VOCATIONAL EDUCATION AND TRAINING (VET) PLAN FOR AUTOMOBILE SECTOR

TERTIARY AND VOCATIONAL EDUCATION COMMISSION
Ministry of Vocational Training and Skills Development

VOCATIONAL EDUCATION AND TRAINING PLAN FOR AUTOMOBILE SECTOR

2018

Tertiary and Vocational Education Commission
(Ministry of Vocational Training and Skills Development)
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Revised Version

Foreword

The Tertiary and Vocational Education Commission is required to plan and coordinate work with regard to Technical and Vocational Education throughout the country. Amongst its functions as the apex body, preparation of Vocational Education Training (VET) plans, for different industry sectors as well as provinces is a key function.

The VET plan for Automobile sector (revision) is prepared based on the previous plan and considering the current practices. Work in this sector is predicted to continue to increase in the future, offering a wide range of diverse employment opportunities. The growing prominence of technology advancement, in global perspectives, as well as public awareness on latest development in the sector, has led to geared for more investments in this sector. Employers/industrialists are now taking measures to consider the latest technology, which is desirable in terms of sustainability. These changes have led to an increase in the demand for the automobile sector oriented occupations.

Therefore, this study is very important for understanding developments in the sector and the need for new and more training courses therein.

The study was entrusted to a team of private sector organization conducting research studies and validated with the participation of experts in the sector and TVEC officials. The comments and suggestions at the validation workshop are incorporated to ensure a practical plan that would help bridge the current skills gaps.

It is notable however that much employment in this sector requires training at higher levels than was previously entrusted to the Tertiary and Vocational Education Commission. The bulk of productive employment in this sector will, understandably enough and to be for those who have obtained degrees and postgraduate diplomas. Previously though the TVEC developed curricula upto NVQ Level 6, leaving Level 7 to UNIVOTEC.

This study suggests the need also to rethink responsibilities and TVEC has suggested that we should also lay down curricula for degree level courses in areas where better Vocational Training is needed. Government has now realized the need to grant appropriate recognition to NVQ qualifications and we need therefore to move on ensuring that ladder progression is available for students in this sector.

We had in any case begun on a programme of structural reforms with regard to our courses. First we developed a new Policy document in-line with current national needs and then revised the Operations Manual for certification with regard to National Vocational qualifications. Furthermore, the lead in developing curricula has now been entrusted to the newly established Sector Skills Councils, while several 3 month courses designed to prepare students for productive employment have been started.

Following a directive of the Minister, soft skills including English communicative capacity, have been introduced on all NVQ courses. New teachers have been hired and trained for this, while training for the new trade courses has been entrusted primarily to industry and those who will provide employment for students when they finish their course.

Now that government has recognized the need for a dual system of education, TVEC will strive to provide more and better opportunities for all youngsters. This plan indicates an area in which we should do more and together with the University of Vocational Technology, we will strive to fulfil both expectations and requirements in all areas under our mandate.

Revised VET plan for Automobile sector has identified many new avenues of training requirements considering the current trend in the industry/sector.

R. D. S. Kumararatne
Director General
Tertiary and Vocational Education Commission

Acknowledgement

The Tertiary and Vocational Education Commission (TVEC) would like to thank all those who participated in and contributed towards preparing this Vocational Education and Training (VET) Plan.

TVEC would specially like to thank the following members of the team who did the study on behalf of the TVEC. The study team included following officials;

- Mr. B. H. S. Suraweera, Consultant/Former Deputy Director General on the request of TVEC; M/S. Multi Tech Solutions (Pvt) Ltd.
- Mr. Gamini Gunasinghe – Consultant; M/S. Multi Tech Solutions (Pvt) Ltd.
- Mr. L. M. Gurusinghe – Consultant; M/S. Multi Tech Solutions (Pvt) Ltd.

TVEC wishes to acknowledge the professional engagement of following industry representatives of the validation stage who read the plan and made comments at the validation workshop held on 15th August 2019.

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Dr. T. A. Piyasiri, Vice Chairman (Planning), National Education Commission acted as the Rapporteur at the Validation.

The TVEC appreciates the hard work done by the TVEC staff who monitored the development of the VET plan from the origin up to the completion. The TVEC team included the following officials;

No.	Name	Designation
1.	Mr. R. D. S. Kumararatne	Director General
2.	Mr. Vajira Perera	Director (Planning and Research)
3.	Mr. G. A. M. U. Ganepola	Director (Information Systems) /Actg. Deputy Director, formally at Planning and Research
4.	Ms. Kumudu Amarasinghe	Computer Application Assistant
5.	Ms. G. V. L. Piyumali Vithanage	Development Officer

- Proof read by Mr. Hector Hemachandra: M/S. Multi Tech Solutions (Pvt) Ltd.

CONTENTS

Annexures

LIST OF TABLES

LIST OF FIGURES

ABBREVIATIONS

AAC	: Automobile Association of Ceylon
ABS	: Anti-Lock Braking System
A/C	: Air Conditioning
AETI	: Automobile Engineering Training Institute
AirMac	: Air Resource Management Center (AirMAC) of Ministry of Mahaweli Development and Environment
AMW	: Associated Motor Ways
CAGR	: Compound Annual Growth Rate
CBT	: Competency-Based Training
CD	: Compact Disc
CEA	: Central Environmental Authority
CGTTI	: Ceylon German Technical Training Institute
CO	: Carbon Monoxide
COT	: College of Technology
CPC	: Ceylon Petroleum Corporation
CTB	: Ceylon Transport Board
DCSSL	: Department of Census and Statistics Sri Lanka
DMT	: Department of Motor Traffic
DTET	: Department of Technical Education and Training
ELTP	: Employment Linked Training Programme
EV	: Electric Vehicles
FGD	: Focus Group Discussion
GDP	: Gross Domestic Product
GWP	: Gross Written Premium
HC	: Hydro Carbon
HR	: Human Resources
IOC	: Indian Oil Corporation
ISIC	: International Standard Industrial Classification
IRCSL	: Insurance Regulatory Commission Sri Lanka
KII	: Key Informant Interview
LASL	: Leasing Association of Sri Lanka
MPV	: Multi-Purpose Vehicle

MSDVT	:	Ministry of Skills Development and Vocational Training
NAITA	:	National Apprentice and Industrial Training Authority
NCS	:	National Competency Standard
NDES	:	National Diploma in Engineering Sciences
NDT	:	National Diploma in Technology
NGO	:	Non-Governmental Organization
NITAC	:	National Industrial Training Advisory Committee
NOX	:	Nitrogen Oxide
NVQ	:	National Vocational Qualification
NYSC	:	National Youth Services Council
OEM	:	Original Equipment Manufacturer
OJT	:	On the Job Training
OUSL	:	Open University Sri Lanka
RPL	:	Recognition of Prior Learning
SLACMA	:	Sri Lanka Automotive Component Manufacturers Association
SLASPA	:	Sri Lanka Automobile Service Providers Association
SLBFE	:	Sri Lanka Bureau of Foreign Employment
SLSIC	:	Sri Lanka Standard Industrial Classification
SPM	:	Suspended Particulate Matter
SUV	:	Sports Utility Vehicle
TVEC	:	Tertiary and Vocational Education Commission
IS-TVEC	:	Information Systems Division of TVEC
TVET	:	Technical and Vocational Education and Training
UNIVOTEC	:	University of Vocational Technology
US	:	United States
USAID	:	The United States Agency for International Development
VET	:	Vocational and Education Training
VIAL	:	Vehicle Importers Association of Lanka
VTA	:	Vocational Training Authority

EXECUTIVE SUMMARY

Tertiary and Vocational Education Commission prepares the VET Plan for different industry sector based on the mandate given by Section 11 (1) of the (TVE) Act No. 20 of 1990. Accordingly, VET Plan for Automobile sector has been first developed in 2000 which was revised in 2009. This is the 3rd update and revision of VET Plan for Automobile Sector.

The literature survey in this study was done mainly to determine the Socio-economic environment of the Automobile industry, in the preparation of this VET plan. The contribution to the Sri Lankan economy by the Automobile industry and its related sub-sector industries were studied and briefly presented in this report.

However, the main scope of this VET plan is related to and limited to the present skills gaps and future skills requirements in Automobile Repairs, Maintenance, and Services Industry sector. Future skills requirements are considered based on a forecast of sector growth as well as possible technology changes.

A sample of around 275 enterprises has been surveyed among 30,679 reported enterprises operating in Automobile Repairs and Maintenance Services sector in the country for the purpose of collecting the demand side primary data required to study the current employment scenario.

In order to estimate the demand for skilled workers, a survey has found a number of vacancies in enterprises. These data have been projected to population. Accordingly, there are 75,951 technical employees in the automobile sector with 10,739 vacancies in 2019. A total number of 18,568 females are working in the automobile industry.

Demand for skills means the creation of vacancies and vacancies will be created because of resignation, retirement, and death of employees and the growth of the industry. Growth will vary annually but other factors will not have significant variation if relevant policies are not changed in the coming years. Therefore, vacancies that may create in the next three years is projected from the current vacancies based on a rational assumption of growth rate based on the growth of vehicle populations and current trends of policy changes.

It is assumed that there will be 4 percent, 5 percent and 6 percent growing demand for skills in 2020, 2021 and 2022 respectively. Demand-side analyses were further strengthened with Key Informant Interviews held with representatives of many leading automobile industries and Focused Group discussions held with two regional industry clusters, spare part dealers and insurance and valuation agencies.

Training Supply or the supply of the skilled workers to the Automobile Repairs, Maintenance, and Services sector in the country, is determined based on the annual data collection by TVEC which are more reliable than an enumeration survey. The supply data includes the formal training provided through Institutional training and Apprenticeship training provided by NAITA in the workplaces and part-time training provided by some public and private training centres. Supply-side analyses were further strengthened with the tracer study of about 200 NVQ certificate holders.

The skills gaps are worked out taking differences in demand for and supply of skilled people for all key occupations. However, it was not possible to identify the skills gaps of some occupations such as auto tinker and painter as many enterprises are found to outsource those activities and obtain the services of freelance craftsmen.

Some of the Proposed Quantitative Interventions

- Automobile Mechanic occupation has a skills gap of 585 vacancies at present and it will increase with the industry growth.
- Auto A/C Mechanics also has a gap of 185 vacancies with growing demand.
- Enterprise survey indicates that only 28 percent of enterprises are engaged in Apprenticeship and OJT in Automobile Occupation. Therefore, still, there is a huge potential to increase the apprenticeship and train required automobile mechanics and Auto A/C Mechanics.
- Though there is a significant skills gaps in Diesel Injector Pump Repairer (Calibration) occupation, it is not possible to purchase the Injector Pump Test bench and employ skilled instructors. As these are precision sensitive skills, it may not be possible to train the required number under apprenticeship. As private sector enterprises have many test benches, it is possible to get their cooperation to train Diesel Injector Pump Repairers under Training purchase model (ELTP) introduced by SSDP.

- NVQ Level 5 & 6 Diploma courses offer training for technician/supervisor level workers and its supply per year is only 178, but Supervisors have vacancies around 1947. More need to be trained at NVQ levels 5 or 6.

Some of the Proposed Qualitative Interventions

- The FGDs and KIIs revealed that present-day automobile technicians should be multi-skilled and they should have mechanical, electrical and electronic skills. It was proposed to name this occupation as Automobile Mechatronics Technician. Therefore, develop an NVQ for Automobile Mechatronics Technician and convert Auto Mechanics and Auto Electricians courses offered in training centres to Automobile Mechatronics Technician courses.
- Severe skills shortages of Automobile Tinker and Automobile Painter are identified. TVET Institutions have limited capacity for training in these occupations as Painting needs huge investment and difficulty in attracting youth for these two occupations. Use ELTP Training purchase to train more in these two occupations with good incentives to attract trainees.
- Automobile Serviceman: NCS and Curricula are developed and some trainees are in the apprenticeship. The industry has a role to play to make these occupations more glamorous and attractive to youth.
- Interior Designer / Upholster: This is also an occupation for apprenticeship and training purchase model
- Sundry Occupations: Automobile Repair and Service industry also have many sundry occupations such as tyre fitter and battery charger. As it is difficult to attract youth for these occupations and they are filled from the adult informal labour force. It is proposed to develop skill upgrading courses for these occupations.
- Develop NVQ Level 5/6 diploma on Automobile Insurance and Valuation. Institute of Insurance Motor Assessors and Engineers agrees to conduct courses with TVEC accreditation. Further Valuers Association will work out a system to recognize people with above qualification as valuers, maybe after a number of years of experience working as sub-assessors or inspectors.
- NCS for Techno-Commercial Assistant which was developed to tram females should be revised to include subject areas such as an estimator, warranty officer, inventory control, procurement, and pre-delivery inspection.
- Need to revisit NCS and Curricula of all automobile occupations and strengthen their soft skills subjects. Automobile trainers should be trained to teach soft skills too.

- Training centres' facilities should be extended to train employees in the industry for multi-skills and soft skills.
- KIIs identified the following occupations as suitable for females.
  Technical Service Advisor, Estimator, Warranty Officer, Warranty Manager, Spare parts store Management and Inventory Controller. Paint Mixer, Customer Relations Management, Import and Procurement, Pre-delivery Inspection.

This VET plan outlines the direction for Skill development to develop human resources required for Automobile Repairs, Maintenance, and Services sector. Therefore, the TVET sector should have a mechanism to implement the activities outlined in this plan. For this purpose, it is recommended to establish a VET Plan Steering or Committee with representatives of both leading Training Institutions and industry representatives from the relevant Industrial Sector Skills Council.

CHAPTER 01: INTRODUCTION FOR DEVELOPMENT OF VET PLAN FOR AUTOMOBILE REPAIRS, MAINTENANCE AND SERVICES INDUSTRY SECTOR

1.1 Background

The Tertiary and Vocational Education Commission (TVEC), by virtue of the mandate vested on it through the Tertiary and Vocational Education (TVE) Act No 20 of 1990 shall act in accordance with three (03) objectives as set out below:

a) Policy development, planning, coordination and development of the tertiary education and vocational education at all levels in keeping with human resource needs of the economy
b) Development of a nationally recognized system for granting of tertiary education awards and vocational education awards including certificates, and other academic distinctions; and
c) Maintenance of academic and training standards in institutes, agencies and all other establishments providing tertiary education and vocational education.

Further, Section 11 (1) of the (TVE) Act No. 20 of 1990 as given in the box below requires the TVEC to prepare plans for the development of TVET Sector.

Clause I of Section 11

The Commission shall, from time to time in accord with the guidelines including criteria for eligibility or entry requirements issued by the Minister prepare a plan or plans as the case may be, for the development of tertiary education and vocational education in Sri Lanka. The Minister shall with his report thereon submit such plan or plans to the President for approval.

To ensure that the aforementioned objective is achieved, the TVEC has been engaged in the development of Vocational Education and Training (VET) plans for key industry sectors of the economy of Sri Lanka since 1999. Further, TVEC started development VET Plans for Provinces on the request of the Chief Minister of Respective provinces since 2009.

1.2 Rationale for the Development of VET Plan for Automobile Repairs, Maintenance and Services Industry Sector

Automobile industry plays a very important role in the economy of any country and lives of people. It facilitates mobility of the people both rich and poor alike in almost all countries. Automobile

development has focused to address the needs of all segments of the society. There are buses for public transport, vans for group transport, cars for individuals and families and motor bicycles for those who cannot afford to buy cars.

The increasing population in the country, coupled with the need for moving more people and goods resulting in expansion of improved and better road network explains the importance and the phenomenal growth of the automobile sector in the country. The growth of the automobile sector is quite evident from gradual and also a continual increase in vehicle imports both brand new and second-hand cars into the country.

Manufacturers of Automobiles design different models; luxury cars for rich and small cars at affordable prices for families and individuals. Further, manufacturers have continued with innovations and developed automobiles with many advanced features such as electronic fuel injection, automatic transmission, and hybrid vehicles, etc.

Automobile Repair, Maintenance, and Services Industry thus have also become a very important economic activity in the country and all enterprises in the automobile repair and maintenance industry are striving to provide quality service to the customers. The quality, productivity and expansion/ growth of their services will depend on the availability of trained, skilled and adaptive workforce in this industry.

Therefore, training of automobile technicians, supervisors, drivers, and other para-service personnel is also a priority area and that is why all training providers including DTET being the earliest training provider had commenced training of automobile technician since the inception of their training centres. However, training of automobile technicians and other service personnel have become very challengeable as trainers and training facilities need to be kept improving in par with advancing technologies in the automobile industry.

Tertiary and Vocational Education Commission has as explained earlier, the mandate to establish a demand-driven training system in the country which supplies skilled manpower to meet the employment needs of the industry. TVEC thus undertakes to prepare Vocational Education Training Plans, which are planning documents which detail strategies, priority areas and specific initiatives for the training of workforce needed for most industry sectors in the country. Such VET plans are expected to be implemented by TVET providers in the country.

TVEC has thus prepared a VET plan for automobile Repair, Maintenance, and Services Industry sector initially in 1999 which was later revised in 2005.

1.3 Scope of this Study

This study basically intends to revise and upgrade the previously revised VET plan published in 2006, by identifying and analysing the skills gap between demand for and supply of skills in the Automobile Repairs, Maintenance and Services sector with any current shortages and with estimates or forecasts of human resource requirements for the next three years, in terms of both quantity and quality-wise.

The VET Plan published in 2006 had focussed on following aspects of the Automobile Repairs, Maintenance, and Services sector. This present VET Plan also expects to capture the current development of the Automobile Industry and give more elaboration to these aspects and update them as well.

a) Socio-economic scenario and current development trends of the Automobile Repairs, Maintenance and Services Industry
   - Composition of industries – large, medium, small
   - Geographical Distribution of industries – by district and province,
   - Technological level and changes envisaged in the next 2- 3 years
   - Related government policy and other factors impacting on the sector

b) Employment scenario with a mapping of occupations of the sector
   - Current employment by occupation, age, sex, district, province, education, and training level

c) Demand for training and manpower requirements

d) Training profile

e) Employment status of a sample of 200 students who have completed courses in the Automobile sector

f) Gap analysis between the demand for and supply of skills and a training plan with estimates

g) Forecasts of human resource and skills requirements for the next 5 years by occupation, age, sex, education, and training level

h) Future trend analysis

1.4. Methodology

a) Use of Secondary Sources

A literature survey was done to determine the Socio-economic environment of the Automobile Repairs, Maintenance, and Services sector and its current development trends.

The trend in the import of vehicles to the country and their registration was studied and analysed as secondary data. The data of registration of motor vehicles for the last 10 years in terms of various vehicle categories, (Example from three-wheelers and motorcycles to commercial and agricultural vehicles) available at the Department of Motor Traffic.

Manpower demand in foreign labour market and supply from Sri Lanka was also studied based on secondary data available at Sri Lanka Bureau of Foreign Employment. This was in terms of job orders and departure figures for various occupations at different manpower levels.

For the training supply side, the secondary data is limited only to Information collected from TVET Guide -2019 and Labour Market Information Bulletin -December 2017.

b) Use of Primary Sources

Collection of primary data was required to study the current employment scenario with a mapping of occupations of the sector by occupation, age, sex, district, province, education, and training level to determine/forecast the demand for training and manpower requirements for next five years or so. Data collected from enterprise survey, Key Informant interviews', Focus Group Discussions, Tracer study, and TVEC databases are considered as Primary Data.

1.4.1 Survey Method

Demand-side Primary data was collected using the survey method.

Any survey study needs a database to decide on the sampling frame on the geographical distribution of the total population of automotive enterprises/repair shops garages/service centres etc.

DCSSL Economic Census 2013/14- final reports published in 2017 suggested that most of such enterprises/ establishments are in informal economy. The literature survey did initially reveal that the data frame prepared in 2013 by DCSSL as the latest database available for this study.

This database of Enterprises in both formal and informal sector was made available, with the courtesy of DCSSL officials. This was the basis of the sample design and sample frame.

A questionnaire designed and field-tested was used in carrying out the survey to collect necessary information regarding present and future skills requirements. The Questionnaire was designed to get the following data.

- General information about the establishment
- Numbers in different occupations/job titles
- Workers' age distribution, gender
- Highest educational qualifications
- Highest vocational qualifications
- Years of experience
- Training underwent in house
- Expected expansion/growth of the sector
- Current skills deficiencies and
- Labour turn over

Data were collected by trained enumerators. SPSS package was used for data analyses.

1.5 Key Informant Interviews (KIIs)

Structured interviews were held with five key individuals selected from five leading companies in Automotive Repairs, Maintenance and Service sector in the country. The purpose was to gather qualitative and quantitative information on the workforce and also economic and technology trends in the industry.

1.6 Focus Group Discussions (FGDs)

Two focus group discussions with participants comprising owners/ senior technical and service personnel in automotive garages and service centres in both formal and informal sectors in Kurunegala and Hambantota districts were held. Two more Discussions, one with participants representing Motor Assessors in Insurance companies and Motor Valuers from Leasing companies and other with personnel from leading automobile spare parts suppliers and dealers were held. The purpose was to learn the skills gaps in the present and future workforce and the envisaged growth potential of the automotive sector and technology changes and innovations in the next few years.

1.7 Tracer Study

Tracer study was done for a sample of 200 NVQ certificate holders in various occupations in the automotive sector. Sampling was based on the stratified sampling of a total number of NVQ certificate holders in the Automobile sector, (the database was made available by TVEC), who were qualified in 2015-2017.

Samples were stratified by occupation, district/province and TVET institute as well.

A questionnaire was used in this tracer study to interview the sample NVQ certificate holders by a few selected trained enumerators. Both face to face and telephone interviews were held.

The Questionnaire designed comprised structured as well as open questions and made available in both Sinhala and Tamil languages. In additions to questions to get personal information of the respondents, there were questions to derive information related to employability and relevance of NVQ to the job and learn about any skills gaps they have encountered.

Questions were also included to get information on the extent or status of employment (whether an employee or own account worker-self-employed, employer or unemployed) by course completed.

The collected data was analysed using SPSS package.

1.8 Data on Supply Side of Skills

TVEC annually collect training data from individual training centres in all public, private and NGO sectors. As TVEC verify those data at a meeting of training providers, it was considered that TVEC databases were more accurate primary data than data collected by enumerators.

Therefore, Annual enrolment in pre-employment training courses conducted by TVET institutions, apprenticeship, and enterprise-based training, course completion and details of NVQ certifications by occupations in the automobile sector and TVET institutions were collected from TVEC databases. This information is basically primary data received from TVEC databases.

Further, relevant data was taken from secondary data sources such as the Labour Market Bulletin and TVET Guide.

Similarly, data collected from the questionnaire administered to sample of automotive establishments supplemented with information gathered from KIIs and FGDs include data on the in house and firm-based training carried out by the establishments also.

1.9 Skills Gaps and Training Plan

The training plan presented here reports the skills needs/ skills gap that was calculated based on the difference in demand and supply of skills in the sector, both to fill current vacancies, and to meet the needs of a growing industry. This plan was validated with the participation of Industry personnel and was further improved.

Vet Plan also offers proposals to meet these needs through training, apprenticeships, and also by promoting the industry as one that offers secure, rewarding employment opportunities.

1.10 Limitation to the Scope of the Study

The automobile sector is very broad and it includes imports, manufacture, marketing insurance, financing, driving, repair and maintenance and control of air pollution. As some of these boundaries have crossed with other sectors, TVET interest of these activities is addressed when such other

sectors are analysed for skills gaps. Therefore, the main scope of this VET plan is related to and limited to the present skills gaps and future skills requirements in Automobile Repairs, Maintenance and Services Industry sector only.

However in the literature survey done on the economic environment of the automobile-related industry, in addition to repairs, maintenance, and services sector, most other sub-sectors like automobile spare parts market, manufacturing of components, sale of motor vehicles, motor financing/leasing, motor insurance are covered, mainly in terms of their contribution to the economy and number of persons engaged. Auto fuel retail market, charging networks for electric vehicles and driving schools too are covered as possible areas for skills development. It became difficult to capture gaps in all automobile occupations as many enterprises outsource many activities fully and partially. It became difficult to foresee these complexities and therefore realistic scenario of those occupations was not captured.

1.11 Structure of the Report

Chapter 01 includes a brief description of the rationale of this study with an Introduction for Development of VET Plan for Automobile Repairs, Maintenance, and Services Industry Sector. It also indicates the methodology of this study and its scope. Chapter 02 is a compilation of secondary data on Socio-Economic Characteristics done mainly by Literature Review. Chapter 03 describes the Demand for Skills in Automobile Repairs, Maintenance, and Services sector, based on the findings from enterprise survey, it also estimates the manpower requirements for coming three years indicating the emerging occupations as well. Chapter 04 is on Training Needs Identified through Key Informant Interviews and Focused Grouped Discussions. Chapter 05 covers Demand for Automobile Skilled Persons for Foreign Employment. Chapter 06 deals with the Skills Supply Side Analysis in the Automobile Industry.

Chapter 07 of the report is on the detailed description of the findings of the Tracer Study done on 200 NVQ certificate holders in Automobile related occupations/occupational areas.

Chapter 08 covers the Skill Gaps forecast and training needs Identified followed with the Chapter 09 which basically presents the Training Plan to bridge the skill gaps and training needs in the Automobile Repairs and Maintenance Sector and recommendations for the training. Chapter 10

outlines the suggested mechanism for coordinating and monitoring the implementation of the VET plan. Chapter 11 indicates in a table, new areas covered and Improvements made in the Revised VET Plan (2019) in comparison to the VET plan published in 2006.

Annexure A is the detailed write up compiling the output of the five KIIs held with five key individuals selected from five leading companies in Automotive Repairs, Maintenance, and Services sector in the country. Annexure B is the descriptive report on the outputs of the four focus group discussions held with four stakeholders' groups in Automotive Repairs, Maintenance and Services sector Automotive Repairs, Maintenance, and Services sector. Annexure C contains relevant Tables and lists referred to in Chapter 2.

CHAPTER 02: ECONOMIC ENVIRONMENT OF THE INDUSTRY

2.1. Industry Profile

2.1.1 Importance of Automobile Industry

Automobile industry plays a very important role in the economy of any country and lives of people. It facilitates mobility of the people both rich and poor alike in almost all countries. Automobile development has focused to address the needs of all segments of the society. There are buses for public transport, vans for group transport, cars for individuals and families and motor bicycles for those who cannot afford to buy cars. Purchase of an automobile has a dual purpose; to have convenient and comfortable transport as well as to have prestige and status. In fact, all the people have the dream of buying a car and therefore, manufacturers of Automobiles design different models; luxury cars for rich and small cars at affordable prices for families and individuals. Further, manufacturers have continued with innovations and developed automobile with many advanced features such as Electronic fuel injection, automatic transmission, and hybrid systems, etc.

Automotive Repairs, Maintenance, and Services sector has also become a very important economic activity in the country and all enterprises in the automobile repair and maintenance industry are striving to provide quality service to the customers. Therefore, training of automobile technicians, supervisors, drivers and other paras- service personnel are also a priority area and that is why all training providers including DTET being the earliest training provider had commenced training of automobile technician since the inception of their training centres. However, training of automobile technicians and other service personnel have become very challengeable as trainers and training facilities need to be kept improving in par with advancing technologies in the automobile industry.

2.1.2 Evolution of Automobile Industry

Steam-powered self-propelled vehicles large enough to transport people and cargo were first devised in the late 18th century. Steam-powered road vehicles, both cars, and wagons reached the peak of their development in the early 1930s with fast-steaming lightweight boilers and efficient engine designs. Internal combustion engines also developed greatly during World War 1, becoming simpler to operate and more reliable. The development of the high-speed diesel engine from 1930 began to

replace them for wagons, accelerated in the UK by tax changes (on-road funding, an 'axle weight tax' was introduced in 1933 in order to charge commercial motor vehicles more for the costs of maintaining the road system, and to do away with the perception that the free use of roads was subsidizing the competitors of rail freight. The tax was payable by all road haulers in proportion to the axle load; it was particularly damaging to steam propulsion, which was heavier than its petrol equivalent) making steam wagons uneconomic overnight. Although a few designers continued to advocate steam power, no significant developments in production steam cars took place after Doble in 1931. (The Doble was an American steam car maker from 1909–1931. Their latter models of steam car, with fast firing boiler and electric start, were considered the pinnacle of steam car development) It is generally acknowledged that the first really practical automobiles with petrol/gasoline-powered internal combustion engines were completed almost simultaneously by several German inventors working independently: Karl Benz built his first automobile in 1885 in Mannheim. Benz was granted a patent for his automobile on 29 January 1886 and began the first production of automobiles in 1888, after Bertha Benz, his wife, had proved – with the first long-distance trip in August 1888, from Mannheim to Pforzheim and back – that the horseless coach was absolutely suitable for daily use. Since 2008 a Bertha Benz Memorial Route commemorates this event.

The modern era is normally defined as the 25 years preceding the current year. The modern era has been one of increasing standardization, platform sharing, computer-aided design, to reduce costs and development time and increasing use of electronics for both engine management and entertainment systems.

Some particular contemporary developments are the proliferation of front- and all-wheel drive, the adoption of the diesel engine, and the ubiquity of fuel injection. Most modern passenger cars are front-wheel-drive monocoque/unibody designs, with transversely mounted engines.

Body styles have changed as well in the modern era. Three types, the hatchback, sedan, and sport utility vehicle, dominate today's market All originally emphasized practicality but have mutated into today's high-powered luxury crossover SUV (sports utility vehicles), sports wagon and two-volume Large MPV (multi-purpose vehicle). The rise of pickup trucks in the United States and SUVs worldwide has changed the face of motoring with these "trucks" coming to command more than half of the world automobile market. There was also the introduction of the MPV class (smaller non-

commercial passenger minivans), among the first of which were the French Renault Espace and the Chrysler minivan versions in the United States.

The modern era has also seen rapidly improving fuel efficiency and engine output. The automobile emissions concerns have been eased with computerized engine management systems.

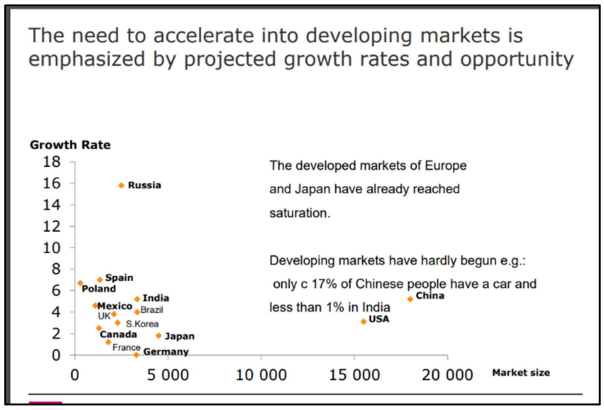
2.1.3 Global Perspective

For the last century, the car culture has spread over the entire globe. As much as any other product, the car has shaped not only the global economy but how billions of people live. In Europe alone, the automotive industry accounts for roughly 12 million jobs (including related jobs); in the US, more than 8 million; and in Japan, more than 5 million.1 For all of its staying power, though, the industry has also seen constant change. Today's cars – with their drive-by-wire electric systems or drive assistants – would have astonished Henry Ford, Ferdinand Porsche, and Kiichiro Toyoda. They would also have been taken aback by the increasingly demanding environmental requirements and the rise of new players, particularly in China.

Challenges of Global automotive industry

a) Complexity and cost pressure.

There will be more platform sharing and more modular systems. At the same time, regulatory pressures will tighten, and prices in established markets are likely to be flat.



b) Diverging markets.

OEMs need to adapt to changing regional and segment patterns of supply and demand with respect to their production and supply base footprints, supply chains, and product portfolios; and the emerging Chinese after-sales market offers new growth opportunities.

c) Digital demands.

Consumers want more connectivity, are focused on active safety and ease of use and are increasingly using digital sources in making their purchase decisions.

d) Shifting industry landscape.

Suppliers will add more value in alternative power train technologies and in innovative solutions for active safety and infotainment; Europe needs to restructure and adjust its capacity to better match demand, and competition is emerging from China.

Automobiles have become increasingly sophisticated, incorporating technology such as hybrid or diesel engines, antilock brakes, computer microprocessors, multimedia entertainment systems, and wireless Internet. In 2012, Rich Orban, manager of the General Motors Service Technical College, warned that the industry is bracing for a shortage of mechanics, reported "USA Today." The growth in the need for auto mechanics will exceed the supply, especially for highly qualified mechanics. (From; https://work.chron.com/growth-need-auto-mechanics-25571.html)

e) Growth Predictions

The U.S. Bureau of Labour Statistics predicts that the number of jobs for auto mechanics will increase by 17 percent through 2020, compared to 14 percent for all occupations. That translates into an additional 124,800 jobs by 2020, or a total workforce of 848,200. Similar growth though may not be that high will be experienced in all countries including Sri Lanka.

2.1.4 Automobile industry in Sri Lanka

- Pre-1977 Automobile Industry

Prior to 1977, the automobile market of the post-colonial Sri Lanka was dominated by British and European car brands such as Ford, Mini, Rolls Royce, Hillman, and Morris Minor, etc. Back then purchasing a car was a luxury that only the crème de la crème of the society could enjoy as the vehicle importation was strictly limited and taxes were high.

- Open-Economy - Open Roads

The Liberalization of the Sri Lankan economy in 1977 opened the market, encouraging investments in the private sector. As the government followed a liberal economic policy - with the amendments to the regulations of export and import industries, overseas goods started to circulate in the local market. The related fiscal incentives and infrastructure development with the promotion of private-sector had led to economic growth.

Board of Investment firms were initially offered incentives which included duty-free vehicles.

Public transport is a key economic necessity in any country since it connects economic activities with mobility, reduces commuting time and increases the frequency of travel, thereby enhancing key economic activities for greater national progress. The promotion of private-sector small bus operators to compete with public sector Ceylon Transport Board, resulting in a large fleet of buses and vans to public transport.

The growth of small-scale industries, commercial distributions and agricultural enterprises in the informal sector created the demand for three-wheelers, motorcycles and delivery vans, etc.

With the amendments to importation policies, Japanese motor brands were introduced to the local market, changing the direction and nature of Sri Lankan automobile industry. During this phase many aspiring entrepreneurs ventured into the second-hand vehicle trade, importing used Japanese cars. With reliability, comfort, and durability Japanese automobile brands were able to win the consumer trust and loyalty and by late 1980s the automobile market was booming.

2.1.5 Growth of Vehicle Registration.

The increasing population in the country, coupled with the need for moving more people and goods resulting in expansion of improved and better road network explains the importance and the phenomenal growth of the automobile sector in the country. The growth of the automobile sector is quite evident from gradual and also a continual increase in vehicle imports into the country.

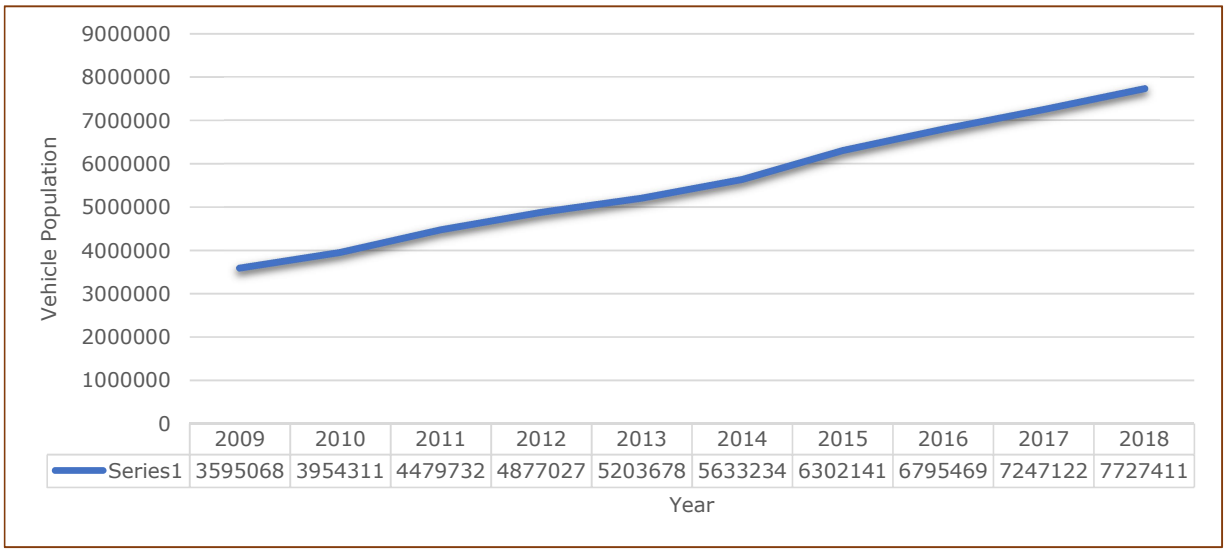
This phenomenal growth of the vehicle population recorded during the past 10 years is indicated in the following table.

Table 2.1 Vehicle Population by Class and Year

Class of Vehicle	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Motor Cycles	1896021	2100832	2354163	2546447	2715727	2988612	3359501	3699630	4044010	4383182
Motor Cars	387210	410282	468168	499714	528094	566874	672502	717674	756856	837636
Three Wheelers	443895	529543	667969	766784	850457	929495	1059042	1115987	1139524	1159158
Buses	81789	84280	88528	91623	93428	97279	101419	104104	107435	110392
Dual Purpose Vehicles	197516	209228	242746	280143	304746	325545	365001	391888	408630	425895
Motor Lorries	271230	282033	294479	304924	309449	313300	318656	323927	332616	361294
Prime Movers	3025	3318	3891	4174	4313	4483	4799	5299	5883	
Lorry Trailers	6260	6552	7047	7346	7495	7658	7868	8202	8631	
Lorry Others	1910	2299	3523	4666	5422	6230	7444	8772	10444	
Ambulances	2090	2143	2201	2267	2559	2670	2702	2820	2853	
Hearses	332	347	369	399	410	428	442	454	479	
Land Vehicles Tractors	258755	276039	296112	314562	325334	332404	342381	352666	361487	369948
N.A. Tractors	879	958	958	958	958	958	958	958	958	647 (Quadricycle+ Motor Home)
Land Vehicle Trailers	44156	46457	49578	53020	55286	57298	59426	63088	67316	78841
Total	**3595068**	**3954311**	**4479732**	**4877027**	**5203678**	**5633234**	**6302141**	**6795469**	**7247122**	**7727411**

Source: DMT & http://www.transport.gov.lk

Figure 2.1 Total Vehicle Population by Year



Source: Derived from the Table 2.1

Such an increase in vehicle population or vehicles in use (parc) in the country has also led to a growth in automotive aftermarket services.

2.2 Automotive Aftermarket Services

The automotive aftermarket includes the maintenance and repair of various services and parts such as changing the engine oil, gear oil, brake oil, etc. Tyre services include repair of flat tyres, tyre pressure monitoring, misalignment of tyres, and replacement of tyres. Battery services include automotive batteries replacement. Wear and tear parts include shock absorbers, brake wheel end, engine, driveline, and suspension. Collision body includes coating and painting, crash parts, refinishing, and repair materials. Starters and alternators include armature, field coil, brushes, end shield, and solenoid. Lighting includes automotive lighting and aftermarket services. Exhaust components include mufflers, exhaust manifold, catalytic convertor, and tailpipe. Spark plugs include spark plug- hot and cold, glow plug- metal, and ceramic.

Indeed, automotive repairs and maintenance services is definitely a booming business at a global level. According to research, the global automotive repair and maintenance services market was valued at US$ 441.3 Bn by the year-end of 2016 and is projected to expand at a CAGR of 5.6percent over the forecast period (2016- 2025), to exceed US$ 750 Bn by 2025.

Source: www.prnewswire.com

With such a booming business in the global market, automotive repairs and maintenance services in Sri Lanka could also be expected to grow significantly.

2.3. Automobile Industry Groups/Subsectors in Sri Lanka

In addition, the mass vehicle consumption, in turn, requires an elaborate distributive organization to sell the vehicles/cars and to develop confidence among customers that adequate service will be available. The auto showrooms (locally referred to as car sales), vehicle service stations and spare part shops were established to meet the increasing demand.

There is also the manufacturing of Automobile related components by a growing number of medium-sized enterprises in Sri Lanka's free trade zones that are tapping into the growth of global production networks, often producing highly specialized components.

Vehicle financing is a major business in Sri Lanka as the majority of new and used vehicle registrations are supported by leases or loans. As a result, most insurance companies report motor insurance and leasing as a lucrative segment of their business lines.

2.3.1 Services Industry

a) Repairs and Maintenance

- Auto A/C Repair
- Auto Electricals
- Body Shops/collision repairs
  - Auto Tinkering, Welding & Painting
- Battery Repair
- Engine Rebuilders and Machining workshops
  - Boring/Reboring/valve grinding/ Repair
- Injector Pump/Fuel Injector Repair
- Petrol Engine Repair only
- Diesel Engine Repair only
- Both Petrol and Diesel Engine Repair
- Motor Cycle Repair

- Motor Vehicle General Repair
- Service Stations/interior /exterior Detailing
- Three-Wheeler Repair
- Two/Four Wheel Tractor repair
- Tyre Repair
- Upholstery/Interior works
- Wheel Alignment and Balancing
- Vehicle Security System Installation/repair
- Suspension Inspection and repair
- Head Lamp and Lighting System repair
- Radiator repair
- Motor Vehicle Scanning and Tuning
- Automotive Glass /Windscreen replacement
- Air Bag Inspection and Repair
- ABS Inspection and Repair
- Hybrid System repair
- Electric vehicle repair
- Gas conversion/Repairing
- Vehicle Emission Testing

b) Sales

- Motor Vehicle Imports
- Sales of motor vehicles (including buying and selling in the informal economy)
- Sales of motor vehicle body parts and accessories
- Motor Spares Shop

2.3.2 Manufacturing Industry

- Manufacture of Motor Vehicles, Trailers and Semi-Trailers
- Vehicle Assembling
- Spare parts/Accessory Manufacture
  - Radiator/exhaust pipes /silencer/ muffler manufacture
  - Vehicle seats manufacture and export
  - Battery manufacture

2.3.3 Related Financial Services

- Motor Insurance and Valuation
- Leasing /Hire Purchase of Motor Vehicles

2.3.4 Auxiliary Services

- Fuel Supply/Fuel Stations
- Electric Charging Stations

2.4. Contribution of the Automobile Services Sector to the Sri Lankan Economy

The service sector, in general, provides vital support to the economy more specifically to industry, for example through finance, logistics, and communications. Increased trade in services and the widespread availability of services may boost economic growth by improving the performance of other industries.

The International Standard Industrial Classification (ISIC) Revision 4 of the United Nations was localized for the convenience of identifying specific industries in the country. Sri Lanka Standard Industrial Classification (SLSIC) had been used by DCSSL to classify economic activities.

Automobile services come under the SLSIC 2/3 digits economic division classification no 45: Wholesale and retail trade and repair of motor vehicles and motorcycles.

In Sri Lankan economy wholesale and retail trade and repair of motor vehicles and motorcycles activities are studied in Economic Census 2013/2014 under both informal and formal economic activities and data are available in both sectors.

2.4.1 Contribution to the Economy by the Wholesale and retail trade and repair of motor vehicles and motorcycles

According to the DCS classification, Repair of Motor Vehicle and Motor Cycles activities are categorized under Wholesale and retail trade and analysed under informal and formal sectors separately. The informal sector plays a significant role in the economies especially in developing countries in terms of the provision of employment, production of goods and services and generation

of income. Activities of the informal sector entities are not taxed, monitored or regulated by the government.

Entities that do not maintain a complete set of accounts or unincorporated entities and with no proper and acceptable documentations having ten or lesser number of employees were defined as informal in the economic census 2013/14. (Final Report on Informal Non-Agricultural Activities, November 2017 DCSSL)

Table 2.2: Contribution to the economy by Wholesale and Retail Trade and Repair of Motor Vehicles and Motor Cycles

	Group/Type of Activity	No. of Establishments	Persons Engaged	Output (Rs.)	Intermediate Consumption (Rs.)	Value-added (Rs.)
45: Wholesale and retail trade and repair of motor vehicles and motor cycles	451: Sale of motor vehicles	2,277	3,951	6,672,913,674	1,178,428,102	5,494,485,571
	452: Maintenance and repair of motor Vehicles	24,342	47,653	26,344,631,411	8,993,538,614	17,351,092,797
	453: Sale of motor vehicle part and accessories	6,817	12,525	9,261,062,222	1,322,357,228	7,938,704,994
	454: Sale, maintenance and repair of motor cycles, and related parts and accessories	8,690	15,867	11,641,499,269	2,639,160,918	9,002,338,350
Total		**42,126**	**79,996**	**53,920,106,576**	**14,133,484,863**	**39,786,621,712**

Source: Economic Census 2013/2014 Final Report on Informal Non-Agricultural Activities - DCSSL - Nov 2017

Table 2.2 shows that a total of 42,126 enterprises engaging 79,996 persons in the informal sector contributed over LKR 53,920 million to Sri Lankan economy as output with total value addition of LKR 39,786.

The number of persons engaged is defined as the total number of persons who work in or for the establishment, including working proprietors, active partners, unpaid family workers, administrators, managers, technical, supervisory officers, clerical and related services and all other employees.

Annual output per person engaged is an indicator which reveals the labour productivity of an establishment and value-added per persons engaged is an indicator which suggests the productivity of the industry.

In Table 2.3 the output per person engaged in **Wholesale and retail trade and repair of motor vehicles and motorcycles** activities are worked out as LKR 674,035. Group-wise the highest output per person engaged in sales of motor vehicles is reported as LKR 1,688,918. Next to it is Sale of motor vehicle parts and accessories activities (LKR 733,693). Sale, maintenance and repair of motorcycles, and related parts and accessories, and Maintenance and repair of motor vehicles are in the 3rd and 4th rank in labour productivity.

Table 2.3 also shows the value-added per persons engaged by economic section Highest is again in Sales of Motor vehicles as LKR 1,390,657 and Wholesale and retail trade and repair of motor vehicles and motorcycles as the overall sector is only LKR 497,358.

Table 2.3: Comparison of Labour productivity of establishments and productivity of the Wholesale and Retail Trade and Repair of Motor Vehicles and Motor Cycles Industry

Economic Division	Group/Type of Activity	Productivity of Establishments	Productivity of Industry Subsector
45: Wholesale and retail trade and repair of motor vehicles and motorcycles	451: Sale of motor vehicles	1,688,918	1,390,657
	452: Maintenance and repair of motor Vehicles	552,843	364,113
	453: Sale of motor	739,406	633,829

Economic Division	Group/Type of Activity	Productivity of Establishments	Productivity of Industry Subsector
	vehicle part and accessories		
	454: Sale, maintenance and repair of motorcycles, and related parts and accessories	733,693	567,362
		674,035	**497,358**

Source: Derived from Table 2.2

A Formal establishment is defined as the establishments which have documented account and number of persons engaged more than 10 or being incorporated.

Incorporated establishments are all public limited companies, all private limited companies, and offshore companies. In addition to the above, branches of foreign companies and co-operative societies are considered formal establishments.

Contributions to the economy by leasing (which are in both informal and formal sectors); Financial Services, Insurance, and Re-insurance sector and Automotive Manufacturing sector which are formal industries are considered in the following sections 2.6, 2.7.3 and 2.11 respectively, in the chapter on literature survey in developing this VET Plan.

Table 2.4: Principal Indicators of Trade and Services Activities in Formal Sector by Economic Group 45 - 2013

Economic Division	Group/Type of Activity	No. of Establishments	Persons Engaged	Salaries $ Wages	Value of output LKR	Value of intermediate consumption LKR	Value added LKR
45 wholesale and retail trade and repair of motor vehicles and motor cycles	451 Sale of motor vehicles	165	10,818	8,767,350,822	95,434,816,939	26,271,212,112	69,163,604,827
	452 maintenance and repair of motor vehicles	121	3,947	1,147,477,588	9,875,744,116	3,768,385,752	6,107,358,364
	453 Sale of motor vehicle parts and accessories	194	8,305	4,445,214,724	15,172,148,468	4,573,296,979	10,598,851,489
	454 Sale, maintenance and repair of motor cycles, and related parts and accessories	66	1,267	604,398,833	7,032,125,277	1,641,487,508	5,390,637,769
Total		**546**	**24,337**	**14,964,441,967**	**127,514,834,800**	**36,254,382,351**	**91,260,452,449**

Source: Economic Census 2013/14 - Construction, Trade and Services (Formal Sector)-DCSSL- October 2017

Table 2.4 above shows that a total of 546 enterprises engaging 24,337 persons in the formal sector contributed over LKR 127.5 billion to Sri Lankan economy as output with total value addition of LKR 91 billion. Annual salary per person engaged in the overall economic groups works out to be LKR 614,884 in Table 2.5. This is an indicator which reveals the labour market status which is considered very important in the education and vocational training policies of the country.

Labour Productivity of establishments overall in wholesale and retail trade and repair of motor vehicles and motorcycles is LKR 5,2 million. Labour productivity as an industry division is LKR 3.7 million.

Table 2.5: Principal indicators of wholesale and retail trade and repair of motor vehicles and motorcycles activities in the formal sector by economic group 45 – 2013

Division	Group	Annual Salary per Person	Productivity of Establishments	Productivity of Industry Division
45 wholesale and retail trade and repair of motor vehicles and motorcycles	451 Sale of motor vehicles	810,441	8,821,854	6,393,381
	452 maintenance and repair of motor vehicles	290,721	2,502,089	1,547,342
	453 Sale of motor vehicle parts and accessories	535,246	1,826869	1,276,201
	454 Sale, maintenance and repair of motorcycles, and related parts and accessories	477,031	5,550.217	4,254,647
		614,884	**5,239,546**	**3,749,865**

Source: Derived from Table 2.4

According to the DCS data, total employment in the automobile repair and maintenance sector is 104,333 persons. But enterprise survey done for this VET Plan development has estimated the number engaged in the automobile industry as 201,301 persons. This difference may have happened due to ambiguity in the demarcation of boundaries of sub-sectors.

2.5. Vehicle Emission Testing

Automobile exhaust is identified as a major source of air pollution in Sri Lanka. Rapidly increasing vehicle population and fuel consumption, particularly diesel, a high proportion of old and reconditioned vehicle usage in transportation and poor vehicle maintenance, usage of cheaper oil to reduce cost and high rate of urbanization are contributing factors to high pollution levels in Sri Lanka. However, usage of electric and hybrid vehicles in recent years has contributed to maintaining urban air quality levels within reasonable levels even with the increasing number of vehicles on the road. Still urban air quality levels in our major cities mainly Colombo is above the gazetted ambient air quality level.

Therefore, the measurement of these constituents in automobile exhaust is important in urban air quality control, human health impact assessment and environment pollution assessment. Existing evidence has shown that the urban environment of Colombo is heavily contaminated with vehicular emissions. Many studies were undertaken by regulatory agencies and researchers clearly indicate that inefficient combustion of petroleum fuels in motor vehicles is the primary cause of growing air pollution in Colombo, the largest metropolitan area with nearly 50percent of the vehicle population is concentrated and 30percent of the nation's human population dwells. The observed lead (Pb) (till 2003), total suspended particulates (TSP), sulphur dioxide (SO_2), and ozone (O_3) levels are significantly higher than the levels recommended by the World Health Organization (WHO) and the Central Environmental Authority (CEA) of Sri Lanka. It has been found that among the major sectors contributing emissions of air pollutants to the atmosphere from petroleum-derived combustion sources (transport, industry, power and domestic) approximately 75percent of SPM, NO_X, HC, CO originates from the transport sector.

The growing vehicle population as indicated above, mainly due to the importation of used personal cars, motorcycles and three-wheelers together, with the high emission rates from many of these vehicles has been associated with serious air pollution problems in many urban areas of Sri Lanka.

Modern vehicles are dependent on properly functioning components to keep pollution levels low. Minor malfunctions in the air/fuel or spark management systems can increase emissions significantly. Major malfunctions can cause emissions to skyrocket. The government can require that vehicles be tested or “inspected to determine whether their emissions exceed levels appropriate for

that vehicle type. Vehicles that fail the test must undergo repairs or maintenance to bring their emission performance up to par, or they must cease operating, some studies suggest that a small fraction of the vehicle fleet can have a responsibility for a large share of total vehicle emissions, so an inspection and maintenance program that reduces the emissions of these "gross emitters" can bring substantial air quality benefits. (USAID, 2004).

Therefore, reduction and control of vehicular emissions required comprehensive strategy, which requires emissions standards for new vehicles, cleaner fuels, emissions standards and inspection & maintenance program for in-use vehicles, vehicle importation policies, traffic & demand management measures; and also, institutional development, awareness, education, and training.

In control of ambient air quality in Sri Lanka, it is mandatory to control source emissions as well as non-source emissions. As a strategy for source emission control, the Central Environmental Authority has finalized Source Emission Control standards for Sri Lanka. These standards were approved by the Board of Management of the CEA and allowed to practice as interim standard until gazetted under National Environmental Act.

Vehicle Emissions Test Certificate is mandatory for obtaining the vehicle's revenue license within all provinces in Sri Lanka.

Moreover, the government expressed its intention to promote greener, environmentally healthy vehicles to reduce auto emissions that need to engage all operators in the industry to launch such crucial interventions.

Amid this evolving landscape, import duties for hybrid cars were relaxed to some extent in line with government policy on greener industry for a brief period – and hybrid vehicle sales witnessed a jump, causing the price gap between hybrids and regular vehicles to narrow.

2.5.1 Vehicle Emission Testing Process

- As the engine of the vehicle needs to be at the running temperature when produced for the test, the Engine must be switched on at least 10 minutes.
- Vehicles with oil or emission gas leaks are not subjected to the test.

- The vehicle should be free of water leaks with the engine in good working condition. In case of any damage caused during testing to a vehicle subjected to the test without confirming to the said requirements, the loss should be borne by the owner.

Table 2.6: Emission Standards for Different Types of Vehicles

Type of Vehicle	Emission Standards as effective from 01 April 2008		Remarks
	Carbon Monoxide CO (% v/v) percentage by volume	Hydro Carbon HC ppm (v/v)	
Petrol vehicles other than motor bicycles and motor tricycles	4.5	1200	Started, not running and 2500 RPM with NO LOAD.
Petrol motor bicycles and the petrol motor tricycles.	6	9000	
Abbreviations % v/v - percentage as per volume ppm v/v - parts per million as per volume RPM - Rounds per minutes.			
Diesel vehicles	8.0		
Abbreviations - K – factor - absorbent Co-efficient Instant acceleration - Carries the same meaning in the interpretation of the term 'SAE RECOMMENDED PRACTICE J 1667			

Source: Central Environmental Authority

Table 2.7: Number of Vehicle Emission Tests Done on Vehicles for Annual Licensing purpose by Year

Year	2012	2013	2014	2015	2016
Total number of Tests performed done	2,810,652	3,546,197	3,853,340	4,328,540	5,225,081
No passed the test	2,323,563	2,991,568	3,292,765	3,695,061	4,142,516
Total locations for Emission tests	No data available	No data available	No data available	No data available	384

Source: http://www.transport.gov.lk/web

2.5.2 Testing Centres and their Locations

There are two private-sector firms permitted to carry out these vehicle emission testing in Sri Lanka. There are Laugh Eco Sri and (Klenco Lanka / CleanCo Lanka/) Drive Green DRIVEGREEN operates 176 fixed/semi-fixed/mobile testing stations around the country.

Laugh Eco Sri operates a total of 222 testing stations at 88 fixed and mobile at 134 mobile locations. Each centre was planned to be manned by a centre manager having a middle level technical qualification at Diploma level and three more at the operator or technician level with skilled craft apprenticeship or equivalent background.

Source: Vehicle Emission Testing programme-Sri Lanka clean air action plan, 2007 by AirMac under Ministry of Environmental and Natural Resources.

Table 2.8: Distribution of the Emission Testing stations by District

	Drive Green	Laugh Eco Sri
District	**No. of Testing Stations**	**No. of Testing Stations (fixed)**
Ampara	07	03
Matara	07	02

	Drive Green	Laugh Eco Sri
Kegalle	05	03
Badulla	08	04
Galle	09	06
Hambantota	06	02
Puttalum	11	03
Anuradhapura	11	03
Pollonnaruwa	05	01
Ratnapura	06	04
Kalutra	09	05
Colombo	13	16
Kurunegala	21	08
Batticaloa	04	01
Monaragala	10	02
Gampaha	09	14
Jaffna	08	02
Vavunia	02	01
Kandy	07	04
Matale	03	02
Trincomalee	05	01
Kilinochchi	02	-
Mullative	04	-
Mannar	02	-
Nuwara Eliya	02	02
	176	**89**

Sources: http://www.drivegreen.lk and www.ecosri.lk as at end of Sept-2018

2.5.3 Role of Accredited/Certified Garages Island wide.

Vehicle Repair Centres are a crucial part of the Vehicle Emission Testing program. After all, the main objective of any Vehicle Emission Testing Program is to maintain the vehicle properly so as to reduce the vehicular emissions and maintain the air quality. Hence, these repair centres have a direct role in maintaining vehicles and maintaining air quality. There are 1056 garages which are

accredited/ certified garages and registered by Department in Motor Traffic. *(Source: DMT-2018)* The list is attached in the Annexure D.

2.5.4 Vehicle Emission Testing Monitoring

Vehicle emission testing program is implemented to control air pollution caused by vehicles and officers of this unit engage roadside monitoring activities occasionally. In addition, the vehicle emission testing program and VET centres are monitored on a regular basis to make it a public benefitted program through controlling air pollution caused by vehicles.

2.5.5 Recent Amendments to the Act

The Gazette of the Democratic Socialist Republic of Sri Lanka Extraordinary No.2083/37 dated 10.08.2018 published some amendments to the vehicular exhaust emission standard and Safety Measures/Standards regulations.

The new regulations were drafted related to the vehicular exhaust emission and safety standards. The measures related to the vehicular exhaust emission were based on Euro 4 standards. The Motor vehicles below the Emission Standards of the EURO 4 or its equivalent will be prohibited.

Importation of Motor Vehicles which do not comply with the safety standards will be prohibited to import.

The required safety measures for importation, manufacturing or assembling of vehicles were published in the above-mentioned Gazette Notifications.

2.5.6 Carbon Tax

While exempting electric cars, a Carbon Tax is now imposed on directly fossil-fuelled vehicles including petrol cars from January 1, 2019, based on the fuel consumption of vehicles.

The tax is charged under the 2018 financial Act and under three categories - the manufacturing year of the vehicles of less than five years, between five and ten years and more than ten years, Hybrid vehicles using petrol or diesel and based on their engine capacity with a manufacture date of less

than five years would be charged 25 cents for one cubic centimetre, between five and ten years 50 cents and more than ten years one rupee.

The vehicles using petrol or diesel with a manufacture year of fewer than five years are charged 50 cents and between five and ten years one rupee and more than ten years Rs.1.50 for one cubic centimetre according to the engine capacity.

The passenger transport buses with a manufacture year of fewer than five years will be charged Rs.1,000, between five and ten years, charged Rs.2,000 and more than ten years Rs. 3,000.

2.6 Hire purchase / Leasing Industry

Another economic sector closely connected up with the automotive industry is hire purchase or leasing industry.

The evolution of the leasing industry began in 1980 when the government of Sri Lanka floated Lanka ORIX Leasing Company (LORC) as a joint venture on the recommendation of the World Bank. This earmarked the emergence of leasing industry in Sri Lanka. The Leasing industry in Sri Lanka has been facilitating small and medium-term business enterprises for their capital formation, whilst enhancing the living standard of the individuals. It has been primarily responsible for facilitating the convenience of transport through finance leases of vehicles. Industry statistics justifies that leasing has become the most popular financing instrument for vehicle financing and micro-business asset financing. Further, the leasing industry has been providing an invaluable service to the banking industry and the economy by making hitherto an un-bankable community embrace the banking habit by, in most cases, providing the first form of financing.

In Sri Lanka, almost all leases are finance leases with minimal operating leases offered in the country. Also, in terms of asset classes, over 80percent of the total business in the leasing market is driven by vehicle leasing. This is mainly not due to the fact that there is no demand for equipment leasing but merely due to the reluctance of the part of lessors to promote equipment leases. The reasons for this reluctance are quite simple. A motor vehicle is a moveable asset and hence, repossession in the event of default does not pose great difficulty. On the other hand, equipment is often placed inside the factory or business premises of lessees and poses tremendous hardship to the lessor in the event of repossession for non-payment of lease rentals.

Table 2.9: Principal indicators of trade and services activities in both Formal and Informal Sectors by economic group

Economic division	Economic Group	No. of Establishment	Persons Engaged	Salaries and Wages LKR	Value of output LKR	Value of Intermediate consumption LKR	Value-added LKR
77: Rental and leasing activities (informal)	771: Renting and leasing of motor vehicles	284	416	-	694,733,600	156,503,690	538,229,910
77: Rental and leasing activities (formal)		11	306	87,944,753	867,321,971	306,236,995	561,084,976

Economic Census 2013/2014Final Report on Informal Non-Agricultural Activities-DCSSL-Nov 2017/ &

Economic Census 2013/2014 - Construction, Trade and Services (Formal Sector)-DCSSL- October 2017

As Table No.2.9 indicates there are a total of 295 establishments with a 722-total no of persons engaged in rental and leasing of motor vehicles in both formal and informal sectors.

The contribution to the economy is LKR 1.5 billion as output from this economic group and around LKR 1.1 billion as value addition. The Leasing Association of Sri Lanka (LASL) which is a guaranteed company duly incorporated in Sri Lanka is set up to promote, foster, protect and safeguard the interests of the Leasing Industry in Sri Lanka. At present, the membership of LASL is comprised of 38 Licensed Finance Companies and three Licensed Specialized Leasing Companies. The list of Members is attached as Table 2 in Annexure C.

Regulating the authorized motor vehicle Valuers is a core function of the Leasing Association. The valuers appointed by LASL are the only authorized personnel to issue valuation reports in respect of motor vehicles. Activities and practices of these valuation officers are being monitored consistently, in order to protect the ethical business conduct of the valuation sector.

2.7. Insurance

Road Accidents in Sri Lanka are a major social and economic problem. With the increasing demand for transport services and the rapid increase in vehicle-kilometres have resulted in an increased number of road accidents.

Table 2.10: Analysis of Data of Road Accidents - Years 2016, 2017 & 2018

Overview	Total - 2016	Total - 2017	Total – 2018
Deaths	3,003	3,101	3,097
Fatal Accidents	2,824	2,924	2,949
Minor Accidents	13,961	13,592	12,264
Critical Accidents	8,518	8,144	8,475
Damages Only	13,675	13,072	12,064
Total number of accidents	38,978	37,732	35,752

Source: National Council on Road safety – http://www.transport.gov.lk

According to the above statistics in Table 2.10, the number of road accidents reported to police was 38,978 in 2016; 37,732 in 2017 and 38,849 in 2018. Of the 2,824 (2016); 2,924 (2017) and 2,949 (2018) were fatal accidents causing 3,003 (2016); 3,101(2017) and 3,094 (2018) deaths. These are figures based on the accidents that have been reported to the police and most of the damaged only accidents are settled between parties amicably.

All motorists are required by law to have a valid insurance policy that means that if someone is injured that person can claim against motorists for compensation. The legal framework applicable in Sri Lanka is protective to some extent to victims of road accidents through the provision of compulsory insurance for third party liability.

Table 2.11: Number of Compensation Applications for Accident Victims by Year

Year	2012	2013	2014	2015	2016	2017
No. of applications submitted for compensation	38	28	63	142	88	48
Compensation paid to	31	17	23	72	67	89

Year	2012	2013	2014	2015	2016	2017
applicants						
Application rejected	7	2	-	21	10	ni*
Awareness Programs	-	-	-	-	80	ni*

Source: National Council on Road safety – http://www.transport.gov.lk (ni-not indicated)

2.7.1 Types of Insurance Policies

Insurance is a basic form of risk management which provides protection against anticipated future loss to life or physical assets. In other words, it is a promise to reimburse the loss or damage to the insured by the insurer on payment of premium agreed by the insured. There are some major kinds of insurance policies such as life insurance, health insurance, business, and travel insurance.

2.7.2 General Insurance

Insurance against risk in loss to assets like vehicles, houses, and accidents, etc is covered under general or non-life insurance. General insurance includes fire insurance, marine insurance, motor insurance, theft, health, and personal accidents insurance, etc.

Motor/Vehicle insurance is an agreement with an insurer whereupon regular payments of premiums the insurer agrees to offer compensation for a financial loss that occurs when involved in an accident.

2.7.3 Contribution to Economy

Table 2.12: Contribution of Insurance Sector GDP of Sri Lanka by Year

	LKR in Million							
Year	2010	2011	2012	2013	2014	2015	2016	2017
Financial Services, Insurance and Re insurance	342,763	283,544	361,537	390,522	433,665	450,227	527,491	643,021

	LKR in Million							
Year	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Gross Domestic Product @ current prices	6,413,668	7,219,106	8,732,463	9,592,125	10,361,151	10,950,621	11,906,752	13,317,292
% contribution to GDP	5.34	2.93	4.14	4..07	4.19	4.11	4.43	4.83

Source: Economic and Social Statistics of Sri Lanka- Central Bank of Sri Lanka -2018

As Table 2.12 indicates the country's total Gross Domestic Product (GDP) amounted to LKR 13,318 billion in 2017. and had continued to grow from LKR 6,413 billion in 2010 during the period. Since the year 2012, Financial Services, Insurance, and Reinsurance sector continued to contribute over 4 percent to the GDP (*Source – Central Bank Annual Report 2017).*

General insurance industry with seventeen insurers solely operating in general insurance business along with another three composite insurers handles both general and long-term insurance businesses.

Similar to previous years, Total Gross Written Premium (GWP) of the insurance industry has grown by 15.07 percent to Rs. 164,623 million (2016: Rs. 143,067 million) in 2017. The growth in premium was largely driven by the general insurance business, mainly from motor and health insurance sub-classes. Total GWP of general insurance business amounted to Rs. 93,119 million in 2017 compared to Rs. 79,590 million in 2016, reflecting a growth of 17 percent. General insurance business accounted for 56.57 percent (2016: 55.63 percent) of the total GWP recorded in the year 2017.

a) Motor insurance

Motor insurance business continued its dominance in the general insurance market by recording GWP of Rs. 56,073 million (2016: Rs. 49,333 million) which represented 60.22 percent of total GWP. Health represented the second largest category of the general insurance

business by recording GWP of Rs. 14,676 million (2016: Rs. 10,037 million). *Source: Statistical review 2017-Insurance Regulatory Commission of Sri Lanka*

b) Number of Policies Representing Gross Written Premium- General Insurance Business

Table 2.13: Number of Policies representing Gross Written Premium - General Insurance Business by year

	No. of Policies				
	2013	**2014**	**2015**	**2016**	**2017**
Fire	177749	188578	227800	246058	242184
Marine	158,893	186,447	190,720	191,966	196,293
Motor	3,795,059	4,004,162	4,531,187	5,075,622	5,428,618
3rd party only	2,126,037	2,229,153	2,460,596	2,628,255	2,785,000
Comprehensive	1,669,022	1,775,009	2,070,591	2,447,367	2,643,618
Health	11,609	13,716	15,053	16,040	14,121
Miscellaneous	186,131	204,285	202,038	238,921	290,357
Total	4,329,441	4,597,188	5,166,798	5,768,607	6,171,573
Motor as a % of Total	**87.6**	**87.1**	**87.7**	**88.0**	**87.9**

Source: Statistical review 2017-IRCSL

Table 2.13. reflects the number of insurance policies pertaining to different sub-classes of the general insurance business which had contributed to generate GWP from 2013 to 2017. The total number of insurance policies related to sub-class of Motor in general insurance business has significantly increased to 5,428,618 in 2017 from 3,795,059 policies reported in 2013.

Similar to previous years motor insurance business accounted for the largest number of policies from a single sub-class of general insurance business and represented by over 87.1 percent total policies in this period. Out of total motor insurance policies issued, the majority was third party insurance indicating that people tend to look for a minimum level of protection for a low premium to fulfil only the legal requirement.

List of Names of the Insurance Companies involved in General Insurance including Motor is given in Table 2 in Annexure C:

c) Data on Branches, Employees, and Agents of Motor Insurers

Due to the nature of the business, availability of widespread branches over the island plays an important role in distributing the insurance services to customers. Overall in the year 2017, 108 new branches were added where the total branches increased to 2,079 in the current year compared to 1,971 reported in the previous year. The composition of branches reported in 2017 is 1,151 life insurance branches, 765 general insurance branches, and 163 composite insurance branches. As depicted in Table, the total number of employees servicing the insurance industry amounted to 18,467 during the year and improved compared to 16,896 reported in the previous year.

The total number of agents servicing the total industry including both life and general insurance etc. were 44,866 in 2017 against 43,816 reported in 2016. Agents' were mainly scattered in the Western Province followed by Southern and Central Provinces.

Table 2.14: No of Branches, Employees, and Agents in Insurance Industry by Province

	No. of Branches		No. of Employees		No. of Agents	
	2016	**2017**	**2016**	**2017**	**2016**	**2017**
Central Province	196	177	880	1018	4,245	4,418
Eastern	132	153	553	652	2,223	2,286
North Central	145	139	617	724	2,520	2,468
North Western	178	224	919	1,116	4,094	4,238
North	160	161	570	547	3,387	3,171
Sabaragamuwa	149	161	842	822	2,745	3,117
Southern	234	266	1,088	1,470	4,915	5,000
Uva	120	121	478	583	2,422	2,435
Western	657	677	10,949	11,535	17,265	17,733
Total	**1,971**	**2,079**	**16,896**	**18,467**	**43,816**	**44,866**

Source: Statistical review 2017-IRCSL

2.8. Auto Fuel Retail Market

Ceylon Petroleum Corporation (CPC) and Lanka IOC are the two major players in the auto fuel retail market in Sri Lanka and CPC is the dominant player in the sector.

The demand for fuel consumption has increased due to increased vehicle population and other rapid development taking place in the country at present. Based on the crosscutting features of upstream and downstream petroleum industry among all economic development sectors, the petroleum sector has to be developed in order to ensure the fuel security of the country.

2.8.1 CEYPETCO - CPC Sales Outlets

An average of 20 percent price reduction has been made for all petroleum products with effect from January 2015 and as a result, a sudden increase in demand has been observed. However, this increase is significant in Petrol 92 Octane and 95 Octane. This trend has continued for the last years as well. With the increased number of hybrid vehicles of which fuel economies exceed that of the diesel-driven vehicles, the demand for Lanka Auto Diesel is almost stagnated and it has only been marginally increased since 2015. This has affected sales of Diesel. More than 55 percent of the demand for petroleum products in the country comes from the transport sector. CPC's island-wide sales of petroleum products are shown in Table 2.15 below.

Table 2.15: Consumption of Fuel Product by Year and Type

Type of Product	2015	2016	2017 (up to July)
Lanka Petrol-92 Octane	756,275	854,902	531,211
Lanka Petrol-95 Octane	81,666	110,244	77,110
Lanka Auto Diesel	1,579,137	1,875,369	1,168,573
Lanka super Diesel	46,891	63,176	42,532

Source: Progress report -2017 MPRD

Ceylon Petroleum Corporation (CPC) is taking initial steps to introduce Euro 4 Petrol (95 Octane) and Super Diesel. Introduction of Euro 4 based on the proposal of organic smoke in the budget, 2018. Most of the countries including Europe use Euro 4 standard fuel. European standard fuel (Euro 4) is highly environmentally friendly. It will raise the efficiency of vehicles and protect the environment.

The filling stations newly established are equipped with more facilities than at existing filling stations and the availability of CPC products has been increased after 2015. Further, these new filling stations will offer the facility of Petrol 95 and Super Diesel to consumers as most of the modern vehicles run on these advanced fuels. Petroleum products sales outlets belonging to CPC as at the end of July 2017 are given in Table 2.16 below.

2.8.2 Lanka IOC PLC

Lanka IOC is a leader among Sri Lanka Oil Companies and the Indian Oil's subsidiary in Sri Lanka was the only private oil company other than the state-owned Ceylon Petroleum Corporation (CPC) that operates retail petrol/diesel stations in Sri Lanka and a key player in engine oil in Sir Lanka market. It has over 150 fuel stations in Sri Lanka and has a current market share of 18 percent approximately.

2.8.3 LAUGFS Petroleum Pvt Limited

In addition, Laugfs Petroleum has entered into petroleum retailing under Laugfs petroleum and Southern Petroleum titles with its fast-expanding network of 23 fuel filling stations. However, these operate in partnership with either CEPETCO or IOC.

2.8.4 Litro Gas Lanka

Litro Gas Lanka has entered the fuel retail market as well. Litro fuel was launched on July 2018 and the first 2 sites were commissioned at the service areas located at Welipanna on both sides of the Southern Expressway.

Table 2.16: Number of Filling Stations by Province and Company

	No of Filling Stations			
Province	**CEYPETCO As at the end of July 2017**	**Lanka IOC**	**Laugfs Petroleum**	**Litro Fuel**
Western	298	66	16	02
Central	102	15	01	-
Southern	141	17	03	-
Northern	181	07	-	-
Eastern	141	10	01	-
North Western	179	14	02	-
North Central	81	05	01	-
Uva	56	09	-	-
Sabaragamuwa	74	07	-	-
	1,253	**150**	**24**	**02**

Source: Progress report -2017 and Action plan-2018 Ministry of Petroleum resources Development/ www.lankaioc.com / www.laugfs.lk/www.litrogas.com

2.9. Charging Networks for Electric Cars

The electric vehicles seem to be the fastest-growing alternative to oil-derived gasoline. Initially, there had been explosive growth partly supported by government incentives with the taxes on electric vehicles being reduced from 25percent to 5percent through the government's budget in 2015, although such incentives were later withdrawn.

The primary consideration of every potential consumer who is eager to be a proprietor of an electric vehicle is the availability of charging stations Island wide. Most of the problems initially associated with electric vehicles are gradually being resolved, however, the "Range anxiety" which is the fear of running out of charge as the battery runs out of power of those who drive pure electric cars and still worry about getting stranded, This Range anxiety will go away with the increase of range by the manufacturers and the availability of charging stations island wide.

2.9.1 EV fast-charging stations in Sri Lanka.

These stations are installed by Green Frontiers (GF), ChargeNET (CN) and Spark EV that could be made use by motorists, for charging their car batteries while on travel.

Table 2. 17: Provincial Distribution of Charging Stations by Type

Province	Charging socket	Normal Charging - L2	DC Fast -L3				ChargeNET		Total
			EVP	GF	IEV	Others	L2-Charger	Fast Charger	
Western	-	01	02	11	03	05	13	28	63
Central	01	-	-	04	-	-	04	-	05
Southern	-	-	01	02	01	-	02	-	06
Northern	-	-	-	-	-	-	-	-	-
Eastern	-	-	-	-	-	-	01	-	01
North Western	01	-	-	02	01	02	-	-	06
North central	-	-	-	-	-	-	-	-	-
Uva	-	-	-	-	-	-	-	-	-
Sabaragamuwa	-	-	-	01	-	01	01	01	04
Total	**02**	**01**	**03**	**20**	**05**	**08**	**21**	**29**	**85**

Source: www.evclub.lk as at 30th Sept.2018

The total number of charging stations recorded is 85 of which the major portion of 63 is located in Western Province.

ChargeNET is an end-to-end solution for electric vehicle charging, a unified network that is scalable, efficient and smart, powered by IoT technology. All products are designed and manufactured according to J1772 and CHAdeMO international standards and are a 100 percent local solution for B2C and B2B segments. chargeNET mobile and cloud-based web applications, enable smart monitoring, smart payments, and easy station management for a 24-7-365 operation. (refer Annexure C)

This service provider has been selected for the World Summit Award (WSA) Grand Jury, as best and most innovative Digital Innovation with high impact on society 2017, in the category 'Smart Settlement and Urbanization'. chargeNET, a subsidiary of CodeGen International (Pvt) Ltd., is the only winner from Sri Lanka, and will join a prestigious list; World's Top 40 Digital Innovators 2017.

With over 2000 users and multiple charging locations island-wide, the company is focusing on expanding its services and reach, to offer futuristic, regional and trans-border infrastructure that is safe, inclusive and accessible to the public for Electric and Plug-in Hybrid Vehicle (PHEV) charging, ensuring a future which greener than today.

2.10 Automotive Spare Parts Market (Service Sector)

With the significant growth of the vehicle population in Sri Lanka and the Increase in the average age of vehicles and the average kilometres driven which closely associated with the wear and tear of parts had led to a rise in demand for auto spare parts to do repair and maintenance services. This explains the expansion of the spare parts market with new and more players entering the business.

Table 2.18: Registered Commercial Places for Spare parts of motor vehicles by Province, District and Year

Province	District	Number of enterprises selling Auto spare parts	% of the total number of enterprises	Total No of Enterprises	Data with reference year
Western	Gampaha	629	2.0	23,341	2016
	Kalutara	254	1.8	14,314	2016
	Colombo	No Records			
Central	Kandy	402	1.6	24,389	2016
	Matale	214	1.57	6220	2016
	Nuwara Eliya	12	0.2	6,998	2015
Southern	Galle	818	4.8	17,187	2015
	Matara	141	1.0	14,189	2017
	Hambantota	102	1.8	5,735	2015
Northern	Jaffna	144	1.7	8,355	2015
	Mannar	31	2.6	1,103	2010
	Vavuniya	75	3.51	2,137	2016
	Mullative	18	2.89	622	2010
	Killinochchi	39	1.5	2,557	2016
Eastern	Ampara	35	0.77	4,572	2014
	Trincomalee	125	2.47	5,069	2014
	Batticaloa	176	1.9	9,377	2016
North Western	Kurunegala	673	3.0	22,551	2016
	Puttalum	231	2.2	10,330	2016

Province	District	Number of enterprises selling Auto spare parts	% of the total number of enterprises	Total No of Enterprises	Data with reference year
North Central	Anuradhapura	222	1.8	12,555	2016
	Polonnaruwa	150	3.3	4,578	2016
Uva	Badulla	248	1.8	13,947	2016
	Monaragala	118	2.8	4,223	2016
Sabaragamuwa	Ratnapura	255	1.8	14,515	2016
	Kegalle	167	1.9	8.933	2016
	Total	**5,279**	**2.31**	**228,873**	

Source: District Statistical Hand Books -- Data from Local Government Institutes

Table 2.18 shows the distribution of spare parts shops that are registered with local authority's district-wise as reported in the district statistical handbooks. These are the latest data published and available on the website of the DCSSL.

Table 2.19: Detailed analyses of different spare market segments by number of Establishment and persons engaged by district

District	45301: Wholesale and retail sale of Rubber tyres and inner tubes		45302: Wholesale and retail sale of Batteries, lighting equipment, and electrical parts		45303: Wholesale and retail sale of parts and accessories of three-wheelers		45309: Wholesale and retail sale of other motor vehicles parts and accessories (other than 3-wheelers and Motor Cycles)		45402: Wholesale and retail sale of motorcycle spare parts	
	Shops	Staff	Shops	Staff	Shops	Staff	Shops	Staff	Shops	Staff
Colombo	213	972	97	308	271	548	1,265	4,804	229	681
Gampaha	174	402	56	119	187	253	631	1,636	175	284
Kalutara	72	164	20	27	107	151	190	386	87	118
Kandy	107	351	8	15	123	188	329	749	36	60
Matale	40	89	7	7	31	48	82	183	19	28
Nuwara Eliya	30	77	1	1	37	54	58	96	3	6
Galle	62	133	12	27	86	123	118	248	80	101
Matara	31	75	18	31	53	69	132	236	49	70
Hambantota	44	80	2	4	31	40	69	122	20	31
Jaffna	8	17	1	1	9	19	67	117	72	130
Mannar	2	3	0	0	4	4	6	9	1	1
Vavuniya	6	11	3	7	6	16	9	20	17	54
Mulative	0	0	0	0	0	0	11	18	8	10

District	45301: Wholesale and retail sale of Rubber tyres and inner tubes		45302: Wholesale and retail sale of Batteries, lighting equipment, and electrical parts		45303: Wholesale and retail sale of parts and accessories of three-wheelers		45309: Wholesale and retail sale of other motor vehicles parts and accessories (other than 3-wheelers and Motor Cycles)		45402: Wholesale and retail sale of motorcycle spare parts	
Killinochchi	1	2	7	13	4	6	27	43	4	6
Batticaloa	8	18	3	4	16	20	35	54	40	64
Ampara	29	64	8	12	17	26	99	149	146	198
Trincomalee	18	27	2	4	10	17	50	68	70	100
Kurunegala	109	235	30	63	78	123	425	897	183	304
Puttalama	32	63	12	27	48	68	153	275	83	104
Anuradhapura	44	118	0	0	26	37	130	265	103	178
Pollonnaruwa	26	80	3	3	10	13	72	122	45	114
Badulla	56	121	6	12	56	91	90	206	23	60
Monaragala	26	54	1	1	39	46	36	51	22	32
Rathnapura	67	139	6	7	80	106	130	257	42	83
Kegalle	55	115	5	6	70	96	131	235	29	39
	1,250	**3,410**	**308**	**699**	**1,399**	**2,162**	**2,162**	**11,246**	**1,586**	**2,856**

Source: census listing in 2013 -DCSSL

Above Table 2.19 shows more detailed data about the number of shops selling rubber tyres and tubes, shops selling batteries, electrical and lighting parts, shops selling spare parts for three-wheelers, shops selling spare parts of motor vehicles and shops selling motorcycle spares and also, the number of persons engaged in the relevant segments. In 6,705 shops a total number of 20,373 persons are engaged in wholesale and retail sales of automotive spare parts.

2.11. Automotive Manufacturing Sector-formal Industry

The automobile industry also has a sector which has hitherto not been given prominence, especially by vocational training providers, although these manufacturing activities continue and contribute to the country's economy and also to the export market. DCSSL in its annual surveys in industry covers four sectors a) Mining and Quarrying; b) Manufacturing; c) Water supply, Sewerage Waste management, and Remediation activities and d) Electricity, Gas, steam and air conditioning supply. Economic activities in the Automobile manufacturing sector are covered under Sri Lanka Standard Industrial Classification (SLSIC) industry divisions 29; 2211, 2720, 2910, 2920, and 2930 in the Manufacturing sector studied in the Annual surveys of Industry.

Table 2.20: Data on Number of Manufacturing Establishments and Employees by Industry Division (SLSIC-29)

Industry Division	No. of Establishments	Persons Engaged No	Employees (No)	Salaries & Wages	Value of Output LKR	Value of Intermediate Consumption LKR	Value Added LKR	Gross Addition To fixed Assets
29: Manufacture Of Motor Vehicles, trailers And semi-trailers (Establishments with 5 or more persons engaged)	43	1,658	1,631	863,083,733	22,295,659,318	18,608,955,756	3,686,703,562	567,863,248
2211: Manufacture of Rubber tyres and tubes Retreading and rebuilding Of rubber tyres (>25 p)	23	16,023	16,019	7,439,387,231	50,374,890,442	18,007,298,109	32,367,592,333	5,005,158,644
2720: Manufacture of Batteries & accumulators (=>25 p)	1	290	290	183,378,101	2,387,245,072	1,684,869,692	702,375,380	153,123,636

Industry Division	No. of Establishments	Persons Engaged No	Employees (No)	Salaries & Wages	Value of Output LKR	Value of Intermediate Consumption LKR	Value Added LKR	Gross Addition To fixed Assets
2910: Manufacture of Motor vehicles=>25 P	1	381	381	273,886,427	20,048,677,551	17,049,613,271	2,999,064,280	184,654,830
2930: manufacture of parts & accessories for motor Vehicles with= >25 P engaged	6	943	932	511,257,898	2,058,491,733	1,467,116,840	591,374,893	377,367,730
Total	**74**	**19,295**	**19,253**	**9,270,993,390**	**97,164,964,116**	**56,817,853,668**	**40,347,110,448**	**6,288,168,088**

Source: Annual Survey of Industries Final Report 2016-DCSSL

Table 2.21: Data on Productivity in Manufacturing Establishments by Industry Sub-Division (SLSIC-29)

Industry Division	Annual salary per person	labour productivity of Establishments	Labour productivity of the industry division
29: Manufacture Of Motor Vehicles, trailers And semi-trailers (Establishments with 5 or more persons engaged)	520,557	13,447,321	2,223,585
2211: Manufacture of Rubber tyres and tubes Retreading and rebuilding Of rubber tyres (>25 p)	464,294	3,143,911	2,020,071
2720: Manufacture of Batteries & accumulators (=>25 p)	632,338	8,231,880	2,421,984
2910: Manufacture of Motor vehicles=>25 P	718,862	52,621,201	7,871,556
2930: manufacture of parts & accessories for motor Vehicles with= >25 P engaged	542,161	2,182,918	627,120
	481,535	**5,046,744**	**2,091,065**

Source: worked out from Annual Survey of Industries Final Report 2016-DCSSL

74 establishments engaging a total number of 19,295 persons contribute LKR 97.2 billion as output to the Sri Lankan economy with total value addition of LKR 40.3 billion. LKR 9.3 billion is recorded as the total remuneration paid the workforce in 2015.

Annual salary per person engaged is an indicator which reveals the labour market status and it is very important in the education and vocational training policies of the country.

Jobs in motor vehicle manufacturing earn LKR 718,862 annually in the automobile manufacturing subsectors followed with battery manufacturing (LKR 632,338), parts manufacturing (LKR 542,161). Annual salaries are lowest with LKR 464,294 in the manufacture of tyre, tubes and retreading sub-sector.

Annual output per person engaged is an indicator which reveals the labour productivity of an establishment. Labour productivity is highest with LKR 52 million in motor vehicle manufacturing and lowest of LKR 2 million is in Parts manufacturing.

Value-added per persons engaged is an indicator which suggests the productivity of the industry. Total of the productivity of the industry subdivisions considered in the manufacturing of automobile sector is around LKR 15 million.

2.11.1 Automobile Manufacturing -Export Sector

Automotive is at the forefront of technological advancement and it is a field driven by technology and continues to grow and push the boundaries from the discovery of new fuels and manufacturing techniques and the creation of light materials there is a constant drive towards innovation.

A country does not have to produce a whole car to reap the gains from the rapidly expanding global demand for automobiles. "It can specialize in a given slice of the production process of automobiles, as the Lanka Harness case vividly illustrates in global production networks, the shift in the global supply chain is fertile ground for emerging economies with a relatively cheap, but skilled workforce. Sri Lanka has companies supplying knitted components to multinationals such as Nike, the U.S sportswear supplier, electronic components for lighting devices to Japanese companies, sensors for Airbus, and metal components to other companies in the European Union. All this is part of the development of a system of international production fragmentation" that is replacing much bilateral trade between countries.

Table 2.22A: Export Performance by Major Product Sectors (related to Automobile Industry) 2008-2017 (Value in US$ Millions)

Sector code	Product	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	% average growth
		Value	Value	Value	Value	Value	Value	Value	Value	Value	Value	
S. 020302	Pneumatic & retreated rubber tyres and tubes	337.97	214.27	337.78	571.40	541.22	554.60	567.59	470.58	479.46	513.49	6.71
S.160201	Motor vehicles and parts	59.29	12.62	22.36	47.39	44.98	59.52	70.56	56.71	57.51	66.87	10.80

Source: Export performance Indicators (2008-2017), policy and Strategic Division- Sri Lanka Export Development Board

Table 2.22B: Export Performance by Major Product Sectors (related to Automobile Industry) 2008-2017 (Value in US$ Millions)

Sector	Export Value US$ million 2017	Share in World exports of products %	Rank in world Exports	Contribution to total Export Earnings of the country%	Exports to Major Markets as % of Total exports of the product	Total Export Market
Rubber Finished products	874	0.5	32	5.81	75	USA, Germany, Belgium, Canada, Italy, France, UK, Brazil, India, Australia, China
Solid tyres	329	24.4	1	2.19	75	USA, Germany, Belgium, Canada, China, France, UK

Source: Export performance Indicators (2008-2017), policy and Strategic Division- Sri Lanka Export Development Board

Sri Lanka ranks first in the world export market in solid tyres. List of Automobile Parts/Component Manufacturing and Exporters by Product is given in the Annex Table 3:

2.12. Trade associations

2.12.1 Sri Lanka Automobile Service Providers Association

Membership

- Body Shops and Collision Repairs
- Mechanical /General Repairs
- Service Stations
  - Auto Electrical Repairs
- Auto A/C repairs
  - Engine Rebuilders and Machining Workshops-Basically engine overhauling
- Hydraulic Repairers and Hose Fabricators
- Automobile Cable Manufacturers
- Lathe workshops
- Automobile Cushion Workshops
- Tyre Shops
- Wheel Alignment centres
- Vehicle Body Builders /Fabricators
- Vehicle Fibre Glass workshops
- Vehicle Modifications and Beauty Decorators
- Car Carrier and Recovery Service Providers

2.12.2 Automobile Component Manufacturers Association

Sri Lanka s automotive component manufacturing industry comprises around 50 industries and 10 of these industries are highly successful. List of companies in the component Manufacturing Industry is given in the Annex D Table 4:

With the recent Government's integrated car manufacturing policy, the automotive components manufacturing in Sri Lanka is to reach a phenomenal growth during the next 10 years. The newly formed Sri Lanka Automotive Component Manufacturing Association comprising large, medium and small-scale automotive component manufacturers is endorsed by the Ministry of Industries and

Commerce. SLACMA in short, as an association has committed to providing 45,000 jobs within the next 10 years if the government policy on automotive component manufacturing stays consistent.

Thailand, Malaysia, India, and Pakistan, have stronger industrial policies to protect automotive component manufacturing. Sri Lanka whereas lacks way behind. This is because authorities and policymakers failed to understand that mobility and transportation would automatically create an industry of replacement auto-parts. Every moving vehicle has worn and tear, and the parts have to be replaced during the lifetime of a vehicle. Each vehicle which runs 100,000 km will minimum replace Rs. 400,000 worth of parts and currently 100percent of these parts are imported.

Import localization and 30percent value addition in local vehicle assembly many member companies are directly providing parts to the two vehicle assembly license holders UEL and Micro Cars Ltd. This year's budget alone has created 2000+ new jobs in the industry and the two local assemblers are working on the first batch of vehicles with local components to export to the African market if the finance ministry gives clear guidelines on local vehicle assembly strategy and policy in 2017 financial budget.

2.12.3 Lanka Motor Spare Parts Dealers Association

LMSPDA is reported to have 124 members.

There are also 298 companies/Establishments ion Panchikawatta along and all are not members. The list of 298 spare parts companies is given in Annexure D as Table 5.

2.13 Vintage or Classic Cars in Sri Lanka

In this age of digitally designed vehicles, where everything is done in a computer, where hybrid and electric is becoming the norm, there are cars from the Morris's to the mini's, and the Beetle! still rumbling along with its small air-cooled engine, designed after World War II, still running well! Cars back then were things of beauty, all beautiful curves, and smooth rumbling. Every piece drawn, crafted, bent into shape. A lot of effort. But they did it and they did it right.

The owners of old cars who love to own, preserve and maintain them like to display play them at regular events organized by them. These old car lovers are excited to show their cars.

They don't take these cars out daily; only take it out to exhibitions. It is not practical, one thing is with manual drive and such old stuff, all driving is strenuous and to keep them away from three-wheelers and buses is a tough task. A vintage car such as this one would not fare so well on the street of Colombo as they are today. Because if somebody scrapes the liquor painted buffers, they can't get it done locally. Also, if somebody breaks a lamp or something, it's very difficult to replace them, they say. We only take them out for an occasion or a Sunday morning drive."

These old vintage or classic car owners have organized into clubs. There are many clubs to meet with various other classic car collectors and parade along with them. For example, the Vintage Car Owners Club, the Classic Car Club, CEAC (Ceylon Exotic Automobile Club. And many more with rich heritage and even more rich patrons. There are at least 5-6 meets that happen every year run by different clubs, like Cars and Coffee and Classic Car Sunday, and they take place every month.

The cars here are handled with love. One can see it at the meetups, alongside the proud owners of magnificent cars. They've gone to massive ends to keep their vehicle pristine. They wait for ages for original parts and it's a lot of pain, frustration and finally bliss. That's for the restorers. Then there are people who bought the car when they were young and have grown old with it, kept it as close as family and taken care, thoroughly maintaining it so it's in running condition. It's all very beautiful and heart-warming. One cannot really categorize all of them. They all share the same love for classic.

The Classic Car Club of Ceylon is the largest club, formed in 1992 by a group of ardent Sri Lankan Classic Car enthusiasts. This group of gentlemen consisted of renowned Sri Lanka Motor Sportsmen, highly respected business magnets in the island and well-informed motoring personalities.

The Club has a membership of over 250 members in all categories and a total registered number of Classic Cars amounting to over 800.

The Club's primary aim is to promote the cherished ownership, restoration and enjoyment of Classic Cars which are also a historical reflection of the progression of transport in the island.

Towards this aim the Club endeavors to educate its members and support them with technical advice and to promote the use and enjoyment of classic cars while organizing regular rallies, social events,

and technical seminars. The Club also organizes by-annually the "Ceylon Motor Show" in partnership with the Ceylon Motor Traders Association which ranks among the best Motor Shows in the world.

The Club also regularly provides advice and fellowship to foreign enthusiasts visiting Sri Lanka. The Classic Car Club of Ceylon has received international recognition by being admitted as a member of the Federation International Vehicles Ancients (FIVA).

2.14 Importation of Vehicles

2.14.1 Vehicle importer's Association of Lanka (VIAL)

Vehicle importer's Association of Lanka (VIAL) was reorganized in 2012. Within this short period of time VIAL has emerged as the leading vehicle importing body in Sri Lanka. VIAL today is 360 members strong and still growing, catering to a large number of well recognized commercial entities, and to all classes of people in the country. More Importantly, the over 500 members representing micro, small and medium enterprises in support services for vehicles who come from regions of the country exemplify VIAL's commitment to achieving equitable development.

Apart from very rare cases, practically every vehicle that is imported to Sri Lanka is done so through a Sri Lankan vehicle merchant, who will deal with the complex tax and legal policies in order to make it easier for a typical Sri Lankan buyer to purchase their dream car. As a result, dozens of merchants exist to import Japanese, European, American as well as vehicles manufactured in other countries into our island. Some of these distributors have also specialized in importing particular vehicle brands to the country.

From all the local vehicle dealers, a few have managed to climb to the top to become the largest vehicle importers of Sri Lanka. Therefore, based on market capitalization data, the following list gives a glimpse into the biggest players within the automobile import industry in Sri Lanka.

a) **United Motors Lanka PLC (UML)**

   Without a surprise, the United Motors Lanka PLC, known shortly as UML, is the largest automobile importer in Sri Lanka. With a market cap of nearly 40 percent, the company is

steering ahead with a wide variety of vehicle imports to the country. Founded more than 70 years ago in 1945, UML imports a number of important brands, that includes Mitsubishi passenger and commercial vehicles, TVS two and three-wheelers, Perodua cars, JMC commercial vehicles, DFSK Mini trucks as well as Zotye SUVs.

b) Diesel & Motor Engineering PLC (DIMO)

Established more than 77 years ago in 1939, the Diesel & Motor Engineering PLC or DIMO is one of the leading vehicle importers in the country. Founded by four entrepreneurs, the company initially began by manufacturing mechanical and electric components for motor vehicles. Nevertheless, DIMO was able to secure exclusive import rights to a number of German brands, which helped to accelerate its growth in the local market. Today, DIMO acts as the authorized distributor for Mercedes-Benz, Jeep, Chrysler, and TATA vehicles in Sri Lanka.

c) Lanka Ashok Leyland PLC

Established more than 35 years ago in 1982, Lanka Ashok Leyland is a leading supplier of commercial and other heavy vehicles in Sri Lanka. The company was inaugurated initially as a joint venture between the Lanka Leyland Ltd, which was a fully owned corporation of the government of Sri Lanka and Ashok Leyland Ltd of India. Currently, Lanka Ashok Leyland imports knockdown kits or fully completed Ashok Leyland vehicles and offer them to local buyers in the Sri Lankan market.

d) Colonial Motors Ceylon LTD

The Colonial Motors Ceylon LTD is one of the oldest motor vehicle distributors in Sri Lanka. Initially started as a Motor Engineering company more than 107 years ago in 1909, by the respected businessman Mr. Geo Fred Nell, the company now acts as the authorized importer and distributor for Mazda branded vehicles in both Sri Lanka and the Republic of Maldives. Apart from that, the Colonial Motors Ceylon also provides spare parts for Land Rover & TATA vehicles in Sri Lanka.

e) Sathosa Motors PLC (SML)

The Sathosa Motors PLC, or known shortly as (SML), is one of the most profitable automobile distributors in Sri Lanka. Established more than half a century ago in 1962, the Sathosa Motors Corporation primarily acts as the authorized agent for ISUZU branded

commercial vehicles and SUVs within the island. Apart from that, Sathosa Motors is also the joint owner of SML Frontier Automotive, who acts as the authorized distributor for the range of Land Rover luxury vehicles in Sri Lanka

2.15 Automobile Association of Ceylon

This premier Motoring Association in Ceylon (Sri Lanka) established in 1903 with a membership of 100, and presently the membership standing over 11,000, is responsible for all matters relating to the motorists. It was incorporated by the parliament through "the Automobile Association of Ceylon (Incorporation) Act, No. 19 of 1957 ".

It's the only authorized body in Sri Lanka to issue the International Driving Permit. Those with Sri Lankan Driving License planning to travel abroad can obtain an International Driving Permit (IDP) by applying to the Automobile Association of Ceylon. Similarly, any foreign visitor to the country can apply to AAC to get a license to drive in Sri Lanka after undergoing a trial test under AAC.

Because of the huge demand for driving licenses, the Department of Motor Traffic recently has given permission to CTB and the AAC to do the trial tests on driving skills on behalf of the DMT.

The Automobile Association of Ceylon has been an affiliated member of the FIA (Federation Internationale de l' Automobile) since 1931.

Automobile Association provides a comprehensive range of services across all areas of automobile needs, including emergency breakdown service to its members/clients. AAC has trained technicians and accredited service points around the island guaranteeing a reliable and excellent service. In addition to the 24-hour emergency breakdown service, AAC offers up - to - date information on regional road conditions as well as the latest in motoring news.

a) Breakdown Road Services

- Its "First Aid" 24 - hour mechanical breakdown assistance will enable motorists to proceed to their destinations or, in case of a major breakdown, to the nearest garage.
- Delivery of fuel/oil and wheel change due to puncture.

- An island-wide breakdown service is also operable through AAC's officially appointed Aid-Point garages.
- A list of these garages is published in every issue of the "Record ".
- AAC's technicians also undertake minor adjustments free of charge to members' vehicles at its head office.
- Loan battery services.
- Battery Jumpstart service.
- The services of a Tow Truck are available for members at a discounted price island-wide. The Trailer enables even the most expensive vehicle to be moved to any destination, in case of a breakdown or accident, without any further damage to the vehicle.

b) Home-Start Service

Whenever an AAC member's vehicle is immobile at his/her residence, the Automobile Association of Ceylon "Home-Start" Service will be provided, including changing a wheel due to a puncture, battery jumpstart, etc.

c) AAC Service Points

The Automobile Association of Ceylon accredited Aid Point Garages located around the Island cater to the emergency and maintenance needs of its members

d) Mechanical Services

Motorists can seek technical advice and mechanical assistance at Head office of the Automobile Association of Ceylon from competent staff.

- Minor adjustments and Engine Tune-Up.
- Minor electrical repairs.
- Members may also have their motor vehicles examined by the AAC Engineer for a technical report with regard to its condition and a valuation obtained for a discounted fee.
- Automobile Association of Ceylon ensures a thorough examination and complete repairs through our mechanical services.

e) Free Legal Defence

Legal assistance is provided to members for any offense under the Motor Traffic Act in any Magistrate's Court in the country and also in respect of ownership of a private motor vehicle of a member.

f) Discounted Special Services

- If roadside repair is not possible, the Road Patrol will tow the member's vehicle to a garage of his choice.
- Members may obtain their motor and other insurance through the Association.
- Vehicle washing.
- Members can obtain the services of our registered drivers for temporary assignments.
- Purchase of batteries, spare parts, tyres, servicing and hiring of vehicles at discounted prices.
- Loan batteries and battery charging.

g) Ensuring Road Safety

The Association continues to play an active role in promoting road safety and ensures that necessary safety measures are implemented by drawing the attention of the authorities concerned.

Several important suggestions such as defective traffic lights; damaged signal signboards; overloading and footboard travelling on private and public transport; obstruction to pedestrian crossings; unauthorised structures on highways; flooding; unauthorised advertising boards obstructing highways; speeding of vehicles on wrong tracks, wayside garage menace; beggar menace at pedestrian crossings, parking difficulties in Colombo City and the use of unleaded petrol were a few of the subjects taken up by the Association with the authorities concerned.

CHAPTER 03: DEMAND FOR SKILLS IN AUTOMOBILE REPAIRS AND MAINTENANCE AND SERVICES SECTOR

In order to identify the demand for skills quantitatively and qualitatively, the following programmes were launched for this VET Plan development.

- A sample survey of enterprises to envisage skills demand in years from 2019 to 2022
- Key Informant Interviews with representatives of leading automobile-related industries
- Focused Group Discussion with Industry Sub Sector and Industry clusters

This chapter will explain the analyses of the findings of the survey of enterprises.

3.1 Methodology and Sample Frame

Manpower demand in Automobile Repairs and Maintenance and Services sector in the local labour market was studied based on Primary data collection done by the survey research method. However, Data was essential on the geographical distribution of the total population of automotive enterprises, repair shops garages/service centres, etc. by category and size or scale for any survey research study. It is also noted here that most of such enterprises/ establishments are in the informal economy except perhaps less than a hundred which are at a national level and registered with Registrar of Companies and a few others at Divisional/District Secretariats. The literature survey done initially in this assignment of preparing the VET plan revealed that such enterprise surveys have been conducted by the Department of Census and Statistics, Sri Lanka and reports compiled and published based on findings of such surveys in 2017/18 by the DCSSL indicated the availability of a data frame prepared in 2013 as the latest database available for this study.

This database of Enterprises in both formal and informal sector which was made available, with the courtesy DCSSL officials was the basis of the sample design and sample frame. Based on the geographical distribution of a total population of the automotive establishments (including garages, service stations, etc.) by district, scale/size, stratified random sampling technique was used in the research survey.

A questionnaire designed and field-tested was used in carrying out the survey to collect necessary information regarding present and future skills requirements. The required data were general

information about the establishment, numbers in different occupations/job titles, age distribution, gender, highest educational qualifications, highest vocational qualifications, years of experience, training underwent in house, expected expansion/growth of the sector, current skills deficiencies, and labour turn over, etc.

Collected data by trained enumerators were entered in a database and SPSS package was used for data analyses.

Qualitative and quantitative information will also be gathered through structured interviews with key persons selected among leading Automotive Repairs, maintenance and service providers.

The sample frame used was developed as shown in the following Table 3.1.

Table 3.1: Sample Frame for Number of Enterprises to be Selected

Automobile Sector	Districts																								
	Colombo	Gampaha	Kalutara	Kandy	Matale	NuwaraEliya	Galle	Matara	Hambantota	Jaffna	Mannar	Vavuniya	Mullaitivu	Kilinochchi	Batticaloa	Ampara	Trincomalee	Kurunegala	Puttalam	Anuradhapura	Polonnaruwa	Badulla	Moneragala	Ratnapura	Kegalle	Total
45201: Repair of three-wheeler	686 (06) *	530 (05)	252 (02)	235 (02)	83 (0.8)	82 (0.6)	197 (02)	143 (1.3)	87 (0.7)	27 (0.2)	12 (0.1)	17 (0.1)	0	0	25 (0.3)	33	19	184 (01)	90 (01)	75 (01)	30	122 (01)	61 (01)	208 (02)	138 (01)	3,336
45202: Repair of other motor vehicles other than motor cycles and three wheelers	2,317 (20)	2,330 (20)	926 (08)	941 (08)	315 (03)	265 (02)	666 (06)	541 (05)	425 (06)	252 (02)	42 (01)	107 (01)	55	44	133 (02)	262 (02)	160 (02)	1,245 (11)	632 (05)	607 (05)	317 (03)	357 (03)	239 (02)	746 (07)	461 (04)	14,385
45203: Spraying and Painting of motor vehicles	481 (04)	646 (06)	246 (02)	148 (01)	56 (0.5)	27 (0.2)	92 ((01)	100 (01)	48 (0.4)	65 (01)	5 (0.05)	7	2	1	20 (0.2)	35	12	310 (03)	180 (02)	83 (01)	38 (01)	44	19	100 (01)	110 (01)	2,875
45204: Tyre and Tube repairing or replacing	182 (02)	212 (02)	98 (01)	114 (01)	44 (0.4)	41 (0.3)	91 (0.8)	67 (0.6)	42 (0.4)	77 (01)	11 (0.1)	34	14	25	37 (0.4)	65 (01)	39	159 (01)	90 (01)	64	35	57	28	81	52 (01)	1,759
45205: Battery Charging Services	46 (0.4)	29 (0.3)	19 (0.2)	9 (0.7)	4 (0.03)	0	8 (0.07)	4 (0.04)	4 (0.03)	0	0	1	1	0	7 (0.07)	2	2	9 (0.07)	14	5	2	4	1	12	7	190
45209: Other repairs such as cushion works and N.E.C.	399 (03)	311 (03)	137 (01)	108 (01)	46 (0.4)	36 (0.3)	98 (01)	81 (0.7)	58 (0.5)	20 (0.2)	1	10	4	2	16 (0.2)	43 (01)	24	197 (01)	130 (01)	86 (01)	35	67 (01)	28	86 (01)	108 (01)	2,131
45403: Maintenance and repair of motor cycles	465 (04)	735 (06)	332 (03)	158 (01)	96 (01)	55 (0.4)	408 (04)	203 (02)	176 (01)	260 (02)	29 (0.3)	74 (01)	18	91 (01)	129 (02)	294 (03)	157 (02)	823 (07)	349 (03)	416 (04)	188 (02)	93 (01)	117 (01)	199 (02)	138 (01)	6,003
	4,576	4,793	2,010	1,713	644	506	1,560	1,139	840	701	100	250	94	163	367	734	413	2,927	1,485	1,336	645	744	493	1,432	1,014	30,679
	14.9	15.6	6.6	5.6	2.1	1.6	5.1	3.7	2.7	2.2	0.3	0.9	0.3	0.5	1.3	2.4	1.4	9.5	4.8	4.4	2.1	2.4	1.6	4.7	3.3	100%
No. of enterprises	40.	42	18	15	06	04	14	10	07	06	01	02	00	01	04	07	04	26	13	12	06	06	04	13	09	270

Source: Database-2013 of DCSSL

Table 3.2 below shows the percentage distribution of the sample of 274 representing a total population of 30,649 enterprises distributed among 24 districts in the country (except Mullativu district out of a total number of 25).

Table 3.2 Distribution of Enterprises in the Sample Frame

Province	District	Number of Enterprises	% of the Total number
Western	Colombo	45	16.4
	Gampaha	42	15.3
	Kalutara	16	5.8
Central	Kandy	16	5.8
	Matale	6	2.2
	Nuwara-Eliya	4	1.5
Southern	Galle	14	5.1
	Matara	10	3.6
	Hambantota	7	2.5
Northern	Jaffna	6	2.2
	Mannar	1	0.4
	Vavuniya	2	0.7
	Kilinochchi	1	0.4
Eastern	Batticalo	4	1.5
	Ampara	7	2.5
	Tricomalee	4	1.5
North-Western	Kurunegala	26	9.5
	Putalam	13	4.7
North-Central	Anuradhapura	12	4.4
	Polonnaruwa	6	2.2
Uva	Badulla	6	2.2
	Monaragala	4	1.5
Sabaragamuwa	Ratnapura	13	4.8
	Kegalle	9	3.3
Total		**274**	**100**

Source: Survey of Automobile Enterprises 2019 for the VET Plan

3.2 Services Provided by Enterprises

Table 3.3 lists the service provided by the enterprises based on multiple responses at the survey. Accordingly, 28.8percent of enterprises undertake Diesel Engine repairs, 26.6percent Engine block, 24.1percent each diesel pump/fuel injector repairs and petrol engine repairs in-house or outsourced. A lower percentage of 1.1 each of enterprises do Passenger Entertainment System Installation, Inspection and Repair and Automotive Glass/Windscreen replacement and 1.5percent of enterprises do Passenger Safety System (ABS and Airbags, etc) Inspection and Repairs respectively in house. Only 19.0percent of are body shops /or collision repair shops. 8.4percent of repair shops have motor spares dealerships.

Table 3.3: Distribution of Enterprises Engaged by Automobile Service Area

Current Areas of operation/Industry Group	Number of Enterprises	Percentage of Enterprises %
Auto A/C Repair	35	12.8
Auto Electricals General Repair	49	17.9
Body Shops/ Collision Repair (Auto Tinkering, Welding & Painting)	52	19.0
Engine Block Repair	73	26.6
Diesel Pump/Fuel Injector Repair	66	24.1
Carburettor Repair / Petrol Fuel System Repair	40	14.6
Motor Vehicle Scanning and Tuning /EFI/tuning	22	8.0
Vehicle Emission Testing	15	5.5
Diesel Engine Repair	78	28.5
Petrol Engine Repair	66	24.1
Motor Vehicle General Repair	51	18.6
Motor Cycle Repair	59	21.5
Three-Wheeler Repair	41	15.0
Two/Four Wheel Tractor repair	10	3.6
Motor Spares Dealership	23	8.4
Tyre Repair	24	8.8
Wheel Alignment and Balancing	32	11.7

Current Areas of operation/Industry Group	Number of Enterprises	Percentage of Enterprises %
Service Stations/Interior /Exterior Detailing	27	9.9
Automobile Cushion Workshops/Upholstery/Interior	18	6.6
Vehicle Security (Centre Locking etc.) Systems and Accessories Installation/Inspection and Repair	7	2.6
Passenger Entertainment System Installation, Inspection and Repair	3	1.1
Passenger Safety System (ABS and Airbags etc) Inspection and Repair/	4	1.5
Suspension Inspection and Repair	12	4.4
Radiator Repair	43	15.7
Hybrid System Repair	23	8.4
Electric Vehicle Repair	11	4.0
Battery Repair	20	7.3
Gas Conversion/Repair	5	1.8
Automotive Glass/Windscreen replacement	3	1.1
Vehicle Modifications and Beauty Decorators	8	2.9
Vehicle Body Builders / Fabricators	7	2.6

Source: Survey of Automobile Enterprises 2019 for the VET Plan

3.3 Type of Ownership, Membership in Association, etc.

Table 3.4 shows that 89.8percent of enterprises are owned by sole proprietors while 9.5percent are private companies with only 0.7percent are publicly owned companies. Out of the total enterprises, 3.3percent and 2.9percent of private partnership enterprises are located in Western and Central provinces respectively while Sabaragamuwa and North Western have 2.2percent and 0.7percent respectively. In the Northern Province, there is 0.4percent private partnership company. There is 0.4percent each of public companies/ enterprises in Central and Western provinces.

Table 3.4: Distribution of Enterprises by Type of Ownership

Province	Ownership of the Establishment		
	Private Partnership	Public	Sole Proprietor - Private Single Owner
Central	8	1	17
Eastern	0	0	15
North-Central	0	0	18
North-Western	2	0	37
Northern	1	0	9
Sabaragamuwa	6	0	16
Southern	0	0	31
Uva	0	0	10
Western	9	1	93
Total	**26**	**2**	**246**
Percentage	**9.5**	**0.7**	**89.8**

Source: Survey of Automobile Enterprises 2019 for the VET Plan

As Table 3.5 shows only a very few enterprises (4.8percent of the responded enterprises) reported having membership in any of the Industry Associations, and more than half of enterprises responded having a membership, do so in the Trade association in their own townships.

Table 3.5: Membership of the Surveyed Enterprises in any of the Industry Associations

Employer Association	Count	%
Automobile export association	1	7.7
Bajaj	1	7.7
Ceylon Motor Traders Association	1	7.7
Intertown trade association	7	53.8
Tyre importer Association	1	7.7
Worker club	1	7.7
Ceylon Chamber of Commerce	1	7.7
Total	**13**	**100**

Source: Survey of Automobile Enterprises 2019 for the VET Plan

The Enterprise Survey reveals that only 8.8percent of enterprises in the Automobile Repairs and Services sector reported having dealership with suppliers of spares and lubricants. Table 3.6 indicates that the dealership is prominent in repair and services of Motor Bicycles and Three wheelers and more than 50percent of enterprises responded positively of having dealership with the importer and distributor, David Piers Motor Company.

Table 3.6: Dealership with Suppliers of Spares and Lubricants

Type of Dealership	Count
Bajaj	3
Reshma Motors	1
Caltex	1
DSI Tyre	1
TVS	1
Max	1
Lubricants	1
David Pieris Motor Company	10
Yamaha	3
DPMC	1
Hero	1
Total Number of Enterprises	**24**

Source: Survey of Automobile Enterprises 2019 for the VET Plan

42.3percent enterprises are engaged in body/collision repair work and other related works of automobiles where motor assessors/other insurance agents make direct visits to inspect repair work undertaken by enterprises when such vehicle damages are covered under insurance. 57.7percent of enterprises do not claim such a relationship with insurance agencies. (Refer Table3.7 below)

Table 3.7 Number of Enterprises Visited by Motor Assessors for Insurance Purposes

Province	Number of Enterprises being Visited by an insurance agent	Number of Enterprises Having no Relationship with an insurance agent
Central	3	23
Eastern	4	11
North-Central	10	8
North-Western	14	25
Northern	3	7
Sabaragamuwa	3	19
Southern	20	11
Uva	0	10
Western	59	44
Total	**116**	**158**
Percentage	**42.3**	**57.7**

Source: Industry Survey of Automobile Enterprises 2019 for the VET Plan

3.4. Human Resources Profile

3.4.1 Total number of Employees in the Surveyed Sample Enterprises and Disadvantaged Groups

Table 3.8 and Figure 3.1 indicate that in the surveyed sample of enterprises, 45.6percent are having an average number of 4 employees and 2.9percent are having only a single employee. Around 89percent of enterprises are having less than 10 employees and only 0.4percent is having more than

50 employees. Here the total number of enterprises has been categorized according to their sizes. Then the Total number of employees were worked out by multiplying the number of enterprises of each employee strata with the medium of employees in that strata and accordingly the number of employees working in the automobile industry sector is 201,303.

In the enterprise survey, no any disadvantaged groups in the employment are identified, however, in FGDs and KIIs, participants have mentioned that there are no restrictions on the part of enterprises in giving opportunities to such disadvantaged persons for employment in their establishments.

Table 3.8: Number of Employees in Enterprises Surveyed with Estimated Total and Percentage Distribution of Different Sizes of Enterprises (By Number of Employees)

Number of Employees	Number of Enterprises	Percentage of enterprises	Apportioning Total number of 30,649 Enterprises to each Employee Strata giving Different Sizes of Enterprises	Total Number of Employees Working in Different Sizes of Enterprises in the Automobile sector.
1	8	2.9	889	889
2	36	13.2	4046	8091
3 – 5	125	45.6	13976	55904
6 - 10	74	27.0	8275	66202
11 - 15	16	5.8	1778	23109
16 - 20	8	2.9	889	15999
21 - 30	3	1.1	337	8428
31 - 50	3	1.1	337	13486
51 & above	1	0.4	123	9195
Total	**274**	**100**	**30649**	**201303**

Source: Industry Survey of Automobile Enterprises 2019 for the VET Plan

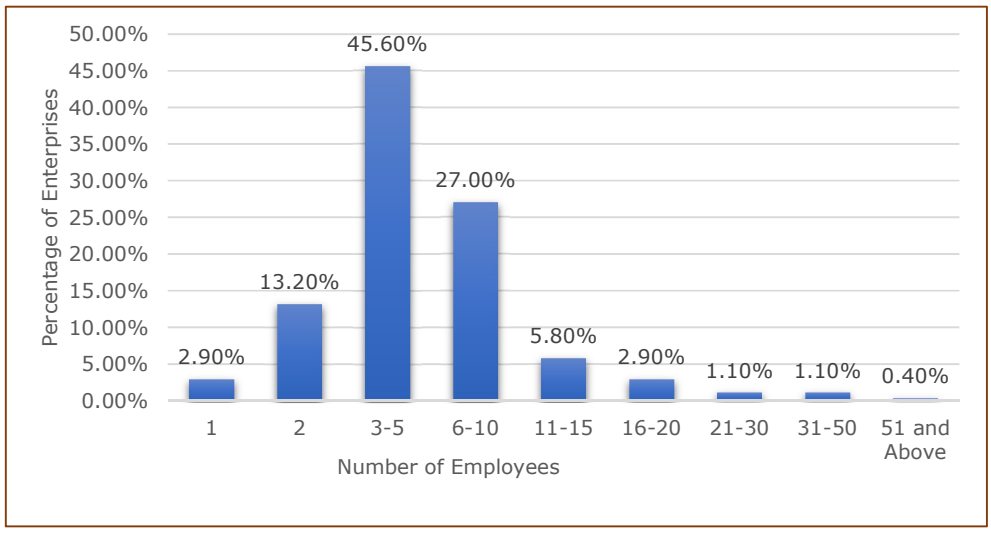


Figure 3.1: Distribution of Enterprises by Number Employees

Source: Industry Survey of Automobile Enterprises 2019 for the VET Plan

3.4.2 Number of Female Employees in the Surveyed Enterprises

As depicted in Table 3.9 and Figure 3.2, in 223 (81.4percent) of enterprises surveyed, not a single female has been employed, but a single enterprise (0.4percent of the total number surveyed) is recorded of having an average workforce of 75 numbers of which 18 are female workers as given in Table 3.9. When a number of females in the sample of enterprises is projected to the population of enterprises, the estimated total number of 18,568 females are working in the automobile industry. This survey has not identified what percentage of females are in technical jobs. However, at key informant interviews, it was identified that a very small number of females are working in semi-technical jobs in large scale industries.

Table 3.9: Number of Female Workers Employed in Enterprises Surveyed

Number of Females Employees	Number of Enterprises in the Sample	Percentage of Enterprises with female employees	Number of Enterprises with females' employees in populations	Number of females employed in different sizes of enterprises
0	220	80.29	24609	0
1	22	8.03	2461	2461
2	17	6.20	1902	3803
3 – 5	8	2.92	895	3579

Number of Females Employees	Number of Enterprises in the Sample	Percentage of Enterprises with female employees	Number of Enterprises with females' employees in populations	Number of females employed in different sizes of enterprises
6 – 10	4	1.46	447	3579
11 – 15	2	0.73	224	2908
16 – 20	1	0.36	112	2237
Total	**274**	**100**	**30649**	**18568**

Source: Industry Survey of Automobile Enterprises 2019 for the VET Plan

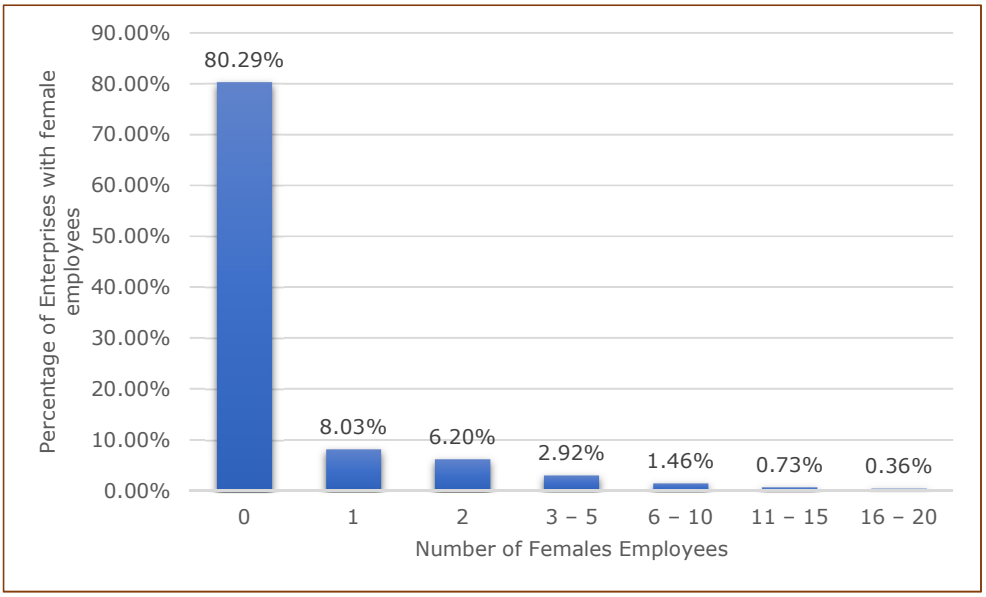


Figure 3.2 Distribution of Number of Enterprises by Number of Female Employees

Source: Industry Survey of Automobile Enterprises 2019 for the VET Plan

3.4.3 Number of Employees in the Different Age Groups

Table 3.10 - A: Number of Employees in the Enterprises Surveyed by Age Group

Number of Employee Layers	Number of Enterprises with employees of different age group in the Sample				
	(19- 30) Yrs	(31-40) Yrs	(41-50) Yrs	(51-55) Yrs	(55+) Yrs
0	101	97	192	256	269
1 to 5	151	153	75	15	5

Number of Employee Layers	Number of Enterprises with employees of different age group in the Sample				
	(19- 30) Yrs	(31-40) Yrs	(41-50) Yrs	(51-55) Yrs	(55+) Yrs
6 to 10	16	18	5	1	0
10 to 20	4	3	1	1	0
20 +	2	2	1	1	0
Total	**274**	**273**	**274**	**274**	**274**

Source: Industry Survey of Automobile Enterprises 2019 for the VET Plan

Table 3.10A has listed the number of enterprises with employees in different age groups against a number of employee layers. **Here the first row gives the number of enterprises with zero employees in a different age group.** Accordingly, 101 enterprises have no employee of the age group of 19 – 30 years. These data will be used to estimate the age distribution of employees in enterprises.

Table 3.10 - B: Percentage of Employees in the Enterprises Surveyed by Age Group

Number of Employee Layers	Percentages of Enterprises with employees of the different age group in the Sample				
	1	2	3	4	5
	(19- 30) Yrs	(31-40) Yrs	(41-50) Yrs	(51-55) Yrs	(55+) Yrs
0	36.86	35.40	70.07	93.43	98.18
1 to 5	55.11	55.84	27.37	5.47	1.82
6 to 10	5.84	6.57	1.82	0.36	0.00
10 to 20	1.46	1.09	0.36	0.36	0.00
20 +	0.73	0.73	0.36	0.36	0.00
Total	**100.00**	**99.64**	**100.00**	**100.00**	**100.00**

Source: Derived from Table 10.3 A

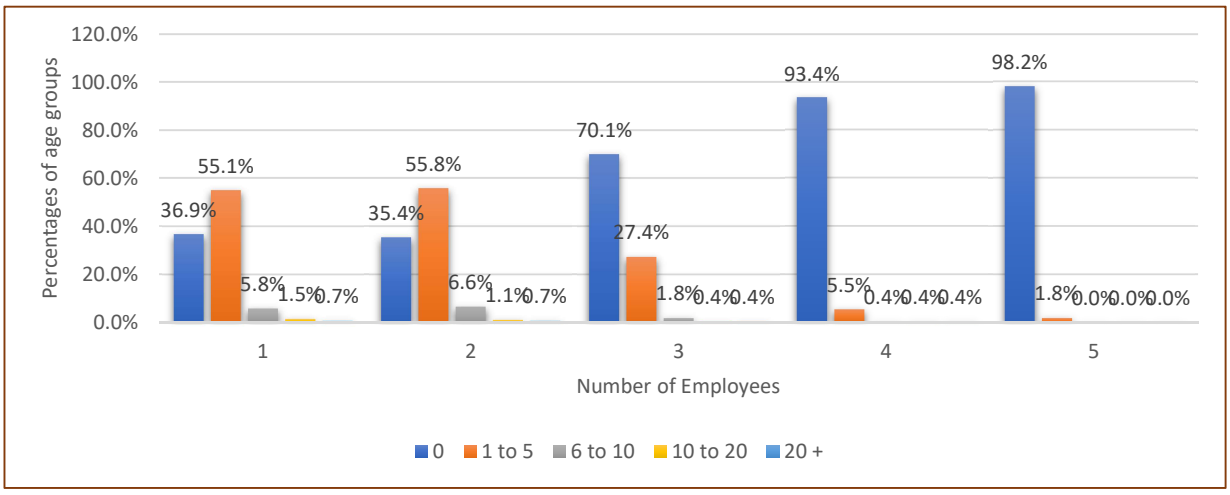


Figure 3.3: Distribution of the number of employees in enterprises by Age Category

Source: Industry Survey of Automobile Enterprises 2019 for the VET Plan

Table 3.10 B and Figure 3.3 give the percentage of enterprises with employees in different age groups against a number of employee layers.

Table 3.10 - C: Number of Enterprises with Employees of Different Age Groups in the Population

Number of Employee Layers	Number of Enterprises with Employees of Different Age Groups in the Population				
	(19- 30) Yrs	(31-40) Yrs	(41-50) Yrs	(51-55) Yrs	(55+) Yrs
0	11298	10850	21477	28636	30090
1 to 5	16891	17114	8389	1678	559
6 to 10	1790	2013	559	112	0
10 to 20	447	336	112	112	0
20 +	224	224	112	112	0
Total	**30649**	**30537**	**30649**	**30649**	**30649**

Source: Derived from Table 10.3 A and 10.3 B

Based on the percentage given in Table 3.10 B, Number of enterprises of each group against different employee layers in the total enterprise population were calculated and given in Table 3.10 C.

Table 3.10 - D: Number of Employees by Age Group in the Automobile Sector

Number of Employees	Number of Employees in Different Age Group				
	(19- 30) Yrs	(31-40) Yrs	(41-50) Yrs	(51-55) Yrs	(55+) Yrs
1 to 5	50672	51343	25168	5034	1678
6 to 10	14318	16108	4474	895	0
10 to 20	6711	5034	1678	1678	0
20 +	5593	5593	2796	2796	0
Total	**77294**	**78077**	**34117**	**10403**	**1678**
	38.35	**38.73**	**16.93**	**5.16**	**0.83**

Source: Derived from Table 10.3 A, 10.3 B, and 10.3 C

Table 3.10 D identifies the number of employees in different age groups working in enterprises my multiplying number of enterprises with a medium of employee layers. Accordingly, 38.35percent and 38.73percent of employees are in the 19 -30 and 31 – 40 age group respectively. The only 5.99percent of employees are above the age of 51 years. (Here, a total number of employees worked out in Table 3.10 D is only 201,569. But the total number of employees worked out in Table 3.8 is 201,303. This minor different has been arisen due to rounding of numbers.)

3.4.4 Number of New Recruitments in Technical Trades in Recent Years

New Recruitments in technical trades in the enterprises of the Sample in recent years is given in Table 3.11A below.

Table 3.11 A Number of Enterprises with New Recruitments in Recent Years

Layers of Number of New Recruitments	Number of Enterprises of Sample with New Recruitments in Recent Years				
	2014	2015	2016	2017	2018
0	250	224	224	230	240
1 to 2	20	46	47	38	26
3 to 5	3	3	2	2	3
5 to 10	1	0	0	2	3
10+	0	1	1	2	2
Total	**274**	**274**	**274**	**274**	**274**

Source: Industry Survey of Automobile Enterprises 2019 for the VET Plan

The number of enterprises in the total population with new recruitments is given in Table 3.11 B below. Accordingly, as given in the first row of table 3.11 B, about 26,000 enterprises have not done any new recruitment in recent years.

Table 3.11 B: Number of Enterprises in Total Population with New Recruitments in Recent Years

Layers of Number of New Recruitments	Number of Enterprises in the Population with New Recruitment in Recent Years				
	2014	**2015**	**2016**	**2017**	**2018**
0	27964	25056	25056	25727	26846
1 to 2	2237	5145	5257	4251	2908
3 to 5	336	336	224	224	336
5 to 10	112	0	0	224	336
10+	0	112	112	224	224
Total	**30649**	**30649**	**30649**	**30649**	**30649**

Source: Industry Survey of Automobile Enterprises 2019 for the VET Plan

As Table 3.11C shows that the balance number of enterprises (4650) annually recruit about 11, 000 new employees.

Table 3.11C Number of New Recruitment Done in Recent Years

Layers of Number of Employees	Number of New Recruitments Done in Enterprises of Population in Recent Years				
	2014	**2015**	**2016**	**2017**	**2018**
0	0	0	0	0	0
1 to 2	3356	7718	7886	6376	4362
3 to 5	1342	1342	895	895	1342
5 to 10	839	0	0	1678	2517
10+	0	1398	1398	2796	2796
Total	**5537**	**10459**	**10179**	**11745**	**11018**

Source: Derived from the Enterprise Survey 2019 done for VET Plan development

Here, new recruitments in 2014 are much lower than in subsequent years. That may be due to low recruitment done in the election environment in 2014 and employers may not have proper records or memory to respond for a survey in 2019.

3.4.5 Number of Enterprises Recruiting Passed Outs from TVET Centres

This survey has identified a number of enterprises which recruit TVET passed outs based on their responses.

Table 3.12: Number of Enterprises Recruiting Passed Outs from TVET Centres

Province	Number of Enterprises which recruit TVET passed outs			Number of Enterprises which do not recruit TVET passed outs		
	Number in Sample	Percentage	Number in Population	Number in Sample	Percentage	Number in Population
Central	7	27	783	19	73	2125
Eastern	1	7	112	14	93	1566
North-Central	6	33	671	12	67	1342
North-Western	14	36	1566	25	64	2796
Northern	1	10	112	9	90	1007
Sabaragamuwa	15	68	1678	7	32	783
Southern	20	65	2237	11	35	1230
Uva	1	10	112	9	90	1007
Western	48	47	5369	55	53	6152
Total	**113**	**41**	**12640**	**161**	**59**	**18009**

Source: Industry Survey of Automobile Enterprises 2019 for the VET Plan

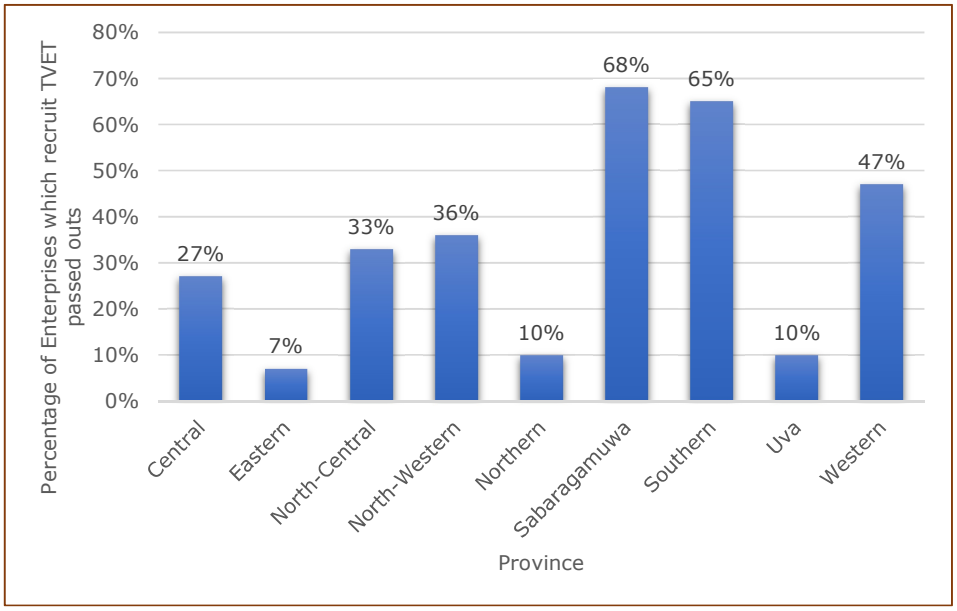


Figure 3.4: Distribution of enterprises recruiting TVET Passed Outs by Province

Source: Industry Survey of Automobile Enterprises 2019 for the VET Plan

According to Table 3.12 and Figure 3.4, only about 41percent of enterprises recruit passed outs from TVET centres. Enterprises in Western, Southern, Sabaragamuwa, North-Western, North –Central and Central provinces have good responses for this question. However, Enterprises in Uva, Northern and Eastern Provinces have not taken interest in recruiting passed outs from TVET Centres.

3.4.6 Reasons for Not Recruiting Passed Outs of TVET Centres

After finding whether they recruit TVET passed outs, this survey has tried to find out the reasons for not recruiting. Responses of the enterprises received accordingly are listed in Table 3.13.

Table 3.13: Number of Enterprises Recruiting Passed Outs from TVET Centres

Reasons	Number of Enterprises Responded	Percentage
High Salary Demands	51	18.6
Lack of skills	21	7.7
No information on TVET Pass outs	21	7.76
Already enough workers at industry	14	5.1
We will Like to get but they won't come	13	4.7
No one has come to look for a job	8	2.9
They don't have any interest in the field	8	2.9
Low experience	6	2.2
They are not working for a longer period	5	1.8
No any links with TVET Centres	3	1.1
Because of the Income problems	1	0.4
Family Business	1	0.4
No response for requests from TVET centres	1	0.4
Lack of knowledge about hybrid	1	0.4
Not working for a longer period	1	0.4
No work	1	0.4
Not come to the work properly	1	0.4
The income is low for industry no more recruitments	1	0.4
Total	**161**	

Source: Industry Survey of Automobile Enterprises 2019 for the VET Plan

High salary expectations of the passed out and the reluctance of the enterprises to meet that expectation is the major issue for not recruiting TVET passed outs. Lack of skills of the passed out is the second-highest reasons for not recruiting TVET passed outs from TVET institutions conducting automobile courses. Though TVET institutions do not have any leverage on salary issues, they could look into the skill issues. Further, some employees demand trainees from TVET institutions and they are not getting passed outs for recruitment. This may be due to an insufficient number of trainees, then those employers should be directed to NAITA to get apprentices for training.

3.4.7 Number of Enterprises which Provide Apprenticeship and OJT

This survey has identified a number of enterprises which provide Apprenticeship Training and OJT based on their responses as given in Table 3.14 and Figure 3.5. Accordingly, still, 72 percent or 22,148 enterprises are not contributing to Apprenticeship and OJT. Therefore, there is a huge potential to expand this area and increase the training output with quality improvement.

Table 3.14 Number of Enterprises which Provide Apprenticeship and OJT

Province	Number of Enterprises which Provide Apprenticeship and OJT			Number of Enterprises which Do not Provide Apprenticeship and OJT		
	Number in Sample	percentage	Number in Population	Number in Sample	percentage	Number in Population
Central	3	12	336	23	88	2573
Eastern	2	13	224	13	87	1454
North-Central	6	33	671	12	67	1342
North-Western	11	28	1230	28	72	3132
Northern	1	10	112	9	90	1007
Sabaragamuwa	6	27	671	16	73	1790
Southern	15	48	1678	16	52	1790
Uva	1	10	112	9	90	1007
Western	31	30	3468	72	70	8054
Total	**76**	**28**	**8501**	**198**	**72**	**22148**

Source: Industry Survey of Automobile Enterprises 2019 for the VET Plan

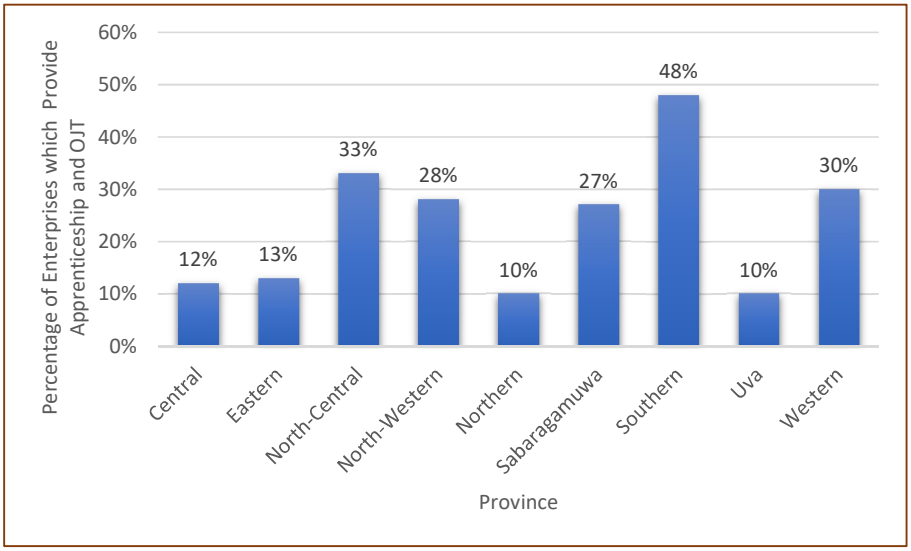


Figure 3.5: Distribution of Enterprises providing apprenticeship and OJT by Province

Source: Industry Survey of Automobile Enterprises 2019 for the VET Plan

When provincial percentages are considered, in Central, Eastern, Northern, and Uva, the number of enterprises participating in apprenticeship and OJT is lower than 15percent.

3.4.8 Number of Employees and Vacancies in Technical Occupations in 2019

In order to estimate the demand for skilled people, the survey has found a number of vacancies in sampled enterprises. This data has been projected to the population in Table 3.15.

Table 3.15. Number of Employees and Vacancies in Technical Occupations

Occupation	Total Number of Staff in 274 sample	Total number of Vacancies in 274 sample	Total Number of Staff in 30,649 Population of Enterprises	Total Number of Vacancies in 30,649 Population of Enterprises
Engineer / Assistant Engineer	29	3	3244	336
Technical officer /Technician	134	19	14989	2125
Automobile Motor Mechanic	199	28	22260	3132
Auto A/C Mechanics	37	6	4139	671
Auto Painter	11	1	1230	112

Occupation	Total Number of Staff in 274 sample	Total number of Vacancies in 274 sample	Total Number of Staff in 30,649 Population of Enterprises	Total Number of Vacancies in 30,649 Population of Enterprises
Auto tinker	8	1	895	112
Diesel Engine mechanic	13	0	1454	0
Diesel Pump room mechanic	27	1	3020	112
Electrician	85	12	9508	1342
Interior Designer/upholster	14	1	1566	112
Motor Cycle Mechanic	64	20	7159	2237
Serviceman	32	2	3579	224
Tune- up Mechanic	8	1	895	112
Tyre Mechanic	18	1	2013	112
Total	**679**	**96**	**75951**	**10739**

Source: Enterprise Survey -2019 done for VET Plan development

Accordingly, there are 75,951 technical employees in the automobile sector with 10,739 vacancies in 2019.

3.4.9 Matching the Demand for Skills with Growth of Industry

Vehicle population was taken based on the number of vehicles registered with the Registrar of Motor Vehicles-Department of Motor Traffic which is given in Table 2.1 of Chapter 2.

Table 3.16 Annual Growth Rate of Vehicle Population

Year	Number of Vehicles Registered with RMV	Growth Rate of Vehicle Registration
2008	3390993	6.02%
2009	3595068	9.99%
2010	3954311	13.29%
2011	4479732	8.87%
2012	4877027	6.70%

Year	Number of Vehicles Registered with RMV	Growth Rate of Vehicle Registration
2013	5203678	8.25%
2014	5633234	11.87%
2015	6302141	7.83%
2016	6795469	6.65%
2017	7247122	-

Source: Department of Motor Traffic

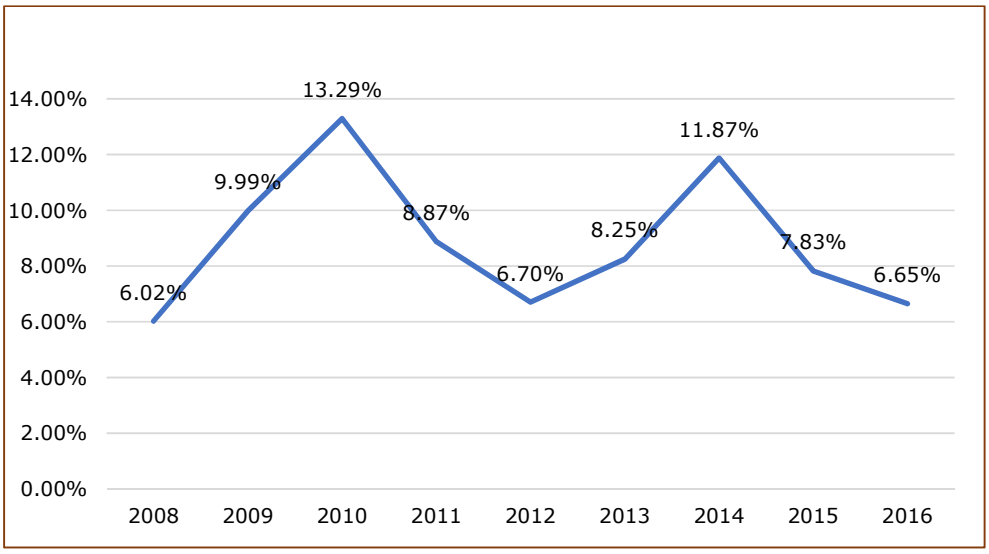


Figure 3.6: Growth Rate of Population of Motor Vehicles in Sri Lanka

Source: Department of Motor Traffic

According to the above table, the industry is continuously growing but the growth rate is declining. In 2016, vehicle registration growth rate 6.65percent, declined by 1.18percent from 2015. Last two years and this year, it could have been further declined because of increase of taxes, enforcement of a ceiling for leasing and withholding the import of vehicles for the permits issued to public officials and due to slowing down of economic activities after Easter Sunday bomb blast. However, it is hoped that the economy will recover from 2020 onwards and have a good growth rate. In order to forecast the demand for skills, a growth rate of the industry is required and based on the growth rate of vehicle population, it is assumed that there will be 4percent, 5percent and 6percent growing demand for skills in 2020, 2021 and 2022 respectively.

Table 3.17 gives the number of vacancies in the current year. These vacancies are created because of the growth of the industry, retirement, and resignation of staff to go abroad and employment in other industry sectors. However, it is not possible to evaluate the effect of each factor and data collected at the Survey are listed below for information.

Table 3.17. Retirement and Resignation in the Sample Enterprises

Number of Enterprises	Job Title	Total Number Retired in last 3 years	Total Number Resigned in last 3 years	Reasons for resignation if known
9	Technician	3	8	Demanding High Salary, Got Better Job in a different place
7	Mechanic	1	9	Went abroad, shift to other company
2	Auto Mechanic	0	4	Went abroad, shift to other company
4	Motor Cycle Mechanic	2	5	shift to other company, owned a garage
3	Motor Mechanic Technician	0	5	shift to other company, owned a garage
3	Serviceman	0	5	shift to other company
2	Electrician	0	4	shift to other company
3	Diesel Pump room mechanic	0	4	shift to other company, Went abroad
4	Tyre Mechanic	0	6	shift to other company, Went abroad
6	Engineer	1	8	Demanding High Salary, shift to other company, Went abroad
2	Auto A/C	0	3	shift to other company, Went abroad
1	Upholster/Interior Designer	0	1	shift to other company

Number of Enterprises	Job Title	Total Number Retired in last 3 years	Total Number Resigned in last 3 years	Reasons for resignation if known
1	Assistant Engineer	0	1	shift to other company
2	Diesel Engine mechanic	0	3	shift to other company
2	Tune-up Mechanic	0	3	shift to other company, Went abroad

Source: Enterprise Survey -2019 done for VET Plan development

Demand for skills means the creation of vacancies and as explained earlier, vacancies will be created because of resignation to go abroad and other sectors, retirement and death, and growth of the industry. Growth will vary annually but other factors will not have significant variation if relevant policies are not changed in the coming years. Therefore, vacancies that may create in the next three years is projected from the current vacancies based on the growth rate assumed above.

Table 3.18. Forecast of the Vacancies to be Created in Next Three Years

Occupation	Total Number of Vacancies in 30,649 Population of Enterprises	Total Number of Vacancies that may create in 2020 with 4% Growth of Vehicle Population	Total Number of Vacancies that may create in 2021 with 5% Growth of Vehicle Population	Total Number of Vacancies that may create in 2022with 6% Growth of Vehicle Population
Engineer / Assistant Engineer	336	Not calculated as this is beyond the scope of TVET		
Technical officer /Technician	2125	2210	2321	2460
Automobile Motor Mechanic	3132	3,257	3,420	3,625
Auto A/C Mechanics	671	698	733	777
Auto Painter	112	Number of vacancies has not been realistically reflected as many enterprises outsourced these activities		
Auto tinker	112			
Diesel Pump room mechanic	112	116	122	129

Occupation	Total Number of Vacancies in 30,649 Population of Enterprises	Total Number of Vacancies that may create in 2020 with 4% Growth of Vehicle Population	Total Number of Vacancies that may create in 2021 with 5% Growth of Vehicle Population	Total Number of Vacancies that may create in 2022with 6% Growth of Vehicle Population
Auto Electrician	1342	1396	1466	1554
Interior Cleaning	112	116	122	129
Motor Cycle Mechanic	2237	2327	2443	2590
Upholster	112	Not realistic as the sample does not reflect standalone enterprises		
Serviceman	224			
Tune-up Mechanic	112	This is a specialization skill for Automobile Mechanics, acquired through work experience.		
Tyre Mechanic	112	Not realistic as the sample do not reflect standalone tyre shops		
Total	**10851**	**8608**	**10627**	**11264**

Source: Derived from the Enterprise Survey 2019 done for VET Plan development

Table 3.18 shows the forecast of vacancies or demand for skilled people in different occupations in the Automobile Repairs, Maintenance, and Services sector in the next three years. The forecast was not done for some occupations due to the reasons given in the table.

CHAPTER 04: Training Needs Identified Through Key Informant Interview and Focused Grouped Discussions

4.1. Training Demand Identified through Analyses of Key Informant Interviews

4.1.1 Status of Key Informants

Key informant interviews were held with officials from following Automobile Industries

- Associated Motorways Pvt Limited
- Carmart (Pvt) Limited
- Micro Cars Limited
- Stafford Motor Co. (Pvt) Ltd
- Toyota Lanka (Private) Limited

4.1.2 Major Challenges Faced by their Individual Enterprises

All officials have stated that the skills shortage is a major issue. These enterprises experienced a severe shortage of skilled personnel in body repair and paint occupations. They pointed out that retaining experienced technicians has become very difficult due to the availability of opportunities for foreign employment with higher salaries. Even smaller companies faced difficulties to retain youth trained by them as these trained youth aspire to join reputed companies.

4.1.3 Recruitment of Staff

All enterprises find staff for trades by absorbing trainees who perform well at 'On the Job Training'. These enterprises prefer AETI and CGTTI trainees over other trainees. However, AMW has its own training centre and it gives first preference to their trainees. One officer stated that they prefer AETI training because they demonstrated higher cognition/ cognitive skills during training. For the recruitment of skilled persons for body repair and painting, most enterprises find staff through paper advertisements and personnel recommendations. One enterprise pointed out that they recruit informally skilled personnel too as they are multi-skilled. Vacancies of higher-level technical staff are usually filled through promotions, but in case, internal staff workers are not fitting for promotion, they advertise the posts. Vacancies of other technical and non-technical staff are filled through advertisements and on personal recommendations. For the advertisements, they used print media and websites.

4.1.4 Deficiencies of Skills of Trainees in OJT and New Recruits

Some officers stated that trainees lack thinking skills and learning interest and learning skills. All trainees and new recruits lack soft skills such as commitment to work, taking responsibility, punctually, teamwork, customer care, etc. Training under OJT gives opportunities to improve the skills and new recruits are given probation of 9 months to 1 year and they are expected to upgrade their skills to expected levels.

They explained that there is a limiting factor for OJT capacity as workshops are going to have productivity enhancement programmes. When too many trainees are working in the workshop, productivity measurement of their own staff will not be realistic.

Lack of English knowledge has become a barrier for further learning during the OJT and learning by current staff.

4.1.5 Training of Current Staff on Modern Vehicles

It was pointed out that their staff lacks interest in learning.

Enterprises send one or two staff members to their manufacturers in foreign countries and get them trained on modern technologies introduced by the manufacturers. On return, these trained staff train other staff in the company. Toyota and AMW have their own training and certification system. Stafford Company received training CDs from their principals and staff is given the computer time to study those training CDs. It was pointed out that the current trend is to recruit multi-skilled technicians instead of mechanics and electricians. Stafford Motors has job rotation to make its staff multi-skilled.

4.1.6 Adaptability of NVQ

All enterprises have recruited staff with NVQ and one representative was not fully aware of NVQ system and another officer didn't know about RPL assessment. In one company, only two staff members had NVQ certificates received through RPL, but both of them have left the company for higher-level jobs. All Key Informants stated the need for an NCS for multi-skilled technicians and Level 5 & 6 NCS for diagnostic technicians.

4.1.7 Recruitment of Females for Automobile Trades

All enterprises are positive on recruitment of females for technical jobs if trained females are available. Some companies have employed one or two females and they have provided facilities required by females. Others have stated that need has not yet arisen as trained females are not available for recruitment. They identified the following occupations as suitable for females. One company stated that they have already trained and employed a female for pre-delivery inspection.

Technical Service Advisor, Estimator, Warranty Officer, Warranty Manager, Spare parts store Management and Inventory Controller. Paint Mixer, Customer Relations Management, Import, and Procurement, Pre-delivery Inspection

4.1.8 Major Expansion Envisaged in Next Five Years

Most companies have plans to go for Electric vehicles and to expand their hybrid repair facilities and improve skills capacities in electric and electronic fields. The need for focusing on green technology was also highlighted. Some stated the need for expanding body repair works. One representative stated that there is a trend to go for low capacity high powered vehicles.

4.1.9 Policy Issues-Inconsistency

All enterprises explain the issues with inconsistent policies and Micro Cars Ltd explained that policies are not favourable for assembly of cars in the country. Issues with the grey market and import of second-hand vehicles and spare parts were explained.

4.1.10 Training Needs

According to the above explanations, the following training needs could be identified.

- Develop lesson material and upload to social media such as YouTube and make them available in CDs too. Employers could use those lessons to train their staff and trainees also could use their computers or smartphones to learn those material

- Develop an NCS & curricula for Automobile Technician Integrating mechanical, electrical and electronic repairs.
- Develop Occupational Outlook (Career Guidance Material) for Body Repairer and Painter and Strengthen Career Guidance for those occupations
- Develop a Vocational English Module for the automobile sector and prepare a CD. That CD should be issued to each trainee to learn it at home with supplementary instruction in the classroom. That CD should be made available to the industry too.
- NCS for Techno commercial assistant which was developed to train females should be revised to include subject areas such as an estimator, warranty officer, inventory control, procurement, and pre-delivery inspection.
- Need to revisit NCS and Curricula of all automobile occupations and strengthen their soft skills subjects. Automobile trainers should be trained to teach soft skills too.
- Training centres' facilities should be extended to train employees in the industry for multi-skills and soft skills.

4.2. Skills Demand Identified through Analyses of Focused Group Discussions (FGD)

4.2.1 Participants

Focused Group discussions were held with four groups and details are given below.

- Automobile Industries in Tissamaharama

  This FGD was held on 26th February 2019 at Kavantissa Vocational Training Institute, Tissamaharamaya with 15 members of Tissa Automobile Association)

- Automobile Industries in Kurunegala - 9 participants

  This FGD was held on 15th March 2019 at COT, Kurunegala with 9 representatives for automobile industries in Kurunegala

- Spare parts dealers in Colombo

  This FGD was held on 5th March 2019 at COT, Maradana with 7 automobile spare part dealer representatives.

- Insurance, Finance and Valuer Agencies in Colombo

This FGD was held on 5th April 2019 at COT, Maradana with 12 representatives of Automobile insurance, finance, and valuer agencies and Assistant Commissioner (Technical) of Department of Motor Traffic.

4.2.2 Findings on Automobile Repair Works

a) Major Challenges in Managing their Automobile Repair Workshops

They stated that they have been experiencing a shortage of skilled technicians for the last 15 years. Further, there is a skill gap among even trained and certified staff. This problem has been further aggravated due to fast diffusing of advanced technologies and due to the slow learning abilities of the practicing craftsmen. The trained staff also lacks soft skills, they have a poor attitude to work and cannot work under pressure.

They stated that there are severe skills shortages in tinker and painter occupations. The daily wage for tinker has risen up to LKR 5,000.00 due to this shortage. Therefore, they requested to pay special attention to the training of tinkers and painters.

Non-availability of spare parts of modern vehicles is also a major issue faced by these repair shops when modern vehicles with damages due to accidents are brought for repair.

b) Issues in Repair of Modern Vehicles

Vehicle importers get trained their staff through the Principals and in turn staff of importers' workshops give training to the staff of dealers. Then there is a problem for other workshops without dealerships to get skills on repairing modern vehicles. Many technicians learn new technologies from the internet and YouTube and there are networks of technicians of different workshops who share their new experience and new skills learned. All explained that they do not have sufficient exposure to expensive European cars such and BMW and VOLVO.

In Hambantota, there is an association of Automobile industries which cooperates on sharing new experiences and skills in addition to making cooperate endeavours on business issues. Here the Kavantissa Vocation Training Institute plays a catalytic role to provide a platform for cooperation. In Kurunegala also, passed outs of COT, Kurunegala are working in

automobile workshops in Kurunegala and some of them have their own repair workshops. They have frequent contact with the COT, Kurunegala as well.

c) Training of their Current Staff

In Hambantota, two participants stated that a few members of their staff follow part-time training at CGTTI. And they requested to arrange CGTTI and AETI to deliver part-time training regionally. Manager, Kavantissa Vocational Training centre agreed to provide facilities if CGTTI or AETI could deliver skills upgrading courses in his training centre. They proposed to give them training on estimations and costing of works and give awareness on cost-based incentive schemes practiced in large scale companies. All FGD participants promised to give the fullest cooperation if TVET Institutions facilitate skills upgrading programmes.

d) Recognition of NVQ and skills of TVET Graduate

All participants in FGDs are fully aware of NVQ framework including RPL assessment. They have many technicians who have obtained NVQ through RPL. However, a number of participants explained that most NVQ Level 4 certificate holders do not have competencies specified in the certificate. For example, though Automobile Mechanic NVQ Level 4 certificates holders are required to be competent in Engine overhaul, those with NVQ Level 4 passed out from VT centres are not competent in engine overhaul. They pointed out that this problem has arisen due to a shorter course duration.

They further explained that there are very competent informally trained craftsmen in their workshops but they are reluctant to do report writing and examinations, At the discussion, it was highlighted that TVET passed out working in their workshop lack soft skills such as commitment to completion of work (due to 8 to 5 duty mindset), safety, cleanliness, and customer care. They are trained to follow instructions but they lack think–and–do skills.

4.2.3 Findings of FGD with Automobile Spare Parts Dealers

a) Availability of Staff.

Automobile Spare Parts dealers use all types of advertisements and personal recommendation to find staff for spare parts sales and management and there are no constraints to find staff as sales staff are paid attractive salaries by many dealers. There are human resource needs for

inventory management, procurement and imports too. There is no issue in finding staff for those posts and some salespeople also get career navigation and absorbed to these posts.

b) Skills of Staff

Most spare parts dealers do not search for staff with technical skills. Youth with career aspiration for sales and marketing apply for spare parts sale. But, to serve the customers more effectively, sales staff needs some technical skills to communicate with customers. At present, most spare parts dealers have only a handful of staff with relevant technical skill and their assistance is sought by other staff whenever technical details are requested by customers.

Because spare parts sale staff does not have relevant technical skills, most of the repair technicians come personally to purchase spare parts. That is a huge waste of skilled man-hours in the country. This situation has partially relieved by sending technical details and pictures of parts by mobile phones. But all technicians are capable of compiling technical details and some spare parts sale staffs are not capable to read these messages.

However, managers of spare parts dealers do not feel these skills issues as there are no applicants with skills and no opportunity for current staff to acquire technical skills. However, two participants have followed a part-time automobile mechanic course at CGTTI and they told that it gave a boost to their automobile spare parts sale and marketing career.

c) Recognition of NVQ

Majority of spare parts dealers are not aware of NVQ. They were made aware of the new NCS and curriculum developed for Automobile Techno-Commercial Sales Assistant - NVQ Level 4 and all participants appreciated it. They requested to organize a part-time training on the competency unit of Gain Basic Technical Knowledge (Unit Code G52S005U08) and promised to send their staff to follow it.

4.2.4 Findings of FGD with Automobile Finance, Insurance, and Valuation Agencies

a) Availability of Staff

Though a few engineers and a number of diploma certificate holders have embarked on careers in these fields, the majority of staff do not have relevant automobile skills. There are

registered Valuers, finance and insurance staff also do the valuation works and various issues happened due to lack of relevant skills were highlighted at the discussion.

b) Motor Insurance

The insurance industry has employed a large number of automobile technicians and diploma holders as assessors. In the past assessors' role was to check the repair estimate given by garage and negotiate and agree on the cost estimation. But at present assessors' role has been widened. Motor assessors are required to examine the damaged vehicle, investigate how the accident happened, decide on the pattern of the accident, what was the condition of the vehicle when the accident happened, etc, investigate just like the police does, but on the behalf of the insurance company. Valuation of the car is also to be done by motor assessor and decide on the extent of repair, decide on whether the cost of repairs are covered under the insurance policy/the liability of the insurance cover, arrange to transport the damaged vehicle to a secure place/garage and negotiate and approve on the cost estimate and approve the repairs on behalf of the insurance company. Whether the damaged parts could be repaired or to be replaced. These are decisions that the motor assessor needs to take.

There is no qualification framework for motor assessors/engineers in the Insurance industry. Institute of Insurance Motor Assessors and Engineers was formed for the purpose of bringing motor insurance assessors to an acceptable professional standard based on academic qualifications and work experience. They pointed out the need for qualification for the staff already in the insurance sector as well as for new entrants. They expressed their willingness to conduct courses if appropriate qualifications are developed.

Institute of Insurance Motor Assessors and Engineers estimates that there are over 700 practicing motor assessors serving in the insurance industry in Sri Lanka. Among them, 160 motor assessors, around 25percent of the total number have already joined the newly formed Institute within the first three months of its incorporation. Some of the participants in the focus group discussion held with motor assessors had provided the details of the technical qualifications of the motor assessors working in their Insurance companies and this data is given in Table 4.1. below.

Table 4.1: Technical Qualifications of Motor Assessors in Sri Lanka

	Name of the Insurance Company	Number of Valuers/Assessors with Initial Qualification / Institute where Automobile Related Course Completed													Total Number of Assessors
		Degree in Auto Engineering- Open University	Diploma	NDT	HNDE	NDES Katunayake	CGTTI German Tec	AETI Japan Tec	DTET/TC	City & Guilds	NVQ 4	NVQ5/6	NVQ 7	Any Other/ Degree	
1	Cooperative Insurance Company Ltd.	-	-	01	-	06	35	15	24	-	-	-	-	-	96
2.	LOLC General Insurance Limited	-	01	02	01	-	40	22	19	09	09	04	-	06	120
3.	Orient Insurance Limited	01	-	-	-	-	02	02	01	04	02	-	-	-	12 +
4.	Sri Lanka Insurance Corporation Ltd.	07	-	06	-	06	72	67	-	-	-	-	-	02	160
5.	MBSL Insurance Ltd (on permanent cadre)	01	01	-	-	-	06	04	-	-	-	03	-	-	15+
		09	**02**	**09**	**01**	**12**	**155**	**110**	**44**	**13**	**11**	**07**	**-**	**08**	**379 +**

Source: Information given by Participants in the FGD

Participants highlighted many issues such as non–availability of standard rates for costing and re-registration of condemned vehicles which are beyond the purview of TVEC.

c) Finance for Automobile

Finance sector also needs automobile assessors/valuers to estimate the values of motor vehicles. Many finance companies have their own assessors and some time, they obtain the services of valuers registered with Valuers Association.

There is no shortage of valuers as the University of Sri Jayewardenepura conduct a bachelor degree in Valuation. But, a very few assessors have knowledge in the automobile to value vehicles. When there is a valuation requirement in an outstation, valuers just sign the documents prepared by a non –professional person. For this purpose, it is necessary to give valuation skills to practicing automobile technicians and examiners.

Automotive Valuers Association of Lanka reports that it has a membership of 51valuers, 40 of whom are technically qualified in automobile engineering and 11 are experienced valuers and over 300 inspectors again with a qualification in automobile sector work under these practising valuers.

d) Vehicle Assessment in the Department of Motor Traffic

During the Discussion, Assistant Commissioner (Technical) referred to the Role of Motor Vehicle Examiners, the category of staff officers in the Sri Lanka Middle-Level Technical services, employed in the Department of Motor Traffic, who test candidates for issuing driving licenses, Check automobiles etc when motor accidents happen, carry out inspection of vehicles and other technical related tasks and also work as motor assessors for government-owned vehicles. These officers are recruited to the Class 2- grade B cadre positions of MLT service by a competitive examination and a viva. The minimum qualification to appear for the examination is the successful completion of a National Diploma in Technology course or an equivalent with a minimum of two years' experience in the supervisory capacity in an automobile garage of a government or statuary body or private enterprise having at least 10 workers who are entitled and paid EPF and ETF benefits. Also, the applicants do need to hold licenses to drive motor coaches and motor bicycles. (*Source: Government gazette 2004.08.27)*

There are currently 102 motor vehicle examiners employed under DMT, a majority (26) of them are working at Colombo-Werahera and rest are posted to all 25 districts in smaller numbers.

Table 4.2: Motor Vehicle Examiners

District	Number of Examiners
Head Office	3
Colombo -Werahera	26
Ampara	3
Monaragala	2
Anuradhapura	4
Badulla	2

District	Number of Examiners
Batticaloa	2
Galle	4
Gampaha	9
Hambantota	3
Jaffna	3
Kalutara	4
Matara	3
Kandy	5
Kegalle	4
Kilinochchi	1
Kurunegala	6
Mulathiwu	1
Mannar Vavuniya	2
Matale	2
Nuwara Eliya	2
Polonnaruwa	2
Puttalam	3
Ratnapura	4
Trincomalee	2
Total	**102**

Source: Technical unit, DMT

4.2.5 Training Needs Identified at Focused Group Discussions

NCS and Curricula to be developed

a) NCS for Automobile Technicians

This is a multi-skills programmes of Mechanical, electrical and electronic technologies

b) NCS for Automobile Insurance and Valuation

It was proposed to develop NVQ Level 5/6 diploma on Automobile Insurance and Valuation. Institute of Insurance Motor Assessors and Engineers agrees to conduct courses with TVEC accreditation. Further Valuers association will work out a system to recognize people with

above qualification as valuers, maybe after a number of years' experience as sub assessors/inspectors.

It is further proposed to conduct a survey among passed out trainees with NVQ Level 4 in Automobile Mechanics and Electricians to assess their skills level. If they have weaknesses in skills, remedial measures should be taken.

c) Training Delivery

- Number of Training courses and apprenticeship for tinkering and painting should be increased

  All participants of FGD stated that there is a severe shortage of auto tinkers and painters. Therefore, it is necessary to develop some more courses and recruit more apprentices for those occupations. In order to attract more youth for these occupations, it is proposed to develop career guidance materials and conduct career guidance programmes.

d) Skills Upgrading for Practicing Craftsmen and Technicians

- CGTTI and AETI are required to conduct skills upgrading programmes regionally for the staff of the automobile industry.
- Training centres with automobile mechanics courses are required to develop and deliver a part-time training on Competency Unit Gain Basic Technical Knowledge (Unit Code G52S005U08), from the NCS for Techno- Commercial Sales Assistant for spare part sales staff of spare parts shops.
- Skill Ring

  In Kurunegala, a number of technicians are networked to share their new experiences and do collective learning. This network could be named as 'Skill Ring' and it is proposed to establish more skill Rings taking a training centre with an automobile mechanic course as the nucleus.

CHAPTER 05: DEMAND FOR AUTOMOBILE SKILLED PERSONS FOR FOREIGN EMPLOYMENT

Foreign employment has both positive and negative impacts on local industry. The negative impact is the migration of skilled persons while there is a severe labour shortage in the local industry. But there are a few significant positive impacts on the industry in addition to the remittance of foreign currencies.

- Transfer of technologies and good industry practices
- In spite of lower entry-level salaries of local industry (Lower than service sector salaries), youth choose automobile careers due to foreign employment opportunities.

Therefore, positive impacts outweigh the negative impacts and demand for foreign employment was analyzed.

5.1 Demand for and Supply of Skilled Automobile Persons for Foreign Employment

The number of Job offers received from foreign countries (Overseas demand for occupations) in Automobile Repairs and Services Industry and the relevant number of departures (local supply of skilled) to accept those job offers in years 2016 and 2017 are indicated in Table 5.1.

Table 5.1: Foreign Vacancies and Departures of Automobile Repairs and Services Industry Workers

Occupation	2016		2017	
	Vacancies	Departures	Vacancies	Departures
Clerical & Related Level				
Electrician Auto A/C	2	-	-	-
Skilled				
Technician – Auto	39	22	27	7
Technician - Diagnostic	10	-	4	2
Tinter	20	-	-	-
Tyre Puncture	12	-	5	-
Electrician – Vehicle	5	4	53	-
Technician - Generator	11	-	-	-

Occupation	2016		2017	
	Vacancies	Departures	Vacancies	Departures
Technician - Puncture	-	-	1	-
Mechanic -Transmission	1	-	-	-
Technician –Tyre	25	25	-	-
Forklift Mechanic	4	-	5	-
Apprentice Denter	50	17	-	-
Technician – Fuel	-	-	26	3
Denter II	61	9	28	2
Painter II	15	1	-	-
Painter I	10	1	-	-
Denter – Auto	18	1	42	-
Mechanic - Construction Equipment	10	-	-	-
Mechanic -Fork Lift	3	-	-	-
Tinker/Spray Painter	-	-	2	-
Auto Electrician / Mechanic	-	-	5	-
Denter/Panel Beater	100	9	31	0
Auto Electrician / Technician	0	0	12	2
Mechanic-Heavy Equipment	1	0	0	0
Electrician Auto Light Vehicle	4	0	0	0
Auto A/C Mechanic (TRANSPORT WORKSHOP)	3	1	0	0
Senior Auto Electrician	2	0	10	0
Painter – Senior	10	0	2	0
Tyreman	10	1	20	8
Salesman - Automotive Tools	0	0	2	0
Car Painter	6	1	0	0
Car Washer	42	13	170	62
Service Associate	60	0	110	0
Assistant. Electrician (Auto)	13	6	0	0
Mechanic Light Vehicle	30	9	46	3

Occupation	2016		2017	
	Vacancies	Departures	Vacancies	Departures
Technician - Auto A/C	47	3	49	1
Technician - Heavy Equipment	10	0	0	0
Mechanic (Diesel and Petrol)	19	0	96	5
Technician - Automobile Mechanical	0	0	10	0
Power Generator Electrician	7	5	0	0
Fitter - Tyre (wheel)	20	0	2	0
Tinker	16	3	10	0
Balancer - Tyre (wheel)	10	0	0	0
Painter – Auto	48	4	74	5
Painter – Metal	3	2	0	0
Paint Mixer	11	0	2	2
Panel Beater	170	8	15	0
Upholster	69	0	21	1
Polisher	58	0	21	3
Mechanic - Motor Vehicle	20	0	0	0
Electrician – Auto	189	20	143	20
Mechanic – Petrol	8	2	0	0
Mechanic - Heavy Vehicle	45	19	27	1
Mechanic – Auto	141	18	141	4
Mechanic – Pump	0	0	17	0
Mechanic - Diesel Equipment	131	35	192	18
Mechanic - Heavy Equipment	81	19	144	8
Mechanic - Marine Engine	10	0	65	0
Mechanic – Generator	5	2	110	0
Technician - Garage Equipment	0	0	4	0
Technician - Power Generation Services	0	0	4	0
Assistant Auto Mechanic	15	14	0	0

Occupation	2016		2017	
	Vacancies	Departures	Vacancies	Departures
Mechanic - Tyre Bay	0	0	5	0
Technician - Wheel Balancing & Alignment Specialist	20	0	10	3
Mechanic- Vehicle	16	1	63	2
Mechanic- Car	112	7	18	18
Mechanic-Engine	25	0	2	0
Detailer	25	0	0	0
Vehicle Maintenance and Analyst	0	0	2	0
Semi-Skilled				
Assistant Technician - Auto Electrical	0	0	20	0
Serviceman	29	11	0	0
Total	**1952**	**294**	**1910**	**180**
% of supply		**(15.1)**		**(9.4)**

Source: Sri Lanka Foreign Employment Bureau-2018 through IS-TVEC

According to the above data provided by foreign employment bureau, Demand for Automobile repairs and services industry occupations in foreign labour market in 2016 was 1,952 and in 2017, it was 1,924; but the departures were only 294 and 180 which were (15.1 percent) and (9.4 percent) respectively of the vacancies received for the same periods.

The possible reasons for such low skills supply for foreign employment market may be the number of workers required are not available in the country and /or the current competencies of available workers are not up to the required standards expected by the foreign clients. This needs to be studied by careful need analyses followed with the provision of necessary training inputs for any identified skills gap filling, in terms of quantity and quality.

Though NCS and Curricula are available for almost all automobile occupations, it may be necessary to revise them to incorporate skills demanded for foreign employment which will be useful for the local industry too. Therefore, this requires identification of additional skills needs for Automotive

occupations in Foreign Labour Market through job agencies and by capturing any special skills of migrant workers acquired during their work and incorporate such skills into local NCS and Curricula.

The VET Plan on Automobile Engineering Industry assumes that an average of about 500 job vacancies could be filled annually during the next three years and such number of persons should be included in the estimation of the total demand for training.

CHAPTER 06: SUPPLY OF SKILLS FOR AUTOMOBILE REPAIRS, MAINTENANCE SERVICE SECTOR IN THE COUNTRY

This chapter will focus on the supply of the skilled workers to the Automobile Repairs and Maintenance Services sector in the country. That includes the formal training in the sector provided through Institutional training and Apprenticeship training in the workplaces.

6.1 Institutional Training

The institutional training is provided by public and private sector run training centres distributed island wide. The Private training centres include centres operated by both private and non-governmental organizations. TVET history shows that all public training centres and some of the private sector training centres have provided skills training in the most common occupations at craft and technician levels, in Automobile Repairs and Maintenance from their very inception. The institutional training is usually followed with a period of On the Job Training in the workplaces as well.

(Under the NVQ Framework, on the job training is compulsory for the courses of NVQ Level 4 and above, and the OJT is not compulsory for NVQ Level 3. In the TVET System of Sri Lanka, NAITA has been entrusted to handle OJT of courses of NVQ Level 4 and higher levels).

The following Table 6.1 shows the annual training capacities in various occupations in this sector mainly of public sector institutes compiled based on data given in the TVET Guide and the number of courses advertised and registration database of TVEC website.

Table 6.2 shows the distribution of course mix of full-time courses by district again based on data given in the TVET Guide -2019 and additional information given by IS-TVEC.

Table 6.1: Training Capacity and Performance of Automobile Occupations of TVET Institutes Registered at TVEC

Occupation Trade	TVET Agency	*Number of Programmes Registered with TVEC	** No of Active Programmes in 2019	Duration	Annual Training Capacity	Training Performance in 2017	
						Number Enrolled	Number Completed
Auto Mechanic	DTET	29	28	24M	560	942	286
	NAITA	06	04	12-36M	205	204	37
	VTA	37	22 15	12 M 18 M	740	843	441
	NYSC	11	11	12M	275	308	191
	CGTTI	01	01	48 M	150	150	113
	Other Public	05	-	-	100	-	-
	Private	34	10	12-24 M	300	425	385
	Sub-Total	**123**	**91**	**-**	**2,330**	**2,872**	**1,453**
Auto Electrician	DTET	10	10	6M	300	300	205
	NAITA	02	02	12 -36M	90	85	05
	VTA	15	15	12M	300	235	172
	NYSC	02	02	9-12M	50	42	29
	CGTTI	01	01	36M	50	50	43
	Other Public	04	-	-	100	-	-
	Private	05	02	18M	40	159	149
	Sub-Total	**39**	**32**	**-**	**930**	**871**	**603**
Auto A/C Mechanic	DTET	08	08	6M	240	251	190
	NAITA	01	01	24 M	40	34	22
	NYSC	-	-	-	-	-	-

Occupation Trade	TVET Agency	*Number of Programmes Registered with TVEC	** No of Active Programmes in 2019	Duration	Annual Training Capacity	Training Performance in 2017	
						Number Enrolled	Number Completed
	VTA	06	06	6M	240	226	198
	CGTTI	01	01	36 M	15	-	-
	Sub-Total	**16**	**16**	-	**535**	**511**	**410**
Auto Tinker (Vehicle body repairer and painter)	DTET	01	01	6M	30	34	20
	NAITA	01	01	18 M	60	57	00
	VTA	06	06	6M 12M	90	82	73
	CGTTI	01	01	36 M	50	50	27
	Other Public	01	-	-	-	-	-
	Sub-Total	**10**	**09**	-	**230**	**223**	**120**
Auto Painter	DTET	01	01	6M	30	36	28
	NAITA	01	01	18 M	60	57	00
	VTA	09	08 01	6M 12M	135	111	81
	Sub-Total	**11**	**11**	-	**225**	**204**	**109**
Diploma in Automotive Technology NVQ L-5/6	DTET	04	04	18M	120	308	101
	CGTTI	01	01	12 M	24	-	24
	NAITA	02	02	18-48M	47	23	16
	Other Public	02	-	-	60	59	01
	Sub-Total	**09**	**07**	-	**251**	**390**	**142**
Motor Cycle Mechanic	DTET	20	19 01	6M 12 M	600	614	426

Occupation Trade	TVET Agency	*Number of Programmes Registered with TVEC	** No of Active Programmes in 2019	Duration	Annual Training Capacity	Training Performance in 2017	
						Number Enrolled	Number Completed
	NAITA	01	01	12M	16	22	17
	VTA	41	41	6 M	820	825	750
	NYSC	04	04	12M	80	58	35
	Private	09	05	6M 12 M	80	88	54
	Sub-Total	**75**	**71**	-	**1,596**	**1,607**	**1,282**
Three Wheel Mechanic Three-Wheeler/Motorcycle /OBM	DTET	08	08	6M	240	226	160
	NAITA-	01	01	24M	30	-	-
	VTA	38	38	6M	1520	664	625
	NYSC	02	02	12M	40	11	11
	Private	03	-	-	-	10	08
	Sub-Total	**52**	**49**	-	**1,830**	**911**	**804**
Diesel Mechanic (including pump and Engine)	CGTTI	01	01	36M	45	45	20
	Sub-Total	**01**	**01**	-	**45**	**45**	**20**

** Source: IS division -TVEC; ** Source: TVET Guide -2019 tvec.gov.lk, Government Gazette 02/30-11-2019*

Table 6.2: Automobile Course Mix - Number of Full-Time Courses* by District

District	Training Provider	Automobile Mechanic	Automobile A/C Mechanic	Automobile Electrician	Automobile Tinker	Automobile Painter	Motor Cycle Mechanic	Three-Wheeler Mechanic	Diesel Mechanic	Diploma in Automobile Technology	Total Number of Courses
Colombo	VTA	03	02	02		02	02	02		01	14
	CGTTI	01	01	01	01*				01		06
	DTET	03	03	02			01			01	10
	NAITA	01	01	01	01*						05
	NYSC	03	-	01			01	01			06
	Total	**11**	**07**	**07**	**02**	**04**	**04**	**03**	**01**	**02**	**41**
Gampaha	VTA	03	-	02	-	-	03	02	-	-	10
	DTET	01	-	-	-	-	-	-	-	-	01
	NAITA	-	-	-	-	-	-	-	-	01	01
	NYSC	01	-	-	-	-	-	-	-	-	01
	Private	02	-	-	-	-	-	-	-	-	02
	Total	**07**	**00**	**02**	**00**	**00**	**03**	**02**	**00**	**01**	**15**
Kalutara	VTA	01	01	01		-	02	02	-	-	07
	DTET	01	-		-	-	-	-	-	-	01

District	Training Provider	Automobile Mechanic	Automobile A/C Mechanic	Automobile Electrician	Automobile Tinker	Automobile Painter	Motor Cycle Mechanic	Three-Wheeler Mechanic	Diesel Mechanic	Diploma in Automobile Technology	Total Number of Courses
	NYSC	-	-	01	-	-	-	-	-	-	01
	Private	01	01			-	-	-	-	-	02
	Total	**03**	**02**	**02**	**00**	**00**	**02**	**02**	**00**	**00**	**11**
Galle	VTA	04	-	01	01	01	03	02	-	-	12
	DTET	01	-				01		-	-	02
	NYSC	-	-	-	-	-	01	01	-	-	02
	Total	**05**	**00**	**01**	**01**	**01**	**05**	**03**	**00**	**00**	**16**
Matara	VTA	02	-	-	01	01	03	03	-	-	10
	DTET	01	-	01	-	-	01	-	--	-	03
	UC		-	-	-	-	-	-		01	01
	Total	**03**	**00**	**01**	**01**	**01**	**04**	**03**	**00**	**01**	**14**
Hambantota	VTA	02	01	01	01	01	03	03	-	-	12
	DTET	01	-	-	-	-	01	-	-	-	02
	NYSC	01					01	-	-	-	02
	Private	01									01

District	Training Provider	Automobile Mechanic	Automobile A/C Mechanic	Automobile Electrician	Automobile Tinker	Automobile Painter	Motor Cycle Mechanic	Three-Wheeler Mechanic	Diesel Mechanic	Diploma in Automobile Technology	Total Number of Courses
	Total	**05**	**01**	**01**	**01**	**01**	**05**	**03**	**00**	**00**	**17**
Rathnapura	VTA	01	-	01	01	01	02	02			08
	DTET	02	01	01	-	-	01	01			06
	Total	**03**	**01**	**02**	**01**	**01**	**03**	**03**	**00**	**00**	**14**
Kegalle	VTA	02	-	01	01	01	02	02			09
	DTET	02	-	-	-	-	-	-	-	-	02
	NYSC	01	-	-	-	-	-	-	-	-	01
	Private	01		01							02
	Total	**06**	**00**	**02**	**01**	**01**	**02**	**02**	**00**	**00**	**14**
Kandy	VTA	01	-	-	-	-	01	01	-	-	03
	DTET	02	-	01	-	-	02	02	-	01	08
	NAITA	01	-	01	-	-		-	-	-	02
	NYSC	01	-	-	-	-	-	-	-	-	01
	Private	02	-	-	-	-	-	-	-	-	02
	Total	**07**	**00**	**02**	**00**	**00**	**03**	**03**	**00**	**01**	**16**

District	Training Provider	Automobile Mechanic	Automobile A/C Mechanic	Automobile Electrician	Automobile Tinker	Automobile Painter	Motor Cycle Mechanic	Three-Wheeler Mechanic	Diesel Mechanic	Diploma in Automobile Technology	Total Number of Courses
Matale	VTA	01	-	-	-	-	01	01	-	-	03
	DTET	02	-	-	-	-	01	-	-	-	03
	NYSC	-	-	-	-		01	-	-	-	01
	Total	**03**	**00**	**00**	**00**	**00**	**03**	**01**	**00**	**00**	**07**
Nuwara Eliya	VTA	02	-	-	-	-	01	01	-	-	04
	DTET	01	--	-	-	-	01	-	-	-	02
	Private	01	-	-	-	-	01	-	-	-	02
	Total	**04**	**00**	**00**	**00**	**00**	**03**	**01**	**00**	**00**	**08**
Kurunegala	VTA	02	01	-	01	02	02	02	-	-	10
	DTET	02	01	01	01	01	01	01	-	01	09
	NAITA	-	-	-	-	-	01	-	-		01
	UC	-	-	-	-	-	-	-	-	01	01
	Private	01	-	01	-	-	-	-	-	01	03
	Total	**05**	**02**	**02**	**02**	**03**	**04**	**03**	**00**	**03**	**24**
Puttalam	VTA	02	-	01	-	-	02	02	-	-	07

District	Training Provider	Automobile Mechanic	Automobile A/C Mechanic	Automobile Electrician	Automobile Tinker	Automobile Painter	Motor Cycle Mechanic	Three-Wheeler Mechanic	Diesel Mechanic	Diploma in Automobile Technology	Total Number of Courses
	DTET	-	-	-	-	-	01	-	-	-	01
	Total	**02**	**00**	**01**	**00**	**00**	**03**	**02**	**00**	**00**	**08**
Badulla	VTA	02	-	01	-	-	02	02	-	-	07
	DTET	02	-	02	-	-	-	02	-	-	06
	NYSC	01	-		-	-	-	-	-	-	01
	Total	**05**	**00**	**03**	**00**	**00**	**02**	**04**	**00**	**00**	**14**
Monaragala	VTA	02	-	01	-	-	01	01	-	-	05
	DTET	01	-	-	-	-	-	-	-	-	01
	NYSC	01	-	-	-	-	-	-	-	-	01
	Private	01	-	-	-	-	01	-	-	-	02
	Total	**05**	**00**	**01**	**00**	**00**	**02**	**01**	**00**	**00**	**09**
Anuradhapuraya	VTA	02	01	01			02	02			08
	DTET	01	-	-	-	-	01	-	-	-	02
	NYSC	02	-	-	-	-	-	-	-	-	02
	Private	01	-	-	-	-	-	-	-	-	01

District	Training Provider	Automobile Mechanic	Automobile A/C Mechanic	Automobile Electrician	Automobile Tinker	Automobile Painter	Motor Cycle Mechanic	Three-Wheeler Mechanic	Diesel Mechanic	Diploma in Automobile Technology	Total Number of Courses
	Total	**06**	**01**	**01**	**00**	**00**	**03**	**02**	**00**	**00**	**13**
Pollonnaruwa	VTA	01	-	01	-	-	01	01	-	-	04
	DTET	01	-	-	-	-	01	-	-	-	02
	Total	**02**	**00**	**01**	**00**	**00**	**02**	**01**	**00**	**00**	**06**
Ampara	VTA	02		01			01	01			05
	DTET	02	01	01			03	01		01	09
	Total	**04**	**01**	**02**	**00**	**00**	**04**	**02**	**00**	**01**	**14**
Traincomalee	Private	02	-	01	--	-	-	-	-	-	03
	Total	**02**	**00**	**01**	**00**	**00**	**00**	**00**	**00**	**00**	**03**
Batticaloa	VTA	01	-	-	-	-	02	02	-	-	05
	DTET	01	-	-	-	-	01	-	-	-	02
	Private	02	-	-	-	-	-	-	-	-	02
	Total	**04**	**00**	**00**	**00**	**00**	**03**	**02**	**00**	**00**	**09**
Vavuniya	VTA	-	-	-	-	-	01	-	-	-	01
	DTET	-	-	-	-	-	01	-	-	-	01

District	Training Provider	Automobile Mechanic	Automobile A/C Mechanic	Automobile Electrician	Automobile Tinker	Automobile Painter	Motor Cycle Mechanic	Three-Wheeler Mechanic	Diesel Mechanic	Diploma in Automobile Technology	Total Number of Courses
	Total	**00**	**00**	**00**	**00**	**00**	**02**	**00**	**00**	**00**	**02**
Mannar	DTET	-	01	-	-	-	01	-	-	-	02
	Private	01	-	-	-	-	01	-	-	--	02
	Total	**01**	**01**	**00**	**00**	**00**	**02**	**00**	**00**	**00**	**04**
Mullative	VTA	-	-	-	-	-	02	02	-	-	04
	Total	**00**	**00**	**00**	**00**	**00**	**02**	**02**	**00**	**00**	**04**
Kilinochchi	NAITA	02	-	01	-	-	01			02	07
	Total	**02**	**00**	**01**	**00**	**00**	**01**	**01**	**00**	**02**	**07**
Jaffna	VTA	01	-	-	-	-	02	02	-	-	05
	DTET	01	-	-	-	-	01	-	-	-	02
	Private	01	-	-	-	-	01	-	-	-	02
	Total	**03**	**00**	**00**	**00**	**00**	**04**	**02**	**00**	**00**	**09**
		97	**16**	**33**	**10**	**12**	**71**	**48**	**01**	**11**	**299**

*Source: TVET Guide -2019 (tvec.gov.lk) * Only Accredited courses of private sector training centres are included in the Table. However, except a number of courses offered by NYSC, rest of the courses offered in public sector institutes are also accredited courses.*

According to Tables 6.1 and 6.3, some courses registered with TVEC are not active and that is a loss of training capacity. The highest number of inactive courses are with the private sector and there are inactive courses in public training institutes too. TVEC and respective institutes are required to look into this issue and take actions to harness the full capacity of training courses.

Further, training completion of most courses conducted by most institutions is much less than the enrolment. When the course duration is more than one year, the number of trainees at enrolment and completion in a year are not the same. But most courses should have the same capacity in recent years too and then enrolment and completion should be comparable. According to these data, there is a 35.6percent of drop out and it should be minimized to increase the training output.

Table 6.3: Total Training Capacity in Performance of Automobile Occupations of TVET Institutes Registered at TVEC

#	Occupation	*Number of Programmes Registered with TVEC	** No of Active Programmes in 2019	Annual Training Capacity	Training Delivery in 2017	
					Enrolment	Completion
1	Automobile Mechanics /diesel mechanic(o1)	123	91	2330	2872	1453
2	Auto Electrician	39	32	930	871	603
3	Auto A/C Mechanics	16	16	535	511	410
4	Auto Tinker	10	9	230	223	120
5	Auto Painter	11	11	225		109
6	Motor Cycle Mechanics	75	71	1596	1607	1282
7	Three-Wheeler Mechanic	52	69	1830	911	804
8	Diesel Mechanics	1	1	45	45	20
	Total	**327**	**300**	**7,721**	**7,040**	**4,801**

Source:-Derived from Table 6.1

6.2. Apprenticeship Training in Automobile Maintenance and Service Sector

6.2.1 Introduction to Apprenticeship

Apprenticeship training is an industry-based mode of training conducted by NAITA on its mandate from the Part II of the Tertiary and Vocational Education Act No 20 of 1990.

Under NAITA apprenticeship, students are directly enrolled for full-time training at workplaces owned and managed by employers. They are private and public sector employers but the majority are in the private sector. Here, apprentices learn the trades by working under the guidance of skilled persons in the workplaces. NAITA has established district offices with field inspectors to do the placements, monitor the training and to organize the assessment of apprentices under the supervision of district managers of NAITA.

This enterprise-based apprenticeship training is provided at three levels, which are; Craft Apprenticeship, Situational Apprenticeship, and Village Level Apprenticeship. As apprenticeship training occurs while working in a workplace, it needs a longer duration than structured institutional training.

6.2.2 Craft Apprenticeship

Craft Apprenticeship is well-formalized apprenticeship programme with following features

- It is based on Craft trades or occupations
- Curricula are validated by National Industrial Training Advisory Committees (NITAC) and approved by the Board of Management of NAITA
- Training duration is set by the NITAC
- Trade tests are validated by NITAC
- Trade tests are conducted by a panel comprising NAITA Assessment Inspector, External Assessor and Training supervisor at the workplace.

NAITA has restructured a number of crafts apprenticeship programmes to award NVQ and all courses at all places are not yet converted to NVQ. Therefore, under Craft Category, there are both Crafts – non-NVQ and Craft- NVQ apprentices.

Table 6.4: Training of Craft Apprenticeship in Automobile Trades by NAITA

Craft-Occupation	Districts having training in Relevant Occupation		Duration	2015				2017			
				NVQ		Non-NVQ		NVQ		Non-NVQ	
	2015	2017		Enrolments	Completions	Enrolments	Completions	Enrolments	Completions	Enrolments	Completions
Automobile Air Conditioning Mechanic	14	19	12-24 M 36 M	118	31	51	75	143	51	70	28
Automobile Electrician	23	22	12M-24 M 36 M	157	134	25	24	196	64	32	21
Automobile Tinker	25	25	12 - 24 M 30 M	98	13	81	59	60	24	83	24
Auto Mechanic	24	23	18-30 M 48 M	677	60	36	59	712	320	94	55
Auto Painter	24	25	12-24M 36 M	160	18	72	58	152	41	121	39
Diesel Engine Mechanic	19	20	30M	-	-	105	74	-	-	42	45
Motor Cycle	25	25	12-24 M	502	44	526	505	465	121	663	276

Craft-Occupation	Districts having training in Relevant Occupation		Duration	2015				2017			
				NVQ		Non-NVQ		NVQ		Non-NVQ	
	2015	2017		Enrolments	Completions	Enrolments	Completions	Enrolments	Completions	Enrolments	Completions
Mechanic											
Three Wheel mechanic	23	24	12-24 M	310	58	176	198	199	96	169	107
Upholsterer	20		24M	-	-	65	33	-	-	-	-
Total				**2,022**	**358**	**1,137**	**1,085**	**1,927**	**717**	**1,274**	**595**
Percentage of NVQ and Non-NVQ in enrolments				**64**	**-**	**36**	**-**	**60**	**-**	**40**	**-**
Percentage of NVQ and Non-NVQ in Completion				**-**	**25**	**-**	**75**	**-**	**55**	**-**	**45**
Total Enrolments				**3,159**				**3,201**			
Total Completion				**1,443**				**1,312**			

Source: VT Analyses - NAITA 2015 and Course enrolment and completion data in 2017 provided by TVEC

According to above Table 6.4, Apprenticeship also makes a significant contribution to training in automobile trades. NAITA has taken action to enrol signification number of apprentices under NVQ but the comparison of 2015 and 2017 figures do not show an increase. Completion of Apprentices in 2015 was only 25percent of the total completion. That might be because NVQ under apprenticeship was still new in 2015. However, by 2017, completion has been increased up to 55percent of the total completion.

6.2.3 Craft Situational

There are many trades or jobs, specific or situational to some workplaces. Mostly these are emerging trades. As these trades have not developed with widespread applications, training in such trades cannot have national-level curricula. Still, there is a demand for training and opportunity for employment in these trades. Therefore, NAITA had started Situational Apprenticeship programme to meet this need at the commencement of national apprenticeship programmes in the 1970s. Curricula for training in situational trades are set by the employer in consultation with NAITA Inspector and final assessments are conducted by the same parties. Situational Apprentices are usually enrolled with job guarantee letter issued by the employer.

6.2.4 Village Level Apprenticeship

This programme aims to train village artisans. Presently this programme has a declining trend as the majority of youth are aiming to get national-level certificates (Table 6.5).

Table 6.5: Training of Craft -Situational Apprenticeship in Automobile Trades by NAITA

	Number of Districts			Duration	2015		2016		2017	
	2015	2016	2017		E	C	E	C	E	C
Automobile Mechanic /Repairer	11	04	03	12M	01	119	02	14	02	08
Auto Electrician	04	01	00	-	00	12	00	04	-	-
Diesel Engine Mechanic	07	02	02	12M	05	13	11	04	02	06

	Number of Districts			Duration	2015		2016		2017	
	2015	2016	2017		E	C	E	C	E	C
Diesel Injector Pump Repairer	04	02	02	12 M	04	04	04	02	03	01
Diesel Pump /Room Mechanic	02	-	-	-	00	02	-	-	-	-
Radiator Repairer	01				00	01				
Fuel Pump Operator	04	05	03	6-12M	31	17	29	25	20	32
Motor Cycle Mechanic	03		00	-	-	03	-	-	-	-
Wheel Alignment Mechanic	02	02	03	12 M	01	02	06	00	09	03
Petrol Shed Operator	-	-	01	-	-	-	-	-	04	00
Tyre Fitter	09	11	11	3-6-12M	25	12	17	20	35	13
Vehicle Serviceman	11	12	14	12 M	62	13	87	40	82	42
					129	**198**	**156**	**109**	**157**	**105**
Craft- Village Level Apprenticeship Training										
Vehicle Electrician	02	-	-	12M	00	03	-	-	-	-
Three-wheeler Stainless steel spare parts maker	01	01	-	12M	09	00	01	05	-	-
Motor Mechanic	01	01	-	18 M	00	01	00	01	-	-
Diesel Engine Repairer/Mechanic	02	02	02	12M	02	03	04	01	17	02
Motor Cycle Repairer	03	01	01	-	00	03	01	-	-	01
Three-Wheeler Mechanic	-	-	01		-	-	-	-	01	00
Tinker (Vehicle. Three-Wheeler)	-	01	01	-	-	-	02	-	03	01
Vehicle Painter	-	01	01	-	-	-	02	-	02	02
					11	**10**	**10**	**07**	**23**	**06**

Source: VT Analyses -NAITA 2015 and TVEC databases.

6.3 Part Time Courses in Automobile Related Occupations

The part-time courses (Table 6.6) are usually offered to the already employed for the purpose of upskilling in their same occupation of employment or skilling/retraining. In addition, people who want to acquire vehicle repair skills as life skills also follow these part-time courses. Further, youth who missed the opportunity follow a reputed course and those who do not have entry qualifications to follow formal courses follow these part-time courses to pursue a career in automobile trades.

A number of people who followed part-time courses at CGTTI were also met at the focused group discussions. Accordingly, many youths who follow part-time training find employment in automobile trades and for estimation of training supply, it is assumed that 50percent of those who follow part-time training will find employment.

Table 6.6: Part-Time Courses offered by Both Public and Private Sector Training Institutes as given in TVET Guide -2019

TVET Agency	Name of the Course	Duration	NVQ Level	Number of Centres	Number of Programmes	Training Capacity
DTET/C GTTI	Dip in Automotive Tech.	36 M-PT 12 M- FT	5	5	5	154
CGTTI	Auto Painter	150 hrs	-	-	2	30
CGTTI	Auto Tinker	150 hrs	-	-	3	45
NYSC /VTA	Auto A/C	6 M	-	2	2	80
CGTTI /NYSC/VTA	Automobile Electrical -E3	150 hrs	-	-	5	490
CGTTI / VTA/DIMO	Automobile Mechanic M1	150 hrs	-	1	5	1,375
CGTTI	Fuel Injection (Diesel) Technology 1-M4	150 hrs	-	-	4	96
CGTTI	Hydraulic and Pneumatic Technology 1-HP1	150 hrs	-	-	9	220
NYSC /VTA/CGTTI	Motor Bicycle Repair	6M	-	4	4	180
VTACGTTI	Three-Wheeler Mechanic	100 hrs	-	2	2	120

Source: TVET Guide -2019, tvec.gov.lk

6.4 Availability of Academic Staff in Training Institutes

Skills Sector Development Programme implemented under the Ministry in charge of Skills development which regularly monitors the vacancy ratios in the TVET agencies operating under the Ministry has reported on the vacancies existing in its TVET agencies as indicated in Table 6.7 below.

Table 6.7: Total Approved Academic Cadre Positions and Existing Vacancies in TVET Agencies

Institute	Approved Cadre	Existing Staff			Vacancies	Vacancies %
		Permanent	Contract	Visiting Industry base		
DTET	1345	628	10	122	707	52.6
NAITA	727	525	40	0	162	22.3
UNIVOTEC	56	48	3	0	5	8.9
CGTTI	170	155	0	0	15	8.8
Ocean University	81	50	26	0	5	6.2
VTA	1730	891	510	10	329	19.0
NYSC	161	74	28	0	59	36.6
Total	**4270**	**2371**	**617**	**132**	**1282**	**30.0**

Source: HR Division -SSDP as at 31.03.2019

As the above Table 6.7 shows, DTET vacancy ratio is over 52percent which is really high which in effect reduces training capacities in technical colleges more than half and this is true perhaps in different scales of other training agencies having lower vacancy ratios, as well. This is undoubtedly a serious issue faced by TVET agencies.

However, DTET informs that as at 30th of April, 2019 in instructor cadre, of an approved cadre position of 72 instructors in motor mechanism, only 33 are in service having 39 vacancies(VR-54.2percent), and in an approved cadre of 20 lecturers in automotive technology, only 3 lecturers are in service having 17 positions(VR-(85percent) vacant.

In VTA, as per information provided on 15th May 2019 by VTA Academic division, for delivery of 132 programmes planned for 2019 in the Automobile sector, only 129 programmes are being conducted as only 129 instructors are available indicating only three vacancies are currently existing in instructor positions in the Automobile sector. Here total instructor cadre is approved and the number of instructors for automobile trades is not specified in the approved cadre.

6.5. Implementation of NVQ in Automobile Industry Sector

6.5.1 Development NVQ for Automobile Occupations

TVET sector since its inception has given priority to start training in automobile occupations. Similarly, NVQ framework was initially started in 2004 with development NCS and Curricula for 45 occupations which included all key Automobile occupations such as Automobile Mechanics, Automobile Electrician, Auto A/C Mechanic, Auto Tinker, and Auto-Painter. At present, there are 18 NCS and Curricula developed for following automobile occupations.

a) Automobile Air Conditioning Mechanic - NVQ level 3-4
b) Automobile Electrician - NVQ level 2-4
c) Automobile Mechanic - NVQ level 2-4
d) Automobile Painter - NVQ level 3-4
e) Automobile Tinker - NVQ level 2-4
f) Motorcycle Mechanic - NVQ level 1-4
g) Three-Wheeler - NVQ level 2-4
h) Diesel Engine Mechanic - NVQ level 4
i) Diesel Pump Mechanic - NVQ level 2-4
j) Vehicle Body Repair Technician (Painting) - NVQ level 3
k) Vehicle Serviceman and Interior Cleaner - NVQ level 2-3
l) Wheel Alignment Technician - NVQ level 2-3
m) Petroleum Customer Service Assistant - NVQ level 3
n) Transport Supervisor - NVQ level 4
o) Vehicular Emission Testing Technician - NVQ level 3-4
p) Upholsterer - NVQ level 3-4
q) Automobile Techno Commercial Sales Assistant - NVQ level 4
r) Automobile Technology - NVQ Level 5-6

According to training information given from Table 6.1 to Table 6.3, No NVQ is implemented for following occupations yet though a very small number of trainees follow training in a few occupations under the situational apprenticeship.

a) Diesel Pump Mechanic - NVQ level 2-4
b) Vehicle Body Repair Technician (Painting) - NVQ level 3
c) Vehicle Serviceman and Interior Cleaner - NVQ level 2-3
d) Wheel Alignment Technician - NVQ level 2-3
e) Petroleum Customer Service Assistant - NVQ level 3
f) Transport Supervisor - NVQ level 4
g) Vehicular Emission Testing Technician - NVQ level 3-4
h) Upholsterer - NVQ level 3-4
i) Automobile Techno Commercial Sales Assistant - NVQ level 4
j) Construction Equipment Operator - NVQ level 3-4

Therefore, actions should be taken to implement training in these occupations through training centres, apprenticeship and/or training purchase model.

6.5.2 NVQ Assessors

In order to conduct NVQ assessment, TVEC appoints NVQ assessors, after selecting people with relevant automobile qualification and experience and training in assessment methodology by the UNIVOTEC. Table 6.6 below shows the distribution of NVQ assessors in automobile occupations in the country compiled with data provided by TVEC. A total number of 288 assessors are active in this sector and they do assessments in 503 trades.

Table 6.8 below shows the distribution of NVQ assessors in automobile occupations

District	Auto A/C Mechanic	Auto Electrician	Auto Mechanic	Auto Painter	Auto Technology	Auto Tinker	Diesel Engine Mechanic	Diesel Pump Mechanic	Motor Cycle Mechanic	Petrol customer service assistant	Three-Wheeler Mechanic	Total number of assessors	Number in persons
Colombo	06	18	46	07	03	11	10	-	14	02	03	120	70
Gampaha	02	12	35	05	04	05	08	01	18	01	02	93	48
Kalutara	06	04	14	02	-	01	03	03	05	-	-	38	27
Galle	02	03	11	-	02	01	01		05	-	05	30	12
Matara	01	01	09	-	01	-	-	02	06	-	02	22	13
Hambantota	-	-	04	02	-	02	01	-	-	-	-	09	06
Ratnapura	-	01	06	-	-	02	01	-	02	-	01	13	06
Kegalle	01	01	06	01	01	01	01	-	03	-	-	15	09
Kandy	-	05	16	-	01	01	02	-	03	-	01	29	22
Matale	-	-	03	-	01	-	01	-	03	-	01	09	04
Nuwara Eliya	-	-	02	01	-	01	-	-	-	-	-	04	02
Kurunegala	04	08	12	02	02		05	-	07	-	04	44	23
Puttalama	01	02	03	-	02	01	01	-	03	-	01	14	06
Badulla	-	02	09	-	-	01	01	-	04	-	01	18	12
Monaragala	-	-	02	-	-	-	-	-	01	-	-	03	02
Anuradhapura	-	-	06	-	-	-	01	-	02	-	01	10	07
Pollonnaruwa	-	-	-	-		-	-	-	-	-	-	00	00
Ampara	-	02	04		01	-	-	-	03	-	02	12	06
Trincomalee	-		-	-	01	-	-	-	01	-	-	02	02
Batticaloa	-	-	03	-	-	-	-	-	05	-	-	08	07
Vavuniya	-	-	01		-	-	-	-	01	-	01	03	01
Mannar	-	-	-	-	-	-	-	-	-	-	-	00	00
Mulative	-	-	-	-	-	-		-	-	-	-	00	00
Kilinochchi	-	-	-	-	-	-	-	-	-	-	-	00	00
Jaffna	-	-	02	-	01	-	-	-	03	-	01	07	03
	23	59	194	20	20	27	36	06	89	03	26	503	288

Source: IS-TVEC as at 31st August,2018

According to above Table 6.8, there is a good number and good distribution of NVQ assessors in automobile occupations, however, assessors are not available in Vavunia, Mannar, Mulative and

Kilinochchi districts. Though it is manageable, it is better a few more assessors are appointed to those 4 districts too.

6.5.3 NVQ Certification

Table 6.9 depicts the total number of NVQ Certificates issued in automobile occupations since the inception of NVQ Framework. A total number of NVQ Certificates issued so far in all occupations is 277,709 and Issue of 24,642 NVQ certificates in Automobile occupations is a good performance. However, the number of NVQ certificates issued in some occupations is not sufficient and no certificate has been issued yet in some occupations.

Table 6.9: No. of NVQ Certificates Issued by Automobile Occupations up to December 2017

Occupation	CBT	RPL	NVQ for Enterprise Based Training (EBT)Apprentices	Total
Automobile Mechanic	10,818	2,344	165	13,327
Motorcycle Mechanic	5,265	560	68	5,893
Three-Wheeler Mechanic	854	112	14	980
Automobile Electrician	1,261	227	24	1,512
Automobile Painter	834	274	26	1,134
Automobile Air Conditioning Mechanic	625	67	32	724
Automobile Tinker	629	152	18	799
Automobile Technology	262			262
Diesel Pump Mechanic		11		11
Total	**20,548**	**3,747**	**347**	**24,642**

Source: LMB/IS Division-TVEC

Table 6.10: Number of NVQ Certificates issues in 2017 in Automobile Occupations

NCS Name	CBT	EBT	RPL	Total
Automobile Technology NVQ Level 5	67	0	0	67
Automobile Air Conditioning Mechanic	120	17	14	151
Automobile Electrician	318	24	21	363
Automobile Mechanic	1723	130	226	2079
Automobile Painter	138	21	15	174
Automobile Tinker	118	13	19	150
Motorcycle Mechanic	897	41	103	1041
Three-Wheeler Mechanic	296	7	44	347
Agricultural Equipment Mechanic	147	0	0	147
Outboard Motor Mechanic	19	0	3	22
Construction Equipment Mechanic	3	0	0	3
Diesel Pump Mechanic	0	0	0	0
Diesel Engine Mechanic	0	0	0	0
Total	**3,846**	**253**	**445**	**4,544**

Source: Assessment Division-TVEC

In respect of the issue of NVQ certificates, automobile sector performs better than other sectors but it is much below the number of training completion. Therefore, TVEC and all TVET institutions must pay attention to give NVQ Certificates for all trainees completing automobile courses.

6.5.4 Recognition of Prior Learning (RPL)

In Sri Lanka labour force, more than 80percent have acquired the skills through work experience. They are skilled but have no qualifications or recognition. NVQ Framework facilitates the recognition of employees who acquired skills through work experience. This is called recognition of prior learning (RPL). According to Table 2.2 of Chapter 2, there are 47,653 employees working in small scale (informal) repair and maintenance workshops. Majority of these employees may not have any certificates for their skills and issue of 3,747 NVQ certificate through RPL may not be

sufficient. Therefore, TVEC, NAITA, VTA, and DTET have to pay attention to strengthen the RPL assessments in automobile occupations.

6.6. Training of Vehicle Drivers

6.6.1 Driving Licenses

At focused group discussions, the need for improving driving quality was informally discussed. If NVQ is developed and implemented for vehicle drivers, it will improve the driving quality definitely as NVQ focuses on all dimension of Competencies.

- Task Skills
- Task Management skills
- Contingency Management skills
- Environmental skills
- Job Role Skills
- Transfer skills

The Driving test usually assesses the task skills. But, annually over 350,000 new driving licenses are issued in the country with another 100,000 licenses are renewed. Therefore, the implementation of NVQ for vehicle drivers is an impossible task at this stage.

There are 550 registered Driving Schools in the country as per Table 6.11.

Table 6.11: Geographical Distribution of Number of Driving School by District

District	Number of Driving Schools
Colombo	58
Ampara	11
Monaragala	17
Anuradhapura	17
Badulla	24
Batticaloa	12
Galle	19

District	Number of Driving Schools
Gampha	65
Hambantota	19
Jaffna	7
Kalutara	29
Matara	17
Kandy	40
Kegalle	27
Kilinochchi	3
Kurunegala	67
Mulathivu	4
Mannar Vavuniya	17
Matale	16
Nuwara Eliya	12
Polonnaruwa	5
Puttalam	19
Ratnapura	33
Trincomalee	12
Total	**550**

Source: Technical Division, DMT

TVET institutions could make an effective intervention for improving driving quality by developing and implementing an NVQ for driving instructors.

6.7 Total Training Supply for New Entrants

Development of the VET Plan was started at the beginning of 2019 and then 2018 training data was not available. Therefore, these analyses and estimations of training supply are based on 2017 training data. Every year TVEC collects course details for TVET guide and training data to monitor the progress. For the following analyses, all training data are taken from TVEC.

Table 6.12: Total Training Supply in 2017

#	Occupation	Training Supply in 2017 through Institutional Training	Training Supply in 2017 through Craft Apprentices of NAITA	Training Supply in 2017 through Situational Apprentices of NAITA	Part-Time Training 50% of the capacity	Training Supply in each occupation in 2017
1	Dip in Automobile Technology	142	-	-	77	219
2	Automobile Mechanics	1453	375	09	687	2524
3	Auto Electrician	603	85	-	245	933
4	Auto A/C Mechanics	410	79	-	40	529
5	Auto Tinker	120	48	3	22	193
6	Auto Painter	109	80	2	15	206
7	Motor Cycle Mechanics	1282	397	01	90	1770
8	Three-Wheeler Mechanic	804	203	01	60	1068
9	Diesel Mechanic	20	45	07	-	72
10	Diesel Injector Pump Repairer	-	-	04	48	52
11	Wheel Alignment Mechanics	-	-	03	-	03
12	Vehicle Servicemen	-	-	42	-	42
13	Tyre Fitter	-	-	13	-	-
14	**Total Training supply in 2017**	**4,943**	**1, 311**	**85**	**1,284**	**7,611**

Source: Derived from Earlier Tables

6.8 Training Needs Identified Based on Analyses of Training Supply

a) Training supply in automobile trades of Institutional Training was 4,801 but NVQ certificates issued through CBT courses was 3,846(80percent). The number of apprentices completing craft courses under NVQ of automobile trades in NAITA in 2017 was 717 but NVQ certificate issued for them was 253 (35percent). Therefore, programmes to implement NVQ in institutional training and apprenticeship should be strengthened

b) Training and/or RPL assessment have not yet been implemented for 10 NCS and CBT Curricula developed for 09 Automobile Occupations

c) According to Table 6.2, 27 courses (9percent) in automobile trades in training centres are inactive. From the training capacity for 7,040 trainees, 4,801 (68percent) trainees have completed the training. Therefore, training management needs to be improved to increase the internal efficiency of training courses.

d) In order to improve vehicle driving quality, it is proposed to develop and implement an NVQ for driving instructors.

CHAPTER 7: A TRACER STUDY ON NVQ CERTIFICATE HOLDERS IN AUTOMOBILE RELATED OCCUPATIONS

A tracer study was done to find out the employability of NVQ Certificate holders in Automobile trades and to obtain their suggestions on course improvements. In this study 232, NVQ Certificate holders were interviewed who had received NVQ certificates during the two years 2016-2017.

7.1 Sample Selection

There was a total of 11,367 NVQ certificates in occupations in Automobile sector issued in the country from 1st of January, 2016 to 31st of December, 2017. It was decided to have a sample size of 200 for this tracer study as it seemed manageable. To make the sampling more representative, based on the total number of NVQ certificates issued in occupations in automobile sector by district, by various training providers and by vocations (thus inclusive of both clustering and stratification of samples), proportionate numbers to be traced in each cluster were determined. The names and the addresses of the persons to be contacted for the survey were randomly picked from the TVEC database.

However, no female was found in the sample.

7.2. Sample Details

7.2.1 Sample distribution in the district by routes

Table 7.1 and Fig.7.1 below show distribution of the sample by provinces and route of certification. Accordingly, 91.3percent of NVQ certificate holders in the sample have got their certification through competency-based institutional training while a lesser 8.6percent got certification through Recognition of Prior Learning. (See Figure 7.1)

Table 7.1 Distribution of NVQ certificate holders by Route

Province	Route of NVQ awarded	
	Competency-Based Training (CBT)	Recognition of Prior Learning (RPL)
Central	20	2
Eastern	16	1
North-Central	17	1
North-Western	35	1
Northern	21	3
Sabaragamuwa	9	2
Southern	31	2
Uva	11	1
Western	52	7
Total	**212**	**20**
Percentage	**91.3**	**8.6**

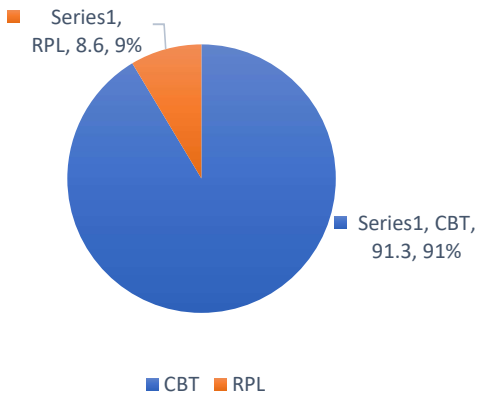


Figure 7.1: Percentage of Respondents Certified by Mode of Certification

7.2.2 Sample Distribution by Training Institute (CBT mode) and RPL mode

As Table 7.2 and Fig. 7.2 show the distribution of the number of respondents by training provider for CBT route and the number through RPL mode. 28.0percent of respondents are from CGTTI, while 24.6 and 20.3 per cents are from technical colleges under DTET and training centres of VTA respectively. 12.5percent are from NAITA and 6.0percent are from private and NGO operated training centres. 8.6percent of respondents are NVQ certificate holders through RPL mode.

Table 7.2: Number of Respondents by Training Provider (CBT) and RPL mode

Training Provider	Number of Respondents	Percentage
CGTTI	65	28.0
DTET/TC	57	24.6
NAITA	29	12.5
NGO	6	2.6
Private Training Center	8	3.4
VTA	47	20.3
RPL	20	8.6
Total	**232**	**100**

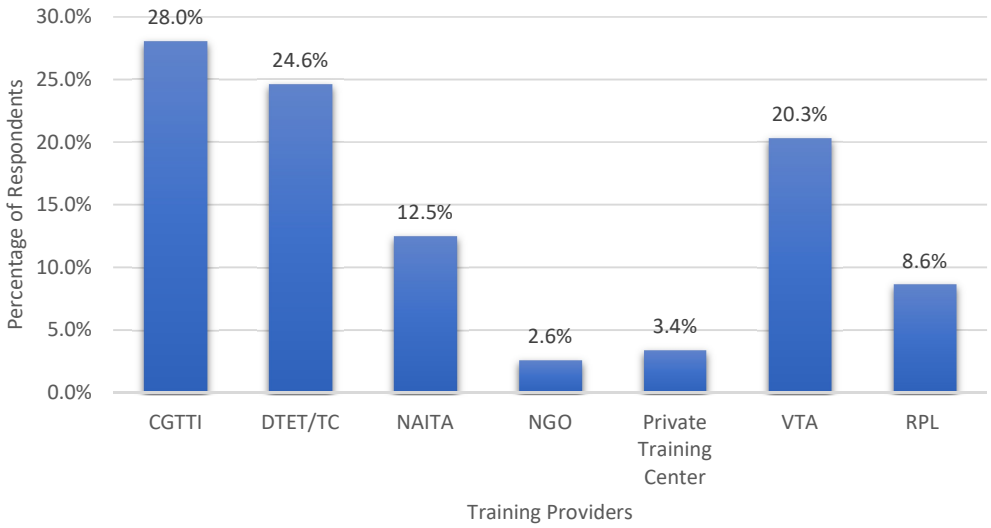
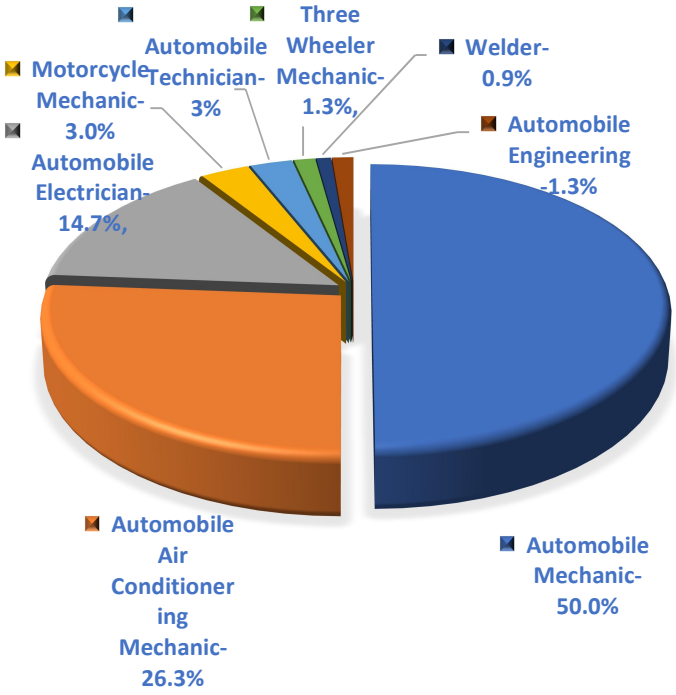


Figure 7.2 : Percentage of Respondents by Occupation

7.2.3 Distribution of the Sample by Occupation

Figure 7.3: Percentage of Respondents by Occupation



Majority of respondents are from Automobile mechanics (50 percent) and Automobile A/C Mechanics (26.3 percent).

7.3 Respondents by Education Level

It is interesting to note that among the Automobile sector-related NVQ holders, 29.3percent have passed G.C.E. (A/L) examination and 10.8percent have studied up to G.C.E. (A/L) examination. 19.8percent have passed G.C.E (O/L) and 28.0percent have studied up to G.C.E (O/L). 10.3percent of NVQ certified skilled persons have secondary education (Grade 6 to Grade 9) and further 1.7percent has only primary education. Thus, the highest proportion of students joining the training in Automobile trades are those who have passed G.C.E (A/L) examination. (Fig.7.4)

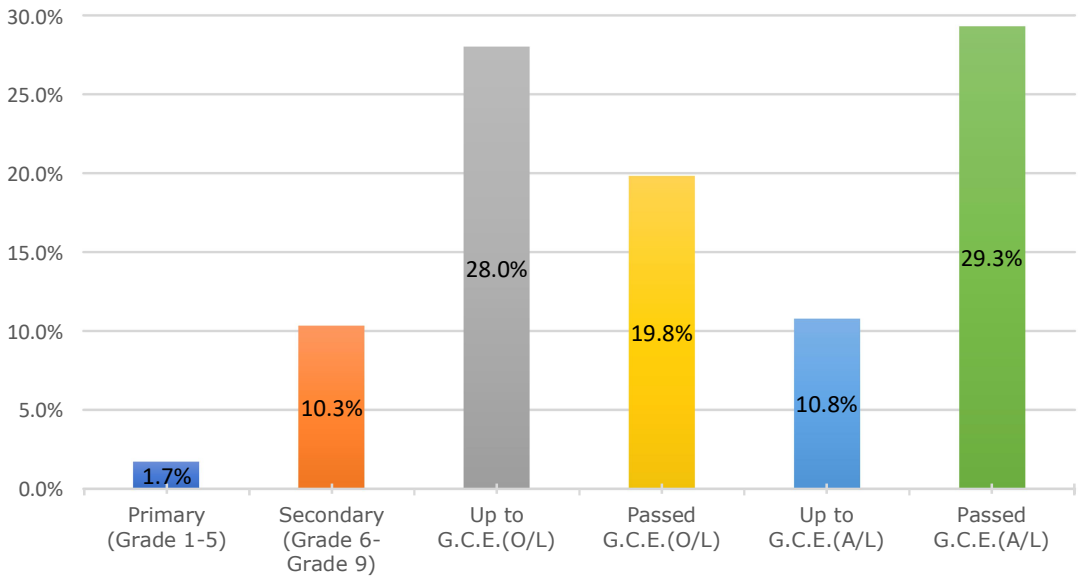


Figure 7.4: Respondents by Education Level

7.4. Employability of NVQ Certificate holders in Automobile Occupations

The tracer study has found that overall employability of NVQ Certificate holders in automobile occupation is 69.0percent. The overall employability of TVET graduates reported in the Metal & Light Engineering Sector in the tracer study carried out by CEPA in 2016 is 86percent. Metal and Light Engineering sector comprises occupations in Automobile repairs and related services, aluminium fabrication, machining, and welding subsectors, etc. This high figure may be due to higher employability of TVET graduates in Welding and such metal related engineering occupations. Employability of TVET graduates in automobile sector seems less and depends to a certain extent on acceptance/ recognition of the training institutes as employers look for competent graduates for precision jobs in the automobile sector.

7.4.1 Province Wise Employability

Province wise employability of NVQ Certificate holders in automobile trades is given in Table 7.3 and it is graphically depicted in Figure 7.5 below.

Table 7.3: Analysis of Current Employment of Surveyed NVQ holders by Province

Province	Current Employment Status			
	No		Yes	
	Number	Percentage	Number	Percentage
Central	7	32	15	68
Eastern	7	41	10	59
North-Central	6	35	11	65
North-Western	10	28	26	72
Northern	9	36	16	64
Sabaragamuwa	4	36	7	64
Southern	13	39	20	61
Uva	5	42	7	58
Western	12	20	47	80
Total	**73**	**31**	**159**	**69**

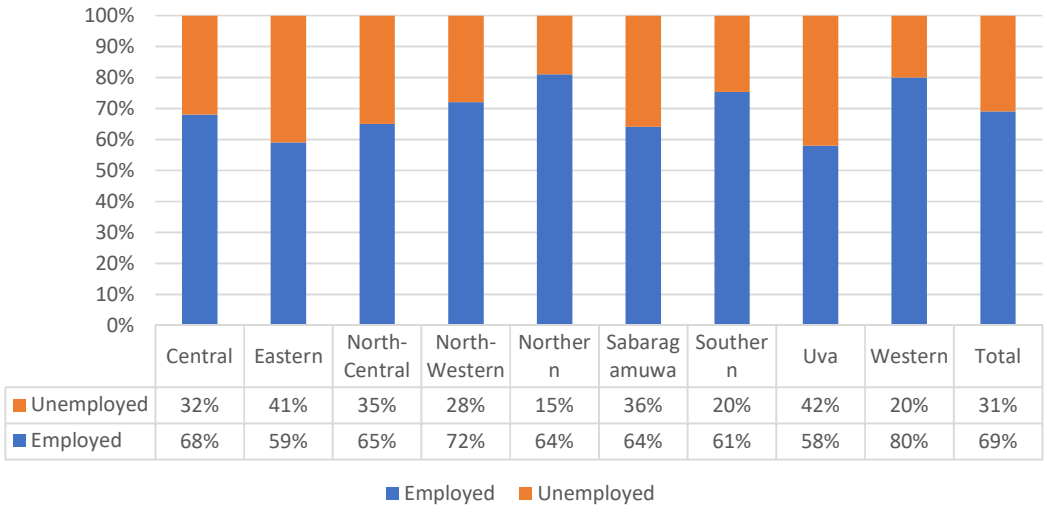


Figure 7.5: Distribution of Current Employment Status by Province

Here, the highest employment rate is found in the Western Province with 80percent. It also has a rationale as the Western Province has well-reputed training centres and major industries. The second highest employment rate is reported in North Western Province with 72percent. Lowest rates are reported in Uva province with 58percent and Eastern province with 59percent. The total employment rate of all NVQ certificate is reported as 69percent.

7.4.2 Nature of Employment

Nature of employment found by employed respondents is given in Table 7.5 and it is graphically presented in Figure 7.7 below.

Table 7.4: Nature Employment of the Surveyed Sample

Nature of employment	Number	Percentage
Casual but Monthly paid (Permanent Place)	15	9.3
Daily paid Job / (Day to day work in different places)	1	0. 8
Part-time Job	15	9.3
Permanent, monthly paid Full-time Employment	110	69.0
Self-employed	18	11.6
Total	**159**	**100.0**

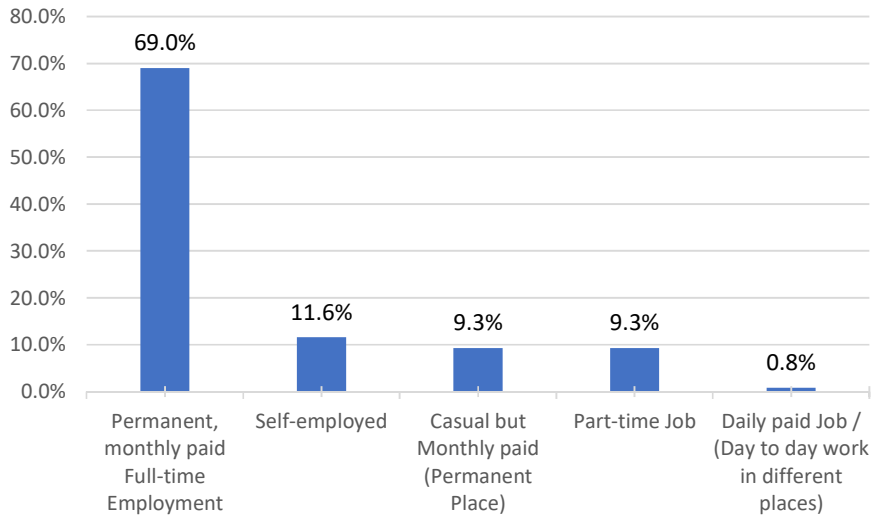


Figure 7.6: Nature of Employment of the Surveyed Sample

Of the employed NVQ holders, 69.0percent are in permanent, monthly paid full-time employment while 11.6percent are self-employed. 9.3percent are casual employees, monthly paid and work in permanent places while 9.3percent do part-time jobs. a very lower 0.8percent is reported to look for daily paid work in different places and make their living (Refer Table 7.5 & Fig. 7.7).

Though only 11.6percent of employed or 7.8percent from the total sample are in self-employment, 19percent of respondent have expressed their willingness to start their own business in their trained trades.

Table 7.5: Number of Respondents intend to have own business in the automobile sector

Do you ever think of to be on your own starting your own business in the Automotive sector	Count	Percentage
No	187	81.0
Yes	45	19.0
Total	**232**	**100**

7.4.3 Nature of Working Organizations

Nature of organizations where these NVQ holders are employed found in the tracer study is given in Table 7.7 and it is graphically presented in Figure 7.8 below.

Table 7.6: Nature of the Working Organization of Currently Employed Graduates

Nature of the currently working organization	Number	Percentage
Foreign Employment	5	3.1
Government	4	2.3
Private	125	78.3
Semi-Government	7	4.7
Self Employment	18	11.6
Total	**159**	**100.0**

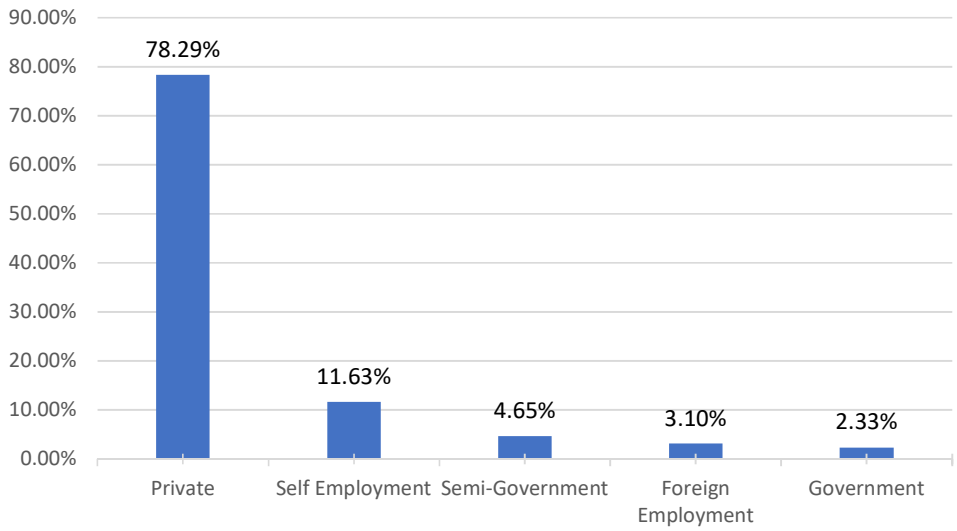


Figure 7.7: Nature of the Working Organization of Currently Employed Graduates

Accordingly, 78.3percent of employed are in the private sector, 4.7percent are in semi-government and 2.3percent are in government jobs while 3.1percent are reported to be in foreign employment.

7.4.4 Time Duration Taken to Get their First Employment

This tracer study obtained the time spent by NVQ certificate holders to find their first employment as listed in Table 7.8 which are graphically presented in figure 7.9

Table 7.7: Time Duration Taken to Get their First Employment

Duration	Number	Percentage	Cumulative Percentage
0 - 1 Months	78	48.8	48.8
2 - 3 Months	54	34.1	82.9
3 - 6 Months	11	7.0	89.9
More than Six Months	16	10.1	100
Total	**159**	**100.0**	

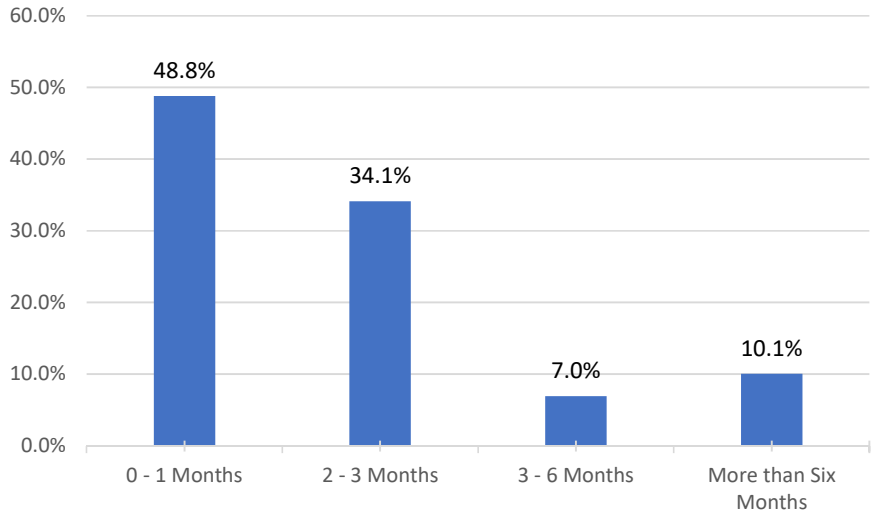


Figure 7.8: Time Duration Taken to Get their First Employment

Accordingly, 48.8percent of the employed reported getting their first job within a month, and a total of 82.9percent within three months of completion of their courses. 10.1percent had taken more than six months to get their first job.

7.5 Relevance of Skills for Jobs

When employed responded were asked about relevancy of skills to the current employment, and their responses are graphically presented in Figure 7.10

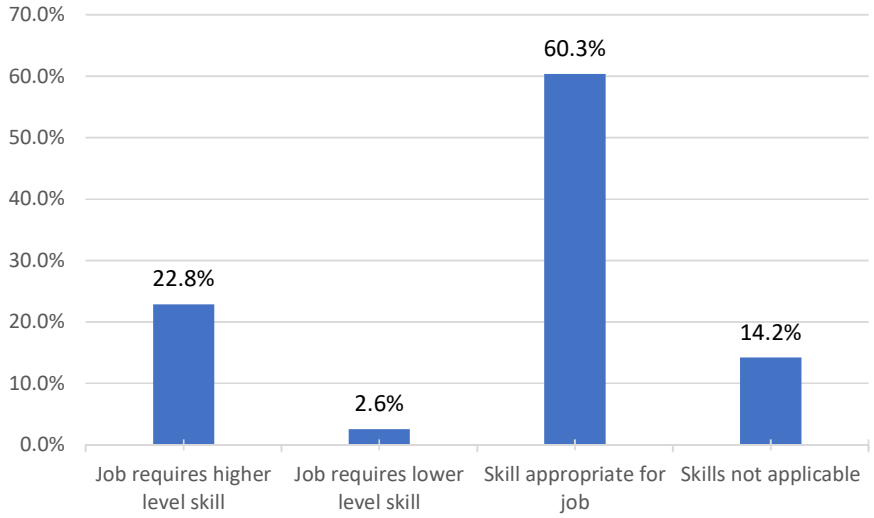


Figure 7.9: Relevance of Skills

Accordingly, 60.3percent have stated that skills acquired in the courses are appropriate for the job. However, 22.8percent have stated the need for a higher level of skills.

7.6 Comments and Suggestions from Respondents

- Extend the course duration for new knowledge and practical
- Give the opportunity to work in big companies
- Give more knowledge about engine
- Give more safety training while doing work
- Need a payment during OJT Period
- Give training about new technology
- No study Material
- Give OJT training in the district of residence
- Help to find suitable jobs for students
- Improve the soft skills
- Need more practical
- Need Guidance for Self-Employment
- Need assistance to find foreign employment
- Need training in German Tech or Japan Tech

7.7 Training Needs Identified through the Tracer Study

Based on tracer study responses together with comments and suggestions, the following training needs could be identified to improve the employability of NVQ certificate holders.

- Develop a short course on advanced skills demanded by foreign employment agencies. The target group for this course should be already employed, people. Persons without work experience will not be able to capture and retain these advanced skills
- Automobile Trainees should be considered on a priority basis for self-employment training programmes.
- All automobile courses should have facilities and trainers to provide skills on advanced-technical application. If not, trainees should be given opportunities to acquire skills in AETI, CGTTI or any other training centre with relevant facilities and trainers.
- Employment placement services need to be strengthened.
- All trainees should be given some opportunity to follow at least a short-term training in large & reputed companies. At a KII interview, it was pointed out that many trainees who do not get OJT in reputed industries do not have the opportunity to acquire relevant skills.
- Training in engine repair and overhaul should have a longer duration of training
- Learning materials should be made available and trainees should have access to such materials.

CHAPTER 08: SKILL GAPS AND TRAINING NEEDS

Skills Gap and Training needs are the core of this plan. Skill Gaps have quantitative and qualitative dimensions. Quantitative skills gaps mean the difference between the demand for skilled people by the enterprises and supply of skilled people by training institutions. Many Qualitative skills needs have been identified in key informant interviews and focused group discussions. Further, many training needs become visible in analyses of training too.

8.1 Skill Gaps with Forecast Quantities

In analyses of demand for and supply of skills, skill gaps of 5 occupations have been identified. It was not possible to identify the skills gaps of all occupation's due to the complex nature of skills applications. For example, many enterprises outsource many activities and obtain the services of freelance craftsmen.

Table 8.1: Current Skills Gaps in Selected Occupations

Occupation	Training Supply in 2019	Total Number of Vacancies in 30,649 Population of Enterprises	Gap in 2019	Gap in 2020	Gap in 2021	Gap in 2022
Technical officer /Technician	178	2125	1947	2032	2143	2282
Automobile Motor Mechanic	3218	3803	585	737	935	1184
Auto A/C Mechanics	486	671	185	212	247	291
Diesel Pump room mechanic	52	112	60	64	70	77
Auto Electrician	1300	1342	42	96	166	254
Interior Cleaning		112	112	116	122	129
Motor Cycle & Three Wheel Mechanic	2291	2237	-54	36	152	299

Gap = difference between training demand for and supply (Worked out from Table 3.18 of Chapter 3 and Table 6.10 of Chapter 6)

Strategy derived from previous analyses on how to address skills gaps of the above occupations is explained below.

a) Automobile Mechanics and Auto Electrician

According to the above table, the automobile mechanic occupation has a gap of 585 between demand and supply. The gap of Auto Electricians is not significant. However, at the key informant interviews, many senior officials of leading enterprises explained that present-day automobile technicians should be multi-skilled and they should have mechanical, electrical and electronic skills. Automobile Electro-Mechanical Technician is the appropriate name for that job. Therefore, it is proposed to develop NVQ for Automobile Electro-Mechanical Technician and convert Auto Mechanics and Auto Electricians of Training centres to Auto Electro-Mechanical Technician courses. However, Automobile Mechanic occupation has skill gap of 585 vacancies at present and it will increase with the industry growth. Therefore, until NCS and Curricula for Automobile Electro-Mechanical Technician are developed and implemented, action should be taken to increase training of automobile electrician through the apprenticeship training under NAITA.

According to Table 6.2 of Chapter 6, NAITA train 1,000 Automobile Mechanics (974 with NVQ and 26 with non- NVQ) through enterprise-based craft apprenticeship. According to Table 3.14 of Chapter 3, only 28percent of enterprises are engaged in Apprenticeship and OJT in Automobile Occupation. Therefore, still, there is a huge potential to increase the apprenticeship and train required automobile mechanics.

b) Auto A/C Mechanics

Auto A/C Mechanics also has a gap of 185 vacancies with growing demand. According to Table 6.10 of Chapter 6; TVET centres train about 486 auto A/C Mechanics per year and under apprenticeship, 177 Auto A/C Mechanics are trained. As there is more potential to expand apprenticeship, it is proposed to focus on expanding apprenticeship to train 185 more Auto A/C Mechanics.

c) Motor Cycle Mechanics & Three Wheel Mechanics

According to Table 8.1, the supply and demand of skilled Craftsmen for Motor Cycle Mechanics & Three Wheel Mechanics occupation are almost equal. Therefore, no strategy is discussed here.

d) Diesel Injector Pump Repairer

Though there is a significant skill gap in Diesel Injector Pump Repairer (Calibration) occupation, it is not possible to purchase the Injector Pump Test bench and employ skills instructors. As these are precision sensitive skills, it may not be possible to train the required number under apprenticeship even though 4 injector pumps repaired have been trained under apprenticeship. As private sector enterprises have many test benches, it is possible to get their cooperation to train Diesel Injector Pump Repairers under Training purchase model introduced by SSDP.

e) Supervisors

Survey of enterprises has identified three supervisory level occupations; Engineers, Assistant Engineers, and Technicians. Here Engineering titles were not considered for analyses as they are filled from B.Sc. (Engineering), NDES, NDT, NDT, and Diploma of OUSL qualifications. Therefore, those qualifications were also not considered for analyses.

NVQ Level 5 & 6 Diploma is meant for technician level and its supply per year is only 178 but it has a vacancy around 1947. These vacancies are filled through the promotion of automobile craftsmen and it is better if they could be trained with NVQ 5 or 6. At present, COT, Maradana and COT, Kandy and CGTTI conduct part-time NVQ 5 programmes and it is necessary to expand part-time delivery of these programmes.

These part-time programmes are delivered on weekends. NVQ Level 5 curriculum has 1500 hrs notional hours and it needs about 2½ years to complete 1500 hrs. However, if prior learning of these working supervisors could be recognized, course duration could be reduced based on the notional hour concept. Therefore, delivery of NVQ 5 Automobile Technology courses should be expanded with a shorter duration while giving credits for experience / prior learning based on notional hour concept.

8.2 Skill Gaps without forecast Quantities

As explained in Table 3.18, of Chapter 3: Forecast of the Vacancies to be Created, skills gaps of Automobile Tinker, Automobile Painter, Serviceman and Tune-Up Mechanics have not been forecast.

a) **Automobile Tinker and Painter**

TVEC have developed NCS and Curricula for Automobile Tinker and Automobile Painter. Another NCS and Curriculum have been developed for Vehicle Body Repairer too. At the focused group discussions, participants stated that severe skills shortages are existing in these two occupations. TVET Institutions have limited capacity for training in these occupations and TVET institutions have following constraints to increase training in these two occupations.

b) **Painting Need Huge Investment to Establish Painting Booth etc.**

c) **It is difficult to attract youth for these two occupations.**

Therefore, it is proposed to do training purchase to train more in these two occupations with good incentives to attract trainees.

- Automobile Serviceman

  According to Key Informant Interviews, it has become very difficult to find staff for servicemen occupation. Other occupations are careers with opportunity for learning advanced skills and foreign employment. Servicemen may not have that type of career orientation.

  NCS and Curricula are developed and some trainees are in the apprenticeship. An apprenticeship training could be increased if youth could be attracted to these occupations. For that purpose, the industry has a role to play to make these occupations more glamorous and attractive to youth.
- Interior Designer / Upholster

  This is also an occupation for apprenticeship and training purchase model
- Sundry Occupations

  Any industry has many sundry occupations and automobile Repair and service industry also have many occupations such as tyre fitter and battery charger. It is difficult to attract youth

for these occupations and they are filled from the adult informal labour force. It is proposed to develop skill upgrading courses for these occupations.

8.3 Training Needs Identified in Analyses of Training Supply

- Training supply in automobile trades of Institutional Training was 5,131 but NVQ certificates issued through CBT courses was 3,846. The number of apprentices completing craft courses of automobile trades in NAITA in 2017 was 865 but NVQ certificates issued for them was 253. Therefore, programmes to implement NVQ in institutional training and apprenticeship should be strengthened.
- Training and/or RPL assessment have not yet been implemented for 10 NCS and CBT Curricula developed for 10 Automobile Occupations.
- According to Table 6.1, 100 courses (34 percent) in automobile trades in training centres are inactive. From the training capacity for 7,032 trainees, 5,131 trainees have completed the training. Therefore, management of training needs to be improved to increase the internal efficiency of training courses.
- Though there are about 75,000 technical employees in the automobile industry, in 2017, only 445 NVQ certificates have been issued through RPL assessments in 2017
- In order to improve driving quality, it is proposed to develop and implement an NVQ for driving instructors.

8.4. Training Needs Identified at Focused Group Discussions

8.4.1 NCS and Curricula to be developed

a) NCS for Automobile Mechatronics

This is a multi-skills programmes of Mechanical, electrical and electronic technologies. It was proposed to name it as the NCS for Automobile Mechatronics Technician

b) NCS for Automobile Insurance and Valuation

It was proposed to develop NVQ Level 5/6 diploma on Automobile Insurance and Valuation. Institute of Insurance Motor Assessors and Engineers agreed to conduct courses with TVEC accreditation. Further Valuers association will work out a system to recognize people with

above qualification as valuers, maybe after a stipulated number of years of experience working as sub assessors.

It is further proposed to conduct a survey among passed out trainees with NVQ Level 4 in Automobile Mechanics and Electricians to assess their skills levels. If they have weaknesses in skills, remedial measures should be taken.

8.4.2 Training Delivery

a) **Number of Training Courses and Apprenticeship for Tinkering and Painting should be increased**

   All participants of FGD stated that there is a severe shortage of auto tinkers and painters. Therefore, it is necessary to develop some more courses and recruit more apprentices for those occupations. In order to attract more youth for theses occupations, it is proposed to develop career guidance material and conduct career guidance-programmes.

8.4.3 Skills Upgrading for Practicing Craftsmen and Technicians

a) CGTTI and AETI are required to conduct skills upgrading programmes regionally for the staff of the automobile industry.
b) Training centres with automobile mechanics courses are required to develop and deliver part-time training on Competency Unit Gain Basic Technical Knowledge (Unit Code G52S005U08), from the NCS for Techno-Commercial Sales Assistant for spare part sales staff of the spare part- shops.
c) Skill Ring

   In Kurunegala, a number of technicians are networked to share their new experiences and do collective learning. This network could be named as ‘Skill Ring’ and it is proposed to establish more skill Rings taking a training centre with an automobile mechanic course as the nucleus.

8.5 Training Needs identified through Analyses of Key Informant Interviews

According to the above explanation, the following training needs could be identified.

- Develop lesson material and upload to social media such as YouTube and make them available in CDs too. Employers could use those lessons to train their staff and trainees also could use their computers or smart phone to learn those material.
- Develop an NCS & curricula for Automobile Technician Integrating mechanical, electrical and electronic repairs (Automobile Mechatronics Technician).
- Develop Occupational Outlook (Career Guidance Material) for Body Repairer and Painter and Strengthen Career Guidance for those occupations
- Develop a Vocational English Module for the automobile sector and prepare a CD. That CD should be issued to each trainee to learn it at home with supplementary instruction at the classroom. That CD should be made available to the industry too.
- NCS for Techno-Commercial Assistant which was developed to train females should be revised to include subject areas such as an estimator, warranty officer, inventory control, procurement, and pre-delivery inspection.
- Need to revisit NCS and Curricula of all automobile occupations and strengthen their soft skills subjects. Automobile trainers should be trained to teach soft skills too.
- Training centres facilities should be extended to train employees in the industry for multi-skills and soft skills.

CHAPTER 09: TRAINING PLAN TO BRIDGE THE SKILLS GAPS AND TRAINING NEEDS

This is national-level planning to bridge the skills gaps and training needs identified in previous chapters and analyses. Therefore, it is macro-level planning prepared for the next three years. It identifies the implementing agencies based on current operational practices. Respective institutions are required to incorporate relevant activities into their annual implementation plan and realize the targets set out in this plan.

This is the plan to bridge the skills gaps. The current training programmes are not included in this plan.

9.1 Development and Revision of NCS and Curricula

Activity No.	Activity	Objective	Impact	Period of Implementation				Implementing Agencies
				2019	2020	2021	2022	
1	New NCS & Curricula for Automobile Electro-Mechanical Technician	To convert all Auto Mechanics and Electrician Courses in Automobile Electro – Mechanical Courses	The industry will have NVQ holders skilled in both Mechanical, Electrical and Electronic skills of Automobile					TVEC
2.	New NCS and Curricula for Automobile Insurance and Valuation	Expand NVQ to Automobile Insurance	Automobile Insurance and Valuation will have technically competent people					TVEC
3	Incorporate skills needs of Warranty officer, estimator, automobile spare parts procurement and pre-delivery inspection to existing NCS and Curricula or develop new NCS and Curricula	To expand employment opportunities for females trained in Techno-Commercial Spare Part Sale Assistant programmes already launched.	Females will have more employment opportunities in the Automobile sector					TVEC
4	Develop an NCS and Curricula for Vehicle Driving Trainers in	To improve skills of driving instructors	Driving quality in the country will improve					TVEC

Activity No.	Activity	Objective	Impact	Period of Implementation				Implementing Agencies
				2019	2020	2021	2022	
	cooperation with DMT							
5.	Identify additional skills needs for Automotive occupations in Foreign Labour Market through job agencies and by capturing any special skills of migrant workers and incorporate into local NCS and Curricula	To develop our Automobile training programmes with skills demanded by foreign employment destinations.	More foreign employment opportunities for Automobile Craftsmen and Technicians					TVEC, SLFEB and Training centres (DTET implemented a SSDP programme and has arranged to gather migrant workers and capture some of their special skills and also train them further and qualify them for foreign emolument in Welding trades)

9.2 Development of Training Materials for Training Delivery

Activity No	Activity	Objective	Impact	Period of Implementation				Implementing Agencies
				2019	2020	2021	2022	
6	Develop Self Learning Materials for all Competency units of advanced skills and soft skills. Upload them to social medial and make them available in CDs for distribution and sales	To promote and facilitate self-learning among trainees and staff in the industry	Skills of Employees in the Automobile industry will be enhanced					TVEC & UNIVOTEC (Some companies use Lessons in CD to train their staff)
7	Develop a Vocational English Module for Automobile Training and make it available for Training centres and industry employees	To improve skills of English language of trainees and employees in Automobile courses and in Industry	Automobile industry, as well as its workforce, will be improved					UNIVOTEC

9.3 Training Delivery

Activity No.	Activity	Current status	Impact	Period of Implementation				Implementing Agencies
				2019	2020	2021	2022	
8	Implement Automobile Electro-Mechanical /Mechatronics Technician course by converting Auto Mechanic and Auto Electrician courses	To convert all Auto Mechanics and Electrician Courses in Automobile Electro–Mechanical Courses	The industry will have NVQ holders skilled in both Mechanical, Electrical and Electronic skills of Automobile					TVEC and All Training Centres
9	Include Out Board Motor Repairs module in the Automobile Mechanic course as an optional module to be delivered in training centres in relevant regions /locations	There is a separate Outboard Motor Repairs course. But the outboard motor is brought to auto garages for repairs. Therefore, it is better for Auto Mechanics to have skills of outboard motor mechanics	Auto garages will be able to handle repairs of outboard motors.					TVEC, DTET, VTA
10	Increase Apprenticeship training of Automobile Mechanic, Auto A/C Mechanics to meet skills gaps forecasted in Table 5.1	To bridge the gap	More skilled people to the industry					NAITA

Activity No.	Activity	Current status	Impact	Period of Implementation				Implementing Agencies
				2019	2020	2021	2022	
11	Develop Occupational Outlook and Career Guidance Material for Auto Tinker and Auto Painter	To attract youth to Auto Tinker and Auto Painter courses	Skill shortage in Auto Tinker and Auto Painter trades will be reduced					TVEC
12	Training Purchase to increase training in Auto Tinker, Painter and Injector Pump Repairer	To address immediate skills gaps	Some solace to the industry by getting skilled people in these two trades					TVEC & SSDP
13	Activate Inactive Private and Public Sector Automobile Sector Training Courses	To activate inactive courses	Training output will be increased					DTET, NAITA, VTA, NAITA, and TVEC
14	Implement Training in 10 NCS developed but not implemented training by establishing courses or through training purchase model	10 NCS developed but no NVQ training yet	There will be NVQ qualified skilled people in all automobile occupations					TVEC

9.4 Skill Upgrading of Instructors

Activity No.	Activity	Objectives	Impact	Period of Implementation				Implementing Agencies
				2019	2020	2021	2022	
15	Train Automobile Instructors on advanced technologies introduced with NEW NCS and Curricula	New and Revised NCS are introduced without training the staff	Advanced Technologies will be taught to trainees					TVEC
16	Train Automobile Instructors to deliver soft skills	Enable trainers to conduct soft skills lessons	Trainees will have higher levels of soft skills.					

9.5 Skills Upgrading of Industry Employees

Activity No.	Activity	Objectives	Impact	Period of Implementation				Implementing Agencies
				2019	2020	2021	2022	
17	Increase Part-Time Delivery of NVQ 5 for Automobile Technology with reduced course duration by giving credits for prior learning	To enable industry employees to have NVQ 5 Qualification	Higher-order skills and career aspiration for industry employees					DTET, CGTTI, AETI
18	AETI and CGTTI should deliver part-time short-term training in advanced technologies in automobile repair regionally.	To make available Part- time Training in all districts.	Skilled Industry employees in faraway districts too					CGTTI, AETI
20	Conduct part-time training on Competency unit “Gain Basic Technical Knowledge (Unit Code G52S005U08), from the NCS for Techno-Commercial Sales Assistant for spare part sales staff of the spare part shop.	To give technical training to spare parts sale assistants	Car owners and garages will have the right spare parts					AETI, CGTTI, COT, Maradana, NVTI, Narahenpita
21	Skills Ring of Industry employees will be established by	To promote collective learning through sharing	The industry will have a highly skilled workforce					DTET and VTA (In Kurunegala

Activity No.	Activity	Objectives	Impact	Period of Implementation				Implementing Agencies
				2019	2020	2021	2022	
	each NVTI and COT with automobile mechanic and Technology courses to facilitate collective learning. Promote membership in professional bodies for the employees	experience	and cooperative culture					there is an informal ring/ network.)
22	Identify the skills needs of foreign employment in different destination countries and conduct short term skills upgrading courses for foreign employment	To promote foreign employment of Automobile technician	Inward Technology transfer and automobile technician job will be more attractive with high inward remittance					All training institutions

9.6 NVQ and RPL Assessment

Activity No.	Activity	Objectives	Impact	Period of Implementation				Implementing Agencies
				2019	2020	2021	2022	
23	Increase award of NVQ from all automobile courses.	To increase the issue of NVQ certificates	More NVQ holders Both youth and Industry will be satisfied					All Accredited Courses and TVEC
24	Increase RPL assessment of employees in the automobile industry	Certify more employees in the industry with NVQ	Industry employees will have skills, recognition and further learning opportunities					NAITA, VTA, and DTET

9.7 Further Studies

Activity No.	Activity	Objective	Impact	Period of Implementation				Implementing Agencies
				2019	2020	2021	2022	
25	Study to find out reasons for drop-out and take remedial measures	To take actions to reduce drop out from the courses	Increased training completion					TVEC
26	Study to find out why NVQ certification is much lower than the training completion	To make sure all training completing the courses get NVQ certificates	The internal efficiency of courses will be increased					TVEC

CHAPTER 10: A mechanism for Coordination and Monitoring of the Implementation

10.1 Overview

This VET plan outlines the direction for Skill development to develop human resources required for Automobile Repairs, Maintenance, and Services sector. Therefore, the TVET sector should have a mechanism to implement the activities outlined in this plan.

There is a large number of training providers operating in the TVET sector in Sri Lanka. These are the leading training providers under the Ministry of Skills Development and Vocational Training, many public sector training providers under different Ministries and Provincial Councils, and Private sector and NGO operated training providers. All these training bodies should get together with TVEC to implement the proposed activities. For this purpose, it is recommended to establish a VET Plan Steering OR Committee with representatives of both leading Training Institutions and industry representatives from the relevant Industrial Sector Skills Council. This committee shall meet every three months.

10.2 Term of Reference of Steering Committee for VET Plan of Automobile Repairs, Maintenance and Services Industry

- Identify activities of the VET Plan to be included in annual implementation plans of respective institutions
- Periodically/Quarterly review the training in automobile trades and implementation of VET Plan activities included in annual plans. Accordingly, the steering committee has to pay attention to the following activities.
    - Make all automobile courses active
    - NCS and Curriculum development, their revision and implementation of their training in training centres, apprenticeship, and training purchase model
    - Train instructors on advanced technologies introduced in new NCS and Curricula
    - Development of Training material and preparation of CDs and their distribution
    - Skills Upgrading of industry employees

- Identification of skills needs for foreign employment and building them into curricula and courses
- Part-time training of NVQ 5 Automobile Technology with recognition of prior learning acquired through work experience
- Development of skills rings
- Explore why there are frequent complains about incompetence's of NVQ Certificate holders

10.3 Output of the Steering Committee

- Committee team will estimate the Annual Training demand for each trade/occupation-based on analysing the above data in different industry sectors
- Each individual TVET agency/institution shall then in agreement with the institutional heads draw up an annual training plan for each TVET agency.
- Committee will prepare a report on the annual training demands and possible individual institutional plans to TVEC/MSDV for further actions (endorsement by both TVEC and validated by relevant ISSCs)

CHAPTER 11: CONCLUSIONS

This VET Plan has many improvements compared to previous VET plan as listed in Table 11.1, given below.

Table 11.1 Improvement in Revised VET Plan

Previous VET Plan	Revised VET Plan	New Ares/ improvement added
Section 1 – Introduction	Chapter 1 – Introduction for development of VET Plan for Automobile Repairs, Maintenance and services Industry Sector	Both chapters are almost same but new VET Plan has a chapter title with focus. Previous VET Plan has worked with enterprises working with NAITA to identify the population. But the revised VET Plan has obtained information from the Department of Census & Statistics which has higher validity in the scope of research.
Literature Review	Literature Review	-
Section 2 – Economic Environment of the Industry	Chapter 2 – Economic Environment of the Industry	Chapter 2 in new VET Plan has added subjects such as vehicle emission with a distribution of emission testing stations, electric vehicles, charging satiations, driver training, Auto fuel retail market, spare parts retail market and contribution to the economy.
Section 3 – Automobile Part Assembly (A chapter of 100 words)		
Section 4 – Development of Transportation and Impact on Environment		
Demand Side Analyses	Demand Side Analyses	-
Section 5 – Human Resources Profile of the Industry	Chapter 3 – Demand for Skills in Automobile Repairs and Maintenance and Service Sector	Previous VET Plan has identified everything from an industry survey. New VET Plan has included an industry survey, Key Informant

Previous VET Plan	Revised VET Plan	New Ares/ improvement added
Section 6 - New Occupations in Automobile Field	Chapter 4 - Training Needs identified through key informant interviews and Focused Group discussions	interviews with representatives of many major industries and Focused Group discussion with two regional industry clusters and industry sub-sectors such as spare parts dealers and insurance and valuation. Therefore, the new VET Plan has unearthed many issues and emerging trends.
	Chapter 5 - Demand for Automobile skilled persons for foreign employment	
Supply Side Analyses	Supply Side Analyses	-
Section 7 – Current Training Profile	Chapter 6 - Supply of Skills for Automobile Repairs, maintenance services in the Country.	Previous VET Plan has done analyses based on training capacities and the National Trade test. NVQ was not well developed at that time. New VET Plan has analyzed training delivery numbers, NVQ certification, and instructor availability. Thus, the new VET Plan has identified more facts for planning.
	Chapter 7 - Tracer Study of NVQ Certificate Holders	-
Skills Gaps and Training Plan	Skills Gaps and Training Plan	-
Section 8 – Training Plan for the Medium-term	Chapter 8 – Skills Gaps, Training Needs and New Trends	New VET Plan has a separate chapter for skills gaps; different between demand and supply, the qualitative forecast for 3 years. It presents training identified in KIIs and FGDs and gives more new trends too.
Section 9 -	-	Recommendations included.

Previous VET Plan	Revised VET Plan	New Ares/ improvement added
Recommendations		
Section 10 – Matrix of the Training Plan	Chapter 9 - Training Plan to bridge the skill gaps and training needs	Training Matrix of Previous VET Plan has only Objective, Activity/programme and responsible agency. Training Plan of the new VET Plan has Activity, objective, impact, the period of Implementation and implementing agencies. Thus, the training plan of the new VET Plan is more elaborative
Section 11 – Mechanism for Coordination and Monitoring of Plan implementation	Chapter 10 – Mechanism for Coordination and Monitoring of Implementation	These two chapters are almost the same
Section 12 – Useful Addresses	Section 11 - Conclusion	
Section 13 – Names and Addresses of Registered Training Institutes those conducted Automobile Engineering Courses		New VET Plan has not included addresses as they are available in the TVEC website.

However, these improvements will be meaningful only if the plan presented in this report is timely implemented. This plan has focused almost all skills issues of the automobile industry and its successful implementation will facilitate meeting the skills needs of the industry as well as employment aspiration of youth.