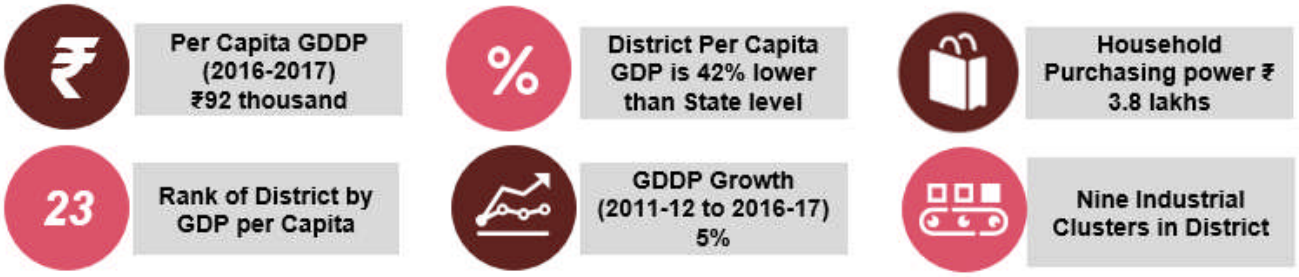
Figure 1 Age-wise Population Pyramid of Thanjavur (2011 vs 2026)[4]



1.2. Economic Profile

Thanjavur is famous for the its traditional art and rich culture contributes to 2.4% of the states GDP.[5] The district plays a key role in Tamil Nadu by producing about one-fourth of the total output of rice in the state and is called the "Granary of South India". The cotton spinning mills, rice mills and sugar factories have contributed significantly to the economic growth of the district. Further, the geographical location of the district enabled widespread growth in fishing industries. The district ranks **23rd in terms of Per Capita Income and 18th in terms of Purchasing Power**.[6]

Figure 2 Key Economic Indicators of Thanjavur District



[4] Age wise Population projected for 2026 based on age group wise life expectancy, birth and death rates
[5] D0ES, GoTN
[6] Household Purchasing Power is calculated from the total purchasing power (disposable income after savings/ investments) of the district, divided by the projected number of households (savings/ investment data calculated from RBI database on savings). 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. Source- districtmetrics.com

1.2.1. Sector Analysis[7]

Figure 3 Sectoral Snapshot of GSVA 2016-2017

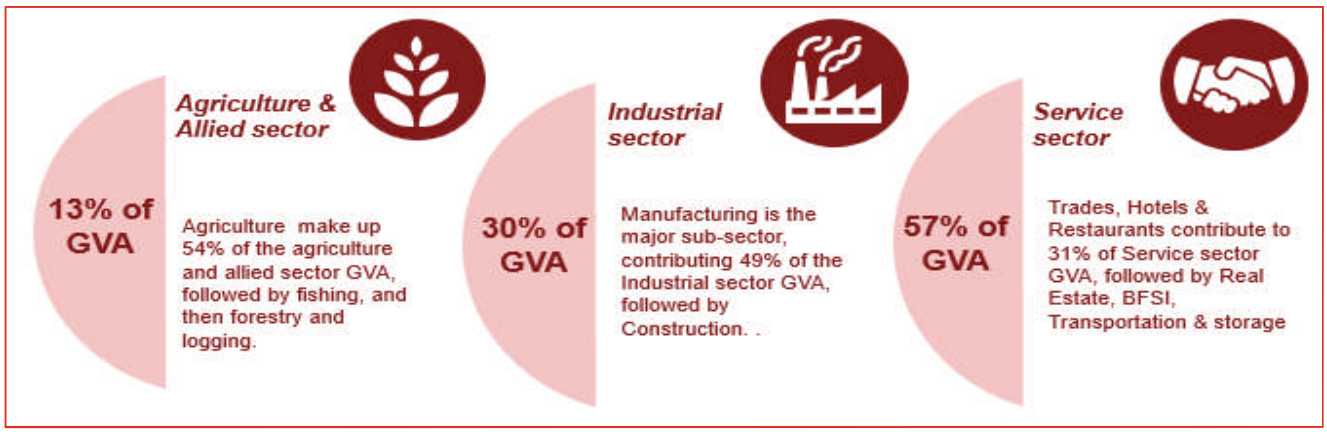
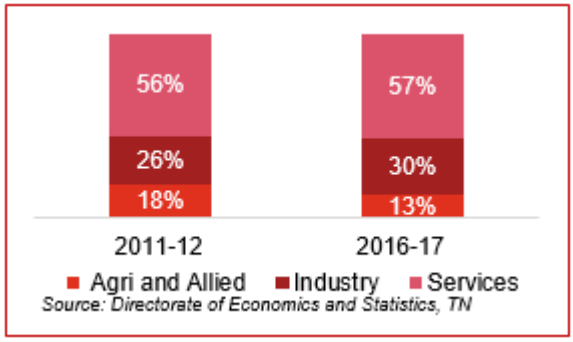


Figure 4 Sectoral Share of GSVA (2011-12 & 2016-17)

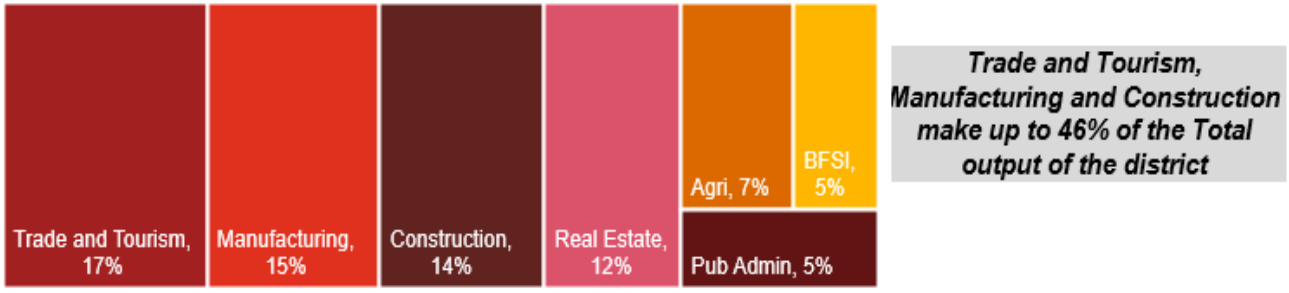


Accounting for about 57% of the district output in 2016-2017, the service sector dominates the economy of the district. . Thanjavur is one of the less prosperous districts with a per capita GDDP lower than the State average. This district has seen a decrease in share of agriculture and allied sector since 2011-2012. The services sector has witnessed a growth from 56% in 2011-2012 to 57% in 2016-2017 due to increase in tourism sector. The share of industry has gone up by 15% between 20111-2012 and 2016-2017 majorly because of growth in agri-based food processing industries. At sector level Trade & Tourism, Manufacturing, Construction, Real Estate & Agriculture are the major contributors to the district's economy.

Table 2: Sector wise- Annual Growth Rate in Thanjavur (Directorate of Economics and Statistics, TN)

Sector	2012-13	2013-14	2014-15	2015-16	2016-17	CAGR (2011-12 and 2016-17)
Agri & Allied	*-20%*	*33%*	*-15%*	*15%*	*-14%*	*-2%*
Industry	*10%*	*9%*	*2%*	*18%*	*3%*	*8%*
Services	*7%*	*8%*	*6%*	*3%*	*3%*	*5%*

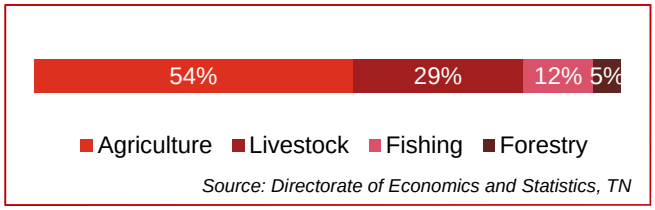
Figure 5 Share of GVA by Industry of Origin (2016-2017)



[7] Directorate of Economics and Statistics, Tamil Nadu

Agriculture and Allied Sector

Figure 6 GVA of Agriculture and Allied Sectors (2016-2017)



Agriculture and allied sector has gone down at a CAGR of 2% between 2011-2012 and 2016-2017.

Apart from paddy, farmers here grow coconut and sugarcane and it is the largest producer of coconut in Tamil Nadu. The other crops cultivated in Thanjavur district are pulses, gingelly and groundnut. Banana is primarily grown in Padugai lands. Being an agrarian economy, industrial growth in the district is mainly confined to agro-based industries. Around 28 private registered Rice mills and three government rice mills are currently operational in the district. and oil mills are spread over the district.[8]

Paddy is cultivated in different periods in the entire district such as Kuruvai, Thaladi, and Samba crops. The services rendered by the Agricultural Research Station at Aduthurai, Water use management Research station at Kattuthottam and Coconut Research station in Pattukkottai were instrumental in the improvement of paddy cultivation in the district.

Industrial Sector

Figure 7 Industrial Sector GVA (2016-2017)

Manufacturing and Construction sectors account for 95% of the industrial sector output. The sector experienced fluctuations in output and has grown at a CAGR of 8% between 2011-2012 to 2016-2017. The key manufacturing sectors by output include structural metal products, tanks, reservoirs and steam generators, grain mill products, starches and starch products and general-purpose machinery are other sectors that employ a significant share of the industrial workers.

SIDCO estates exist in Thanjavur, Nanjikottai, Kumbakonam, Pillayarpatti, Tirubhuvanam and Budhalur. According to the district Industries Centre, the district has got 8723 SSI units, 9 medium and large scale units, 5187 cottage industries, and 7805 handicrafts units. Agro-processing industries, especially rice milling and oil extraction mills, have significant potential for further expansion in the district which is ideally placed in terms of agro-climatic conditions, raw material availability, and skilled manpower supply.

Key Clusters and Traditional Industries

Stainless Steel Cluster, Kumbakonam	**Brass Art Lamps,** Kumbakonam, Nachiyarkoil, Swamimalai, Thiruvidaimarudhur	**Silk Weaving Cluster**, Kumbakonam, Thirubuvanam
Brass metal cluster, Nachiyarkoil	**Coir Cluster** Orathanadu, Pattukottai, Peravoorani	**Rice Mill Cluster,** Thanjavur
Musical Instruments, Thanjavur	**Thanjavur Art Plate,** Thanjavur	**Bronze Icon making**, Kumbakonam, Nachiyarkoil, Swamimalai, Thiruvidaimarudhur

[8] Stakeholder consultation

Table 3 Profile of Manufacturing Sector from ASI

Industry	No. of Units	No. of Employee	Gross Value Added (share in total GVA)	Share of Employment	Average workers per unit
Structural metal products, tanks, reservoirs and steam generators	66	1,157	35%	38%	18
Grain mill products, starches and starch products	46	599	11%	20%	13
General purpose machinery	9	433	11%	14%	48
Basic chemicals, fertilizer and nitrogen compounds, plastics and synthetic rubber in primary forms	6	229	10%	8%	38
Rubber products	4	165	9%	5%	41
Other chemical products	6	112	9%	4%	19
Beverages	12	93	7%	3%	8
Pharmaceuticals, medicinal chemical and botanical products	5	231	4%	8%	46
TOTAL	154	3019	97%	100%	29

Source: Annual Survey of Industries 2014-15

According to the ASI 2014-15, 154 Industrial units were present in Thanjavur, directly employing 3,019 workers. The above described top eight sectors contributed to 97% of the GVA of the district. Structural metal products, tanks, reservoirs and steam generators and grain mills products were the key industries in terms of employment generation and contributed to 46% of the GVA. Average workers per unit is maximum in general purpose machinery and Pharmaceuticals, medicinal chemical and botanical products.

Industrial Estates in Thanjavur:

- SIDCO, Thanjavur
- SIDCO, Nanjikottai
- SIDCO, Pillaiyarpatti
- SIDCO, Thirubuvanam, Kumbakonam

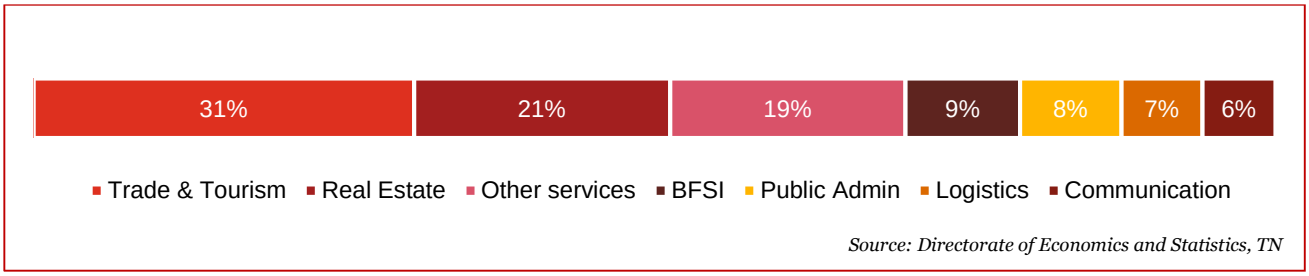
Services Sector

Trade, Tourism, and Real Estate contribute to more than half of the total service sector in the district. The sector experienced fluctuations in output and has grown at a CAGR of 3% during 2011-2012 to 2016-2017.

Thanjavur district is the home to a number of ancient temples, and a majority of them are lo cated on the banks of the river Cauvery and its tributaries. Rajarajeswaram temple and Brahadeeswarar temple at Thanjavur and the Siva temple at Darasuram and Thirubhuvanam glorifies the ancient *Chola* architecture. Thanjavur District is an important center of South Indian religion, art, and architecture. Most of the 'Great Living Chola Temples', which are UNESCO World Heritage Monuments, are located in and around this district. The Royal Place museum, art gallery, Sivaganga Tank, Tholkappiyar Sadukkam and Grant Anicut are other famous tourist attractions. The Natyanjali Dance Festival and the Carnatic Classical Musical Festival are some of the notable festivals of Thanjavur that reflect the unique cultural traditions of the place.

Figure 8 Cultural program at Brahadeeswarar temple

Figure 9 GVA of Services Sector (2016-2017)



Source: Directorate of Economics and Statistics, TN

Traditional sector analysis

The district of Thanjavur is famous for its traditional handicrafts and industrial clusters involved in the production of Thajavur gold paintings, musical instrument-*veena*, Thanjavur bronze idol making, coir products, metal ware, brass utensils, silk weaving handloom, Bell metal products, icon and art plate works which significantly contribute to the economy of the district. Nachairkoil, Ammapettai, Swamimalai, Korkai, Kumbakonam, Pattukkottai, Tirubhuvanam, and Budhalur are the major clusters. Image worship is a regular practice in Thanjavur and thus the art of making solid images flourished here. It is home to many sculptures that cast idols of metal, clay and stone, which has been their family tradition. Unaltered and unaffected by modern day civilization, the art and craft of Thanjavur has an internationally acclaimed status.

Figure 10 Thanjavur paintings at display, Royal Museum, Thanjavur

Kumbakonam is important trade centre famous for metal ware, brass utensils and silk sarees, providing employment opportunities to the local people.

The beautiful paintings of Thanjavur portray the rich and artistic skill and creative imagination of the artists of the place. The brilliant colour composition coupled with the fine sketches imparts an attractive look to the exclusive paintings of Thanjavur.

The District has around 30 lakhs coconut trees with a yield of 80-85 coconuts per annum per tree. Most of the nuts in Copra form are transported to other districts for oil extraction and other value-added products making. Coir making units are spread across the district of Thanjavur.

Bronze idol making[9]:

Background:

Figure 11 Bronze idols at display, Swamimalai

The artisans portray great traditional skills of bronze icons or '*Panchaloha'* (the idols are made of a combination of five different types of metals) idol making in Swamimalai, a taluk in Kumbakonam block. It is a production centre for bronze idols of Gods and Goddesses and great leaders. The town has a heritage of bronze making dating back to the *Chola* period. Most of the villagers nearby are exclusively involved in making bronze icons.

This town also has a training unit that instills the art of making bronze icons. Swamimalai is the sole surviving traditional center for Bronze casting in Tamil Nadu. There are around 20 units in this area, each having roughly 25 workers. The monthly turnover of the units are INR 25 lakhs.

Nearly 30-40 families are engaged in idol making in this area. Almost half of the total artisans (~700) are in the age group of 25-40 years. The sector engages male workers only as the nature of work which involves casting, heavy physical work, is not suitable for woman. The daily wage of an artisan ranges between INR 300-500.

[9] Primary stakeholder consultations at Swamimalai, Vellore

The idols are in great demand overseas also and are exported to Singapore and Malaysia. They are a favourite pick amongst foreign tourists too, especially the ones with antique finish.

Challenges:

- Low profit and wages in this sector has led to the lack of interest amongst the new generation
- Lack of marketing strategies. There is an ardent need of advertisement and promotion of this art form
- Lack of modern show room or sales/display centre to attract the customers and promote sales
- Involvement of middlemen has cut down the profit margin of the artisans

The only sales showroom available to the icon artisans is the Swamimalai Icon Manufacturers Co-op. Cottage Industrial Society Ltd., Swamimalai running under the control of the General Manager, District Industries Centre. The Swamimalai Icon Manufacturers' Cottage Industrial Co-op. Society has 450 idol making artisan members from the entire Swamimalai and surrounding villages.

Figure 12 Idol making Artisan, Swamimalai

Recommendations:

- A marketing unit needs to be established in the area to support the effective sales and promotion of idol making art in the district. The artisans can directly tie-up with the marketing unit to avoid middleman involvement
- Government assistance and subsidies can be provided to these artisans to set up focused skill development centres
- Provide a better working environment to the artisans

Thanjavur Art Plate making:

Figure 13: Art plate

Background: Thanjavur art plate is an artifact that is exclusively made in Thanjavur. The production of Thanjavur art plate dates back to early 18th century. The art plates are circular in shape and made as a gift item. It is a handicraft made up of metals such as silver, copper and bronze. These metals are usually embossed with the figures of gods and goddesses at the centre of the art plate. This unique artwork has been registered for the protection under the Geographical indication of the Trade Related Intellectual Property Rights (TRIPS) agreement.

Thanjavur Art plate worers Co-op Society, established in 1957 has 245 members associated with them. The age group of artisans are generalyy in the range of 19-65 years. There are around 15 units employing 10 memnbers each with a fixed target every month, set by the society.

These Thanjavur art plates are crafted exclusively by the Vishwakarma and Kammalar community that consists few of goldsmith families of Thanjavur. This traditional artform has been passed down through generations for more than 100 of years. The artisans are highly experienced in making durable art plates that retain its glow and shine for a longer period of time. This cottage industry generally enages male workforce. Any artisan who wish to initiate the art of making 'Thanjavur art plates' should be have propoer legal registration and certification to do

so. The artisan must also possess an authorized user logo that has to be imprinted on the metal art plates, to ascertain its genuine and authentic description.

The main market for these art plates are education institutions and organizations.

Fisheries Industries:

Thanjavur district has an east coast line of 45 km with fishing hamlets stretching from Pattukkottai taluk in the north to Peravurani taluk in the south. The coastal aquaculture is being carried out in an area of 822 hectares, whereas the inland aquaculture covers an area of 2400 ha. Thanjavur district is also the richest in inland fishing due to the presence of the Cauvery river system. The irrigation channels, canals, major and minor tanks are richest in many varieties of fish. About 5,000 inland fishermen are engaged in fishing, and the production of fish from inland water sources.

1.2.2. Investments and key economic drivers

Figure 14 Sector-specific growth of Credit off Take[10] (2013-14 to 2016-17) - RBI

According to the RBI data, the district has seen recent growth in credit across Food processing, Construction, Auto and auto components, Trade, Retail and textile sectors.

Key investments include:

- Thanjavur-Madurai Greenfield Project - Melur-Karaikudi (NH-338, 36 & 383 Extension) Four Lane Highway Project for an investment of INR 7,676 crores
- 50.48-km road from Sethiyathoppu to Cholapuram has been proposed to be widened into four lanes at the cost of INR 1,128 crores, while the 48-km-long Cholapuram-Thanjavur section at INR 1,176 crores
- Thanjavur Dairy Plant Upgradation Project proposed at an estimated investment of INR 750 crores
- Construction of four new parks has been sanctioned at an estimated cost of INR 308. Four more (Mullai Nagar, Sathiyakrishna Nagar, Royal City and Alamelu Nagar Park) is proposed for improvement work
- Thanjavur Smart city project

Tourism, Food including seafood processing, manufacturing and construction are sectors with high growth potential. The traditional clusters require government support to revamp its glorified art.

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

1.3. Labour Market Profile[11]

The overall labour force participation and worker population ratio are higher at the district level compared to the state level. More than half of the workers in the district are in casual labour as against the state average of 44%. Youth Unemployment Rate (15-29 years) in the district is 5 percent points higher that of the state average

Figure 15 Key Labour Market Indicators[12]

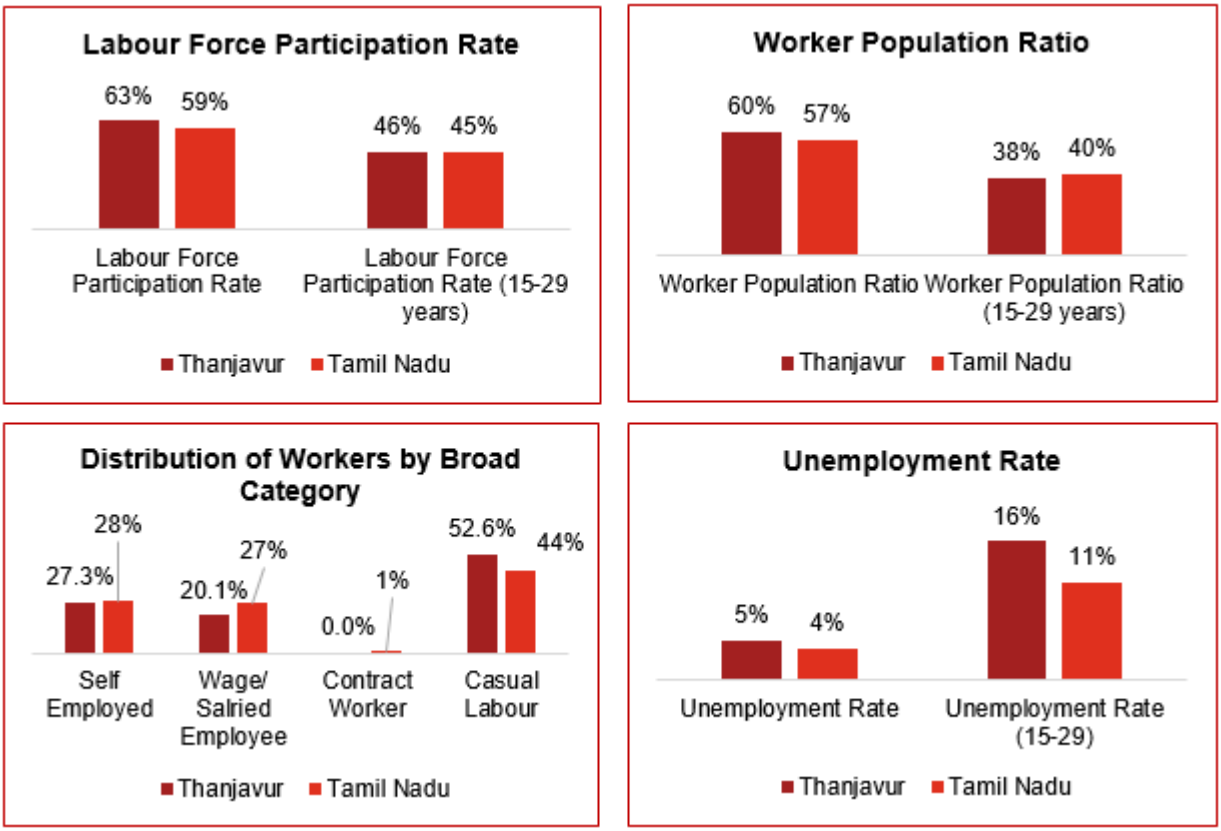
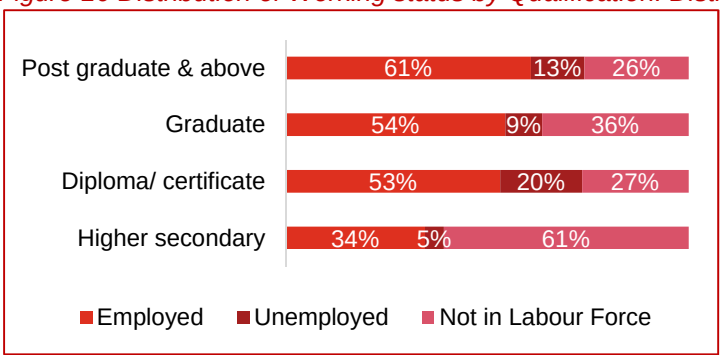


Figure 16 Distribution of Working status by Qualification: District Level Estimates



The education-level classification of the district population reveals that the unemployment rate among youth with higher education is high in the district. 13% of population with postgraduate and above level of education is unemployed. One-fifth of the diploma holders are unemployed in the district. The overall trend suggests positive correlation between unemployment level and level of education, pointing towards mismatch between industry demand and supply from the educational institutions in the district. There is a dearth of employment opportunities within the district for youth with higher qualification.

Table 4: LFPR and Unemployment Rate by gender & Location

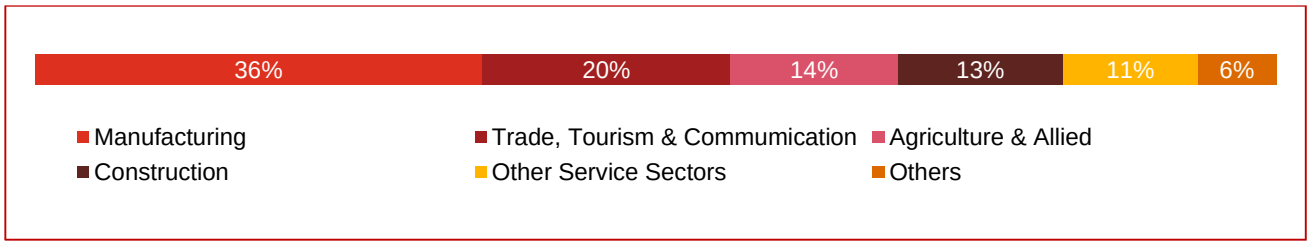
	LFPR		Unemployment Rate	
Sex	Rural	Urban	Rural	Urban
Male	84.0%	79.1%	6.8%	2.6%
Female	49.6%	34.9%	2.1%	6.1%

Analysing the labour market indicators by gender and across rural-urban areas, it is found that the Labour Force Participation Rate (LFPR) is higher across gender in the rural areas. The rural male LFPR is 4.9 percent points higher than the urban male LFPR while the rural

[11] Analysis in this section are based on the District Level Estimates, EUS, 2013-14, Labour Bureau
[12] District Level Estimates, EUS, 2013-14, Labour Bureau

female LFPR is 14.7 percent points higher than the urban female LFPR. Further, a huge difference in female unemployment rate could be observed between rural and urban areas. The urban female unemployment rate is about 4% points higher than the rural female unemployment rate. The gap is reversed for males, indicating that urban women face lack of employment opportunities and there is a scope for training woman in the district.

Figure 17 Sector-wise share of Employment



Source: District Level Estimates, EUS, 2013-14, Labour Bureau

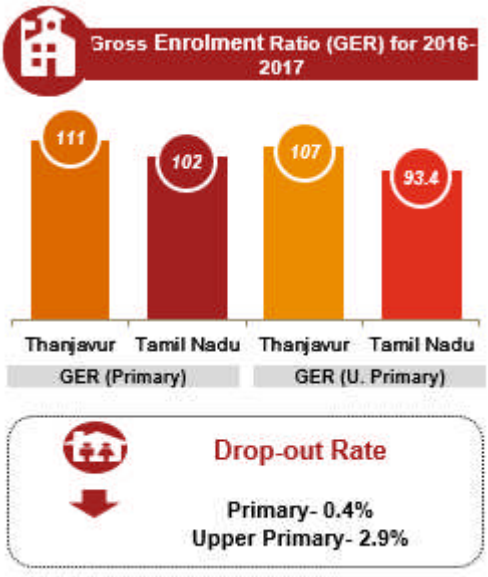
36% of the workforce in the district is employed in the manufacturing sector. The overall contribution from the Industrial sector is 30% of the GDDP where else manufacturing and construction combined contribute to 49% of the employment share. This reflects there is an issue of productivity in the industrial sector. Trade, Tourism and Communication is the second most important sector in terms of employment followed by agriculture. Tourism is the major contributor of the GVA (17%) in the district thus indicating that this is the major driving sector for economic growth in the district.

1.4. Education and Skill Development Profile

1.4.1. Education Profile

Thanjavur is home to the Saraswati Mahal Library, which dates to the end of the 16th century era and contains over 30,000 rare manuscripts. There are 1121 Primary schools, 265 Middle schools, 202 High schools, 212 Higher secondary schools functioning in the district.[13] Under the Social welfare department, one Higher secondary school, one Deaf and Dump Higher secondary school (Special School) and one High school for Blind (Special School) located in Thanjavur town.

Figure 18 GER and Drop-out Rates - DISE



The Gross Enrolment Ratio[14] at both Primary and Upper Primary are higher than the state average. The ratio indicates that the number of students in the district outstrip the expected population in the age cohort by a significant margin. One of the reasons is the presence of several schools, catering to students from the neighbouring districts. The dropout rates are marginal at 0.4% at the primary level but is quite high at 2.9% at the upper primary level.

As on 2015, totally 32 Arts and Science Colleges are functioning in the district, out of which six are government colleges, five are aided college, 21 are unaided College. Apart from this, the district has 15 engineering colleges and 14 polytechnic colleges in the district. Thanjavur has four universities - Tamil University, Periyar Maniammai University, PRIST University and SASTRA University. There are several famous colleges including the Thanjavur Medical College and RVS Agricultural College. There are also many research centres, including the Indian Institute of Crop Processing Technology and Soil and Water Research Centre.

The district houses five Agricultural Research Institutions.

- Indian Institute of Crop Processing Technology, Thanjavur
- SWMRI – TNAU Institution, Thanjavur

[13] Education department website, Thanjavur

14 Gross enrolment ratio (GER) is defined as 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.

- Coconut Research Station, Veppankulam (TNAU)
- ARS – TNAU, Pattukkottai
- TRRI – TNAU, Aduthurai

1.4.2. Vocational Education and Skill Development Profile

The skill training infrastructure of the district include skill training centers implementing schemes like TNSDC, Pradhan Mantri Kaushal Vikas Yojana (PMKVY) and Deen Dayal Upadhyay Grameen Kaushal Yojana (DDU-GKY).

Under the PMKVY scheme, four training institutes offered courses on sewing machine operator and self-employed tailor. Apparel is the most prominent sector under PMKVY. Pharmacy Assistant training were given to 1,354 candidates under DDU-GKY.

Table 5 Vocational Training under Short Term Skill Development Programs[15]

Scheme	Sector	Job Role	No. of Training Centres	Intake
Deen Dayal Upadhyay Grameen Kaushal Yojana	Healthcare	Pharmacy Assistant	1	1,354
Pradhan Mantri Kaushal Vikas Yojana	Apparel	Self-employed tailor	3	300
	Beauty and wellness	Beauty Therapist	2	210
		Hair Stylist		
	Electronics & hardware	CCTV Installation Technician	1	90
		Field Technician - Computing and Peripherals		
	Retail	Retail Sales Associate	1	201
		Trainee Associate		
	Tourism and Hospitality	F & B Service: Steward	1	180
		Multi cuisine cook		
Tamil Nadu Skill Development Programs	Agriculture (Others)	Municipal Solid Waste Management Training	1	100
	Automotive	Basic Car Servicing	1	60
		Automotive Service & Repair Advance Level 1		60
	Banking & Accounting	Accounting	1	180
	Beauty And Wellness/ Beauty Culture & Hair Dressing	Beauty Therapist	2	275
		Beauty Therapy And Hair Styling Level One	1	120
		Integrated Course In Hair, Skin And Make Up	2	180
	Capital Goods	Fitter Electrical And Electronic Assembly	1	180
		Manual Metal Arc Welder	1	60
		CNC Operator - Turning	1	60
	Construction	Assistant Electrician	1	120
		Scaffolder	1	120
	Electrical	Electrician Domestic	2	160
	Electronics	Field Technician AC	1	120
		Field Technician Other Home Appliances	1	60
	Fabrication	Pipe Fabrication	1	90
		CO2 Welder	1	60
		Arc And Gas Welder	3	120
		TIG Welder	2	60
		Structural Fabrication	1	120

[15] 2017-2018 training year report.

Scheme	Sector	Job Role	No. of Training Centres	Intake
	Garments	Tailor (Basic Sewing Operator)	3	240
		Hand Embroider	1	120
		Tailoring & Blouse Designing Embroidery	1	120
		Ornamentals Hand Work Specialist	1	60
		Ornamentals Bead Worker	1	60
	Healthcare	General Duty Assistant	2	120
		Nursing Aides	1	60
		Front Line Health Worker	1	50
		Operating Theatre Technician	1	50
	Home Decor Art Jewellery	Imitation Jewellery Kit Maker	1	180
	Hospitality	Cook (General)	1	60
	Information And Communication	DTP And Print Publishing Assistant	1	60
	IT/ITeS	Accounts Assistant Using Tally	1	60
		Domestic Data Entry Operator	1	120
		CRM Domestic Non Voice	1	60
	Jute Diversified Products Sector	Jute Braided Product Maker	1	40
	Manufacturing	CNC Milling	1	60
		CNC Turning	1	60
	Travel & Tourism	Ticket Reservation Assistant	1	70
	Retail	Sales Associate	1	120

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. In addition, there are **26 ITIs offering 22 trades**, with 5,931 seats, occupied by 3,235 trainees indicating a 54% utilization. The district has 5% of the total ITI seats (top 5) in the state, however the almost half of the seats are not occupied.

The below table presents the courses offered through ITI, and the number of such institutes offering each trade/ training for job role.

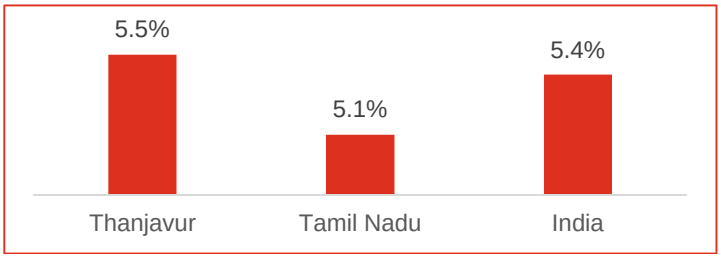
Table 6 Vocational Training under Long Term Skill Development Programs (ITI)

Scheme	Sector	Job Role	No. of Training Centres	Intake
Industrial Training Institutes **(Craftsmen Training Scheme)**	Agriculture	Mechanic (Tractor)	1	39
	Automobiles and Auto Components	Mechanic (Motor Vehicle)	11	380
	Capital Goods	Draughtsman (Civil)	1	0
		Sheet Metal Worker	2	39
		Welder	13	271
		Welder (GMAW & GTAW)	1	40
		Welder (Pipe)	1	40
		Welder (Welding & Inspection)	1	40
	Construction	Carpenter	2	48
		Electrician	16	729
		Industrial Painter	1	17
	Electronics & Hardware	Wireman	7	211
		Mechanic (Refrigeration and Air-Conditioning)	5	205

Scheme	Sector	Job Role	No. of Training Centres	Intake
		Mechanic Industrial Electronics	11	0
	Handicrafts & Carpets	Turner	2	105
	Infrastructure Equipment	Mechanic Diesel	11	223
	Instrumentation, Automation, Surveillance and Communication	Mechanic Mechatronics	1	0
	Iron and Steel	Machinist	1	46
	IT/ ITeS	Computer Operator and Programming Assistant	3	63
	Mining	Fitter	16	576
	Textile and Apparel	Sewing Technology	1	42
	Tourism and Hospitality	Food Production (General)	3	121

Figure 19 Proportion Undergone Vocational training 2015-16, MoLE[16]

With respect to vocational training in the district, 5.5% had received training in the district compared to 5.1% in the state as per Employment and unemployment survey 2015-16. This is higher than the state and country average.



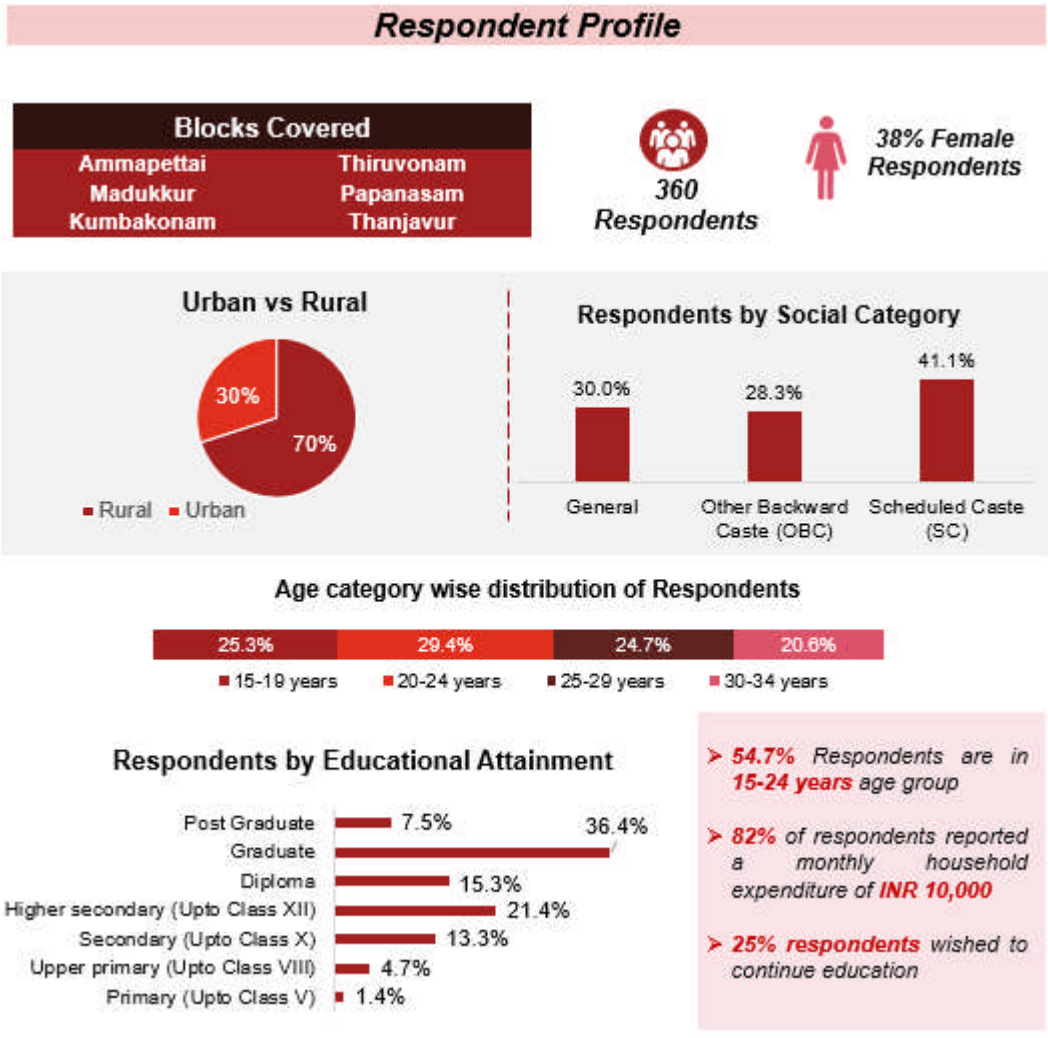
[16] Employment and Unemployment Survey 2015-16, Ministry of Labour and Employment

2. Youth Perspective

2.1. Profile of Respondent youth

The structured household survey tool was administered with the 360 youth (young men and women in the age group of 15-34 years) sampled from six blocks **Ammapettai, Thiruvonam, Madukkur, Papanasam, Kumbakonam, Thanjavur** [17]. Of the total respondents, **38%** were **female respondents**. **Majority (70%) of the respondents** were from the rural category. The sample has balanced representation of various socioeconomic and demographic characteristics of the population.

Figure 20 Respondent Profile of Youth Aspiration Survey

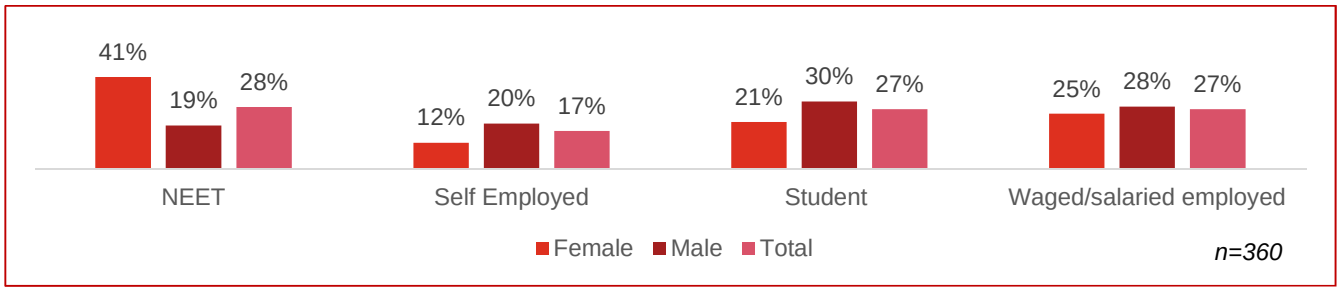


2.2. Youth's Educational and Economic Engagement Status

The figure below illustrates the gender wise classification (current status) of the respondents interviwed during the household survey. While the female respondents were predominantly falling in the NEET (41%) category, the male respondents were largely distributed between Wage / Salaried Employment (28%), and in Education system (30%).

[17] Detailed methodology of selection of blocks is described in Appendix 1 of the report.

Figure 21 Current Status of Respondent by gender

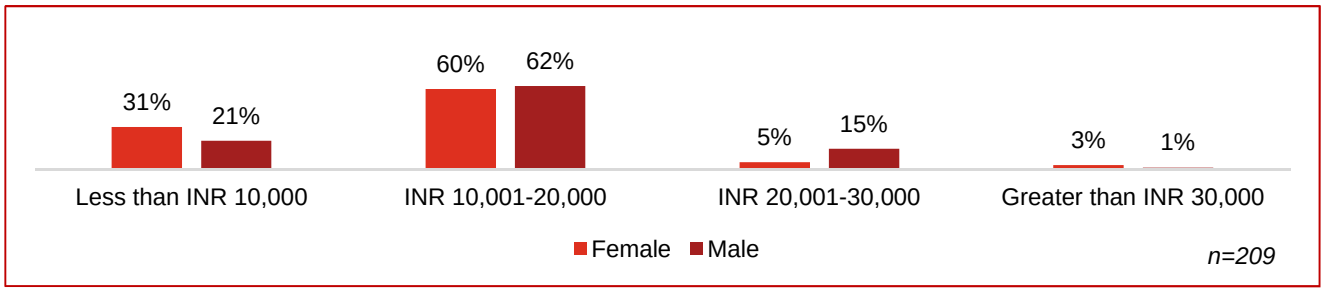


2.3. Economic engagement of Respondents

44% of the total respondents are currently engaged in economic activities.

59% of the total respondents are currently working or had worked before. Out of the respondents who are not presently working, 21% of these respondents have ever been engaged in economic activities. 78% of the respondents (ever engaged in an economic activity or currently working) reported that they were employed in a field related to their education/ training.

Figure 22 Distribution of Respondents (ever worked & currently working) across Monthly Income Category across gender



More than half (32%) of the respondents who had worked and are currently working were females.

60% of the female respondents reported that they receive wage in the range of INR 10,001 to INR 20,000 monthly. 83% male respondents under this category reported that their monthly income is less than INR 20,000. Lower wages have been a major reason for out migration amongst locals in the district. In addition, lower wages demotivates females to take up any form of economic activity. Around 38.3% of the respondents were dissatisfied with their jobs.

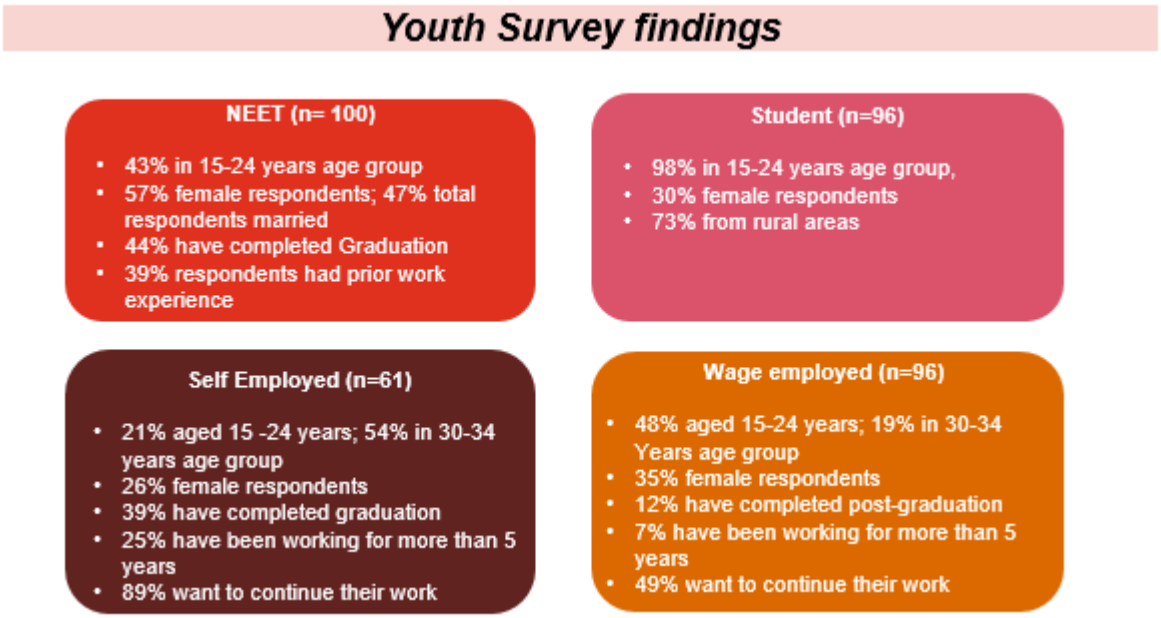
Among those with education of higher secondary and below, skilled work like tailor, mason, electrician and plumber were the most common form of economic activity. It is important to note that, 41% of the respondents who had completed their post-graduation, graduation and Diploma degrees had been engaged in unskilled work.

Table 7 Education Qualification of Respondents and Employment Type

n=209

	Upper Primary and Below	Secondary	Higher secondary	Diploma	Graduate	Post Graduate
Farm Activities	18%	14%	12%	4%	3%	4%
Livestock	0%	0%	0%	0%	3%	4%
Unskilled worker (construction, MNREGA)	9%	28%	44%	48%	41%	38%
Salaried Employment (teacher, government official, etc.)	0%	8%	0%	4%	15%	17%
Skilled worker (tailor, mason, electrician , plumber)	73%	53%	56%	61%	51%	33%
Petty Business/Trade	0%	8%	0%	0%	5%	4%
Major Business/Trade/ Manufacturing	0%	0%	0%	0%	1%	13%
Number of respondents	**16**	**36**	**34**	**23**	**76**	**24**

Figure 23 Youth survey findings across categories



2.4. Youth under NEET Category

28% of the total respondents were neither in employment, nor in education nor in any training. 57% of the NEET category respondents were females. Majority of the NEET respondents (43%) of the respondents were between the age group of 15-24 years while 38% were between 25-29 years. 44% of the NEET respondents had completed their graduation. This shows that there is high level of educated unemployment in the district.

More than one-third of the NEET respondents have ever worked before. While the most of the respondents in NEET category have been in it for more 1 year (59%). **Almost three-fourth of the female respondents in the NEET category have been in the category for more than a year.**

58% of the male NEET respondents wish to work in the future compared to only 12% of the female NEET respondents.92% of the male respondents and 86% of the female respondents interested to work in the NEET category are actively seeking work opportunities and 24% of them are looking for job opportunities for more than 1 year.

Table 8 NEET Category Respondents

Duration in NEET Category (n=100)			
	Female	Male	Total
Less than 6 months	0.0%	14%	6%
6 months- 1 year	25%	49%	35%
1- 2 years	38%	23%	32%
2- 3 years	26%	12%	20%
3 - 4 years	9%	2.3%	6%
4 - 5 years	2%	0%	1%

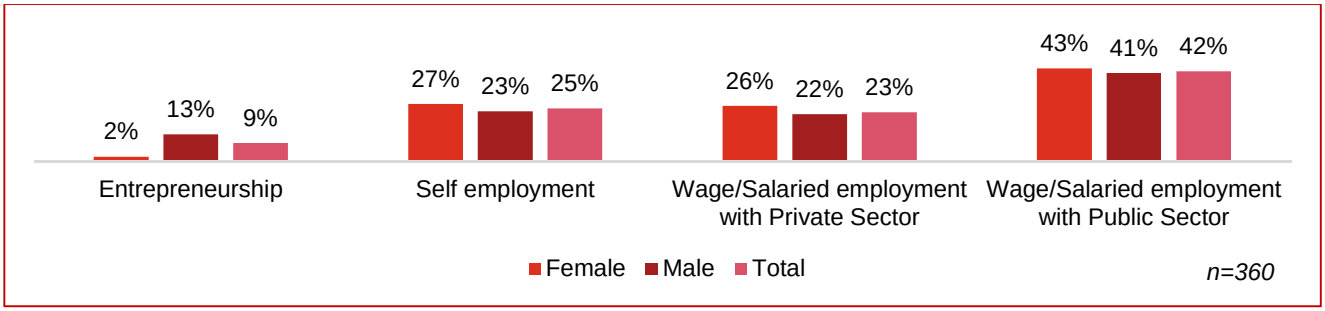
Wish to Work (n=100)			
	Female	Male	Total
Yes	12%	58%	32%
Total	7	25	32

Actively Seeking Work (n=33)			
	Female	Male	Total
Yes	6%	92%	91%
Total	7	25	32

2.5. Youth Career Aspiration

The youth in the district have preference for wage / salaried employment (65%). Both female and male respondents have shown similar interest in the pursuit of wage employment, and have a substantially higher interest in pursuit of public sector employment as it assures stability and is more prestigious.

Figure 24 Career Aspiration of Youth



34% of the youth feel there is a lack of adequate employment opportunities available in the district.

The main factors determining the aspiration of the youth are Salary (wages) / Income (90%), Job Security (69%) and Social Status (42%).

About 43% of the respondents (all excluding NEET and students) feel they are completely prepared for requirements for a job while only 2% of the respondents feel they are unprepared for jobs. The main reason for these respondents feeling prepared is their understanding of the job (66%).

Table 9 Career Aspiration - Factors, Preparedness and Availability of Jobs

Factors Determining Aspiration (n=360)*	Responses
Salary (wages) / Income	90%
Job Security	69%
Social Status	42%
Flexible work arrangements (location, schedule)	39%
Emigration Prospects	24%
Gender suitable role	18%
Closeness to Residence	16%
Opportunities for promotion and career development	3%
Employer provided benefits and perks	2%
Safety / Security	2%

Perception of Preparedness for Jobs (n=164)	Responses
Completely Prepared	43%
Largely Prepared	17%
Moderately Prepared	32%
Somewhat prepared	8%
Availability of Job Opportunities (n=360)	**Responses**
Somewhat adequate	4%
Neither adequate nor inadequate	55%
Inadequate	34%
Do not know	1%

**Multiple response question, responses may add up to more than 100%*

Lack of sufficient education qualification was the major challenge faced by youth in pursuing their career aspiration. Other factors include lack of family support (14.4%). **11% of the youth highlighted the lack of technical and vocational skills as a challenge in pursuing their career aspiration.**

*Table 10 Career Aspiration – Challenges in pursuing desired career **

N=360

Challenges	Responses	Challenges	Responses
Low financial strength	46%	Lack of work experience	15%
Lack of jobs locally	43%	Pressure related to getting married	12%
Unsafe working environment	31%	Lack of sufficient education qualification	9%

Challenges	Responses	Challenges	Responses
Lack of guidance / information on appropriate job available for skill levels	29%	Lack of family support / social acceptance of girls being engaged in economic activity	7%

**Multiple response question, responses may add up to more than 100%*

The key factors determining their employability, according to the respondents, were Relevant work experience in similar position or field (38%), years of relevant work experience (21%), level of Education attainment (20%) and soft skills (14%). Teamwork (57%), leadership (50%) and active listening (43%) were identified as key skills specific to their aspired jobs. **While 69% respondents stated that apprenticeships and work experience could help them achieve their aspirations, 35% respondents were looking to continue education and** 30% were intending to take up a vocational / skill training program.

Table 11 Key Requirements to enhance employability and steps to achieve aspirations

Key Requirements to enhance employability (n=360)			
Requirements	Responses	Requirements	Responses
Education attainment (level of education)	20%	Years of Relevant Work Experience	21%
Soft skills	14%	Relevant work experience in similar position or field	38%
Certifications of Technical Skill	6%		
Key Skills Required for desired job (n=360)*			
Team work	57%	Creativity, originality and initiative	31%
Leadership	50%	Analytical thinking	29%
Active listening	43%	Clear Communication	27%
Coordination Skills	42%	Attention to detail	16%
Time management	41%	Critical thinking and analysis	4%
New Steps to achieve aspirations (n=360)*			
Steps	Responses		
Apprenticeship / Gathering Work Experience	69%		
Vocational/ Skill Training	30%		
Continuing Education	35%		

**Multiple response question*

Career aspiration and preference of sectors varied across the gender group. Banking (23%), Textiles (20%) and Education (18%) were the most preferred sectors among the total female respondents while the male respondents preferred sectors like Banking and financial services (20%), Construction (10%), Transport & logistics (12%) and electronics and IT (11%). However, logistics and construction were the least preferred sectors by the female respondents. The figure below details out the gender wise career aspiration for the youth.

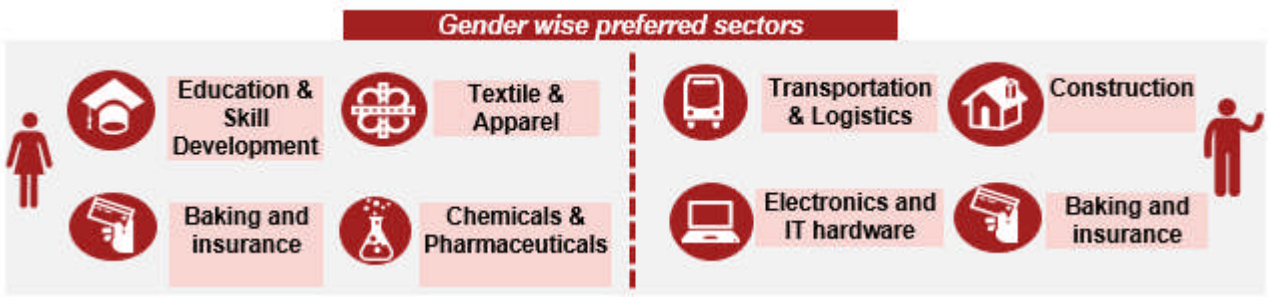
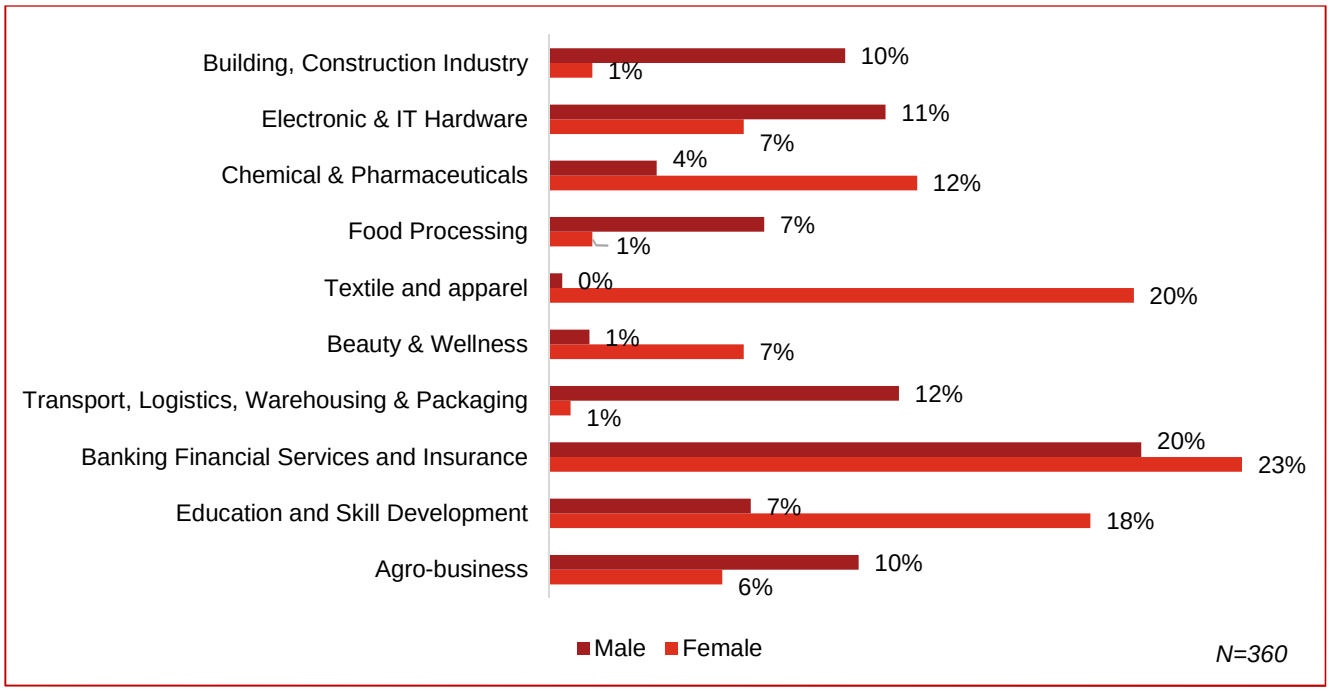


Figure 25 Sectors aspired by respondents



The median wage expectation is around ₹22,000. Around 76% of the respondents have expectations of monthly income greater than ₹20,000. Male respondents aspired for higher salaries compared to their female counterparts. 45% of the respondents in the NEET category aspired for a monthly salary ranging between INR 15,001 to 25,000. Students aspired for higher monthly salary compared to other categories. 8% of the students aspired for salary greater than INR 45,000.

Figure 26 Aspired monthly salary of respondents by category

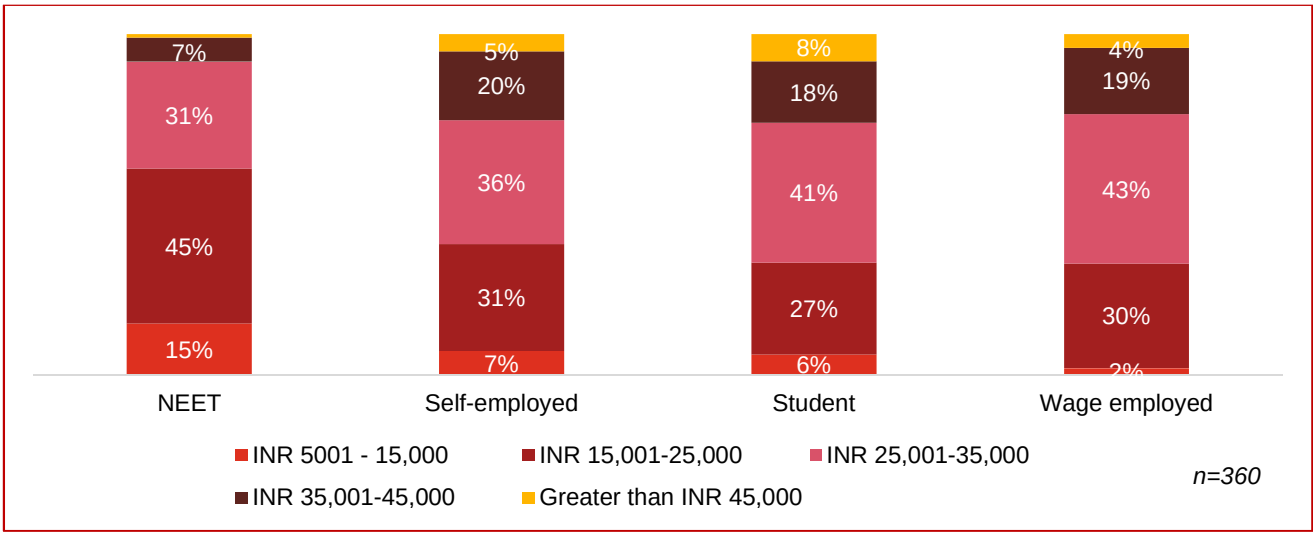
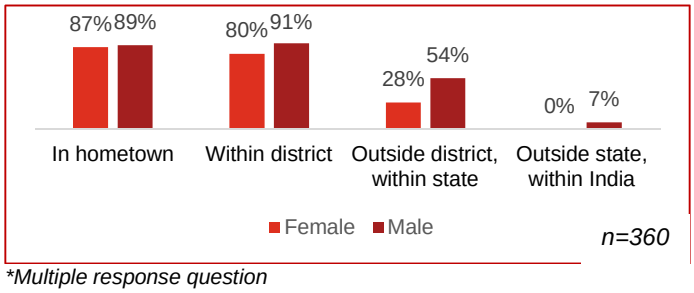


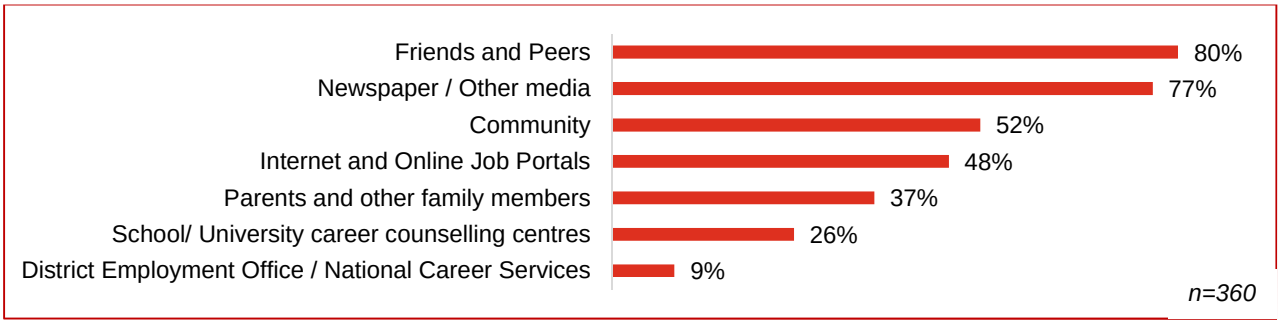
*Figure 27 Preference for Work Location**



88% of the total respondents preferred a job within their hometown. The respondents were reluctant to migrate outside of their hometown / district for the purpose of employment. Both male and female respondents preferred their work locations to be situated within their hometown or in the district.

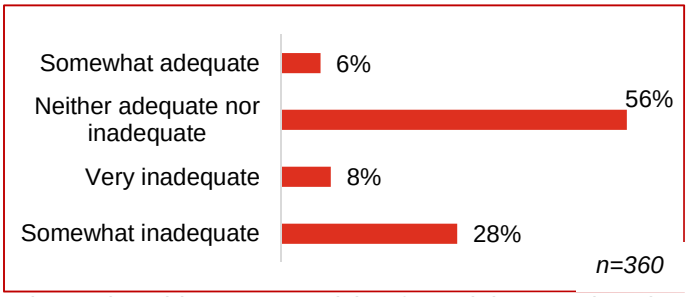
**Multiple response question*

*Figure 28 Sources for Job Information**



*Multiple response question

Figure 29 Accessibility on Counselling Services

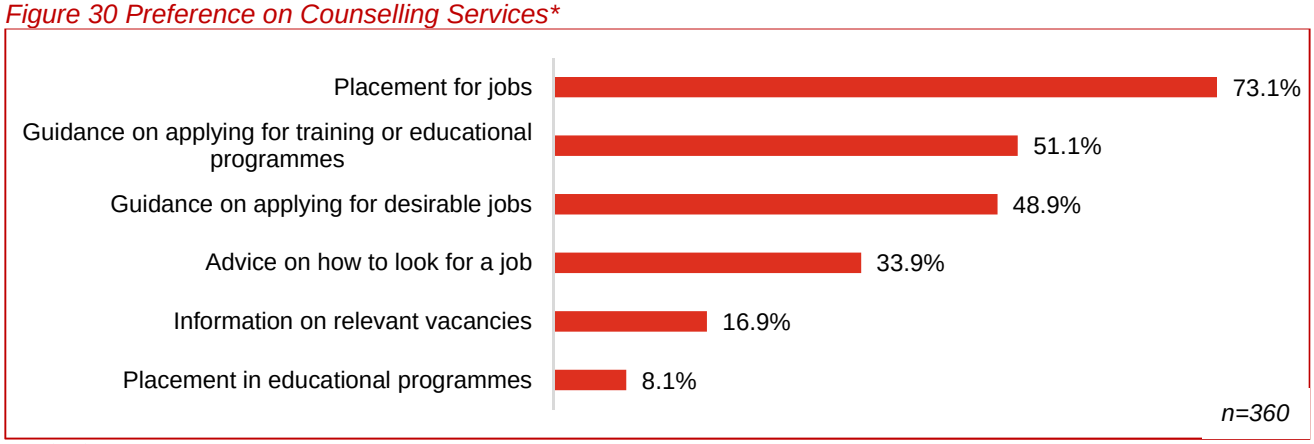


The most important source for the job related information was friends and peers (90%). Newspaper and media contributed to 77% and the community (52%).

36% of the respondents felt that the counselling services were not adequate in meeting their requirements.

The key inputs requested by the respondents from career counselling services include placement support (36.7%), guidance on applying for training or education programmes (51%) and guidance on applying for desirable jobs (49%).

*Figure 30 Preference on Counselling Services**



*Multiple response question

2.6. Skill Training Preferences of youth

Only 5% of the total respondents had any awareness of Government run vocational programs while around 2% had undergone any vocational training previously. 41% of the respondents were interested in undertaking any vocational training. Of these respondents 41% wanted the trainings to be short term certificate courses and 82% wanted the courses to be part time in nature. Though the respondents weighed most aspects of a training program as being important, they were all mostly concerned with quality of internship/ apprenticeship and quality of training (82%).

Figure 31 Skill Training type interested in

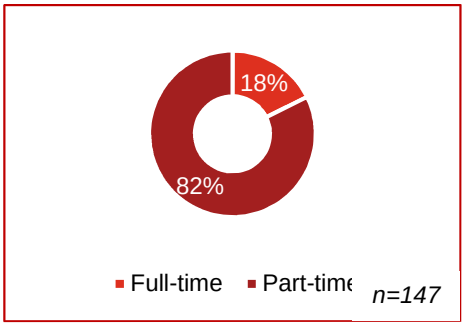
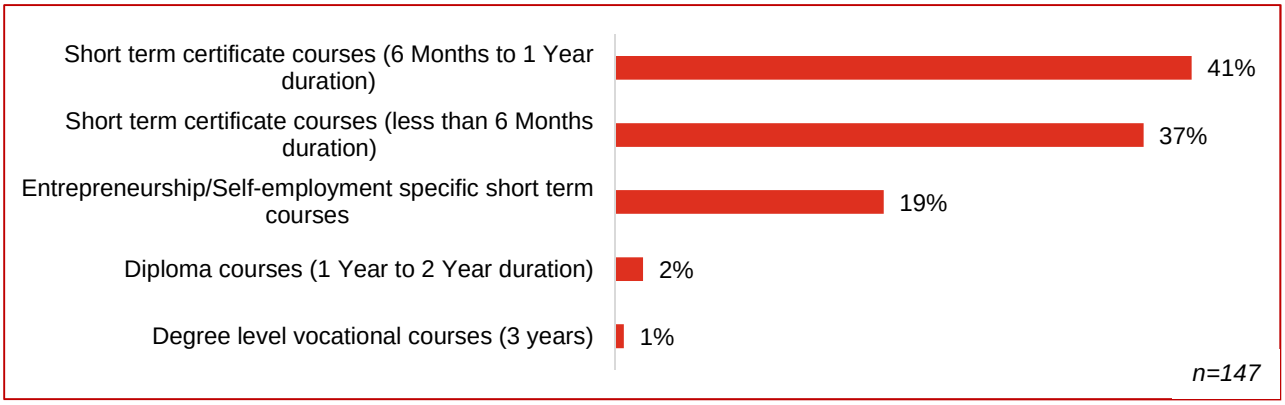


Figure 32 Skill Training type interested in



Construction, auto & auto components, transport and food processing were the most popular and aspired sector amongst male respondents and Textile, healthcare and education amongst female respondents.

3. Employer's and Other Stakeholder's Perspective

3.1. Employers' Perspective

The study covered employers, industrial associations and other key stakeholders to understand the demand side perspectives of skills. The information was collected through quantitative survey.

The survey covered 33 Industries from primarily five sectors, with highest representations from the auto and auto components, food processing and building construction which are highest contributors to the local economy. 48% of the industries were in operations for more than 10 years. 70% of the industries surveyed reported to be in the Small Industries category.

Figure 33 Distribution of Industries by Size

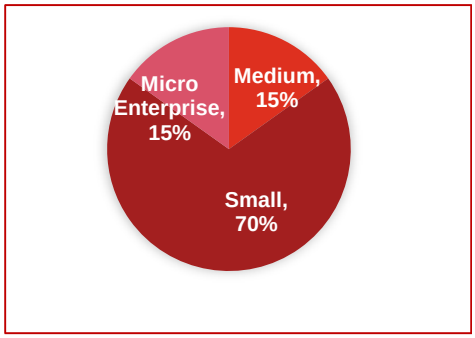


Table 12 Sector wise coverage of Industries in Employer Survey

S.No	Sector	Number of Industries Surveyed	S.No	Sector	Number of Industries Surveyed
1.	Auto and Auto Components	12	6.	Iron, Steel and Other Metals	1
2.	Food Processing	5	7.	Logistics	1
3.	Building Construction	3	8.	Media & Entertainment	1
4.	Machinery Equipment	2	9.	Oil Gas and Hydrocarbon	1
5.	Paper and Paper Products	2	10.	Retail	1
6.	Chemical & Pharmaceuticals	1	11.	Tourism Travel and Hospitality	1
7.	Healthcare Services	1	12.	Warehousing and Packaging	1

Majority of the employers (68%) recruited through employee reference, from either existing employees or known sources as a mode of recruitment. Local Community (11%) was the second most preferred mode of recruitment, followed by advertisements in newspaper (7% each). There has been slower uptake of recruitments from Job Melas (2%) and web portals (2%).

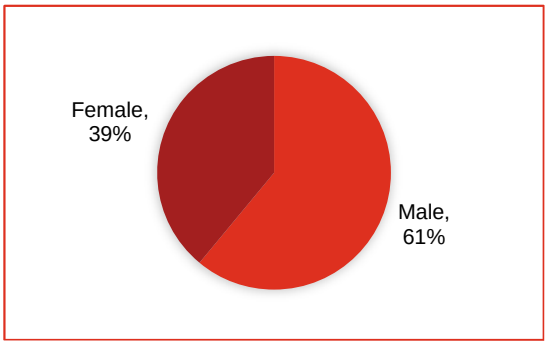
The most common challenge they face by employers was candidate disinterest and attitude (35%), followed by high local wages (31%) and lack of requisite core skills (10%).

*Table 13 Modes and Challenges in Recruitment Process**

Key Modes of Recruitment			**Key Challenges faced in Recruitment**		
S.No	Particulars	%	S.No	Particulars	%
1.	Employee Reference/ Other Referrals	68%	1.	Candidate Disinterest and Attitude	35%
2.	Local Community	11%	2.	High local wages	31%
3.	Advertisements in Newspapers	7%	3.	Lack of requisite core skills	10%
4.	Social Networks	5%	4.	Lack of requisite soft skills	6%
5.	Recruitment/ Manpower Agencies	2%	5.	None	5%
6.	Web Portals	2%	6.	Lack of Prior Experience	3%
7.	Job Melas	2%	7.	Nature of work requires strenuous physical labour	3%
8.	Others	2%	8.	Others	3%

**Multiple response question*

Figure 34 Average distribution of workers by gender



The surveyed industries were largely dominated by the male workers. Semi-Skilled workers dominated the share of workforce (42%) followed closely by skilled workers (27%). Most of the females employees were employed in the unskilled workers category as daily wage labourers for doing manual work. While 80.5% respondents affirmed sourcing migrant workers from other districts of Tamil Nadu, all (41 employers) confirmed sourcing workers from other parts of the country. Among these (33), 85% of the respondents sourced their workers from the southern districts of Tamil Nadu. All the employers stated that they recruited employees from Eastern India. States of Bihar, West Bengal and Odisha were the key sources of migrant workers.

Figure 35 Distribution of workers-Skill Levels

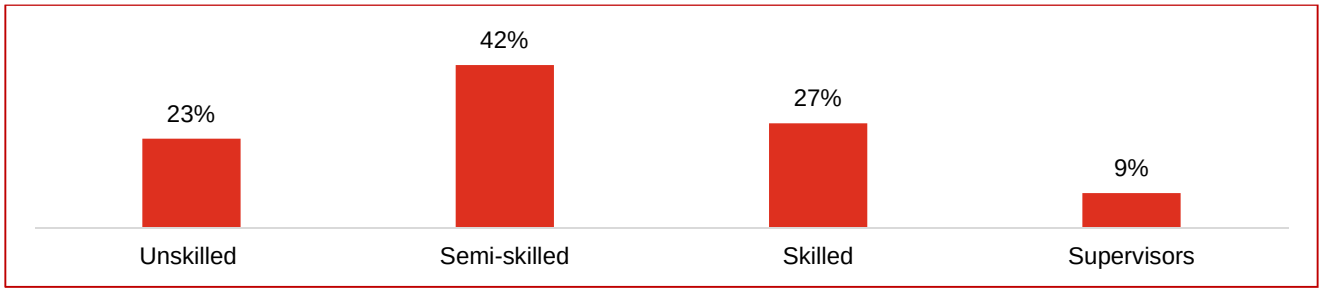
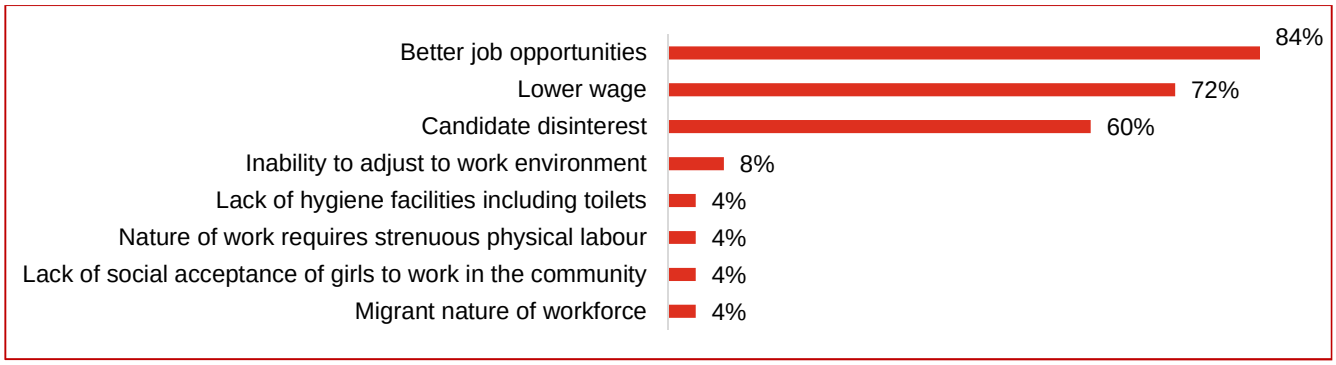


*Figure 36 Key causes of Attrition**



**Multiple response question*

The employers estimate 25% attrition annually from their workforce.

Better job opportunities (84%) and lower wages (72%) were the dominant cause of attrition. Candidate disinterest and inability to adjust to work environment were the other causes of attrition in the enterprises.

The employers stated that domain skill upgradation (23%) of the workers needs the most focus. In addition, 13% employers stated that communication skills trainings are required for the workers.

Only 19% of the employers feel there is high growth prospects in the industries, while only none of the respondent see high adoption of technology in the future.

Table 14 Growth Prospects and prospective adoption of technology

Growth Prospects of Industry (n= 32)	%	Level of Technology adoption (n= 31)	%	Plans to adopt Technology (n=33)	%

High	19%			Yes	3%
Medium	56%	Medium	32%		
Low	16%	Low	48%	No	87%
Can't Say	9%	Can't Say	19%		

The employers see a medium demand for both minimally skilled and skilled workers while only 3% of the respondents see high demand for supervisory roles. 75% of the respondents provided some sort of training to their workers. Trainings were largely given for domain skills for recruitment.

Table 15 Demand for workers by Skill Level and type of training provided to workers

Demand for Workforce in next 5 years (n=30)			
	Minimally Skilled	Skilled	Supervisory
High Demand	0%	10%	3%
Medium Demand	23%	20%	3%
Low Demand	13%	3%	10%
None	63%	67%	84%

Domain skills and communication skills are the two major requirements for workers.

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

3.2. Other Stakeholder's Perspective

The study also included in-depth interviews of more than 15 stakeholders including District Collector and other line departments involved in the Skill Development, Livelihood and Employment and Industrial development related activities, Industrial Associations, Vocational Education and Skill Development institutions among others. A focus group discussion was conducted with eight stakeholders from various organizations and industry associations like automobile sector, Tamil Nadu Bakers Association, Micro & Small Industrial Association, Thanjavur Chamber of Commerce & Industry and hotel management institute.

The following were the key findings from the stakeholder consultations and FGD:

Table 16: Qualitative findings Thanjavur

S No	Topic	Responses
1.	Awareness of government skill training programs/ jobs/ job melas	• The workforce is moderately aware of skill training programmes • Low level of awareness regarding job fairs that are being conducted locally • Inadequate awareness of government skill training programs amongst females
2.	Traditional sectors	• Artisans are ready to provide skill training to the youths irrespective of educational qualification. • Students studying architecture are generally do their internships with these artisans informally. • Artisans are willing to pass on their skills, if there is a structured program supported by Tamil Nadu Skill Development Corporation • In order to improve their business, the marketing strategies should be introduced.
3.	Education-schools, ITI/ Polytechnics/ Engineering colleges in the district	• ITIs emphasize on practical application of knowledge • Lack of training centres to provide training for the Silk Industries and Metal manufacturing. • Students passing out of Polytechnic colleges are placed with TVS, Ashok Leyland, Logistic companies • Welder, Fitter, CNC operator and electrician are the most in demand job profiles preferred by recruiters • Unemployed youth who join short-term training programs are more willing to work in private companies.

S No	Topic	Responses
		• Low attendance rates in colleges especially private ITIs
4.	Candidate Attitudes/ Abilities	• A job-guarantee scheme program for industries would help local firms with facing labour shortages • Local youth do not prefer shop-floor roles, and prefer white-collar jobs • Local youth also do not prefer to work in smaller firms, and migrate to Trichy • Lower wages and Candidate disinterest leads to attrition • Candidates recruited through job fairs also tend to aspire to desk-based jobs over shop-floor roles, while the latter has more demand • The BHEL ancillary units are closing down due to lack of skilled workers
5.	Industry Engagement	• Dedicated semester for full time apprenticeship training and industry knowledge • Though Industries have expressed willingness to tie up with the Skill Development programs, they are severely constrained (especially small scale industries) by some of the program guidelines and operational issues. • Small scale industries should provide certification • Local institutions do not reach out to local firms for apprenticeships/ on the job training
6.	Industrial Scenario	• The district houses many engineering, fabrication, boilers and ancillary units mostly catering BHEL • As per Thanjavur District tourism officer, there is a steady growth for demand of tourist guides in the district due to increase of foreign tourists • Rice mills are spread all over the district • Most ITI students go to Tiruchirappalli, the neighbouring district for jobs (BHEL and its ancillary units) as the ancillary units in the district are closing down. • Men in age group 25-45 are engaged in Bronze icon making
7.	Labour Requirements	• High demand for Skilled labour • There is a growing trend amongst youth to either seek government jobs or be employed with the big brands. • Demand for Tourist guides increasing in the district with the growth in the tourism sector • The industries perceive a preference for jobs among youths in the services sector, especially in retail, food delivery and cab services over a fixed employment in manufacturing sector. • Swiggy and Zomato delivery agents are in high demand in the district town of Thanjavur
8.	Women Employment	• 30% of total workforce in the industrial sector are women. • Women are employed largely in the food processing, tourism & hospitality, spinning/ weaving industries in Thanjavur.
9.	Skill Gaps	• Students lack Soft Skills especially communication skills, professionalism, flexibility and interpersonal skills. • In the services sector, the conversation skills in English were found wanting in the Tourism & Hospitality sector.

4. Skill Gap Analysis

4.1. Skill Gap Assessment - Incremental Demand[18] for Skilled & Semi Skilled Manpower

As per our methodology for estimating demand and supply, it can be seen that **manufacturing, trade and repair services, construction, transportation and communication, hotels and restaurants** show high levels of demand for both skilled and semi-skilled workers.

The detailed methodology is described under Appendix 7.2. The table below illustrates the sector wise demand and skill gap for skilled and semi-skilled workers for time period 2019-21 and 2022-25.

Table 17 Sector wise Incremental Demand for Skilled and Semi Semi-Skilled Workers between 2019 and 2025

Sectors	Incremental Demand for Skilled Workers			Incremental Demand for Semi Skilled Workers			Total Incremental Demand
	2019-21	2022-25	Total	2019-21	2022-25	Total	Total
Allied Activities (Fisheries, Livestock, forestry etc.)	97	138	235	679	963	1,642	1,877
Manufacturing	4,755	7,513	12,267	9,509	15,025	24,535	36,802
Electricity, gas, water supply and other utility services	40	57	97	80	113	194	290
Construction	853	1,352	2,205	2,132	3,381	5,513	7,718
Trade & Repair Services	513	720	1,232	1,776	2,491	4,266	5,499
Hotels and restaurants	531	772	1,304	1,029	1,496	2,526	3,829
Transportation and storage	85	114	199	203	274	477	675
Communication and services related to broadcasting	992	1,556	2,548	496	778	1,274	3,822
Financial and insurance activities	1,479	2,297	3,777	740	1,149	1,888	5,665
Real estate	200	296	495	500	739	1,238	1,734
Public Administration	33	45	78	27	36	63	141
Education; Human health & Social Work Activities	2,893	4,343	7,236	2,315	3,475	5,789	13,026
Arts, entertainment and recreation	606	888	1,494	485	710	1,195	2,689
Repair of computers and personal and household goods	2,032	2,976	5,008	1,625	2,381	4,006	9,014
Other Services	962	1,410	2,372	770	1,128	1,898	4,270
Total Demand	**16,072**	**24,475**	**40,547**	**22,365**	**34,138**	**56,503**	**97,051**
Total Supply	**6,024**	**8,033**	**14,057**	**9,722**	**12,963**	**22,686**	**36,743**
Total Skill Gap	**10,047**	**16,443**	**26,490**	**12,643**	**21,175**	**33,818**	**60,308**

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

5. District Skilling Action Plan

5.1. District Action Plan

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

Table 18 Summary of Trainings

S. No	Sector	Trades	Target (Persons)	Budget (₹)
1.	Food Processing	• Packaging Technician • Packaging Technician • Industrial Production Worker – Food Processing • Quality Assurance Manager • Traditional Snack and Savoury Maker • Cold Storage Technician • Dairy Farm Supervisor • Dairy Farmer/ Entrepreneur • Dairy Worker	5,000	₹6.9 Crores
2.	Tourism and Hospitality	• Food & Beverage Steward • Housekeeping Attendant • Chef • Billing Executive • Facility Supervisor • Order Taker-Home Delivery • Tour escort and Driver	4,180	₹6.18 Crores
3.	Construction	• Draughtsman • Construction Fitter • Fabricator • Construction Welder • Helper Electrician • Foreman – Electrical Works (Construction)	6,400	₹18.78 Crores
4.	Banking, Financial Services and Insurance	• ₹Accounts Executive (Recording, Reporting) • Goods & Services Tax (GST) • Accounts Assistant • Mutual Fund Agent	2,800	₹1.62 Crores
5.	Plumbing, Electronics and Hardware	• Plumber (General) • Solar Domestic Water Heater Technician • Field Technician – AC • Field Technician – Refrigerator • Field Technician - Washing Machine • Field Technician - Other Home Appliances	3,400	₹6.1 Crores
6.	Healthcare	• Nursing • Emergency Medical Technician • Medical Records & health Information technician • Blood Bank Technician • General Duty Assistant • Medical Equipment Technician • Pharmacy Assistant • Medical Laboratory Technician • Ambulance Driver	3,000	₹7.45 Crores
Total			**27,780**	**₹47 crores**

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 19 Training Project 1-Food processing sector

Name of the Project: Training in Food Processing sector							
Key Economic Drivers: • Expected growth and investment potential in Food processing Sector • Potential investment is expected - Thanjavur Dairy Plant Upgradation Project proposed at an estimated investment of INR 750 crores • Food processing amongst top 3 sectors aspired by youth as per primary survey							
Key Partners: Dairy board, APEDA (Agricultural and Processed Food Products Export Development Authority), ITIs							
Job Roles:	**NSQF Level**	**NSQF Code**	**Duration of Training**	**Cost Category**	**Target Group**	**Training Target (People)**	**Cost of Training (₹)**
Food Products Packaging Technician	5	FIC/Q7001	240 hours	1	12th Class Pass	1000	₹1.32 Crores
Industrial Production Worker –	2	FIC/Q9005	240 hours	1	5th class Pass	1000	₹1.32 Crores

Food Processing							
Quality Assurance Manager	6	FIC/Q7602	240 hours*	1	M.Sc.	500	₹0.66 Crores
Traditional Snack and Savory Maker	4	FIC/Q8501	240 hours	1	8th Class Pass	1000	₹1.32 Crores
Cold Storage Technician	4	FIC/Q7004	250 hours	3	12th Class , Preferably/ Diploma /ITI with certification in refrigeration	600	₹0.65 Crores
Dairy Farm Supervisor	5	AGR/Q4103	150 hours	1	12th Class Pass	100	₹0.09 Crores
Dairy Farmer/ Entrepreneur	4	AGR/Q4101	240 hours	1	5th class Pass	500	₹0.66 Crores
Dairy Worker	2	AGR/Q4102	240 hours	1	5th class Pass	300	₹0.4 Crores
					Total training cost	5,000	₹6.39 crores
					Total Assessment and Certification cost (₹ 1,000 per candidate)		₹0.5
					Total cost		₹6.9 Crores

Key Considerations:
This sector is most suited to absorb workers shifting out of agriculture. It is also a favorable Industry for the employment of women.

**-Job roles do not have training hours mentioned. The average training hours for the sector and NSQF level within the sector, and applied those as notional hours. In some cases, insights from consultations with stakeholders are also considered.*

Table 20 Training Project 2-Tourism and Hospitality

Name of the Project: Training for Tourism & Hospitality Sector

Key Economic Drivers:

- Tourism is the most prominent sub sector, contributing to 24% of the service sector
- Number of tourist places in Thanjavur- temples, which attract not only national but Foreign tourist also
- Around 1.5 crores tourist flock to the district
- Credit offtake high for tourism and hotel sector
- Estimated Incremental demand of 2,000 in hotel and restaurant sector
- Swiggy and Zomato- high demand of food delivery executives

Key Partners: ITI, Tourism and Hospitality Skill Council, Tourism Department

Job Roles:	NSQF Level	NSQF Code	Duration of Training	Cost Category	Target Group	Training Target (People)	Cost of Training (₹)
Food & Beverage Service - Steward	4	THC/Q0301	300 hours	2	Class 10th pass	600	₹0.89 Crores
Housekeeping Attendant (Manual Cleaning)	3	THC/Q0203	250 hours	2	Primary education	600	₹0.74 Crores
Chef-de-partie	6	THC/Q0404	285 hours	1	Class 8th pass	600	₹0.95 Crores
Billing Executive	4	THC/Q5801	300 hours*	2	Graduate	480	₹0.71 Crores
Facility Supervisor	5	THC/Q5709	300 hours*	2	ITI	400	₹0.59 Crores
Tour vehicle Driver	4	THC/Q4202	240 hours*	2	Driving license & Class 8th pass	500	₹0.59 Crores

Assistant Catering Manager	6	THC/Q5901	300 hours*	3	Class 12th pass	400	₹0.52 Crores
Front Office Associate	4	THC/Q0102	280 hours	3	Class 12th pass	300	₹0.36 Crores
Guest Relations Manager	6	THC/Q0108	300 hours*	2	Class 12th pass	300	₹0.45 Crores
					Total training cost	4,180	₹5.75 crores
					Total Assessment and Certification cost (₹ 1,000 per candidate)		₹ 0.42 crores
					Total cost		₹6.18 Crores

Key Considerations:

- Tourism is the most prominent sub sector, and can provide employment to educated youth
- Woman and youth can be easily employed in this sector

**-Job roles do not have training hours mentioned. The average training hours for the sector and NSQF level within the sector, and applied those as notional hours. In some cases insights from consultations with stakeholders are also considered.*

Table 21 Training Project 3- Construction Sector

Name of the Project: Training for Construction sector							
Key Economic Drivers: • Construction is one of the identified sectors with high skill demand in the next five years • The most preferred sector for undergoing training/ pursuing career during youth aspiration survey amongst male respondents • New parks and road construction is proposed in the district Thanjavur Smart city project will accelerate the demand for construction sector							
Key Partners: Construction sector council, SIDCO, ITI, Polytechnics, Thanjavur Smart City Mission							
Job Roles:	**NSQF Level**	**NSQF Code**	**Duration of Training**	**Cost Category**	**Target Group**	**Training Target (People)**	**Cost of Training**
Draughtsman	4	CON/Q1301	600 hours*	1	ITI/ Diploma in Civil	1,200	₹3.96 Crores
Construction Fitter	3	CON/Q1205	350 hours*	1	Class 10th pass	1,500	₹2.89 Crores
Quality Technician	6	CON/Q0403	516 hours	1	Class 12th pas	600	₹1.71 Crores
Fabricator	4	CON/Q1206	600 hours	1	Class 12th pass	500	₹1.65 Crores
Construction Welder	4	CON/Q1252	600 hours*	1	Class 10th pass	1000	₹3.3 Crores
Helper Electrician	2	CON/Q0601	350 hours	1	10th pass	600	₹1.16 Crores
Construction Electrician -LV	4	CON/Q0603	636 hours	1	Class 10th pass	1000	₹3.5 Crores
					Total training cost	6,400	18.13 Crores
					Total Assessment and Certification cost (₹ 1,000 per candidate)		0.64 crores
					Total cost		₹18.78 Crores
Key Considerations: • Tie up with upcoming investment sites to understand the need of manpower in construction sector • Focus on ITI graduates and diploma graduates • Trainings can be accompanied by stipends • Trainings can focus on sustainable practices • Upcoming construction projects can be target areas (Roads, parks) where high demand of skilled workforce will be required in the next six years							

**-Job roles do not have training hours mentioned. The average training hours for the sector and NSQF level within the sector and applied those as notional hours. In some cases, insights from consultations with stakeholders are also considered.*

Table 22 Training Project 4- Banking, Financial Services and Insurance Sector

Name of the Project: Training in Banking, Financial Services and Insurance sector							
Key Economic Drivers: • High credit offtake in BFSI sector • Marketing of traditional handicrafts is important to boost its growth • These skill training programs would also benefit the traditional sector artisans in the district • Skilled labour force requirement in the sector as per skill gap estimation projection • One of the aspired sectors during youth aspiration study • High demand of GST Assistants in the industries • The large number of MSME units and have potential for better marketing and financial management of their enterprises • Marketing of traditional handicrafts is important to boost its growth • These skill training programs would also benefit the traditional sector artisans in the district							
Key Partners: BFSI, ITI, MSME Associations, Swamimalai Icon Manufacturers Co-op. Cottage Industrial Society Ltd., Thanjavur Art plate association, Thanjavur Handicraft association							
Job Roles:	**NSQF Level**	**NSQF Code**	**Duration of Training***	**Cost Category**	**Target Group**	**Training Target (People)**	**Cost of Training (₹)**
Marketing and Social Media manager	4	ASC/Q1110 *(Derived QP from Automotive sector)*	100 hours*	2	Diploma/ Graduation	500	₹0.25 Crores
GST Accounts Assistant	4	BSC/Q0910	100 hours	3	Graduation: commerce or allied subject	400	₹0.18 Crores
Mutual Fund Agent	4	BSC/Q3802	100 hours*	3	Class 12th pass	450	₹0.2 Crores
Life Insurance Agent	4	BSC/Q3801	100 hours*	3	Class 12th pass	900	₹0.39 Crores
Accounts Executive (Recording, Reporting)	4	BSC/Q1001	100 hours	3	Graduate in Commerce	450	₹0.2 Crores
Export Assistant	5	AMH/Q1601 *(Derived QP from Apparel sector)*	270 hours	2	Diploma/ Graduation	100	₹0.14 Crores
					Total training cost	2,800	₹1.33 crores
					Total Assessment and Certification cost (₹ 1,000 per candidate)		₹0.28 crores
					Total cost		₹1.62 Crores
Key Considerations: With the growth in BFSI sector and introduction of GSTs, there is a need to skilled workforce to work in the sector. Youth, especially woman can be trained and provided meaningful employment in this sector.							

**-Job roles do not have training hours mentioned. The average training hours for the sector and NSQF level within the sector and applied those as notional hours. In some cases, insights from consultations with stakeholders are also considered.*

Table 23 Training Project 5- Plumbing, Electronics and Hardware Sector

Name of the Project: Training in Plumbing, Electronics and Hardware sector							
Key Economic Drivers: • Urbanization will lead to increase consumption ad purchase of domestic appliances. This will lead to growth in Repair sector of domestic appliances and computers							
Key Partners: ITI							
Job Roles:	**NSQF Level**	**NSQF Code**	**Duration of Training**	**Cost Category**	**Target Group**	**Training Target (People)**	**Cost of Training (₹)**
Plumber (General)	3	PSC/Q0104	410 hours	1	10th pass	600	₹1.36 Crores
Field Technician – AC	4	ELE/Q3102	300 hours	2	8th Class+ 2 yrs	1000	₹1.47 Crores
Field Technician – Refrigerator	4	ELE/Q3103	300 hours	2	8th Class+ 2 yrs	400	₹0.59 Crores
Field Technician - Washing Machine	4	ELE/Q3106	300 hours	2	8th Class+ 2 yrs	400	₹0.59 Crores
Field Technician - Other Home Appliances	4	ELE/Q3104	360 hours	2	8th pass	1000	₹1.76 Crores
					Total training cost	**3,400**	₹5.76
					Total Assessment and Certification cost (₹ 1,000 per candidate)		₹0.34
					Total cost		**₹6.1Crores**
Key Considerations: Youth can be trained to provide services for repair of domestic appliances. ITI and Diploma graduates can also be given in this sector.							

Table 24 Training Project 6-Healthcare Sector

Name of the Project: Training in Healthcare sector							
Key Economic Drivers: • Incremental demand of 13,000 in next six years • More than 20 hospitals in the district • One of the aspired sectors during youth aspiration study							
Key Partners: Hospitals, Medical colleges, Nursing colleges							
Job Roles	**NSQF Level**	**NSQF Code**	**Duration of Training**	**Cost category**	**Target Group**	**Training Target (People)**	**Cost of Training**
Emergency Medical Technician	4	HSS/Q 2301	240 hours	1	12th Pass with Science	400	₹0.53 Crores
Medical Records & health Information Technician	4	HSS/Q5501	600 hours	1	12th Pass with Science	400	₹1.32 Crores
Blood Bank Technician	4	HSS/Q2801	1000 hours	1	12th Pass with Science	300	₹1.65 Crores
General Duty Assistant	4	HSS/ Q 5101	240 hours	2	10th Pass	500	₹0.59 Crores
Medical Equipment Technician (Basic Clinical Equipment)	3	HSS/Q5601	600 hours	1	12th Class preferably but 10th Class in certain cases	400	₹1.32 Crores
Pharmacy Assistant	4	HSS/Q5401	200 hours	2	12th Pass	500	₹0.49 Crores
Medical Laboratory Technician	4	HSS/ Q 0301	1500 hours	1	12th Pass with Science	400	₹0.44 Crores
Ambulance Driver	4	ASC/Q9706	400 hours	1	10th class pass	100	₹0.83 Crores
					Total training cost	3,000	₹7.15 Crores
					Total Assessment and Certification cost (₹ 1,000 per candidate)		₹0.3 Crores
					Total cost		₹7.45 Crores
Key Considerations: The Healthcare sector has completely moved into using high-end technological medical equipment and methods for treating patients. Youth and women can be employed in this sector							

5.2. Key Recommendations

Study findings reveal that there is an emerging demand for skilled workforce in the district with several investments lined up within the district. However, access to skills, livelihoods and gainful employment vary across the district. Technical skills, lack of soft skills, aspirations, migration patterns and access to financial institutions has emerged as key impediments in the economic engagement of youth. However, it also emerges that there are opportunities for the youth, especially in sectors like manufacturing, food processing, tourism and trade among others.

Recommendation on key interventions that could be considered to foster the participation of youth in the economy are as follows:

Collaboration between training centres and MSME associations:

Thanjavur houses many small and micro enterprises catering to BHEL. To enhance the quality of workers, students require quality education and practical knowledge exposure. Faculty workshops to be conducted every three months. MSME associations in collaboration with training institutes can conduct the workshops where they suggestions and training will be imparted to improve and upgrade the technical skills of the faculties as per latest industry demand. Special should be given to practical knowledge. District MSME associations can certify the faculties on successful completion of the workshops.

Promote Thanjavur as the 'Cultural Capital of Tamil Nadu':

Enhancement of tourism, heritage and public space imagery should be prioritized. Local economies (indigenous art and craft forms) will have to be reinforced and improvement of livelihood avenues can be done through diversification of tourism activities including Agro-tourism, Sericulture tour, Heritage Walk, etc.

The tourism activities can be further diversified through engaging tourists in handicraft making workshops, display of art and culture, offering local cuisine. These activities can be offered together under one platform by setting up a recreational centre and package tours can be offered to tourists. Skilled workforce will be required to operate and run such tourist centres.

Tourism sector is the major thrust area for growth in the district. There is a demand of 34 thousand skilled and semi-skilled workforce in the next six years. Tourist guides, chefs, tour drivers will be require quality skilling in soft and communication skills.

Digital Marketing of traditional handicrafts in Thanjavur:

Digital marketing of traditionally made handicrafts should be introduced. Tapping potential of commercializing the local handicrafts and enhancing earning potential of artisans through e-commerce portal will boost the growth of the sector. Promotion, enhancement and development of talent to preserve the indigenous art and craft forms is of utmost importance in the district.

Development of training infrastructure:

Development of training centres and introduction of courses for training youth for the Silk Industries and Metal manufacturing.

Training centres can be developed to impart skills on traditional sectors too. Artisans can be engaged to train the new generation. TNSDC can collaborate with interested artisans and set up training courses to instil interest in youth and revive the rich art forms in the district.

Convergence and coordination:

Convergence and coordination is required between various departments of the Government especially between the Training & Employment wings of the Dept. of Labour, Employment and Training, the District industries Centre, other line Departments implementing skill development including the RURBAN Mission which is implementing both the DDU-GKY and the NULM scheme in the state.

Government-support to artisans:

- Government assistance and subsidies can be provided to the artisans to set up focused skill development centres
- A better working environment needs to be provided to the artisans
- The export market will have to be strengthened

Appendix

A.1 Methodology for Block Selection for Youth Aspiration survey

Sampling Design for Youth Survey

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

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

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

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

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

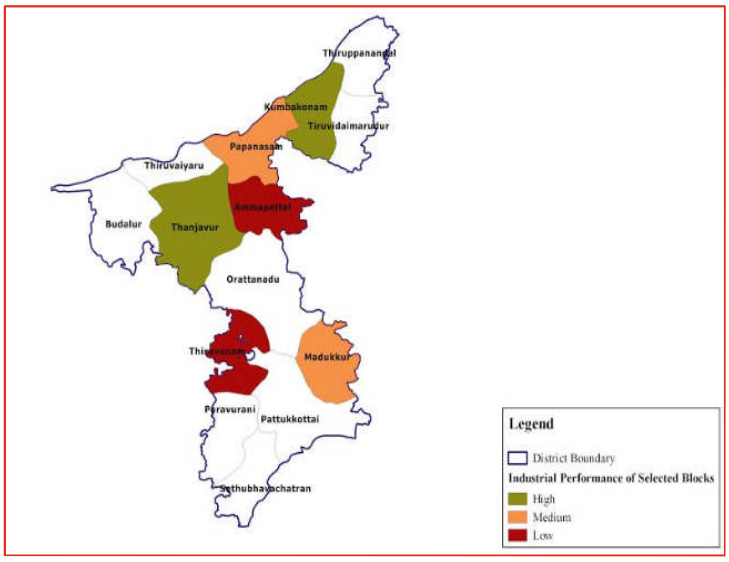
Selection of Blocks

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

To categorize blocks, the following data points were used.

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

Figure 37 Thanjavur block selection map



The following weights were assigned post award of marks:

- MSME Cluster – 25%
- SIDCO Cluster – 25%
- SIPCOT Industrial Estate – 5%
- Annual Centre-level Credit Data – 45%

Based on the above weights, the total score of each block was calculated. The total score was capped at 100. To classify the block as High/Medium/Low, the total score was converted into percentile values and categorized

into three groups – 0-33.33th percentile values, 33.33 to 66.67 percentile value and 66.67 to 100 percentile values. The percentile values are calculated with respect to each district as the base.
Based on the percentile classification obtained, blocks were classified as follows:

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

After deriving the above values for the blocks, **t**wo blocks are randomly selected from each category.

The blocks selected were:

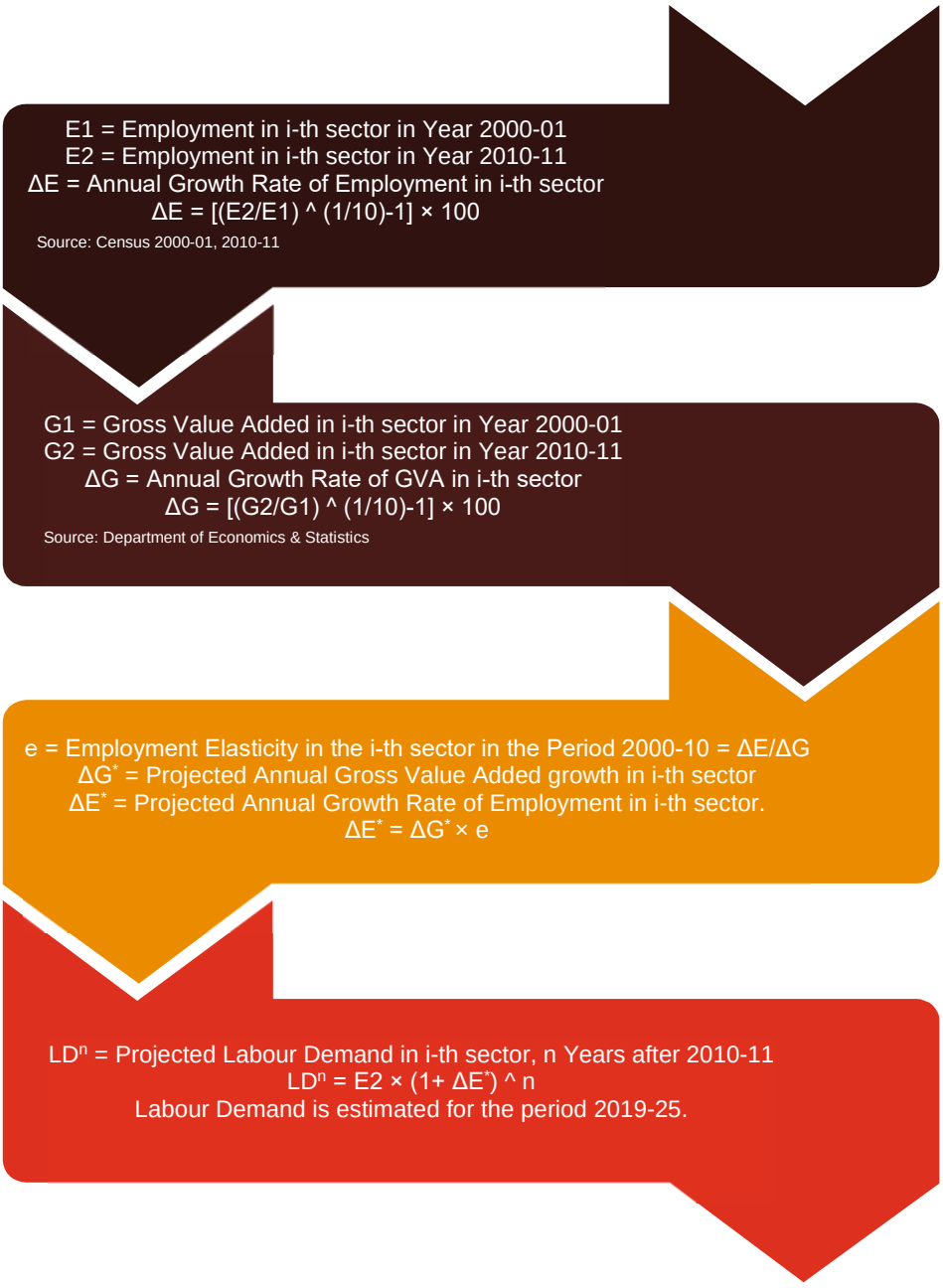
Low- Ammapettai, Thiruvonam,
Medium- Madukkur, Papanasam,
High- Kumbakonam, Thanjavur

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

Demand Estimation:

We adopted employment elasticity approach to forecast the labour demand. Employment elasticity is the measure of percentage change in employment associated with one percentage change in economic growth. The employment elasticity approach indicates the ability of an economy to generate employment opportunities. We estimated sector specific employment elasticity using historical data and assumed it to remain constant in the near future. If the estimated sector specific elasticities at district level varied significantly with national and state level estimates, we rationalized the estimated elasticities based on national and state level trends. Automation 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:

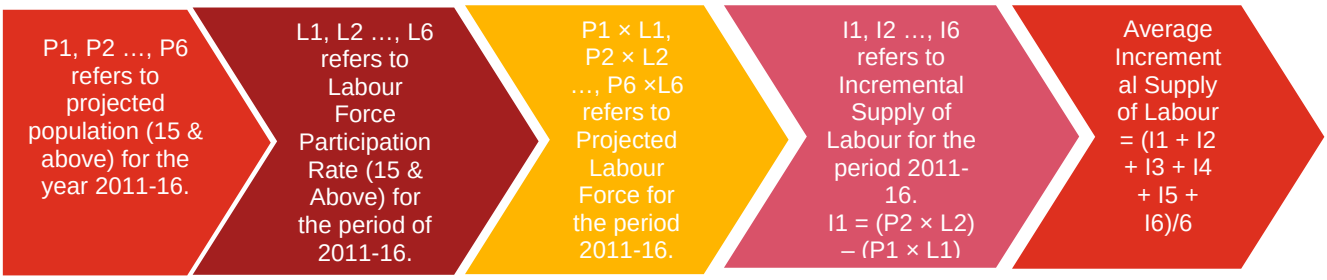
Figure 38 Steps for Demand Estimation



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[19]. 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 39 Steps for Supply Estimation



Workers are then segmented into three broad Skill groups based on the following criteria–

1. **Unskilled**: Illiterate, Less than five years of schooling, 5-10 years of schooling & no Vocational training,
2. **Semi-Skilled**: 5-10 years of schooling & some Vocational training, Secondary/Higher Secondary passed & no Vocational training, Secondary/Higher Secondary passed & some Vocational training;
3. **Skilled**: Graduate & no Vocational training, Graduate & some Vocational training and Technical Graduates

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

A.3 List of Stakeholders Consulted

S.No	Stakeholder	Category
1.	District Collector	Govt. official
2.	District Industries Center- General Manager	Govt. official
3.	District Assistant Director, District Skills Department	Govt. official
4.	District Tourism Officer	Govt. official
5.	Mr Chitrasu, Civic Society-Rice Mill	Govt. official
6.	Icon making Association Kumbakonnam	Industry Association
7.	Tamil Nadu Central coir marketing industrial Co-op society	Industry Association
8.	Thanjavur Artplate making association	Industry Association
9.	Thanjavur Handicrafts making association	Industry Association
10.	Thanjavur Leather making association	Industry Association
11.	Thanjavur Musical instruments making association	Industry Association
12.	Govt ITI, Principal	Training Service Provider
13.	Kunthavai Naacchiyaar Government Arts College for Women	Training Service Provider
14.	Chamber of Commerce Manali Ramakrishna Polytechnic College	Training Service Provider
15.	Govt.Polytechnic	Training Service Provider
16.	Laxmi Flexo Ink	Industry
17.	Malliga Mara Check Alai	Industry
18.	Ceylon Dasan Backery	Industry
19.	Shanmuga Agencies	Industry
20.	Nallamani Industries	Industry
21.	Ravi & Ravi Company	Industry
22.	State Medical Center	Industry
23.	Bombay Sweet Stall	Industry
24.	Ragam Color Digital Lab	Industry
25.	Iswarya Gas Agency	Industry
26.	Annai Auto Works	Industry
27.	M.S Trading And Marketing	Industry
28.	Om Muruga Agency	Industry
29.	Tvsc Services	Industry
30.	Thanjavur Industries	Industry
31.	Deepam Lithose	Industry
32.	Global Print Industries	Industry
33.	Anandam Silk	Industry
34.	Subramaniyam BE Engineer	Industry
35.	Mech Honda	Industry
36.	Seenivasa Construction	Industry
37.	Sastha auto works	Industry
38.	Kali BMH systems pvt ltd	Industry
39.	Annamalai motors Pvt ltd(Authorised Renault Dealer)	Industry
40.	Universal Motors	Industry
41.	Universal Industries	Industry
42.	Pillai and Sons Motor Company	Industry
43.	Vishal Engineering Works	Industry
44.	Natarajan and Sons Dhall Mill	Industry
45.	G M Engineering Works	Industry
46.	Pillai & Sons	Industry
47.	Sastha Auto Works	Industry
48.	Sangam Hotel	Industry