Tertiary and Vocational Education Commission

Tracer Study for
ICT NVQ Level 5 & 6 and NDICT Courses

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Executive Summary

The Government of Sri Lanka has the responsibility to ensure the development of national and international competent labour force in order to enhance the sustainable development of the country. Therefore the Tertiary and Vocational Education Commission (TVEC) has taken steps to introduce a National Vocational Qualification Framework with the assistance of Asian Development Bank funded Skills Development Project and the Technical Education Development Project. This is an internationally benchmarked policies and process adopted qualification system. The NVQ framework has been adapted to the TVET sector since 2004.

As studying the NVQ certificate holders is vital this research is focused on identifying required improvements for NVQ process in TVET sector. Especially for the ICT sector identifying labour market status is vital. Therefore NVQ 5 & 6 courses in ICT and National Diploma in ICT (NDICT) were considered for the study.

Based on the analysis and presentation following concluding remarks are given.

It is important to state that considering the NVQ level 5and 6 certificate holders and NDICT certificate holders the probability of getting a job is same for both groups. Considering the age distribution of the NVQ certificate holders it can be concluded that there is a higher tendency of looking NVQ at young ages. The lowest percentage is reported from Eastern province. Almost fifty percent of respondents are from Westernn and Central province. It is important to show that there is a higher possibility of not finding a training place among NDICT course followers. Analysis reveals that 61 percent has been obtained OJT in public sector. Majority of training receivers were done word processing, data entry and clerical works as their main duties. Less than 30 percent of training receivers were involoved duties of coding software programme, identify user requirements for software solution, analysing requirements, and designing functionality of software solution, designing the concept and framework for graphic design and developing and hosting website. Out of all OJT receivers only 20.8 percent had a chance to develop and host websites.

Only few, 4.3 percent were find high salary jobs. From all respondents 29.3 percent of NVQ holders were able to go for higher qualification studies. When percentage distribution of employment status of the respondents is considered, 41.3 is employed. From the employed population, 66 percent worked in ICT related jobs while 34 percent worked in non ICT jobs. The avarage salary of NVQ level 5 and 6/NDICT qualified persons in salary range of Rs. 10,001 -20,000. According to reasons for dissatisfaction, most responded with salary is not up to expected level and work not related to the qualification. From the sample, 84.2 accepted that their working environment is good, which is a positive factor in improved working environments.

The impotent recommendations given are

1. Expand ICT diploma level courses to Northern, Eastern, North central and Uva provinces to avoid low participation in ICT Education.
2. Further strengthen OJT component to cover all students with relevant training.
3. Improve private sector training places for OJT rather than public sector.
4. Avoid OJT places only with Word Processing, Data Entry and Clerical work
5. Standardize ICT sector labour market with proper designations, defining job roles and improving quality and relevancy.
6. Improve ICT related job opportunities through career guidance and conduct labour market surveys to focus training more towards usable competencies.

1: Introduction and Literature Review

1.1: Introduction

The NVQ framework was established in TVET sector in 2004 as an outcome of Skills Development Project (SDP) started in year 2000 up to 2006. As a sub component of SDP, "IT for Rural Youth" programme was implemented in parallel to NVQ implementation.

Under "IT for Rural Youth" Program, two courses have been introduced namely

1. National Certificate in Information and Communication Technology (NCICT).

2. National Diploma in Information and Communication Technology (NDICT).

3. NDICT course was conducted at IT centres under VTA and NAITA as a full time one year course with an intake from NCICT.

It was aimed to address the issue of unemployment among the rural youth and use of IT for poverty reduction. The main objectives of the establishment of training facilities in IT were to train O/L and A/L qualified rural youth including women, in IT skills to reduce unemployment among educated youth, reduce poverty, and provide access to information systems and services in rural areas.

After establishing NVQ framework, ICT NVQ Level 5 & 6 standard and curriculum was prepared in CBT mode. These courses were implemented in Colleges of Technology operated under Department of Technical Education and Training. Further all NAITA and VTA was advised to convert their NDICT courses in to NVQ ICT level 5 under the CBT mode.

The study is considered all the Diploma holders from NDICT courses and NVQ ICT level 5 courses.

1.2: Literature Review

Successive governments of Sri Lanka were dedicated to make sure human resources development in the country in par with the national and international labour market demand and be aware of the importance of attainment of competencies. The National Vocational Qualifications (NVQ) system that was based on the certification of competencies was developed to be implemented in the Sri Lankan Technical and Vocational Education and Training (TVET) sector with the assistance of various donor funded projects and loans.

NVQ ensure the opportunity for sustainable, strategic solutions for national training needs as well as for the skill mismatch in world of work. In an increasingly globalised and competitive environment, NVQ will without doubt be able to achieve national and international recognition. This will increase the mobility of Sri Lankan workers nationally & internationally in competitive world of work. The internationally benchmarked policies and processes adopted by the Tertiary and Vocational Education Commission (TVEC) will ensure credibility of qualifications awarded in Sri Lanka.

1.2.3: National Vocational Qualifications Framework

Establishment of a National Vocational Qualifications Framework happen to increase the quality and relevance of Technical and Vocational Education and Training (TVET) sector and specifically focused to:

- Unified qualification framework which is recognized nationally and understood internationally

- Development of progressive qualifications for career advancement

- Greater alignment to national development goals.

- Strengthened linkages with industry, commerce and other external stakeholders.

- Increased responsiveness to industry competency needs.

- Convenient & flexible access for potential trainees.

- More proactive education and training strategies.

- Improved international linkages and recognition.

- Collaboration and rationalisation among the training agencies.

- Enhanced quality, relevance, performance, effectiveness, efficiency, and transparency.

- An education and training culture of responsiveness and excellence.

Establishment of NVQ ensures that all current and newly emerging technical and vocational education and training (TVET) activities are well coordinated. Competency-Based Training (CBT) curricula and appropriate teaching, learning, and assessment materials shall be available in the framework, together with requirements for registration and accreditation for training providers and courses respectively. The whole system shall be underpinned on acquisition of competencies with an emphasis on quality. The TVEC is the authority for the implementation of NVQSL and the active participation of all the training agencies NAITA, DTET, VTA, NYSC, Univotec and other public, private and NGO sector training institutions are vital for the effective implementation of the National Vocational Qualifications of Sri Lanka.

This system shall be extended and be linked with secondary and higher education to provide pathways for continuing worker education and lifelong learning. Technical and vocational education and training may take place as "institutional training" (off the job training) as well as "industrial training" (on the job training).

1.2.2: Overview of the Qualifications System

The National Vocational Qualifications Framework makes provision for a nationally consistent, technical, and vocational education and training in Sri Lanka relevant to economic and social development and is of an international standard. The National Vocational Qualifications of Sri Lanka are based on national competency standards identified by the industry stakeholders. The competency standards include relevant technical and employability competencies. The system awards qualifications at seven levels as given in Table1.1.

Table 1.1: Seven Levels of Qualifications

Level No.	Qualification	Generalized Description
Level 1	National Certificate	Level 1 recognizes the acquisitions of entry level competencies
Level 2 Level 3 Level 4	National Certificate	Levels 2, 3,and 4 recognize increasing levels of competencies. Level 4 qualification provides for full craftsmanship/ workmanship.
Level 5 Level 6	National Diploma	Levels 5 and 6 recognize the increasing levels of competencies of technicians including supervision and process management.

Level 7	Bachelors Degree	Level 7 recognizes the vocational/technological competencies at Bachelors Degree level

Certification of 1 – 6 levels shall be carried out by institutions accredited by the TVEC. Certification at level 7 shall be carried out by the Univotec. They are nationally recognized and attests the achievement of a national standard determined by industry. Competency standard units can be acquired individually or progressively and lead towards a full award. The NVQSL encourages flexible skills acquisition both on and off the job and also recognizes that prior learning-policies and processes. These are established to allow knowledge and skills acquired informally to be assessed, and competencies recognized towards national vocational qualifications.

A broad framework has been developed integrating technical/vocational and higher education and further levels may be added. The framework allows for an interface with secondary education and provides a progression for technical and vocational education qualified personnel to proceed to higher education. Industry and professional bodies participating in the development of the national competency standards are therefore in a position to plan for a smooth progression of qualifications from craft to technician to higher education.

Quality assurance is fundamental to all aspects of the NVQSL; it includes the determination of the national competency standards, training delivery to learners on and off the job, the assessment of competencies of candidates and the award of qualifications. Technical and vocational qualifications which comply with the national quality requirements are formally recognized through the National Vocational Qualifications of Sri Lanka. The framework is based on national competency standards which form the criteria for accreditation of courses. All other qualifications including foreign qualifications which conform to the requirements of the framework will be aligned with the NVQ system.

1.2.3: Progressive Qualifications

The NVQ is developed to assist trainees to join and leave the system at different stages with qualifications at different levels. The qualifications at different levels have been identified to suit employment requirements of the industry. Vertical mobility upwards through the system is straightforward as seamless progression is facilitated. Lateral entry into the system is possible at certain levels for those who have work experience in an appropriate field and assessed to have Recognized Prior Learning (RPL).

Figure 1.1:   NVQ Upgrading Pathways
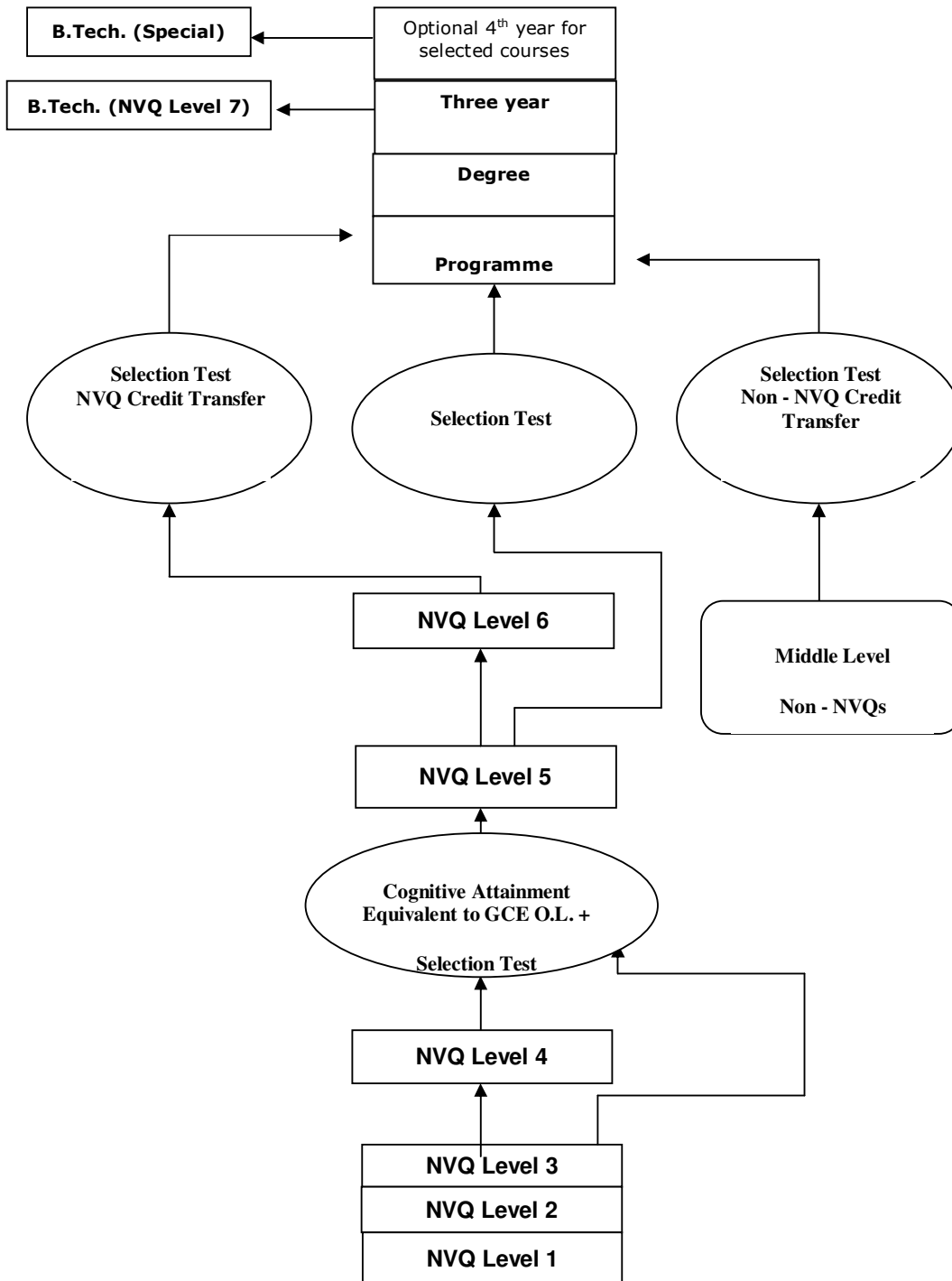
1.2.4: Qualification Upgrading and Pathways

  (a)   NVQ Levels 1 – 4

Qualifications at levels 1 – 4 allows for a trainee to upgrade competencies starting from unskilled stage to reach full or master craftsperson stage through the acquisition of competencies specified at each level. These competencies are incorporated into the units of competencies which are packaged appropriately to form the National Competency Standards of a particular occupation. The trainee maintains a Record of Achievement of the units of competency that he/she has successfully completed and once all the units comprising a particular level has been successfully completed he/she is eligible to receive the National Certificate in the relevant occupation at the applicable level. Thus a trainee is able to upgrade his/her qualification level in a particular occupation through gradual acquisition of competencies as per the National Competency Standards.

(b)   NVQ Levels 5 and 6

NVQ level 5 and 6 diploma programs allow a student to leave the system at the end of Level 5 with a National Diploma of NVQ level 5 or proceed and leave the system at the end of Level 6 with a National Diploma of NVQ level 6. However some diploma programmes may not have an exit at NVQ level 5. This is possible where the industry has identified that there is no employment category for a person with competencies achieved up to level 5 only in that technology area.

The programmes are developed so that persons with NVQ level 5 or 6 qualifications will have supervisory and/or process management competencies. These involve an increased percentage of knowledge component compared to competencies at lower levels. It is therefore necessary to ensure those entering NVQ level 5 programmes already have the necessary

hands on skills to embark on a level 5 programme. The entry qualification to the Level 5 Diploma program is therefore fixed at NVQ Level 3 or Level 4 in a relevant occupation. The list of relevant occupations for each level 5 diploma will be notified when applications are called for these programmes. There is also a path of lateral entry for students with non NVQ qualifications mapped by the TVEC and assessed for their practical experience as well as for those who have work experience in an appropriate field and assessed to have Recognized Prior Learning (RPL) equivalent to NVQ level 3 or 4.

Candidates selected for entry to a NVQ level 5 programme may possess different skill and knowledge backgrounds. Even those coming through the NVQ system itself will have qualifications from different occupations. In order to ensure that all those selected to undergo a level 5 programme have the minimum skills and knowledge needed at entry, they will initially go through a Bridging program. This is carried out for the selected candidates after a selection test and an academic counselling session. The bridging program provides the necessary knowledge and competence to the students selected to Level 5. If there is a skill gap in a particular student that will be identified at the academic counselling session and the student is directed for necessary "Gap-Filling" programs. The "Foundation Studies" program is intended to provide the necessary mathematics, science and English knowledge and computer literacy needed to embark on a level 5 programme. Some students may get full or part exemption from Gap-filling. However, it is recommended that all students follow the Foundation Studies program. There are four subjects under Foundation Studies with each subject having several Modules:-

- Communication Skills in English
- Mathematics for Technology
- Science for Technology
- Computer Literacy

NVQ level 5 and 6 competency standards comprise of units of competency and each unit of competency is assigned a credit value. A trainee will be eligible to receive the NVQ level 5 qualification once he/she earns the required number of credits specified in the relevant competency standard. A level 5 qualification allows direct entry to the NVQ level 6 training programme in the same technology area with the credits earned towards the NVQ level 5 qualification counted towards the NVQ level 6 qualification.

(c)   NVQ Level 7

NVQ level 7 programmes conducted by the Univotec allow students to acquire B.Tech. or B.Ed. Tech. degree qualifications. Pathways, from the National Diplomas, will be available to students who have achieved the relevant NVQ qualifications at levels 5 or level 6 to proceed to degree programmes. Those with NVQ level 6 qualifications are eligible to receive appropriate credit transfer towards the degree programme, to be determined by the Univotec.

1.2.5: National   Competency Standards (NCS)

Competency is the application of knowledge and skills relative to an industry standard of performance. The concept of competency focuses on what is expected of an employee in the workplace, rather than on the learning process, and embodies the ability to transfer and apply skills and knowledge to different situations and environments. Therefore, in Competency-based training (CBT) emphasis is placed on what a person can do in the workplace as a result of completing a program of training.

Competency standards are industry-determined specifications of performance that set out the skills, knowledge and attitudes required to operate effectively in a specific industry or profession. Competency standards are made up of units of competency, which are themselves made up of elements of competency, together with performance criteria, a range of variables, and an evidence guide. Competency standards are an endorsed component of a training package.

For a person to be assessed competent they need to demonstrate the ability to perform tasks and duties to the standard expected in employment. CBT focuses on the development of the skills, knowledge and attitudes required to achieve those competency standards.

One of the primary features of CBT is that each learner's achievement is measured against the competency standards rather than against the achievement of other learners.

The competency standards are a basis for curriculum development, the preparation of teaching, learning and assessment materials, as well as training plans.

The framework shall progressively include new qualifications based on national competency standards. It is envisaged that over time, many areas of technical and vocational education and training shall be covered by national competency standards.

The competency standards approach allows continuous review of national vocational qualifications and shall together with the international benchmarking bring coherence to competency standards-setting at all levels.

The intellectual property contained in the national competency standards and the NVQSL is copyright to the Government of the Democratic Socialist Republic of Sri Lanka and shall be available through the Tertiary and Vocational Education Commission (TVEC).

TVEC shall make available a full listing of all accredited courses with their level and purpose for the information of learners and employers. This ensures comprehensive coverage of a sector and coherent identification of competency standards / qualifications including a sensible match adjusted to the labour market.

Guidelines are available to advice the developers of competency standards and qualifications in order to outline technical requirements for the format and content of the national vocational qualifications.

1.2.6: Quality Assurance of NVQ

Quality underpins all components of the NVQSL. A quality assurance model based on institutional self-assessment and continuous development has already been adopted. Quality assurance requires that all training agencies take responsibility for excellent performance and demonstrate to stakeholders that quality management systems are to the standard required by the TVEC.

TVEC is responsible to facilitate and regulate quality assurance and has four clusters of activities to support the NVQSL.

1. Registration of training providers

2. Quality Management System

3. Course accreditation

4. Monitoring and audit

Quality assurance is a prerequisite for regular registration of training providers. Registration of training providers may lead to accreditation of courses and programs. Accreditation ensures that training providers adhere to active internal quality

management systems with particular reference to the course for which accreditation is being sought.

The Quality Assurance system is subject to monitoring and audit by TVEC. This process systematically verifies registration and accreditation through institutional quality audit. Training providers must have satisfactory audit results in order to maintain the status of registration and accreditation.

In addition the TVEC shall undertake monitoring, evaluation and research during the implementation of the vocational qualifications system, in order to modify policies and procedures in the light of Sri Lankan experience and international developments. An implementation, monitoring and research committee with external stakeholder representation shall be established by the TVEC.

1.2.7: Certification of NVQ

Accredited training providers and establishments are authorized to award national qualifications jointly with TVEC. The certification of national qualifications shall be maintained in a central database at the TVEC. Accredited training providers are facilitated to enter assessment information to online NVQ certificate database. This will facilitate the verification of the authenticity of qualifications.

The national certificate will carry the logo of the Democratic Socialist Republic of Sri Lanka, logo of TVEC together with the logo of the respective training agency. The government of Sri Lanka will promote the NVQSL through benchmarking and official communication with relevant international agencies. Qualification description and the units of competencies achieved listed overleaf of the certificate to provide information on qualification structure and achievement of the certificate holder. Qualification could be verified online through TVEC web site using National Identity Card (NIC) number, certificate number and the batch serial number of the certificate. Therefore attainment of a qualification could be verified even without a NVQ certificate using IC number.

1.2.8: Acquisition of Flexible Skills

The NVQSL framework which is based on national competency standards is flexible with regard to worker/trainee competency acquisition. Training providers could offer modularized courses, which are delivered either full time or part time.

Progressive competency acquisition shall be recognized in the NVQSL. A worker/trainee achieving some of the units and not all the competencies specified in the respective national competency standard, is provided with a Record of Achievement (RoA). RoAs are issued by the respective training provider.

1.2.9: Level Descriptors of National Vocational Qualifications

The units of the competency standards are individually assigned to a level and vocational qualifications are also assigned levels. Annexure 1 provides information on the level descriptors for the "National Vocational Qualifications".

The factors to be considered in the assignment of levels for the units of competency standards are;

Process that a qualification holder will carry out

Learning demand and

Responsibility

After developing a unit of competence, the content is evaluated using above level descriptors to assign an appropriate level for the unit. Once levels are assigned to each unit, they are packaged in to a qualification where a job exists for such package. The level of qualification package decided using level of each unit in the package.

1.3: Research Objectives and Rationale:

As the employability and other aspects of NVQ holders need to be taken as feedback for improvements of the current system, it is proposed to conduct sample tracer study for passed out trainees from Colleges of Technology (CoTs), VTA and NAITA centers who completed NVQ 5 & 6 courses in ICT and National Diploma in ICT (NDICT).

According to the comments from DTET and NAITA regarding on the job training (OJT) placements, it has been shown a difficulty in finding training places especially for ICT courses. This could be happened due to less demand for employment in such areas. Therefore it is necessary to find out the employability of passed out trainees. So that necessary policy level and operational level changes could be made by the TVEC with the participation of training institutions according to the tracer study outcomes.

There are 138 ICT level 5 certificates and 11 ICT level 6 certificates issued and about 2000 NDICT certificates issued totally up to now. It is suggested to conduct questionnaire survey for all NVQ 5 & 6 ICT certificate holders (about 150) and sample of about 200 from NDICT holders. Tertiary and Vocational Education Commission has taken steps to introduce a National Vocational Qualification System (NVQ) consisted with 7 Levels in collaboration with Government, private and NGO sector Technical Education and Vocational Training Institutes under the guidance of Ministry of Vocational and Technical Training. The NVQs are issued in two modes called institutional Competency Based Training(CBT) mode and Recognition of Prior Learning (RPL) mode.

The proposed research is focused for following main objectives:

1. Identification of NVQ implementation difficulties and obstacles faced by the stakeholders.
2. Analysis of NVQ process improvements for ICT sector.
3. Analysis of the current employment status of NDICT and NVQ 5 & 6 holders in ICT sector
4. Analysis of the economic and social status changes of beneficiaries
5. Analysis of the NDICT and NVQ 5 & 6 holders in ICT sector behaviour in the labour market.

2: Methodology

This section deals with the population of the study, how the sample was selected, the instruments used for the survey and the analysis methods.

2.1: Sample Selection

It is suggested to conduct questionnaire survey for all NVQ 5 & 6 ICT certificate holders (about 150) and sample of about 200 from NDICT holders. There are 138 ICT level 5 certificates and 11 ICT level 6 certificates issued and about 2000 NDICT certificates issued totally up to now. The total sample size was 350 IICT certificate holders .

Before the actual survey start the pilot survey was conducted in order to finalize the questionnaire. Stratified sampling technique will be used to select the sample. In addition to that secondary data was considered.

Postal questionnaire survey method was selected for this research. The questionnaire can be mainly considered as semi-structured. There were few main sections of questionnaire. The questionnaire was prepared in Sinhala and Tamil languages. The questionnaire was mailed with a stamped envelope and explanatory letter to selected NVQ certified personnel throughout the country. The data was coded and entered to a database. SPSS package was used to analyze the data. Graphs and tables were used to represent the output.

3: Analysis and Interpretation

As the tracer study is conducted trough mail survey the response rate of the respondents is 26 percent of the total sample. Structured questionnaire was used to collect data. 92 respondents responded to the mail survey. Simple cross tabulations and graphs were used to analyse the data.

3.1: General Information

The actual sample distribution by industry sector is shown below.

Table 3.1.1 Gender Distribution of Respondents

	Frequency	Percent
Male	35	38.0
Female	57	62.0
Total	92	100.0

Figure 3.1.1 Gender Distribution of Respondents
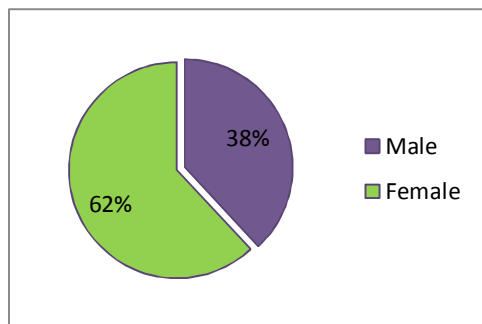
The gender distribution of the respondents is 38 percent for males and 62 persent for females. Males are less like to looking for a vocational or technical qualification for ICT than females .

Figure 3.1.2: Age Distribution of the Respondents

Mean =25.84
Std. Dev. =3.385
N =92

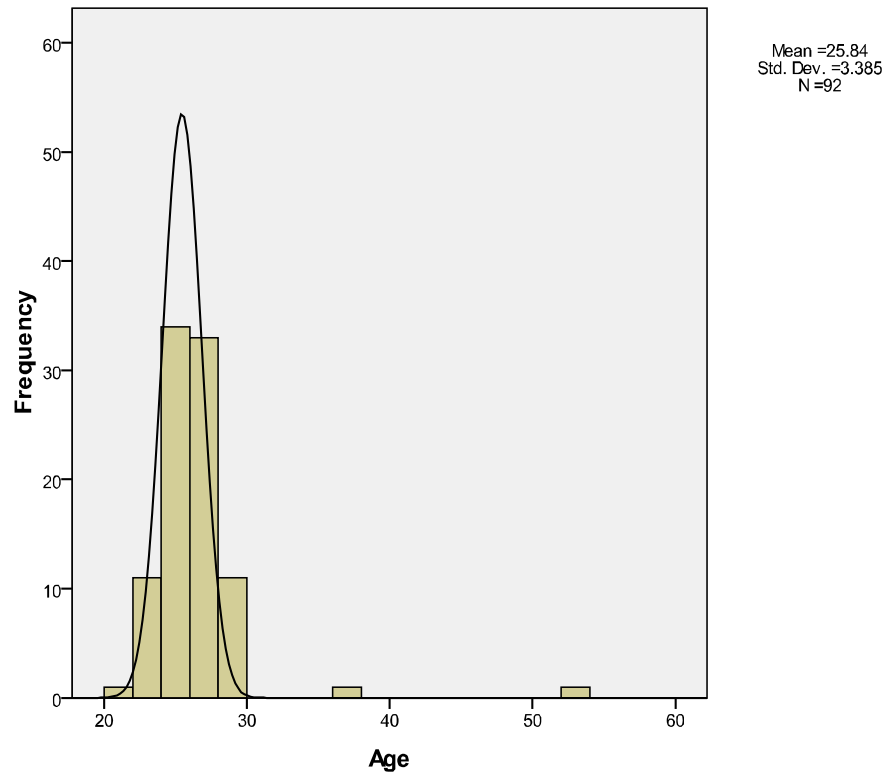|	
Mean	25.84
Median	25.50
Mode	26

The age distribution of the Respondents is shown in the above figure. The average age of the respondents is 26 years. The standard deviation of the age is 3 years. Majority of respondents are age at 26 years. The age of the respondents is normally distributed. The figure 3.1.2 shows that there are respondents whose ages are 35 years over.

Table 3.1.2: Level of Certification by Institute

Institute	L5 & L6	NDICT	Total
VTA	0	38	38
DTET	21	0	21
NAITA	0	33	33
Total	21	71	92

According to the table 3.3 from the total respondents 38 are from Vocational Training Authority (VTA), 33 from National Apprenticeship and Industrial Training Authority (NAITA) and 21 from Department of Education and Technical Training (DTET). DTET is the only institute who produces only NVQ level 5 and 6 qualified personnel.

**Figure 3.1.3: Percentage Distribution of Respondents by Province**
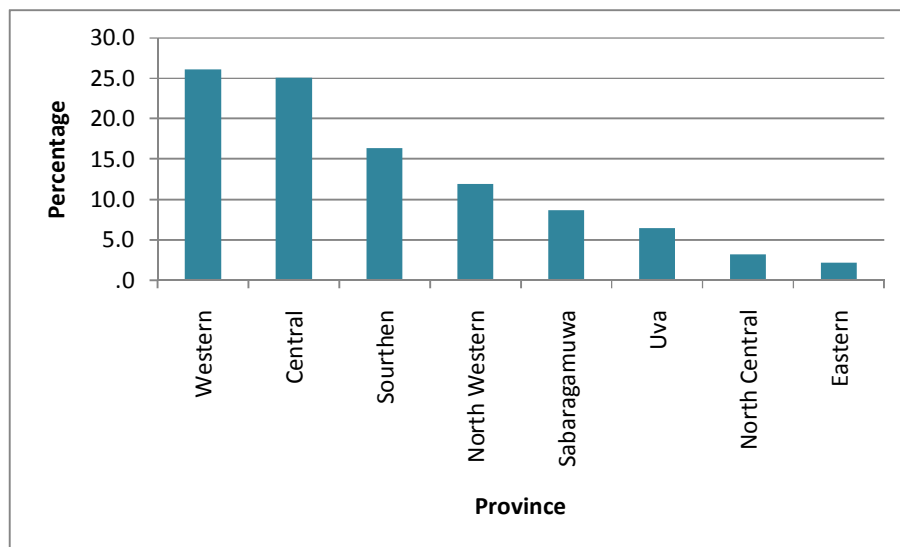
As shown in the table 3.1.3 the highest percentage of respondents are reported from the Western province. None of respondents can be seen from Nothern province. The lowest percentage is reported from Eastern province. . Almost fifty percent of respondents are from Westernn and Central province.

Table 3.1.4: On-the-Job Training Status of the Certificate Holders

Level	On-the-job training		Total	Percentage
	Yes	No		
L5 & L6	19	2	**21**	22.8
NDICT	58	13	**71**	77.2
Total	77	15	**92**	100.0

**Figure 3.1.4: Percentage Distribution of On-the-Job Training Status**
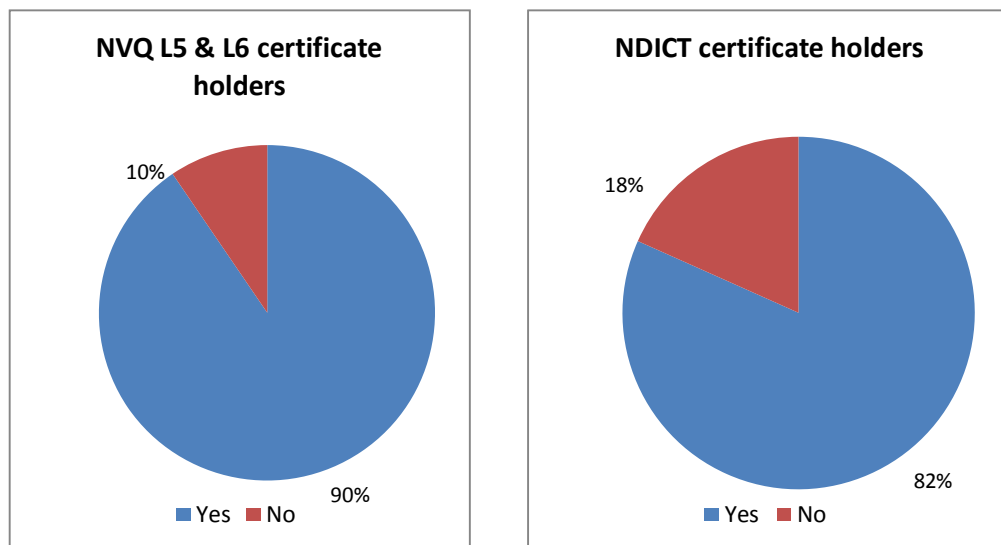
According to the above pie-chart 16 percent of respondents haven't been able to find on-the job training places. Of all NDICT trained respondents 18.3 percent were unable to find training places. It is important to show that there is a higher possibility of not finding a training place among NDICT course followers.

Table 3.1.4: On-the-Job Training Status of the Certificate Holders by Institute

Institute	On-the job sector		%
	Public (%)	Private (%)	
VTA	71.4	28.6	100
DTET	52.6	47.4	100
NAITA	56.7	43.3	100
Total(%)	61	39	100

Figure 3.1.4: On-the-Job Training Status of the Certificate Holders
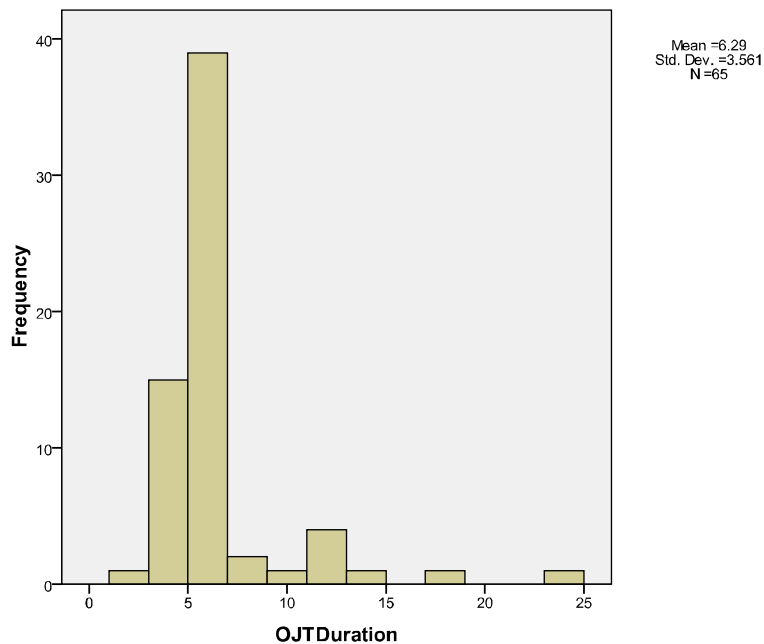
According to table 3.1.4 of all on-the-job training receivers 61 percent trained in the public sector organizations. Vocational Training Authority has the highest no. of public sector job placement receiver. It has been seen that mean of the training duration is 6 months. As shown in the table 3.1.4 Trainees at the VTA have lower chance of getting private sector job place than trainees of other two training institutes.

3.2: Perception of the certificate holders

In order to identify respondents perception on on-the-job training method they have been asked to evaluate the duties they have under go. Following analysis are based on the on-the-job training receivers only.

Table 3.2.1: Assessment of duties at the On-the-Job Training Place (Percentage)

Duties	Done at the work place(Yes)	No. out of 92(Yes)	Not Done at the work place	Total
Word Processing	59.7	47	40.3	100
Data Entry	59.7	47	40.3	100
Clerical work	55.8	43	44.2	100
Managing work place	44.2	35	55.8	100
Install and implement database management system, database and	44.2	35	55.8	100
Perform database maintenance and troubleshooting	44.2	34	55.8	100
Manage images, photographs, illustrations and colour	40.3	31	59.7	100
Install and configure local area network (LAN)	40.3	32	59.7	100
Collect requirement, analyse and document the graphic design	37.7	29	62.3	100
Test software programme	35.1	27	64.9	100
Print and finish process for graphic product	31.2	24	68.8	100
Code software programme	28.6	23	71.4	100
Identify user requirements for software solution	28.6	23	71.4	100
Analyse requirements and design functionality of software solution	28.6	22	71.4	100
Design the concept and framework for graphic design	27.3	21	72.7	100
Develop and host website	20.8	16	79.2	100

According to the table 3.2.1 the highest percentage of on-the-job training receivers stated that word processing, data entry and clerical works are their main duties. Less

than 30 percent of training receivers were involeved duties of coding software programme, identify user requirements for software solution, analysing requirements, and designing functionality of software solution, designing the concept and framework for graphic design and developing and hosting website. Out of all OJT receivers only 20.8 percent had a chance to develop and host websites.

Figure 3.2.1: Distribution of Number of Duties done at the JOT place
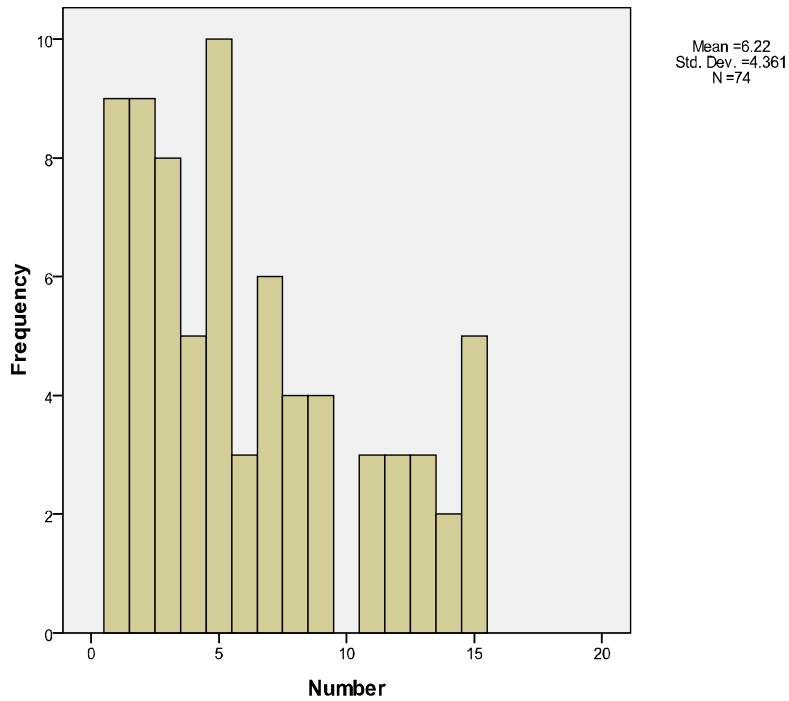
Mode   5
Median 5

Figure 3.2.1 shows the distribution of number of duties done at the OJT place. Considering all 16 duties majority were done only 5 duties or less than five duties.

Table 3.2.2: Percentage Distribution of Word Processing, Data Entry and Clerical Work done at the work place

Done at the work place	Percentage
No	34.8
Yes	65.2
Total	100.0

According to table 3.2.2, about 65.2 percent of ICT certificate holders were involved in all three duties of word processing, data entry, and clerical work. Therefore it has been seen that instead of doing their major tasks majority of certificate holders were done tasks that need low level competencies.

Table 3.2.3: Percentage Distribution of Respondents Perception on Certificate

Advantage	Percentage
Was able to find a better paying job than the old one	4.3
Got a new job	4.3
Got a wage increase in the present job	1.1
Received higher social recognition	2.2
Got a chance to enter higher education	29.3
No Advantage/No response	58.7
Total of 92	100.0

According to the table 3.2.2, from all respondents only 4.3 percent were find another job with a higher salary. It has been seen that 8.6 percent of Respondents were able to find a new job with the help of National Vocational Qualification. From all respondents 29.3 percent of NVQ holders were able to go for higher qualification studies. 58.7 percent of Respondents have stated that they haven't had any benefit by getting ICT deploma level certificate.

Table 3.2.4: Percentage Distribution of Respondents Perception on Course Structure

| Usefulness	Percentage			
	Knowledge	Skills	Attitude	Training in Industry
Not useful at all	2.2	3.3	6.5	6.5
Somewhat useful	6.5	8.7	6.5	13.0
Useful	26.1	35.9	37.0	19.6
Very useful	50.0	33.7	30.4	42.4
Total	84.8	81.5	80.4	81.5
System	15.2	18.5	19.6	18.5
	100.0	100.0	100.0	100.0

According to the table 3.2.3 50 percent say that the knowledge they got from the training is very useful. As well as majority agree that skill and attatides are useful for their career advancement. 42.2 percent agree as industry training is very useful.

3.3: Employment Status

Table 3.3.1: Percentage Distribution of Employment Status of the Respondents

Employment status	Percentage
Employed	41.3
Self Employed	1.1
Not doing any job	57.6
Total	100.0

Figure 3.3.1: Percentage Distribution of Employment Status of the Respondents
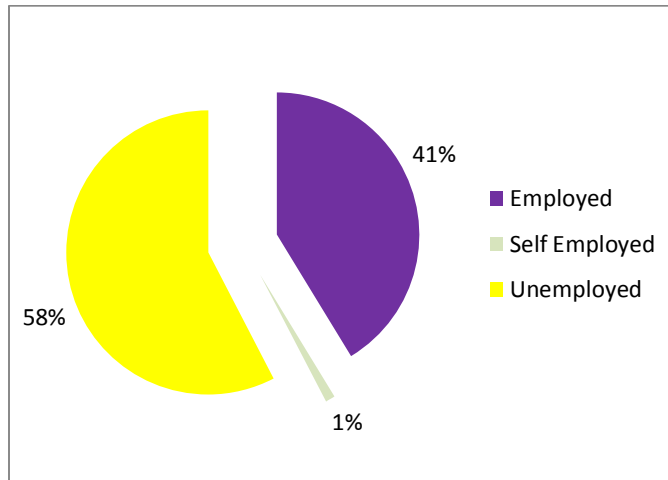
As shown in the above table and graph majority of respondents are not doing a job. It is 58 percent of all respondents. 41 percent are employed.

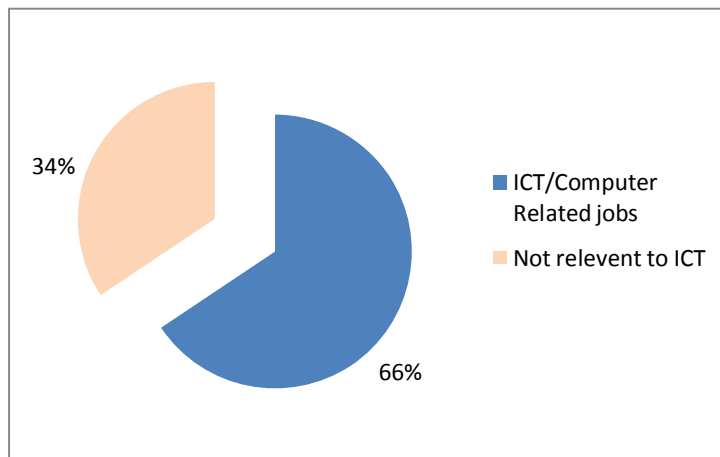**Figure 3.3.2: Relationship to the ICT/Computer sector**

Figure 3.3.2 shows a pie chart based on their job titles. Therefore 34 percent of job titels are not specify the ICT/Computer skills.

Table 3.3.2: Percentage Distribution of the Salary of Employees/ Self employees

Salary	Percentage
<=10000	25.6
10001 - 20000	51.3
20001 - 30000	5.1
40000 <	2.6
Total	84.6
No Response	15.4
	100.0

Figure 3.3.3: Distribution of the Salary of Employees/ Self employees
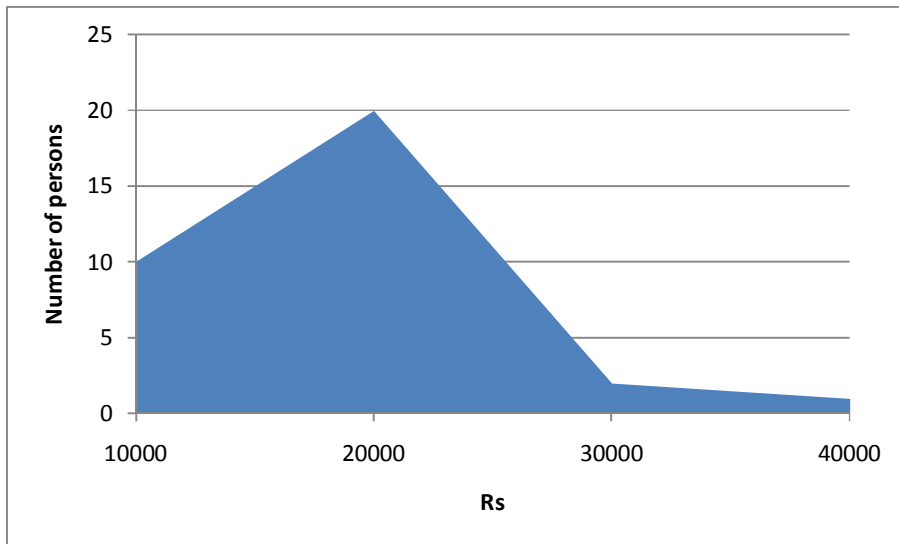
According to the figure 3.3.3 it has been seen that 51.3 percent of employees that is the highest are in salary range of Rs. 10,001 -20,000. Also 25.6 percent of certificate holders receive less than or equal Rs. 10,000 of salary.

Table3.3.3: Job Satisfaction

Satisfaction	Percent
Yes	41.0
No	48.7
Total	89.7
Missing	10.3
Total	100.0

In order to assess the job satisfaction the question, "Are you satisfied with your job?" was asked. Out of all employed persons 41.0 percent stated that they are satisfied. It has been seen that 48.7 percent do not satisfy with their jobs.

Table 3.3.4: Reasons for Dissatisfaction

	Salary not up to expected level	Designation not match with qualification	Work not related	Environment not good
Yes	68.4	42.1	57.9	15.8
No	31.6	57.9	42.1	84.2
Total	100.0	100.0	100.0	100.0

Considering dissatisfy group it has been found that 68.4 percent stated as the reason of "Salary is not up to expected level". 57.9 percent say that work is not related to their qualification.

3.4: Unemployment

Table 3.4.1: Reason of not doing a Job

Reason	Number	Percentage
Not doing a job	30	56.6
Studying	20	37.7
Other	3	5.7
Total	53	100.0

According to the table 3.4.1 it can be seen that out of 53 persons who don't do jobs 56.6 percent says that they were unable to find a job. 37.7 percent of certificate holders are doing studies.

Table 3.4.2: Unemployment of ICT Certificate holders

Status	Percent
Employed/Self employed	42.4
Unemployed	32.6
Studying or other	25.0
Total	100.0

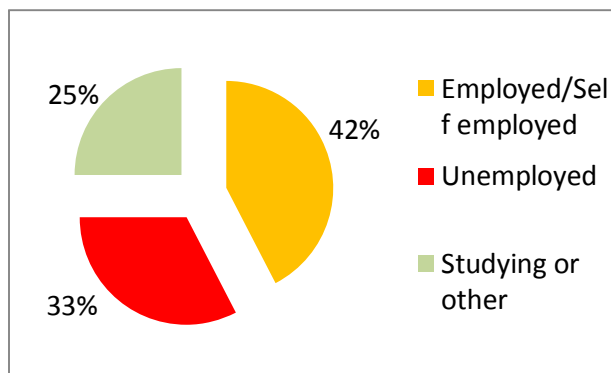**Figure 3.4.1: Unemployment of ICT Certificate holders**

Table 3.4.1 shows that employment status of ICT certificate holders. The unemployment among ICT certificate holders is 33 percent.

Table 3.4.3: Unemployment of ICT Certificate holders by Study Mode

Status	Total Percentage	NVQ Certificate holders (Percentage)	NDICT Certificate holders (Percentage)
Employed/Self employed	42.4	23.8	47.9
Unemployed	32.6	9.5	39.4
Studying or other	25	66.7	12.7
Total	100	100	100

The table 3.4.3 indicated that percentage of persons going for study/other is higher among the NVQ certificate holders than conventional NDICT certificate holders. It is 66.7 percent for NVQ certificate holders contrast to 12.7 percent for NDICT certificate holders. Even though percentage of employment is lower for the NVQ certificate holders unemployment is still lower than the NDICT certificate holders.

Therefore in order to find the significance of unemployment between these two groups it has been decided to do a statistical test.

Table 3.4.3: Unemployment of ICT Certificate holders by Study Mode

Status	group		Total
	NVQ Holders (%)	NDICT Holders (%)	%
Employed	71.4	54.8	56.5
Unemployed	28.6	45.2	43.5
	100.0	100.0	100.0

Ho: Status of employment is independent of mode of study

H$_1$: Status of employment is depend with mode of study

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.704[a]	1	.401		
Continuity Correction[b]	.191	1	.662		
Likelihood Ratio	.733	1	.392		
Fisher's Exact Test				.690	.337
Linear-by-Linear Association	.694	1	.405		
N of Valid Cases	69				

a. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 3.04.

b. Computed only for a 2x2 table

Considering Fisher's Exact Test

P value= 0.69 > 0.05, Not reject Ho.

Therefore at 5 percent level of significance it can be said that status of employment is independent of mode of study. Based on the above test proportion of getting a job is same for both groups.

Table 3.4.4: Reason of can't find a Job

Reason	Percentage
Qualification is not enough for a job market	14.3
Skill does not match with the job requirement	17.1
Not many vacancies in qualified area	60.0
Other	8.6
Total	100.0

Out of all certificate holders 60 percent say they can't find a job as not many vacancies in qualified area.14.3 percent say that qualification not enough for a job market.

4: Conclusion and Recommendations

4.1: Conclusion

Based on the analysis and presentation following concluding remarks are given.

Considering the age distribution of the NVQ certificate holders it can be concluded that there is a higher tendency of looking NVQ at young ages. The average age of the NVQ certificate holder is 26 years.(Figure 3..1.2) As 62 percent of the sample is female and only 38 percent is male, it is a clear indication that the ICT Diploma courses are female dominated.(Table 3.1.1)

According to the table 3.3 from the total respondents 38 are from Vocational Training Authority (VTA), 33 from National Apprenticeship and Industrial Training Authority (NAITA) and 21 from Department of Education and Technical Training (DTET). DTET is the only institute who produces only NVQ level 5 and 6 qualified personnel.

According to the table 3.1.3 the highest percentage of respondents are reported from the Western province. None of respondents can be seen from Nothern province. The lowest percentage is reported from Eastern province. . Almost fifty percent of respondents are from Westernn and Central province.

Questions have been included in order to assess On-the-Job Training (OJT) Status of the Certificate Holders. About 84 percent have stated that they have obtained OJT component while 16 percent respoded as "no". Also 18.3 percent of NDICT holders were unable to find training places. It is important to show that there is a higher possibility of not finding a training place among NDICT course followers.

According to the table 3.1.4 , 61 percent of the sample has been obtained OJT in public sector and while 39 percent obtained OJT in private sector.

In order to identify respondents perception on on-the-job training method they have been asked to evaluate the duties they have under go. Following analysis are based on the on-the-job training receivers only.

According to the table 3.2.1 the highest percentage of on-the-job training receivers stated that word processing, data entry and clerical works are their main duties. Less than 30 percent of training receivers were involeved duties of coding software programme, identify user requirements for software solution, analysing requirements, and designing functionality of software solution, designing the concept and framework for graphic design and developing and hosting website. Out of all OJT receivers only 20.8 percent had a chance to develop and host websites.

According to the table 3.2.2, from all respondents only 4.3 percent were find another job with a higher salary. It has been seen that 8.6 percent of respontents were able to find a new job with the help of National Vocational Qualification. From all respondents 29.3 percent of NVQ holders were able to go for higher qualification studies. 58.7 percent of respontents have stated that they haven't had any benefit by getting ICT deploma level certificate.

According to the table 3.2.3 50 percent say that the knowledge they got from the training is very useful. As well as majority agree that skill and attatides are useful for their career advancement. 42.2 percent agree as industry training is very useful.

When percentage distribution of employment status of the respondents is considered, 41.3 is employed, 1.1 percent self empoyed and 57.6 is unemployed from a total sample of 92. From the employed population, 66 percent worked in ICT related jobs while 34% worked in non ICT jobs.

According to the figure 3.3.3 it has been seen that 51.3 percent of employees that is the highest are in salary range of Rs. 10,001 -20,000. Also 25.6 percent of certificate holders receive less than or equal Rs. 10,000 of salary

In order to assess the job satisfaction the question, "Are you satisfied with your job?" was asked. (Table3.3.4: Job Satisfaction) Out of all employed persons 41.0 percent stated that they are satisfied. It has been seen that 48.7 percent do not satisfy with their jobs. Considering dissatisfy group it has been found that 68.4 percent stated as the reason of "Salary is not up to expected level." 57.9 percent say that work is not related to their qualification.(Table 3.3.5 Reasons for Dissatisfaction) According to reasons for dissatisfaction, most responded with salary is not up to expected level and work not related to the qualification. From the sample, 84.2 accepted that their

working environment is good, which is a positive factor in improved working environments.

According to the table 3.4.1 it can be seen that out of 53 persons who don't do jobs 56.6 percent says that they were unable to find a job. 37.7 percent of certificate holders are doing studies.

4.2: Recommendations

Based on the analysis and conclusion following recommendation are given.

1. Increase the number of male participants in ICT level 5 programmes up to about 50 %
2. Expand implementation of ICT level 5 courses to other public and private training organizations.(Table 3.1.2)
3. Expand ICT diploma level courses to Northern, Eastern, North central and Uva provinces to avoid low participation in ICT Education.(Figure 3.1.3)
4. Further strengthen OJT component to cover all students with relevant training.(table 3.1.4)
5. Improve private sector training places for OJT rather than public sector.(Table 3.1.4)
6. Avoid OJT places only with Word Processing, Data Entry and Clerical work(Table 3.2.1)
7. Encourage students to obtain an employment rather than higher education(Table 3.2.2)
8. Standardize ICT sector labour market with proper designations, defining job roles and improving quality and relevancy.(Table 3.3.5)
9. Propose online job portal for ICT related jobs in job market.(Table 3.4.3)
10. Improve ICT related job opportunities through career guidance and conduct labour market surveys to focus training more towards usable competencies.

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Annexure 1

Level descriptors for the national vocational qualifications framework

Level	Process	Learning demand	Responsibility
1	Carry out processes that: - are limited in range - are repetitive and familiar - are employed within closely defined contexts - are single processes	Employing : - recall - a narrow range of knowledge and cognitive skills - no development of new ideas	Applied : - in directed activity - under close supervision - with no responsibility fo the work or learning others

2	Carry out processes that:	Employing :	Applied :
	- are moderate in range - are established and familiar - offer a clear choice of routine responses - involve some prioritizing of tasks from known solutions	- basic operational knowledge and skill - readily available information - known solutions to familiar problems - little generation of new ideas	- in direct activity - under general supervision and quality control - with some responsibility for quantity and quality - with possible responsibility for guiding others

3	Carry out process that:	Employing :	Applied :
	- require a range of well developed skills - offer a significant choice of procedures requiring prioritization - are employed within a range of familiar contexts	- some relevant theoretical knowledge - interpretation of available information - discretion and judgment - a range of known responses to familiar problems	- in directed activity with some autonomy - under general supervision and quality checking - with significant responsibility for the quantity and quality of output - with possible responsibility for the output of others.

4	Carry out process that:	Employing :	Applied :
	- require a wide range of technical or scholastic skills - offer a considerable choice of procedures requiring prioritization to achieve optimum outcomes - are employed in a variety of familiar and unfamiliar contexts	- a broad knowledge base incorporating some theoretical concepts - analytical interpretation of information - informed judgment - a range of sometimes innovative responses to concrete but often unfamiliar problems	- in self – directed activity - under broad guidance and evaluation - with complete responsibility for quantity and quality of output - with possible responsibility for the quantity and quality of the output of others

5	Carry out processes that:	Employing :	Applied :
	- require a wide range of specialised technical or scholastic skills - involve a wide choice of standards and non –standards procedures - are employed in a variety of routine and non routine contexts	- a broad knowledge base with substantial depth in some areas - analytical interpretation of a wide range of data - the determination of appropriate methods and procedures in response to a range of concrete problems with some theoretical elements	- in self – directed and sometimes directive activity - with broad general guidelines or functions - with full responsibility for the nature, quantity and quality of outcomes - with possible responsibility for the achievement of group outcome

6	Carry out processes that:	Employing :	Applied :
	- require a command of wide-ranging highly specialised technical or scholastic skills - involve a wide choice of standards and non standards procedures, often in non standards combinations - are employed in highly variable routine and non routine contexts	- specialised knowledge with depth in more than one area - the analysis, reformatting and evaluation of a wide range of information - the formulation of appropriate responses to resolve both concrete and abstract problems	- in managing processes - within broad parameters for defined activities - with complete accountability for determining and achieving personal and / or group outcomes

| 7 | Carry out processes that:

- require a command of highly specialised technical or scholastic and basic research skills across a major discipline

- involve the full range of procedures in a major discipline

- are applied in complex, variable and specialised contexts | Employing :

- knowledge of a major discipline with areas of specialisation in depth

- the analysis, transformation and evaluation of abstract data and concepts

- the creation of appropriate responses to resolve given or contextual abstract problems | Applied :

- in planning, resourcing and managing processes

- within broad parameters and functions

- with complete accountability for determining, achieving and evaluating personal and/ or group outcomes |