TVET Graduate Study Bhutan

Multi-Cohort Online Tracer Survey Report of TTI and IZC Graduates (2013-2019)

Department of Technical Education
Ministry of Labour and Human Resources
Bhutan, 2020

TVET GRADUATE (TTI AND IZC) STUDY

BHUTAN

Multi-Cohort Tracer Survey Report — 2013-2018

Department of Technical Education (DTE)

Ministry of Labour and Human Resources

Thimphu

2020

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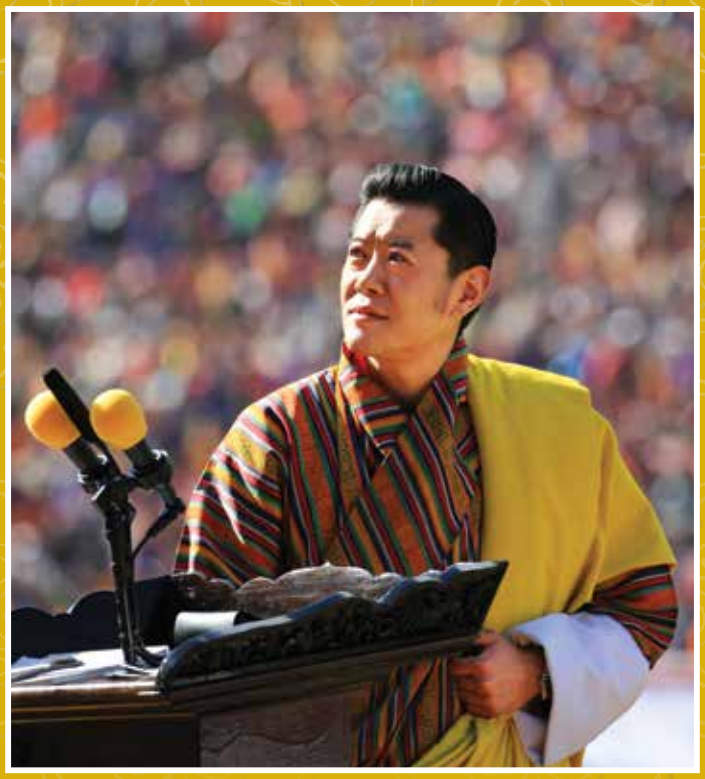
Most humbly dedicated to
40th Birth Anniversary of His Majesty Druk Gyalpo
Jigme Khesar Namgyel Wangchuck



"The government has provided education to our youth. But for the nation to prosper for all time, a sound education must be succeeded by access to the right jobs and responsibilities, so that our youth may bloom as individuals and at the same time serve their Nation well."

- His Majesty The King's Address at the 2012 National Day Celebration

"The greatest and the most valuable wealth we have in Bhutan is our people. We can never go wrong if we invest in human resources - no matter how much it cost, that investment will give our Nation rich dividends and what we lack in number, we must make up in talent."

- His Majesty The King's Address at the 10th Convocation of the Royal University of Bhutan on 25th February 2015.

To Transform TVET, the society must change its mindset towards TVET

- Tracer Team

Launching of TVET Statistics and Multi-Cohort Tracer Study Report on 27 July, 2020 in Thimphu by HE the Minister of the Ministry of Labour and Human Resources

The reports can be accessed from www.molhr.gov.bt

Tracer Team

Lham Dorji, Chief Program Officer, Technical Institute Support Division (TISD), DTE led the Tracer Team. Besides his leading role in conducting the online survey, he carried out the data analysis, writing and report designing. Dorji joined TISD, DTE in March 2018. He worked as Chief Research Officer at National Statistics Bureau (NSB) and as a multi-disciplinary Researcher at the Centre for Bhutan Studies (CBS).

Yeshey Wangchuk, Program Officer, TISD, DTE contributed to the questionnaire design, survey administration, data validation and other survey logistics. He joined TISD in 2019. He worked as a labour officer in MoLHR's Regional Office, Phuentsholing.

Choki Wangmo, Assistant Engineer, TISD contributed to developing the survey instrument, survey administration, data validation and other survey logistics.

Jigmi Dorji, Deputy Chief Program Officer, TISD contributed to re-contacting the respondents for completing their partial surveys, data validation and supported other survey logistics. He managed the TISD's regular activities when three other officials were engaged in compiling TVET Statistics and carrying out the Tracer Study. He joined TISD in 2018 after serving as principal in the Zorig Institutes.

Sonam Wangmo, Intern, supported the team to contact survey respondents and do the survey listing.

Deo Kumar Ghalley, Intern, supported the team to contact survey respondents and do the survey listing.

Karma Dorji (Boss), Program Analyst, supported the team to manage 49-data package given as the survey incentive.

Acknowledgement

We relied on the methodological guide of ETF, cedefop & ILO (2016) titled 'Carrying out tracer studies' to develop the conceptual and methodological frameworks for the present study. Further, we referred the tracer study of 2016 conducted by DoEHR, MoLHR and other similar studies of Nepal, Philippines and India. We acknowledge the use of all these reports as reference materials.

Helvetas Office, Bhutan financed the survey incentive given to the respondents. The incentive was given in the form of the data package to compensate for the usage of the internet to complete the online survey on SurveyMonkey App. ADB, PMU, Bhutan supported the fee for a one-year subscription of SurveyMonkey Advantage and partly financed the development of the survey instruments. We thank both these organisations for financial support.

The team is indebted to Norbu Wangchuk, DTE director for constant guidance and support.

We wish to thank all graduates (2003-2018) of TTIs, IZCs, Kharbandi Technical Institute, Construction Training Centre, Serzhong Vocational Training Institute, RITH, RDTC, UWICER and other private training institutes. We thank all training providers who had supported us in providing the list of graduates and helping us mobilise the survey participants.

Though the online survey covered graduates of 2003-2018, the present report focussed on the responses of TTI and IZC graduates of 2013-18. The responses of other cohorts will be used for various analytical purposes even if separate reports are not published. We hope this report will provide the data and information crucial for various reform initiatives in the public TVET system.

Tracer Study Team

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Royal Government of Bhutan

Ministry of Labour and Human Resources

MINISTER

Minister's Foreword

DTE's in-house team has undertaken the online multi-cohort TVET graduates study covering TTI and IZC graduates of 2013-2018. The study mainly aimed to understand the link between TVET quality, relevance, training delivery and labour market outcomes.

The results in this report pertain to the survey data collected from graduates of TTIs and IZCs of 2013 to 2018. I was told that the online TVET tracer survey has resulted in four different datasets having reference to TTI and IZC graduates of 2003-2012 and 2013-2018, TVET graduates of other public training providers, and graduates of selected private training providers. I am sure the same team will analyse the other datasets for internal use, even though the reports are not published in the present format.

The study's findings are expected to inform various TVET reforms and plan initiatives, reinforce the monitoring and evaluation of the TVET system, facilitate demand-supply mapping of TVET programmes and generate the data for research in TVET. This report may serve as the benchmark information for measuring TVET progress and initiating alternative action plans. I am confident that the report will be useful especially to MoLHR, TTIs and IZCs and other key national TVET players and donors.

This study is the first of its kind. It manifests MoLHR's aspiration and effort to make TVET more resilient and responsive to the human resource and labour market needs of the country through the adoption of the data-driven approach to TVET governance, strategic management and effective delivery of training.

I am happy that our program officers carried out this study. They are by profession not responsible for research, and yet, they have completed the national level TVET tracer study as per the international framework and standard. Through this effort, they have proven their commitment to managing TVET through informed decisions using strategic TVET planning and management approaches. The same team had published the first-ever TVET Statistics (2020). I convey my deepest appreciation and thanks to the DTE Director and all the team members for their hard work and extraordinary outputs.

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This also allows me to thank all our TVET graduates who had taken part in the online tracer survey. Through such participation, they had demonstrated their willingness to contribute towards the growth and development of our TVET system. I hope they will continue to play their key roles in promoting TVET image and its significance by meaningfully applying their training and competencies in their respective professions.

Ugyen Dorji.
Minister
Ministry of Labour and Human Resources
Thimphu Bhutan

June 24, 2020

P.O. Box 1036, Thiumphu; Location: Thongsel Lam, Lower Motithang; Tel: PABX (975) 2-333867/326734;
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Abbreviation

ATP: Apprenticeship Programme

DCSI: Department of Cottage and Small Industry

EPE: Entrepreneurship Education

OJT: On-the-Job-Training

TTI: Technical Training Institute

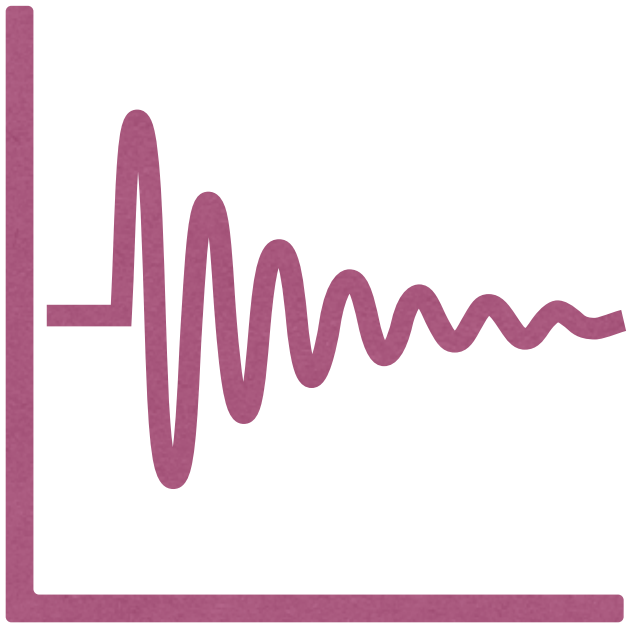
IZC: Institute of Zorig Chusum

SG: Sampled Graduates

TVET: Technical and Vocational Education and Training

Section I

General Introduction



Introduction

The multi-cohort TVET tracer study was designed to trace the representative sample of TVET graduates in Bhutan. The online survey overall covered 4512 TVET graduates (2003-2018) of both public and private TVET institutions. The survey was conducted using the SurveyMonkey App. Although the survey covered a larger sample, the present report was based on the responses/data of the representative sample of 2143 TTI and IZC graduates corresponding to the years from 2013 to 2018 (six years). These graduates were employed, self-employed and unemployed at the time of the survey. The survey datasets of other graduates need to be analysed separately.

The online survey was administered using the standardised questionnaire with eight sections, fifteen pages and 79 questions. The questionnaire covered several inter-related themes: the socio-biographic background of graduates, their academic qualifications, TVET programmes, competencies, learning experiences, skills acquisition, the transition to labour market, utilisation of competencies, employment and career paths, qualification up-gradation and finally their feedback.

The study tried to assess the relevance of various TVET programmes and the labour market outcomes for TVET graduates, including their progress in profession and career. It further covered the retrospective and subjective assessment of the quality of training programmes and other services.

The study's findings and recommendations are expected to contribute towards developing various plan initiatives for reinforcing the public TVET programmes mainly in six TTIs and two IZCs under MoLHR's management. Two IZCs are known as NIZC (National Institute of Zorig Chusum and CZC (College of Zorig Chusum).

Helvetas Bhutan office, ADB-PMU and RGoB funded the survey.

What is this tracer study all about?

The study that is based on the standardised survey of TVET graduates can be defined as *a TVET Tracer Study*. Tracer Studies are known by varying names in different countries. The other names for the tracer studies are Graduates Study, Alumni Survey, Follow-up Survey or Graduate Career Tracking System (GCTS).

The graduate tracer is generally conducted to (i) assess the outcomes of the TVET programmes, (ii) study the link between training and work, (iii) seek feedback for improving training programmes and labour market, and (iv) for research and analysis.

A tracer study is customarily conducted on a single cohort that allows tracking the graduates of a single year or one homogenous group who had finished their training in one particular time, a course or from one particular institution. The institution-based/single-cohort/programme-based tracer studies are relevant for the individual institution and cannot be generalised at the national level.

On the other hand, a mixed-cohort tracer also known as a traditional tracer study covers the graduates of multiple years, trades or institutions. It represents a centralised approach to conducting a tracer study. Such studies are rarely conducted now. The CHEERS study conducted in the 1990s jointly by eight European countries is one example of the multi-cohort tracer study.

The centralised tracer study does not provide the results for individual institutions. The questionnaire is either rarely or not at all adapted to the specific needs of the individual institutes. The data analysis of a multi-cohort tracer survey is much more complex than that of the single-cohort survey.

In the present case, though the study used the mixed-cohort, the tracer team had attempted to make the survey relevant to individual institutions by adjusting the sample size at the level of TTIs and IZCs for graduates corresponding to the timeframe of 2013-1018. This was possible owing to a few TTIs and IZCs in the country. The tracer team cautions that the data cannot be disaggregated at the occupational level.

Background

In a dynamic and complex labour market system, a tracer study is indispensable to link skills training to employment outcomes and assess the TVET's contribution to the country's workforce. The TVET sector in Bhutan not only faces the problems in training delivery but also the issues of skills mismatch (demand-supply imbalance), fluid labour market situation and low employability of graduates.

The TVET system in Bhutan is being critiqued by various sections of the society and economy for its failure to meet the growing demand for the skilled workforce. This purported failure cannot be singly attributed to TVET supply or training components. One must understand that the success of TVET depends on achieving a reasonable equilibrium between demand and supply, the matching of which is neither going to be perfect nor necessary. The best that any TVET system can do is to minimise the gap between TVET demand and supply through close coordination and effective partnerships between the TVET institutions, TVET players, employers and graduates

In this context, a comprehensive Labour Market Information (LMI) is crucial to inform policies and strategies aimed at closing the gap between TVET demand and supply. A tracer study is one most commonly accepted method to generate LMI. Its functions are enhanced when complemented by the data generated through the employers' need and satisfaction surveys. Many countries have long started to recognise the crucial role of the tracer and employer surveys for generating empirical evidence on quality and relevance and employability and performance of TVET graduates to the extent of implementing legal provisions for collecting such information.

Bhutan's poor intelligence-gathering system on the employability of TVET graduates, career pathway and quality and relevance of TVET programmes had motivated this tracer study. The multi-cohort tracer study at this scale was conducted for the first time in the country. The tracer studies of 2004 and 2016 lacked slightly in their methodological vigour while their reports were never published and shared among the key stakeholders. TTIs and IZCs conduct the institutional tracer studies but they use varying tools and methods and are not so comprehensive. The institutional tracer studies in most cases cannot produce results at the national level.

The motivation for this study was derived from the fact that the lack of reliable information on TVET graduates and their labour market situation is constraining TVET reforms and strategic development. Considering the above concerns, the TVET Institutes Support Division (TISD) under DTE initiated this onetime national level tracer study without the involvement of any external expert. This initiative represents the ministry's one of the key priority areas for enhancing and improving the quality and relevance of TVET.

Study questions

The principal decision problem of the study was the issues related to TVET delivery, quality and relevance and labour market outcomes. Based on this decision problem, the study sought to address the thirteen key questions:

1) What are the demographic and socio-economic characteristics of TTI and IZC graduates?
2) What were the actual reasons/factors that motivated them to take up TVET?
3) Did they take up the courses of their choices? If not, what were their preferred courses?
4) How did graduates retrospectively rate different training components of TTIs and IZCs?
5) What happened to graduates after leaving the education/training institutions?
6) Did graduates get meaningful/gainful employment within the acceptable time frame?
7) Are TTI and IZC graduates able to use their knowledge, skills and skill competencies through employment or other means? If not, what are the reasons?
8) Which are the economic and non-economic sectors under which graduates are working and in what occupations?
9) Are graduates happy and satisfied with their jobs?
10) Have they changed their jobs and if so, what were the reasons?
11) What are the educational aspirations of TTI and IZC graduates?
12) What are the fields of study/training in which graduates desire to upgrade their qualifications?
13) What needs to be done to improve TVET delivery, quality, relevance and employability of TTI and IZC graduates?

Aims and objectives

The primary purposes of the study were to understand the labour market situation of TVET graduates and retrospectively assess the delivery of TVET programmes in respect to their quality and relevance. These primary goals led to the following objectives:

1) Collect socio-biographic information of TTI and IZC graduates;
2) Understand the training-work transition of the TTI and IZC graduates;
3) Measure the employability of TTI and IZC graduates;
4) Provide insights into the labour market situation (for TTI and IZC graduates) to support better matching of training and jobs;
5) Understand the qualification aspirations of TTI and IZC graduates;
6) Collect the retrospective rating and feedback on the conditions and effectiveness of TTIs and IZCs and their programmes;
7) Use as an instrument for monitoring and evaluation of TVET programmes in TTIs and IZCs;
8) Provide inputs for the assessment and further development of TVET programmes;
9) Integrate the tracer survey data into the TVET database;
10) Establish a database of addresses that can facilitate broader contacts with TTI and IZC graduates for research and other purposes;
11) Make recommendations for the improvement of TVET quality, relevance, governance and strategic management of TVET institutions and their programmes and labour market outcomes.

In summary, the objectives of the study were to (i) profile TTI and IZC graduates, (ii) measure their employability (labour market information) and (iii) collect graduates' feedback to improve the study/training programmes (retrospective evaluation).

Methodology

The research design was a 'survey-based method' of enquiry with the combination of explorative, descriptive and explanatory approaches.

The online questionnaire survey was administered within a nine months period (from June 2019 to March 2020) with the representative sample of TTI and IZC graduates of 2013-2018. The survey overall covered TTI and IZC graduates of 2003-2012, 2013-2018 and graduates of Other Public and Private Training Providers (OPPTs). However, the data of other graduates were excluded from the present analysis to delimit the study to 2013-18 graduates of TTIs and IZCs.

The 'universal target' approach was used for the data collection. This approach stressed on getting the 'maximum number of respondents'. The sampling design was assumed to be randomised, as every TVET graduate had an equal chance of being selected for the survey.

The dominant form of a survey in the country remains the enumerator-administered survey. Such (physical) survey requires a huge logistic arrangement and is costly. The present tracer survey was carried out using the online premium SurveyMonkey program. Three key reasons influenced the choice of the online survey: (i) TVET graduates are scattered across the country (some of them constantly changing their locations) and physically tracking them would be time-consuming, difficult and costly; (ii) it would be easier to collect responses online as the increasing number of the Bhutanese people are spending their time on phones/internet, and; (iii) the low cost of the online survey.

The online survey had several advantages among which were the ease of administering questionnaires, wider coverage and the cost-competitiveness. There were limitations too, such as the issues of both the over-selection and under-selection and the technical issues related to slow internet in some areas. The next section discusses these issues.

The questionaries were delivered to graduates with their mobile phone numbers via SMS. The social media fora and email facilities were the other means of the survey delivery, especially to those whose mobile phone numbers were not accessible. The lists of graduates were collected from the training providers. The survey data was analysed using SPSS program. Being the explorative study, the analysis did not go beyond the description of the data.

Definitions

TVET graduate: A TVET graduate is a person who has completed TVET course/programme through the institute-based learning or the Recognition of Prior-Learning (RPL) certification issued by the Department of Occupational Standards (DOS), MoLHR.

Tracer study: A study or graduate survey is a standardised survey (in written or oral form) of graduates from education/training institutions, which takes place sometimes after graduation or at the end of the training (Cedefop, 2008).

Employability: The combination of factors which enable individuals to progress towards or get into employment, to stay in employment and to progress during a career (Cedefop, 2008).

Labour Market Information (LMI): Any information concerning the size and composition of the labour market or any part of the labour market, the way it or any part of it functions, its problems, the opportunities which may be available to it, and the employment-related intentions or aspirations of those who are part of it (Mangozho, 2003).

Recognition of Prior Learning (RPL): The skilled workers who have gained competencies through work experiences or other modes (informal) and are assessed through RPL and certified without having to go for formal training (BVQF, 2013).

Sampled Graduates (SGs): It refers to graduates of TTIs and IZCs taken as the sample for the present study.

Target audience

There should be some mutual agreement about the objectives of a tracer study among different stakeholders. The multi-cohort tracer study may not fulfil the needs of the individual institutions in its entirety like a programme-based tracer. By the same token, the information in this report may not equally match the needs of all the stakeholders. This study expects to be useful to the following stakeholders:

1. MoLHR, Bhutan Innovation and Technology Hub (BITE), TVET project offices, policymakers, key TVET donors and other national TVET stakeholders;
2. TTIs and IZCs (institutions) mainly from the retrospective evaluation of the institution and their programmes;
3. For career guidance and counselling that would usually require the information on the whereabouts of the past graduates and other LMI;
4. The information on employment-work transition and employment status of the past TVET graduates might be useful to the current and future trainees, and;
5. For TVET advocacy programmes, as the information may show who had influenced the graduates and how they had decided to opt for TVET.

Scope and limitations

The promise of a tracer study lie in the flexibility to cover the topics relevant for individual training institutes. The present study, being done at the central level, did not customise the questionaries to any specific institution or study/training programme.

Though the survey data can be used for a broad range of inferential analysis, the present analysis did not go beyond the simple descriptive statistics.

The findings of an employer need or satisfaction survey did not complement this study. Ideally, these two studies should complement each other for better results.

The qualitative data should usually complement the qualitative data to provide deeper insight into the issue or phenomenon. The last question (open-ended) has resulted in some qualitative data on individual motivations, satisfaction with the TVET programmes, job market, employment, and importantly, graduates' feedbacks. Time limitation did not allow triangulation and integration of these two types of data.

As the field of training (course) and mode of delivery (level) were not controlled, the analysis and the comparison at the course and mode level have to be done with extreme caution.

The results are expected to be more relevant to MoLHR and other national TVET stakeholders, though the data may not irrelevant for TTIs and IZCs. The effort to improve the representativeness of the sample size of eight TTIs and IZCs was made by firstly trying to meet the required sample size, and second, by doing the post-survey adjustments of the weights. While the analysis can be disaggregated at the institute level, the report did not identify individual institutions to avoid the ranking.

The tracer studies may have many objectives —some produce only the simple descriptive findings about the employment situation while others try to analyse the link between training and employment using advanced inferential analysis. The present study simply reports the reasons for unemployment as accounted by the unemployed graduates rather than through any higher inferential analysis.

Report structure

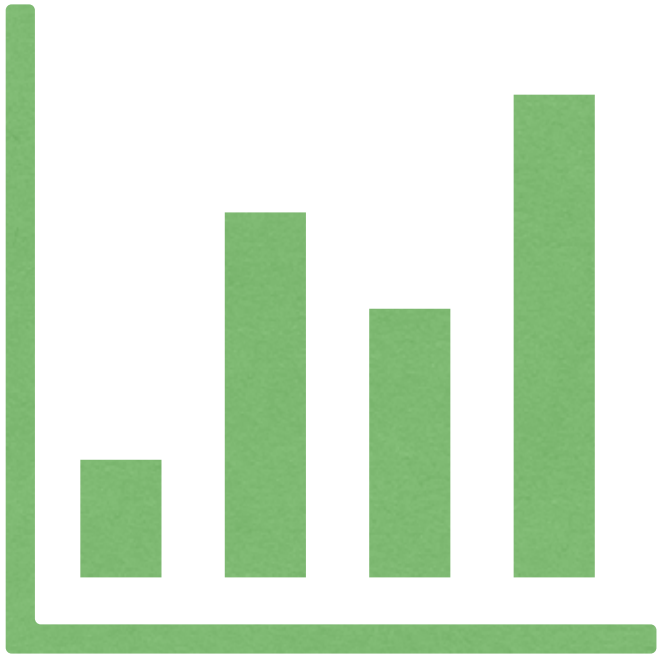
The report is divided into nine sections namely, introduction (section I), methodology (section II), socio-demographic profiles of graduates (section III), Technical and Vocational Education and Training (section IV), retrospective evaluation of institutions and programmes (section V), workplace-based training—OJT and ATP (section VI), transition to work and employment (section VII), qualification up-gradation and education aspirations (section VIII) and the key conclusions (section IX).

The key feature of the report is that the information was presented more in the form of infographics than in the form of texts.

Caption

Section II

Methodology



Introduction

This section details the study method: sampling design (sampling scheme and sample size), design and pretesting of the questionnaire, data collection, data validity and credibility, analytical framework, data analysis and research ethics. It concludes with a note for graduate participants.

Research design

The study design was the cross-sectional survey design that graduates self-administered. The survey collected the data related to their socio-economic characteristics, experiences, perceptions and opinions.

The study tried to answer the questions of what, when, where and how but not why. The variables were simply observed and measured rather than controlling and manipulating for other factors as is usually the case with the inferential research. The key difference between descriptive and inferential statistical analysis is that the former simply describes what the data shows while inferential statistics try to draw conclusions, often beyond the immediate data.

Sampling design: sampling scheme and size

The sampling design considers sampling scheme (how participants are selected) and sample size for generalisation of the results. The stratified sampling technique was used for grouping graduates into their respective institutions of training. The selection of participants was based on universal targeting.

The choice of sampling scheme (i.e., random vs. non-random) is normally based on the type of generalisation of interest (i.e., statistical vs. analytic). Ideally, the random sampling scheme is required but there is no fixed rule that a study cannot use a non-random sampling technique (Onwuegbuzie and Leech, 2005).

The questionaries or survey forms were sent to the maximum number of TVET graduates depending on the availability of mobile numbers of the listed respondents. The use of the online platform (Facebook, WeChat, emails, etc) allowed distributing the survey links to graduates to cover those graduates whose contact numbers were not accessible thus making it possible to target every graduate (universal targeting).

The choice of sample size is as important as the choice of sampling scheme as it determines the extent to which the results can be generalised statistically and/or analytically. On the whole, the sampling design was universal (sending the survey to maximum respondents possible) providing almost all the listed TVET graduates of 2003-2018 the chance to participate in the survey (without biases).

The minimum number of the respondents required for each institute was determined to ensure a required sample size for the generalisability. Some may question why the determination of the minimum sample size if the survey was targeted at the entire graduate population. This had to be done in case the universal target approach did not bring in the expected number of respondents as well as to guide the online data collection. The sample size for the survey, therefore, was determined using the target population of 4815 graduates of six TTIs and two IZCs who graduated from 2013 through 2018. The list of graduates with mobile phone numbers was used as the sampling frame. The record of TVET graduates with mobile numbers (about 60%) was available from the TVET database and respective institutes.

The sample size was determined by taking into account confidence level of 95% (i.e., how sure one can be that the results are accurate) and margin of error of 5% (i.e., the range the results would fall if the confidence level is true). If taken as a whole for eight institutes for the period 2013-2018, the combined sample size required was 356. However, the sample size determination was done separately for each institute by categorising the graduates into 2013-15 and 2016-18 cohorts. The sample size was determined using the formula developed by Twumasi (1987). The equation is:

$$n = N / 1 + N(e)^2$$

Where n=sample size, N=total population (estimated) and e= the confidence level.

The estimated and observed sample sizes are shown in table 2.1.

Table 2.1: Sample Size Determination

Institute	Estimated population			Expected sample size		Observed sample size
	2013-15	2016-2018	2013-2018	Option A	Option B	
TTI-Chumey	290	346	636	240	347	343
TTI-Khuruthang	426	432	858	266	406	472
Serzhong/JWPTI	424	537	961	275	426	284
TTI-Rangjung	342	351	693	247	365	373
TTI-Samthang	309	383	692	247	363	292
TTI-Thimphu	72	107	179	122	145	80
NIZC	127	309	436	204	267	270
CZC	158	202	360	186	245	309
	2148	2667	4815	1787	2564	2423
Option A:	Expected sample size when the sampling was based on the total graduate population of 2013-2018					
Option B:	Expected sample size when the sampling was based on the separate total populations of 2013-2015 and 2016-2018					

For the entire survey (including TTI and IZC graduates of 2003-2012 and OPPTs and private institutions), the observed number of respondents was 4950. Out of this, about 438 responses had to be deleted because these responses were found to be either duplicates or some response sets had many missing items. The validly observed number of respondents was 4512.

Two options were considered to determine the sample size. In option A, the target sample size was 1787. If this option was adopted, the required sample size was achieved except for Thimphu TTI (table 2.1 above). The total population in this case was taken as the combined population of graduates of 2013-2018 from all TTIs and IZCs.

In option B, the population of graduates was taken by institutes for two cohorts: graduates of 2013-15 and 2016-18. Using this option, the sample size for graduates of 50% of the institutions (TTIs and IZCs) had been met. This option was adopted, as it allowed breaking the entire graduate population of interest (2013-18) into two cohorts—one representing that of the recent time and the other of bit earlier period.

The survey data required the post-survey weighting and calibration to achieve the desired sample size and address other survey issues like unit non-response bias, item non-response bias, non-coverage bias, selection bias and under/over-sampling bias.

The unit nonresponse occurs when no usable information is collected for all the survey variables. The over-sampling problem arises when the responses for a particular group is higher than what is required. In the present case, the problem of over-sampling had occurred due to some respondents filling up more than one questionnaire. Double-entry happened possibly because there was a 49 data package incentive. The lack of 'customised thank you' at the end of the survey page seemed to have contributed to the problem of double-entry. Without customised 'thank you page' at the end, it appears that many respondents were not sure of their surveys got through. They probably did the repeated entry to ensure they were not left out of the survey, which was good as this showed they were keen to participate. A few graduates contacted the tracer team to confirm if their surveys had been accounted for. A 'thank you' note could not be placed at the end of the page for its extra charge. To resolve the issues of unit non-response and over-sampling, 438 responses had to be deleted after verifying their CIDs and phone numbers. The deletions were compensated by the post-survey weighting.

For the representation of graduates by institutes, the issue of variance was there due to observed sample size being smaller than the initially targeted. Furthermore, there was the issue of item non-response. While some imputation of the missing data was done based on certain observed trend in the data, most respondents were contacted again (as

the updated phone numbers became available) and asked to either redo the survey or submit their missing responses via SMS.

The post-survey weighting was done to address most of the above-mentioned problems. The post-survey weighting works on the assumption that, by aligning the survey to the population, many of the sampling biases would be reduced though cannot be altogether eliminated.

The post-survey weights were stratified by the number of graduates by the institute. The weights were calibrated to the known population totals of each institute for the year 2013-15 and 2016-18. This calibrated weighting allowed the alignment between the sample and known population figures at the institute level. The weighing by sex was not required, as the observed sample's gender distribution matched with that of the population.

Target population

In a single-cohort tracer study, the survey respondents would have similar educational experiences and conditions of their transition to the labour market. One crucial facet of a tracer study is the time of the survey after graduation—'how many months or years should have passed after the graduation to interview those graduates'? There is no standard time frame. Some prefer to conduct a tracer survey a few months after graduation for the reason that graduates are easily traceable. Others prefer the lapse of some years so that the graduates would have transited to works and gained some experiences. The survey conducted too early or late have their advantages and drawbacks. It is for this reason that the present analysis had considered the graduates of six years. The data for analysis were segregated into two groups: graduates of 2016-2018 to represent the most recent graduates and graduates of 2013-2015. At times the results were aggregated for the timeframe of 2013-18.

Questionaries and pre-testing

The TVET tracer study of 2016 (DoEHR, MoLHR), Harald Schobarg's guide for 'Carrying out tracer studies' and TVET tracer surveys of Nepal, India and Philippines were used as the reference materials, especially for designing the self-administered questionnaire.

The questionnaire was highly standardised—the respondents were [in most cases] required to select the answers from a list of the pre-determined responses. Some questions were kept open-ended to give the respondents the option to decide the answers on their own. The last question was the essay type to invoke or allow submission of individual graduate's feedback. The questionnaire was not adapted to any specific institution, training programme and level of the training.

The questionnaire was divided into eleven sections with 79 questions and 15 pages. As the self-administered questionnaire, questions were asked in a simple format and in the English language.

The number of sections and pages of the questionnaire are not the best measures of the questionnaire length. It is rather measured in terms of time taken to complete the survey. During the pretesting, filling up each survey questionnaire took about 30 minutes whereas in the actual case, it had taken on average about an hour (as shown by the SurveyMonkey program summary).

Each section of the questionnaire covered different themes and topics as discussed below:

Section I collected the socio-biographic information of graduates. The information included the study descriptors: gender, age, Dzongkhag of origin, present address and parental background.

Section II addressed learning/education experiences of graduates before taking up TVET programmes. It further covered questions related to their after-school interests and engagement.

Section III gathered relevant information about TVET institution (where graduates had attended the initial training programmes), graduates' motivations for choosing TVET, their course preferences, fields of training, training levels, learning competencies and year of graduation.

Section IV covered the questions related to practical training such as OJT and ATP. ATP programmes were common before being replaced by OJT programmes.

Section V focussed on different non-professional qualifications, skills and orientations gained during the training such as soft skills and other skills that the

graduates found relevant in their transition to works and for their jobs. The extent to which such non-professional skills were taught differed among TTIs and IZCs. Some institutions had formal soft skilling programmes while others did not due to lack of teachers and other logistics issues. The questions were designed to capture both formal and informal learning of soft skills.

Section VII emphasised on the graduates' retrospective assessment of institutions, training programmes, training condition and other provisions and services they had experienced/received during the training. There was the issue of objectivity or subjectivity of such retrospective evaluation. It was treated as the quasi-subjective assessment as certain subjective judgements were involved in responding to the questions. This section aimed to see the 'averaged' ratings. It might not have been the case that an institute's hostel condition was too bad just because a few respondents had treated that way. On averaging, the marginal distribution of highly positive and negative ratings would have evened out. This is one of the key principles on which statistical science is based. The key focus was on comparing the negative ratings of various institutions and training components (in relative terms) on the assumption that this might indicate the possible areas of weaknesses requiring actions.

In section VIII, graduates were asked about their transition from training to work and career (outcomes). The focus was mainly on the graduates' strategies for seeking employment: source of job information, timing of job search (before or after graduation) and time taken to get the first job.

Section IX was designed to collect information on the graduates' employment: employment status, a number of jobs changed, professional occupations, employment sector, income (wage), job satisfaction and performance, job-training and job stability.

A special emphasis was placed on gathering information that would allow matching of the training with work/professional occupations. Some graduates might be doing extra works/jobs besides their main occupations. The survey did not capture this information. The section also emphasised on collecting the information related to job stability (whether they changed their jobs). Job hopping was found to be one major issue. It was known that some TVET graduates tend to change their jobs and employers depending on who pays them more. For some graduates, their jobs are never stable due to the short-term nature of projects they work with/for such as in the case of a construction project where they get laid off when the project is completed.

Section X covered the questions related to unemployment and reasons for being unemployed. The same question was applied to graduates who were once employed but had become unemployed at the time of the survey.

Section XI focused on graduates who were self-employed or own-account workers, mainly those graduates in businesses. The information on business type, income, and business challenges was gathered.

Section XII contained questions designed to capture the information on further training or qualification up-gradation (education pathways). The section further covered questions regarding their educational aspirations, choice of professional education, level and willingness to finance their qualification up-gradation programmes.

The last section contained questions related to the ease of getting jobs and gender differentiation in the labour market. The section concluded with a provision (essay-type question) for providing suggestion/feedback on TVET programmes and labour market.

Data quality and reliability

Since the interviewers/enumerators were not involved to implement the questionnaire, there was the need to design the questionnaire according to the respondents' ability to complete. To address this issue, firstly the questionnaire was developed in language intelligible to TVET graduates with class X or XII academic qualifications. Secondly, it was important to ensure that the design allowed responses without the need for any further explanation. The quality and reliability of interview data can depend so much on internal, external and operational validities of the questionnaire and survey. The internal validity means avoiding any external factor that may influence the data reliability; external validity is related to generalisability of data, and operational

validity is the ability to measure what is intended to measure (Brassard, 2015).

As the self-administered survey, the tracer team had no control over the actual conduct of the survey (internal validity). The team could just remind the respondents about the importance of the survey. This was done through online fora and telephonic calls. The respondents were reminded not to skip any question but to complete the survey with utmost honesty. They were assured of 'no harm' and 'confidentiality of the information'.

The external validity measured in terms of sampling and generalisability.

As the operational validity relates to measuring what is intended to measure, the effort was made to ensure all data collection tools (questionnaires and survey) were designed in consultation with other stakeholders and experts and then pretested.

The questionnaire design was discussed, refined and improved during the two-day consultative workshop, held in Lobesa. The workshop was attended by members and experts from various agencies and institutions including the members from the National Statistics Bureau (NSB) and Centre for Bhutan Studies (CBS)—the key agencies in conducting the national surveys.

The questionnaire was pretested first with the participants of the consultative workshop after which the questionaries were sent to 22 graduates for pilot-testing between May 16 and 18 2019.

Data collection

The online SurveyMonkey App allowed conducting the survey using smartphones, laptops, iPads and computers. The choice for the online method of data collection was based on its ease of implementation, low costs, non-requirement of post-survey data entry and its alignment with the media and technological choices of the younger generation. The online survey at this level was probably conducted for the first time in the country keeping with the need to recognise the huge potential of ICT to revolutionise the surveys.

The increasing number of Bhutanese people have started to use ICT for information-sharing using their smartphones. This is an indication of the growing pervasiveness of data digitisation in the country. The Annual Info-Comm and Transport Statistical report (MoIC, 2019) shows that the number of mobile cellular subscribers in the country had increased from 544,337 in 2013 to 703,554 in 2018. The mobile broadband connections (3G and 4G) users had grown from 117,659 in 2013 to 766,768 in 2018.

The online survey method had some disadvantages. The technical problems with the internet access might have discouraged some respondents and affected the way some graduates had responded.

There were several options to deliver the survey invitations: individually via SMS, by e-mail and through social media groups (Wechat and Facebook groups). Before sending the survey invitations, several strategies were adopted to publicise the tracer study. The tracer survey was announced through Bhutan Broadcasting Service (TV) and Kuensel (Print media). The other strategies included the advocacy through TVET alumni groups and social online forums. Some staff of TTIs and IZCs played their part in informing graduates (with whom they had contacts) about the survey and its importance. The 'snowballing technique' was also used. This involved asking those graduates who had already completed the survey (and their mobile numbers updated through the survey) to either share the mobile numbers of their batch mates or share/distribute the survey links.

The delivery of survey links was not without problem. One difficulty was that many of the mobile numbers were obsolete. There were more invalid mobile numbers among graduates of earlier years compared to that of the recent graduates.

Before sending the survey links, the respondents were contacted through calls to explain the survey. It was only after they had confirmed their participation that they were given the survey links. The SurveyMonkey app had its data collection features such as the distribution of links through email and SMS. The SMS feature could not be activated as it required the additional payment. The email option provided for sending one invitation and three reminders.

The survey incentive of a 49 internet data package was given to each respondent upon fully completing the questionnaire. The incentive had both pros and cons. Several of them seemed to have taken part in the survey primarily for a 49 data package. This was

known through the evidence of some non-TVET respondents and double surveys. Those responses were deleted. The problem of non-targeted and double responses was detected during the data validation stage when the three-member team read through each completed survey. Potentially false respondents were contacted and reminded not to obstruct the survey merely for a 49 package. Most of them had apologised.

Expecting that there would always be some 'satisficers' (SurveyMonkey App's term), constant reminders were posted on WeChat and Facebook groups telling them about the significance of the tracer study. The 'satisficers' are those people who rush through the survey, don't take the survey seriously and those who are purely motivated by survey incentive (gifts or payment for completing the survey). The respondents were repeatedly informed that each response would be thoroughly checked for inconsistency and expeditiousness. They were reminded of the risk of getting deregistered from the survey in case the validation team detect some sign of response inconsistency and improvidence in completing the questionnaire.

Response rate

The online survey with less than 30% response rate was reported from the tracer studies across the world (EU, 2016). As per the SMS backup record, 4750 survey links were delivered via SMS along with 1394 email links and 3126 web-links via SurveyMonkey app. The response rate was 48.24%. This is normally considered quite satisfactory participation. The fair response rate could be attributed to rigorous advocacy done through various medium and several reminder actions. The other factor could have been the relevance of the tracer study to the respondents. Many graduates [had expressed] had been looking forward to such a survey because apart from the one conducted in 2016, they did not get such forum to express their views. Many graduates had considered the survey as an indication that TVET graduates were not being neglected by the government and other stakeholders.

Out of the total responses, fully completed responses constituted 82% and partially completed was about 18%. This was shown by the SurveyMonkey app. The respondents with partially completed responses were re-contacted (through phone calls) and asked to complete.

Data validation and coding

A separate team of three members conducted the data validation. The first stage of data validation involved tallying CID numbers with the given names of the respondents. This was done using the G2C online CID database. The cases of inconsistency between the names and CID numbers were contacted to verify if they were the desired/targeted respondents. The second stage validation took longer time and involved going through each response. This took more than a month for three persons. The inconsistent and dubious responses were noted and the respondents were contacted for an explanation. The data validation and editing were done online on the SurveyMonkey app. Data imputation were kept minimum, instead, graduates were requested to provide additional information to fill up the missing data.

After the data validation, the entire dataset was downloaded in excel and SPPS formats. The data cleaning was done on the excel file. The data coding was not necessary—the codebook is not required if a person who reads the data and conducts analysis is familiar with the survey data.

The responses to the open-ended questions required a meticulous classification and coding. The post-survey coding and classification of the occupations and sector of employment were done as per the International Standard Classification of Occupations (ISCO-08) and the International Standard Industrial Classification of All Economic Activities (ISIC, Rev-4) respectively. These became considerable tasks.

Data analysis

The descriptive analysis method was used, which is the statistical procedure that summarises or reduces data into an easily apprehensible form. It usually precedes the inferential analysis. This does not imply that the inferential analysis is superior to descriptive analysis. Each analysis serves different purposes.

The responses were categorised into nominal, ordinal and scale measurements. Most data were categorical, nominal and ordinal.

The data analysis was done using SPSS. This is one of the most used and best-documented software for statistical data analysis. The SPSS generated results for both valid and missing categories of variables and cumulative percentages.

As most responses were nominal and ordinal data, the results were broken into two parts: first few parts covered the univariate analysis such as simple description (frequencies and percentages), typicality or central tendency (weighted mean), variation (homogeneity and heterogeneity) and symmetry or skewness (ranked-order and clusters). The variations were often expressed in terms of percentage variation and inter-quartile range. The bivariate analyses were limited to cross-tabulations. The results were are presented in tables and figures/graphs.

It was possible to do the inferential interpretation of the data, but it was deliberately left out, as it was beyond the scope of this report. The present results could inform the decisions, but it is always advised to do thorough investigations of the data and supplement with other studies for more practical implications and actions.

The inclusion criteria were the prerequisite for meeting the objectives of the study. As highlighted earlier, the survey had covered graduates from 2003 to 2018 of all the public institutions under MoLHR including Kharbandi Technical Institute, Construction Training Centre and Serzhong VTI. Besides, the survey covered graduates of some other public and private TVET institutions. However, the first phase of data analysis was limited to graduates of TTIs and IZCs for the timeframe 2013-2018, divided into two categories: 2016-2018 (most recent) and 2013-2015 to control for different years after graduation and institutes.

Missing values

Some survey elements had missing values. This often happens when some respondents leave certain questions unanswered while some questions (by design) would skip certain groups. The problem of missing data is common in almost all the surveys and can significantly affect the conclusions drawn from the data.

To resolve the issue of missing data, the first strategy was to contact the respondents for answers. Those elements/questions that could not be completed even after contacting the respondents were left as blank cells. These blank cells (missing values) were explicitly coded as "99" known as the user-defined missing values that a data analyst can instruct the SPSS program. Defining missing data would not change the data while the analysis would omit the missing values.

Research ethics

Studying TTI and IZC graduates did not involve much sensitivity. The participation was voluntary. Sufficient advocacy was done to encourage and persuade graduates to participate in the survey. They were explained about the importance of their views and opinion to understand not only their employment situation but also to inform TVET policies and programmes.

The respondents were assured of no harm for participating in the survey. The first page contained the information on the application of a strict code of ethics to ensure anonymity and confidentiality of the respondents and information.

The most important aspect of ethics in statistical analysis is the need to have an ethical responsibility to properly analyse the data and do unbiased reporting. Certain people, in the beginning, expressed the concern that the tracer study being conducted by the people working within the public TVET sector might fabricate the results in favour of DTE/MoLHR. Those people were wrong. The very purpose of the study was to generate information that would not only show the outcomes of various TVET programmes (positive or negative) but also to point out their shortcomings. The tracer team tried its best to follow the highest possible ethical standard in terms of data collection, analysis and reporting. The team tried to let 'fact speak to themselves rather than speak for them"—avoiding results based on one's beliefs and prejudices.

Usually, in many countries, tracer reports are not published for public consumption. The tracer team felt that there was no need to withhold the results if the publishing the results were to serve the information need of various TVET stakeholders. So some limited copies were printed for distribution among the key TVET stakeholders.

One safeguard against misreporting or wrong analysis is to make the survey dataset available to the general public and further research. The tracer team is more than

willing to share the dataset with anyone wishing to do further analysis in the form of Public User Files (PUFs).

There might have been certain technical flaws owing to the reason that tracer study had to be conducted most of the time by one person who was then burdened with another task of compiling TVET statistics. If it were not for the manpower shortage, the online survey could have been completed before the timeframe prescribed in the international tracer guidelines. The manpower and time constraints were also the reasons for limiting the analysis to the descriptive analysis otherwise the same team could have performed the inferential analysis.

Costs

The costs of tracer studies vary. The national representative surveys may cost around Nu. 4-6 million if the surveys are conducted physically (face-to-face). The present online tracer survey was the low-budget survey. The major cost was incurred on a 49-data package incentive given to the respondents. *Helvetas, Bhutan Office supported the survey incentives (Nu. 245,000). ADB-PMU purchased the SurveyMonkey App and supported the concept and instrument development workshop and other consultations, salary for two interns and some utility cost (cost for internet data and voice data).* The rest of the fundings were met by the government. In total, the cost of the study was about Nu. 500,000, which was by any standard very low for the survey of such nature and level.

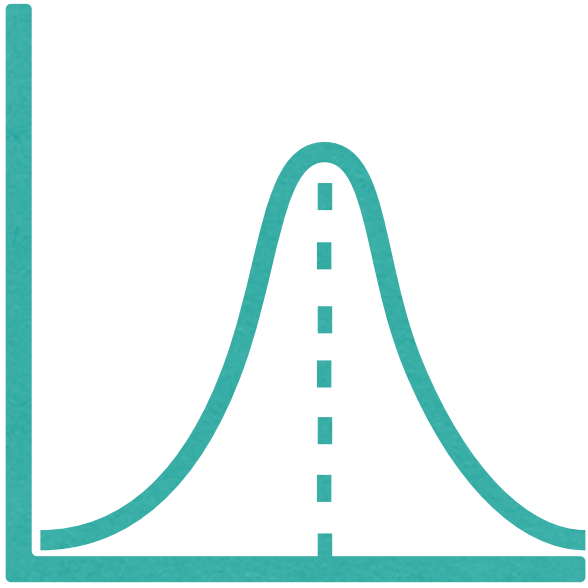
Report for participating graduates

Against the initial aim, the analysis of the survey data was limited to those related to TTI and IZC graduates of 2013 to 2018. This doesn't imply that the data collected from graduates of other institutions and years are of no use. These data will be analysed in stages and could inform the decisions even if the results are not published. *The team would like to apologise those respondents and remind them that their efforts to provide information will not go in vain*.


BROTHER

Section III

Socio-Demographic Profile of Sampled TVET Graduates



Introduction

This section presents the results of the responses to the principal question: "What are the demographic and socio-economic characteristics of graduates?" The section covered socio-biographic profile of the graduates—age, gender, academic qualifications, parental background including their spatial distribution by Dzongkhag.

Gender and age

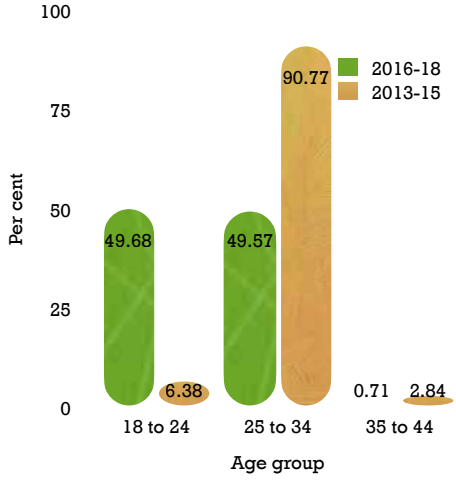
Gender distribution of graduates of the two cohorts (2013-15 & 2016-18) was nearly proportional as shown in table 3.1 and corresponded to the gender distribution in the 2013-18 graduate population. Graduate population by sex was published in TVET Statistics, 2008-2019.

Table 3.1: Graduates by sex (2016-18 & 2013-15)

Sex	2016-2018		2013-2015		2013-18	
	n	%	n	%	n	%
Male	1676	62.80	1380	64.31	3056	63.47
Female	993	37.20	765	35.65	1758	36.51
Total	2669	100.00	2146	100.00	4815	100.00

Figure 3.1 shows the distribution of graduates by age (in percentage). The majority (49.68% of graduates) were in the age group of 18-24 years among the 2016-18 cohort and age group 25-34 (67.93%) among the 2013-2015 cohort.

Figure 3.1: Graduates by Age Group (2016-18 & 2013-15) Cohorts



Academic qualification

As presented in table 3.2, the data shows that the majority of graduates had attended class X (middle secondary) before taking up TVET followed by those with class XII qualification. The minimum requirement for admission into TTIs and IZCs is class X qualification (middle secondary level). Some graduates had reported the academic qualifications other than class X and XII. They could be the ones who had availed TVET certification through RPL. A few institutes, especially zorig institutes had enrolled some candidates with monastic education in the past.

Table 3.2: Academic qualification of the graduates by 2016-18 & 2013-18 Cohorts

Qualification	2016-18		2013-2015	
	n	%	n	%
Class X	1723	64.56	1562	72.79
Class XII	854	32.00	500	23.30
Class IX	21	0.79	18	0.84
Class XI	21	0.79	17	0.79
Monastic Education	17	0.64	3	0.14
Lower Secondary	13	0.49	18	0.84
Bachelor's Degree	12	0.45	11	0.51
Primary	3	0.11	5	0.23
Diploma	2	0.07	5	0.23
Pre-Primary	2	0.07	3	0.14
Non-Formal Education (NFE)	1	0.04	3	0.14
Total	2669	100	4815	100

The representation of class X and XII among graduates conformed to the proportion of graduates with class X and XII academic qualifications in the actual population (administrative data).

Parental socio-economic background

Table 3.3 presents the occupational background of the graduates' families/ parents. Most of them belonged to agriculture (farming) families. This substantiates the claim that the public TVET programmes are usually availed by young people belonging to farming/rural and lower socio-economic population, termed as '*miser nyamchung*—humble citizens'. The other reason could be the presence of a higher proportion of farming families within the entire Bhutanese population. Whatsoever it may be, the data somewhat indicates that *TVET has remained more as a social policy response rather than occupying a prominent place in the national economic policy*.

Table 3.3: Family (parental) occupation of graduates (2016-18 & 2013-15)

Occupation	2016-18		2013-15	
	n	%	n	%
Farmer (agriculture)	2043	76.55	1663	77.49
Civil servant	178	6.67	164	7.64
Corporate employee	110	4.12	66	3.08
Armed force	106	3.97	65	3.03
Private employee	83	3.11	79	3.68
Family business	65	2.44	40	1.86
Religious family (example: gomchen)	43	1.61	26	1.21
Retired armed force	16	0.60	8	0.37
Self-employed	15	0.56	11	0.51
National Workforce	10	0.37	22	1.03
Retired civil servant	1	0.04	1	0.05
Total	2669	100	2146	100

The education status of parents (both father and mother) of graduates further lends weight to the claim that most TTI and IZC graduates belong to the low socio-economic households. Tables 3.4 (A) and 3.4 (B) shows that the majority of these parents did not have any formal education.

Table 3.4 (A): Graduates' Fathers' Education background (2016-18 & 2013-15)

Qualification	2016-18		2013-15	
	n	%	n	%
No education	1866	69.91	1508	70.07
Primary	362	13.56	303	14.12
Lower secondary (Class VII-VIII)	122	4.57	70	3.26
Middle secondary (Class IX-X)	102	3.82	93	4.33
Don't know	70	2.62	17	0.79
Monastic education	55	2.06	40	1.86
Higher secondary (Class XI-XII)	54	2.02	43	2.00
Non-formal education	17	0.64	26	1.21
Diploma	10	0.37	16	0.75
Bachelor's degree	5	0.19	16	0.75
Master's degree	3	0.11	2	0.09
VTI Certificate	1	0.04	10	0.47
PhD	1	0.04	0	0
Total	2669	100	2146	100

Table 3.5(B) presents the educational status of the graduates' mothers.

Table 3.4 (B): Mothers' educational background of graduates (2016-18 & 2013-15)

Education	2016-18		2013-15	
	n	%	n	%
No education	2358	88.35	1940	90.40
Primary (Class PP-VI)	149	5.58	102	4.75
Non-formal education	88	3.30	44	2.05
Monastic education	0	0.00	4	0.19
Middle secondary (Class IX-X)	17	0.64	23	1.07
Lower secondary (Class VII-VIII)	45	1.69	13	0.61
Higher secondary (Class XI-XII)	9	0.34	8	0.37
Diploma	1	0.04	4	0.19
Bachelor's degree	2	0.07	2	0.09
VTI certificate	0	0.00	4	0.19
Master's degree	0	0.00	2	0.09
Total	2669	100	2146	100

Spatial distribution of graduates

Spatial distribution of graduates irrespective of their employment status (where they resided at the time of the survey) shows that most graduates were based in two Dzongkhags of Thimphu and Chukhha. This was a clear indication of the geographical disparity in the spread of economic sectors with the potential of employing TTI and IZC graduates.

The spatial distribution of graduates was derived from the information the respondents had provided showing their present address. The present address included the exact place of residence, gewog/Thromdue and Dzongkhag. The information was aggregated at the Dzongkhag level.

The distribution of graduates was illustrated separately for two cohorts using bar charts as shown in figure 3.2 (A) and 3.2 (B). Not much variation in the distribution of Dzongkhags was observed among two cohorts. Thimphu, Chukhha, Sarpang, Paro and Trongsa were in top positions in both the cohorts.

Some graduates were residing abroad at the time of the survey.

Figure 3.2 (a): Distribution of graduates by Dzongkhag/abroad (2016-18)

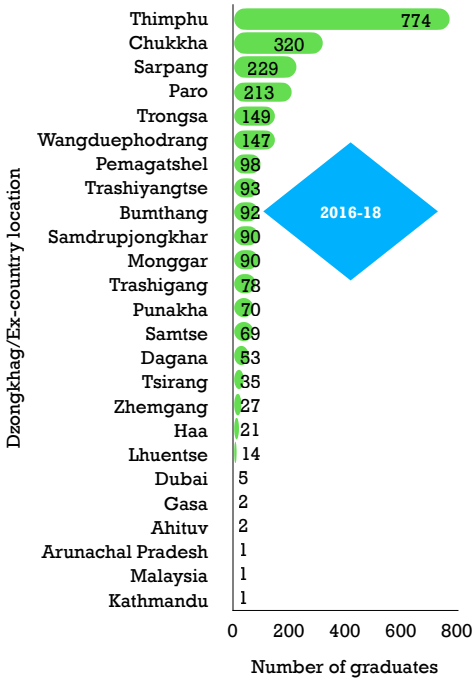
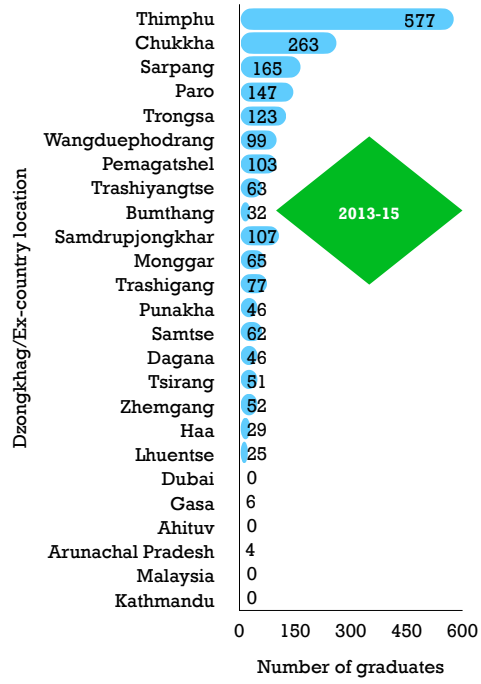


Figure 3.2 (b): Distribution of Graduates by Dzongkhag/abroad (2013-15)



The distribution of graduates is by gender and Dzongkhags is presented in table 3.5.

Table 3.5: Distribution of graduates by Dzongkhag and gender (combined for 2013-2018)

Dzongkhag	Male		Female		Total
	n	%	n	%	
Thimphu	835	61.76	517	38.24	1352
Chukkha	372	63.81	211	36.19	583
Paro	209	58.06	151	41.94	360
Sarpang	252	64.12	141	35.88	393
Trongsa	162	59.78	109	40.22	271
Wangdue	138	56.10	108	43.90	246
Pemagatshel	126	62.69	75	37.31	201
Trashigang	93	60.00	62	40.00	155
Monggar	99	63.87	56	36.13	155
Trashiyangtse	101	64.74	55	35.26	156
Samjonglhar	153	78.06	43	21.94	196
Bumthang	84	68.29	39	31.71	123
Samtse	92	70.23	39	29.77	131
Punakha	81	69.83	35	30.17	116

Dzongkhag	Male		Female		Total
	n	%	n	%	
Zhemgang	45	56.96	34	43.04	79
Tsirang	62	72.09	24	27.91	86
Dagana	76	76.77	23	23.23	99
Haa	32	64.00	18	36.00	50
Lhuentse	33	82.50	7	17.50	40
Dubai	0	0	5	100	5
Gasa	4	57.14	3	42.86	7
Malaysia	0	0	1	100	1
India	5	100	0	0	5
Israel	2	100	0	0	2
Kathmandu	1	100	0	0	1
Total	3057	63.52	1756	36.48	4813

Graduates' Dzongkhag of origin

Table 3.6 presents the distribution of graduates by their Dzongkhag of origin. Contrary to the previous case in which the majority of graduates were residing in Thimphu Dzongkhag, the distribution by their ancestral Dzongkhag shows that the highest number of them belonged to Trashigang Dzongkhag.

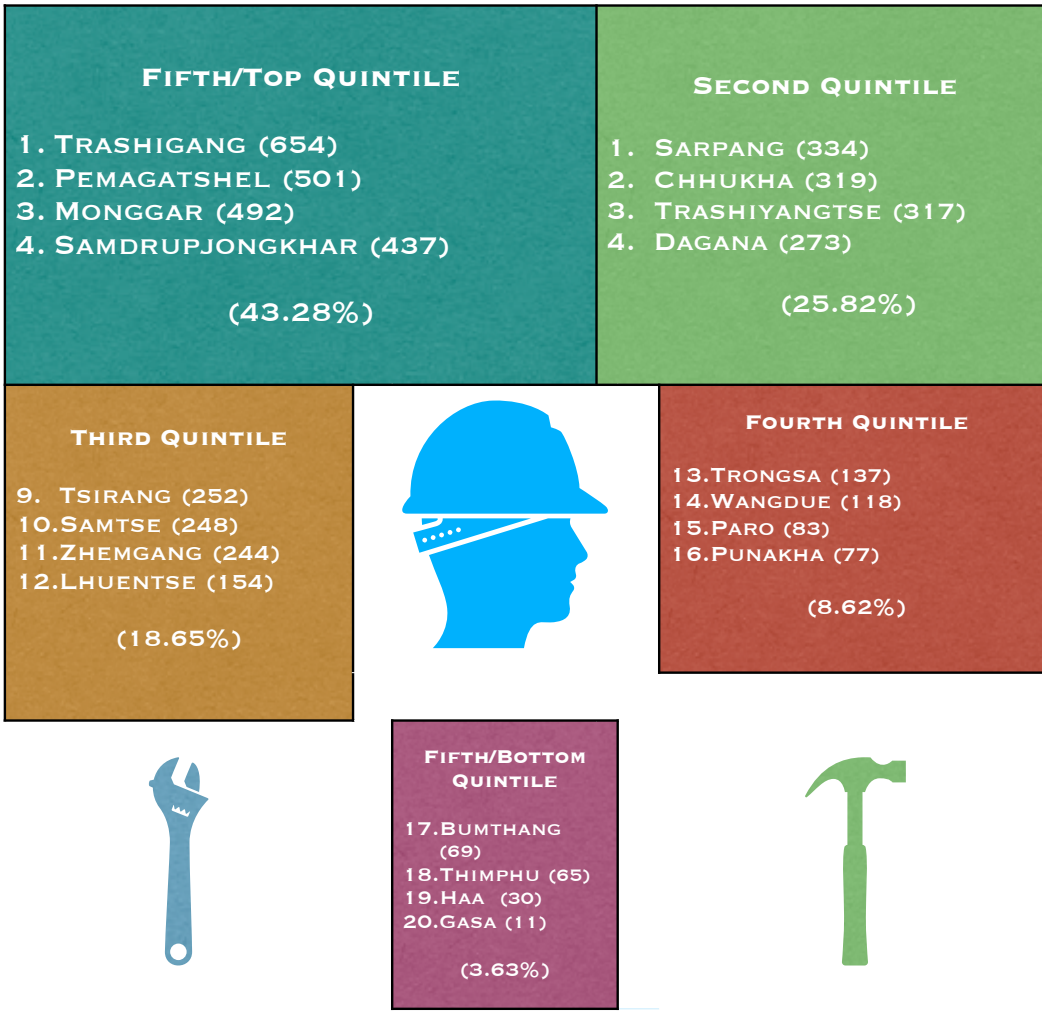
Table 3.6: Graduates' Dzongkhag of origin(2016-18 & 2013-18)

Dzongkhag of Origin	2016-18		2013-15	
	n	%	n	%
Trashigang	375	14.05	279	13.00
Pemagatshel	284	10.64	217	10.11
Monggar	275	10.30	217	10.11
Samdrupjongkhar	236	8.84	201	9.37
Sarpang	169	6.33	165	7.69
Chhukha	161	6.03	158	7.36
Trashiyangtse	177	6.63	140	6.52
Dagana	152	5.70	121	5.64
Tsirang	140	5.25	112	5.22
Samtse	140	5.25	108	5.03
Zhemgang	123	4.61	121	5.64
Lhuentse	96	3.60	58	2.70
Trongsa	74	2.77	63	2.94
Wangduephodrang	73	2.74	45	2.10
Paro	51	1.91	32	1.49
Punakha	51	1.91	26	1.21
Bumthang	43	1.61	26	1.21
Thimphu	27	1.01	38	1.77
Haa	17	0.64	13	0.61
Gasa	4	0.15	7	0.33
Total	2669	100	2146	100

The distribution of the Dzongkhag of origin is further illustrated in figure 3.3 by grouping them into quintiles. A quintile is any of the quantiles which divide the ordered sample into five equal parts of equally numerous subsets. The fifth or top quintile constituting four Dzongkhags: Trashigang, Pemagatshel, Monggar and Samdrupjongkhar accounted for 43.28% of the data meaning 43.18% of graduates belonged to these four Dzongkhags.

In the first/bottom quintile, the Dzongkhags represented were Bumthang, Thimphu, Gasa and Haa. About four per cent of graduates originally belonged to these four Dzongkhags. On adding the topmost and second quintile, 69.10% of graduates belonged to eight Dzongkhags, namely Trashigang, Pemagatshel, Monggar, Samdrupjongkhar, Sarpang, Chhukha, Trashiyangtse and Dagana.

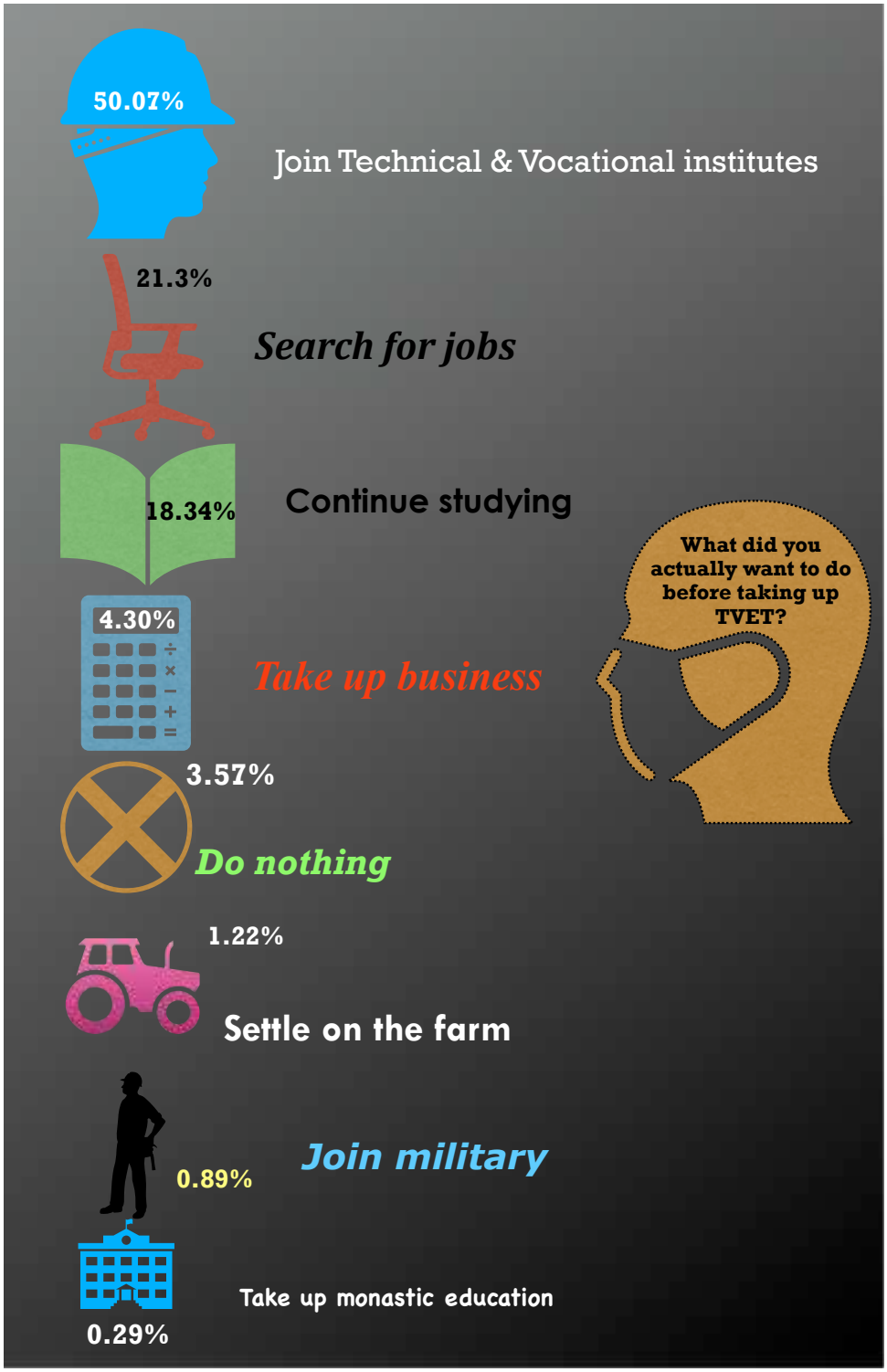
Figure 3.3: Distribution of graduates grouped by Dzongkhag of origin (Grouping done in descending order of the number of graduates, 2013-18)



After-school aspirations and plans of graduates

A question was asked about the graduates' after-school aspirations and plans—what they aspired and wanted to do immediately after completing middle or higher secondary education. The aspirations were matched to determine the actual outcomes. As shown in figure 3.4, 50.07% of them aspired to take up TVET programmes implying that the other 49.93% did not intend to take up TVET. The results presented in figure 3.6 was based on the data 2013-18 graduates (combined for the cohort of 2013-15 and 2016-18).

Figure 3.4: After-school aspirations and plans of graduates (combined for 2013-18)



School-TVET exposure of graduates

Graduates were asked the questions related to their experiences of TVET subjects or activities while in schools or before joining TTIs and IZCs: 'Did you take up TVET as an optional subject or join the vocational club in school'? The results are presented separately for two cohorts (Figure 3. 5 (A) & 3.5 (B)). About 31% of graduates (2016-18 cohort) and 33% of graduates (2013-15 cohort) had reported that they took up TVET subjects/ joined the vocational club prior to taking up the core TVET programmes.

Figure 3.5 (a): School-TVET exposure among Graduates (2016-18)

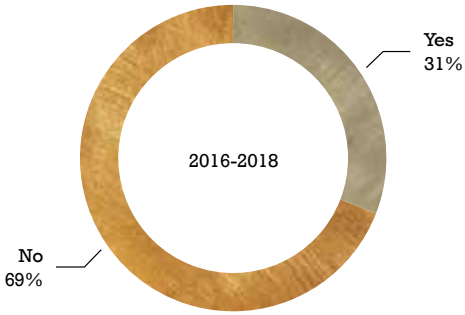
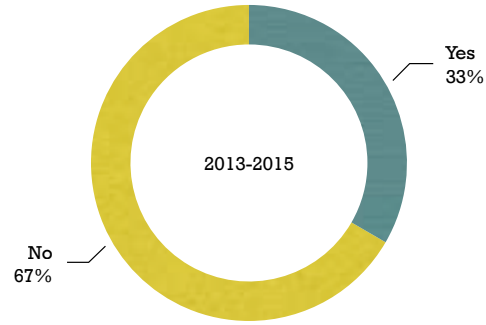
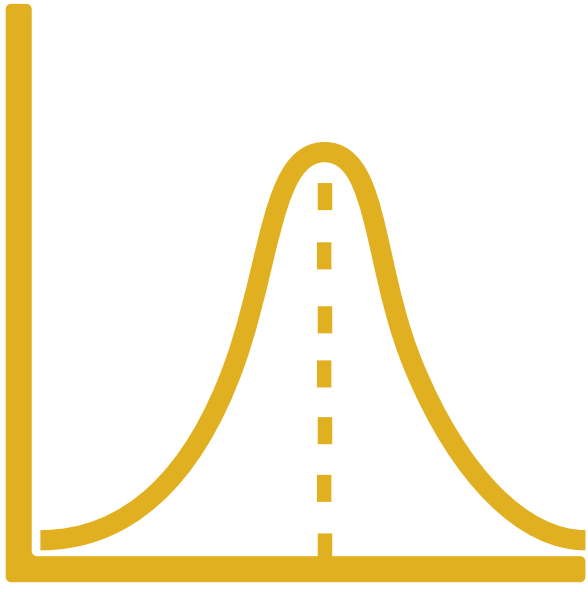


Figure 3.5 (b): School-TVET exposure among Graduates (2013-18)



Section IV

Technical and Vocational Education and Training (TVET)



Introduction

This section reports the results of the descriptive analyses of the graduates' training institutions, TVET motivations, course preference, field and level of training, learning competencies and year of graduation. The section addresses the following questions:

(1) What/who motivated or influenced graduates to opt for TVET track?

(2) What courses did graduates initially prefer to take and what courses they actually took up?

(3) What were the reasons for not being able to get the preferred courses?

(4) Did they like the chosen field of training?

(5) Did they ever think of quitting the chosen training and if so, what were the reasons?

(6) How did they rate different dimensions of programmes and learning environment in the context of quality and relevance?

Distribution of graduates by institutes and gender

Table 4.1 presents the distribution of graduates across TTIs and IZCs by gender. The distribution is presented by two major cohorts. The percentage distribution of gender and total graduates by each institute was taken out of the total graduates (percentage by total, not by row). As is understandable from the data, no major distributional difference was observed between two cohorts. Serzhong VTI's data were merged with that of JWPTI on account that these two institutes became the present Jigme Wangchuck Power Training Institute (JWPTI) in 2016.

Among the 2016-18 cohort, the highest number of graduates was reported from Serzhong/JWPTI representing about 20.76% of the total graduates and the lowest number from Thimphu TTI (4.01%). The same was the case with the 2013-15 cohort with some variation in the percentage distribution. In the total, 63.49% of graduates among the 2016-18 cohort were males and 36.51% females while among the 2013-15 cohort, 64.32% were males and 35.68% females.

Overall, as shown in the table above, JWPTI had the highest representation of females. Samthang TTI and Thimphu TTI had the

Table 4.1: Distribution of graduates by institutes and gender (count and %)

Institute	2016-2018						2013-2015					
	Male		Female		Total		Male		Female		Total	
	n	%	n	%	n	%	n	%	n	%	n	%
Serzhong/JWPTI	302	11.32	252	9.45	554	20.76	241	11.22	187	8.71	428	19.93
Khuruthang Technical Training Institute (TTI-K)	259	9.71	153	5.73	412	15.44	279	12.99	136	6.33	415	19.33
Samthang Technical Training Institute (TTI-S)	323	12.11	63	2.36	386	14.47	267	12.44	42	1.96	309	14.39
Ranjung Technical Training Institute (TTI-R)	220	8.25	126	4.72	346	12.97	222	10.34	117	5.45	339	15.79
Chumey Technical Training Institute (TTI-C)	204	7.65	143	5.36	347	13.01	178	8.29	112	5.22	290	13.51
Thimphu Institute of Zorig Chusum (IZC-T)	194	7.27	117	4.39	311	11.66	69	3.21	56	2.61	125	5.82
Trashiyangtse College of Zorig Chusum (CZC)	96	3.60	109	4.09	205	7.68	68	3.17	93	4.33	161	7.50
Thimphu Technical Training Institute (TTI-T)	78	2.92	29	1.09	107	4.01	57	2.65	23	1.07	80	3.73
Total	1676	62.82	992	37.18	2668	100.00	1381	64.32	766	35.68	2147	100.00

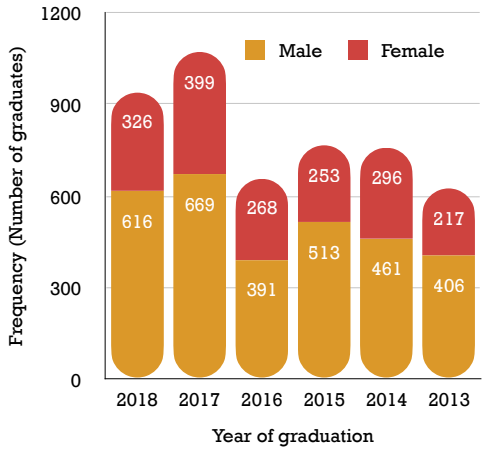
lowest representation of females, and the gender distribution in the sample conformed to the actual population. The lowest number of females in Samthang and Thimphu TTI could be accounted for the automobile courses that these institutes offer, which are in general considered as the male domain.

Thimphu TTI had the lowest percentage of sampled graduates. This is the same case in the actual population. Thimphu TTI's enrolment seems to have been affected by the lack of hostel facility in Thimphu TTI.

Distribution of graduates by year of graduation

Figure 4.1 shows the distribution of graduates by gender and year of graduation. The highest number of graduates covered by the survey belonged to the cohort of 2017 (both males and females). The lowest number of respondents belonged to the 2013 cohort (both sexes).

FIGURE 4.1: GRADUATES BY GENDER AND YEAR OF GRADUATION (FREQUENCY)



Graduates by TVET courses

Table 4.2 presents the incidence and percentage distribution of graduates by courses. The highest number of graduates had taken courses in electrical trade (30.12%). The data indicated the trend of continued higher demand for electrical courses. This trend suggest the need to diversify and upgrade the courses in the electrical trade to offer more manpower choices for the largest employers such as DGCP, BPC and other hydropower projects. *The findings proved that the hydropower sector continues to be the largest source of employment all through the construction, production and distribution stages.*

Among 35 different courses that were reported by graduates, about half of them (48.99%) had reported having obtained the courses in the electrical, auto mechanical and masonry trades. About 25% of graduates had obtained the courses in plumbing, mechanics, tailoring and carpentry. Information technology and fashion design were the least common courses. These courses were not even listed as regular courses in the TVET statistical report; TTIs and IZCs could have offered them as short courses in the past.

TABLE 4.2: GRADUATES BY COURSES (2016-18 & 2013-18)

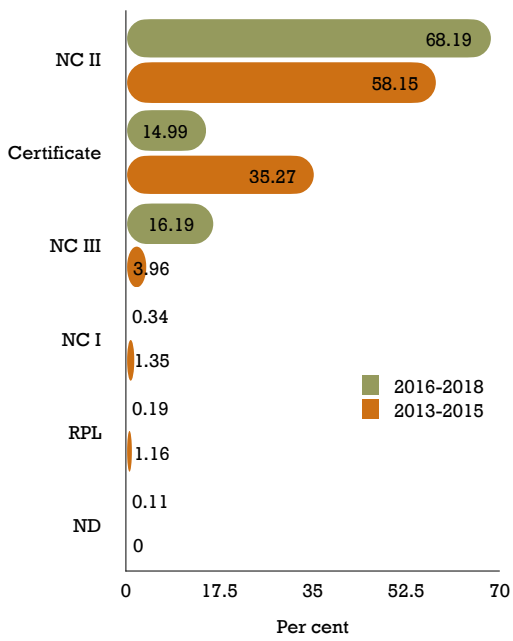
Courses	2016-18		2013-2015	
	n	%	n	%
Electrical	499	18.70	647	30.14
Auto Mechanic	352	13.19	312	14.53
Masonry	322	12.07	227	10.57
Plumbing	228	8.55	183	8.52
Mechanical Welder	181	6.78	160	7.45
Tailoring (Tshemzo)	147	5.51	85	3.96
Carpentry	159	5.96	60	2.79
Traditional Painting (Lhadi)	99	3.71	72	3.35
Heavy Vehicle Driving (HVD)	81	3.04	68	3.17
Computer Hardware and Networking (CHN)	79	2.96	61	2.84
Wood Carving (Patra)	91	3.41	48	2.24
Embroidery (hand)	70	2.62	43	2.00
Mechanical Fitting	78	2.92	29	1.35
Furniture-Making	56	2.10	19	0.88
Sculpture (Jimzo)	41	1.54	18	0.84
Panel Beating	22	0.82	15	0.70
Auto Electrician	28	1.05	7	0.33
Heavy Earth Mover (HEM)	26	0.97	3	0.14
Gold & Silver Smith (Trezo)	23	0.86	4	0.19
Upholstery	0	0.00	25	1.16
Embroidery (machine)	13	0.49	9	0.42
General Mechanical	6	0.22	15	0.70
Traditional Dralham (boot) Making	13	0.49	6	0.28
Wood Turning (Shazo)	12	0.45	4	0.19
Civil General	3	0.11	13	0.61
Hydropower Transmission & Distribution Linemen	10	0.37	0	0
Hydropower Mechanical	10	0.37	0	0
Cable TV Technician	9	0.34	0	0

Courses	2016-18		2013-2015	
	n	%	n	%
Light Vehicle Driving	0	0.00	8	0.37
Mask Carving (Babzo)	6	0.22	1	0.05
Construction	2	0.07	0	0
Auto Denting	2	0.07	0	0
Weaving (Thazo)	0	0	2	0.09
Information Technology	0	0	2	0.09
Fashion Design	0	0	1	0.05
Total	**2668**	**100.00**	2147	100.00

TVET courses and level (Mode of Delivery)

Most graduates covered by the survey had National Certificate II TVET level. The 2013-15 cohort had a slightly higher representation of graduates who had completed NC II. The same cohort had a higher number of graduates who had obtained non-NC level qualification (35.27%). As shown in figure 3.2, there were a few RPL (Recognition of Prior Learning) graduates. RPL graduates had not specified their level of certification. A few of them had completed ND (National Diploma) and represented graduates of *Jimzo* (sculpture). National Diploma in *Jimzo* is offered by Trashiyangtse College of Zorig Chusum. Further details are illustrated in figure 4.2.

Figure 4.2: Graduates by Certification Level (%) (2016-18 & 2013-15)



Motivations for choosing TVET

Graduates were asked to state the reasons/ motivations for choosing TVET. The results are illustrated in figure 4.3(a) for the 2016-18 cohort and figure 4.3(b) for the 2013-15 cohort.

The majority of graduates had given better labour market prospect for TVET graduates (easy to get a job) and career growth as two significant reasons that determined their choice for TVET.

The study conducted by Ayub, Hina (2017) in Pakistan has identified the important role of parents in influencing their children's decisions towards TVET. One main influencer of educational and occupational choice among study graduates happened to be parents and relatives. This suggests the future merit of targeting TVET advocacy and promotion campaign programmes on the parents and the general public. The current TVET advocacy programmes are exclusively for students and out-of-school-youth.

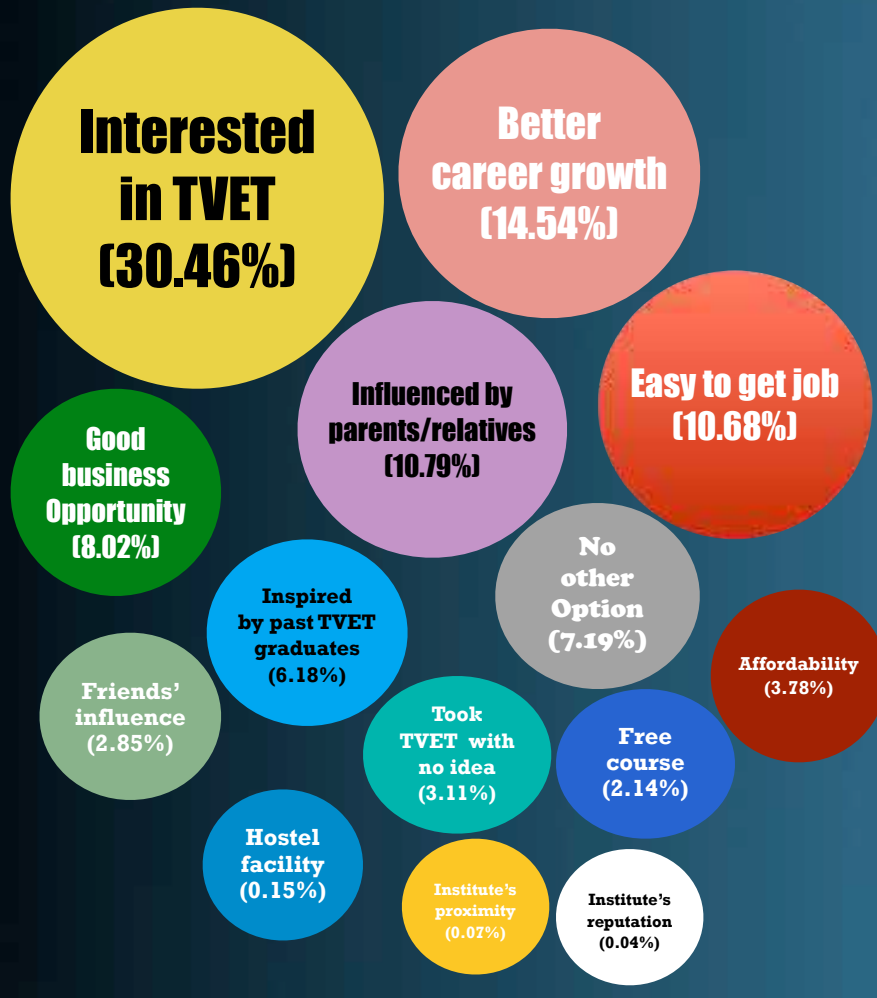
The other major influencers were senior graduates. They could bear either a positive or negative influence on school children. That is, they could either motivate or discourage the juniors from taking TVET. These graduates are rarely thought about in the present advocacy and promotion activities thought they could be used as one of the strongest advocates of TVET image.

Moreover, there is no formal unit or division to deal with the post-graduation services including the linkages between institutions, central agencies and graduates. Meetings and interactions between TVET officials, graduates, experts and researchers are rarely held, which otherwise can be useful to explore the roles that graduates can play in advocating for TVET image and inspiring students towards TVET tracks.

So much is desired to improve the status of TVET in the country. Along with the efforts in other TVET areas, it will be worth noting in the priority list the strategic promotion of TVET. The existing method of TVET promotion requires strategic improvement. A variety of awareness campaign and activities should take place across the nation not just through the limited engagement of students and several dropouts (as is currently done) but through the mass engagement of parents, employers and TVET graduates.

Figure 4.3 (a): Motivations for taking TVET among the 2016-18 cohort

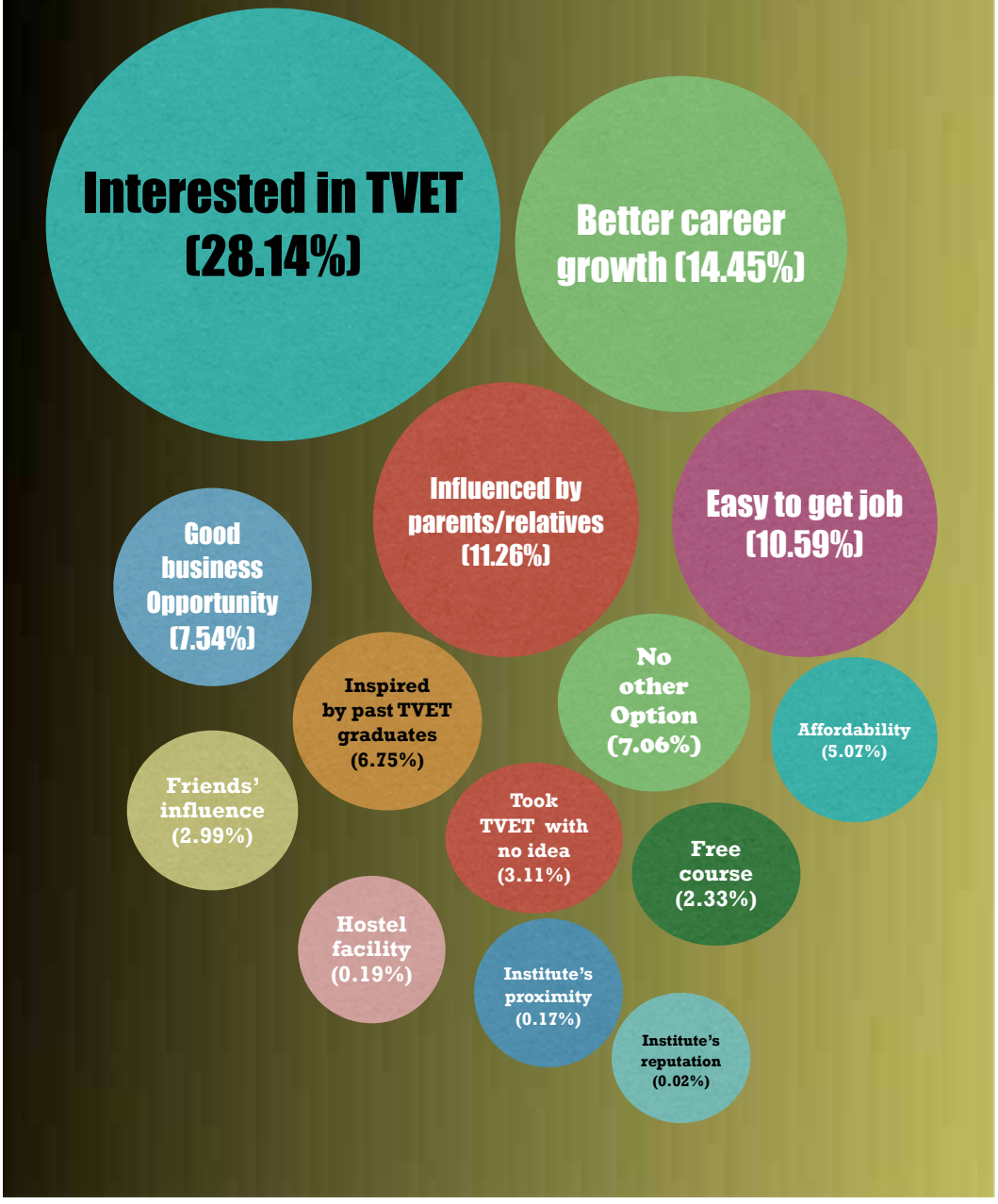
TTI and IZC graduates had given multiple reasons for joining TVET. About 30.46% of them were inclined to take TVET for their intrinsic interest. There could have been several reasons for their intrinsic interest in TVET. The survey had not captured all these. On the whole, more than 14% had reported that they opted for TVET thinking there were better occupational and career growth options. Parents and relatives had influenced about 11% of them. Another 11% of them had joined TVET thinking it was going to be easy to find employment after training. A good number of them had reported that they undertook TVET programmes for a business opportunity that TVET has to offer them. More than 7% of them had undertaken TVET having no other options in life. Past TVET graduates might have influenced about 6% of them. The least cited reasons had to do with the institutions' reputation, availability of accommodation and proximity of the institutes to their homes. The reasons for affordability and availability of free courses seem to have been given in the context of paid courses offered by private training providers. The reasons are shown below.



The size of circles is not exactly proportional to the percentages though a larger circle indicates a higher percentage.

Figure 4.3 (b): Motivations for Joining TVET among the 2013-15 cohort

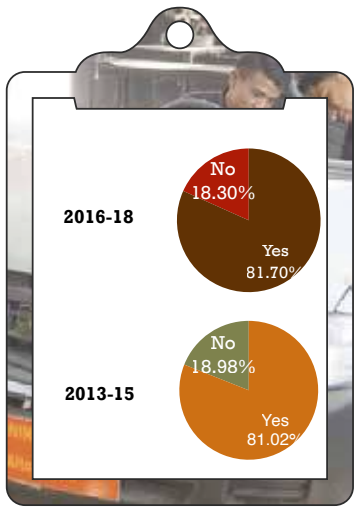
The reasons/motivations for choosing TVET among graduates of 2013-2015 did not vary much from those of the previous (2016-2018) cohort. The reason 'interested in TVET" though dominant was considered a broad reason. Future tracers must look into the possibility of digging further into this factor.



Course undertaken/not undertaken as per the graduates' preference

The responses to the question: "Did you take up the training/course you were actually interested in?" shows that 81.70% (2016-18 cohort) and 81.02% (2013-15 cohort) had availed the courses as per their interest while 18% took up the courses that were not their first choice (figure 4.4). The trend of having had qualified, but being denied the training in the courses of their choice can be a serious issue. Taking up a wrong course or gradual losing of interest in the course may have severe consequences on the motivation to learn of a concerned trainee and getting deployed to the relevant occupations. Furthermore, the choice of course that trainees usually make may imply demand in the market and reflect their motive and social disposition, and the youth must be given the chance to take their preferred TVET courses.

Figure 4.4: Did you take up the course you were actually



Graduates' preferred courses

The next question: "If 'no', what was the course you preferred?" was meant for those respondents who stated they did not get to take their preferred courses (about 18% of the respondents who stated 'No'). The data of 2013-15 and 2016-18 were combined for this specific case.

Among 18% of graduates who had to take the other courses against their initial choices, 25.63%% (2013-18) had stated 'they had no other option' but take whatever courses were offered to them. The responses under 'others' category were given in different wordings and phrases mostly to mean 'they did not have other option but had to take up whatever courses that were available'.

The next highest numbers of graduates preferred the courses in driving (16.51%), embroidery (14.46%), plumbing (6.49%), electrical (5.69%) and tailoring (4.78%) other than what they had to accept in the end. The other preferred courses are listed in table 4.3 in descending order of preference (2013-18).

Table 4.3 Graduates' Preferred courses against their initial choices (2016-18)

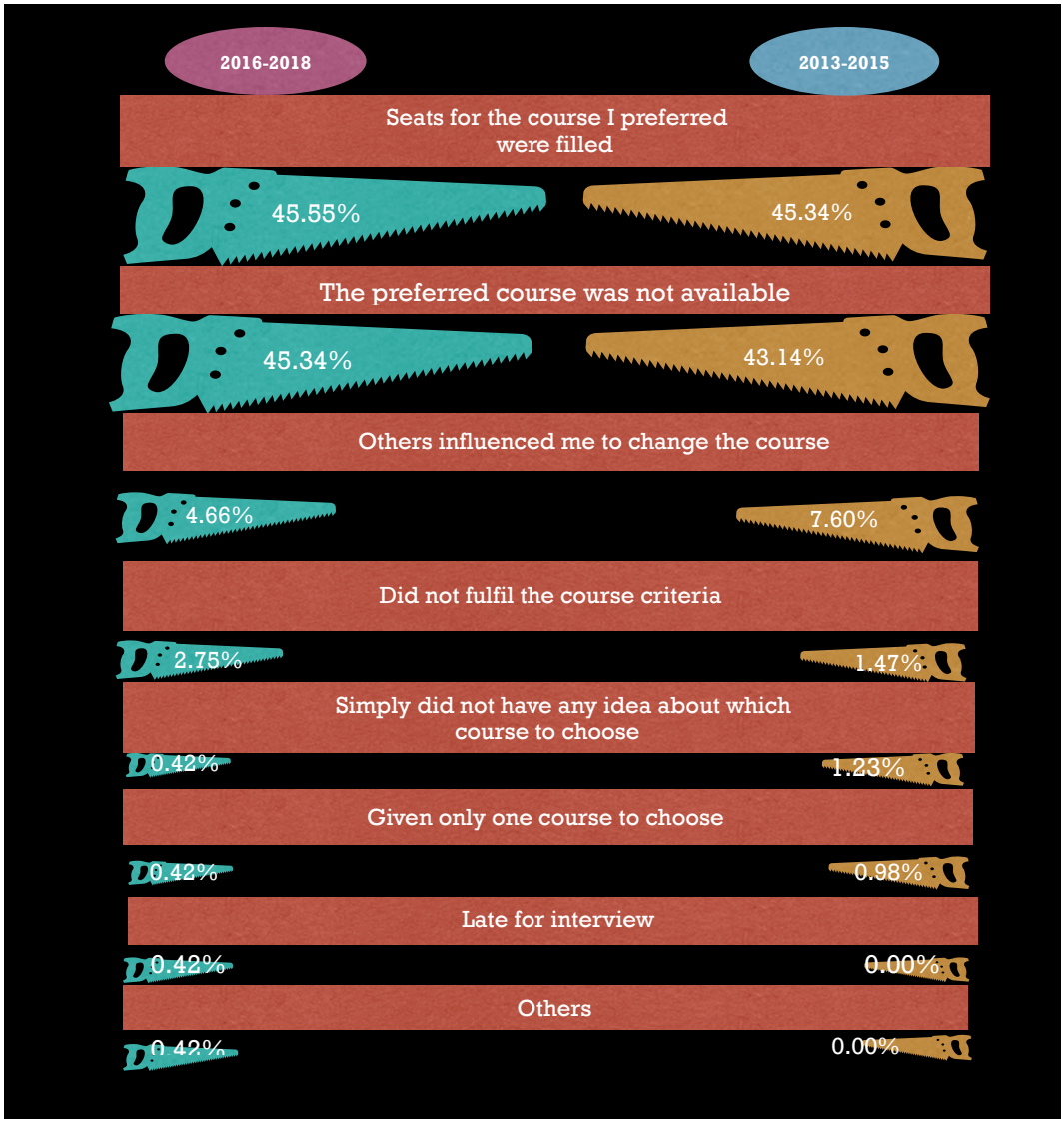
Course	2013-18	
	n	%
No option	225	25.63
Driving	145	16.51
Embroidery	127	14.46
Plumbing	57	6.49
Electrical	50	5.69
Tailoring	42	4.78
Traditional Painting	40	4.56
ICT course	38	4.33
Heavy Earth Moving	22	2.51
Cable TV	15	1.71
Masonry	13	1.48
Computer Applications	13	1.48
Mechanical	12	1.37
Sculpture	10	1.14
Wood Carving (Patra)	10	1.14
Civil General	10	1.14
Carpentry	10	1.14
Auto Mechanic	8	0.91
Gold and Silver Smith (Trezo)	7	0.80
General Mechanical	6	0.68
Degree (course not specified)	6	0.68
Furniture-Making	4	0.46
Auto Electrician	4	0.46
Auto Painting	2	0.23
Diploma (course not specified)	2	0.23
Missing	3937	81.77
Total	878	18.23
Total	4815	

Reasons for not taking their preferred courses

There were more than eight reported reasons for not being able to take the courses of their initial choice (figure 4.5). Nothing was mentioned about corruption and nepotism in the admission process. The most frequent reason they had cited was related to the

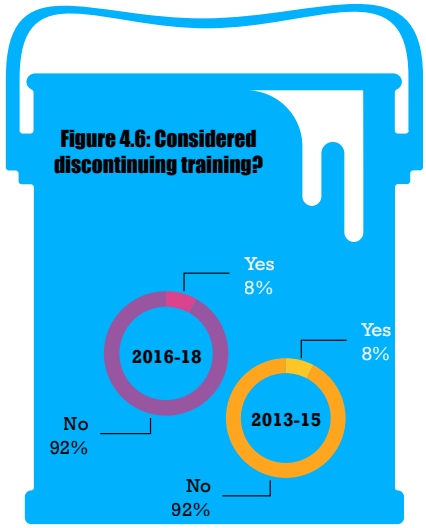
'carrying capacity' that is contingent on the institutional capacity and availability of resources. About 45% of graduates (both cohorts) had cited 'filled seats'. The current practice is that once the seats for a particular course are filled, remaining applicants are offered the next available courses. *That 18% did not get the courses that they liked better suggests the absence of proper and regular mapping of course demand and supply.* The second important reason was non-availability of the courses as per their initial preference. They would have obtained any available course just to continue learning rather than to genuinely learn. The third most cited reason was that other people had influenced them—a typical case of yielding to peer pressure and social influence. Interestingly, few graduates reported they simply had 'no idea' while a few other cited the reasons related to admission process such as not being able to meet the course admission requirement. There were a few variations between two cohorts in terms of the overall pattern of graduates' given reasons for not getting the course of their first choice.

Figure 4.5: The graduates' Reasons for not getting to take courses of their choice



Thought about discontinuing training

The next question was: 'During your training, have you ever seriously considered quitting your training'? About 8% of graduates had reported they thought about quitting their training after sometime. There was no variation between the two cohorts in this reporting (Figure 4.6).



Reasons for thinking to quit training

The next question concerned 8% of the total graduates who thought about quitting the training. The question asked them to provide the reasons that provoked such a thought.

The reasons given by graduates for such thought were varied, numerous and interconnected. As illustrated in figure 4.7, twenty-three factors were identified and categorised into: personal and family, financial, learning/institutional, TVET image and employment prospects (TVET outcome). The ranking of these factors, in general, did not vary much between two cohorts though some percentage differences were observed in their reporting of a few specific reasons.

It is not surprising that the most common reason came out to be 'low TVET image'. This remains almost a universal concern. Poor TVET image is usually linked with low-profile jobs involving manual works in difficult circumstances with relatively low salary. Generally, parents and their children view the participation in TVET as a second option at best while it remains inadequately publicised and appreciated. TVET is seen more as a part of social equity policy catering to the population group of low performers who cannot afford to avail other educational options on their expenses rather than viewing it as an important element of the country's economic policies and priorities. In spite of the huge potential TVET has in terms of closing skills gap and addressing unemployment problem, students, parents and the society at large show little interest towards TVET as compared to university degrees. In most cases TVET is regarded as the last resort to advance their educational aspirations.

As expected, the second frequent reason was related to unmatched TVET supply and demand (skills mismatch). About 14% of graduates who thought about quitting the training stated that they realised the poor prospect of getting good jobs. Getting jobs is relatively less difficult for TVET graduates than for other graduates but many graduates felt the working conditions and renumeration for skilled workers are not so attractive.

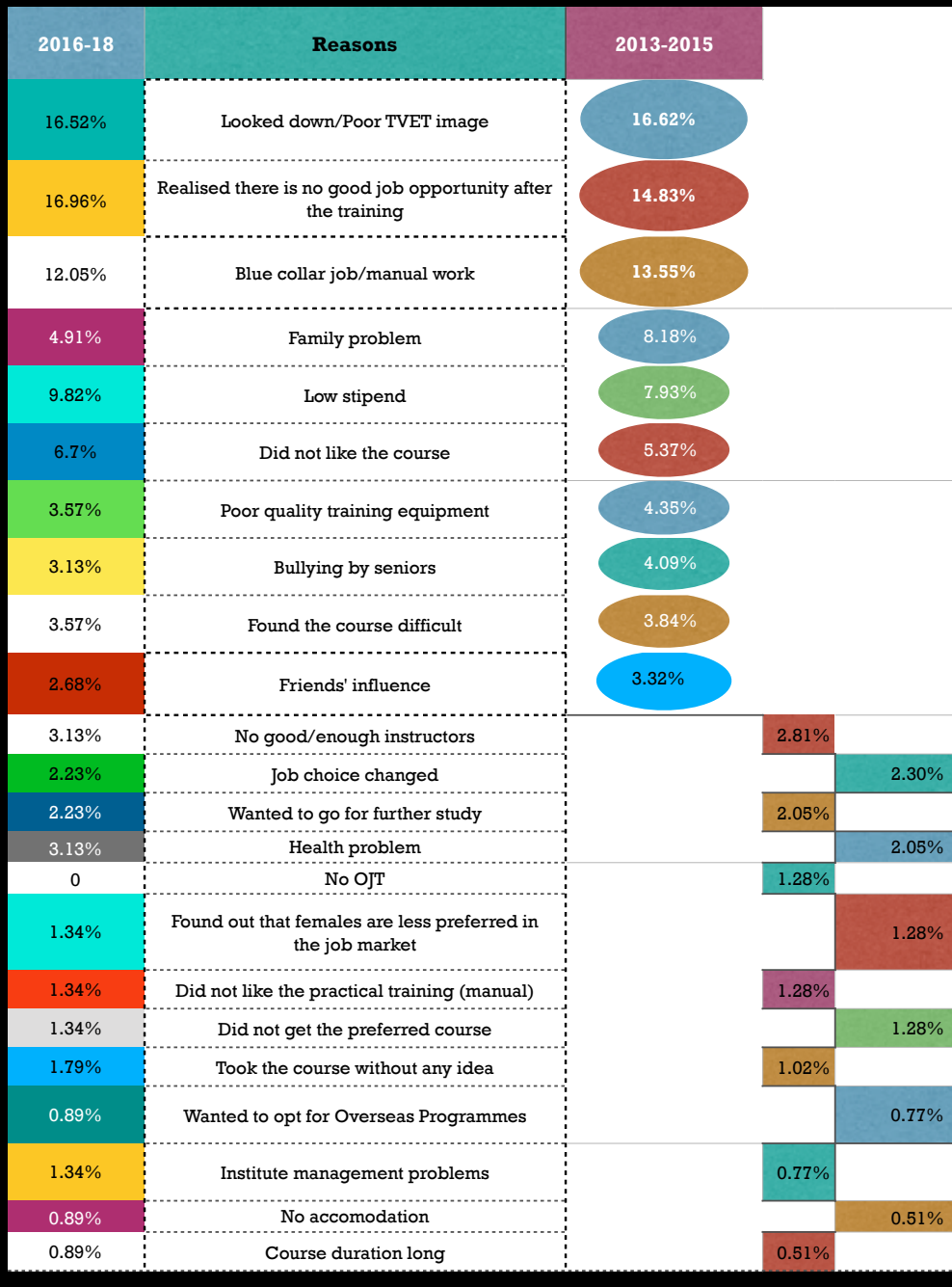
Many graduates had identified family issue as another important factor. Family issues could be the mix of different personal problems such as shortage of manpower at home, family responsibilities, financial difficulties and others.

The low stipend was identified as one major factor that affected their interest in pursuing the training. This reflects the financial problems they faced during the training period. The stipend had not been revised for so long despite repeated concerns from TTIs and IZCs though the raise in trainees' stipend was justified from both CPI and nutritional points.

The other reasons graduates cited under the learning and institutional domain were poor quality of tools and equipment, learning difficulties, shortage of teachers and inadequate practical lessons. Interestingly, many graduates had reported about the seniors' bully, which may be going on covertly in certain TTIs and IZCs. The institutes may have to take note of these reasons.

Several inter-related factors seem to influence trainees' intention to quit their training. *It might be worthy to conduct a separate study to examine the causes of dropouts in the near future. Such studies are crucial to informing policy and programmes for improving TVET image and effectiveness.*

Figure 4.7: Reported Reasons for thinking about quitting Training (2016-18 & 2013-15 cohorts)



Soft skills training

TVET trainees should be equipped with the necessary set of soft skills along with the core technical skills if they were to be more competent in the actual world of work. This is important in the context of the changing workplace situation.

Soft skills can be diverse and contextualised to unique nature of training and overall labour market situation. UNESCO (IBE 2013) defines soft skills as "A set of intangible personal qualities, traits, attributes, habits and attitudes that can be used in many different types of jobs." EU Commission (Skills Panorama, 2015) defines it as "Skills that are cross-cutting across jobs (Job-specific skills) and sectors (Sector-specific jobs) and relate to personal competences (confidence, discipline, self-management) and social competences (teamwork, communication, emotional intelligence)."

TTIs and IZCs were trying to integrate soft skills into technical and vocational training such as through the introduction of the formal teaching programmes in English, Mathematics, Dzongkha and ICT. Some institutes have been able to fully implement these programmes while others are just beginning to implement owing to shortage of teachers.

Graduates were asked to answer the question: "What soft skills/other skills that you've learned formally or informally during your training were most relevant to your job?" The purpose of this question was to assess the work relevance of soft skills that they had obtained either through formal courses or informal learning arrangements.

The results (expressed in percentages) show that graduates found entrepreneurial, computer, human relations, problem-solving and green skills relevant to their works. The results are illustrated in figure 4.8 separately for two cohorts as well as combined for 2013-18 graduates. The sizes of the bars given in the figure below are not exactly proportional to the percentage values.

TTIs and IZCs need to promote research, innovation and entrepreneurship. As found relevant by graduates, *it makes sense to explore the possibility of integrating Entrepreneurship Education with TVET, as this might also entail promoting research and innovation in the TVET programmes*. This might help to attract more youth who aspire to build their own business and entrepreneurship. The courses in two Zorig institutes appears to offer more prospects for self-employment and establishment of SMEs.

Figure 4.8: The work relevance of soft skills that graduates reported to have learnt formally or informally during their training

Responses	2016-18	2013-15	2013-18
Entrepreneurial skills	29.06	19.62	24.90
Computer skills	16.20	18.90	17.39
Human relation skills	15.76	19.67	17.48
Problem-solving skills	15.48	20.80	17.82
Green skills	12.86	12.70	12.79
Mathematics skill	8.67	6.51	7.71
Communication skills	1.29	0.77	1.06
Preservation of culture & tradition	0.36	0.41	0.38
Drawing skills	0.28	0.26	0.27
Painting skills	0.00	0.05	0.02
Designing skills	0.00	0.05	0.02
Driving skills	0.00	0.15	0.07
Total	2481	1952	4433
Missing	187	194	381
Total	2669	2146	4815

Institute-Graduate ties

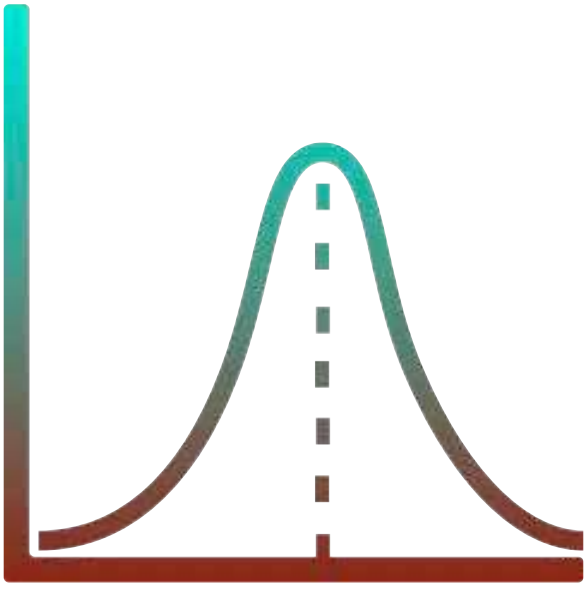
Graduates were asked the question "How would you like to keep in contact with your previous TVET institute?" The majority responded they want to do it through alumni groups/associations. Presently, several social groups facilitate closer contacts among graduates and between institutes and graduates. However, there are no formal alumni association or other programmes that can bring together institutes and graduates. Alumni association could enhance the connection between institutes, trainees and graduates to support the goals of institutes through interactive and integrative actions including sharing of experiences and promotion of TVET image.

Table 4.4: The graduates' preferred arrangement to link with their institutes

Responses	2016-18		2013-15	
	n	%	n	%
Alumni group	945	36.91	961	47.13
Personal contacts with the staff	531	20.74	395	19.37
Through the institute's newsletter/magazine	411	16.05	371	18.20
Graduate meeting	280	10.94	205	10.05
Convocation	216	8.44	0	0.00
Social media	148	5.78	94	4.61
Institute's Website	28	1.09	13	0.64
Total (A)	2560	95.92	2039	95.01
Missing	109	4.26	107	5.25
Total (B)	2669	104.26	2146	105.25

Section V

Retrospective Assessment of Training Institutions and programmes



Introduction

This section presents the results of the retrospective assessment of thirty different components of training institutions (TTIs and IZCs) vis-à-vis training programmes, summed as 'teaching and learning conditions'. The retrospective assessment takes place at the end of the training or after some years through self-assessment of different components of training and institutions. Such assessment is crucial to (i) find out the areas of deficiency in training, (ii) assess training effectiveness and adequacy, and (iii) make appropriate decisions for corrective measures and improvement.

Subjective rating of the training programmes

Graduates were asked to rate the specific teaching and learning conditions associated with TTIs and IZCs. They were further asked to grade the overall quality and relevance of the training programmes for assessing the adequacy of training programmes and their outcomes concerning the actual practice. The data were collected through these questions:

1. How would you rate the following teaching and learning conditions at TTI/IZC? Please check the answers (30 components) that you feel are the most correct ones.
2. Overall, how would you rate the quality of the technical and vocational training that you have received?
3. Overall, how would you rate the relevance the technical and vocational training you've received to your job? (Choose one answer that you think is the most correct one)

In the post-training/retrospective assessment (usually conducted immediately after the end of the training), graduates assess the change in their own belief, attitude, behaviour, performance and productivity. The present assessment was different in the senses graduates were asked to rate different components of training institutions and their programmes. It was more of seeking graduates' feedback.

The questions have generated ordinal level data as each Likert-scale question was constructed on a four-scale response item (checked). Each response item was assigned the values of 1=very poor, 2= poor, 3=good and 4 very good. These responses were ranked from 1-4. The data was ordinal and each value represented the corresponding column weight.

There is a diverse opinion about whether the 'arithmetic mean' approach could be used for the ordinal level measurement. Some statistical experts suggest that the most appropriate measure of central tendency is median or mode. In the present case, the average weighted mean approach was used. This approach constitutes the following steps:

(1) total scores ($\sum Fi$) for each response item was derived by adding the number of responses corresponding to each scale:

> Total scores ($\sum Fi$)=Number of responses for scale 1 (very bad)+ number of responses for scale 2 (bad) + number of responses for scale 3 (good) + number of responses for scale 4 (very good).

(2) The weighted scores were derived for each response item by multiplying the number of responses corresponding to that particular response by column weight and adding them up as follows:

> $\sum WiFi$=number of responses x 1 (very bad)+ number of responses x 2 (bad)+ number of responses x 3 (good) + number of response x 4 (very good) to derive a weighted total score for that response item.

1,2, 3 and 4 were taken as the corresponding column weights.

(3) The total weighted score $\sum WiFi$ was then divided by total score ($\sum Fi$) to generate the average weighted score.

(4) The average weighted score of each item was added up and divided by the number of response items to produce an average weighted mean.

Such elaborate explanation was not necessary. This had to be explained to dispel the confusion surrounding the use of mean approach to analyse the data collected through the Likert rating scale.

The results are presented in table 5.1 (A) and 5.1 (B) for the cohort of 2016-18. It is suggested to emphasise on the results of 2016-18 cohort because many assessment components would have seen improvement over time, and thus, the assessment done by the most recent graduates could be more accurate. However, as is clear from the results

of the 2013-15 cohort given in table 5.1(B), not much difference was observed in the results of these two cohorts.

Such retrospective assessment could not be used to determine 'how poor was the rating of poor'. The cut-off points could be used only to determine which weighted score (of each component) fell above and below the average. The 'ratings of poor' that fell above the cut-off point were treated as the components that require more attention These are illustrated in the tables below.

Table 5.1 (A): Graduates' Subjective assessment of institutes and various components of TVET programmes (2016-2018)

Components of institutes/training	Very poor	Poor	Good	Very good	∑Fi (a)	∑WiFi (b)	b/a	-100	Poor ®
Research component	727	1073	642	105	2546	5219	2.05	48.8	1
Quality of food	259	1192	907	85	2443	5704	2.33	41.6	2
Quality of training equipment	231	1046	1004	280	2561	6455	2.52	37.0	3
Free Internet access on the campus	318	901	1032	309	2559	6452	2.52	37.0	4
Green skilling (environment) learning	176	1039	1108	228	2550	6490	2.55	36.4	5
Entrepreneurship/business idea learning	154	1024	1101	268	2546	6577	2.58	35.4	6
Availability of technical equipment	152	915	1146	344	2556	6796	2.66	33.5	8
Trainees' involvement in decision-making	103	806	1386	263	2559	6925	2.71	32.4	9
Institute support in employment/job search	183	677	1331	354	2545	6946	2.73	31.8	10
Supply of learning materials	114	764	1352	324	2554	6994	2.74	31.5	11
ICT/computer learning	73	680	1546	194	2494	6847	2.75	31.4	12
Learning of soft skills	125	624	1576	270	2595	7181	2.77	30.8	13
Transportation facilities	141	555	1609	249	2554	7074	2.77	30.8	14
Recreational facilities on the campus	73	537	1624	323	2558	7311	2.85	28.6	15
WEIGHTED AVERAGE							2.86	28.5	
Workshop	61	560	1418	504	2544	7451	2.93	26.8	16
Books in the library	68	457	1593	426	2543	7465	2.94	26.6	17
Quality of hostel	94	417	1474	463	2448	7202	2.94	26.5	18
Hygiene and sanitation facilities	51	417	1709	378	2555	7524	2.94	26.4	19
Institute's support to trainees in problems	46	447	1523	542	2557	7677	3.00	24.9	20
Safety conditions during practical training	73	547	1183	752	2555	7724	3.02	24.4	21
Career counselling	47	347	1664	499	2556	7729	3.02	24.4	22
Institute's leadership and management quality	52	263	1776	468	2560	7778	3.04	24.0	23
Classrooms (size, light and noise condition, location, etc)	58	389	1503	606	2556	7769	3.04	24.0	24
Cooperation with the local community	15	310	1639	592	2557	7920	3.10	22.6	25
Teaching methods of instructors	24	327	1412	793	2556	8086	3.16	20.9	26
Discipline	19	150	1748	634	2550	8099	3.18	20.6	27
Quality of practical learning	33	279	1434	812	2558	8141	3.18	20.4	28
Quality of cassroom (theory) learning	36	152	1634	738	2560	8194	3.20	20.0	29
Industrial tour	76	191	1417	867	2550	8177	3.21	19.8	30
On-the-Job-Training (OJT)	44	142	1548	794	2528	8148	3.22	19.4	31

Table 5.1 (b): Graduates' Subjective assessment of institutes and various components of TVET programmes (2013-2015)

Components of institutes/ training	Very poor	Poor	Good	Very good	∑Fi (a)	∑WiFi (b)	b/a	b/a (%)	-100	Poor R
Research component	688	735	568	51	2043	4066	1.99	49.76	50.2	1
Free Internet access on the campus	388	792	772	110	2062	4728	2.29	57.32	42.7	2
Quality of food	175	860	857	89	1980	4822	2.44	60.88	39.1	3
Entrepreneurship/business ideas learning	144	956	812	129	2041	5008	2.45	61.34	38.7	4
Quality of training equipment	6.8	834	884	194	2051	5103	2.49	62.20	37.8	5
Green skilling (environment related) learning	127	838	978	99	2042	5133	2.51	62.84	37.2	6
Institute support to trainees' employment/job search	267	591	996	196	2051	5221	2.55	63.64	36.4	7
ICT/computer learning	73	719	1119	94	2004	5244	2.62	65.42	34.6	8
Availability of technical equipment	82	792	982	200	2055	5412	2.63	65.84	34.2	9
Supply of learning materials	100	675	1087	199	2061	5507	2.67	66.80	33.2	10
Trainees' involvement in the institute's decision-making	105	531	1257	167	2061	5606	2.72	68.00	32.0	11
Transportation facilities	136	446	1320	160	2061	5628	2.73	68.27	31.7	12
Books in the library	122	506	1204	227	2059	5654	2.75	68.65	31.4	13
Recreational facilities on the campus	95	479	1332	149	2055	5645	2.75	68.67	31.3	14
Learning of soft skills (English, Dzongkha, Maths, etc.)	108	495	1257	200	2060	5669	2.75	68.80	31.2	15
WEIGHTED AVERAGE							2.77	69.25	30.8	
Quality of hostel facilities	95	410	1251	227	1983	5576	2.81	70.30	29.7	16
Safety conditions during practical training	102	541	1002	409	2054	5826	2.84	70.91	29.1	17
Workshop	60	495	1188	310	2054	5854	2.85	71.25	28.8	18
Hygiene and sanitation facilities	66	333	1442	210	2051	5898	2.88	71.89	28.1	19
Institute's support for trainees in times of problems	45	413	1302	305	2064	5997	2.91	72.64	27.4	20
Career counselling	54	357	1374	277	2062	5998	2.91	72.72	27.3	21
Classrooms (size, light and noise condition, location)	1.6	353	1299	379	2064	6121	2.97	74.14	25.9	22
Cooperation with the local community	26	265	1449	320	2060	6183	3.00	75.04	25.0	23
Institute's leadership and management quality	39	228	1476	321	2064	6207	3.01	75.18	24.8	24
Quality of cassroom (theory) learning	33	199	1393	439	2064	6366	3.08	77.11	22.9	25
Teaching methods of instructor	1.8	292	1154	579	2061	6364	3.09	77.19	22.8	26
On-the-Job-Training (OJT)	73	169	1269	505	2016	6238	3.09	77.36	22.6	27
Quality of practical learning	33	265	1239	527	2064	6388	3.09	77.37	22.6	28
Discipline	23	169	1457	411	2060	6376	3.10	77.38	22.6	29
Industrial tour	28	179	1303	544	2054	6471	3.15	78.76	21.2	30

The results of the retrospective assessment were interpreted in relative terms because each dimension had both the poor and good ratings with certain dimension reflecting more deficiencies than others. The top-five ranked ratings of 'poor' for each dimension that require attention and actions are illustrated and explained in figure 5.1.

Figure 5.1: Top five poor-rated components of TVET institutes and training programmes

Among 30 training components in TTIs and IZCs, top-five components with a relatively higher rating of poor are given below. The rating was based on the average-weighting method applied to the four-point scale Likert data that rated each responses item from very poor to very good.

Research and Innovation

Among 30 different components, 'lack of research and innovation in TVET programme' was rated as one of the top limitations. Except for a few research projects initiated by instructors and trainees, technical research and innovation are areas that administrative data also pointed out as lacking in TTIs and IZCs. There was the call for establishing the R&D agency in TVET, which so far has not been materialised.

Fooding

In general, trainees are paid Nu. 1500 as monthly stipend (Nu. 1350 for food and other necessities and Nu. 150 as housing allowance). The stipend had not been revised since 2005. Bhutan's CPI had increased from 98.35 in 2012 to 137.45 index points in January 2019. This shows the cost of living had increased over the years due to inflation. Stipend had not been adjusted to the rise in the Consumer Price Index (CPI).

Tools and Equipment

Graduates had rated the quality of training tools and equipment as requiring some improvement. The Quality Management System (QMS) requires every TTI and IZC to fulfil a set of tool and standards for each course as part of quality assurance and standard processes. However, the shortage of fund to update tools and equipment in consonance with the changing technology has remained a major challenge.

Internet Connectivity

Every TTI and IZC provides wifi access on the campus. However, graduates had rated access to internet as relatively poor at the time of the survey.

Green skilling and entrepreneurship development

Green skills and entrepreneurship programmes are organised in TTIs and IZCs. Graduates had rated the two areas as relatively poor. These are new areas that may become increasingly important for TVET.

Graduates were asked to rate the relevance of ten components of training programmes to their work/employment on the five-point scale response items. The scaling was done such that 1 represented the lowest rating —'not at all relevant' and 5 the highest— 'very relevant'. The same approach of averaging the scores of each response item (explained earlier) was applied. The ranking underscored the poorest rated dimension at the top followed by the next poorest and so on to represent the dimensions requiring further investigation and actions. The results are presented in table 5.3 (a) and 5.3 (b) representing the 2016-18 and 2013-15 cohorts respectively.

The ICT course, green-skilling, soft-skills *learning, career counselling and industrial tour were the dimensions that fell above the total weighted average, meaning these are the areas that require attention.*

The results should be interpreted carefully because it could either mean these components were not relevant or too relevant. *The qualitative data that was generated through the open-ended question (which are not included) suggests that these components were too relevant but their provisions were poor or were delivered below the standard in their institutes.* However, further investigation of this particular area using the qualitative approaches suggested. The growing trend is that these dimensions are increasingly being acknowledged as crucial to transform TVET and make it holistic. They represent the changing technological and economic changes in line with the globalisation.

Table 5.2 (a): Graduates' Subjective rating of the relevance of ten dimensions of the training programmes (2013-15)(2016-18)

Areas	Scaling:Not at all relevant-Very Relevant (1-5)					∑Fi	∑WiFi	∑Fi/∑WiFi	Ranking of poor
	NAR	NR	SR	R	VR				
ICT course	106	239	673	1146	213	2377	8252	3.47	1
Green skills (environmental course)	83	245	683	1183	261	2455	8659	3.53	2
Soft skills (English, Maths & Dzongkha)	116	234	599	1162	356	2467	8809	3.57	3
Entreprenuership course	67	220	624	1197	372	2479	9027	3.64	4
Career counselling	69	161	628	1275	357	2490	9160	3.68	5
Industrial tour	98	192	568	1223	445	2525	9303	3.68	6
Weighted average								3.75	
Apprenticeship Programme (ATP)	8	17	72	147	60	304	1146	3.77	7
Theoretical learning	67	61	387	1437	590	2541	10048	3.95	8
Practical learning	57	71	364	1103	945	2540	10428	4.11	9
On-the-Job-Training (OJT)	58	97	282	1127	940	2503	10306	4.12	10

Table 5.3 (b): Graduates' Subjective rating of the relevance of ten dimensions of the training programmes (2013-15)

Areas	Scaling:Not at all relevant-Very Relevant (1-5)					∑Fi	∑WiFi	∑Fi/∑WiFi	Ranking of poor
	NAR	NR	SR	R	VR				
ICT course	108	238	542	866	166	1920	6504	3.39	1
Entreprenuership course	114	233	565	861	196	1969	6699	3.40	2
Green skills (environmental course)	107	158	571	996	165	1997	6945	3.48	3
Soft skills (English, Maths & Dzongkha)	78	189	539	971	242	2020	7167	3.55	4
Career counselling	71	156	547	1019	219	2011	7195	3.58	5
Industrial tour	110	177	456	939	345	2027	7313	3.61	6
Apprenticeship Programme (ATP)	11	16	41	123	24	214	778	3.64	7
Weighted average								3.65	
Theoretical learning	57	69	395	1053	482	2056	8002	3.89	8
On-the-Job-Training (OJT)	105	95	309	846	678	2033	7996	3.93	9
Practical learning	45	73	355	893	693	2059	8293	4.03	10

Besides, graduates were invited to give a more general assessment of the quality and relevance of TVET programmes as opposed to the specific assessment. Figure 5.2 (A) and 5.2 (B) show the rating of the overall quality of TVET programmes by graduates of two cohorts. The ratings were done on the four-point likert scale.

Instead of taking the weighted average, the results are presented in percentage distribution. The ratings of different components did not vary much between two cohorts.

Figure 5.2 (a): Graduates' subjective assessment of the overall quality of TVET programmes (2016-18)

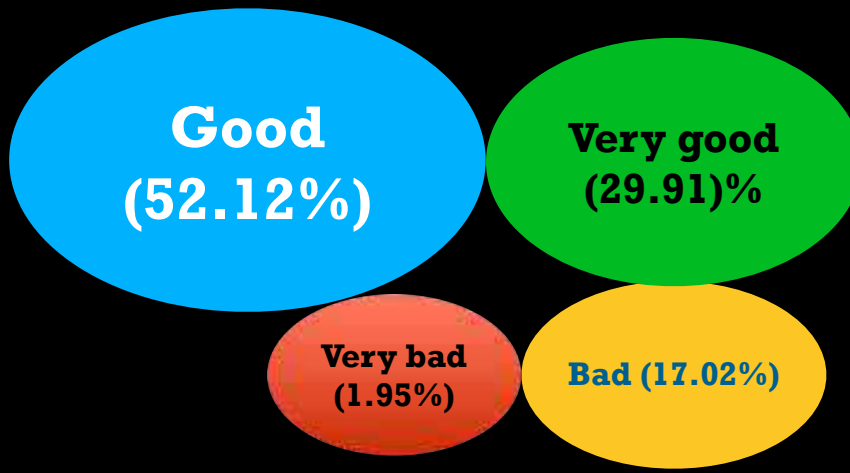


Figure 5.2 (b): Graduates' subjective assessment of the overall quality of TVET programmes (2013-15) Figure

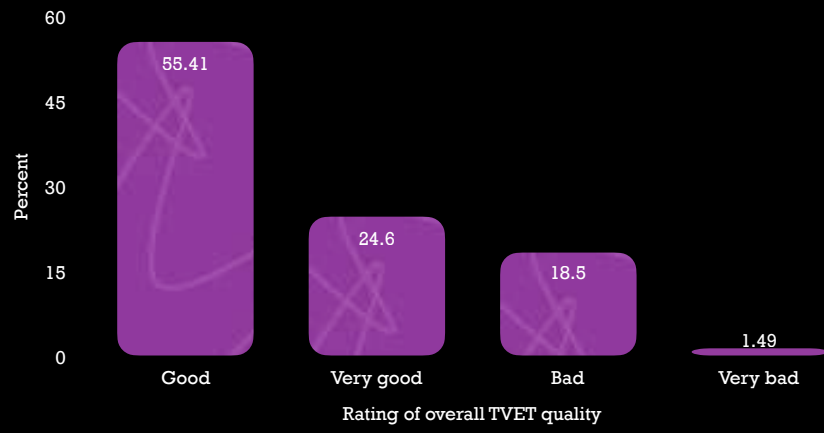
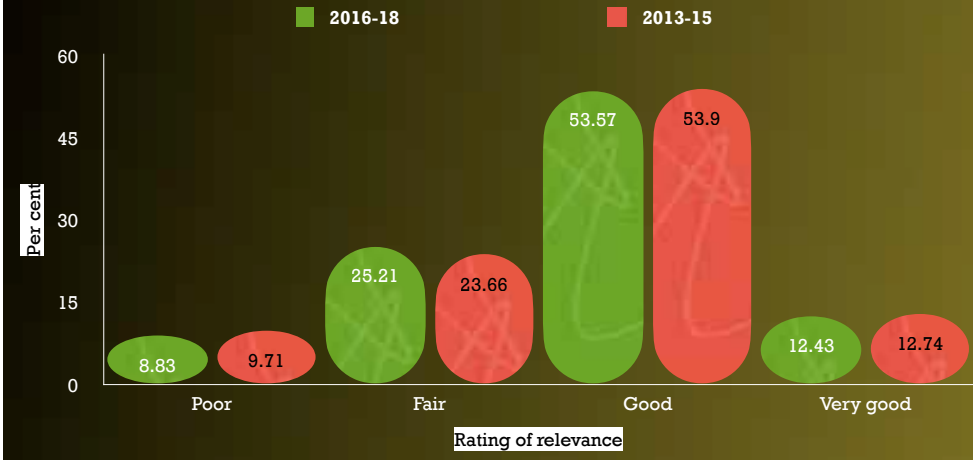


Figure 5.3: Graduates' rating of overall relevance of the TVET programmes

By the same token, graduates were asked to rate the overall relevance of their training programmes to their real work experiences. The ratings for two cohorts were almost the same. A higher percentage of graduates had rated the overall relevance as 'good' (53.67% and 53.90% respectively for the cohorts of 2016-18 and 2013-15). However, 8.83% of 2016-18 cohort and 9.71% of 2013-15 cohort had rated the overall relevance of TVET to their works as poor while there were a substantial number of graduates rating 'just fair' in both the cases. This shows the presence of a mismatch between TVET demand and supply.



Among many strategies, one best approach to reducing this mismatch could be to conduct TVET programmes based on regular mapping of TVET demand and supply. Many countries including UNEVOC (2016) recommend using the findings of regular graduate/tracer and employer surveys to determine the courses that are in high demand in the labour market and accordingly deliver these courses assuring their highest qualities. This approach is important for any country in quest of embracing the demand-driven TVET system.

'Skills mismatch' is blamed for the existing paradoxical problems of shortage of national skilled workforce and unemployment among younger age cohorts. It could be that the skills mismatch is not the absolute factor; there may be other factors such as working conditions, wage attractiveness, presence of relatively cheap foreign skilled workers, higher expectations of employers on TVET graduates to perform right from the start (disregarding that graduates in every profession are going to take time to be able to perform the tasks as the employers expect), lack of opportunity for qualification and skill up-gradation, weakness of labour market system, individual/personal attributes of TTI and IZC graduates, and so on that deter, demotivate or obstruct TTI and IZC graduates from performing well in the labour market. No one exactly knows the major factors, but everyone simply attributes the problems to poor quality and relevance of TVET programmes to the failure on the part of TVET providers—simply tagged as 'skills mismatch'. Such complete attribution to one factor without any empirical basis may not lead to any viable solution. There is, therefore, the urgent need to do robust and factual studies to confirm the factors that might lead to systematically wholistic, suitable and effective strategies.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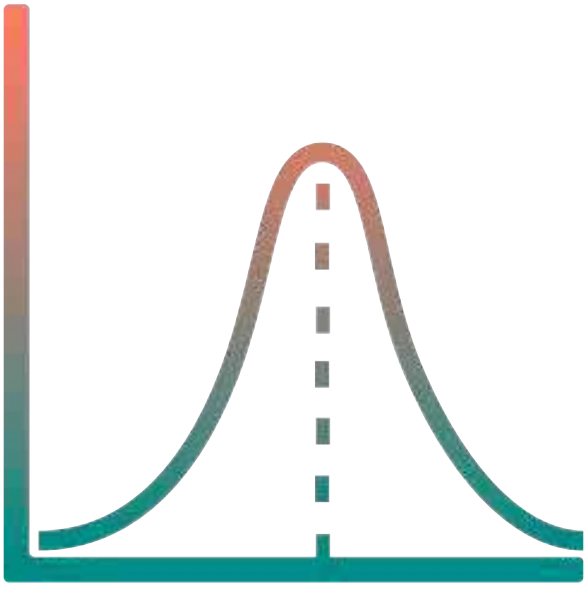
Section VI

Work-based Training—OJT and ATP



Introduction

Skills mismatch can be associated with many factors among which are the inadequacies of practical training and workplace learning experiences. Effectively combining the work-based training with classroom-based learning offers one good possibility to reduce skills mismatch. The work-based learning provides trainees with practical skills and experience they need in the real world of work.

The training programmes in TTIs and IZCs constitute structured teaching-learning processes with some practical lessons. On-the-Job-Training (OJT) and Apprenticeship Programme (ATP) are offered as part of the overall training programmes to complement the institute's practical lessons. OJT and ATP are the alternate learning phases away from the routine institutional training environment. These learning programmes are considered to provide trainees with the opportunity for individual learning and the opportunity for acquiring the applicable occupational competence and personal experiences.

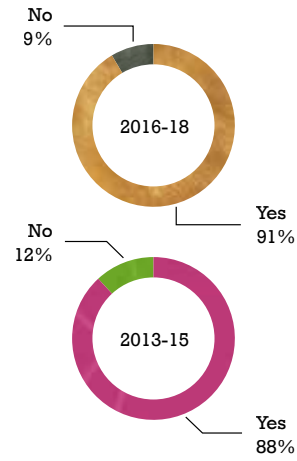
Despite the claim that OJT and ATP are useful programmes for enhancing practical learning experiences, no proper assessment had been conducted to prove their effectiveness and benefits. A section was allocated in the questionaries for questions related to OJT and ATP. These questions covered location, duration and self-assessment of benefits and problems of OJT and ATP.

On-the-Job-Training (OJT) programmes

The Apprenticeship Training Programme (ATP) was more common in the past. This programme was replaced by the OJT in recent years.

As shown in figure 6.1, 91% of graduates among the 2016-18 cohort and 88% among 2013-15 cohort had participated in the OJT programmes. The remaining graduates who had reported they did not participate in the OJTs could be the ones whose courses did not have the OJT component (like Heavy Vehicle Driving course of Samthang TTI and RPL) but other forms of field attachment.

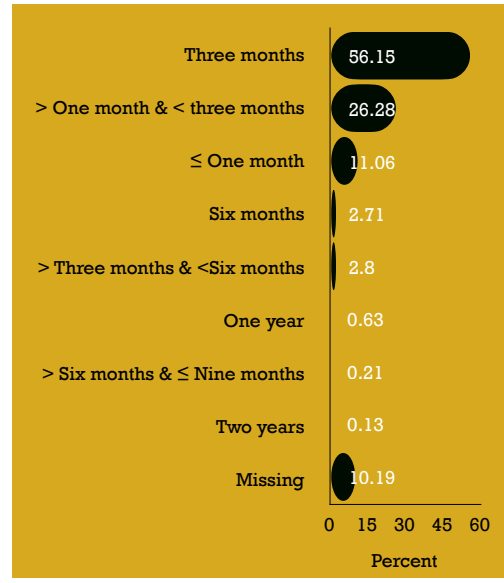
Figure 6.1: Participation in OJT (%)— 2016-18 & 2013-15



OJT's duration

The OJT duration varied among different institutes. This variation could be due to different courses requiring varying duration of OJTs as prescribed in the course curriculum. The average duration for OJT was three months (56.15%) as shown in figure 6.2.

Figure 6.2: OJT duration



OJT placement by Dzongkhag

Dzongkhags were grouped into four quintiles as shown in table 6.1. Close to 71% of OJT placement were located in the top quintile (comprising of Thimphu, Chukhha, Paro, Sarpang and Pemagatshel Dzongkhags). These Dzongkhags have higher level of economic activities. Pemagatshel Dzongkhag could have occupied the fifth position on account of the presence of Dungsam Cement Corporation Ltd., Bhutan Polymers Ltd. and Pemagatshel Dzong construction and other projects.

The second largest quintile, representing 17.76% of the total Dzongkhags, constituted Wangduephodrang, Monggar, Samdrupjongkhar, Bumthang and Trashiyangtse Dzongkhags. Only about 2.70% of the OJTs were placed in Zhemgang, Dagana, Lheuntshe, Haa and Gasa Dzongkhags.

Table 6.1: Placement Dzongkhags for OJTs (2016-18 & 2013-15)

Dzongkhag	2016-18		2013-15		Quintile (2016-18)
	n	%	n	%	
Thimphu	601	24.99	505	26.99	70.94%
Chukhha	397	16.51	330	17.64	
Paro	309	12.85	275	12.81	
Sarpang	225	9.36	121	6.47	
Pemagatshel	174	7.23	184	9.83	
Wangduephodrang	127	5.28	138	7.38	17.76%
Monggar	79	3.28	120	6.41	
Samdrupjongkhar	87	3.62	85	4.54	
Bumthang	67	2.79	66	3.53	
Trashiyangtse	67	2.79	78	4.17	
Trongsa	39	1.62	47	2.51	8.66%
Tsirang	69	2.87	61	3.26	
Samtse	35	1.46	25	1.34	
Trashigang	36	1.50	34	1.82	
Punakha	29	1.21	31	1.66	
Zhemgang	30	1.25	27	1.44	2.70%
Dagana	20	0.83	2	0.11	
Lhuentse	10	0.42	4	0.21	
Haa	3	0.12	4	0.21	
Gasa	2	0.08	7	0.37	
Total	2405	90.11	0	0.00	
Missing	264	9.89	1871	87.19	
Total	2669		2146		

OJT firms/industries

About 70 firms or conglomeration of industries/enterprises had provided OJTs to TTI and IZC graduates during the period 2013-18. The number was determined after classifying related firms/industries under the major industrial sectors, otherwise, the list was long. Top fifteen industrial sectors that supported OJTs are presented in table 6.2. The highest number of OJTs was provided by private automobile workshops (13.28% for the 2016-18 cohort and 14.42% for the 2013-15 cohort) followed by Bhutan Power Corporation Limited (BPCL) (10.78%, 2016-18 & and 12.85%, 2013-15). Top 15 OJT providers represented 73.17% of the OJT providers (2016-18 cohort) and 64.90% for the 2013-15 cohort.

Table 6.2: Firms/Sectors that offered OJTs (2016-18 & 2013-15 cohorts)

Firm/Industry	2016-18		2013-15	
	n	%	n	%
Private Automobile Workshop	328	13.82	267	14.42
Bhutan Power Corporation Limited (BPCL)	256	10.78	238	12.85
Private Construction Company	171	7.20	93	5.02
Monastery Renovation and Construction Project	170	7.16	75	4.05
Zorig Firm	124	5.22	52	2.81
TVET and Zorig Institutes	93	3.92	89	4.81
Dzong Renovation and Construction Project	90	3.79	18	0.97
Agriculture Machinery Centre (AMC)	87	3.66	68	3.67
Dungsam Cement Corporation Limited	76	3.20	52	2.81
Druk Green Power Corporation (DGCP)	69	2.91	60	3.24
Royal Academy Project, Pangbisa	65	2.74	6	0.32
Private Tailoring Firm	57	2.40	43	2.32
Royal Project	55	2.32	67	3.62
Punatsangchhu Hydroelectric Project Authority	50	2.11	67	3.62
State Trading Corporation Limited (STCBL)	46	1.94	7	0.38
TOP fifteen	1737	73.17	1202	64.90
REST	637	26.83	650	35.10

Perceived benefits of OJTs

The benefits of OJT are highlighted in table 6.3. These are not the actual benefits but as perceived by graduates. The OJT is expected to serve three major purposes: practical learning for trainees, growth in productivity of OJT provider firms/industries and aiding industries to select their future workers.

The benefits to the OJT providers can't be assessed unless a separate study is conducted using OJT providers survey or some kind of a qualitative study. Basically, the OJT is meant to bridge the gap between the competence of TVET graduates and job requirement.

Graduates were asked to agree or disagree on the four-point scale (1-4) with the pre-identified seven benefits of the OJT. These benefits were identified through the literature review. The results are presented in table 6.3 (A) and 6.3 (B) for two cohorts.

The weighted average method was used to determine the ranked benefits of OJT programmes. The weighted average scores were divided by 4 (the total score was 4, i.e. out of 4) and multiplied by 100 to give the percentage score.

The highest benefit (represented by the majority of graduates giving it the higher rating, i.e., 89.44% of the total respondents rating this item positively) came out to be in

the form of 'work experience gained' followed by the 'gain in confidence in their works'. The medium-rated benefits were *scope for direct employment, acquisition of new skills and skills fine-tuning*. The least beneficial aspect was the monetary benefit.

Direct employment is understood as the opportunity for the OJT trainees to get integrated and employed in that company/ firm after their graduation. In the actual survey, it was worded as 'helped to get a job in the same agency or company'.

Table 6.3 (a): Reported benefits of OJTs (2016-18)

Responses	Response scale				∑Fi (a)	∑WiFi (b)	b/a	b/a (%)	Rank
	Strongly disagree (1)	Disagree (2)	Agree (3)	Strongly agree (4)					
Gained work experience	68	38	742	1571	2419	8654	3.58	89.44	1
Gained work confidence	58	46	1169	1137	2411	8205	3.40	85.08	2
Helped to explore job	54	159	1353	844	2410	7807	3.24	80.99	3
Networking with experts	49	247	1495	614	2405	7484	3.11	77.80	4
Direct employment	131	866	1106	303	2407	6393	2.66	66.40	5
Helped to develop and hone skills	1179	48	66	1119	2413	5949	2.47	61.63	6
Help to earn money	661	883	599	250	2393	5224	2.18	54.58	7
Mean weighted average							2.95	73.75	

Table 6.3 (b): Reported benefits of OJTs (2013-15)

Responses	Response scale				∑Fi (a)	∑WiFi (b)	b/a	b/a (%)	Rank
	Strongly disagree (1)	Disagree (2)	Agree (3)	Strongly agree (4)					
Gained work experience	57	16	645	1141	1859	6588	3.54	88.60	1
Gained work confidence	34	29	1062	744	1870	6254	3.34	83.61	2
Helped to explore job	56	131	1120	557	1864	5906	3.17	79.21	3
Networking with experts	41	227	1154	437	1859	5705	3.07	76.72	4
Direct employment	167	711	777	210	1865	4760	2.55	63.81	5
Helped to develop and hone skills	875	35	47	905	1861	4706	2.53	63.22	6
Help to earn money	505	680	433	230	1848	4084	2.21	55.25	7
Mean weighted average							2.92	72.92	

Reported problems faced during OJT

Graduates were required to check/tick one main problem they faced during their OJTs from seven predefined problems including the 'others' option. Such a question can simply identify the problems but would not be so useful to determine the extent and depth of the problem. *A quality study on OJT is recommended given the immense importance of OJT to develop strategies for improving TVET quality and relevance.*

The results are presented in table 6.4 and expressed in frequency and percentage. The majority of graduates had reported 'insufficient daily allowance' as the most significant problem faced during their OJT programmes. About 95% of graduates had identified six problems: *insufficient daily living allowance, accommodation and transportation problems, poor support from the OJT providers including giving irrelevant tasks and poor monitoring by the institutes* in descending order. The five major problems are discussed in box 6.1.

TABLE 6.4: PROBLEMS (REPORTED) FACED BY GRADUATES DURING OJTS (2016-18 & 2013-15)

Problems	2016-18			2013-15		
	n	%	CU%	n	%	CU%
Insufficient Daily Allowance	722	29.70	29.70	563	29.84	29.85
Accomodation	531	21.84	51.55	436	23.11	52.97
Transportation	285	11.72	63.28	227	12.03	65.01
Lack of support from the company/agency	260	10.70	73.97	238	12.61	77.63
Poor monitoring by the institute	256	10.53	84.52	214	11.34	88.98
Assigned irrelevant tasks	236	9.71	94.23	119	6.31	95.29
OJT duration was short	52	2.14	96.37	36	1.91	97.19
Did not face any problem	34	1.40	97.77	38	2.01	99.21
Poor/inadequate tools and equipment	25	1.03	98.80	8	0.42	99.63
Poor safety measures	7	0.29	99.09	3	0.16	99.79
Overtime	5	0.21	99.29	0	0	99.79
Non-payment of DSA	3	0.12	99.42	0	0	99.79
No expert supervisors	3	0.12	99.54	0	0	99.79
Remote loction of the workplace	3	0.12	99.66	0	0	99.79
Unsutiable weather	3	0.12	99.79	2	0.11	99.90
Down-looked in the workplace	2	0.08	99.88	0	0	99.90
Langauge problem	2	0.08	99.96	0	0	99.90
Physically demanding	1	0.04	100	0	0	99.90
Lack of uniform change	0	0	100	2	0.11	100
Total	2431	91.08		1887	87.93	
Missing	238	8.92		259	12.07	
Total	2669			2146		

Box 6.1: Problems faced during OJTs (Reported)

Despite several claimed benefits of OJTs, there seems to be certain limitations/ shortcomings in the organisation of the programme. The results presented in table 6.4 points out five major issues. The first one is social and economic needs of the OJT trainees —the need to provide them adequate means of livelihood through the provision of a reasonable amount of subsistence allowance, means of transportation and proper accommodation.

At present, trainees are paid a daily allowance of Nu. 150 per day in the first month and Nu. 90 per day in the subsequent months in addition to a stipend of Nu. 1500. Concerning their monthly stipend of Nu. 1500 (minus Nu. 350 for accommodation), the Poverty Analysis Report (NSB, 2017) uses the food poverty line, estimated for 2017 at Nu 2,195.95 per person per month. Many trainees and institutes have been expressing the need to raise their monthly stipend to meet the minimum nutritional values and calorie intake given that their training involves manual activities and also in the context of the increased cost of loving due to change in the average price of thebasket of essential goods.

The OJTs are conducted in workplaces and in the settings different from the institute. In the institutional setting, there is a sort of the benefit of the economy of scale gleaned through the combined monthly allowance of all trainees for common expenditures. During OJTs, trainees are grouped and sent to different work locations. It was noted in the open-ended responses that even living together in a group while in the workplaces do not give them much cost advantage. This could be the reason why the sweeping majority had identified 'insufficient daily allowance' as the major problem.

It is usually assumed that the OJT providers would arrange the accommodation for the trainees, but the reality seems to be varying for different OJT programmes and altogether different in some cases. About 21.84% (2016-18 cohort) and 23% (2013-15) had underscored accommodation as a problem. At times, the workplaces could be at locations away from their place of residence, which could result in the extra cost of transportation. There is no provision to support home-to-workplace commuting cost.

Since the companies/OJT providers have no incentives to train, learning may be limited to their immediate benefits, which in most cases is manifested in the form of their intention to use trainees to meet the labour need and increase their productivity. It could be for this reason that graduates had stated 'lack of support from the company/OJT providers' and 'given irrelevant tasks' as the problems.

The issue of poor monitoring by the respective institutes featured in the survey among the top list of the reported problems. Besides, there are other problems as presented in table 6.4. *The issues related to the OJT programme management needs to be further substantiated by conducting separate qualitative inquiries with the OJT providers, graduates, trainees and staff of TTIs and IZCs to develop the OJT framework and management strategies.*

Apprenticeship Training Programmes (ATPs)

Presently, TTIs and IZCs do not provide ATPs as the Department of Human Resources under MoLHR provides several School-To-Work-Transition Programmes (STWTPs) through Public-Private Partnership (PPP). STWPTs represents non-formal TVET targeted at two main groups: (i) individuals who are not yet in the transition to work and (ii) individuals who have entered the labour market and are actively seeking employment. STWTPs aims to provide on-the-job learning experiences and skilling support to enhance the employability of young job-seekers who are mostly class X, XII and general graduates and some TVET graduates.

ATPs among TTI and IZC graduates

The number of ATP trainees was relatively lower than the number of OJT trainees. In terms of percentage, only about 9% on average (both cohorts) had availed the ATPs (table 6.5). It is possible that most ATPs were obtained through the informal arrangement, mostly by graduates of two IZCs.

Table 6.5: Did you attend ATP?

	YES		NO	
	F	%	F	%
2016-18	261	9.78%	2408	90.22%
2013-15	183	8.53%	1962	91.43%

ATP benefits

The benefits of ATPs (as reported by graduates) corresponded to the advantages associated with OJTs except that the perceived benefit— 'it [ATP] helped develop and refine skills' was ranked second while in the OJT case this benefit was ranked second last. The percentage distribution of the ATP benefits by cohort are given in table 6.6 (A) and 6.6 (B).

Table 6.6 (a): Percieved benefits of ATP (2016-18)

Responses	Responses scale				∑Fi (a)	∑Wi Fi (b)	a/b	a/b (%)	Rank
	Strongly disagree	Disagree	Agree	Strongly agree					
Gained work experience	8	3	103	120	234	803	3.43	85.79	1
Helped to refine skills	8	10	111	102	232	769	3.31	82.87	2
Gained work confidence	6	4	130	91	232	768	3.31	82.76	3
Helped to explore job	8	20	123	73	224	709	3.17	79.13	4
Networking with experts	5	11	161	53	231	722	3.13	78.14	5
Direct employment	10	58	130	34	232	652	2.81	70.26	6
Helped to earn money	30	56	111	38	234	627	2.68	66.99	7
Mean weighted average							3.12	78.00	

Table 6.6 (b): Perceived benefits of ATP (2013-15)

Responses	Responses scale				∑Fi (a)	∑Wi Fi (b)	a/b	a/b (%)	Rank
	Strongly disagree	Disagree	Agree	Strongly agree					
Gained work experience	0	2	82	85	170	590	3.47	86.76	1
Helped to refine skills	0	4	89	76	170	579	3.41	85.15	2
Gained work confidence	0	6	104	62	172	572	3.33	83.14	3
Helped to explore job	0	8	103	61	172	569	3.31	82.70	4
Networking with experts	5	18	115	35	172	526	3.06	76.45	5
Direct employment	0	66	69	33	167	471	2.82	70.51	6
Helped to earn money	22	44	90	16	172	444	2.58	64.53	7
Mean weighted average							3.14	78.46	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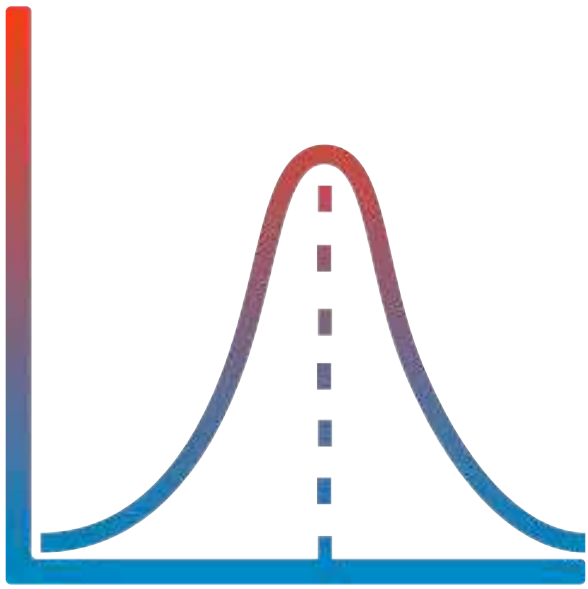
Section VII

Transition to Work and Employment



Introduction

The ultimate goal of every TVET trainee is to get a meaningful job at the end of the training. The extent to which TVET programmes are successful can depend on the training quality and relevance as well as the situation of the labour market.

The main purpose of the tracer study is to analyse TVET graduates' employment state and work trajectories. This section covers the most important part of the study. It tries to address several important questions:

1. How many TTI and IZC graduates have managed to get stable jobs?
2. How long did it take to get the jobs?
3. Are they working in the jobs they were trained for?
4. In which occupational group and sector were TTI and IZC graduates employed?
5. How many graduates were unemployed or inactive at the time of the survey?
6. What were the reasons for [their] being unemployed?
7. What was the level of income of TTI and IZC graduates?
8. Were they satisfied with their jobs?

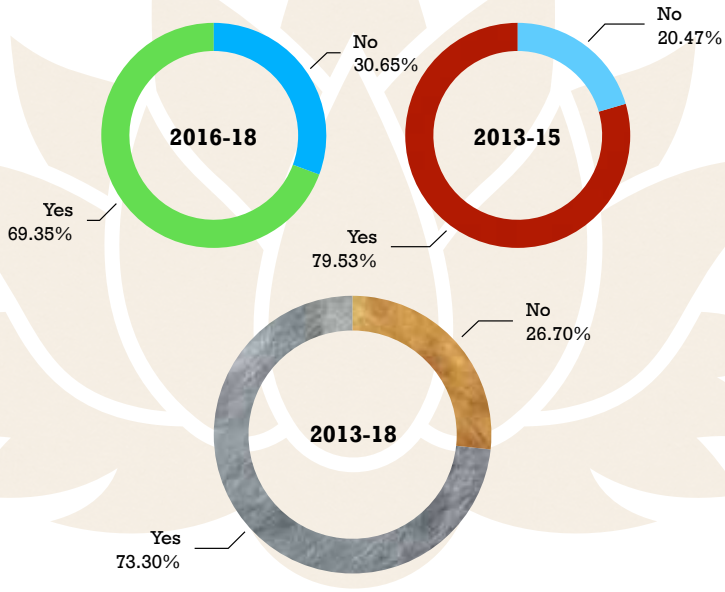
Employed /unemployed graduates by cohort

The results are expected to provide insights into the employability of graduates, identify the demand for TTI and IZC graduates in various sectors and identify possible areas needing improvement in the TVET sector. The percentage distribution of the employment status of graduates by cohort and total is shown in figure 7.1.

The higher percentage (80%) of graduates among the 2013-15 cohort reported they were employed compared to 69% of the employed from among the 2016-18 cohort. *On combining the results of two cohorts, the percentage employed averaged to 73.89%.*

The country's total employment rate in 2018 was 96.6% while the youth employment rate in the same year was 84.30% (Labour Force Survey, 2018).

FIGURE 7.1: EMPLOYMENT STATUS BY COHORT (2016-18 & 2013-15) AND 2013-18



The present study has estimated the employment rate among graduates of TTIs and IZCs at close to 80% for the cohort 2013-15 and close to 70% for 2016-18 cohort and about 73% for the 2013-18 cohort while the tracer study of 2016, covering graduates of 2014 and 2015 had estimated the employment rate at 87.89%. The difference was about 8% between these two studies. However, the following points should be noted: (i) the employment estimate of 2016 tracer study was based on the sample size of 119 graduates out of the estimated population of 1318 graduates of 2014 & 2015. The minimum sample size to estimate employment rate at 95% confidence level and 5% confidence interval should have been 298; and (ii) the sampling design targeted only the graduates of carpentry, masonry, plumbing and welding. The sampling was biased towards these courses.

Moreover, the results can't be compared because those who were employed at the time of 2016 survey would have now become unemployed and vice-versa. Among the unemployed (2013-15), about 49% had reported they were once employed but unemployed at the time of the present survey.

Overall, employment outcomes for TTI and IZC graduates were relatively better than general education graduates. This deduction was based on the Labour Force Survey (2018) data presented in table 7.1. The employment rate among the respondents with a Bachelor's Degree in 2018 was 60.94%.

Table 7.1: Employment rate within various educational attainment groups

Education Groups	Employed	Unemployed	Total	Employed (%)	Unemployed (%)
NFE	12,675	31	12,706	99.76	0.24
ECCD/Daycare					
Primary	24,881	410	25,291	98.38	1.62
Lower Secondary	9,393	841	10,234	91.78	8.22
Middle Secondary	14,996	2503	17,499	85.70	14.30
Higher Secondary	7,978	2965	10,943	72.91	27.09
Certificate					
Diploma					
Bachelor's Degree	4,242	2719	6,961	60.94	39.06
Masters and above	531	90	621	85.51	14.49

Source LFS, 2018

Table 7.2 presents the data on the percentage distribution of the graduates' employment status and year of graduation. The employment rate was the highest among 2014 graduates (82.40%) in 2019 at the time of the survey. The relatively low number of graduates (63%) of 2018 were employed, possibly indicating that more recent graduates had comparatively lower employment rate. The highest representation of graduates in the sample belonged to those who graduated in 2017 and 2018 (shown in last column of table 7.1).

Table 7.2: Percentage distribution of employed/unemployed graduates by graduation year

Year	Yes		No		Total	% of total sample
	n	%	n	%	n	%
2013	412	76.60	126	23.40	538	11.17
2014	530	82.40	113	17.60	643	13.35
2015	510	78.50	140	21.50	650	13.50
2016	568	76.50	174	23.50	742	15.41
2017	852	71.40	341	28.60	1193	24.78
2018	661	63.00	389	37.00	1050	21.81
Total	3532	73.30	1283	26.70	4815	

Employed/unemployed graduates by gender

Table shows 7.3 shows among 2013-2018 graduates (combined), 30.70% of females were employed compared to 69.30% of males indicating that the employment rate among male graduates was twice that of females. Furthermore, among female graduates, 61.26% were employed and 38.74% were unemployed. Out of the total male graduates, 80.41% were employed 19.59% unemployed.

It was not possible to determine the employment rates at the course level though was desired. The national-level multi-cohort tracer survey can't be used for this purpose. Only the institute-level or programme-level tracers survey is designed to capture the employment rates at the course level.

Table 7.3: Cross-tabulation of employment rates among graduates by gender (2013-2018)

Are you presently employed?	2013-2018		
	Female	Male	Total
	NO		
Frequency	685	598	1283
Row %	53.40	46.60	100
% of Total	14.20	12.40	26.70
	YES		
Frequency	1083	2450	3533
Row %	30.70	69.30	100
% of Total	22.50	50.90	73.30
	TOTAL		
Count	1768	3047	4815
Row %	36.70	63.30	100

Percentage distribution of employed/unemployed graduates by institutes

The percentage distribution of graduates by employment status (employed/unemployed) across the TTIs and IZCs is given in table 7.4. The statistics were derived for the total graduates of the 2013 to 2018 cohort.

The highest percentage of Samthang TTI graduates were employed (80.50%) and represented 11.70% of the total employed graduates. The next highest percentage of employed graduates belonged to Serzhong VTI (78.90%) and represented 6.70% of the total employed graduates. The average employment rate for the total graduates (combination of 2013-2018 graduates) was 73.30%. The employment rates that were below the average were among graduates of Chumey TTI (69.90%), JWPTI (64.80%), Thimphu TTI (71.20%), and Thimphu NIZC (67.40%). Overall, employment rate were lower among graduates who passed from those TTIs that offered courses in construction and automobile occupations.

Table 7.4: Percentage distribution of employment rates among graduates by institutes (2013-2018)

Parameter	2013-2018		
	Employed	Not employed	Total
Chumey Technical Training Institute (TTI-C)			
Count	446	192	638
Row %	69.9	30.10	100
% of Total	9.30	4.00	13.20
Jigme Wangchuck Power Training Institute (JWPTI)			
Count	370	201	571
Row %	64.8	35.20	100
% of Total	7.70	4.20	11.90
Khuruthang Technical Training Institute (TTI-K)			
Count	623	203	826
Row %	75.40	24.60	100
% of Total	12.90	4.20	17.10
Ranjung Technical Training Institute (TTI-R)			
Count	513	173	686
Row %	74.80	25.20	100
% of Total	10.60	3.00	14.20
Samthang Technical Training Institute (TTI-S)			
Count	562	136	698

Parameter	2013-2018		
	Employed	Not employed	Total
Row %	80.50	19.50	100
% of Total	11.70	2.80	14.50
Serzhong Vocational Institute (SVI)			
Count	325	87	412
Row %	78.90	21.10	100
% of Total	6.70	1.80	8.60
Thimphu Technical Training Institute (TTI-T)			
Count	131	53	184
Row %	71.20	28.80	100
% of Total	2.70	1.10	4
Thimphu Institute of Zorig Chusum (NIZC)			
Count	295	143	438
Row %	67.40	32.60	100
% of Total	6.10	3.0	9.10
Trashiyangtse College of Zorig Chusum (CZC)			
Count	268	97	365
Row %	73.40	26.60	100
% of Total	5.60	2.00	7.60
Total	3531	1284	4815
% of Total	73.30	26.70	100

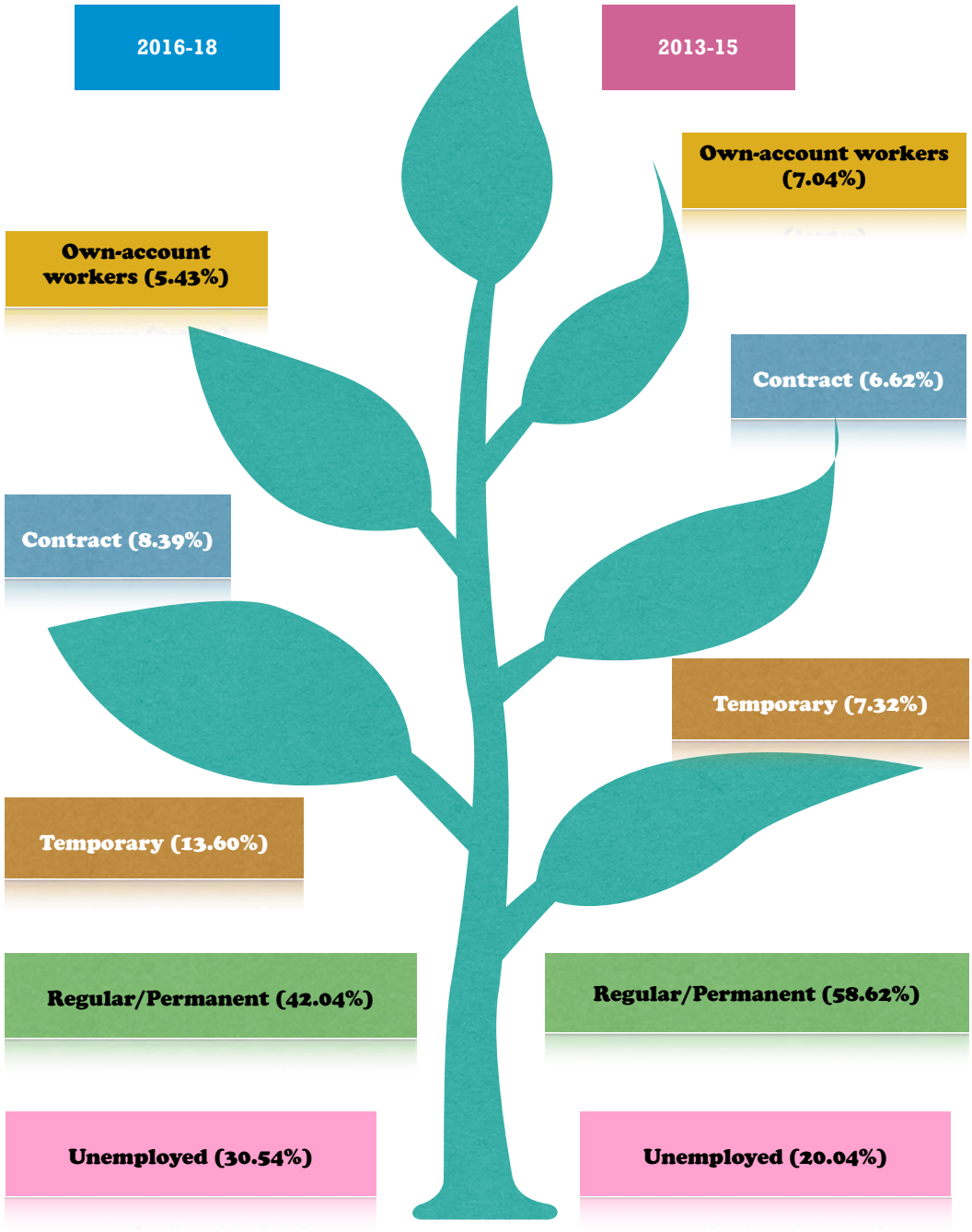
Nature of employment

Figure 7.2 illustrates the type and nature of employment separately for the 2016-18 and 2013-15 cohorts. Among the 2016-18 cohort, 42.04% were regular or permanent workers while it was 58.62% among the 2013-15 cohorts. Most TTI and IZC graduates appear to become regular with the passage of time. *Despite the fact TTI and IZC graduates had relatively better employment outcomes than the general graduates, a substantial number of them working as temporary and contract workers is something of concern.* These type of employment has no guarantee that the workers will get regularised. One of the fears among job seekers in the country is the security of the job not only in terms of post-retirement benefits but also in terms of continuance or stability of jobs.

ILO defined temporary workers as those workers engaged only for some "specific period of time, including fixed-term, project-or task-based contracts as well as seasonal or casual work, including day work." Temporary employment may provide flexibility to enterprises or firms to adjust with the changes in demand, including seasonal fluctuation or for replacement of those employees who are temporarily absent, but this is not a preferred choice for most workers, especially if temporary works are involuntary.

That about 5-7% of graduates were own-account workers/business was reassuring development. This is one employment type that needs to be promoted through various business innovation and entrepreneurship support schemes. This suggests that TVET, be it through a revolution in curriculum, training delivery or any other reform initiatives must prepare graduates not only for immediate jobs, but also for continuing employment, self employment and entrepreneurship in SMEs.

Figure 7.2: Nature of Employment



Ease of getting relevant jobs/employment

The question 'Was it easy for you to find a job related to your training/course'? was intended to infer the ease of getting relevant jobs. It covered two aspects of employment: job accessibility and the relationship of training to available jobs. Figure 7.3 shows that only about 38% among graduates of both the cohorts found the relevant jobs with relative ease. The majority of them (58.03%, 2016-18 & 60.12%, 2013-15) found it difficult to get the relevant jobs.

The results suggest the need to do so much to improve the link between TVET and the labour market. Strengthening TVET-labour market linkage may entail the effort on both the 'supply' and 'demand' ends. This implies that while TVET needs to improve its training quality and relevance, there should be a concomitant effort to improve the labour market situation particularly to make jobs attractive, favourable and motivating for graduates and boost the employers' willingness to employ the domestic TVET graduates even if doing so against the availability of cheap imported labour will incur some additional costs. It further raises the question of what incentives could be made available for employers to motivate them to recruit home-grown skilled workers (to complement the efficacy of the restriction set on certain trades for foreign workers) and encourage them to make adequate investments towards enhancing the workers' productivity. This is so much about finding policy and institutional arrangements to align 'incentives' and 'motivations' for both employers and employees, the responsibility of which is beyond the TVET sector.

The highest percentage of Samthang TTI graduates reported they had the advantage of getting relevant jobs (table 7.5). The institute offers heavy vehicle and earth moving courses that are in high demand. Many graduates from two Zorig Institutes had reported that they did not look for jobs.

Figure 7.3: Percentage distribution of graduates' ease of getting relevant jobs

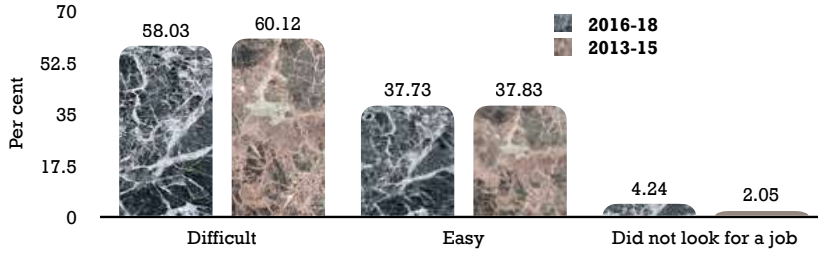


Table 7.5: Ease of getting jobs among graduates of 2013-18 by institutes

Institute	Yes		No		Did not look for a job		Total
Samthang Technical Training Institute (S-TTI)	347	19.08	330	11.66	22	13.75	699
Khuruthang Technical Training Institute (K-TTI)	322	17.70	483	17.06	19	11.88	824
Ranjung Technical Training Institute (R-TTI)	232	12.75	438	15.47	17	10.63	687
Chumey Technical Training Institute (C-TTI)	218	11.98	398	14.06	22	13.75	638
Trashiyangtse College of Zorig Chusum (CZC)	168	9.24	169	5.97	24	15.00	361
Thimphu Institute of Zorig Chusum (T-IZC)	165	9.07	248	8.76	24	15.00	437
Jigme Wangchuck Power Training Institute (JWPTI)	152	8.36	405	14.31	14	8.75	571
Serzhong Vocational Institute (SVI)	142	7.81	266	9.40	3	1.88	411
Thimphu Technical Training Institute (T-TTI)	73	4.01	98	3.46	11	6.88	182
Total	1819		2831		160	100.00	4810

Time-lag to get the first job

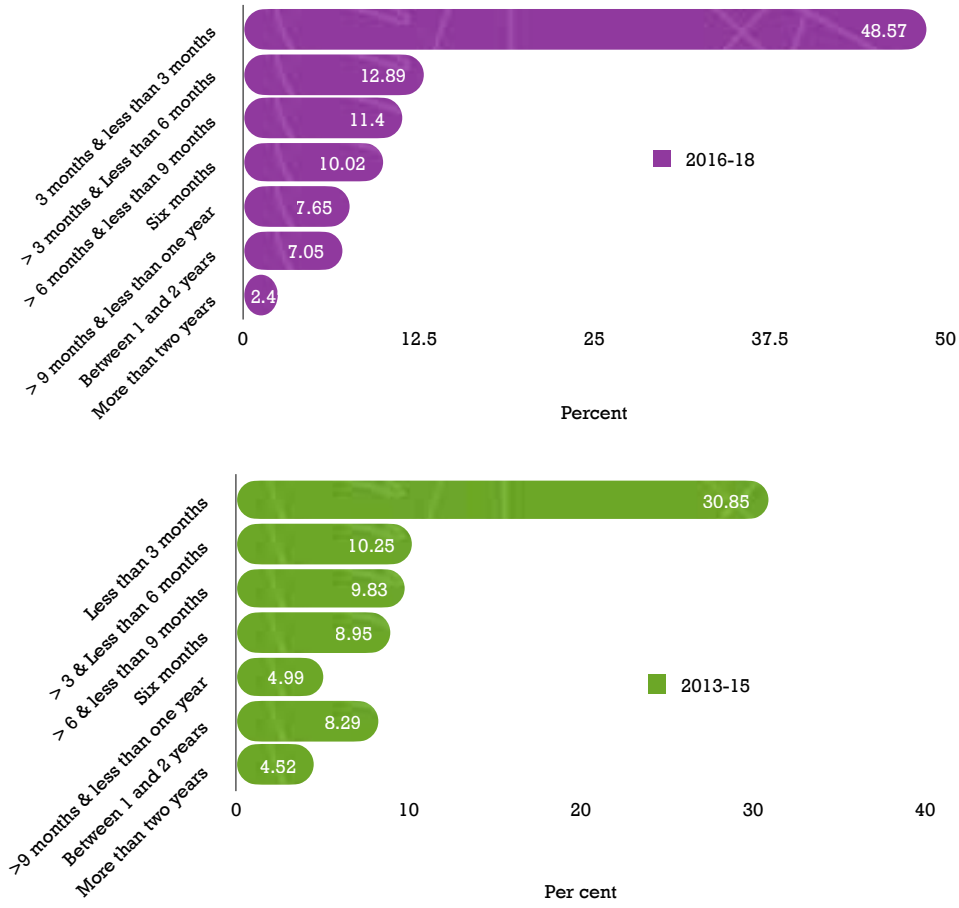
Transition from training to a secure employment can be too long for the new entrants as well as for those who change their jobs frequently. Long transition period can lead to financial hardships, loss of confidence and frustrations particularly when the number of good employment opportunities in the private sector is limited. Many graduates tend to wait long enough in anticipation of the jobs in the public sector.

Figure 7.4 presents the statistics on the time-lag between graduation and first job for the graduates (separately 2016-18 and 2013-15 cohorts).

About 49% of 2016-18 graduates had reported that they got their first job within three months of graduation while 31% of 2013-15 graduates reported the same.

Some graduates (2.4% in case of the 2016-18 cohort and 4.52% of the 2013-15 cohort) reported time-lag of more than two years. If six months is considered a reasonable time-lag, about 60% (2016-18 cohort) and 41% (2013-15 cohort) got their first job within six months after graduation. The details are illustrated in the figure below. *The results published in TVET Statistics and the present results may not match precisely on account of using different groups of graduates based on the year of graduation.*

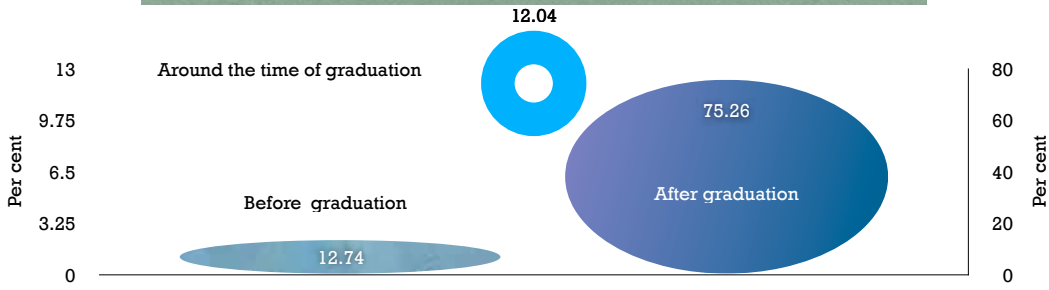
Figure 7.4: time-Lag between graduation and first job as reported by graduates



Time of job search

As illustrated in figure 7.5, graduates of the 2016-18 cohort had stated that the majority (75.26%) of them started to look for the jobs only after graduation. More than 12.04% had started their job search around the time of graduation while 12.74% did the same before graduation. *The findings will have implications on the communication strategies such as the timing of career guidance and counselling, media and other campaigns to promote a positive attitude towards different economic sectors and pre-employment job matching exercise.*

FIGURE 7.5: TIME OF JOB SEARCH (2016-2018) AS REPORTED BY GRADUATES



Source of job information

The major sources of job information for graduates were friends and family members. The other sources were the online advertisement, print media, employment service centres, TV advertisement and so on as shown in table 7.6. None of the 2013-15 graduates had reported they used employment service centres, which the present data can't explain.

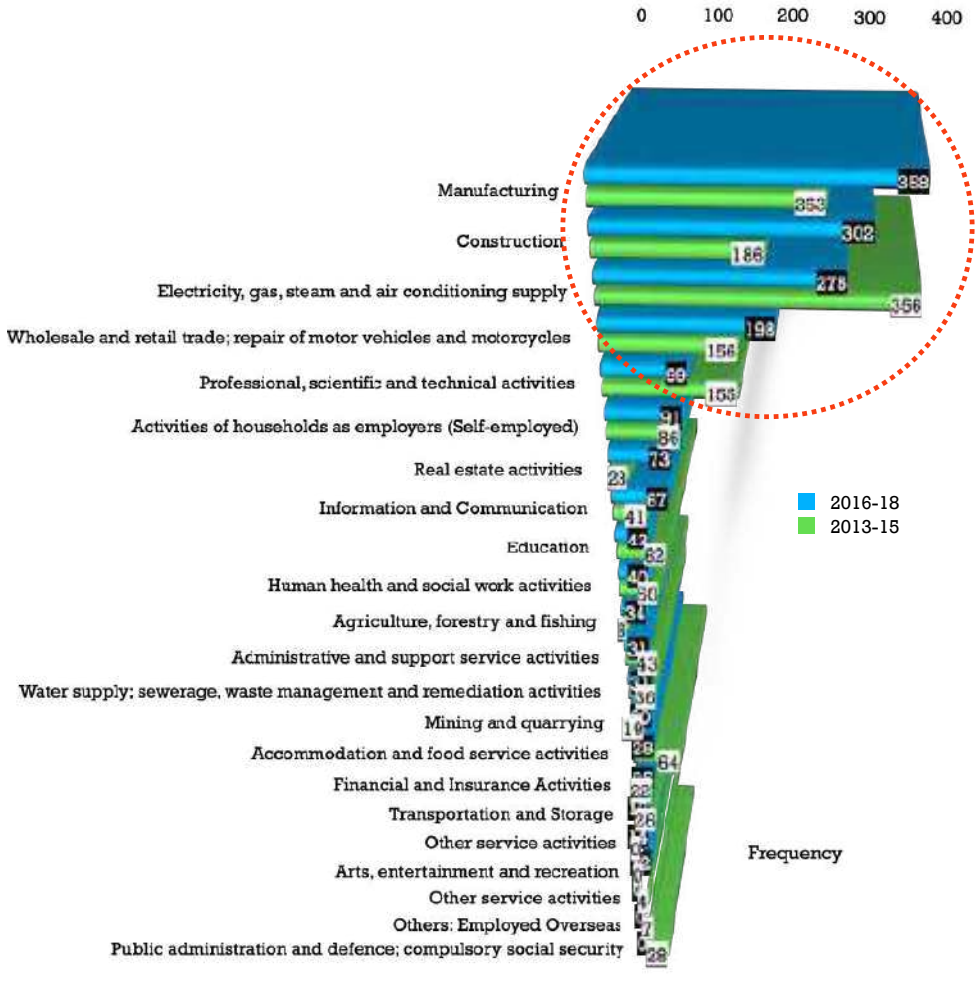
TABLE 7.3: SOURCE OF JOB INFORMATION FOR GRADUATES

Responses	2016-18		2013-15	
	n	%	n	%
Friends/family members	553	33.86	370	24.68
Online advertisement	311	19.04	217	14.48
Print media advertisement	200	12.25	330	22.01
Through employment service centres	125	7.65	0	0.00
BBS TV advertisement	108	6.61	214	14.28
I established contacts during OJT	88	5.39	71	4.74
I was approached by an employer	68	4.16	39	2.60
On-Campus Recruitment	61	3.74	22	1.47
Job Fair	50	3.06	40	2.67
Door-to-door job hunting	45	2.76	38	2.54
Instructors/Institute	20	1.22	23	1.53
Radio annoucement	2	0.12	3	0.20
Telephonic call	1	0.06	116	7.74
Posted by RCSC	0	0.00	15	1.00
Total	1633	61.18	1499	69.85
Missing	1036	38.82	647	30.15
Total	2669		2146	

Economic sectors where graduates worked

The various economic sectors where graduates were employed were numerous and varied. To simplify and provide informative statistics, the employing entities were classified using the International Standard Industrial Classification of All Economic Activities (ISIC, REV-4). ISIC classifies all entities according to the activity they carry out. ISIC serves as a basic tool for promoting the development of the national statistical system and fostering international compatibility of data. It is used for studying economic phenomena. The number of graduates working in different major groups by two cohorts is given in figure 7.6. Top-five sectors where the 2016-18 graduates were workings were the *manufacturing sector* followed by the *construction*, *electricity, gas, steam and air conditioning supply*, *wholesale and retail-repair of motor vehicles & motorcycles* and *professional, scientific, and technical activities*. Among the 2013-15 cohort, the top employment sector was electricity, gas, steam and air conditioning supply. The details are given in the figure below (7.6).

Figure 7.6: Sectors employing graduates (2016-18 & 2013-15) as per ISIC,REV-4



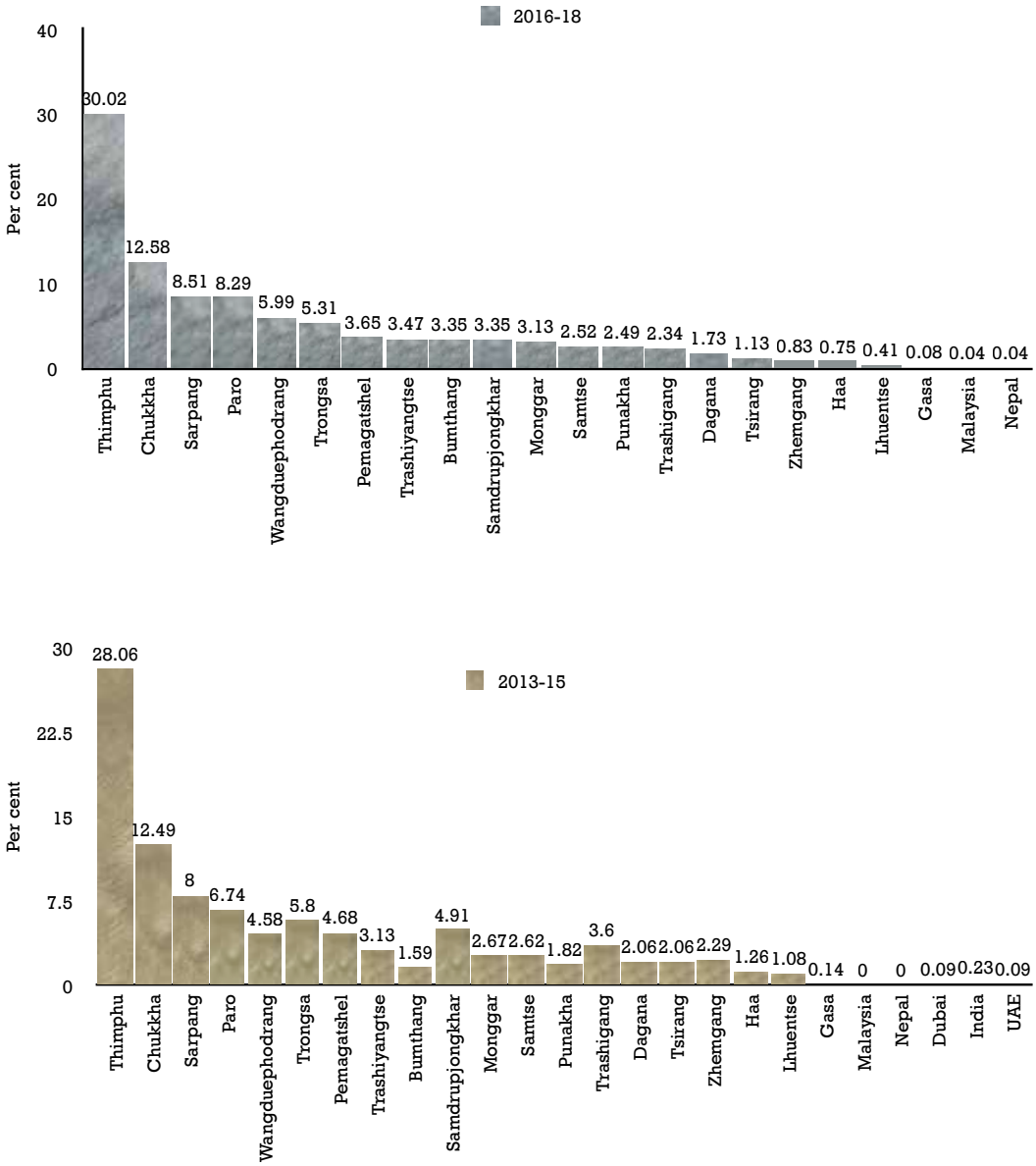
Out of about 700 different entities including own-account works and businesses, top 25 employers of TTI and IZC graduates of 2013-2018 are listed in table 7.7. These 25 entities (agencies or companies) employed about 42% of graduates (2013-18).

Table 7.7: Top 25 employers of graduates of 2013-2018

SLN	Employer/Sector	n	%	CU%
1	Bhutan Power Corporation Limited (BPCL)	315	9.39	9.39
2	Druk Green Power Coproration Limited (DGCPL)	106	3.16	12.55
3	Construction Development Corporation Limited (CDCL)	92	2.74	15.30
4	National Housing Development Corporation Limited (NHDCL)	88	2.62	17.92
5	Farm Machinery Corporation Limited (FMCL)	82	2.44	20.36
6	Dzongkhag Engineering Section	75	2.24	22.60
7	Royal Academy Construction Project	52	1.55	24.15
8	Departmet of National Properties (DNP)	51	1.52	25.67
9	Dzong Constrution Project	50	1.49	27.16
10	Punatsangchhu Hydroelectric Project Authority (PHPA)	50	1.49	28.65
11	Department of Roads (DOR)	44	1.31	29.96
12	Mangdechu Hydroelectric Project Authority (MHPA)	44	1.31	31.28
13	Ministry of Health	36	1.07	32.35
14	Royal University of Bhutan (RUB)	34	1.01	33.36
15	Bhutan Ferro Alloys Limited (BFAL)	33	0.98	34.35
16	Tashi Infocom Limited	33	0.98	35.33
17	Dungsam Cement Corporation Limited (DCCL)	31	0.92	36.26
18	Thimphu Thromde	31	0.92	37.18
19	State Trading Corporation of Bhutan (STCBL)	26	0.78	37.95
20	Army Welfare Project Limited (AWPL)	25	0.75	38.70
21	Bank of Bhutan Limited (BoBL)	25	0.75	39.45
22	Bhutan Telecom Limited (BTL)	24	0.72	40.16
23	Central Regional Referral Hospital (CRRH)	22	0.66	40.82
24	Nikachu Hydroelectric Project	22	0.66	41.47
25	Zimdra Food Private Limited	21	0.63	42.10

The spatial distribution of the entities where graduates were working are presented separately for two graduate cohorts. In both cases, the majority of the employing entities were based in Thimphu, Chukkha, Sarpang, Paro and Wangduphodrang Dzongkhags as shown in figure 7.7.

Figure 7.7: Percentage distribution of location of employing entities by Dzongkhags where graduates of 2016-18 & 2013-15 were working



Specific occupations (as reported)

Graduates had specified their designations or job positions. Over 80 different job positions were reported. Table 7.8 presents the details but of only that of graduates of 2016-18 cohort (recent years) because of the long list. The data shows that the highest number of graduates were *electrical technicians* (16.59%), *auto-mechanics* (9.30%), *plumbing technicians* (6.26%), *tailors* (6.03%), *carpenters* (5.91%) and so on.

Table 7.8: Occupations of graduates (only for 2016-18 graduates)

SL	Designation	n	%	CU %
1	Electrical Technician	289	16.59	16.59
2	Auto Mechanic	162	9.30	25.89
3	Plumbing Technician	109	6.26	32.15
4	Tailor	105	6.03	38.17
5	Carpentery Technician	103	5.91	44.09
6	Welding Technician	102	5.86	49.94
7	Site Supervisor	95	5.45	55.40
8	Mason	73	4.19	59.59
9	Traditional Painter	60	3.44	63.03
10	HV Driver	59	3.39	66.42
11	Wood Carver (Patrap)	37	2.12	68.54
12	IT Technician	35	2.01	70.55
13	Machine Operator	34	1.95	72.50
14	Embroiderer	32	1.84	74.34
15	Mechanical Fitter	28	1.61	75.95
16	Plant Operator	25	1.44	77.38
17	VEEET	25	1.44	78.82
18	Furniture-Maker	22	1.26	80.08
19	Business	20	1.15	81.23
20	General Technician	19	1.09	82.32
21	Elementary Service Personnel (ESP)	18	1.03	83.35
22	Sculptor	18	1.03	84.39
23	Store In-Charge	16	0.92	85.30
24	TVET Trainer	16	0.92	86.22
25	HEM Operator	14	0.80	87.03
26	Sales and Marketing In-Charge	14	0.80	87.83
27	Gold & Silver Smith (Trezop)	13	0.75	88.58
28	LV Driver	13	0.75	89.32
29	Manual Worker	13	0.75	90.07
30	Civil Technician	10	0.57	90.64
31	Cable TV Technician	9	0.52	91.16
32	Panel Beater	9	0.52	91.68
33	Wood Turner (Shazop)	8	0.46	92.14
34	Mechanical Technician	7	0.40	92.54
35	Office Assistant	7	0.40	92.94
36	Road Inspector	7	0.40	93.34
37	Auto Electrician	6	0.34	93.69
38	Motor Vehicle Inspector	6	0.34	94.03
39	Spare Parts Executive	6	0.34	94.37
40	Coach and Refree	5	0.29	94.66
41	Field Assistant	5	0.29	94.95
42	Maintenance In-Charge	5	0.29	95.24
43	Manager	5	0.29	95.52
44	Policeman	4	0.23	95.75
45	Production Supervisor	4	0.23	95.98
46	Service Manager	4	0.23	96.21
47	Auto Denting	3	0.17	96.38
48	Banking Assistant	3	0.17	96.56
49	Fabrication Technician	3	0.17	96.73
50	Freelance Zorig	3	0.17	96.90
51	Housekeeping	3	0.17	97.07
52	Security Guard	3	0.17	97.24
53	Teacher	3	0.17	97.42
54	Accountant	2	0.11	97.53
55	Assistant Transport Officer	2	0.11	97.65
56	Auto Painter	2	0.11	97.76
57	Bio-Medical Technician	2	0.11	97.88
58	Car Washer	2	0.11	97.99
59	Despatcher	2	0.11	98.11
60	Frabrication Technician	2	0.11	98.22
61	Hiring Coordinator	2	0.11	98.34
62	Mechanical Supervisor	2	0.11	98.45
63	Messenger	2	0.11	98.56
64	Mobile Technician	2	0.11	98.68
65	Order Desk Executive	2	0.11	98.79
66	Safety Steward	2	0.11	98.91
67	School Counsellor	2	0.11	99.02
68	Shift In-Charge	2	0.11	99.14
69	Sound Technician	2	0.11	99.25
70	Technical In-Charge	2	0.11	99.37
71	Technician	2	0.11	99.48
72	Tour Executive	2	0.11	99.60
73	Warranty Manager	2	0.11	99.71
74	Wood Fabricator	2	0.11	99.83
75	Caregiver	1	0.06	99.89
76	Clearing In-Charge	1	0.06	99.94
77	Motor Winder	1	0.06	100
78	Overseas Job	1	0.06	100
79	Solar Technician	1	0.06	100
80	Water Caretaker	1	0.06	100

Distribution of TTI and IZC graduates by major occupations (ISCO-08)

The ILO's International Standard Classification of Occupations (ISCO-08) was used to classify and organise various job positions held by TTI and IZC graduates. The categorisation of jobs was done as per the reported job titles or positions assuming that these reflected their major tasks and responsibilities. Separate categories were prepared for major, sub-major and minor groups for 2016-18 and 2013-15 graduates. The number in parentheses represents ISCO's major occupation number (0-9). The actual number of graduates (frequencies) were taken to prepare the bar charts. As shown in figure 7.8, the highest number of graduates (for both the 2016-18 and 2013-15 cohorts) belonged to the major group 7: *Craft and Related Trades Workers,* followed by major group 3: *Technicians and Associate Professionals*. The occupational groups show that the majority of TTI and IZC graduates were working in their relevant trades.

Managers were graduates owning and operating their businesses. The classification was done with care, but it might not have been done perfectly well. Certain occupations were unique and difficult to put under any of the ICSO's major groups. These occupations were grouped under 'others'—the group other than those specified in ISCO.*

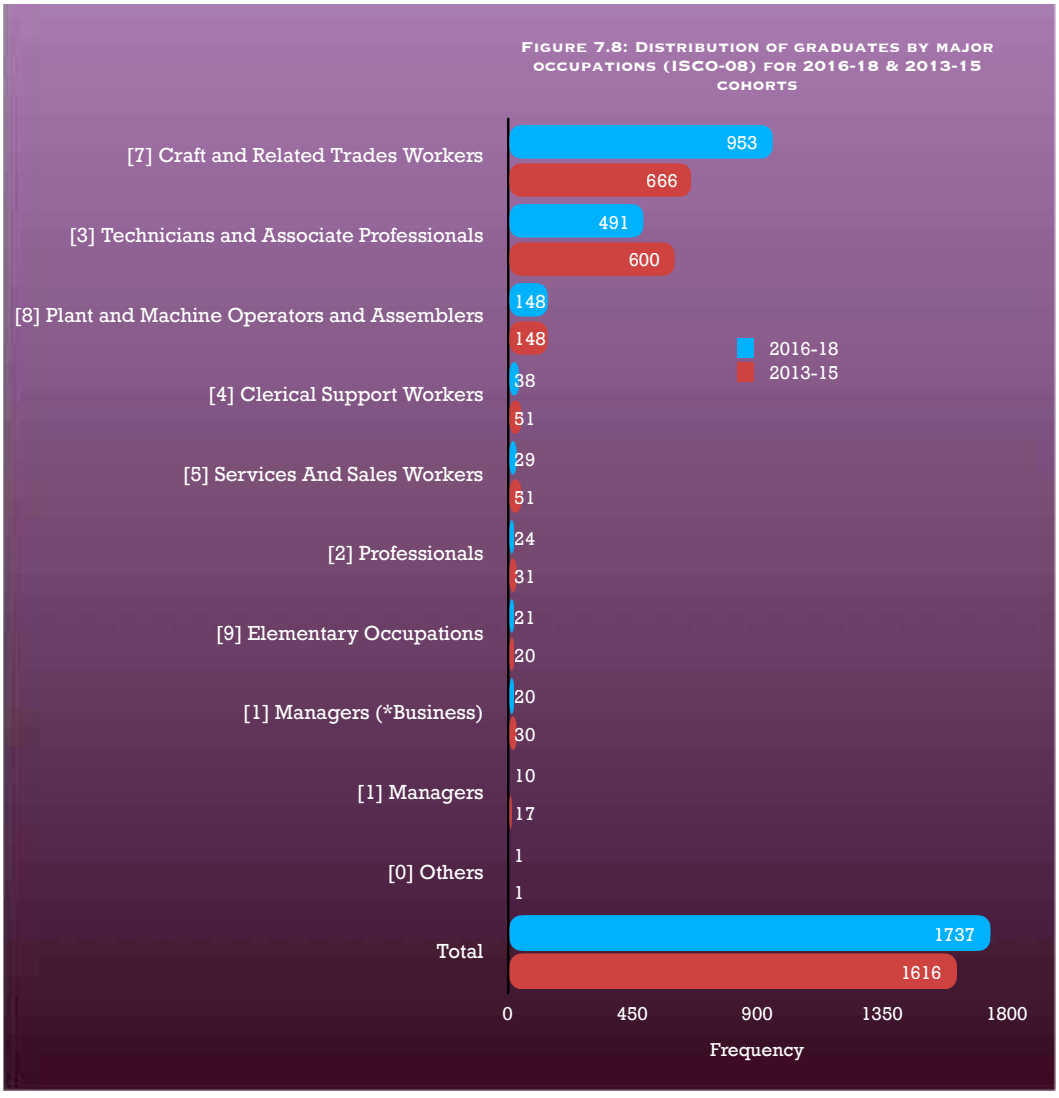


FIGURE 7.8: DISTRIBUTION OF GRADUATES BY MAJOR OCCUPATIONS (ISCO-08) FOR 2016-18 & 2013-15 COHORTS

Furthermore, graduate occupations were grouped into sub-major occupational groups. Table 7.9 shows that among the 2013-18 cohort, 83.02% belonged to sub-major occupations: *31, 71,72, 83, 75, and 81* in the descending order. The top sub-major occupation group was *Science and Engineering Associate Professionals*.

Table 7.9: Percentage distribution of graduates' occupation by ISCO's sub-major occupational groups (2013-18)

Sub-Major Occupational Group	n	%	CU%
31: Science and Engineering Associate Professionals	947	28.06	28.06
71: Building and Related Trades Workers (excluding Electricians)	830	24.59	52.65
72: Metal, Machinery and Related Trades Workers	534	15.82	68.47
75: Food Processing, Woodworking, Garment and Other Craft and Related Trades Workers	210	6.22	74.70
83: Drivers and Mobile Plant Operators	174	5.16	79.85
81: Stationary Plant and Machine Operators	107	3.17	83.02
35: Information and Communications Technicians	93	2.76	85.78
52: Sales Workers	53	1.57	87.35
43: Numerical and Material Recording Clerks	52	1.54	88.89
74: Electrical and Electronics Trades Workers	49	1.45	90.34
121*: Business Services and Administration Managers	49	1.45	91.79
33: Business and Administration Associate Professionals	45	1.33	93.13
23: Teaching Professionals	34	1.01	94.13
93: Labourers in Mining, Construction, Manufacturing and Transport	28	0.83	94.96
41: General and Keyboard Clerks	20	0.59	95.56
24: Business and Administration Professionals	17	0.50	96.06
53: Personal Care Workers	15	0.44	96.50
42: Customer Services Clerks	13	0.39	96.89
82: Assemblers	12	0.36	97.24
14: Hospitality, Retail and Other Services Managers	12	0.36	97.60
741: Electrical Equipment Installers and Repairers	8	0.24	97.84
12: Administrative and Commercial Managers	8	0.24	98.07
51: Personal Services Workers	8	0.24	98.31
13: Production and Specialized Services Managers	7	0.21	98.52
54: Protective Services Workers	7	0.21	98.73
96: Refuse Workers and Other Elementary Workers	6	0.18	98.90
34: Legal, Social, Cultural and Related Associate Professionals	5	0.15	99.05
816: Food and Related Products Machine Operators	5	0.15	99.20
32: Health Associate Professionals	4	0.12	99.32
91: Cleaners and Helpers	4	0.12	99.44
44: Other Clerical Support Workers	2	0.06	99.50
071: Engineering and engineering trades	2	0.06	99.56
26: Legal, Social and Cultural Professionals	2	0.06	99.61
21: Science and Engineering Professionals	2	0.06	99.67
432: Material Recording and Transport Clerks	2	0.06	99.73
712: Building Finishers and Related Trades Workers	2	0.06	99.79
99: Street and Related Sales and Services Workers	2	0.06	99.85
515: Building and Housekeeping Supervisors	2	0.06	99.91
0: Others	2	0.06	99.97
92: Agricultural, Forestry and Fishery Labourers	1	0.03	100.00
Total (A)	3375	100.00	
Missing	1440	29.91	
Total (B)	4815	70.09	

On grouping the graduates (2013-18) by ISCO's Minor occupational groups, top-ten occupations constituted about 67% of the total employed graduates. The top-most occupation was the *Electrical Engineering Technician as shown in table 7.10.*

Table 7.10: Percentage distribution of graduates by ISCO's minor occupational groups (2013-18)

SLN	Minor Occupation Group	n	%	CU%
1	3113 Electrical Engineering Technicians	684	20.27	20.27
2	7231 Motor Vehicle Mechanics and Repairers	324	9.60	29.87
3	7126 Plumbers and Pipe Fitters	276	8.18	38.04
4	7212 Welders and Flame Cutters	175	5.19	43.23
5	3123 Construction Supervisors	164	4.86	48.09
6	7531 Tailors, Dressmakers, Furriers and Hatters	162	4.80	52.89
7	7115 Carpenters and Joiners	151	4.47	57.36
8	7113 Stonemasons, Stone Cutters, Splitters and Carvers	141	4.18	61.54
9	7131 Painters and Related Workers	108	3.20	64.74
10	8332 Heavy Truck and Lorry Drivers	91	2.70	67.44
11	7549 Craft and Related Workers Not Elsewhere Classified	75	2.22	69.66
12	351 Information and Communications Technology Operations and User Support Technicians	68	2.01	71.67
13	121 Business Services and Administration Managers	53	1.57	73.24
14	3112 Civil Engineering Technicians	50	1.48	74.73
15	432 Material Recording and Transport Clerks	49	1.45	76.18
16	8322 Car, Taxi and Van Drivers	47	1.39	77.57
17	5223 Shop Sales Assistants	38	1.13	78.70
18	7533 Sewing, Embroidery and Related Workers	38	1.13	79.82
19	7413 Electrical Line Installers and Repairers	37	1.10	80.92
20	232 Vocational Education Teachers	33	0.98	81.90
21	7119 Building Frame and Related Trades Workers Not Elsewhere Classified	33	0.98	82.87
22	8189 Stationary Plant and Machine Operators Not Elsewhere Classified	33	0.98	83.85
23	335 Government Regulatory Associate Professionals	29	0.86	84.71
24	8342 Earthmoving and Related Plant Operators	28	0.83	85.54
25	752 Wood Treaters, Cabinet-makers and Related Trades Workers	27	0.80	86.34
26	9313 Building Construction Labourers	26	0.77	87.11
27	816 Food and Related Products Machine Operators	22	0.65	87.76
28	7412 Electrical Mechanics and Fitters	20	0.59	88.36
29	3521 Broadcasting and Audiovisual Technicians	17	0.50	88.86
30	3122 Manufacturing Supervisors	15	0.44	89.30
31	411 General Office Clerks	15	0.44	89.75
32	722 Blacksmiths, Toolmakers and Related Trades Workers	14	0.41	90.16
33	8160 Food and Related Products Machine Operators	14	0.41	90.58
34	741 Electrical Equipment Installers and Repairers	12	0.36	90.93
35	8183 Packing, Bottling and Labelling Machine Operators	12	0.36	91.29
36	8211 Mechanical Machinery Assemblers	12	0.36	91.64
37	5414 Security	12	0.36	92.00
38	143 Other Services Managers	11	0.33	92.33
39	2411 Accountants	10	0.30	92.62
40	723 Machinery Mechanics and Repairers	10	0.30	92.92
41	7534 Upholsterers and Related Workers	10	0.30	93.21
42	516 Other Personal Services Workers	10	0.30	93.51
43	7213 Sheet Metal Workers	9	0.27	93.78
44	817 Wood Processing and Papermaking Plant Operators	8	0.24	94.01
45	312 Mining, Manufacturing and Construction Supervisors	7	0.21	94.22
46	8172 Wood Processing Plant Operators	7	0.21	94.43
47	334 Administrative and Specialized Secretaries	6	0.18	94.61

SLN	Minor Occupation Group	n	%	CU%
48	3442 Sports Coaches, Instructors and Officials	6	0.18	94.79
49	713 Painters, Building Structure Cleaners and Related Trades Workers	6	0.18	94.96
50	9329 Manufacturing Labourers	6	0.18	95.14
51	1013 Hotel, restaurants and catering	5	0.15	95.29
52	1321 Manufacturing Managers	5	0.15	95.44
53	4120 Secretaries (general)	5	0.15	95.59
54	5245 Service Station Attendant	5	0.15	95.73
55	8144 Cement, Stone and Other Mineral Products Machine Operators	5	0.15	95.88
56	5311 Child Care Workers	5	0.15	96.03
57	7536 Shoemakers and Related Workers	5	0.15	96.18
58	4419 Clerical Support Workers Not Elsewhere Classified	5	0.15	96.33
59	515 Building and Housekeeping Supervisors	5	0.15	96.47
60	1345 Education Managers	4	0.12	96.59
61	4211 Bank Tellers and Related Clerks	4	0.12	96.71
62	4224 Hotel Receptionists	4	0.12	96.83
63	4323 Transport Clerks	4	0.12	96.95
64	8112 Mineral and Stone Processing Plant Operators	4	0.12	97.07
65	8153 Sewing Machine Operators	4	0.12	97.19
66	8341 Mobile Farm and Forestry Plant Operators	4	0.12	97.30
67	5153 Building Caretakers	4	0.12	97.42
68	2341 Primary School Teachers	3	0.09	97.51
69	3339 Business Services Agents Not Elsewhere Classified	3	0.09	97.60
70	7523 Woodworking Machine Tool Setters and Operators	3	0.09	97.69
71	818 Other Stationary Plant and Machine Operators	3	0.09	97.78
72	9629 Elementary Workers Not Elsewhere Classified	3	0.09	97.87
73	0715 Mechanics and metal trades	2	0.06	97.93
74	1032 Protection of persons and property	2	0.06	97.99
75	1219 Business Services and Administration Managers Not Elsewhere Classified	2	0.06	98.04
76	1221 Sales and Marketing Managers	2	0.06	98.10
77	2166 Graphic and Multimedia Designers	2	0.06	98.16
78	2424 Training and Staff Development Professionals	2	0.06	98.22
79	243 Sales, Marketing and Public Relations Professionals	2	0.06	98.28
80	2635 Social Work and Counselling Professionals	2	0.06	98.34
81	3114 Electronics Engineering Technicians	2	0.06	98.40
82	321 Medical and Pharmaceutical Technicians	2	0.06	98.46
83	3252 Medical Records and Health Information Technicians	2	0.06	98.52
84	3331 Clearing and Forwarding Agents	2	0.06	98.58
85	3511 ICT Operations Technicians	2	0.06	98.64
86	3512 Information and Communications Technology User Support Technicians	2	0.06	98.70
87	352 Telecommunications and Broadcasting Technicians	2	0.06	98.76
88	3522 Telecommunications Engineering Technicians	2	0.06	98.81
89	4214 Debt Collectors and Related Workers	2	0.06	98.87
90	4221 Travel Consultants and Clerks	2	0.06	98.93
91	4226 Receptionists (general)	2	0.06	98.99
92	5230 Cashiers and Ticket Clerks	2	0.06	99.05
93	5249 Sales Workers Not Elsewhere Classified	2	0.06	99.11
94	7127 Air Conditioning and Refrigeration Mechanics	2	0.06	99.17
95	8142 Plastic Products Machine Operators	2	0.06	99.23
96	8212 Electrical and Electronic Equipment Assemblers	2	0.06	99.29
97	8343 Crane, Hoist and Related Plant Operators	2	0.06	99.35
98	9112 Cleaners and Helpers in Offices, Hotels and Other Establishments	2	0.06	99.41
99	9122 Vehicle Cleaners	2	0.06	99.47
100	9212 Livestock Farm Labourers	2	0.06	99.53

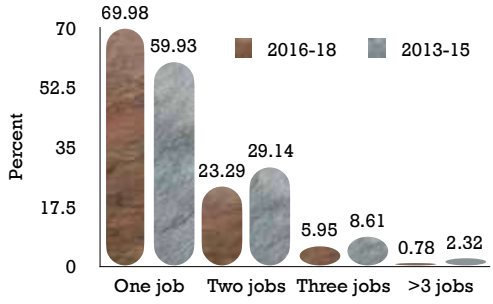
SLN	Minor Occupation Group	n	%	CU%
101	951 Street and Related Services Workers	2	0.06	99.59
102	9621 Messengers, Package Deliverers and Luggage Porters	2	0.06	99.64
103	Mobile Farm and Forestry Plant Operators	2	0.06	99.70
104	0000 Others	10	0.30	100.00
	Total (A)	3375	100.00	
	Missing	1440	42.67	
	Total (B)	4815		

Job stability

Job security, stability and opportunity for career development are the key characteristics of meaningful employment. A secure job could comprise adequate job insurance schemes and retirement benefits, while job stability could be understood in terms of the regularisation of employees in a company or entity. Job mobility takes place when a person changes his or her job. It can be viewed either positively or negatively. Some employees may change their jobs when they cannot get secure and attractive jobs or when their contract terms become expired. Others may change their jobs for occupational mobility, better income prospects, and so on.

The statistics below show that about 70% of graduates (2016-18) did not change their jobs after their first employment. Close to 60% of the 2013-15 cohort had reported the same. About 23% (2016-18) and 29% (2013-18) had experienced two jobs. The remaining graduates had worked in three or more jobs as illustrated in figure 7.9.

Figure 7.9: Number of jobs changed by graduates



Graduates (who had to change their jobs) were asked to state two principal reasons. 1134 respondents had given 1861 responses. These reasons were combined and analysed, taking each reason as the unit of analysis instead of the respondents.

The results are presented in table 7.11. 575 (30.90%) responses ascribed 'low salary in my previous job' as the foremost reason for job hopping. This conforms to the dissatisfaction TTI and IZC graduates generally have with the low wages. This is a common issue in most developing countries, while in the industrialised nations, TVET graduates are usually paid higher. The second popular reason was 'no opportunity for training in my previous job'. There were 247 (13.27%) responses citing 'mismatch between the training fields and the jobs'. Overall, the data shows that the job changes had occurred not for progressive mobility in their career ladder, but for some adverse reasons as shown in the table below.

Table 7.11: Reasons for job change as reported by graduates (2013-18)

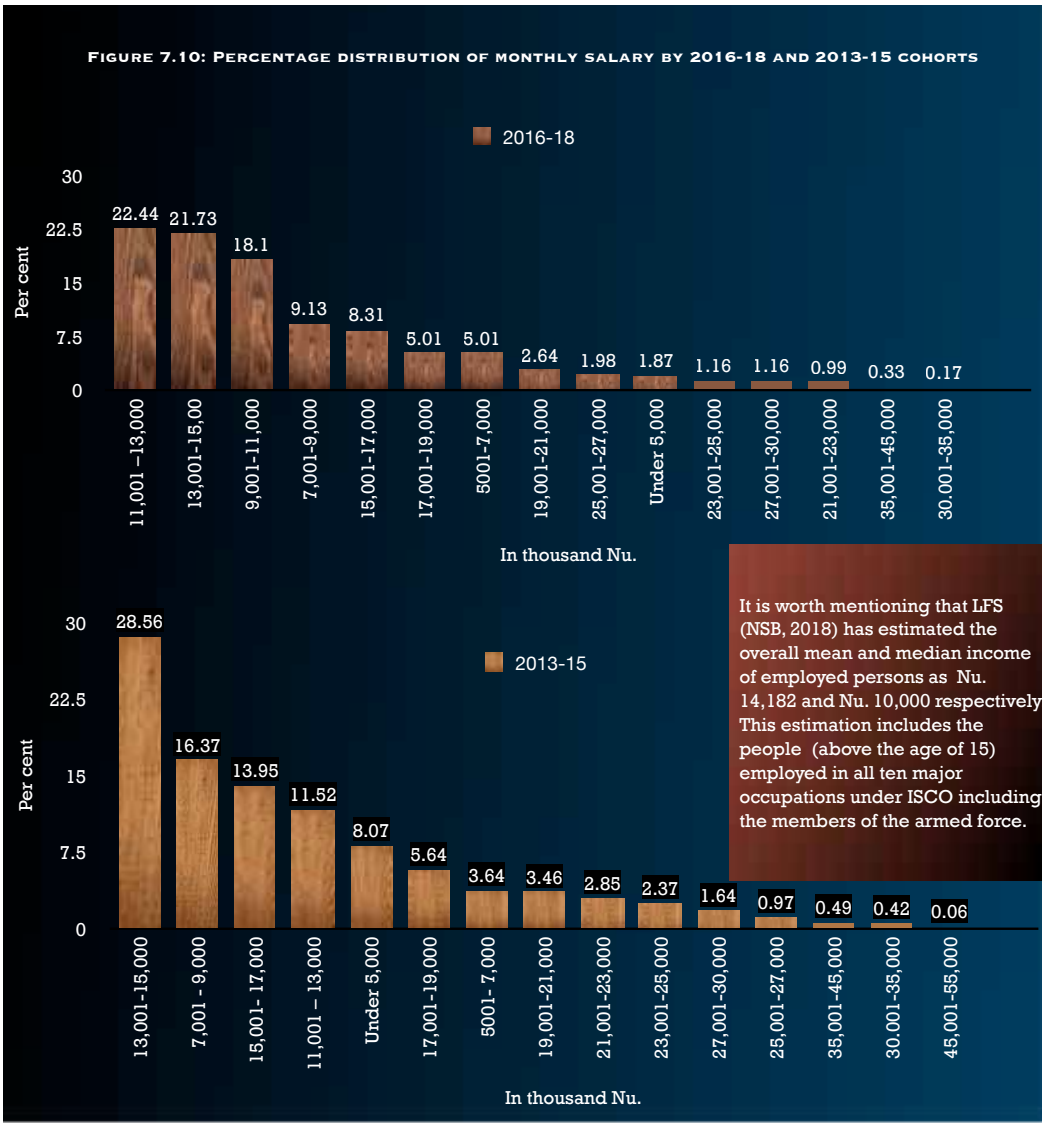
Reasons for job change	n	%
Low salary in my previous job	575	30.90
No training opportunity in my previous job	295	15.85
The job was not related to the TVET programme I undertook	247	13.27
Not moving up on the career ladder	161	8.65
Employer was not good and supportive	122	6.56
I had to do all kinds of work rather than those related to my skills	109	5.86
Domestic problem	78	4.19
No job allowance in my previous job	76	4.08
No housing allowance in my previous job	55	2.96
No provision for pension and provident fund	53	2.85
The workplace far from my house	48	2.58
People looked down on me for being in that job	26	1.40
Family influence	9	0.48
Friends' influence	7	0.38
Total	1861	100
N	1134	

Distribution of monthly salary among graduates (reported)

Figure 7.10 below provides the statistics of employed graduates by level of monthly salary (in Nu. range). Using exact numeric value (salary) instead of range values would provide the data useful to derive the average values (mean). However, the categorical ranges of salary were used for the ease of response (respondent had to check the option of salary range). The range option was used considering that when asking about the age or income, some respondents generally may not feel comfortable about giving the exact numeric values.

Among the 2013-15 cohort, 28.56% of employed graduates had reported they earned the monthly salary of Nu.13,000-15,000. Among the 2016-18 cohort, over 50% earned the monthly salary below Nu.15,000 while among the 2013-15 second cohort, more than 50% of graduates reported they earned below Nu. 17,000. In both the cohorts, 5-8% of graduates earned less than Nu. 5,000. The insignificant (<1%) number earned above Nu.35,000 per month. The monthly salary of the business or own-account workers were included in obtaining the aggregates.

Figure 7.10: Percentage distribution of monthly salary by 2016-18 and 2013-15 cohorts

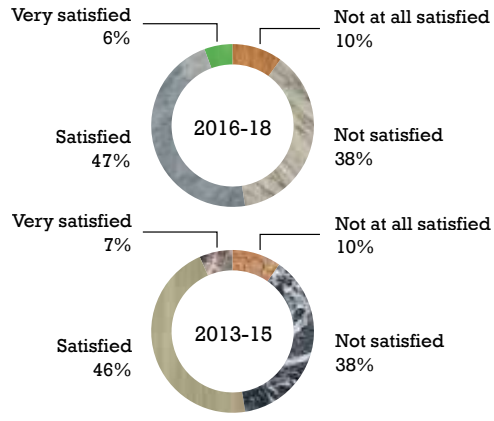


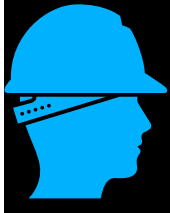
It is worth mentioning that LFS (NSB, 2018) has estimated the overall mean and median income of employed persons as Nu. 14,182 and Nu. 10,000 respectively. This estimation includes the people (above the age of 15) employed in all ten major occupations under ISCO including the members of the armed force.

Job satisfaction of graduates

The overall response to job satisfaction question was mixed. Among the 2016-18 cohort, 47% stated they were satisfied, 38% stated that they were not satisfied, very satisfied (6%) and not at all satisfied was about 10%. The results did not vary much between the two cohorts as shown in figure 7.11.

Figure 7.11: The graduates' satisfaction with their current jobs





Job satisfaction among 2013-2018 graduates by institutes (where they were trained) were examined as shown in table 7.12. Graduates of NIZC-Thimphu, CZC-Yangtse and TTI-Thimphu had their average score about the weighted average showing relatively higher job satisfaction compared to graduates of other TTIs. The least satisfied were graduates of JWPTI. Overall, 62.50% of graduates of all TTIs and IZCs (2016-18) were satisfied with their current jobs, while 37.50% were not satisfied. The findings suggest that graduates of two Zorig Chusum institutes were more satisfied than others.

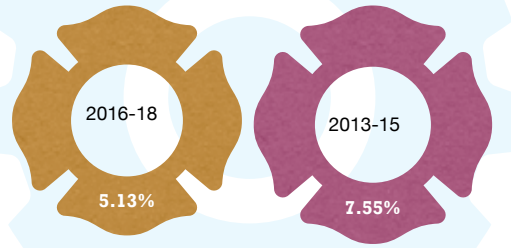
Table 7.12: Job satisfaction of graduates by their institutes (2013-2018)

Institute	Not at all satisfied	Not satisfied	Satisfied	Very satisfied	∑Fi	∑WiFi	∑WiFi /∑Fi	∑WiFi/ ∑Fi (%)
NIZC-Thimphu	11	91	165	23	290	780	2.69	67.24
CZC-Yangtse	19	87	133	21	260	676	2.60	65.00
TTI-Thimphu	18	34	69	7	128	321	2.51	62.70
	Weighted average						2.50	62.50
TTI-Khuruthang	77	203	292	39	611	1515	2.48	61.99
TTI-Rangjung	50	197	228	29	504	1244	2.47	61.71
SVI-Serzhong	35	118	149	17	319	786	2.46	61.60
TTI-Chumey	47	169	192	26	434	1065	2.45	61.35
TTI-Samthang	53	220	251	26	550	1350	2.45	61.36
JWPTI-Dekiling	35	176	128	21	360	855	2.38	59.38
Total	345	1295	1607	209	3456	8592	2.50	62.50

Business or self-employment among graduates

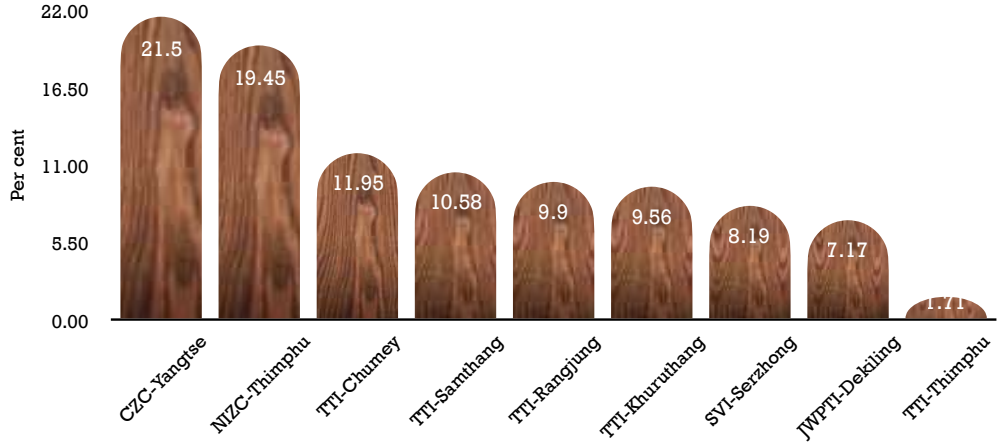
Building employability among TTI and IZC trainees and graduates through Entrepreneurship Education (EPE) is one potential area that the TVET sector could explore. The data shows that about 5-7% of 2013-18 graduates were engaged in their businesses (own-account workers) as shown in figure 7.12. About 4% of graduates had mentioned (presented earlier) that they had opted for TVET programmes intending to explore the business opportunities.

Figure 7.12: Are you doing your own business?



The data shows that more zorig graduates usually opt for self-business than the graduates of other TTIs. As given in figure 7.13, 21.5% and 19.5% of the graduates of 2016-18 and 2013-15 cohorts respectively (out of 5-7% of the total employed graduates) were reported to be running their own businesses. To promote entrepreneurship among TTT and IZC graduates, basic entrepreneurship course is offered in most TTIs and IZCs. DCSI, Loden Foundation and others target TTI and IZC graduates for their business opportunity workshop and advocacy programmes.

Figure 7.13: Percentage Distribution of graduates doing business by institutes (2013-2018)



Income of graduates doing business

The income from businesses varied—most graduates (2016-18) reported their monthly business income of Nu.11,000-13,000 while the majority of graduates belonging to the 2013-15 cohort had reported their monthly business income between Nu. 5000-11,000 (table 7.13). This variation can't be explained.

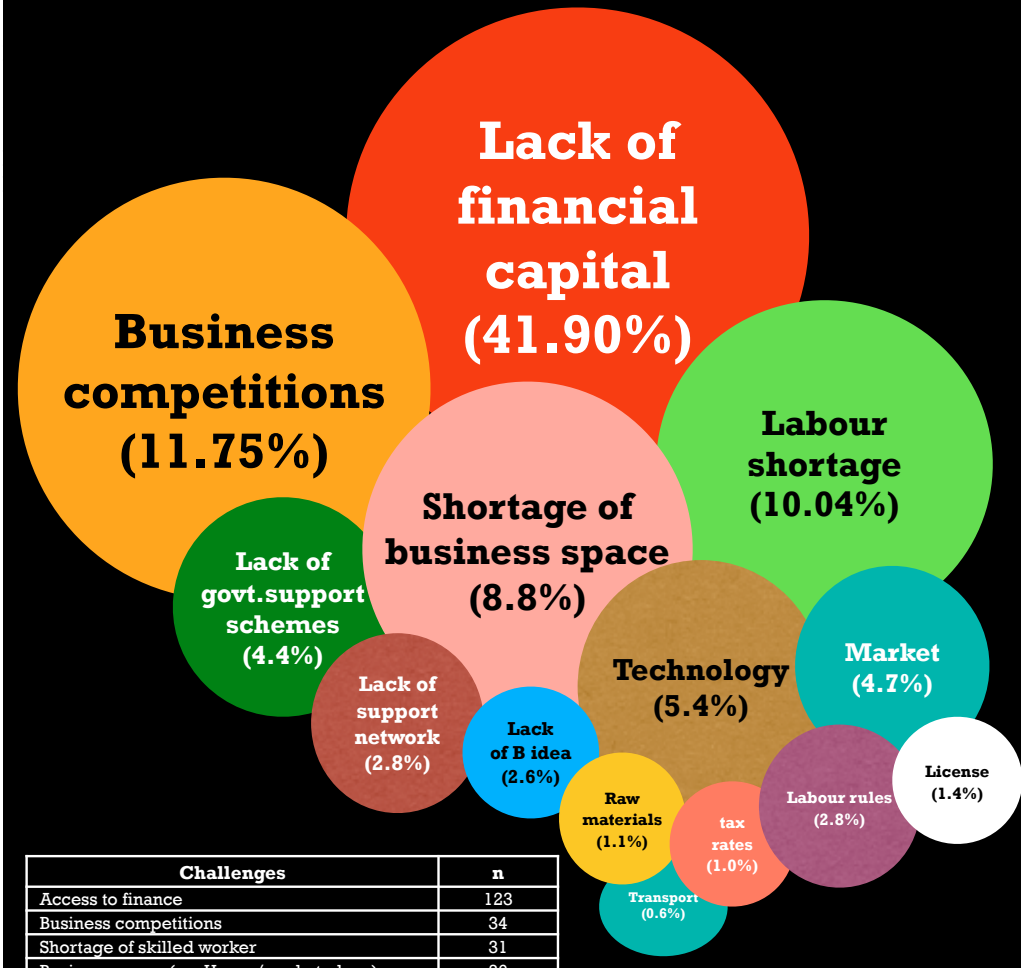
Except for a few business individuals, the monthly income of graduates doing businesses did not vary much from the income of their counterparts working in other sectors. Graduates were asked to check the range of business income per month and not the income from other sources.

Table 7.13: Business income (by range in Nu.) of graduates doing businesses (2016-18 & 2013-15)

Income Range (Nu.)	2016-18		Income Range (Nu)	2013-15	
	n	%		n	%
11,001-13,000	30	15.71	5001-7,000	38	20.32
9,001-11,000	25	13.09	13,001-15,000	24	12.83
13,001-15,000	24	12.57	11,001-13,000	21	11.23
15,001-17,000	23	12.04	7,001-9,000	19	10.16
7,001-9,000	21	10.99	15,001-17,000	18	9.63
17,001-19,000	17	8.90	9,001-11,000	14	7.49
5001-7,000	11	5.76	17,001-19,000	7	3.74
25,001- 27,000	9	4.71	30.001-35,000	7	3.74
21,001- 23,000	8	4.19	19,001-21,000	6	3.21
19,001-21,000	6	3.14	Above 55,000	6	3.21
27,001- 30,000	4	2.09	27,001-30,000	5	2.67
Under5,000	4	2.09	45,001-55,000	5	2.67
Above 55,000	3	1.57	25,001-27,000	4	2.14
35,001-45,000	3	1.57	35,001-45,000	4	2.14
30.001-35,000	2	1.05	21,001-23,000	3	1.60
45,001-55,000	2	1.05	Under 5,000	3	1.60
23,001-25,000	1	0.52	23,001- 25,000	3	1.60
Total	191	7.71	Total	187	9.55
Missing	2477		Missing	1958	
Total	2669		Total	2146	

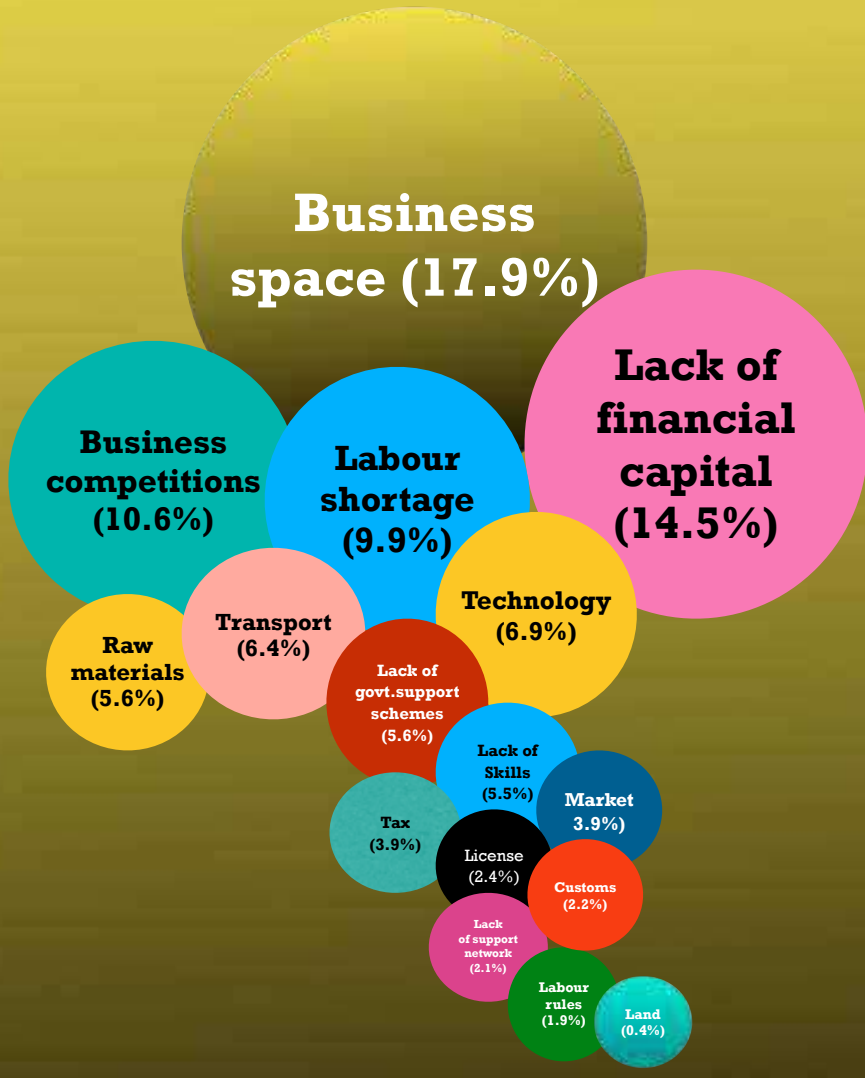
Figure 7.14: Business start-up challenges among 2013-18 graduates doing business

293 graduates (2013-15) had responded to the question "What were the main challenges in starting your business?" The results are illustrated below and show broadly two categories of business challenges: structural and social/personal. They had identified sixteen main business challenges. Ranking of the challenges was based on the percentage of the responses. *The size of the circles was intended to emphasise the importance of the challenges and is not exactly proportional to the percentage.*



Challenges	n
Access to finance	123
Business competitions	34
Shortage of skilled worker	31
Business space (eg. House/market place)	26
Access to technology / resources	16
Market (i.e. demand for product)	14
Lack of government's support schemes	13
Labour regulations	8
Lack of a Support Network	8
Lack of basic business idea/skill	8
Business licensing & permits	4
Purchasing equipment & raw materials	3
High tax rates	3
Transportation	2
Lack of skills	1
	293

FIGURE 7.15: BUSINESS OPERATIONAL CHALLENGES AS REPORTS BY GRADUATES DOING BUSINESS (2013-18)

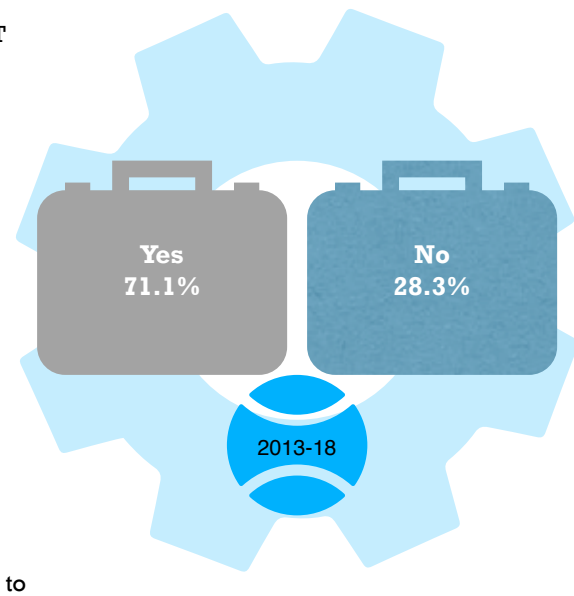


264 graduates doing business had responded to the question: 'What are the main business operational challenges'? The start-up and operational challenges differed slightly business space (house/area) problem emerged as the top-most business operational challenge. This could be due to the lack of suitably located business space or higher rent. Access to the financial capital came up as the second major business operational challenge.

The raw materials and technology shown above refer to the input factors for production, while the 'skills' mean both the business and technical skills. Tax, licensing, customs and labour rules are the regulatory issues.

Asked about the relationship between their business ventures and training, the large majority of graduates had responded that their businesses were related to their TVET qualifications. The result is illustrated in figure 7.16.

Figure 7.16: Is your Business is related with the training?



Nature of unemployment

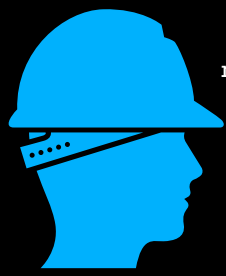
Figure 7.17 summarises the nature of unemployment among TTI and IZC graduates. The majority (40.42%) of them had reported that they became unemployed after getting the jobs once (among the 2016-18 cohort) and 48.95% among the 2013-15 cohort had stated the same reason. A substantial number of them (36.10%, 2016-18 & 27.87%, 2013-2015) had reported that they tried but did not get the jobs. Close to 14% (2016-18) and 9% (2013-18) had never looked for the jobs.

Some graduates seem to have got unemployed when they opted for further education or training. Some graduates had to quit their jobs to look after the ageing parents or children and complete their domestic works (personal reasons).

Figure 7.17 Nature of the unemployment among graduates (2016-18 & 2013-15)

2016-18		Status	2013-15	
n	%		%	n
346	40.42	Got a job once	48.95	234
309	36.10	Did not get job after training	37.87	181
119	13.90	Did not look for a job	8.79	42
79	9.23	Further study/training	3.56	17
2	0.23	Personal reason	0.63	3
856		Total		478

Reasons for Being unemployed



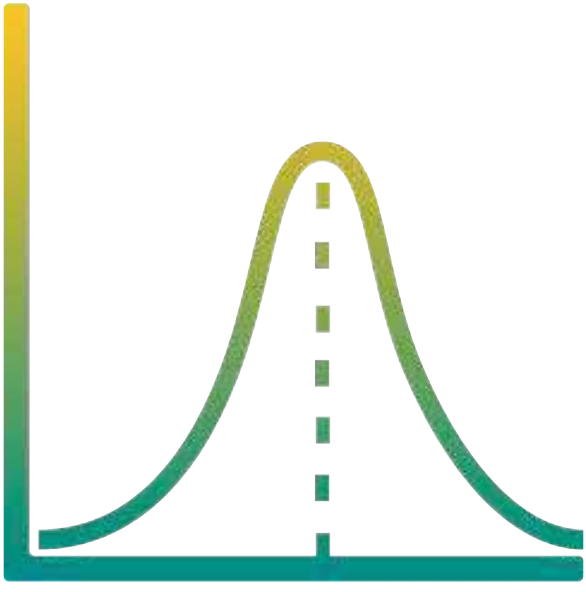
Unemployed graduates were asked to provide reasons for being unemployed. About 1325 unemployed graduates had responded. The most important factor/reason they gave was 'low salary for technical and vocational graduates' (20.24%) among the 2016-18 cohort, while the highest majority of graduates among the 2013-15 cohort (15%) had stated 'inadequacy of work experience and skills'. The other top reason in both cases was 'they were undergoing some further studies or training', which is not a serious issue. The other factors are listed in the table below (7.14).

Table 7.14: Reported reasons for being unemployed (2016-18 & 2013-15)

Reported reason for being unemployed	2016-18		2013-15	
	n	%	n	%
I can get a job, but the salary is very low	171	20.24	68	14.17
Undergoing further studies/training	139	16.45	30	6.25
No job opportunity for technical and vocational graduat	138	16.33	68	14.17
Inadequacy of work skills and experience	123	14.56	72	15.00
Did not look for a job	51	6.04	55	11.46
Health-related reasons	51	6.04	24	5.00
Family problem, decided not to find a job	46	5.44	61	12.71
More job preference given to males	38	4.50	37	7.71
Salary not paid on time	21	2.49	8	1.67
Contract expired	14	1.66	2	0.42
No stable job	13	1.54	13	2.71
Private works	11	1.30	11	2.29
I did not want to work in a blue collar job	10	1.18	19	3.96
Difficult to get job due to low assessment rank	9	1.07	7	1.46
Others*	3	0.36	4	0.83
Overseas	3	0.36		0
Want to join Armed Force	2	0.24		0
Position not given as per labour rule	1	0.12		0
Total	845		480	1325
Missing	1824		1665	
Total	2669		2146	

Section VIII

Qualification Up-gradation and Aspiration



Introduction

This section presents the last part of the survey. The last section of the questionnaire contained a few questions on the qualification up-gradation and educational aspirations of graduates. The following were the questions:

1. Did you upgrade your qualification after you have completed your first Vocational and Technical Training? If Yes, what qualification did you upgrade to?
2. How did you upgrade your qualification?
3. Please provide the training/course details of your qualification up-gradation. You may provide details of two important training/courses important to you.
4. Given the chance, from which level to which would you want to upgrade your qualification?
5. What fields of study or training would you like to undertake for your qualification up-gradation?

Qualification up-gradation

TVET is a lifelong learning programme. It cannot be that a trainee completes a course and not upgrade his or her qualification. This would, otherwise, lead to the dead-end learning. There should be clear qualification pathways for TVET graduates, more so, in the contexts of rapidly changing technology and labour market system induced by global change. As shown in figure 8.1, among graduates of the 2016-18 and 2013-15 cohorts, about 30% had upgraded their TVET qualification while 70% did not.

The data further shows the limitations experienced by graduates in terms of both vertical and horizontal mobility. The dead-end nature of most current TVET courses affect the attractiveness of TVET. The vertical mobility takes place only within the NC levels; only a few had upgraded their qualification to diploma—7.75% (2016-18) and 14.7% (2013-15) cohorts as shown in figure 8.2. The horizontal mobility, which at present is supposed to be in the form of TVET graduates movement to the formal education system (university) through bridging (ideally through integrated higher education interface) was about 1.75% (degree & post-graduation) among 2016-18 cohort and 3.2% (2013-15). The highest percentage of qualification up-gradation had taken place from NC II to NC III level (see figure below).

Figure 8.1: Did you upgrade your qualification?

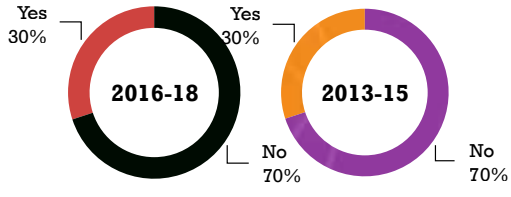
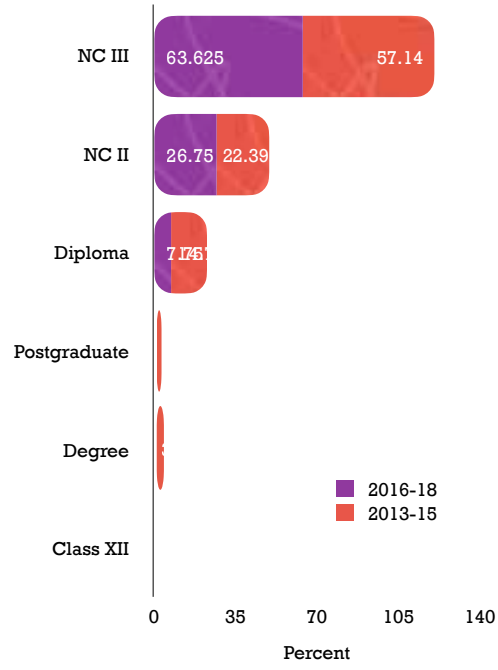


Figure 8.2: Qualification up-gradation among TTI and IZC graduates



Mode of qualification up-gradation

The data (table 8.1) shows that the most common pathway for qualification up-gradation was through the government-funded NC level courses in TTIs and IZCs. About 58% of the 2016-18 graduates and

31% of the 2013-15 graduates had upgraded their TVET qualification within the country through government-funded programmes. These could have taken in TTIs and IZCs as regular NC III and NC II programmes. The second-highest qualification up-gradation was done through self-financed RPL mode. TVET graduates who did RPL through the funding support from their employers was insignificant. This suggest that employers rarely support RPL assessment fees for TVET graduates. It appears that most employers were so far not so keen to support skills up-gradation and education improvement of their employees, or maybe they expect the government and donors to support their HR development programmes.

Table 8.1: How did you upgrade your level or course?

Responses	2016-18		2013-15	
	n	%	n	%
Government-funded course at TTI/ IZC/Others	446	57.70	140	31.39
Sponsored RPL (RPL cost paid by government or others)	104	13.45	99	22.20
Self-financed RPL	89	11.51	86	19.28
Self-financed course at an institute within Bhutan	78	10.09	44	9.87
Self-financed course at an institute outside Bhutan	38	4.92	48	10.76
Sponsored course at an institute outside Bhutan	17	2.20	26	5.83
RPL Financed by employer	1	0.13	1	0.22
Continuing Education (CE)	0	0.00	2	0.45
Total (A)	773	28.96	446	20.78
Missing	1895	71	1700	79.22
Total (B)	2669		2146	

About 5% (2016-18) and 10.76% (2013-15) of graduates had upgraded their qualifications through self-financing at the institutions within Bhutan. TTIs and IZCs do not provide self-financed courses. They must be the ones who had attended diploma, degree, and class XII programmes on self-funding in the colleges and private TVET institutions.

Qualification up-gradation aspiration

Even in absence of a clear education pathway, over 73% of 2016-18 graduates and 76% of 2013-15 graduates had expressed their aspiration to up-grade their qualifications (table 8.2). The result is encouraging, but the question is whether they will get the opportunities to do so. The lack of clear TVET routes seems to be the reason [why] TVET system is not able to attract high-achieving learners and mentally prepared youth.

Table 8.2: Are you interested to upgrade your qualification?

2016-18		
n	%	
Yes	1955	73.25
No	713	26.71
Total	2669	

	2013-215	
	n	%
Yes	1645	76.65
No	500	23.30
Total	2146	

Figure 8.3: Qualification up-gradation preference

Level of up-gradation desired

Qualification	2016-18		2013-15	
	n	%	n	%
ND	724	36.51	431	25.93
NC III	612	30.86	441	26.53
Diploma	303	15.28	333	20.04
Bachelor's Degree	200	10.09	189	11.37
NC II	144	7.26	268	16.13
Total	1983	74.29	1662	77.45
Missing	686	25.71	484	22.56
Total	2669		2146	

Graduates were asked: "Given the chance, what level/qualification up-gradation would you desire?" Among graduates of the 2016-18 cohort, the most desired TVET qualification up-gradation were the national diploma and NC III followed by diploma and degree. Graduates who wish to up-grade their qualification to NC level could be those who had certification level (not NC) the previous qualification framework (prior to introducing the national certification) had provided. Some institutes had been introduced NC courses only in the recent years.

About 1200 graduates (25%) who did not wish to seek any qualification up-gradation gave their reasons. The most popular reasons were (i) qualification up-gradation will not lead to any improvement in their job positions, (ii) they might have to quit the present jobs, and (iii) their employers may not approve the proposals for further studies or training. The other reasons are presented in table 8.2.

Table 8.2: Reasons for not wishing to upgrade qualifications (2013-18)

Reason	n	%	CU%
Even if I upgrade my qualification, my job position will be the same	255	19.62	19.62
I may have to resign to take up further training/studies	240	18.46	38.08
The employer will be unwilling to release me for further training/studies	182	14.00	52.08
No use getting further training because of the problem getting training-related jobs	179	13.77	65.85
Even if I upgrade my qualification level, my income will remain the same	126	9.69	75.54
I may have to take leave without pay to attend the training/study	111	8.54	84.08
I am happy with the present qualification level	86	6.62	90.69
I am not at all interested	51	3.92	94.62
No time for further study/training	35	2.69	97.31
Family Problem	23	1.77	99.08
I am old enough now to go for further training/study	8	0.62	99.69
The preferred course is not available even if I wish to up-grade my qualification	4	0.31	100.00
Total	1300	27	
Missing	3516	73	
Total	4816		

TVET occupations in demand by graduates

Table 8.3 presents the list of occupations or TVET qualifications that graduates of 2013-18 wish to pursue for their qualification up-gradation. The highest demanded qualifications were in the civil and electrical occupations. Most of the top-twenty occupations are offered in TTIs and IZCs. Some graduates wish to pursue qualification up-gradation in occupations/trades other than their initial TVET qualifications such as in the occupations of food and beverages, media, audio-visual, sales and marketing, horticulture, upholstery, dairy-farming and so on as shown in table below.

Table 8.3: Occupations/Trades in demand by graduates (2013-18) for their qualification up-gradation

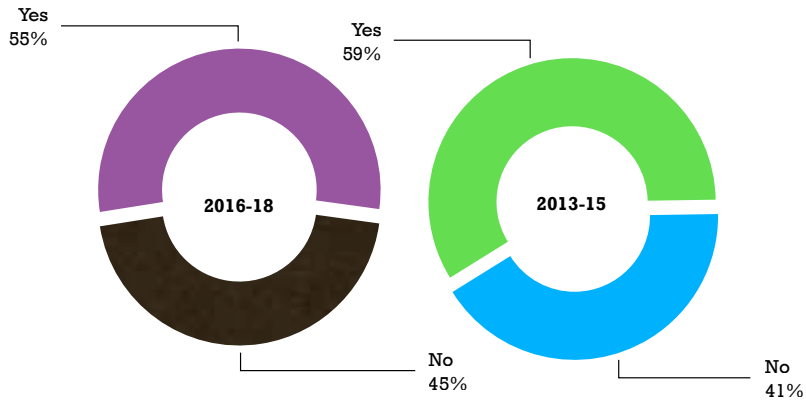
SLN	Qualification	n	%	CU%
1	Civil General	736	21.05	21.05
2	Electrical	719	20.56	41.61
3	Hydropower Transmission & Distribution Linemen	295	8.34	49.95
4	Mechanical Fitting	218	6.23	56.18
5	Construction	143	4.09	60.27
6	Hydropower Mechanical	131	3.75	64.02
7	Auto Mechanic/Engineering	120	3.43	67.45
8	Tailoring	74	2.12	69.57
9	Mechanical Welding	67	1.9	71.47
10	Computer Hardware and Networking	61	1.74	73.21
11	Carpentry	57	1.63	74.84
12	Plumbing	53	1.52	76.36
13	Fashion Design	52	1.49	77.85
14	Traditional Painting	48	1.37	79.22
15	Embroidery (machine)	42	1.2	80.42
16	Mask Carving	38	1.09	81.51
17	Information Technology	37	1.06	82.57
18	Masonry	37	1.06	83.63
19	Advance Handicraft	36	1.03	84.66
20	Auto Painting	36	1.03	85.69
21	Computer Application	31	0.89	86.58
22	Furniture-Making	28	0.8	87.38
23	Wood Carving (Patra)	27	0.77	88.15
24	Sculpture	26	0.74	88.89
25	Heavy Vehicle Driving	25	0.71	89.6
26	Embroidery (hand)	24	0.69	90.29
27	Business Leadership	22	0.63	90.92
28	Traditional Costumes	20	0.57	91.49
29	Heavy Earth Mover (HEM)	19	0.54	92.03
30	Web Designing	18	0.51	92.54
31	Traditional Dralham (boot) Making	16	0.46	93.00
32	Sales and Marketing	15	0.43	93.43
33	Wood Turning	15	0.43	93.86
34	Auto Denting	13	0.37	94.23
35	Gold and Silversmith	12	0.34	94.57
36	Dzongkha and Rigzhung	11	0.31	94.88
37	Food and Beverages	11	0.31	95.19
38	ECCD Facilitator	9	0.26	95.45

SLN	Qualification	n	%	CU%
39	Basic Office Management	8	0.23	95.68
40	Tally	8	0.23	95.91
41	Photoshop and In-design	8	0.23	96.14
42	Penal Beater	7	0.2	96.34
43	Animation	6	0.17	96.51
44	Cable/Digital TV Technician	6	0.17	96.68
45	Electronics	6	0.17	96.85
46	Tourist Guide	6	0.17	97.02
47	Farm Machine Operation	6	0.17	97.19
48	Draughting Civil	5	0.14	97.33
49	International Language	5	0.14	97.47
50	Mobile Repairing and Server Configuration	5	0.14	97.61
51	Religious Items	5	0.14	97.75
52	Autocad	5	0.14	97.89
53	Accounts Management and Book Keeping	4	0.11	98
54	Graphics and Multi-media	4	0.11	98.11
55	Human Resource Management	4	0.11	98.22
56	Horticulture	4	0.11	98.33
57	Upholstery	4	0.11	98.44
58	Beauty: Hair and Skin	3	0.09	98.53
59	Dairy Production	3	0.09	98.62
60	Desktop Publishing	3	0.09	98.71
61	General Mechanical	3	0.09	98.8
62	House Keeping	3	0.09	98.89
63	Mechanical Technology Heating, Ventilation & Air Conditioning (HVAC)	3	0.09	98.98
64	Forester	3	0.09	99.07
65	Trekking Guide	3	0.09	99.16
66	Professional/Tourist Driving	3	0.09	99.25
67	Auto Electrician	2	0.06	99.31
68	Database Administration	2	0.06	99.37
69	Hotel Operations Supervisor	2	0.06	99.43
70	Media Studies	2	0.06	99.49
71	Front Office	2	0.06	99.55
72	Modern Sculpture	2	0.06	99.61
73	Professional/Tourist Driving	2	0.06	99.67
74	Store Management	2	0.06	99.73
75	Commercial Accounting	2	0.06	99.79
76	Vegetable Production	2	0.06	99.85
77	Culinary Arts	1	0.03	99.88
78	Modern Sculpture	1	0.03	99.91
79	Transmission and broadcasting	1	0.03	99.94
80	Risk Management	1	0.03	99.97
81	Weaving	1	0.03	100
	Total (A)	3497	72.63	
	Missing	**1307**	**27.14**	
	Total (B)	**4815**		
	Missing	**1307**	**27.14**	
	Total (B)	**4815**		

Gender difference in employment among graduates

In the earlier sections, there was some mention about female graduates finding it difficult to get jobs because most employers prefer males over female workers. This could be true to a certain extent, given that some professions/occupations require higher manual engagements. Asked about whether they (females) faced any difficulty in getting jobs when compared to male graduates, 55% among the 2016-18 cohort responded they found it difficult to get jobs compared to their male counterparts. About 59% among the 2013-15 responded the same. The results are presented in figure 8.4.

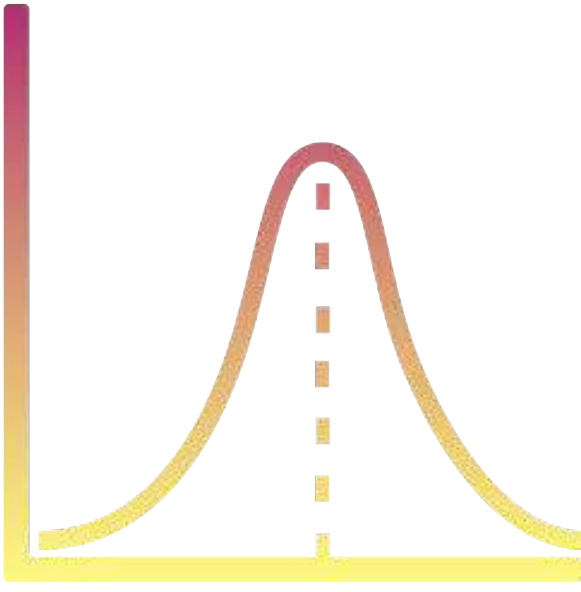
Figure 8.4: If you are female, did you face extra difficulties in getting the job that you are trained for than your male friends?



Response	2016-18		2013-15	
	n	%	n	%
No	450	45.32	317	41.44
Yes	543	54.68	449	58.69
Total	993	100.00	765	100.00

Section IX

Key Conclusions



Key conclusions

This study attempted to provide information to inform the current and future TVET plan initiatives and reforms. Using the survey-based study design and descriptive analysis, the study concluded with several key findings.

TVET has a huge potential to contribute towards the growth and progress of the society and economy, but only to the extent that the TVET sector can maintain its quality, relevance and effectiveness of training delivery and if the labour market can meaningfully employ and harness the potential of TVET graduates.

The study shows that there is so much to improve in both the supply and demand-side aspects of TVET, especially within the public TVET system. The up-to-date data management, tracers and regular assessment of the TVET programmes and labour market outcomes are crucial to understanding the progress, problems and prospects of TVET based on which TVET policies, strategies and actions can be formulated, amended and improved. It is a high time that the entire TVET process has to be made data-driven given the constant technological and economic changes worldwide induced by globalisation.

No one can expect flawless findings from the analysis of any survey data. Somehow, the errors—design-based or beyond-the-control, may affect the accuracy of the data, analysis and results. The tracer team don't claim that the results are fully accurate because, firstly, the sampling design accepts five per cent error. And secondly, statistical laws are based on assumptions, probability and average. In contrast to mathematical science that is based on logical reasoning and conclusion, the measurement in statistics can be bit abstract and the conclusions can often not fully certain. A certain level of error, therefore, must be accepted.

Therefore, the findings of the studies such as this must not be considered as unquestioning. Many other studies should follow to validate and corroborate the present findings. However, this does not mean that the findings are altogether invalid. What the team believes is that the findings should not be just published and end there, but these findings should be subject to intense discussions and diverse interpretations for new meanings and insights, and diligently synthesised and put into practice. Then only the purpose of the study would be served.

The major conclusions drawn from the descriptive analysis of the multi-cohort online survey that covered the representative sample of 2013-18 graduates of TTIs and IZCs are as follows:

1. Though the minimum qualification required to enter TVET is class X, the increasing number of class XII are joining TVET. *This might have implications on the course and curriculum design and teaching-learning approach in TTIs and IZCs.* The difference in the entry qualification and knowledge may entail the review of the TVET delivery approach though it is claimed that one should start from the basics in the competency-based training, irrespective of one's academic qualification.

2. In general, TVET is considered as predominantly the opportunity for poor academic performers and school dropouts. The study confirms that TVET is generally taken as a second-option. The sweeping majority of graduates belonged to the families of agricultural and low-income groups, illiterate or low-educated parents, and for those coming from the eastern and central Dzongkhags. *TVET is considered [more] as a part of the response to ensure social equity rather than as the important element of the country's economic policies and priorities. If TVET is to make progress, it should find a place in both social and economic policy priorities.*

3. About half the TTI and IZC graduates (2013-18) had opted for TVET programmes out of their interest in TVET, while another half would not have opted for TVET if they have got other educational choices. *TVET must attract people who are genuinely interested in TVET, otherwise there is the risk of investing on the people who are less passionate about TVET.*

4. There are comparatively less TVET takers than what TTIs and IZCs can accommodate. Hardly a few youths who perform well in the academic education joins TVET. This is a very complex scenario. *It is time to consolidate resources,*

improve TVET governance, make the after-training condition attractive, and synchronise efforts to rebrand TVET and make it prestigious to attract high-achieving learners. This must be followed by [gradually] making the entry into TVET more competitive even as it continues to offer the second-chance option for the under-performers as social equity policy objective.

5. Only about five per cent of graduates had opted for TVET to build a foundation and learn know-how and technical skills required for their businesses. This figure was no so encouraging. *TVET needs to attract more young people who aspire to build their own business and entrepreneurship, identify potential entrepreneurs, and facilitate their entry into the world of innovation and entrepreneurship*. Linking Entrepreneurship Education (EPE) and TVET is one viable option with a huge potential to contribute towards generating self-employment through SMEs.

6. Parents and families were found to play a critical role in influencing their children to join TVET. *The existing method of TVET promotion requires strategic improvement. A variety of awareness campaign and activities should take place across the nation through the engagement of TVET stakeholders, TVET institutions, employers, graduates, parents and many more.* There is the critical need to synchronise various advocacy programmes conducted by different stakeholders.

7. TVET graduates (seniors) could influence young people either positively (take TVET) or negatively (shun TVET). TVET advocacy and promotion activities rarely target the TVET graduates. *There is no formal entity or division to deal with the post-graduation services, including the linkage between institutions, TVET stakeholders and graduates.* TVET alumni associations and programmes could help to enhance the connection between institutes, trainees and graduates to support the goals of institutes through interactive and integrative actions, including sharing of experiences and promotion of TVET image. *A separate division or unit with the mandate to provide the post-graduate services might be necessary.*

8. Several TTI and IZC graduates reported that they intended to quit the training for multiple reasons among which the prominent ones were *the realisation of TVET's low image (associated with low-profile jobs involving manual works and low salary), learning difficulties, poor training tools and equipment, shortage of competent teachers, low stipend, and the presence of bullying by seniors*.

9. *The issue of insufficient stipend for trainees came out prominently.* TTIs and IZCs had submitted their concerns about the insufficient stipend many times. DTE had proposed the stipend raise a year ago based on two justifications: increased cost of living standards as per the CPI reports published by NSB and the need to full daily dietary requirements as proposed by the National Dietary Assessment of school feeding carried out in 2017. *TVET trainees require additional nutrition given that the intense physical involvement of their training.*

10. The issue of trainees not getting the courses of their first choices due to intake capacity or non-availability of course was reported. *Being denied the training in their preferred occupations is a serious issue. Taking up a wrong course and gradual losing of interest in the training may have severe consequences on the motivation to learn of a concerned trainee*. Most trainees may choose the courses based on the demand in the market, and this decision may reflect their motives and social disposition. *Such issue occurs partly due to lack of strategic planning of TVET programmes based on periodic TVET demand-supply mapping and tracers.*

11. TTI and IZC graduates had found *entrepreneurial, computer, human relations, problem-solving skills and green skills* besides other soft skills relevant to their works, but they had reported *these were somewhat lacking or lagging in their actual training programmes*.

12. In general, TTI and IZC graduates had expressed their satisfaction over 30 different dimensions of training programmes and institutes. This doesn't mean there were no problems. *Top five dimensions that require attention and corrective actions are (i) research and innovation, (ii) fooding (monthly stipend), (iii) training tools and equipment, (iv) internet connectivity in the campus and (v)*

green-skilling and entrepreneurship development programmes.

13. The subjective assessment of nine dimensions of training relevance to work and employment revealed that *ICT course, green-skilling, soft-skills learning, career counselling and industrial tour were the dimensions that the graduates had rated as most relevan*t. Just because they have rated these dimensions as relevant don't imply these provisions were good during their training. It only suggests that these areas need more attention. Further investigations of each of these dimensions using the qualitative approach such as in-depth interviews or Focus Group Discussions (FGDs) are necessary.

14. The general assessment of the quality and relevance of TVET programmes showed that *the overall rating of TVET quality was good while less than a quarter of them rated the quality as bad*. However, *more than 30% of graduates had rated the overall relevance of training as poor*. This shows the presence of a mismatch between TVET demand and supply though it cannot be the absolute factor. *Among many strategies, one possible approach to reducing this mismatch is to conduct TVET programmes based on the regular mapping of TVET demand and supply*. This approach is important for any country to embrace the demand-driven TVET model.

15. The 'Skills mismatch' conundrum is singly blamed for the existing contradictory problems of shortage of national skilled workforce and unemployment among the younger age cohorts. Many other cross-cutting factors appear to deter, demotivate or obstruct graduates from performing well in the labour market. Such complete attribution of the TVET's problem just to one factor with no empirical basis may not lead to any viable solution. *There is, therefore, the urgent need to do robust and factual studies to confirm the factors that might lead to systematically holistic, suitable and effective strategies.*

16. The overall ratings of OJTs were good. The most beneficial aspects of OJTs were the gain in work exposure, experience and confidence. However, *certain limitations in the management of OJTs were pointed out: low daily allowance, accommodation and transportation problems, lack of support from the OJT providers, poor M&E by the institutes and assigning irrelevant tasks.* The companies/OJT providers at present have no incentives to train, and thus, it is possible that training is limited to their immediate benefit (in terms of using OJT trainees to meet the temporary shortage of manpower). *This calls for the need to review the OJT provisions and strengthen the framework and protocols including incentives to OJT providers, duration, places of OJT, etc.*

17. *The employment rate for 2013-18 graduates was 73.30% (69.35% for the 2016-18 cohort and 79.53% for the 2013-15 cohort). Overall, employment outcomes for TTI and IZC graduates were relatively better than that of the general education graduates.* The employment rate among the respondents with a Bachelor's Degree in 2018 was 60.94% (LFS, 2018). However, the employment rate among TTI and IZC graduates was lower than the country's total and youth employment rates. The total employment rate in 2018 was 96.6% while the youth employment rate in the same year was 84.30%.

18. Despite the fact TTI and IZC graduates had relatively better employment rate than the general graduates, *a substantial number of them were working as temporary and contract workers.* This is something of serious concern. These types of employment do not necessarily lead to the regularisation of the employees. One of the fears among job seekers is if their jobs are secure. Job security is understood more in terms of job stability and attractive post-retirement benefits.

19. *A substantial number of graduates had stated that they found it difficult to get relevant jobs (38% among the 2016-18 cohort and 58% among the 2013-15 cohort).* These results suggest the need to do so much *to diversify and align courses with the skills demanded in the labour market*. Strengthening TVET-labour market linkage may entail the effort on both the 'supply' and 'demand' sides. The latter (demand side) implies that the labour market conditions needs some reforms particularly in terms of making jobs attractive, favourable and motivating for graduates and boosting employers' willingness to employ the domestic TVET graduates even if doing so against the availability of cheap imported labour

incurs some additional costs and disruption.

20. This further suggests the need to incentivise employers to recruit more home-grown skilled workers and abide by the existing restriction set on the import of labour in certain occupations. *This is so much about finding the policy and institutional arrangements to align 'incentives' and 'motivations' for both the employers and employees* while TVET institutes have to continually strive to provide the manpower needed for given demand with quality, standards and diversity.

21. The labour market situation for TTI and IZC graduates calls for the need to *build strong partnerships between institutes and private sector, strategic coordination among different stakeholders and setting up a dedicated unit to coordinate employment programmes.*

22. Job stability is an issue for TTI and IZC graduates. *Some 32-39% of graduates have changed their jobs after their first jobs. Some graduates may have been changing jobs because they were not able to get secure and attractive jobs or their contract terms had expired. The most common reason given for the job change was 'low wage' and 'lack of training opportunity'*.

23. If such problems (mostly linked with the employment providers) continue, the effort that is given to improve the TVET supply may not fully lead to the intended outcomes. Many blame graduates for 'lack of attitude'. It is not just their attitude problem. Anyone who is paid less than expected will always move to a profession where he or she gets better wage and incentive. The works they do are technical, skill-oriented and involves a fair amount of manual engagement and other difficult circumstances. *Graduates felt their wages are not so attractive, which gives them enough reasons to keep on hopping from one job to another or choose the occupations other than what they were trained for*.

24. The monthly salary of the maximum number of graduates ranged between 5000 and 17,000. *A substantial number of graduates (38%) were not satisfied with their jobs. One of the reasons for job dissatisfaction graduates gave was 'low wage'.*

25. The entrepreneurship programmes in TVET are increasingly getting popular in many countries. *Just about 5-7% of TTI and IZC graduates identified themselves as the own-account workers or doing businesses with more than 70 per cent of the businesses being related to their technical and vocational training.* The effort to improve this indicator may have to be prioritised.

26. Among several challenges facing the business 'start-ups' among graduates (who took up their businesses), the top challenges were lack of financial capital, business competition, shortage of space, labour shortage and lack of technology. *Facilitating graduates (keen to start their businesses or become self-employed) the access to credit and appropriate technology in coordination with other relevant stakeholders could improve the relevance of TVET*.

27. The nature of unemployment shows that there was almost an equal proportion of graduates who became unemployed after they once got the job and those who did not get even one job. The first group reflects an attempt to change their jobs. The low salary was the most common reason for quitting their previous jobs. Among the fresh job-seekers, the low salary was the most cited reason for not taking up any job. *Overall, the data shows the need to prioritise the labour market situation for TTI and IZC graduates, particular in terms of revising the wage for technical and vocational workers.*

28. In terms of the education pathways, 30% of the graduates had up-graded their TVET qualifications mostly within the TVET at NC III and NC II levels. *The mobility out of TVET into the other higher levels such as diploma, NDs and degree was relatively low.* Making TVET attractive could depend not only on the career progression but also on the clear education pathways. *The current education pathways are not so clear, consistent, inclusive and diverse.*

29. Even in the absence of proper and consistent education pathways, *more than 70% of the graduates had expressed their interest to upgrade their qualifications mainly to higher levels of TVET like NC III*

and ND. About a quarter of them had expressed their wishes to avail diploma and university degrees or the equivalent.

30. *The implementation of BVQF needs to be revisited. It needs to be made consistent and implemented in close coordination between different stakeholders. If BVQF/ NQF is not recognised the way it is supposed to be, then having it can only complicate the system.* Already, there is a huge number of TVET graduates who want to upgrade their qualifications but stuck with their existing TVET qualifications because of not being able to find clear education pathways. *This calls for the attention to TVET trainers, who are also stuck with the same qualifications. The first people who the trainees come to learn about the dead-end nature TVET are their instructors/TVET trainers.*

31. Graduates who attended the competency-based courses cannot manage well the theoretical knowledge required at a higher level of academic education (university). Moreover, the qualifications at higher levels are available only for some occupations. The key strategic question arises: what policies and programmes are in place to contribute towards improving progression from TVET, into TVET and within TVET? T*here is the need to map out all the existing TVET qualifications and examine the problems and gaps in the BVQF and its implementation, and wherever necessary take decisive and concrete actions rather than discuss or simply reflect on the paper.*

32. Developing and implementing an integrated Management Information System (MIS) for the TVET will enable it to track the employment status and work trajectories of TVET graduates by using the new digital tool and artificial intelligence. *TVET MIS is being developed with ADB's funding. Having the system in place is not enough; the project should take into account the operational and sustainability aspects of TVET MIS.* There is the need to train people at various levels to handle TVET data and LMI.

33. Finally, the online graduate and employer surveys can provide valuable intelligence to assess and improve the relevance and quality of TVET programmes.*TTIs and IZCs must conduct regular programme-based or institutional tracers using a well-tested and uniform methodology.* The tracer team stands convinced that an online survey is doable and can be improved by providing trainees (before graduation) a short training on how to complete tracer surveys. The response rates will improve if trainees are informed about the tracer surveys and its importance before they graduate. *DTE must coordinate regular TVET employers' need and satisfaction survey. For this, DTE and to sustain the effort of building TVET database and publishing TVET statistics, there is the need to have a trained statistician or data administrator. The relevant authority must take this as critical HR requirement in the present public TVET system.*

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Memorandum to the Minister

TO: HE Minister of Ministry of Labour and Human Resources
FROM: Lham Dorji, Team Leader, Tracer Study Team
SUBJECT: Submitting the Key Findings of the Multi-Cohort Online Tracer Study
DATE: 13/07/2020

Introduction

It is the honour to submit the key findings of the multi-cohort online tracer survey (2019-2020) and recommend some measures to improve TVET quality and relevance, labour market outcomes, TVET image and subsequent pathways for TTI and IZC graduates. We drew these findings and recommendations from the descriptive analysis of the data collected from 2564 TTI and IZC graduates (2013-2018) inflated to 4815 graduates through the post-survey weighting. Ideally, the findings of the employer survey and other qualitative studies should complement the graduate tracer study, but such [other] studies do not exist at the moment.

Context

We conducted the tracer at the time when the TVET sector was being widely critiqued by various sections of the society and economy for failing to meet the country's pressing labour market needs amidst growing youth unemployment, citing the problem of 'skills mismatch'. This study shows that a complete attribution of the purported 'poor performance' of the public TVET system to skills mismatch alone (with no empirical basis) may not lead to any viable solution. The challenges that the TVET sector is facing are cross-cutting with some issues beyond the control of the public TVET system, including individual aspirations of graduates and the labour market situation. Several factors seem to cause the problem, and the tracer study at its best can only identify those factors, but not delve into their depth and severity.

Key findings

We would like to begin with some broad findings and gradually move towards the specific ones.

The study overall points out that TVET programmes in TTIs and IZCs can contribute towards the growth and progress of the society and economy only if we can simultaneously improve the quality and relevance of the training programmes (TVET supply) and improve the labour market conditions and outcomes for graduates (TVET demand) including their education and career pathways. Any reform initiative that focusses on the initial TVET without giving equivalent, if not more, emphasis on the demand side of TVET may become a lopsided undertaking even if it can create positive effects somewhere.

We see the provision of public TVET as the social equity policy response to provide the second-chance option for the low academic performers rather than as the country's economic policy priority. If the public TVET sector is to play its critical roles in driving economic growth, we

should give it a prominent place in the national economic policy. The prominence of the social equity role of the public TVET was clear from the fact that about half (49.93%) of the sampled TTI and IZC graduates (2013-18) had reportedly undertaken TVET courses only after failing to secure the government-sponsored higher educational scholarships and their socio-economic status did not allow them to pursue higher education in the private higher secondary schools and colleges.

That TTIs and IZCs have to take in a huge number of low academic performers particularly those with a less passion for TVET, even though serves the social equity goal, may partly represent the case of misplaced HR investment undermining the TVET quality and incurring the cost implication on the scarce national resources. This is bad for trainees and national economy. Such a scenario presents us with the complex challenge of either accommodating more mediocre TVET takers or making TVET competitive to attract high-achieving learners. It is the question of balancing social equity and economic goals of TVET. The study shows that for our TVET system to serve its economic goals, TVET should consider both the training and employment goals from the broader economic growth perspective.

A substantial number of graduates had reported that it was difficult for them to get the training relevant jobs (38% among the 2016-18 cohort and 58% among the 2013-15 cohort). These findings suggest three key issues pertinent to the current situation: poor alignment of the courses in TTIs and IZCs with the skills demand in the labour market; inadequate mechanism to support the transition of graduates into the labour market and; poor labour market conditions in terms of wages, job security and working environment.

The OJT programme is one widely recognised method of workplace training for preparing trainees for actual work. The effectiveness of OJT can, to a certain extent, determine the quality and relevance of the entire training programme. The data reveal several issues related to the OJT management such as insufficient sustenance allowance for trainees, accommodation and transportation problems during the OJT, lack of seriousness and support from the OJT providers, poor institutional mechanism for M&E and assigning irrelevant tasks. These issues reflect the problems in the overall management of the OJT programmes. The institutes cannot properly manage OJT owing to the budgetary constraint and lack of proper management framework. Most of the OJT providers seem to accept the trainees with low motivation and less sense of responsibility to train and accountability for the outcomes. We cannot blame the OJT providers/ industries for their lack of seriousness because the government has never incentivised them in any form to take the training obligation.

TVET graduates had relatively better employment outcomes than general graduates so far. Nevertheless, a substantial number of them had reported that they worked only as temporary and contract workers after the graduation. These types of employment do not give the workers a higher sense of job security and satisfaction. Some 32-39% of TTI and IZC graduates have changed their jobs (after the initial employment) because they could not get secure and

attractive jobs or their contract terms had expired. The most common reason they gave for the frequent job change was the 'low wage' and 'lack of training opportunity'. Giving them the training of the highest quality and standards is important, but ensuring them the meaningful employment is equally important.

Besides the evidence that about 50% of the graduates (2013-18) had taken TVET programmes as a second recourse, several of them had intended to quit their training upon realising the dead-end nature of the training, future jobs with long hours of manual works and low wage and low image associated with their training and works.

Just 30% of the graduates had up-graded their TVET qualifications, that too, mostly within the TVET at NC II and NC III levels. The mobility out of TVET into other higher education levels such as diploma, NDs and university degree was relatively low. Over 70% of the graduates had expressed their expectations for higher-level qualifications, reflecting increased ambitions, growing demand in the labour market for higher-level skills and the need for lifelong learning opportunities (re-skilling, up-skilling and deep skilling) including the higher education. Higher-level learning opportunities are also vital to promote TVET image and attractiveness and remove the stigma of TVET track as dead-ends.

TTI and IZC graduates seem to lack the opportunity to pursue higher education, either due to poor TVET pathways or their own inability to manage the theoretical knowledge required at some higher education levels (ex: at JNEC). The situation calls for the need to look at the prospects of ensuring effective education pathways for graduates who wish to pursue high-level education. The absence of proper education pathways appears to be one plausible reason for young people aspiring to take the academic routes from the earliest stage, leading to the distortion of choices and interests, and responding poorly to the labour market needs after the training that they undertake out of no choice. This is one major problem the public TVET system should look into and try to address.

The data shows several challenges facing TTIs and IZCs. Graduates had expressed their general satisfaction over thirty different dimensions of training programmes and learning environment. However, the good overall rating does not mean the problems do not exist. Among many issues, top ten dimensions requiring urgent attention and actions are (i) research and innovation, (ii) food provisions (monthly stipend), (iii) training tools and equipment, (iv) internet connectivity in the campus, (v) green-skilling programmes, (vi) Entrepreneurship Education (EPE), (vii) trainees' involvement in decision-making, (viii) institutes' post-graduation services, (ix) learning materials and (x) recreational facilities. We can only list these issues in order of importance but cannot point out their details.

The ICT course, green-skilling and other soft skills, career counselling and industrial tour were the dimensions that graduates had rated as most relevant for the post-graduation situation, but some of them inadequately delivered in TTIs and IZCs. Among the soft skilling programmes,

TTIs and IZCs should focus more on improving the entrepreneurial, ICT, human relations, problem-solving and green skills programmes.

Only about 5% of the graduates had opted for TVET intending to learn vocational and employability skills to pursue business/entrepreneurship. The data further shows that just 5-7% of 2013-18 graduates were engaged in their businesses (own-account workers) despite the effort to impart entrepreneurship skills and piloting of the business incubation unit in Chumey TTI since 2015. This suggests that the public TVET system was lagging in terms of developing and implementing the programmes that can prepare trainees for the whole spectrum of employment like paid employment, self-employment and businesses and family works. Combining the entrepreneurship skills with the occupation-specific skills is known to mitigate unemployment and open up the opportunity for self-employment among TVET graduates in other countries. EPE has not received enough priority in our TTIs and IZCs though its importance is reflected in the TVET Blueprint.

TVET courses offered by TTIs applies to some economic sectors such as electricity, manufacturing, auto-industry and construction. These are the sectors facing a shortage of skilled workers. Two TTIs offering courses on construction had enrolled over 2800 trainees between 2008 and 2019. Ironically, the highest unemployment rates were among graduates of these TTIs (on average, the unemployment rate was 32.65%). The combined unemployment rate among graduates of these two TTIs was 8.20% out of the total unemployment rate of 26.70% (for all TTIs and IZCs). This finding shows that the construction sector is not a popular employment choice, though a substantial number of young people attend the initial courses in the construction occupations. The same was the case with the automobile courses. TTIs that were doing well in terms of their graduates' employment were the ones that offer courses applicable to the hydroelectricity sector.

The low TVET image leads to a reluctance of young people and their parents to consider TVET as a viable educational option and they take it as the second resort. The data shows that parents and families played an important role in influencing their children's choice for TVET. TVET graduates (seniors) can also influence young people either positively (take TVET) or negatively (shun TVET). The current TVET promotion strategy will become more successful through broader engagement with the community, parents, graduates, including employers. One must, however, note that the low image of TVET is a product of complex factors.

Recommendations

Given the study's findings (summarised above), we recommend the following actions:

vii) In essence, the labour market situation for graduates of TTIs and IZCs calls for skills and competencies that meet the expectations of both graduates and employers. To match the TVET supply with the labour market demand and remove the obstacles that deter and demotivate the graduates' effective integration into the labour market, **TTIs and IZCs**

must conduct the need-based programmes in diversified occupations rather than ritually producing graduates of the same occupations for years.

viii) It is urgent to strengthen the collection, processing and analysis of TVET supply and demand statistics. Reliable Labour Market Information (LMI) and the monitoring of employment impacts are crucial for the structured training needs analyses, and as the pre-requisite for developing need-based technical and vocational education and training and labour market policy measures. **We should either strengthen LMID or establish a fully operational data unit within DTE for these functions. It is important to streamline and provide support to TTIs and IZCs conduct the institutional tracer surveys and analysis using a well-tested methodology.**

ix) Strengthening TVET-labour market linkage may entail the effort from both the 'supply' and 'demand' ends. There is the need to improve the employment situation for TTI and IZC graduates: improving graduates' employability, making jobs attractive and secure, and boosting employers' willingness to recruit TVET graduates. **It is crucial to develop TVET labour market strategies as a part of the TVET reform initiative through a strategic coordination of various stakeholders.** This is in recognition that the current labour market situation cannot adequately meet the expectations and ambitions of graduates and employers/industries.

x) The issues surrounding the OJT management warrants **a separate review of the OJT framework, provision and guidelines including incentives to OJT providers, duration, places of OJT, strategic coordination, etc**. The same team has started the study on 'Improving the framework and management of OJT programmes' which might lead to a set of recommendation.

xi) There is a huge potential to encourage interaction and synergies between institutes and employers/industries for the provision of training and employment. **TTIs and IZCs will have to start coordinating certain critical courses with large employers/group of small employers across key economic sectors and geographical areas even if the structured Dual Training Programme (DTP) is not feasible for the time being.** Such effective two-way partnership can best serve the goal of adopting need-based training. The partnership should include the involvement of employers/industries in the whole range of training, starting from the development of curricula, provision of access to specialised equipment, on-the-job training, assessment to hiring and employment. Making institute-industry partnership work at a system level will require new incentives and structures.

xii) **Industries/employers need to be encouraged to recruit more home-grown skilled graduates as 'regular workforce' even if they have the options to bargain (for) and recruit foreign workers.** Making this work will entail finding the policy and institutional arrangements to align incentives and motivations for both employers and employees, and

the effective implementation of labour regulations on hiring foreign workers. There is the need for strong policy dialogue between various TVET stakeholders on this matter.

xiii) TTIs and IZCs should not only strive to provide the manpower needed for given demand within well-defined standards and quality and **through course diversification,** but promote research, innovation and entrepreneurship. **We need to explore the possibility of integrating EPE that requires research and innovation into TVET programmes.** We need to attract more young people who aspire to build their own business and entrepreneurship, identify potential entrepreneurs among them, and facilitate their entry into the world of innovation and entrepreneurship. **We recommend piloting EPE-TVET integration programme in two zorig institutes in collaboration with the DCSI, foundations and other partners.** Zorig training lends themselves more for self-employment and establishment of SMEs.

xiv) TTIs and IZCs may help graduates with the 'on-campus-recruitment', but it is currently not mandatory for them to extend their support beyond the training provisions. The data reveals that many graduates face difficulties during the training-employment transition phase. **This strongly justifies setting up a dedicated liaison unit within DTE to provide career guidance and coordinate long-term employment programmes for graduates.** The unit could help enhance the connection between institutes, trainees and graduates to support the common goals through coordinated actions to support a range of activities like the formulation and development of labour market policy instruments, promotion of TVET image, provision of advisory and employment services, vocational career guidance, training and retraining, support for business start-ups, employment promotion and supporting alumni associations. Career guidance for trainees plays a critical role, but only if counselling use good data on labour market outcomes to inform trainees and graduates of the post-graduation scenario.

xv) We need to revisit the implementation of BVQF. If BVQF/NQF is not recognised and implemented the way it is supposed to be, then having it only seems to complicate the system. **The most crucial step in the TVET reform is to map out all the existing TVET qualifications and examine the problems and gaps in the BVQF and its implementation**. The implementation of BVQF is also expected to lead to clear pathways for TVET trainers, who at the moment do not get much opportunities to up-grade their qualifications.

xvi) The country's public TVET system should be agile and capable of **providing the entrants especially from working life the opportunities for re-skilling, up-skilling, deep-skilling and qualification up-gradation through short-and long-term courses in line with the changing economic and labour market environment.** This would also entail TTIs and IZCs to diversify their courses rather than stick to the same traditional courses.

xvii) At the moment, qualification up-gradation and gaining additional competencies do not seem to make much difference in the job position and income, which seems to demoralise and demotivate technical graduates in their relevant works, and as a result, many of them opt leave their technical fields if they see better opportunities elsewhere. In this light, t**here is a strong need to rationalise technical job structure and position, pay and incentives and career progression.**

xviii) Attracting high-achieving learners and mentally prepared youth to TVET is not always an easy task owing to negative perceptions attached to TVET. Many say it is the 'attitude problem'. **It is actually not the attitude problems of youth alone but that of the entire nation.** The kind of respects accorded to blue-collar jobs by the society and difficult circumstances associated with TVET occupations are what appears to be discouraging young people from choosing TVET and later taking TVET occupations. **The issue of attitude or negative perception towards TVET seems to have so far drawn little attention resulting in a lack of a strategic direction.** So much is desired to improve the status of TVET in the country. It is for this reason that along with the efforts in other TVET areas, it will be worth taking into the priority list the strategic promotion of TVET. **The existing method of TVET promotion requires strategic improvement.** A variety of awareness campaign and activities should take place across the nation through the engagement of TVET stakeholders, TVET institutions, employers, graduates, parents and many more.

Conclusion

In summary, we recommend the Ministry and other stakeholders to emphasise on (1) prioritising the promotion of demand-driven courses, (2) improving the labour market situation for graduates, (3) revisiting the existing BVQF and paving way towards its effective implementation, (4) strengthening the OJT and workplace learning components, (5) linking EPE and TVET, and (6) strengthening TVET MIS with the focus on LMI.

The study's findings that are more specific to institutes could be taken up separately with the respective TTIs and IZCs.


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Annexes

The tables were extracted from the multi-cohort online TVET survey, part TTI and IZC graduates (2013-2018).

Annex 1: TTI and IZC graduates by age group

Age-Group	2016-18		2013-15		2013-18		2003-18 (Unweighted)	
	n	%	n	%	n	%	n	%
35 to 44	19	0.71	61	2.84	80	1.66	229	7.48
25 to 34	1323	49.57	1948	90.77	3271	67.93	2012	65.69
18 to 24	1326	49.68	137	6.38	1463	30.38	822	26.84
Total	2669	100.00	2146	100.00	4815	100.00	3063	100.00

Annex 2: Family occupation of TTI and IZC graduates (2013-2018)

Occupation	2016-18		2013-2015		2013-18	
	n	%	n	%	n	%
Farmer (agriculture)	2043	76.55	1663	77.49	3706	76.97
Civil servant	178	6.67	164	7.64	342	7.10
Corporate employee	110	4.12	66	3.08	176	3.66
Armed force	106	3.97	65	3.03	171	3.55
Private employee	83	3.11	79	3.68	162	3.36
Family business	65	2.44	40	1.86	105	2.18
Religious family (example: gomchen)	43	1.61	26	1.21	69	1.43
Retired armed force	16	0.60	8	0.37	24	0.50
Self-employed	15	0.56	11	0.51	26	0.54
National Workforce	10	0.37	22	1.03	32	0.66
Retired civil servant	1	0.04	1	0.05	2	0.04
Total	2669	100.00	2146	100.00	4815	100.00

Annex 3: Father's education background of TTI and IZC graduates (2013-2018)

Qualification	2016-18		2013-2015		2013-18	
	n	%	n	%	n	%
No education	1866	69.91	1508	70.27	3374	70.07
Primary (Class I-VI)	362	13.56	303	14.12	665	13.81
Lower secondary (Class VII-VIII)	122	4.57	70	3.26	192	3.99
Middle secondary (Class IX-X)	102	3.82	93	4.33	195	4.05
Don't know	70	2.62	17	0.79	87	1.81
Monastic education	55	2.06	40	1.86	95	1.97
Higher secondary (Class XI-XII)	54	2.02	43	2.00	97	2.01
Non-formal education	17	0.64	26	1.21	43	0.89
Diploma	10	0.37	16	0.75	26	0.54
Bachelor's degree	5	0.19	16	0.75	21	0.44
Master's degree	3	0.11	2	0.09	5	0.10
VTI Certificate	1	0.04	10	0.47	11	0.23
PhD	1	0.04		0.00	1	0.02
Total	2669	100.00	2146	100.00	4815	100.00

Annex 4: Mother's education background of TTI and IZC graduates (2013-2018)

Qualification	2016-18		2013-2015		2013-18	
	n	%	n	%	n	%
Primary (Class PP-VI)	149	5.58	102	4.75	251	5.21
Non-formal education	88	3.30	44	2.05	132	2.74
No education	2358	88.35	1940	90.40	4298	89.26
Monastic education	0	0.00	4	0.19	4	0.08
Middle secondary (Class IX-X)	17	0.64	23	1.07	40	0.83
Lower secondary (Class VII-VIII)	45	1.69	13	0.61	58	1.20
Higher secondary (Class XI-XII)	9	0.34	8	0.37	17	0.35
Diploma	1	0.04	4	0.19	5	0.10
Bachelor's degree	2	0.07	2	0.09	4	0.08
VTI certificate	0	0.00	4	0.19	4	0.08
Master's degree	0	0.00	2	0.09	2	0.04
Total	2669	100.00	2146	100.00	4815	100.00

Annex 5: Academic qualification of sampled TTI and IZC graduates (2013-2018)

Qualification	2016-18		2013-2015		2013-18	
	n	%	n	%	n	%
Pre-Primary	2	0.07	3	0.14	5	0.10
Non-Formal Education (NFE)	1	0.04	3	0.14	4	0.08
Monastic Education	17	0.64	3	0.14	20	0.42
Diploma	2	0.07	5	0.23	7	0.15
Class XII	854	32.00	500	23.30	1354	28.12
Class XI	21	0.79	17	0.79	38	0.79
Class X	1723	64.56	1562	72.79	3285	68.22
Class VII-VIII (Lower Secondary)	13	0.49	18	0.84	31	0.64
Class IX	21	0.79	18	0.84	39	0.81
Class I-VI (Primary)	3	0.11	5	0.23	8	0.17
Bachelor's Degree	12	0.45	11	0.51	23	0.48
Total	2669	100.00	2146	100.00	4815	100.00

Annex 6: What did you want to do after School?

Aspirations	2016-2018		2013-2015		2013-2018		2003-2018	
	n	%	n	%	n	%	n	%
Take up business	120	4.50	87	4.05	207	4.30	122	3.98
Settle on farm	31	1.16	27	1.26	58	1.20	32	1.04
Search for a job	560	20.98	466	21.71	1026	21.31	674	22.00
Join the monastic body as a monk/ nun	8	0.30	6	0.28	14	0.29	12	0.39
Join Technical Vocational Education and Training (TVET) Institute	1355	50.77	1056	49.21	2411	50.07	1520	49.62
Join military	24	0.90	18	0.84	42	0.87	27	0.88
Do nothing	97	3.63	75	3.49	172	3.57	96	3.13
Continue studying	473	17.72	410	19.11	883	18.34	580	18.94
Total	2669	100.00	2146	100.00	4815	100.00	3063	100.00

Annex 7: What was the main reason for taking up technical and vocational training?

Reasons	2016-18		2013-18		2013-15	
	n	%	n	%	n	%
Interested in TVET	813	30.46	1355	28.14	542	25.26
Better career growth for TVET graduates	388	14.54	696	14.45	308	14.35
Advice from parents/relatives	288	10.79	542	11.26	254	11.84
Easy to get job	285	10.68	510	10.59	225	10.48
Good business opportunity for TVET graduates	214	8.02	363	7.54	149	6.94
No other option	192	7.19	340	7.06	148	6.90
Inspired by past TVET graduates	165	6.18	325	6.75	160	7.46
Affordable for family	101	3.78	244	5.07	143	6.66
Took up TVET without any idea	83	3.11	166	3.45	83	3.87
Influenced by friends	76	2.85	144	2.99	68	3.17
Free course was available	57	2.14	112	2.33	55	2.56
Availability/quality of accommodation	4	0.15	9	0.19	5	0.23
Close proximity of TVET institute	2	0.07	8	0.17	6	0.28
Reputation of the institute	1	0.04	1	0.02	0	0.00
Total	2669		4815		0	

Annex 8: Observed distribution of TTI and IZC graduates by institutes and gender

Institute	2016-2018			2013-2015			2013-2018		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
JWPTI	302	252	554	241	187	428	543	439	982
TTI-K	259	153	412	279	136	415	538	289	827
TTI-S	323	63	386	267	42	309	590	105	695
TTI-R	220	126	346	222	117	339	442	243	685
TTI-C	204	143	347	178	112	290	382	255	637
NIZC	194	117	311	69	56	125	263	173	436
CZC	96	109	205	68	93	161	164	202	366
TTI-T	78	29	107	57	23	80	135	52	187
Total	1676	992	2668	1381	766	2147	3057	1758	4815

Annex 9: TTI and IZC Graduates by gender and year of graduation

Year	Male		Female		Total	
	n	%	n	%	n	%
2018	616	65.39	326	34.61	942	19.56
2017	669	62.64	399	37.36	1068	22.18
2016	391	59.33	268	40.67	659	13.69
2015	513	66.97	253	33.03	766	15.91
2014	461	60.90	296	39.10	757	15.72
2013	406	65.17	217	34.83	623	12.94
	3056	63.47	1759	36.53	4815	100.00

Annex 10: TTI and IZC graduates by course undertaken (2013-2018) as per the survey

Courses	2016-18		2013-15		2013-2018	
	n	%	n		n	%
Electrical	499	18.70	647	30.14	1146	23.80
Auto Mechanic	352	13.19	312	14.53	664	13.79
Masonry	322	12.07	227	10.57	549	11.40
Plumbing	228	8.55	183	8.52	411	8.54
Mechanical Welder	181	6.78	160	7.45	341	7.08
Tailoring (Tshemzo)	147	5.51	85	3.96	232	4.82
Carpentry	159	5.96	60	2.79	219	4.55
Traditional Painting (Lhadi)	99	3.71	72	3.35	171	3.55
Heavy Vehicle Driving (HVD)	81	3.04	68	3.17	149	3.09
Computer Hardware and Networking (CHN)	79	2.96	61	2.84	140	2.91
Wood Carving (Patra)	91	3.41	48	2.24	139	2.89
Embroidery (hand)	70	2.62	43	2.00	113	2.35
Mechanical Fitting	78	2.92	29	1.35	107	2.22
Furniture-Making	56	2.10	19	0.88	75	1.56
Sculpture (Jimzo)	41	1.54	18	0.84	59	1.23
Panel Beating	22	0.82	15	0.70	37	0.77
Auto Electrician	28	1.05	7	0.33	35	0.73
Heavy Earth Mover (HEM)	26	0.97	3	0.14	29	0.60
Gold & Silver Smith (Trezo)	23	0.86	4	0.19	27	0.56
Upholstery	0	0.00	25	1.16	25	0.52
Embroidery (machine)	13	0.49	9	0.42	22	0.46
General Mechanical	6	0.22	15	0.70	21	0.44
Traditional Dralham (boot) Making	13	0.49	6	0.28	19	0.39
Wood Turning (Shazo)	12	0.45	4	0.19	16	0.33
Civil General	3	0.11	13	0.61	16	0.33
Hydropower Transmission & Distribution Linemen	10	0.37		0.00	10	0.21
Hydropower Mechanical	10	0.37		0.00	10	0.21
Cable TV Technician	9	0.34		0.00	9	0.19
Light Vehicle Driving (LVD)		0.00	8	0.37	8	0.17
Mask Carving (Babzo)	6	0.22	1	0.05	7	0.15
Construction	2	0.07		0.00	2	0.04
Auto Denting	2	0.07		0.00	2	0.04
Weaving (Thazo)	0	0.00	2	0.09	2	0.04
Information Technology		0.00	2	0.09	2	0.04
Fashion Design		0.00	1	0.05	1	0.02
	2668	100.00	2147	100.00	4815	100.00

Annex 11: TTI and IZC graduates by Mode of Delivery (Level)

Levl/MoD	2016-2018		2013-2015		2013-2018	
	n	%	n	%	n	%
National Certificate (NC II)	1820	68.19	1248	58.15	3068	63.72
Certificate	400	14.99	757	35.27	1157	24.03
National Certificate (NC III)	432	16.19	85	3.96	517	10.74
National Certificate (NC I)	9	0.34	29	1.35	38	0.79
RPL Certification	5	0.19	25	1.16	30	0.62
National Diploma	3	0.11		0.00	3	0.06
Total	2669	100.00	2146	100.00	4815	100.00

Annex 12: Did you take up the training course you were actually interested in?

	2016-18		2013-15		2013-18	
	n	%	n	%	n	%
Yes	2195	82.24	1738	80.99	3933	81.68
No	474	17.76	407	18.97	881	18.30
Total	2669	100.00	2146	100.00	4815	100.00

Annex 13: If 'No' (did not take the preferred course), what was the course you actually wanted to take? (please mention the specific course name)

Course	2016-18		2013-15		2013-18	
	n	%	n	%	n	%
No option	103	21.82	122	30.05	225	25.63
Driving	145	30.72	0	0.00	145	16.51
Embroidery	3	0.64	124	30.54	127	14.46
Plumbing	22	4.66	35	8.62	57	6.49
Electrical	24	5.08	26	6.40	50	5.69
Tailoring	26	5.51	16	3.94	42	4.78
Traditional Painting	29	6.14	11	2.71	40	4.56
ICT course	27	5.72	11	2.71	38	4.33
Heavy Earth Moving	20	4.24	2	0.49	22	2.51
Cable TV	15	3.18		0.00	15	1.71
Masonry	3	0.64	10	2.46	13	1.48
Computer Applications	1	0.21	12	2.96	13	1.48
Mechanical	6	1.27	6	1.48	12	1.37
Wood Carving (Patra)	6	1.27	4	0.99	10	1.14
Sculpture	7	1.48	3	0.74	10	1.14
Civil General	6	1.27	4	0.99	10	1.14
Carpentry	6	1.27	4	0.99	10	1.14
Auto Mechanic	8	1.69		0.00	8	0.91
Gold and Silver Smith (Trezo)	2	0.42	5	1.23	7	0.80
General Mechanical	5	1.06	1	0.25	6	0.68
Degree	3	0.64	3	0.74	6	0.68
Furniture-Making	2	0.42	2	0.49	4	0.46
Electrical	1	0.21	3	0.74	4	0.46
Diploma		0.00	2	0.49	2	0.23
Auto Painting	2	0.42		0.00	2	0.23
Total	**472**	17.68	**406**	18.92	**878**	18.23
Missing	2197	82.32	1740	81.08	3937	81.77
Total	2669		2146		4815	

Annex 14: During the course of your training, have you ever seriously considered cancelling your training?

	2016-18		2013-15		2013-18	
	n	%	n	%	n	%
Yes	224	8.39	164	7.64	388	8.06
No	2444	91.57	1981	92.31	4425	91.90
Total	2669	100.00	2146	100.00	4815	100.00

Annex 15: What was the main reason for not being able to take up the course that you were interested in?

Reasons	2016-18		2013-15		2013-18	
	n	%	n	%	n	%
The course that I preferred was not available	214	45.34	176	43.14	390	44.37
Simply had no idea about what course to take	2	0.42	5	1.23	7	0.80
School academic score did not meet the course requirement	13	2.75	6	1.47	19	2.16
Other people influenced me to change the course at the last moment	22	4.66	31	7.60	53	6.03
Only one option was given	2	0.42	4	0.98	6	0.68
Late for the interview	2	0.42	0	0.00	2	0.23
In-take capacity for that course was already filled	215	45.55	185	45.34	400	45.51
Others	2	0.42		0.00	2	0.23
Total	472	100.00	408	100.00	879	100.00
Missing	2197		1738		3936	
Total	2669		2146		4815	

Annex 16: TTI and IZC Graduates distribution by present Dzongkhag of origin

Dzongkhag	2013-2018		2016-2018		2013-2015	
	n	%	n	%	n	%
Trashigang	375	14.05	279	13.00	654	13.58
Pemagatshel	284	10.64	217	10.11	501	10.40
Monggar	275	10.30	217	10.11	492	10.22
Samdrupjongkhar	236	8.84	201	9.37	437	9.08
Sarpang	169	6.33	165	7.69	334	6.94
Chhukha	161	6.03	158	7.36	319	6.63
Trashiyangtse	177	6.63	140	6.52	317	6.58
Dagana	152	5.70	121	5.64	273	5.67
Tsirang	140	5.25	112	5.22	252	5.23
Samtse	140	5.25	108	5.03	248	5.15
Zhemgang	123	4.61	121	5.64	244	5.07
Lhuentse	96	3.60	58	2.70	154	3.20
Trongsa	74	2.77	63	2.94	137	2.85
Wangduephodrang	73	2.74	45	2.10	118	2.45
Paro	51	1.91	32	1.49	83	1.72
Punakha	51	1.91	26	1.21	77	1.60
Bumthang	43	1.61	26	1.21	69	1.43
Thimphu	27	1.01	38	1.77	65	1.35
Haa	17	0.64	13	0.61	30	0.62
Gasa	4	0.15	7	0.33	11	0.23
Total	2669	100.00	2146	100.00	4815	100.00

Annex 17: TTI and IZC Graduates distribution by present Dzongkhag of residence

Dzongkhag	2013-2018		2016-2018		2013-2015	
	n	%	n	%	n	%
Thimphu	1351	28.06	774	29.00	577	26.89
Chukkha	583	12.11	320	11.99	263	12.26
Sarpang	394	8.18	229	8.58	165	7.69
Paro	360	7.48	213	7.98	147	6.85
Trongsa	272	5.65	149	5.58	123	5.73
Wangduephodrang	246	5.11	147	5.51	99	4.61
Pemagatshel	201	4.17	98	3.67	103	4.80
Trashiyangtse	156	3.24	93	3.48	63	2.94
Bumthang	124	2.58	92	3.45	32	1.49
Samdrupjongkhar	197	4.09	90	3.37	107	4.99
Monggar	155	3.22	90	3.37	65	3.03
Trashigang	155	3.22	78	2.92	77	3.59
Punakha	116	2.41	70	2.62	46	2.14
Samtse	131	2.72	69	2.59	62	2.89
Dagana	99	2.06	53	1.99	46	2.14
Tsirang	86	1.79	35	1.31	51	2.38
Zhemgang	79	1.64	27	1.01	52	2.42
Haa	50	1.04	21	0.79	29	1.35
Lhuentse	39	0.81	14	0.52	25	1.16
Dubai	5	0.10	5	0.19	0	0.00
Gasa	8	0.17	2	0.07	6	0.28
Ahituv	2	0.04	2	0.07	0	0.00
Arunachal Pradesh	5	0.10	1	0.04	4	0.19
Malaysia	1	0.02	1	0.04	0	0.00
Kathmandu	1	0.02	1	0.04	0	0.00
Total	4815		2669		2146	

Annex 18: Did you do any On-the-Job-Training (OJT)?

OJT	2016-18		2013-15		2013-18	
	n	%	n	%	n	%
Yes	2440	91.42	1890	88.07	4330	89.93
No	228	8.54	255	11.88	483	10.03
Total	2669	100.00	2146	100.00	4815	100.00

Annex 19: Reason for thought of cancelling the course

Reasons	2016-18		2013-15		2013-18	
	n	%	n	%	n	%
Looked down/Poor TVET image	37	16.52	28	16.77	65	16.62
Realized there is no good job opportunity after the training	38	16.96	20	11.98	58	14.83
Blue collar job/manual work	27	12.05	26	15.57	53	13.55
Family problem	11	4.91	21	12.57	32	8.18
Low stipend	22	9.82	9	5.39	31	7.93
Did not like the course	15	6.70	6	3.59	21	5.37
Poor quality training equipment	8	3.57	9	5.39	17	4.35
Bullying by seniors	7	3.13	9	5.39	16	4.09
Found the course difficult	8	3.57	7	4.19	15	3.84
Friends' influence	6	2.68	7	4.19	13	3.32
No good/enough instructor	7	3.13	4	2.40	11	2.81
Job choice changed	5	2.23	4	2.40	9	2.30
Wanted to go for further study	5	2.23	3	1.80	8	2.05
Health problem	7	3.13	1	0.60	8	2.05
No OJT		0.00	5	2.99	5	1.28
Fount out that females are less preferred in the job market	3	1.34	2	1.20	5	1.28
Did not like practical training	3	1.34	2	1.20	5	1.28
Did not get the preferred course	3	1.34	2	1.20	5	1.28
Took the course without any idea	4	1.79		0.00	4	1.02
Wanted to opt for Overseas Program	2	0.89	1	0.60	3	0.77
Institute management problem	3	1.34		0.00	3	0.77
No accomodation	2	0.89		0.00	2	0.51
Course duration long	2	0.89		0.00	2	0.51
Total	224	100.00	167	100.00	391	100.00
Missing	2555	8.39	1979	7.78	4534	8.12
Total	2669		2146		4815	

Annex 20: OJT providers where sampled graduates had availed OJTs

SLN	Firms	2016-18		2013-15		2013-18	
		n	%	n	%	n	%
1	Private Automobile Workshop	328	13.82	267	14.42	595	14.08
2	Bhutan Power Corporation Limited (BPCL)	256	10.78	238	12.85	494	11.69
3	Private Construction Company	171	7.20	93	5.02	264	6.25
4	Monastery Renovation and Construction Project	170	7.16	75	4.05	245	5.80
5	Zorig Firm	124	5.22	52	2.81	176	4.16
6	TVET and Zorig Institutes	93	3.92	89	4.81	182	4.31
7	Dzong Renovation and Construction Project	90	3.79	18	0.97	108	2.56
8	Agriculture Machinery Centre (AMC)	87	3.66	68	3.67	155	3.67

SLN	Firms	2016-18		2013-15		2013-18	
		n	%	n	%	n	%
9	Dungsam Cement Corporation Limited	76	3.20	52	2.81	128	3.03
10	Druk Green Power Corporation (DGCP)	69	2.91	60	3.24	129	3.05
11	Royal Academy Project, Pangbisa	65	2.74	6	0.32	71	1.68
12	Private Tailoring Firm	57	2.40	43	2.32	100	2.37
13	Royal Project	55	2.32	67	3.62	122	2.89
14	Punatsangchhu Hydroelectric Project Authority	50	2.11	67	3.62	117	2.77
15	State Trading Corporation Limited (STCBL)	46	1.94	7	0.38	53	1.25
16	Private Furniture Firm	44	1.85	38	2.05	82	1.94
17	Thromdes	42	1.77	50	2.70	92	2.18
18	Private Residential Building	39	1.64	37	2.00	76	1.80
19	Financial Institutions	34	1.43		0.00	34	0.80
20	Dzongkhag and Dungkhag Administration	31	1.31	43	2.32	74	1.75
21	Construction Development Corporation Limited (CDCL)	28	1.18	38	2.05	66	1.56
22	Youth Centre	28	1.18	4	0.22	32	0.76
23	Bhutan Hydropower Services Limited (BHSL)	25	1.05		0.00	25	0.59
24	ICT Companies	23	0.97	24	1.30	47	1.11
25	Central Machinery Unit (CMU)	22	0.93	14	0.76	36	0.85
26	Departments & Ministries	22	0.93	48	2.59	70	1.66
27	Hotels & Resorts	22	0.93	17	0.92	39	0.92
28	Bhutan Ferro & Alloy Limited (BFAL)	21	0.88	38	2.05	59	1.40
29	Kurichhu Hydro Power Corporation Ltd	21	0.88	25	1.35	46	1.09
30	Private Enterprises	21	0.88	18	0.97	39	0.92
31	Tala Hydropower Authority (THPA)	21	0.88	20	1.08	41	0.97
32	Druk Wang Alloys Limited	18	0.76	6	0.32	24	0.57
33	Bhutan Nuns Foundation	16	0.67	2	0.11	18	0.43
34	Chukha Hydro Power Corporation Limited (CHPC)	16	0.67	9	0.49	25	0.59
35	Bhutan Kubera	12	0.51		0.00	12	0.28
36	TV Cable Services	12	0.51		0.00	12	0.28
37	Wood and Fabrication	12	0.51	9	0.49	21	0.50
38	Bhutan Telecom Limited	9	0.38		0.00	9	0.21
39	Foreign Company	9	0.38	9	0.49	18	0.43
40	Media House	8	0.34	33	1.78	41	0.97
41	Royal University of Bhutan	8	0.34	2	0.11	10	0.24
42	Bhutan Silicon Metal Private limited	7	0.29		0.00	7	0.17
43	Beverage Companies	6	0.25	2	0.11	8	0.19
44	Motors Company	6	0.25		0.00	6	0.14
45	Penden Cement Authority Limited	6	0.25	4	0.22	10	0.24
46	National Resource Development Corporation	5	0.21		0.00	5	0.12
47	Basochu Hydropower Project	4	0.17	4	0.22	8	0.19
48	Bhutan Carbide and Chemical Limited	4	0.17	16	0.86	20	0.47
49	Lhaki Cement	4	0.17	15	0.81	19	0.45
50	Lhaki Steel and Rolling Private Limited	4	0.17		0.00	4	0.09
51	Mangdichhu Hydro Power Project	4	0.17	15	0.81	19	0.45
52	Wood Craft Centre	4	0.17	22	1.19	26	0.62
53	Hospitals	3	0.13	7	0.38	10	0.24
54	Kiosk Construction	3	0.13		0.00	3	0.07
55	Mining Companies	3	0.13		0.00	3	0.07
56	Real Estate Builders	3	0.13	17	0.92	20	0.47
57	National Housing Development Corporation	2	0.08	8	0.43	10	0.24
58	Bhutan Polythene Company	1	0.04	9	0.49	10	0.24
59	Dagachhu Hydro Power Corporation(DHPC)	1	0.04	4	0.22	5	0.12

SLN	Firms	2016-18		2013-15		2013-18	
		n	%	n	%	n	%
60	Menjong Sorig Pharmaceuticals	1	0.04	2	0.11	3	0.07
61	Private Group of Companies	1	0.04	13	0.70	14	0.33
62	Ugyen Ferro Alloys Pvt. Ltd.	1	0.04		0.00	1	0.02
63	Army Welfare Project		0.00	11	0.59	11	0.26
64	Bhutan Agro Industries		0.00	4	0.22	4	0.09
65	Construction Service Center		0.00	10	0.54	10	0.24
66	Druk Ferro Alloys ltd		0.00	2	0.11	2	0.05
67	Private Manufacturing Unit		0.00	1	0.05	1	0.02
		2374	100.00	1852	100.00	4226	100.00

Annex 21: Soft skills learned formally or informally

Responses	2016-18		2013-15		2013-18	
	n	%	n	%	n	%
Entrepreneurial skills	721	29.06	383	19.62	1104	24.90
Computer skills	402	16.20	369	18.90	771	17.39
Human relation skills	391	15.76	384	19.67	775	17.48
Problem-solving skills	384	15.48	406	20.80	790	17.82
Green (environment-related) skills	319	12.86	248	12.70	567	12.79
Mathematics skill	215	8.67	127	6.51	342	7.71
Communication skills	32	1.29	15	0.77	47	1.06
Preservation of cultre and tradition	9	0.36	8	0.41	17	0.38
Drawing skills	7	0.28	5	0.26	12	0.27
Painting skills	0	0.00	1	0.05	1	0.02
Designing skills	0	0.00	1	0.05	1	0.02
Driving skills	0	0.00	3	0.15	3	0.07
Total	2481		1952		4433	
Missing	187		194		381	
Total	2669		2146		4815	

Annex 22: Overall, how would you rate the relevance of your technical and vocational training to your job?

	2016-18	2013-15	2013-18
Poor	235	208	443
Fair	671	507	1178
Good	1426	1155	2581
Very good	331	273	604
Total	2662	2143	4805
Missing	6	2	8
Total	2669	2146	4815

Annex 23: Overall, how would you rate the quality of the technical and vocational training that you received?

	2016-18		2013-15		2013-18	
	n	%	n	%	n	%
Very bad	52.00	1.95	32	1.49	84	1.74
Bad	427	16.02	397	18.50	824	17.12
Good	1389	52.12	1189	55.41	2578	53.55
Very good	797	29.91	528	24.60	1325	27.52
Total	2665	100.00	2146	100.00	4811	100
Missing	4		0		4	
Total	2669		2146		4815	

Annex 24: Are you presently employed?

	2016-18		2013-15		2013-18	
	n	%	n	%	n	%
No	818	30.65	1257	26.11	439	20.46
Yes	1851	69.35	3557	73.87	1706	79.50
Total	2669		4815	99.98	2146	100.00

Annex 25: Job designations as reported by TTI and IZC graduates

SLN	2016-18		2013-15	
	Job Dsignation	n	Job Dsignation	n
1	Electrical Technician	289	Electrical Technician	378
2	Auto Mechanic	162	Auto Mechanic	147
3	Plumbing Technician	109	Plumbing Technician	127
4	Tailor	105	Site Supervisor	91
5	Carpentery Technician	103	Welding Technician	71
6	Welding Technician	102	Mason	68
7	Site Supervisor	95	Tailor	58
8	Mason	73	Carpentery Technician	45
9	Traditional Painter	60	Traditional Painter	43
10	HV Driver	59	LV Driver	42
11	Wood Carver (Patrap)	37	Plant Operator	39
12	IT Technician	35	Sales and Marketing In-Charge	30
13	Machine Operator	34	Business	29
14	Embroiderer	32	Civil Technician	27
15	Mechanical Fitter	28	HV Driver	26
16	Plant Operator	25	Wood Carver (Patrap)	24
17	VEEET	25	Store In-Charge	24
18	Furniture-Maker	22	General Technician	23
19	Business	20	IT Technician	23
20	General Technician	19	Machine Operator	17
21	Elementary Service Personnel (ESP)	18	Technical In-Charge	16
22	Sculptor	18	TVET Trainer	15
23	Store In-Charge	16	HEM Operator	14
24	TVET Trainer	16	Motor Vehicle Inspector	13
25	HEM Operator	14	Maintenance In-Charge	12
26	Sales and Marketing In-Charge	14	Sculptor	11
27	Gold & Silver Smith (Trezop)	13	Accountant	11
28	LV Driver	13	Mechanical Fitter	11
29	Manual Worker	13	Upholster	11
30	Civil Technician	10	VEEET	11
31	Cable TV Technician	9	Manual Worker	9
32	Panel Beater	9	Embroiderer	8
33	Wood Turner (Shazop)	8	Manager	8
34	Mechanical Technician	7	Office Assistant	8
35	Office Assistant	7	Elementary Service Personnel (ESP)	7
36	Road Inspector	7	Road Inspector	7
37	Auto Electrician	6	Security Guard	6
38	Motor Vehicle Inspector	6	Shift In-Charge	6
39	Spare Parts Executive	6	Caregiver	5
40	Coach and Refree	5	Ward Boy	4
41	Field Assistant	5	Thromde Thuemi	4
42	Maintenance In-Charge	5	Land Record Assistant	4
43	Manager	5	Despatcher	4
44	Policeman	4	Motor Winder	4
45	Production Supervisor	4	Community Center Operator	4
46	Service Manager	4	Auto Painter	3

SLN	2016-18		2013-15	
	Job Dsignation	n	Job Dsignation	n
47	Auto Denting	3	Spare Parts Executive	3
48	Banking Assistant	3	Furniture-Maker	3
49	Fabrication Technician	3	Gold & Silver Smith (Trezop)	3
50	Freelance Zorig	3	Field Assistant	3
51	Housekeeping	3	Policeman	3
52	Security Guard	3	Production Supervisor	3
53	Teacher	3	Freelance Zorig	3
54	Accountant	2	Transport Assistant	3
55	Assistant Transport Officer	2	Wood Turner (Shazop)	3
56	Auto Painter	2	HVAC Technician	2
57	Bio-Medical Technician	2	Instrumentation Assistant	2
58	Car Washer	2	Cable TV Technician	2
59	Despatcher	2	Graphic Designer	2
60	Frabrication Technician	2	ICT Officer	2
61	Hiring Coordinator	2	Cleaner	2
62	Mechanical Supervisor	2	Mechanical Technician	2
63	Messenger	2	Delivery Boy	2
64	Mobile Technician	2	Auto Electrician	2
65	Order Desk Executive	2	Fabrication Technician	2
66	Safety Steward	2	Air Ticket Counter	2
67	School Counsellor	2	Barista	2
68	Shift In-Charge	2	Caretaker	2
69	Sound Technician	2	Freelance Technician	2
70	Technical In-Charge	2	Section Officer	2
71	Technician	2	Sound Technician	2
72	Tour Executive	2	Medical Record Technician	2
73	Warranty Manager	2	Overseas Job	1
74	Wood Fabricator	2	Boot Maker	1
75	Caregiver	1	Housekeeping	1
76	Clearing In-Charge	1	Medical Record Technician	2
77	Motor Winder	1	Office Assistant	8
78	Overseas Job	1	Store In-Charge	24
79	Solar Technician	1	Total	1616
80	Water Caretaker	1	Total	2146
	Total	2669	Missing	99
	Total	1742		
	Missing	926		

Annex 26: Employers of TTI and IZC graduates (Major Groups)

SLN	Employer	Frequency
1	Bhutan Power Corporation Limited (BPCL)	327
2	Druk Green Power Coproration Limited (DGCPL)	115
3	Construction Development Corporation Limited (CDCL)	92
4	National Housing Development Corporation Limited (NHDCL)	88
5	Farm Machinery Corporation Limited (FMCL)	82
6	Dzong Constrution Project	76
7	Dzongkhag Engineering Section	75
8	Self-Business	67
9	Self Employed	57
10	Punatsangchhu Hydroelectric Project Authority (PHPA)	52
11	Royal Academy Construction Project	52
12	Departmet of National Properties (DNP)	51
13	Department of Roads (DOR)	49
14	Mangdechu Hydroelectric Project Authority (MHPA)	44

SLN	Employer	Frequency
15	Ministry of Health	41
16	Private Construction	41
17	Tashi Infocom Limited	35
18	Royal University of Bhutan (RUB)	34
19	Bhutan Ferro Alloys Limited (BFAL)	33
20	Dungsam Cement Corporation Limited (DCCL)	31
21	Thimphu Thromde Office	31
22	State Trading Corporation of Bhutan (STCBL)	26
23	Army Welfare Project Limited (AWPL)	25
24	Bank of Bhutan Limited (BoBL)	25
25	Nikachu Hydroelectric Project	25
26	Bhutan Telecom Limited (BTL)	24
27	Central Regional Referral Hospital (CRRH)	22
28	Zimdra Food Private Limited	21
29	Jigme Dorji Wangchuck Referral Hospital (JDWNRH)	19
30	Others	18
31	Royal Body Guard (RBG)	18
32	Ministry of Education	17
33	Gelephu Thromde	16
34	Druk Trading Equipment	15
35	Hindustan Construction Company (HCC)	15
36	Bhutan Agro Industries Limited	14
37	Central Machinery Unit (CMU)	14
38	Larsen and Turbo (LNT)	14
39	Lungten Automobile	14
40	Road Safety and Transport Authority (RSTA)	14
41	Zimdra Automobiles Workshop	14
42	Dungsam Polymers Limited	13
43	Ministry of Work and Housing (MoWHS)	13
44	National Resource Development Corporation Limited (NRDCL)	13
45	Tailor Shop	13
46	AFCONS Infrastructure Limited	12
47	Bhutan Hydropower Service Limited (BHSL)	12
48	Bhutan Livestock Development Corporation (BLDCL)	12
49	Tashichodzong Garden Project	12
50	Yoebar Auto Workshop	12
51	Bhutan Development Bank Limited	11
52	High Quality Thangkha Painting	11
53	Private Auto Workshop	11
54	Sersang Kbong Food Private Limited	11
55	Technical Training Institute	11
56	Drukair Corporation	10
57	Jigme Upholstery and Repairing	10
58	Natural Resources Development Corporation Limited	10
59	Private Company	10
60	Ugen Earthmover	10
61	Bhutan Broadcasting Service Limited (BBSL)	9
62	Bhutan Nuns Foundation	9
63	Druk Ferro Alloys Private Limited (DFAL)	9
64	Mountain Hazelnut Private Company	9
65	Rinson Construction Company Private Limited	9

SLN	Employer	Frequency
66	Six Senses Hotels and Spas	9
67	Tashi Beverage Limited	9
68	THYE Company	9
69	Yangki Automobile Workshop	9
70	Bhutan Board Private Limited	8
71	Dzongkhag Municipality	8
72	Food Corporation Bhutan Limited (FCBL)	8
73	Freelance	8
74	Jigme Mining Corporation Limited	8
75	Ugyen Tailoring Shop	8
76	AMW Motor Workshop	7
77	Bhutan Polymers Compay Limited	7
78	Bhutan Spirit Sanctuary	7
79	Kota Tailoring	7
80	Kuenphen Motors	7
81	Le Meridian	7
82	Lungta Auto Workshop	7
83	Namgay Nidup Tailoring	7
84	National Seed Centre	7
85	OGOP	7
86	Peljoling Tailoring	7
87	Rabten Engineering Workshop	7
88	Royal Audit Authority	7
89	Ugen Automobiles	7
90	Ugen Ferro Alloys Pvt Ltd.	7
91	Wood Craft Centre Limited (WCCL)	7
92	Yangphel Pvt. Ltd.	7
93	Basketball Federation of Bhutan	6
94	Dharma Arts and Crafts	6
95	Druk Leading Furniture House	6
96	Dungkhag Engineering Section	6
97	dusitD2 Yarkay	6
98	Jitshen Norbu Construction	6
99	Jurmey Thinley Tailoring	6
100	Kabab Construction Pvt. Ltd	6
101	Kuenjung Automobile Workshop	6
102	National Institute for Zorig Chusum	6
103	Ondi Timber Industry	6
104	Phubgyel Furniture and Sawmill	6
105	Serphel Electrical Construction	6
106	Sonam Tailoring	6
107	Tara Motor (Ford)	6
108	Yangka Thongdrel	6
109	Ardthi Bhutan Contemporary Arts	5
110	Bhutan Hyundai Motors	5
111	Bhutan National Bank Limited (BNBL)	5
112	Chukkha Hydropower Coporation Limited	5
113	Dee Gee Construction Pvt. Ltd	5
114	Dragon Company	5
115	Dratshang Lhentsho	5
116	Gem Construction	5

SLN	Employer	Frequency
117	Ice Beverages Pvt Ltd	5
118	Karma Tshering Worksop	5
119	Kitab Automobile Workshop	5
120	Lhojong Construction Pvt. Ltd	5
121	Phuentsholing Thromde Office	5
122	Ramada Valley Hotel	5
123	SDEBCC	5
124	Sonam Drukpa Eastern Bhutan Coal Company Ltd.	5
125	Tama Construction	5
126	Tashi Metals Pvt Ltd	5
127	Tee Dee Automobile Workshop	5
128	Vajra Builder Pvt. Ltd.	5
129	Yongchab Fabrication Unit	5
130	Yuengdrung Construction Private	5
131	Zhiwaling Private Limited	5
132	Basochu Hydro electric	4
133	Bhutan Engineering Company Private Limited (BECPL)	4
134	Bhutan Silicon Metal Pvt. Ltd.	4
135	Bisque Karma Automobile Workshop	4
136	BMML (SCPL)	4
137	Continental Bhutan Enterprise	4
138	Dai Nippon Construction (DNC)	4
139	Damchu Construction	4
140	Department of Geology and Mines	4
141	Department of Geology and Mines (DGM)	4
142	Dewathang Military Hospital	4
143	Dhodter Rigtsel Company	4
144	Digala Construction	4
145	Green Pigments Art	4
146	Hotel Ariya	4
147	Institute of Zorig Chusum	4
148	International Travels Corporation	4
149	Kado Tailoring Shop	4
150	Karm Feed Pasakha	4
151	Komputer palace	4
152	Kurichu Hydropower Plant	4
153	Lamla Sales and Services	4
154	Lhaki cement Pvt. Ltd.	4
155	Lhaki Steel and Rolling Pvt. Ltd.	4
156	Melasarkha	4
157	Metta Resort and Spa	4
158	Ministry of Agriculture and Forestry (MOAF)	4
159	Namgay Artisanal Brewery	4
160	Namsel Norlha Tailoring	4
161	Norkhil Boutique Hotel and Spa	4
162	Norling Canble Services	4
163	Phuntsho Wangdi Taloring	4
164	Private Automobile Workshop	4
165	Private House	4
166	Royal Bhutan Army (RBA)	4
167	Royal Institute for Tourism and Hospitality	4

SLN	Employer	Frequency
168	Samba Auto Workshop	4
169	Serzang Automobile Workshop	4
170	Sonam Furniture Unit	4
171	State Mining Company Limited	4
172	STP Jurme Tailoring	4
173	Taj Tashi	4
174	Tshewang Choden Tailoring	4
175	Webtech	4
176	Adruka Pvt. Ltd.	3
177	Bhutan Carbide and Chemical Limited (BCCL)	3
178	Bhutan Centennial Distillery	3
179	Bhutan Polythene Company Ltd.	3
180	Bhutan Toilet Organisation	3
181	Bodhisattva Company	3
182	Bulls Furniture	3
183	Dorji Phuntsho Tailoring	3
184	DPZ Trading	3
185	Gembo Funiture	3
186	GMR	3
187	Green Manufacturing	3
188	Handicraft Shop	3
189	Heavenly Handicraft	3
190	Himalayan Tools and Machinery	3
191	Home Wood Work	3
192	Hotel White Tara	3
193	Jachung Security Services	3
194	JD. Pvt. Ltd.	3
195	Karma Drugyal Workshop	3
196	Khenrig Namsum Cooperative	3
197	Kindred Tailoring	3
198	Kuengacholing Peozokhang	3
199	National Land Commission	3
200	National Pension and Provident Fund (NPPF)	3
201	Nima Construction	3
202	Nima Dawa Furniture House	3
203	Nima Furniture	3
204	Perfect TMT TMX	3
205	PN Tailoring	3
206	Private (under Lopen karma tenzin)	3
207	PST construction Pvt. Ltd	3
208	Samzang Furniture House	3
209	Sangay Dorji Tailoring	3
210	Sonam Rinchen Pvt. Ltd.	3
211	Tankha Painting Shop	3
212	Thinley Upholstery and Furniture	3
213	Traditional Boot and Handicraft	3
214	Tshewang Dorji Tailoring	3
215	UD Furniture	3
216	Wangsel Institute for the Deaf	3
217	Yangchab Fabrication Unit	3
218	3G Wood Work/Furniture world	2

SLN	Employer	Frequency
219	Abhaya Builders Pvt. Ltd.	2
220	Alam Tailor	2
221	Anng Thimphu	2
222	Babesa trading	2
223	BB automobile	2
224	Beer agency	2
225	Bharatbenz Company Limited	2
226	Bhawanlal Grocery	2
227	Bhutan Airline	2
228	Bhutan Builder Pvt. Ltd	2
229	Bhutan Building Solutions	2
230	Bhutan Continental Enterprises	2
231	Bhutan Data Centre Services	2
232	Bhutan Duty Free	2
233	Bhutan Infotech	2
234	Bhutan Insurance Limited	2
235	Bhutan Kubera Furniture and Wood Work	2
236	Bhutan Milk and Agro Pvt. Ltd	2
237	Bhutan One Private Limited	2
238	Bhutan Postal Corporation Limited	2
239	Bhutan ventures Pvt. Ltd.	2
240	Bitcom System	2
241	Brama	2
242	Brother Auto Engineering Workshop	2
243	BUBES	2
244	C Wang Workshop	2
245	Central Machinery Unit (CMU)	2
246	Chagrin Restoration Project	2
247	Changjiji H	2
248	Chemena	2
249	Cheten Tailoring Shop	2
250	Chhogshay Enterprise	2
251	Chimi Auto Workshop	2
252	Choden Workshop (Nganglam)	2
253	Choki Traditional Art School	2
254	Chorten Sales and Service	2
255	College of Language and Cultural Studies (CLCS)	2
256	Como Uma Pùnakha	2
257	Computer City	2
258	Costa	2
259	D.B Electrical Services	2
260	Dagachhu Hydro Power Corporation (DHPCL)	2
261	Dasho Khamsum Construction	2
262	Dendup Construction Company	2
263	Dhejung Honda	2
264	Dhendup auto spares parts	2
265	Dorji Wangdi Workshop	2
266	Drakey Tailoring	2
267	Draktsho Vocational Training Centre for Special Children and Youth	2
268	Drasindra Technology	2
269	Drugyel Workshop	2

SLN	Employer	Frequency
270	Druk Furniture Manufacturing Group	2
271	Druk Satair Corporation Limited	2
272	Druk Tsemzo Training Institute	2
273	Druk Wang Alloy Limited	2
274	Druk Water Solution	2
275	Druk wood manufacturing company	2
276	Drukcom Digital Cable Network	2
277	Dzamlha Tailoring Shop	2
278	Embroidery Shop	2
279	Fashion Institute of Technology	2
280	Fenesta	2
281	Gangjung Driving Center of Excellence	2
282	Garp Lungi Khorlo Transport & Clearing Agent	2
283	Gayjur Construction	2
284	GE T&D Indian Ltd (c/o MHPA)	2
285	Gelep Hiring	2
286	General Hospital	2
287	Green Kitchen and Bakery Equipment	2
288	Group Freelance Painter	2
289	Haa camp	2
290	Handicraft Association	2
291	Hotel Migmar	2
292	HRAB	2
293	IBPL	2
294	IHPP JICA	2
295	IIDD/DoI/MoEA	2
296	Imerit Pvt. Ltd	2
297	Institute for Management Studies Limited	2
298	Jangchup Traditional Painting	2
299	JB Solar Solution	2
300	JCB, Ugen Earthmovers	2
301	Jomotshangkha Dungkhag court	2
302	Kancha Automobile Workshop	2
303	Karma Auto Workshop	2
304	Karma Construction Pvt. Ltd	2
305	Karma Sawmill	2
306	karma Tenzin Automobile	2
307	Karsang Automobile	2
308	KB Workshop	2
309	KD Builder Pvt Ltd	2
310	KGUMS	2
311	Kha Rung Cable Service	2
312	Khadho	2
313	Khamssa Engineering Workshop	2
314	Kichu Resort	2
315	Kinga Workshop	2
316	Kinjore Brewery Pvt. Ltd.	2
317	Kuendrup	2
318	Kuenga Automobile	2
319	Kuenga Tshering Tailoring	2
320	Kuenphen Norter Industrial Pvt. Ltd.	2

SLN	Employer	Frequency
321	Kumar Sawmill	2
322	Lekey Cable	2
323	Lobzang Furniture	2
324	Lobzang Tshering Furniture House	2
325	Lop Samten Lhuendup	2
326	Lhendup Norbu Construction	2
327	Tshering-Norbu Cable Service	2
328	MD Alam Tailor	2
329	Menjong Sorig Pharmaceutical Corportion Limited	2
330	Mindrupling School	2
331	Ministry of EconomicAffairs (MOEA)	2
332	Ministry of Foreign Affairs (MoFA)	2
333	Mountain Resort	2
334	MTTC Transport and Hiring Unit	2
335	My Mobile	2
336	Namgay Construction	2
337	National Assembly Secretariat	2
338	National Library and Archives of Bhutan	2
339	Nexus Technology	2
340	Nganglam SD	2
341	NGN Technologies Pvt ltd	2
342	Nima Cable	2
343	Nima Lotey Fiber Services	2
344	Nima Traditional Painting	2
345	Norbling Tailoring	2
346	Norbugang Gewog	2
347	Norzin Norphel Construction	2
348	Nyurjok Fabrication	2
349	Orong School	2
350	Overseas	2
351	P.Gyeltshen Pvt. Ltd.	2
352	Padmasambhava Tours and Treks	2
353	Painting Shop	2
354	Pangkhar	2
355	Pargatai (India)	2
356	Paro	2
357	Paro International Airport	2
358	Patshaling Gewog	2
359	Peaceful Resort	2
360	Pema Jungney Construction Pvt. Ltd	2
361	Pema Tailor Shop	2
362	Pema Workshop	2
363	Pemako Construction	2
364	Penden Cement Authority Limited (PCAL)	2
365	Penjor Construction	2
366	Petsheling Yangkhaling	2
367	Phendey Jungney Engineering Workshop	2
368	Phunsum Automobile	2
369	Phuntsho Automobile Workshop	2
370	Phuntso Automobile Workshop	2
371	Phurpa Car Wash	2

SLN	Employer	Frequency
372	Please Tailor Shop	2
373	Prime Infotech	2
374	Private Lhakhang	2
375	Private Painting House	2
376	Project Hope	2
377	PST Construction	2
378	Ratu Workshop	2
379	Reina Automobiles Workshop	2
380	Rigdrel Automobile Workshop	2
381	Rinchen Tailoring	2
382	Royal Bhutan Police (RBP)	2
383	Royal Bhutan Training Institute	2
384	Royal Court of Justice	2
385	Royal Insurance Corporation of Bhutan (RICB)	2
386	Royal Metal Craft Centre	2
387	Royal Project	2
388	Royal Thimphu College (RTC)	2
389	RSA Poly Product Pvt. Ltd.	2
390	Saint Gobain Ceramic Materials Pvt. Ltd	2
391	Samling Electric	2
392	Sangay Hadicraft	2
393	Sangay Penjor Furniture	2
394	Sangay Thinley Furniture House	2
395	Sangay Thurso Construction	2
396	Sangay Zhetho Nangten Construction	2
397	Sany private Limited	2
398	Sekha Guto	2
399	Self Carving and Selling	2
400	Seven Children Construction	2
401	Sha Thinley Auto Workshop	2
402	Shangri-la Hotel	2
403	She Bhutan	2
404	Sherabz Zangmo Tailoring	2
405	Shingkhar Tailoring	2
406	Singay Agency Workshop	2
407	Sithar Automobile	2
408	SKD Cable	2
409	Soksum Private Company	2
410	Sonam Automoble	2
411	Sonam Peldon Automobile Workshop	2
412	Student Welfare Scheme	2
413	Suprem Court	2
414	Taktsang Construction	2
415	Tandin Auto Electric Workshop	2
416	Tandin Bidha Tailoring	2
417	Tandin Workshop	2
418	Tango Moanstay Project	2
419	Tara motor pvt (ford company)	2
420	Tashi Commercial Corporation	2
421	Tashi Construction	2
422	Tashi Engineering Workshop	2

SLN	Employer	Frequency
423	Tashi Tsheden Tailoring	2
424	Tashideling Construction and Consultancy	2
425	Taugay Tailoring	2
426	TCD Private Ltd.	2
427	Tenzin Hiring	2
428	Tenzing Resort	2
429	Terma Linca Resort & Spa	2
430	The Green Road	2
431	Thinley Auto Workshop	2
432	THP	2
433	TN Printing Press	2
434	Touch Print Sales Service	2
435	Tourism Council of Bhutan	2
436	Traditional Thangka Painting	2
437	Transhimalayan Automobile Workshop	2
438	Travel Agency	2
439	Tshering Agency	2
440	TT WangyelAautomobile Workshop	2
441	TTCPL	2
442	Udee Enterprise	2
443	Ugyen Academy Higher Secondary School	2
444	Ugyen Noryang Auto Workshop	2
445	Ugyen Thongdrel Project	2
446	Uma Resort	2
447	Urban Furniture (sister concern)	2
448	USD Driving Training Institue	2
449	Vintage Quality	2
450	Wangchuck Namgay Tailoring Shop	2
451	Wapcos Ltd..	2
452	Wood Turning	2
453	Y.D Autospare Parts and Accessories	2
454	Yargyel Heavy Earthmovers and Equipment	2
455	Yeshi Workshop	2
456	YT workshop	2
457	Yuedra Automobiles Workshop	2
458	Yuendrung Construction	2
459	Zasa	2
460	Zimdra Motors (EICHER Division)	2
461	Bazor	1
462	Bumpa Company	1
463	CZC Trashiyangtse	1
464	Dolma Lhanam Casting Unit Debsi	1
465	Druk Bronze Casting Works	1
466	Funiture House	1
467	Gakhel Handcraft	1
468	Gaki Shingzo Khang	1
469	Gakil Jigme Dorji Handicraft	1
470	Good Luck Handicraft	1
471	Kezang Choden Tailoring Shop	1
472	Kezang Company	1
473	Khaling Duptho Zangmo Taloring Shop	1

SLN	Employer	Frequency
474	Kumar Tailoring	1
475	Kundrup Tailor	1
476	Lhagi Tailoring	1
477	Lhakhang Construction	1
478	LM Paro	1
479	Localities	1
480	Lopen Sangay	1
481	Monggar Dratshang	1
482	Namgaycholing Resort	1
483	National Handloom Development Centre	1
484	Nepal	1
485	P Wangdrak Tailoring Shop	1
486	Pasaphu	1
487	Pema Norbu Tailoring	1
488	Pema Rinzin Wood Production	1
489	Personal Debri Painting	1
490	Phentsholing Workshop	1
491	Phuntsho Gyeltshen Workshop	1
492	Phuntsho Wangdi Art	1
493	Phuntsho Yangkhel Tailoring Shop	1
494	Private Handicraft	1
495	Private Tailor Shop	1
496	Punakha	1
497	Ramsey Norlha Tailoring Shop	1
498	Rinchen Wangdi Tailoring	1
499	Sangay Tailoring	1
500	Seday Tailoring	1
501	Serphu Construction	1
502	Sharap Nima	1
503	Taba	1
504	Tashi Dema Tailoring Shop	1
505	Tendi Zangpo	1
506	Thakchoeling Dratshang	1
507	Thinley Wangchuk Tailoring Shop	1
508	Traditional Dapa Products	1
509	Traditionl Boot house	1
510	Tsendrup Dorji Tailoring	1
511	Tshangphuchen	1
512	Tshering Wangchuk Tailoring	1
513	Ugyen Dorji Thongdel	1
514	Village Trainer Casual	1
515	Yakpugang Dratshang	1
516	Yap Karma Tshering	1
517	Yousee Tailoring	1
518	Zangmo Tailoring Shop	1
	Total	3366
	Total	3354
	Missing	99
	Total	4815

MULTI COHORT TVET TRACER SURVEY

The Online Tracer Survey for Technical and Vocational Zorig Chusum & Other Training Graduates of 2003-2018

Survey Invitation

DEPARTMENT OF TECHNICAL EDUCATION MINISTRY OF LABOUR & HUMAN RESOURCES (MOLHR)

Kuzu Zangpo La!

Dear Technical and Vocational Education & Training (TVET)/ VTI and other Training Graduates of 2003- 2018. We invite you to participate in the **MULTI-COHORT ONLINE TRACER SURVEY (2003-2018)**.

This survey aims to collect information on graduates of all training institutions registered with MoLHR about their education, training experience, a transition to work, employment, work experience, and future educational and career aspirations. Basically, through the survey, MoLHR and other stakeholders want to find out what happened to you (a TVET graduate) after you have completed your studies and training.

The information will help MoLHR and other TVET stakeholders understand the effectiveness of TVET policies, programmes, and projects; and for formulating effective TVET plans, improving TVET programmes and designing labour market strategies. The last question gives you a chance to express your views about your training and job and make suggestions. We will publish the tracer report and reach out to relevant stakeholders and authorities.

The survey is designed to bring together the voices, ideas, feedback and concerns of TVET graduates. Each one of you (as a TVET graduate) has an important responsibility to help improve the TVET sector. You could do this by participating in this tracer survey. Your participation survey is very important. There are no wrong or right answers. Your answers will be treated with confidentiality. There are more than 70 questions, but please be patient. If you have received more than one survey links, please complete only one survey. Double-survey will not be appreciated.

Please read the questions and instructions carefully.

WE ASSURE YOU OF NO PERSONAL RISK OR HARM FOR PARTICIPATING IN THIS SURVEY. THE BENEFIT OF THE SURVEY WILL BE TO THE TVET SECTOR AND COUNTRY.

Please try to answer all the questions applicable to you. We will value your participation! Thank you in advance for your cooperation.

The questionnaire was directly extracted from the Survey Monkey App. There me some distortion in the format and change in the serial numbers.

Important Instructions

After the questionnaire pre-testing (May 16-18, 2018), we decided to include this instruction page. Please read the instruction carefully.

I. Please try to answer all the questions unless you are asked not to do so.

II. If you skip some questions that you are required to answer, it will create missing data. Missing data is a big problem in every survey. It will affect the overall survey result.

III. If you skip some questions, we will have to follow up with you to complete the survey either through telephone calls or other means. That would require extra time and budget. Please try to answer every required question. Minimize missing/blank answers.

IV. The survey might take less than 30 minutes. Please don't rush.

V. Answer normally and step-wise to prevent malfunctioning of the survey. Based on your answers, certain pages that are not relevant to you will be automatically skipped and you'll be taken to relevant pages.

VI. It is natural for us to choose easy answers, especially in the case of rating certain things/multiple-choice questions. Don't rush to choose an easy answer. Give an honest answer. Simply choosing an easy/convenient question/answer will affect the overall survey result and lead to the wrong conclusion. Be honest with your answer.

VII. Don't submit/press the 'done' button at the end of the survey until you feel you have completed 100%.

VIII. You need not complete the survey at once. The current survey setting is such that you can stop the survey if you have to attend to other works and resume later when you are free.

IX. When you press the 'Done' button on the last page, it means you have submitted your survey.

X. We will value your participation. The government, donor, other stakeholders and many others are waiting for the survey tracer results. It is important for all of us. Be proud to be part of this tracer study.

SECTION I: Biographic Information

This section collects your demographic and social information. Please note: We consider TVET and VTI as same.

1. Please enter your NAME, CID NUMBER and MOBILE NUMBER.

We will upload your mobile number with a data package worth Nu.49 (B-Mobile or Tashi-Cell) after you complete the survey. The data package is to compensate for internet usage while filling up the questionnaire.

Name (your name will be held confidential)	
Citizenship Identification Number (CID) or any identification number	
Mobile number	

2. Date of survey

DD/MM/YYYY

3. Where do you live at present?

Name of the place	
Gewog or Thromde	
Dzongkhag	
Country	
Your Email Address	

4. What is your age?

- 18 to 24
- 25 to 34
- 35 to 44
- 45 or older

5. What is your gender?

- Female
- Male

6. Your Dzongkhag of origin

7. What is the main occupational background of your parental family?

- Farmer (agriculture)
- Civil servant
- Corporate employee
- Private employee
- Armed force
- Family business
- Religious family (example: gomchen)

Other (please specify)

8. What is the highest level of education of your father?

- No education
- Primary (Class I-VI)
- Lower secondary (C VII-VIII)
- Middle secondary (Class IX-X)
- Higher secondary (Class XI-XII)
- Diploma
- Degree
- Master
- PhD
- Monastic education
- NFE
- Don't know
- Other (please specify)

9. What is the highest level of education of your mother?

- No education
- Primary (Class PP-VI)
- Lower secondary (VII-VIII)
- Middle secondary (Class IX-X)
- Higher secondary (Class XI-XII)
- Diploma
- Degree
- Master
- PhD
- Monastic education
- NFE
- Other (please specify)

SECTION II: Education

Section II contains questions related to your school education before joining the TVET institute.

10. What was your last qualification before you got enrolled in the TVET course/programme?

11. When did you complete your school education?

12. What did you want to do right after the school education?

13. Did you take up TVET optional subject or join vocational club in school?

- Yes
- No
- No applicable

SECTION III: Technical and Vocational Education and Training (TVET)

In section III, there are questions related to your experiences when you were undergoing a TVET course at TTIs/IZCs or any other TVET/VTI institute.

14. Name the institute in Bhutan from where you have completed your **FIRST** Technical Vocational Education and Training (TVET) course.

15. What was the main reason for taking up technical and vocational training?

16. When did you first graduate from Vocational and Technical Institute in Bhutan?

17. What level of technical and vocational training course did you achieve or complete?

18. What course did you take for your vocational and technical training?

19. How many months did you take to complete the above-mentioned technical and vocational course?

20. During the course of your training, have you ever seriously considered cancelling your training?

Yes No

21. If 'Yes,' please specify why you considered cancelling your study/training at the Vocational and Technical Institute. You can give more than one reason.

Reason 1: [redacted]

Reason 2: [redacted]

Reasons 3: [redacted]

22. Did you take up the training course you were actually interested in?

Yes. No

22. If 'No', what was the course you actually wanted to take? (please mention the specific course name)

23. What was the main reason for not being able to take up the course that you were interested in?

The course that I preferred was not available

In-take capacity for that course was already filled

Other people influenced me to change the course at the last moment

The location of the institute

There was no accommodation/hostel in the institute

Other (please specify)

24. Did you do any On-the-Job-Training (OJT)? (Based on your answer below, you will be automatically taken to the relevant page)

Yes

No

SECTION IV (A): On-the-Job-Training (OJT)

This section is the continuation of the previous one and contains questions related to On-the-Job-Training (OJT).

25. If you have attended the On-The-Job (OJT), please answer the following questions.

Name of the agency or company where you did OJT:

Location of the agency or company (For example, Pasakha, Chukha):

Duration of the OJT (in months):

26. What were the main benefits of OJT?

	Strongly disagree	Disagree	Agree	Strongly agree
Earned money				
Gained work experience				
Developed and refined skills				
Helped to explore good job				
Helped to get job in the same agency or company				
Helped to develop networks or contact with the field experts				
Helped to gain work confidence				

27. Among many problems, what was the main problem that you faced during the OJT?

- Low allowance
- Accommodation.
- Transportation
- Insufficient Daily
- Lack of support from the company/agency
- Poor monitoring by the institute
- Given irrelevant task
- Other (please specify)

SECTION IV (B): Apprenticeship Programme

This section is the continuation of the previous section, but specifically on the Apprenticeship Programme, known as ATP.

28. Did you do any Apprenticeship Training Programme (ATP)?

- Yes
- No>>>click next at the end of this page.

29. If you have attended the ATP

Name of the organization or company where you worked as the apprentice

Location of the agency or company (For example, Pasakha, Chukha):

Duration (in months):

30. What were the main benefits of ATP?

	Strongly Disagree	Disagree	Agree	Strongly agree
Earned money				
Gained work experience	○	○	○	○
Developed and refined skills				
Helped to explore a good job	○	○	○	○
Helped to get a job in the same company				
Helped to develop networks or contacts with field experts				
Helped to gain work confidence				

SECTION IV (C): Technical Vocational Education and Training (TVET)

This section is the continuation of the previous section and contains questions related to your experiences about TVET course.

31. What soft skills/other skills you've learned during your training was most relevant to your job? Please tick the two most relevant ones. The soft skills or any other skills include those skills other than the main technical and vocational skills that you have learned through formal programmes offered by your institute or learned on your own.

- ☐ Communication skills
- ☐ Problem-solving skills
- ☐ Human relation skills
- ☐ Mathematical skills
- ☐ Computer skills
- ☐ Entrepreneurial skills
- ☐ Green (environment-related) skills
- ☐ Other (please specify)

32. Overall, how would you rate the quality of the technical and vocational training that you received?

Very bad	Bad	Good	Very good

33. Overall, how would you rate the relevance of your technical and vocational training to your job? (Choose the one that you think is correct)

Poor	Fair	Good	Very good

34. Are you the TVET graduate of 2013, 2014, 2015, 2016, 2017 or 2018? (Based on your answer below, you will be automatically taken to the relevant page).

- Yes
- No

SECTION V: Assessing the quality of the TVET institute, course and other programmes

If you are a graduate alumnus of 2013-2018, please give your views of the institute, course, and other programmes. Your honest feedback will be useful to improve your previous institute.

35. How would you rate the teaching and learning conditions at your previous Vocational and Technical Institute (TTI/IZC or any other)? Please give an honest response.

	Very poor	Poor	Good	Very good
Quality of classroom learning (theory)				
Quality of practical learning				
Supply of learning materials (e.g. text books, note books and other stationaries)				
Availability of technical equipment (e.g. lab equipment, measuring instruments)				
Quality of training equipment				
Teaching methods of instructors				
Classrooms (size, light and noise condition, location)				
Workshop (size, light and noise condition, location)				
Quality of soft-skills learning (English, Dzongkha, Math, etc.). The rating is to be done based on whether the skill was offered formally by the institute or you got the opportunity to learn on your own during your training).				

36. How would you rate the food, hostel and other facilities at your previous Vocational and Technical Institute? Please give honest responses. Your feedback will help improve your institute. Please note that certain institutes did not have hostel facility. ***The rating of hostel and food quality does not apply to graduates who did not stay as boarders.***

	Very poor	Poor.	Good	Very good
Quality of hostel facilities				
Quality of food				
Transportation facilities				
Recreational facilities on the campus				
Hygiene and sanitation facilities				
Safety conditions during practical training (helmet, goggles, safety boots, ear muffs)				
Free Internet access				
Books in the library				

37. How would you rate the leadership and management in your previous technical and vocational institute?

	Very poor	Poor	Good	Very good
Institute's leadership and management quality				
Trainees' involvement in the institute's decision-making				
Discipline				
Institute's support for trainees in times of problems				
Cooperation with the local community				
Career counselling				

38. How would you rate the following training components provided by your previous Vocational and Technical Institute (TTI/IZCs or any other institute)?

	Very poor	Poor	Good	Very good
Industrial tour				
ICT training				
Entrepreneurship training				
Green skilling (environment related)				
Research				

On-the-Job-Training (OJT)

Apprenticeship (ATP)

Institute support to trainees' employment/job searches

39. How relevant are the knowledge and skills you acquired at the Institute for your current job? (This is a very important question).

	Not at all relevant	Not relevant	Somewhat relevant	Relevant	Very relevant
Theoretical learning					
Practical learning					
Industrial tour					
On-the-Job-Training (OJT)					
Apprenticeship Programme (ATP)					
ICT course					
Soft skills (English, Maths & Dzongkha)					
Entrepreneurship course					
Career counselling					
Green skills (environmental course)					

SECTION VI (A): Employment

This section contains questions related to your employment. The section is important from the survey point of view. Please spend some time to carefully answer the questions.

40. Before asking you about your employment, we are interested to know how you like to keep in contact with your previous institute?

- Through the institute's newsletter/magazine
- Alumni group
- Convocation
- Graduate meeting
- Personal contacts with the staff
- Other (please specify)

41. If you are currently employed, please give the following details:

Name of your job or position or designation

Name of Agency or Company where you work

Gewog or Thromde

Dzongkhag

Your employing agency or company's phone number (preferably mobile number)

42. How many people work in the agency/company/organisation you are working [with] at present? (need not be accurate, just give rough figures)

43. In which main skill area do you think your agency or company (employer) has a serious shortage of technical and vocational persons and there is the need to hire or employ more? (you can click more than one area)

- [ ] Construction supervision
- [ ] Heavy machine operation and maintenance
- [ ] Plumbing and pipe fitting
- [ ] Tunneling technician
- [ ] Upholstery
- [ ] High end wall painting
- [ ] Flooring technology
- [ ] False ceiling
- [ ] Internal heating and cooling
- [ ] Early Childhood care and development
- [ ] Auto mechanics
- [ ] Denting and painting

- [ ]
- [ ] Industrial plumbing and fitting
- [ ] Metal based product design and development
- [ ] Tailoring - Western garment
- [ ] Tailoring-Traditional Clothes
- [ ] Ceramic and Pottery
- [ ] Home Appliance repair
- [ ] Paper development
- [ ] Textile design, weaving and development
- [ ] Fabric Design and Development
- [ ] Fashion design
- [ ] Handicraft design and development
- [ ] Fabricator
- [ ] Metal based product design and development
- [ ] Automobile
- [ ] Carpentry
- [ ] Electrical
- [ ] Fitting
- [ ] Furniture making
- [ ] Masonry
- [ ] Mechanical fitter
- [ ] Mechanic
- [ ] Painting
- [ ] Plumbing
- [ ] Welding
- [ ] Transmission and Distribution Linemen

- [ ] Mask-making (Babzo)
- [ ] Dralham Making
- [ ] Gold and Silver Smith
- [ ] House painting
- [ ] Jimzo (Sculpture)
- [ ] Lhadri
- [ ] Machine embroidery
- [ ] Patra
- [ ] Shazo (Wood turning)
- [ ] Thagzo (Weaving)
- [ ] Heavy Vehicle Driving
- [ ] Development Tourism Management
- [ ] Hospitality Management
- [ ] Eco Tourism
- [ ] Green Car Technology
- [ ] Solar and Wind Technology
- [ ] Product Design (Art and Craft)
- [ ] Life Maintenance
- [ ] Advance Cosmetology
- [ ] Spa and Therapy
- [ ] 2D Animation
- [ ] 3D Animation
- [ ] Application Development
- [ ] Broadcasting and Audio-Visual Technician

- [ ] Graphics and Multimedia
- [ ] E-Commerce/Business
- [ ] Movie Editing
- [ ] Script and Film Play Writing
- [ ] Web Development
- [ ] Film Making and Production
- [ ] CGI and Special Effects
- [ ] Mobile Repair
- [ ] Agro-based Processing and Product
- [ ] Bamboo Product Design and Development
- [ ] Bio Product Development
- [ ] Diary Product Development
- [ ] Food Processing
- [ ] Health Product Development
- [ ] Photography
- [ ] Solid Waste Management
- [ ] Food and Beverages
- [ ] Front Desk
- [ ] House Keeping
- [ ] Multi Media Development
- [ ] Other (please specify)

44. After completing the Vocational and Technical course, how long did it take it for you to get first job?

- Less than three months
- Three months
- Four months
- Five months
- Six months
- More than six months and less than nine months
- More than nine months and less than one year
- Between one year and two years
- More than two years

45. What is your monthly income?

- Under Nu. 5,000
- Between Nu. 5001- Nu. 7,000
- Between Nu.7,001 - Nu. 9,000
- Between Nu. 9,001- Nu. 11,000
- Between Nu.11,001 – Nu. 13,000
- Between Nu. 13,001- Nu. 15,000
- Between Nu. 15,001- Nu. 17,000
- Between Nu. 17,001- Nu. 19,000
- Between Nu. 19,001- Nu.21,000
- Between Nu. 21,001- Nu.23,000
- Between Nu. 23,001- Nu.25,000
- Between Nu. 25,001- Nu.27,000
- Between Nu. 27,001- Nu.30,000
- Between Nu. 31,001- Nu.35,000
- Between Nu. 35,001- Nu.45,000
- Between Nu. 45,001- Nu.55,000
- Above Nu. 55,000

46. How did you know about your current job?

- Friends/Family members
- Through the employment service centres
- BBS TV advertisement
- Radio announcement
- Print media advertisement
- Online advertisement
- Door-to-door job hunting
- In-Campus Recruitment
- I was approached by an employer
- I established contacts while working during the course of study Other (please specify)

47. When did you start searching for a job?

- Before graduation
- Around the time of graduation
- After graduation

48. Was it easy for you to find the job related to your training/course?

- Yes
- No

49. To what extent are you satisfied with your current job?

Not at all satisfied	Not satisfied	Satisfied	Very satisfied

SECTION VI (B): Employment

In this section, there are questions related to your job(s), if you have changed job after your technical and vocational training.

50. If you are currently employed, is this the same job you took up after completing technical and vocational training?

- ( ) Yes
- ( ) No

51. If this is the same job, what are your two important reasons for staying in the same job?

- [ ] High salary
- [ ] I get training for re-skilling
- [ ] I get good allowance
- [ ] I get free housing
- [ ] The job is relevant to the course
- [ ] I undertook
- [ ] The workplace is close to my house
- [ ] Family influence Friends' influence
- [ ] I like the job
- [ ] My employer is good and supportive
- [ ] I can see good progress in my career
- [ ] There is the pension and provident fund provision Forced to
- [ ] stay on the same job
- [ ] Other (please specify)

52. If you have changed the job (more than one job), what were your two important reasons for leaving your previous job?

- [ ] Low salary in my previous job
- [ ] I had to do all kinds of works rather than those related to my skills
- [ ] No training opportunity in my previous job
- [ ] Not moving up on the career ladder
- [ ] No job allowance in my previous job
- [ ] No housing allowance in my previous job
- [ ] My skills are not related to the job
- [ ] The job was not related to the TVET programme I undertook
- [ ] The employer was not good and supportive

- [ ] I had to do all kinds of work rather than those related to my skills
- [ ] My job was not related to the TVET programme that I undertook
- [ ] The employer was not good and supportive
- [ ] People looked down on me for being in that job
- [ ] Family influence
- [ ] Friends' influence
- [ ] The workplace was far from my place
- [ ] Domestic problems

53. How many jobs (including your current one) have you had altogether since graduation?

- [ ] One job>>>click next at the end of
- [ ] the page Two jobs
- [ ] Three jobs
- [ ] More than three jobs

54. If this is not your first job, please describe your previous job(s). Please fill up as many jobs as you have changed.

Title of your first job:	
Number of months you worked in your first job:	
Name of your first employer agency or company:	
Title of your second job:	
Number of months you worked in your second job:	
Name of your second employer agency or company:	
Title of your third job:	
Number of months you worked in your third job:	
Name of your third employer agency or company:	
Title of your fourth job:	
Number of months you worked in your fourth job:	
Name of your fourth employer agency or company:	
Title of your fifth job:	
Number of months you worked in your fifth job:	
Name of your fifth employer agency or company:	

55. Once again, are you currently employed or not? (re-asking the question only to help you skip the unemployment section because since you are employed, it will not be relevant for you).

- Yes>>>click next, you will skip the unemployment section.
- No

SECTION VII: Unemployment

This section contains the questions only if you are currently unemployed. You have reached this section because you ticked that you are unemployed in the previous section.

56. You are currently unemployed because:

- Did not get a job after technical and vocational training
- Got a job once, but I am unemployed now

Other (please specify)

57. If you are unemployed ever since you have completed technical and vocational training, please select one main reason.

- Undergoing further study
- No job opportunity for technical and vocational graduate
- Family problem, decided not to find a job
- Did not look for a job

Other reason, please specify

SECTION VIII: Business orself- employment

This section is meant only for those of you who are self-employed or doing your own business. You reached this section because you have chosen that you are self-employed/doing your own business in the previous section.

58. Are you doing your own business or self-employed in your own business?

- ○ Yes
- ○ No>>>click next to skip this page

59. As you have mentioned that you are self-employed/doing your own business, please answer the following:

Name of business:	
Location (Dzongkhag):	
Type (eg. tailoring, workshop, etc.):	
Number of years of operation:	
Number of people working:	
Business contact number (preferably mobile number):	

60. Is your business related to your technical, vocational or zorig training?

- ○ Yes
- ○ No

61. What were your two main challenges in starting in your business?

- [ ] Access to finance
- [ ] Shortage of skilled worker
- [ ] Access to technology / resources
- [ ] Business space (eg. House/market place)
- [ ] Market (i.e. demand for product)
- [ ] Labour regulations
- [ ] Business competitions
- [ ] Lack of government's support schemes
- [ ] High tax rates
- [ ] Business licensing & permits
- [ ] Customs and regulations
- [ ] Access to land
- [ ] Access to electricity
- [ ] Transportation
- [ ] Purchasing equipment and raw materials
- [ ] Lack of support network
- [ ] Lack of basic business idea/skill
- [ ] Other (please specify)

62. What is your two main challenge in running the business?

- [ ] Shortage of finance/budget
- [ ] Inadequate business space/house
- [ ] Poor market
- [ ] Lack of business management training
- [ ] Competition from others
- [ ] Shortage of skilled workers
- [ ] Too many rules and regulations
- [ ] High tax
- [ ] Other (please specify)

63. What is your monthly income from your business?

- Under Nu. 5,000
- Between Nu. 5001- Nu. 7,000
- Between Nu.7,001 - Nu. 9,000
- Between Nu. 9,001- Nu. 11,000
- Between Nu.11,001 – Nu. 13,000
- Between Nu. 13,001- Nu. 15,000
- Between Nu. 15,001- Nu. 17,000
- Between Nu. 17,001- Nu. 19,000
- Between Nu. 19,001- Nu.21,000
- Between Nu. 21,001- Nu. 23,000
- Between Nu. 23,001- Nu. 25,000
- Between Nu. 25,001- Nu. 25,000
- Between Nu. 25,001- Nu. 27,000
- Between Nu. 27,001- Nu. 30,000
- Between Nu. 30.001- Nu. 35,000
- Between Nu. 35,001- Nu. 45,000
- Between Nu. 45,001-Nu.55,000
- Above Nu. 55,000

SECTION IX: Education and Career Pathways

This section contains questions related your TVET qualification up-gradation and future goals and plans.

64. Did you upgrade your qualification or level after you have completed your first Vocational and Technical Training?

- Yes
- No>>>click next at the end of this page

65. If Yes, what level/qualification did you upgrade to?

- NC2
- NC3
- Diploma
- Degree
- Post graduate

66. How did you upgrade your level or course?

- [ ] Self-financed RPL (you paid the cost)
- [ ] Sponsored RPL (RPL cost paid by government or others)
- [ ] Self-financed course at an institute outside Bhutan
- [ ] Sponsored course at an institute outside Bhutan
- [ ] Self-financed course at an institute within Bhutan
- [ ] Sponsored course at an institute within Bhutan
- [ ] Other (please specify)

67. Please provide the training/course details of your qualification up-gradation. You may provide details of two important training/courses that are important to you. If you have not attended any training, please ignore this question. In the case of RPL, you need not state the duration of the course.

Course name 1:	[redacted]
Duration (in months):	[redacted]
Country:	[redacted]
Funding (Government/donor/company/self):	[redacted]
Course name 2:	[redacted]
Duration (in months):	[redacted]
Country:	[redacted]
Funding (Government/donor/company/self):	

SECTION X: Others

This section covers your short-term training, career aspirations, education dreams, and workplace experience and suggestions to improve the TVET sector.

68. If you have attended short-term (less than 3 months) vocational and technical course, please provide the details of the three most important courses that are important to you. If you did not attend any short- term training, please ignore.

Name of the course 1:

Duration (in months):

Country:

Funding (Government/donor/company/self):

Name of the course 2:

Duration (in months):

Country:

Funding (Government/donor/company/self):

Name of the course 3:

Duration (in months):

Country:

Funding (Government/donor/company/self):

69. Given the chance, from which level to which would you want to upgrade your qualification?

- Certificate to National Certificate 2 (NC2)
- NC2 to NC3
- NC3 to National Diploma (ND) to be offered by MoLHR

- Diploma offered by colleges under Royal University of Bhutan
- Bachelor's Degree

70. What fields of study would you like to undertake in the level upgrade you have chosen above?

71. If you are not interested to upgrade your qualification level, please give the main reason.

72. If you are to undergo RPL assessment, are you willing to self-finance?

- Yes
- No

73. Did you experience gender discrimination at workplace?

- Yes
- No

74. If you are female, did you face extra difficulties in getting the job that you are trained for than your male friends?

- Yes
- No

75. If you are male, do you think your female friends face more difficulties in getting the job that they have been trained for?

- Yes
- No

76. What suggestions do you have to improve the TVET sector and labour market for TVET graduates? This question gives you a chance to express your views/provide suggestions. Don't hesitate. We will keep your identity strictly confidential.

WHEN YOU CLICK DONE BELOW, YOUR SURVEY WILL BE SUBMITTED.
THANK YOU!

You will notice that a Survey Monkeys add page encouraging you to use the program for your own survey will appear. That is just their advertisement. Just ignore that message. If you have clicked "DONE"...you are really done. Be assured of that.

TVET Institutes Support Division
Department of Technical Education
Ministry of Labour and Human Resources