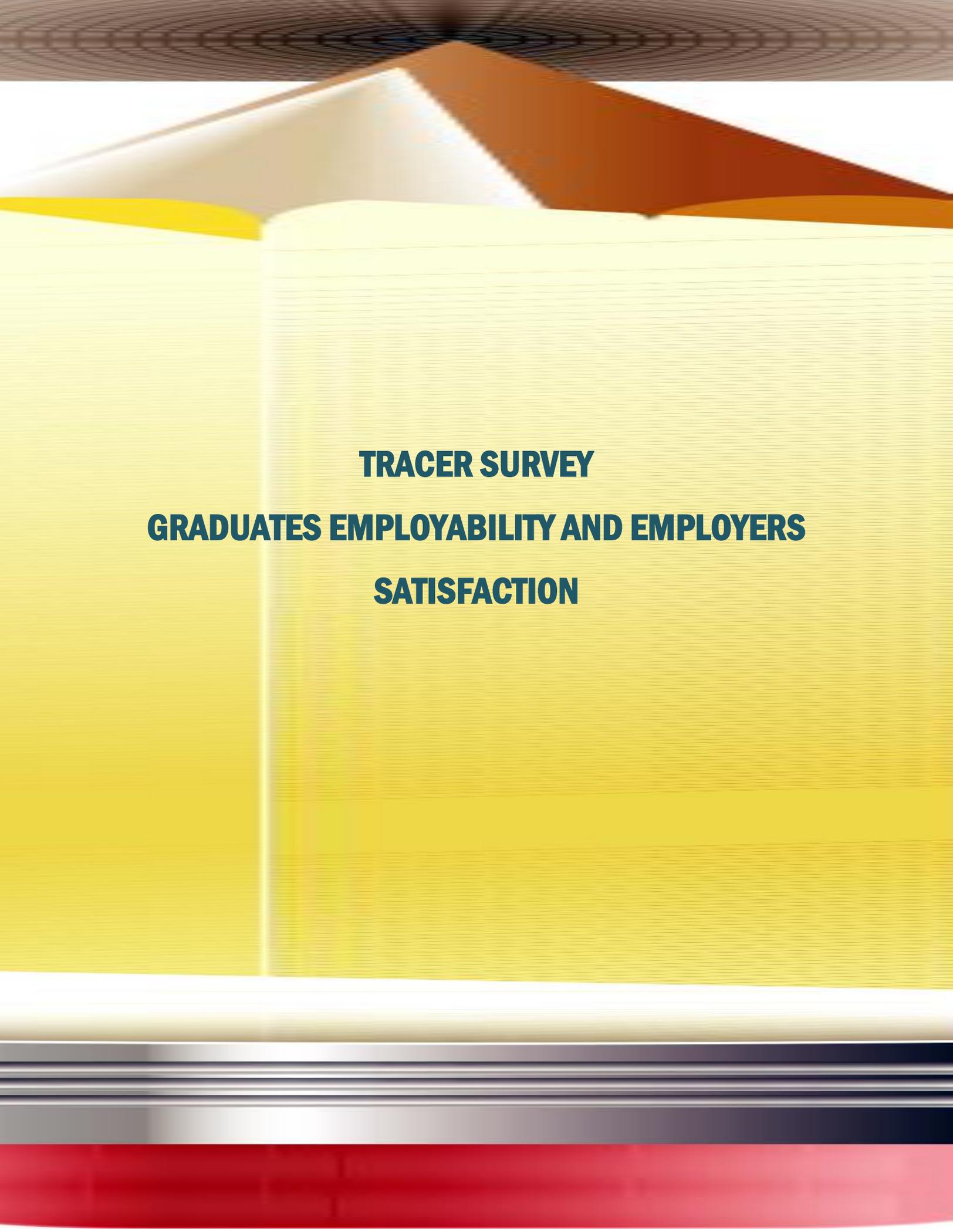**Republic of Rwanda**

Ministry of Education

TRACER SURVEY

GRADUATES EMPLOYABILITY AND EMPLOYERS SATISFACTION

Kigali

July 2021

TRACER SURVEY

GRADUATES EMPLOYABILITY AND EMPLOYERS

SATISFACTION

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ACKNOWLEDGEMENT

Executive Summary

Introduction

The Rwanda Polytechnic hereafter referred to as RP, commissioned this study to find out the status of TVET delivery in Rwanda. This was done through a survey assessing graduates employability, own job creation and employers satisfaction. Equally assessed was satisfaction of graduates with the academic life when they were in the college. This study is important because it fills a knowledge gap on graduates' employability and employers' satisfaction.

Over the last decades, job creation, especially off-farm jobs, has been and it remains one of the major government and development partner's priorities in Rwanda. This is reflected in the National Strategy for Transformation (NST1) in its priority area 1, it envisages to ''create 1,500,000 (over 214,000 annually) off-farm, decent and productive jobs for economic development''[1]. From this, it is clear that employability skills remain instrumental if Rwanda is to achieve the above targets. This cannot be possible without the development of human capital. Without competent, qualified trainers it is impossible to produce TVET graduates with the types of competencies required by the modern labour market. In 2019, the employment rate within 6 months after graduation was 75.2% in polytechnic. However, the employment status was lower where the rate was 60.7%. The findings of the survey are to be used to evaluate and improve the effectiveness and relevance of Quality TVET delivery.

Methodology

The study was a survey; selecting a representative sample of TVET sub-sector to which a questionnaire was administered. Document analysis and some qualitative aspects were used to shed light to findings from the survey. A detailed discussion is contained in the main body of this work.

Key findings

There were differences of appreciation between graduates and employers. 95.1%, of the respondents (graduates) expressed satisfaction with the quality of education acquired. 53.6% of the graduates expressed satisfaction with competencies, the satisfaction with academic-oriented skills (53.6%) was highest compared to personal skills (42.4%) and work-oriented skills (41.3%).

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[1] National Strategy for Transformation,

Findings indicated that graduates were negatively affected by inadequate parental support, limited infrastructure of training institutions and lack of equipment, tools and machinery for practical training., with respect to employment after graduation, 52.3% said they were employed, 45.7% were not employed but had once been employed while 1.9% had never been employed since graduation. Analysis showed that wildlife management, production and manufacturing technology, electrical technology, automobile technology, ICT and electronic telecommunication are the trades that have many employed graduates while irrigation technology, hospitality management, forest resource management had the least employed number of graduates.

The survey found that time taken searching for a job for the majority of unemployed graduates ranged between 3 and 12 months while for the rest of employed graduates, it took them between 6 and 12 months to get their current job. Among employed graduates, they said they work 8 hours per day, while the minimum was 3 hours (under-employment) and maximum was 20 hours (overtime) per day. It is noteworthy that finance for start-up capital for self-employed graduates, 62.8% was derived from family members while 20.9% said they used their personal savings.

With respect to employers' satisfaction, results indicated that the majority of employing companies (22.5%) were in tourism and hospitality, followed by technical services operations (18.8%) and (10%) were in construction and building services. The findings also showed that among employers, 8.9% were highly satisfied, 50.1% were satisfied and 36.0% were moderately satisfied with the knowledge and understanding of graduates. On the attitude and values of graduates, the employers were satisfied (60.5%), moderately satisfied (19.3%) and very satisfied (18.8%). On the skills and competencies, considering academic oriented skills 48.7% of employers were satisfied, 35.7% moderately satisfied and 7.0% very satisfied. Considering work-oriented skills, 45.9% were satisfied, 37.9% were moderately satisfied and 13.9% were very satisfied while only 2.3% were dissatisfied. Considering personal skills, 49.7% were satisfied, 35.7% were moderately satisfied and 10% were very satisfied while only 4.5% were dissatisfied.

For 80 surveyed companies 55% accommodated the students for industrial attachment. Among them, only 33.8% faced the challenges in implementing workplace learning which include the following: Sometimes students do not understand the requirements of work place learning, Sometimes students are not interested, Some students do not respect regulations, Insufficiency of equipment, Sometimes students get tired easily, Management of intern, Insufficient materials and infrastructure to support them, Sometimes the graduates come in the industrial attachment with

low capacity especially how to manage equipment, Sometimes students don't bring protective clothes and we don't always have enough that will fit all of them, Lack of enough utilities for all the students, Many students want to be placed in Kigali site, No insurance for damage caused by internees.

Recommendations

Recommendations of this tracer survey are directed to Students or Graduates' Employers in their respective companies and RP-IPRCs. All these three main TVET training stakeholders are recommended to nurture employable skills amongst the trainees through competence based skills and soft skills, provision of effective workplace learning facilities for industrial attachment and to establish mechanism to reinforce practice of students both at schools and in companies during industrial attachments.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ACRONYMS AND ABBREVIATIONS

CBA   : Competence-Based Assessment

CBT   : Competence-Based Training

GNP   : Gross National Product

ICT   : Information and Communication Technology

IPRCs   : Integrated Polytechnic Regional Colleges

NST1   : National Strategy for transformation

ODK   : Open Data Kit

RMI   : Rwanda Management Institute

RP   : Rwanda Polytechnic

RP-IPRCs   : Rwanda Polytechnic – Integrated Polytechnic Regional Colleges

SPSS   : Statistical Package for Social Science

ToR   : Terms of Reference

TVET   : Technical and Vocational Education and Training

UNESCO   : United Nations Educational, Scientific and Cultural Organization

1. GENERAL INTRODUCTION

1.1. Background

Rwandan Technical and Vocational Education and Training system (TVET) provides young people and the unemployed with the skills to gain productive employment and also provides those already in employment with an opportunity to upgrade their skills, including entrepreneurs and those wishing to work for themselves. Education reduces poverty, increases the productivity of individuals and creates opportunities for new jobs, and it accelerates economic growth and sustainable development, to promote respect for human rights, constructs democratic societies and dynamic competitive economies.[2] These benefits make the world countries heavily invest in education. As an example, UNESCO recommends governments to allocate at least 20% of their total budget and at least 6% of their GNP to education. Over the last decades, job creation, especially off-farm jobs, has been and remains one of the major government and development partner's priorities in Rwanda. ((NST-1, 2018)[3].

Employability skills remain instrumental therefore, if Rwanda is to achieve its targets. Human capital has been identified as the mechanism to achieve social and economic transformation in Rwanda. Graduate tracer surveys are a means of ensuring the relevance of the curriculum and providing targeted benefits to graduates to enhance the marketability of educational programs in this case TVET Skills. If there is sufficient knowledge on employment outcomes of training graduates, this can contribute in formulating policies responding to challenges of unemployment. In a competence based curriculum, students, particularly graduates of any course, are required to earn a sense of competence in their field of study and develop the confidence to explore new possibilities and new employment especially on a backdrop of increasing competition among other finalists. Graduate tracer surveys offer an opportunity to study empirically the impact of previous studies in Regional Polytechnics and how they respond to workplace needs. These studies provide valuable information for evaluating the results of TVET training. In this survey essential information was collected that could serve as a baseline for future traces of the same cohort. By itself, the results of this study throw light on interesting workplace dynamics as experienced by the graduates themselves. This tracer study

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[2] National Strategy for Transformation: (NST1) in its priority area 1, envisages to ''create 1,500,000 (over 214,000 annually) off-farm, decent and productive jobs for economic development''
[3] Idem

collected data on the relevance of the curriculum and graduates' level of satisfaction with their academic preparation.

Concerning the employment status in TVET sector, the national tracer survey was conducted in 2019 on TVET and higher learning graduates. The employment rate within 6 months after graduation was 75.2% in polytechnic. However, the employment status was lower where the rate was 60.7%. Some gender imbalance in employment was observed during this survey. The rate of employed male graduates was 63.4% while for female graduates was 51.2%. About the fields of study, ICT 73.7% were employed. Regarding the level of education, short courses (49.7%) had its highest employment in TVET schools but diploma programs (64.9%) in polytechnics. On the sector that absorbs more graduate, many graduates 12.3% in polytechnics were employed at the construction sites. It was revealed that some graduates in polytechnics (27.4%) spent more than 12 months to get their first jobs after graduation. In particular, graduates in polytechnics from Business Administration (50%) took more than 12 months to secure their first jobs. It was found that the longer time gap between graduation and employment was due to lack of job opportunities. However, it was important to note that the weaker the industries in the specific business sectors were, the longer the graduates of relevant fields of study took time to secure their first jobs. On the other hands, the higher degree the graduates achieved, the shorter the graduates took time to secure their first jobs, because employers are likely to prefer high degree holders regardless of their business sectors. In polytechnics, the satisfaction rate for academic-oriented skills (71.7%) was the lowest compared to work-oriented skills (78.1%) and personal skills (80.1%).[4]

With the above-mentioned background, the Rwanda Polytechnic wanted to conduct a tracer survey on employability and employer satisfaction for 6,368 IPRCs graduates since 2018. The survey was expected to assess the current status of TVET graduates and their employer satisfaction. The findings of the surveys are to be used to evaluate and improve the effectiveness and relevance of Quality TVET delivery. Indeed, graduate's tracer surveys are forms of empirical studies that provide valuable information to evaluate the results of education programmes of a specific educational institution. Results of the study may be used for further development of the institutions in the context of quality assurance[5].

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[4] Education Sector Strategic Plan 2018/19 to 2023/24

[5] Tracer Survey Operational Manual-TCT, 2011

1.2. Objective of the survey

The overall objective of tracer survey was to assess the current status of 6,268 graduates from 1st, 2nd and 3rd RP-IPRCs Graduations and their employers' satisfaction. More specifically, this survey had the following sub-objectives;

- ✓ To Evaluate employability rate of graduates and job creation status as well as financial support for starting their own businesses,;

- ✓ To compare the employability of graduates by gender and people with disability;

- ✓ To assess the trends and changes of employment and employer satisfaction against the current labor market dynamics;

- ✓ To assess the impacts of training programs, in IPRCs with respects to employment;

- ✓ To find out the time taken between graduation and employment;

- ✓ To determine the proportion of graduates in employment, unemployment and underemployment;

- ✓ To evaluate satisfaction of employers and graduates in terms of their knowledge, skills and attitude on the jobs;

- ✓ Identify the current gaps between TVET and labor market demands and propose strategic recommendations to improve individual training programs.

2. SURVEY METHODOLOGY

In line with the key deliverables, as well as the objectives of the survey, the following methodology was exploited for an effective execution of the study.

2.1. Target population and Sample size

2.1.1. Target population

The target population for this tracer study included all RP graduates from 2018 to 2021. It also included graduates' employers as well as representatives of key institutions involved in either training or sponsoring IPRCs, and educational policy makers. The eligible population of the surveys was all graduates from 1st, 2nd and 2rd RP graduation list since 2018 as well as their employers for those who were employed. The tracer survey considered 6,268 RP graduates as the target population.

2.1.2. Sampling and Sample size

2.1.2.1. Sampling

Among the eligible population, the appropriate sample size was soundly and statistically estimated through random stratified sampling techniques to consider, year of graduation, trades/programs, gender issues and geographical locations. In addition to graduates sampling, the survey also used purposive sampling to select key informants presented in a table 1 of this tracer survey report.

2.1.2.2. Sample size

From the population of 6,268 RP graduates since 2018, the sample size of this study was computed based on the following formula as proposed by Gall et al. (2014).

$$n = \frac{NZ^2 * 0.25}{[e^2(N-1)] + Z^2 * 0.25} = \frac{6268 X 1.645 X 0.25}{[0.05 X 0.05 X 6467] + 1.645 X 1.645 X 0.25} = 362.029 \cong 363$$

Where

N is the population

n is the sample size

e is the margin of error here we chose 5%

Z is Z-score at 95% confidence level is 1.96. The z-score is the number of standard deviations a given proportion is away from the mean corresponding to desired sample size. This gave us a sample of 363 respondents from graduates, at margin of error of 5%, confidence level of 95%.

2.2. Methodological approach and design

The approach and design to complete this assessment observed a number of prongs:

The first prong was that the work was Descriptive and Evaluative in nature. The survey was descriptive-evaluative research; it describes general observed patterns and makes no inferences to cause and effect on graduates' employability and employers' satisfaction. The survey collates

perceptions among the graduates and employers, especially through self-reporting and structured interviews. According to Arifin, evaluation research is a research that has an aim to provide information for decision maker (policy maker) related to a power or strength of a program, seen from its effectiveness, cost, device, etc. For instance are the implementations of curriculum, an implementation of contextual learning model, etc.[6]In addition this tracer survey used both quantitative and qualitative study methods.

Regarding the process, the assignment was implemented through the following steps:

Planning & Preparation*:* This step consisted mainly of the preparation of the assignment activities not only to ensure quality but also to deepen the understanding of the objectives and context. In this regard meetings with various key players were organized to identify potential informants (per category) and relevant documentation, and to discuss and gain a common understanding of the terms of reference. Under this phase both the client (RMI and RP) and the consultant Team had common understanding on the process, requirements, methodology, approach and tools;

Data Collection: This is the actual fieldwork across all districts where the IPRCs graduates can be found and other areas/companies where graduates are working. This phase consisted of the review of existing project documents, conversations with Key Informants/stakeholders as well as survey by questionnaire.

Data Processing and Analysis*:* Data analysis was content-based. Content based analysis consist of conceptual analysis (it was used to determine the existence and frequency of concepts under research) and relational analysis (it was used to examine the relationships among concepts under research). The key patterns, from data, were identified and organized into coherent categories corresponding to key themes of the assignment, particularly those pertaining the current employment status of graduates employability and income generation, changes in their living conditions and employers' feedback on graduates' performance. Each theme was numbered,and the corresponding ideas grouped and closely analyzed. The emerging themes from each interview and survey were rigorously scrutinized to understand their meaning and to know where they fit. Where feasible and relevant, data was triangulated using relevant and statistical tools **(SPSS)** in order to ensure quality and more precise data credibility;[7]

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[6]Afeti, G. (2009). Technical and Vocational Education and Training for Industrialization. Paper presented at the African Research and Resource Forum 2009, Nairobi Kenya. Africa: Juta & Co. Ltd.

[7]Patton, Michael Q., Qualitative Evaluation and Research Methods (Sage Publications: Newbury Park, Calif., 1990); Miles, Matthew B., & A. Michael Huberman, Qualitative Data Analysis: An Expanded Sourcebook (Sage Publications: Thousand Oaks, Calif., 1994)

Report drafting: This step consisted of harmonizing data and information in coherent and meaningful manner;

Report validation: Once the draft report was internally agreed between the client and the consultant, a validation session was organized and brought about a wider audience.

Consolidation of inputs and production of the final report: Inputs and comments raised during the validation session were consolidated and integrated in the report, and this lead to the production of the final report to be submitted to the client. The above discussed steps are summarized in the figure below:

Figure 1: Assignment implementation process

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┌─────────────────────────────────────────────────────────┐
│        Planning and preparation (inception phase)        │
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                            ↓
┌─────────────────────────────────────────────────────────┐
│                      Pilot survey                        │
└─────────────────────────────────────────────────────────┘
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│                    Data collection                       │
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│        Data processing, analysis and interpretation      │
└─────────────────────────────────────────────────────────┘
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┌─────────────────────────────────────────────────────────┐
│              Report drafting and submission              │
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│                      Validation                          │
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│   Consolidation of inputs and production of final report │
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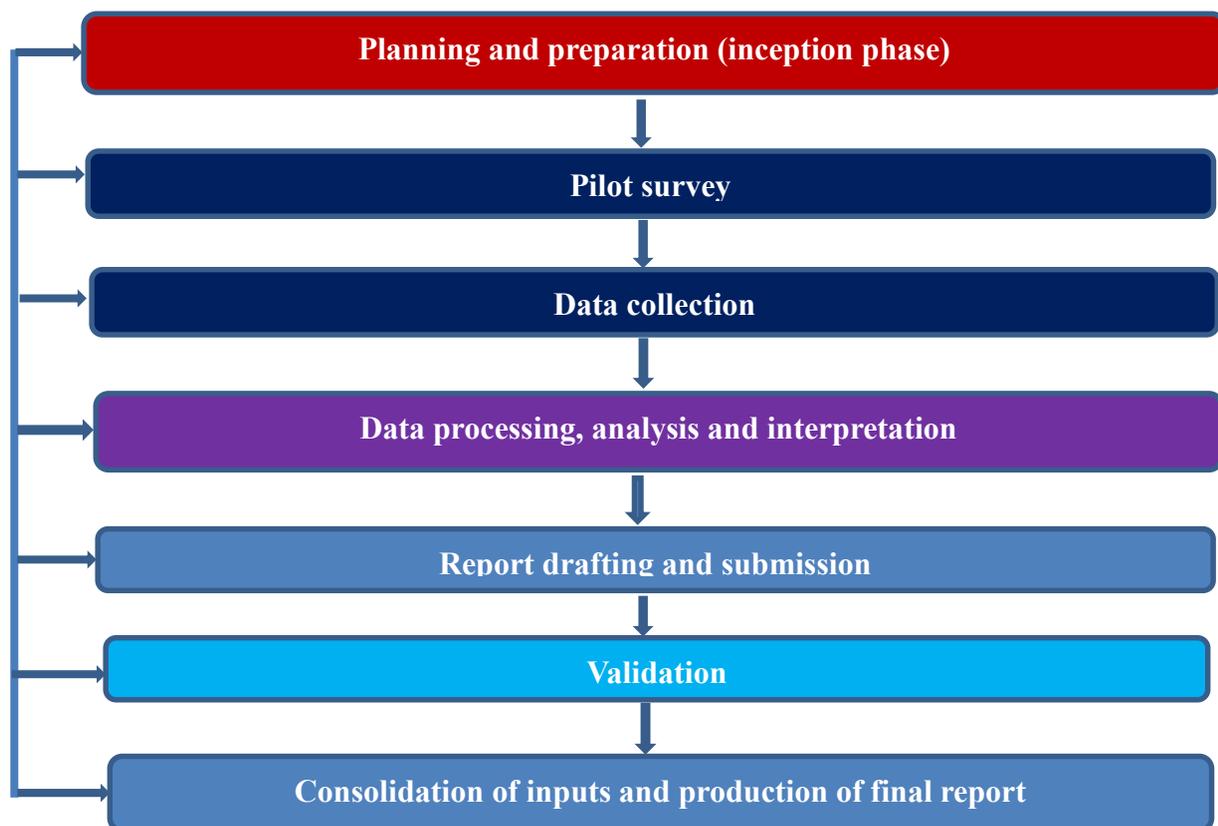
Source: Authors' Compilation, 2021

2.2.1. Data collection methods

The following data collection methods were exploited:

2.2.1.1. Desk review

This assignment extensively relied on Desk Review to frame the tracer survey and anchor the knowledge of the findings on existing, reports, program documents, studies related to theory of change. Particularly, the consultant reviewed relevant program major documents including reports, graduate data base, and related policies and program. Other TVET tracer surveys done before and the

RP reports. An exhaustive list of documents that were reviewed were jointly identified and agreed with the client.

2.2.1.2. Key Informants Interviews

In addition, this work leveraged information from Interviews with Key Informants. With this method, Key informants were identified in close collaboration with the client (RMI and RP), from relevant stakeholders pertaining to the program implementation across the selected districts. The stakeholders involved in the KIIs are listed in annex 4.

2.2.1.3. Survey by Questionnaire

In addition to qualitative information the tracer survey exploited a questionnaire to gather quantitative information pertaining to the situation of students after graduation. For quantitative data collection, the survey involved a structured questionnaire for RP-IPRCs graduates and the employers. A questionnaire was administered to RP-IPRCs graduates using a modern technology below discussed:

2.2.1.4. Data collection Electronic tool/ Open Data Kit (ODK)

With the support of a team of technicians (Tools developer, Statistician, Data analysts) and a pool of well-trained enumerators, data collection was conducted by using a modern technology known as Open Data Kit (ODK) to collect, process, analyse and store field-collected data. ODK is a free and open-source set of tools which help organizations author, to manage mobile data collection solutions. ODK provides an out-of-the-box solution for users to:

Build a data collection form or survey using different programming tools and techniques;

Collect the data on a mobile device and send it to a server; and;

The use of modern technology in data collection was motivated by the fact that it offers the following benefits:

Digital data collection saves time and money

Data are immediately available for analysis: Once the data are collected, saved and submitted on the server, they become immediately available for data analysis. This helps a lot in tracking field progress and giving feedback to data collectors based on their early collected and submitted data

No need to develop a data entry database: The system serves both purposes (collecting and entering data) at once. This cuts the survey cost considerably as you won't need to build any entry mask system

No data entry phase since the data collection and entry are simultaneously performed on the spot

Data cleaning is greatly reduced due to built-in data checks and quality control features

Digital data collection ensures the quality of data by reducing errors

On the spot validation: Unlike on a paper questionnaire, the system was able to alert the user of wrong input patterns

Compulsory skips: Only relevant questions are asked. The system keeps track of previous answers and open or close sub-questions based on previous entries

Supervision: We ensured that every team leader has access to the enumerators' data so as to correct him/her as soon as possible.

Ease of use

One form can be designed in one language and translated into many other languages without having to change the structure or content of the main questionnaire and enumerators had the ability to switch from language to language without quitting the interview. This was very helpful in ensuring that questions were asked and answered without any language barrier. Users can be any trained enumerator with or without advanced computer skills (just like using a mobile phone). Our data were fed into the database through the ONA.io platform to ensure the security of our data throughout the data collection and data analysis phases.

Figure 2: Process of digital data collection
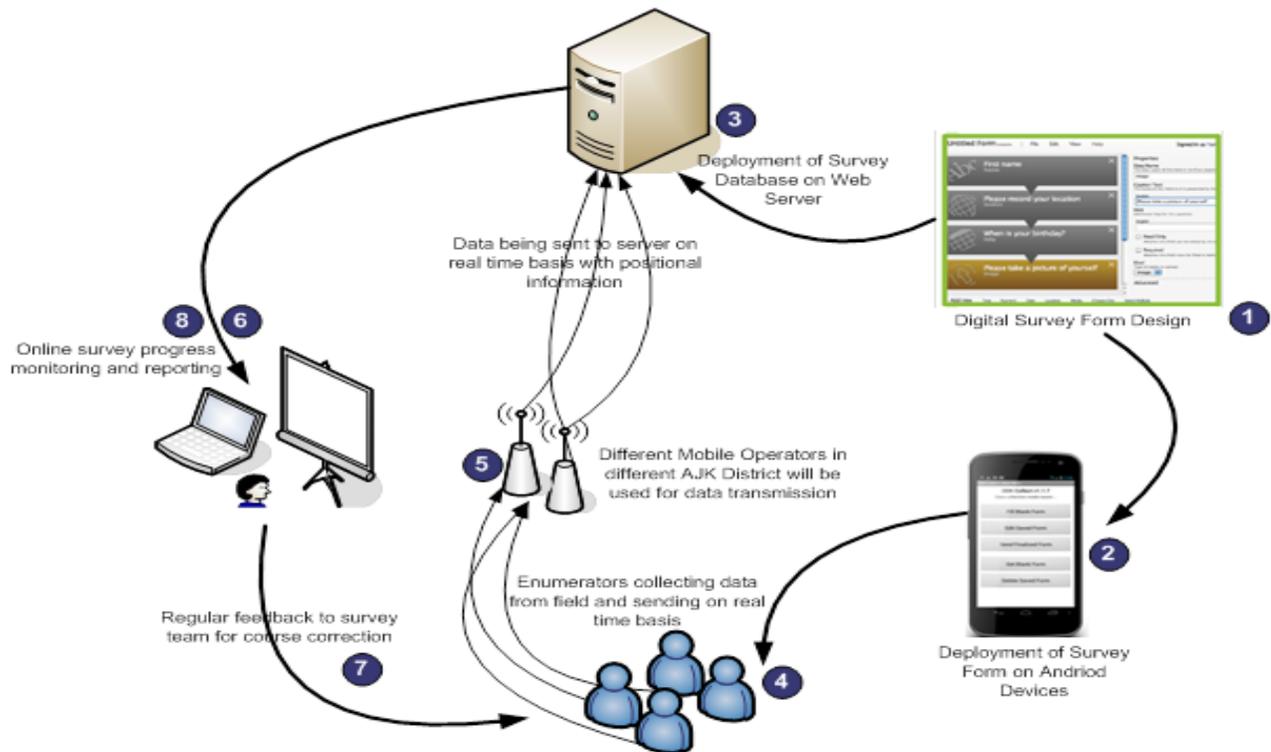
The designed questionnaire is appended to this report as **annex 2.**

2.3. Data Management Strategies

Data management strategies for this survey intervened into two stages, including during fieldwork and after the field work as detailed below:

2.3.1. Data management during fieldwork

Quantitative data were collected using Open data kits (ODK) using iPad and all collected data through ODK were synchronized at the end of the day after verification of the field supervisor and stored in the central database of which data analyst verified and feedback given to the field supervisor before closing the day, just to avoid possible errors.

Qualitative data were compiled through field notes resulting from interview guide and were verified, sealed and kept in a safe place.

At the end of the day, before closing field work, all documents and tools were reviewed by the field data collectors and supervisors to make technical decisions in close collaboration with RMI team.

2.3.2. Data Management after fieldwork

After field data collection, the following data management strategies were applied:

2.3.3. Data cleaning

Data cleaning consisted of fixing or removing incorrect, corrupted, incorrectly formatted, duplicate, or incomplete data within a dataset. Quantitative raw data were compiled together in an xml file because ODK can export data in form of excel file after cleaning.

2.3.3.1. Data processing

Data processing is a set of methods that are used to input, retrieve, verify, store, organize, analyse or interpret a set of data. Data for some variables were coded again (with view of analysis) and some new variables generated. Data saved in xml file were imported to SPSS for full range of coding (standard variable name, label and properties).

2.3.3.2. Data Analysis

Data Analysis is the process of systematically applying **statistical** and/or logical techniques to describe and illustrate, condense and recap, and evaluate **data**. In-depth analysis was done in SPSS and findings were presented under the form of graphs and tables. The Consultant team maintained final data set for the client cross validation and further exploration. Field notes along with impressions notes and key words were compiled together. The transcription of qualitative data was translated in English language

The data analysis was done using SPSS. A data analysis plan developed and shared previously by the Data Analyst was used to guide the data analysis and interpretation. Descriptive statistical analyses were used to generate frequencies and percentage.

2.4. Validity and reliability

A pilot survey was conducted with a small sample for testing the validity and reliability of data collection tools.

2.4.1. Validity

Validity in data collection means that your findings truly represent the phenomenon you are claiming to measure. Valid claims are solid claims. Validity is one of the main concerns with research.[8]Validity refers to the accuracy of a measurement instrument and to the extent to which

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[8]Herbert, W., Seliger, H. W., Shohamy, E. G., & Shohamy, E. (1989). Second language research methods. Oxford University Press.

the instrument measures what it is intended to measure.[9] It also refers to the extent to which a specific measure is free from systematic and random errors.

There are two types of validity, including; internal and external.[10] External validity refers to the extent to which the results of the study could be generalized to other particular research settings and other samples. Validity is harder to assess, but it can be estimated by comparing the results to other relevant **data** or theory. The validity of this survey was tested by comparing the data collected to the assessment objective to ensure content and construct validity.

2.4.2. Reliability

Reliability is a pointer of a measures' internal consistency.[11] Before commencement of the main field work, filtering of the measurement scales started with computing reliability coefficient (Cronbach's alphas) in accordance with Du Plessis (2010) recommendations. The questionnaires were pilot tested amongst the respondents in selected graduates. Connelly (2011) recommends that a pilot study sample should be 10% of the projected sample for research. Therefore, pilot test for this survey consisted of 26 graduates and their employers randomly selected.

2.5. Quality assurance

For quality assurance, the following measures were implemented:

o The consultants regularly consulted various resource persons to learn from their experiences and expertise in relation to the assignment and improve both the process and product;

o Consultations were made with the client and potential stakeholders on regular basis;

o The consultants, in close collaboration with the client (RMI&RP), established a working reference group to work closely with the consultancy team throughout the assignment;

o Recruitment and training of experienced enumerators was conducted;

o Validation sessions meant to enrich the draft and final report were organized.

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[9]Zikmund, W. G., Babin, B. J., Carr, J. C., & Griffin, M. (2010). Business research methods. 8th ed. Mason, HO: Cengage Learning

[10]Van Tonder, E., & Ehlers, L. (2011). Factors threatening the survival of independent financial advisers in their organisational life cycle: an exploratory study. South African Journal of Economic and Management Sciences, 14(2), 155-169.

[11] Ibid. Business research methods. 15

2.6. Ethical consideration

Apart from the above general quality control measures, the consultant adhered to the general research and assessment ethical guidelines and standards including the following:

Transparency and ethical standards: Apart from the consent from participants in the survey, the consultant team ensured that their anonymity, their voluntary participation and confidentiality were fully observed throughout the assessment process.

Transparency about methodology: Detailed methodology to be used in the survey was jointly developed and agreed with the RMI and RP, and the training of enumerators was open to RMI and RP team who would be interested.

Recruitment and training of enumerator

Enumerators were recruited to assist in data collection. The standard profile for an enumerator including: holding at least bachelor's degree, having an experience of fieldwork, ability to interact with people, fluency in English and Kinyarwanda, and other attributes related to data collection. After the recruitment, a one-day workshop was organized to train enumerators in the following aspects:

✓ Rationale and purpose of this assessment;

✓ Methodology of conducting this assessment;

✓ Ethical standards in research;

✓ Data collection instruments and methods;

✓ Dealing with fieldwork challenges.

✓ ODK use in data collection

2.7. Graduates tracing techniques

Tracing is the task of physically locating the selected members of the sample. Tracing graduates may be not easy as their address may not be known to the research team. Therefore, enumerators need to be familiar with effective techniques to trace them. To this end, to trace graduates, the following techniques were used:

a) **Visiting key individuals:** We visited graduates' former teachers/trainers to ask them information on the whereabouts of their former students.

b) **Using professional bodies/associations:** To trace graduates we also considered visiting professional bodies or associations to get information on the location of their members.

c) **Using the school/institution as a resource:** We also used graduates former schools to trace graduates because schools very often maintain records of their former students (alumni)**.**

3. SURVEY FINDINGS

3.1. Introduction

In this section of the report, the key findings of the tracer survey are presented in two main parts namely graduates' Satisfaction and employers' Satisfaction. In both parts demographic profile and other relevant variables that were in line with current status of graduates from 1st, 2nd and 3rd RP-IPRCs graduations and their employer satisfaction were outlined and analysed. The findings of this survey presented in form of frequency tables and figure that illustrated the level of satisfaction for both graduates and employers.

3.2. Graduates Satisfaction

In this part of the report, the key findings of the tracer survey about the current employment status of graduates from 1st, 2nd and 3rd RP-IPRCs graduations. During the preparation the calculated sample was 363 graduates, during data collection all 363 graduates from all over the country responded the questionnaire. Table 2 summarizes the demographic Profile of graduates across the different trades of RP-IPRCs.

Table 1: Graduates demographic Profile

	Male n (%)	Female n(%)	Total n(%)
Age bracket			
18-30	208(57.3%)	119(32.8%)	327(90.1%)
31-40	26(7.2%)	10(2.8%)	36(9.9%)
Graduates education level			
Diploma(A1)	234(64.5%)	129(35.5%)	363(100%)
Geographical location of the graduate			
Kigali	112(30.9%)	53(14.6%)	165(45.5%)
South	25(6.9%)	27(7.4%)	52(14.3%)
West	34(9.4%)	10(2.8%)	44(12.1%)
North	38(10.5%)	21(5.8%)	59(16.3%)
East	25(6.9%)	18(5%)	43(11.8%)
Location			
Urban	149(41%)	85(23.4%)	234(64.5%)
Rural	85(23.4%)	44(12.1%)	129(35.5%)
Disability Status			
Yes	9(2.5%)	3(0.8%)	12(3.3%)
No	225(62%)	126(34.7%)	351(96.7%)
Total	234(64.5%)	129(35.5%)	363(100%)

Source: *Field Data*, 2021

Of the 363 graduates, 36% were female while male respondents stood at 64%. This was a true reflection of the total population. It is recurrent fact that females are underrepresented in TVET as a result of several historical and gender related factors pertaining to society's view of who should do

TVET. Cognizant of this fact, GoR has put in place several policies that seek to increase enrolment of females in TVET.
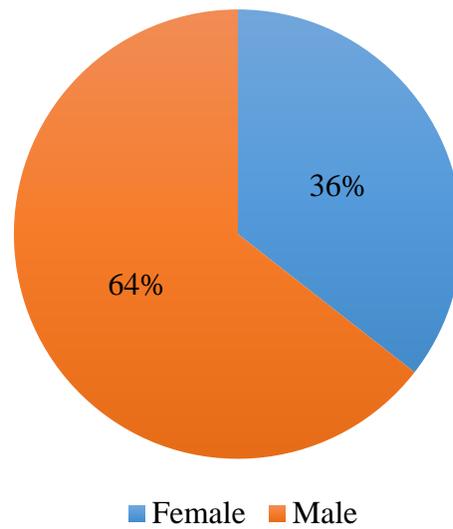
Figure 3. Respondents disaggregated by sex
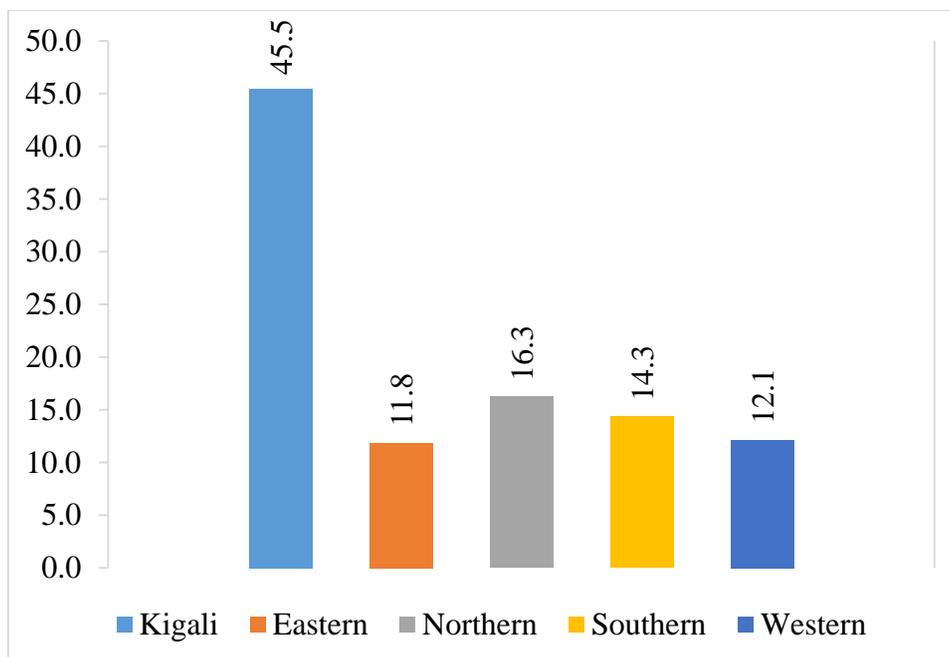
Figure 4. Geographical location of Respondents

Geographical distribution of the graduates, presented a mixed picture with no discernible pattern. The majority 45.5% equivalents were in the city of Kigali, 16.3% in Northern Province, 14.3% in Southern

Province, 12.1% in Western province while only 11.8% were in Eastern province. In the same context, the majority 64.5% of graduates live in urban area while 35.5% of them live in rural area.
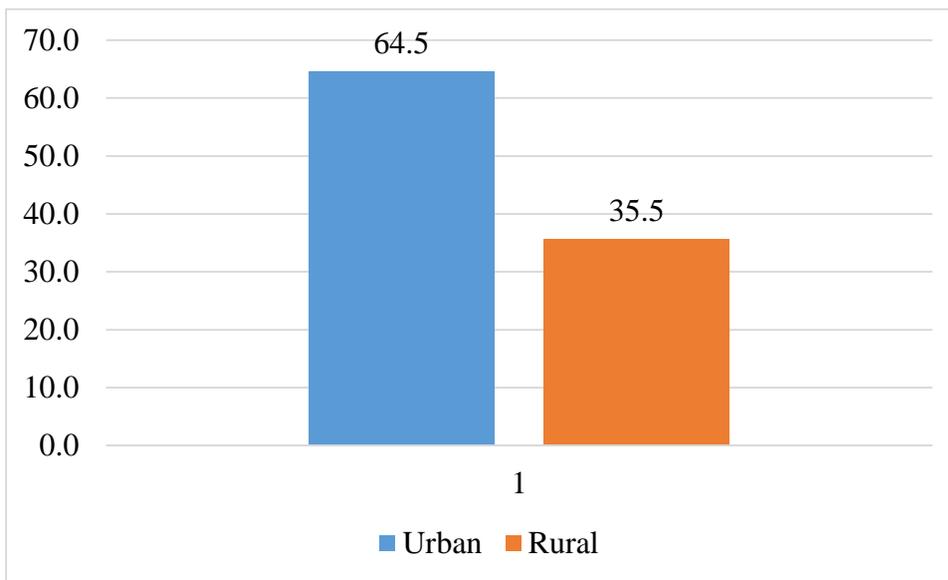
Figure 5. Graduates' location in Urban or Rural areas

The survey also went further to see the number of graduates with disability; it was found that only 3.3% equivalents to 12 graduates have disability whilst 96.7% corresponding to 351 did not have any disability.

The distribution of respondents also analysed their provenance by rural-urban dimension; it was found out that most of them came from urban areas; this could have policy implications on localization of potential sources of jobs; particularly since it appears as if there is congruence with the gender dimension. Rural women have not been equally enrolled in TVET. For RP's outreach and TVET popularization campaigns this could be of importance.

There are other policies that support the decongestion of the capital city as a way of developing other areas.

It is important to note that the age range from 18 to 30 years old is the schooling years for Rwanda advanced higher learning academia. This is an active age for employment even if they lack professional experience. Since the beginning of education system in Rwanda, it was observed the majority graduates prefer to leave their home village from rural to urban area. This associated with fact the majority of employment opportunities; adequate investment infrastructures as easy access to start-up capital were found in the urban area. Currently, the Government of Rwanda is reversing this situation by creating conducive environment for investment and employment creation in all parts of the country.

3.2.1. Quality of Education

Quality of education is usually understood as the balanced compliance of education (its outcomes, processes, and environment) with identified needs, goals, requirements, norms and standards. The table 3 below describes extent to which surveyed graduates in this tracer study were satisfied with Quality of Education during their schooling period.

According the research done by Abelha and her colleagues in 2020, one of the main issues associated with competence development and graduate employability found in the review was related to the mismatch between university graduates' competences and employers' needs.[12] Findings indicate that higher education institutions are concerned with using strategies to enhance the development of competences for graduate employability. Graduate employability and competence development around the world depend on a strong sense of innovation and collaboration practices implemented in higher learning.

Table 2: Graduate's Satisfaction with Quality of Education

Elements of quality of education	Very satisfied	Satisfied	Moderately	Dissatisfied	Very dissatisfied
Labour market relevancy	69(19.0%)	171(47.1%)	86(23.7%)	37(10.2%)	-
The teacher and teaching methods	25(6.9%)	244(67.2%)	83(22.9%)	11(3%)	-
Educational content	32(8.8%)	241(66.4%)	77(21.2%)	13(3.6%)	-
Learning environment	34(9.4%)	219(60.3%)	101(27.8%)	9(2.5%)	-
Student centred learning	13(3.6%)	230(63.4%)	117(32.2%)	3(0.8%)	-
Student workload	29(8%)	229(63.1%)	96(26.4%)	9(2.5%)	-
Institution management	57(15.7%)	220(60.6%)	75(20.7%)	11(3%)	-
Laboratory sessions	33(9.1%)	167(46%)	107(29.5%)	50(13.8%)	6(1.7%)
Proper or desired conditions for students	15(4.1%)	196(54%)	140(38.6%)	12(3.3%)	-
General Total	**307**	**1917**	**882**	**155**	**6**
Overall Percentage	**9.4%**	**58.7%**	**27.0%**	**4.7%**	**0.2%**

Source: Field Data, 2021

The table 3 about Graduate's Satisfaction with Quality of Education showed that Student satisfaction is influenced by the teacher and teaching methods (67.2%), educational content (66.4%),student centred learning (63.4%),student workload(63.1%) and Institution management (60.6%) among

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[12] Measuring Quality in Higher Education: A Competency Approach

others. The table 3 also depicts that students were very satisfied with the quality of education specifically in terms of Labour market relevancy and institutional management.

The analysis of the table 3 indicate considerable proportion of students who were moderately satisfied with quality of education provided by RP-IPRCs where the majority in this category was found on the aspects of proper or desired conditions for students, student cantered learning and learning environment.

Some achievement in terms of quality of education were there but still there was a need to continuously improve in order to anchor in the student perception the so-called 'philosophy of life, their future role as gap filling between industry and academia on the TVET or hands on skills side.

Figure 6: Overall Satisfaction of Graduates with Regard to Quality of Education
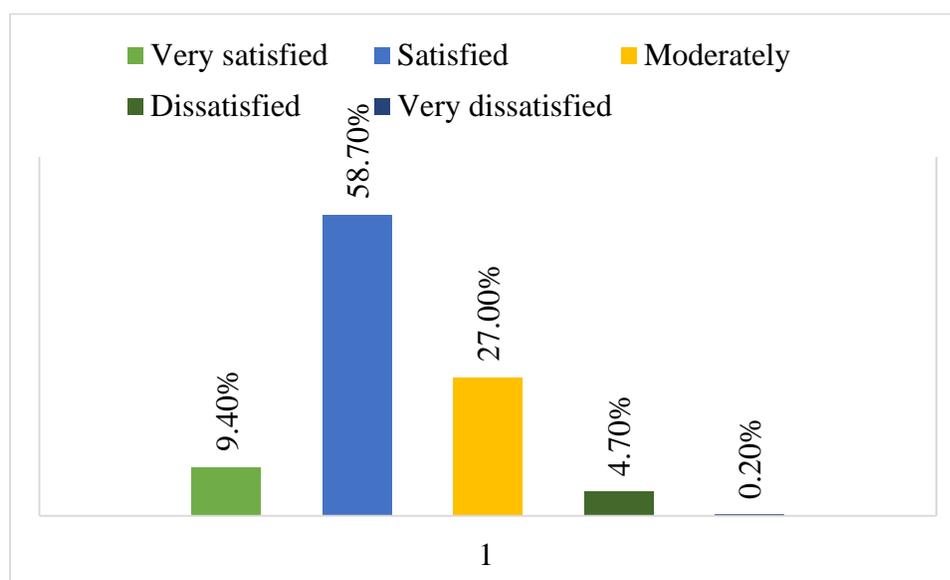
Source: Field Data, 2021

Generally among the 363 surveyed graduates, 58.7% of them were satisfied, 27% were moderately satisfied, and 9.4% were very satisfied. On the hand, 4.9% were in dissatisfaction. All those Likert scale levels of measurement were utilized to measure the satisfaction of graduates with Quality of Education when they were in RP-IPRCs. Based on the fact that around 68.1% of the surveyed graduates are in position of being satisfied with the quality of education they received at IPRCs, it was a good indicator that in RP-IPRCs students are taught in a manner that students appreciate.

In-depth analysis revealed that students considered the following as positive attributes that influenced their satisfaction.

o The teaching staffs put a lot of time into commenting on students' work.
o The teaching staffs normally gave students' helpful feedback.
o The teaching staffs motivated students to do their best in learning.

o The teaching staffs were extremely good at explaining things.

o The teaching staffs worked hard to make their studies interesting.

o The teaching staffs made a real effort to understand difficulties of students in their studies

Issues that need improvement include provision of enough time and facilities for practice and opportunities for creativity, organizing CBT (Competence-Based Training) and CBA (Competence-Based Assessment) system, enhancing industrial attachment among other interventions that are being put in place in the journey of skills development.

3.2.2. Graduates' Competencies

In Rwanda, the demand for employable higher education graduates has resulted in a national strategy that outlines desirable graduate attributes including "Academic oriented Skills, Work-oriented skills and Personal skills" The results of the survey as portrayed by the table 4 below shows the perception of RP-IPRCs graduates with regard to their level of skills and competencies.
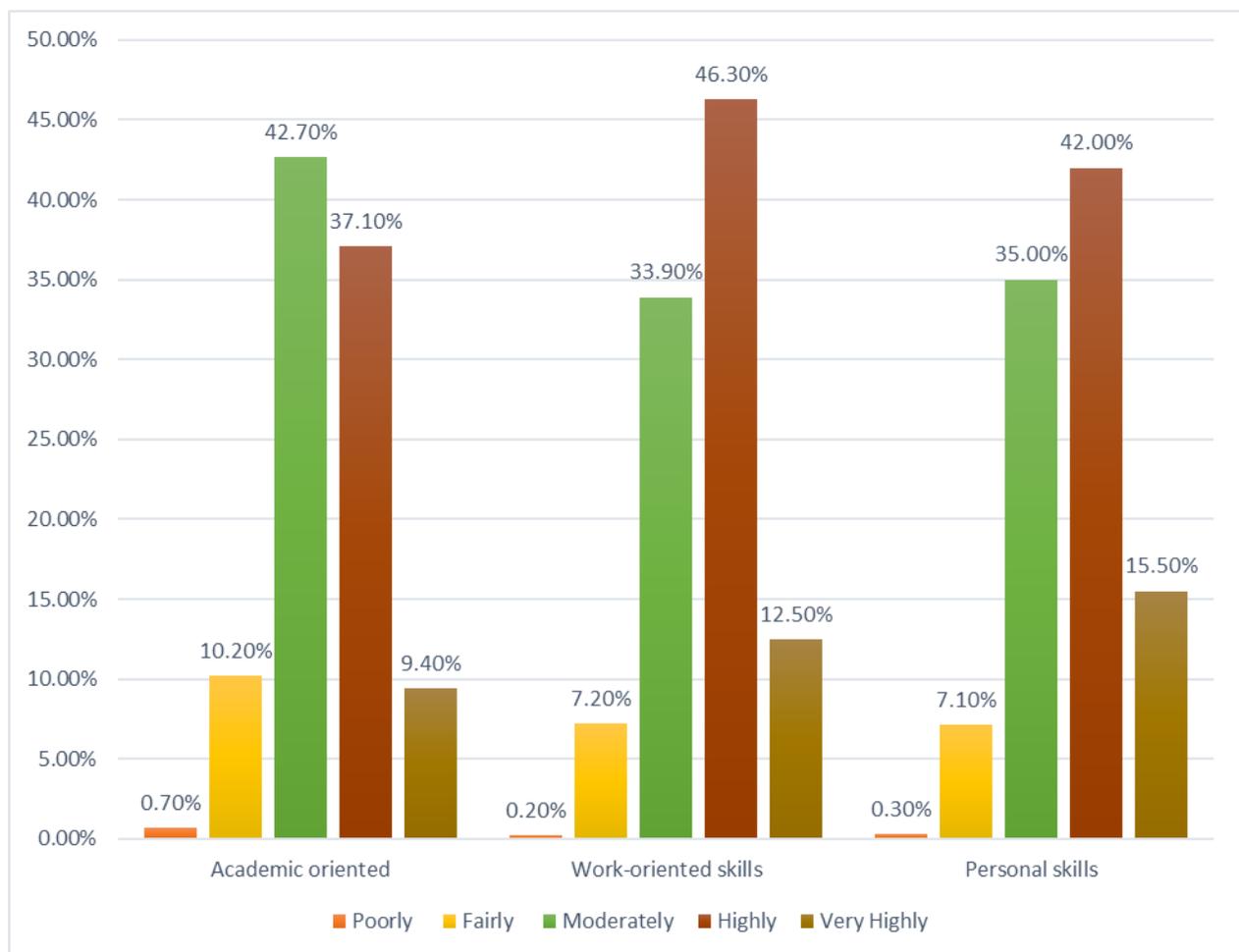
Figure 7. Overall Satisfaction of Graduates with Regard to Level of Competencies

Table 3: Perception of Graduates with Regard to their Level of Competencies

Area of competencies	Poorly	Fairly	Moderately	Highly	Very Highly
	n (%)	n (%)	n (%)	n (%)	n (%)
Academic oriented					
Technical skills	1(.3%)	7(1.9%)	130(35.8%)	155(42.7%)	70(19.3%)
IT skills	-	19(5.2%)	166(45.7%)	134(36.9%)	44(12.1%)
Entrepreneurial skills	4(1.1%)	38(10.5%)	183(50.4%)	110(30.3%)	28(7.7%)
Communication skills	5(1.4%)	36(9.9%)	152(41.9%)	142(39.1%)	28(7.7%)
Critical Thinking	2(.6%)	47(12.9%)	144(39.7%)	150(41.3%)	20(5.5%)
Risk taking skills	4(1.1%)	62(17.1%)	151(41.6%)	114(31.4%)	32(8.8%)
Creativity or creative mind	1(.3%)	50(13.8%)	158(43.5%)	137(37.7%)	17(4.7%)
General Total	**17**	**259**	**1084**	**942**	**239**
General Percentage	**0.70%**	**10.20%**	**42.70%**	**37.10%**	**9.40%**
Work-oriented skills					
Judgment and decision-making skills	-	32(8.8%)	145(39.9%)	158(43.5%)	28(7.7%)
Time Management skills	1(.3%)	16(4.4%)	114(31.4%)	170(46.8%)	62(17.1%)
Teamwork skills	2(0.6%)	15(4.1%)	108(29.8%)	162(44.6%)	76(20.9%)
Organizational skills	-	23(6.3%)	108(29.8%)	185(51.0%)	47(12.9%)
Ability to work under pressure	5(1.4%)	30(8.3%)	117(32.2%)	163(44.9%)	48(13.2%)
Emotional intelligence skills	-	31(8.5%)	128(35.3%)	184(50.7%)	20(5.5%)
Complex problem-solving skills	1(0.3%)	35(9.6%)	139(38.3%)	152(41.9%)	36(9.9%)
General Total	**4**	**182**	**859**	**1174**	**317**
General Percentage	**0.20%**	**7.20%**	**33.90%**	**46.30%**	**12.50%**
Personal skills					
Work independently	1(0.3%)	23(6.3%)	117(32.2%)	151(41.6%)	71(19.6%)
Negotiation skills	2(0.6%)	31(8.5%)	138(38%)	138(38%)	54(14.9%)
Leadership skills	2(0.6%)	27(7.4%)	150(41.3%)	138(38%)	46(12.7%)
Human relations skills		29(8%)	110(30.3%)	161(44.4%)	63(17.4%)
Cognitive flexibility skills	1(0.3%)	19(5.2%)	121(33.3%)	175(48.2%)	47(12.9%)
General Total	**6**	**129**	**636**	**763**	**281**
General Percentage	**0.30%**	**7.10%**	**35.00%**	**42.00%**	**15.50%**

Source: *Field Data*, 2021

Table 4 shows perception of graduates about their level of competencies on three main dimensions (academic oriented, work oriented and personal skills). technical skills, critical thinking, creativity, communication skills, IT skills and Entrepreneurial skills, were rated highly; all aspects of their work oriented skills including judgment and decision-making skills, Time Management skills, Teamwork

skills, Organizational skills, Ability to work under pressure, Emotional intelligence skills, and Complex problem-solving skills.

With respect to personal skills, results indicate that graduates were highly satisfied by the following abilities: ability to work independently, Human relations skills and Cognitive flexibility skills. Graduates were moderately satisfied by leadership skills and Negotiation skills acquired from their institutions. The majority of surveyed graduates were satisfied by their work oriented competencies, a small number of them rated the following skills poorly; communication skills, ability to work under pressure, negotiation skills and leadership skills. Additional skills, such as language, communication, ICT and other jobs related skills, and more professional experience were increasingly demanded by employers.

3.3. Factors that Negatively Affected Graduate's Performance at College

Technical and Vocational Education and Training (TVET) are an important subsector of the educational sector (UNESCO, ILO (2002), the study of technologies and related sciences; acquisition of practical skills, and attitudes; and understanding and knowledge related to occupations in various sectors of economic and social life, is a critical factor for human development, along with general education (Dania, Bakar, & Mohamed 2014). TVET can be formal, non-formal and informal learning which provides young people with the required knowledge and skills in the world of work (Billet (2011), Abeam and Omar (2019). Along with the mentioned mission and vision as well as goals of TVET education system, it is obvious to think its positive achievement but there might be also other factors that can affect graduates performance as assessed in survey and the results were portrayed by the table 6 below.

Table 4: Challenges that impact graduate's performance

Challenges that impact performance	Very High n(%)	High n(%)	Fair n(%)	Low n(%)	Very low n(%)
Equipment, tools, machinery for practical training at the institution	10(2.8%)	122(33.6%)	107(29.5%)	90(24.8%)	34(9.4%)
Safety conditions during practical training	11(3%)	106(29.2%)	132(36.4%)	80(22%)	34(9.4%)
Accommodation and meals	11(3%)	94(25.9%)	168(46.3%)	66(18.2%)	24(6.6%)
Hygiene and sanitation facilities	16(4.4%)	100(27.5%)	142(39.1%)	48(13.2%)	57(15.7%)
Infrastructure of training institution	22(6.1%)	109(30%)	112(30.9%)	80(22%)	40(11%)
Lecturers' qualifications	13(3.6%)	142(39.1%)	85(23.4%)	60(16.5%)	63(17.4%)
Classrooms and Training theatres	9(2.5%)	120(33.1%)	130(35.8%)	63(17.4%)	41(11.3%)
Training costs	10(2.8%)	95(26.2%)	168(46.3%)	67(18.5%)	23(6.3%)
Parental support	30(8.3%)	79(21.8%)	107(29.5%)	91(25.1%)	56(15.4%)
Cultural pressure	8(2.2%)	86(23.7%)	104(28.7%)	87(24%)	78(21.5%)
General Total	**139**	**931**	**1255**	**642**	**370**
General Percentage	**4.2%**	**27.9%**	**37.6%**	**19.2%**	**11.1%**

Source: Field Data, 2021

The table 5 shows results about students' perceptions on Challenges that impact their performance when they were in IPRCs. With regard to the overall perception, graduates have fair perception on various factors assessed as they are illustrated in the table 5 above. In-depth analysis of these factors, the results indicate that inadequate parental support impacts performance, infrastructure of training institution, equipment, tools, machinery for practical training at the institution, among others was high. Challenges of lack of Equipment, tools, machinery for practical training at the institution.
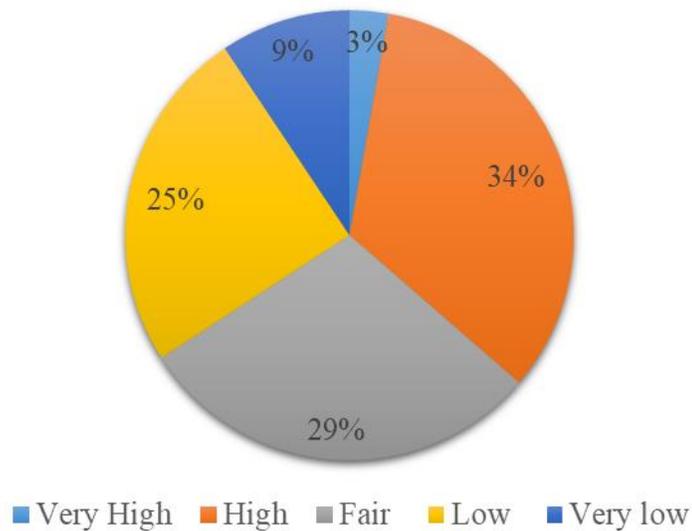
Figure 8. Access to Equipment, tools and Machinery as Challenge

Access to equipment, tools and machinery for practical training is perceived as an impediment to training by a significant percentage of students as evidenced from the pie chart above where 37% considered it as a challenge. This calls for a systematic mechanism to equip IPRCs and other TVET Institutions. The importance of tools to TVET learning has been noted before (Rufai et al 2013). The ministry of education and GoR are cognizant of this and provisions have been made in the ESSP.
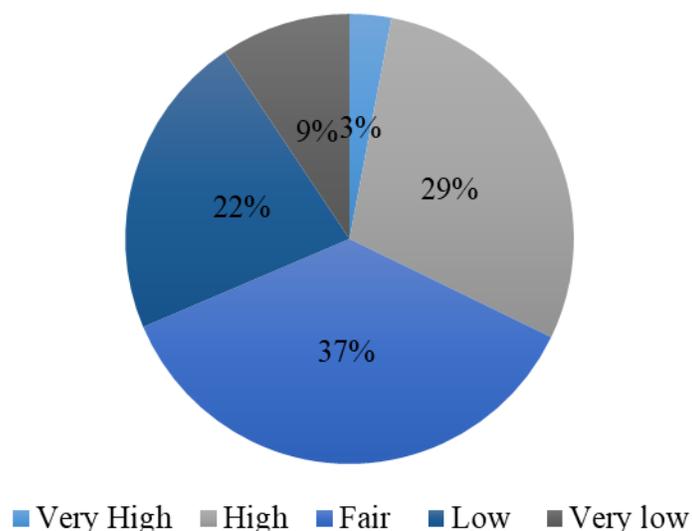
Figure 9. Safety conditions during practical training

TVET is concerned with the acquisition of knowledge and skills for the world of work in a safer way. Occupational safety and health (OSH) is very important because it seeks to ensure the protection and

promotion of safety and health at the workplace. Respondents identified it is one of the challenges, and significant where 32% of the respondents thought it as of major concern. Currently existing policy frameworks are under MININFRA and may not cover the TVET sub-sector.

Figure 10. Accommodation and meals
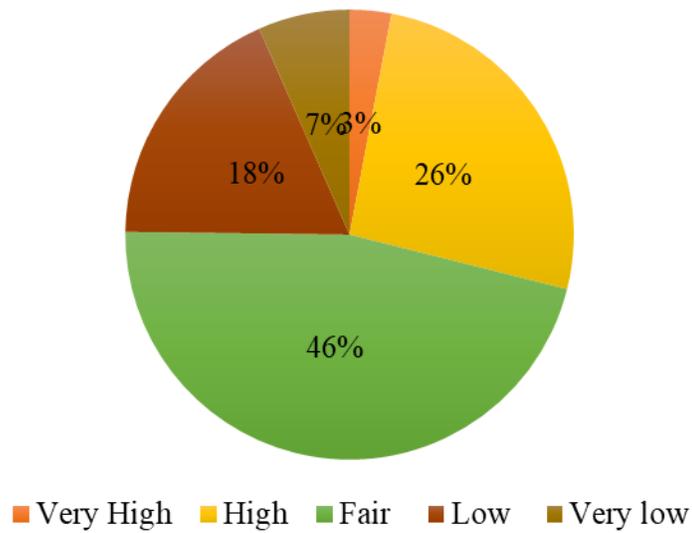
Figure 11. Hygiene and sanitation facilities
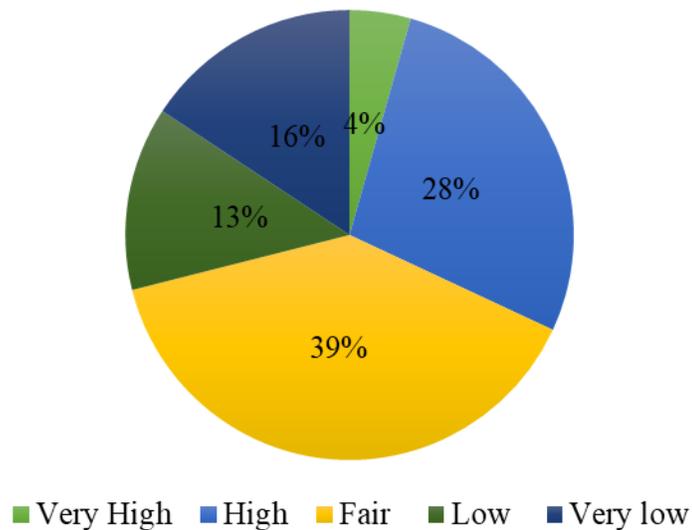
Figure 12. Infrastructure of training institution
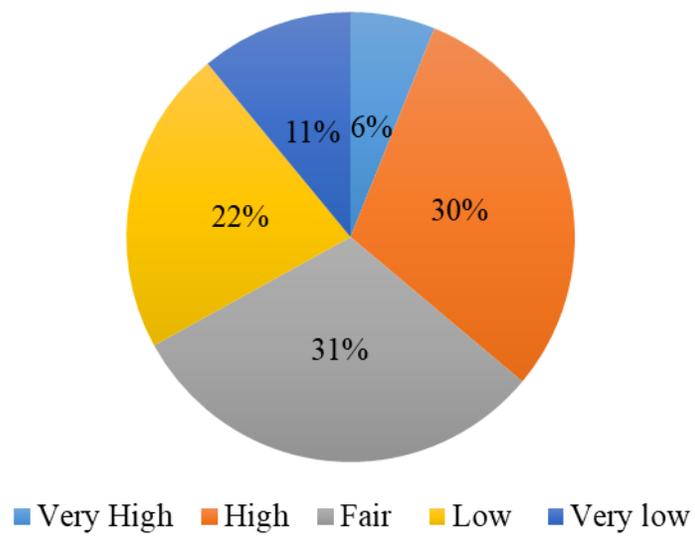
Figure 13. Lecturers' qualifications
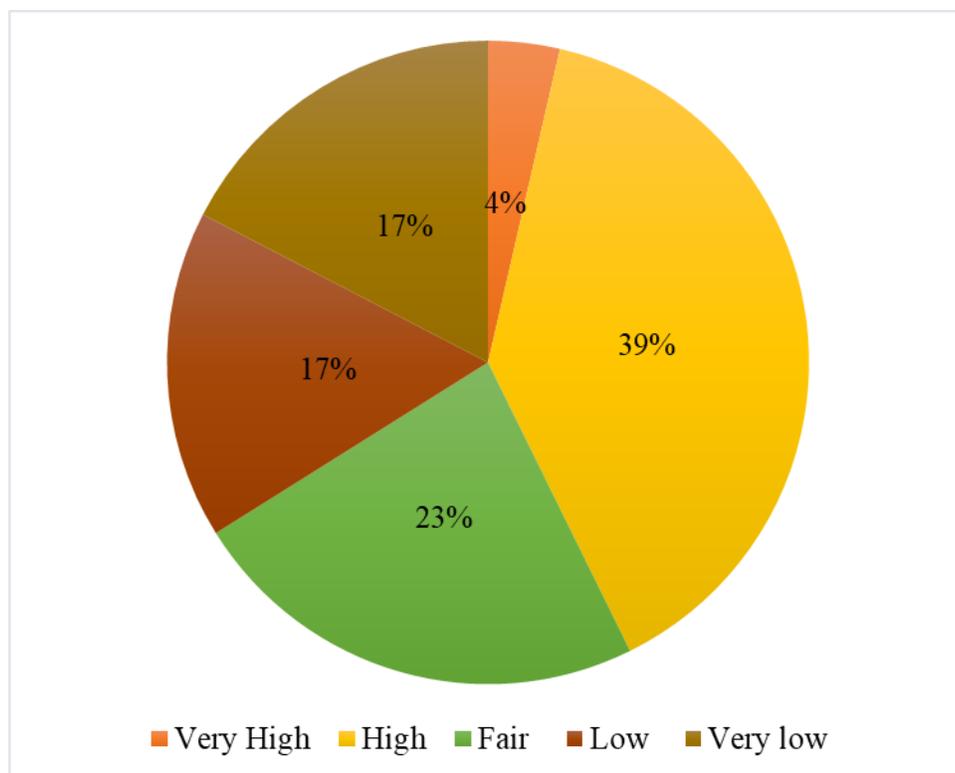
Figure 14. Classrooms and Training theatres

■ Very High	■ High	■ Fair	■ Low	■ Very low
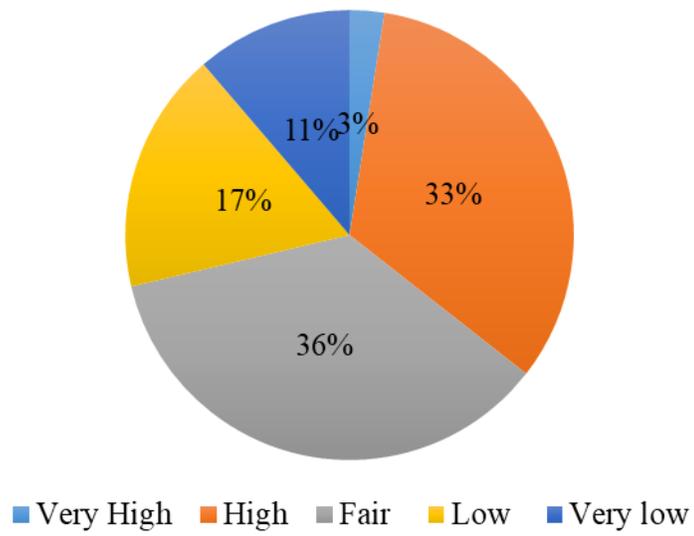
Figure 15. Training costs

■ Very High	■ High	■ Fair	■ Low	■ Very low
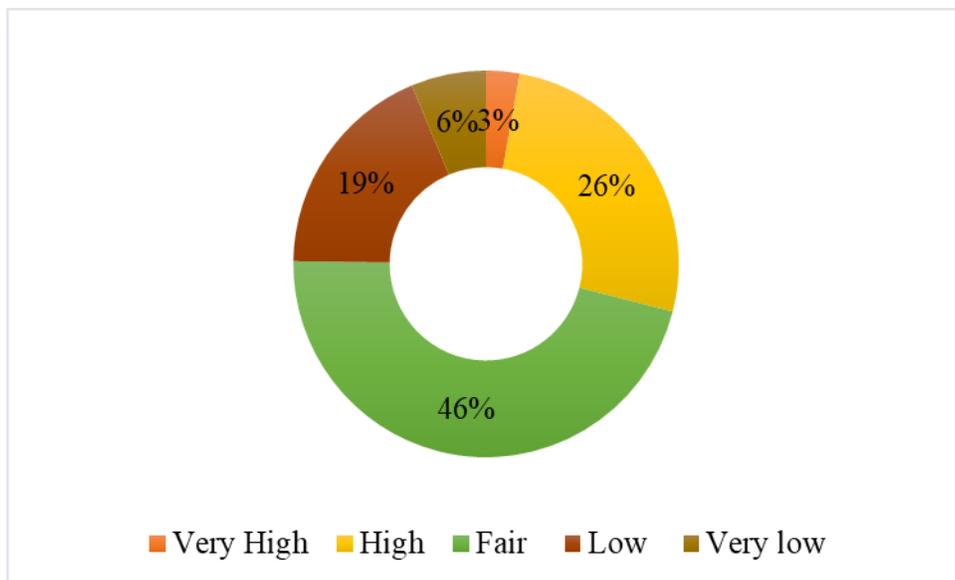
Figure 16. Parental support
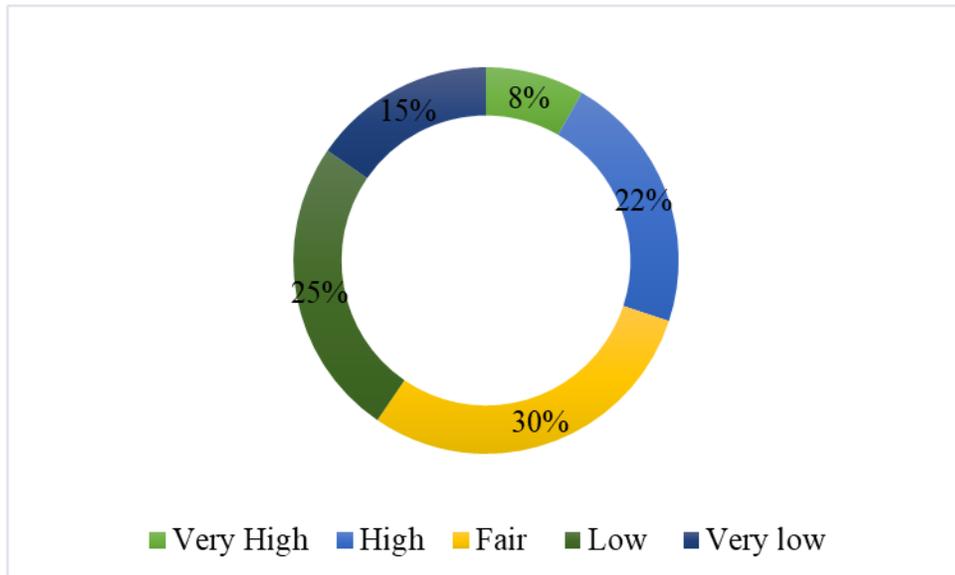
Figure 17. Cultural pressure
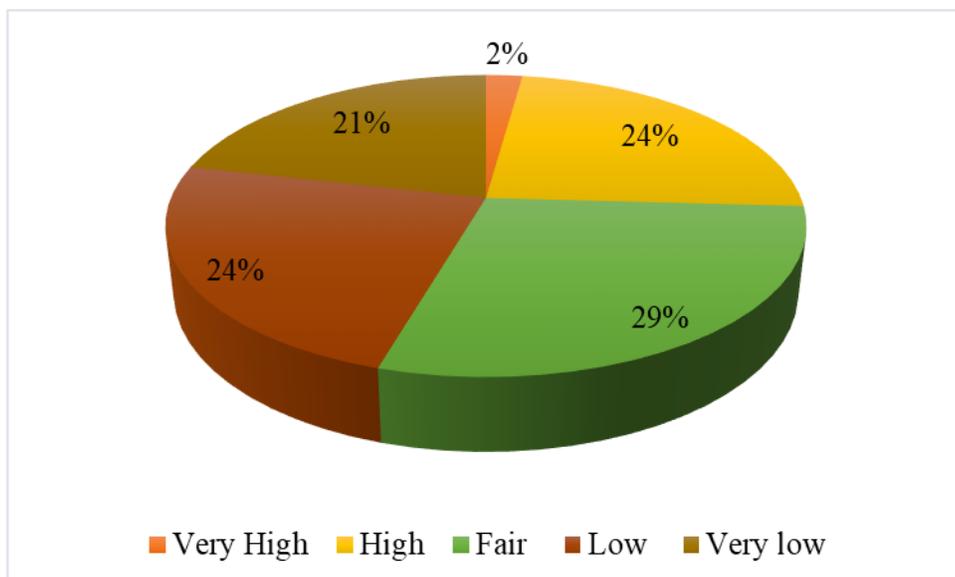
Figure 18: Perception of Respondents to challenges that impact performance
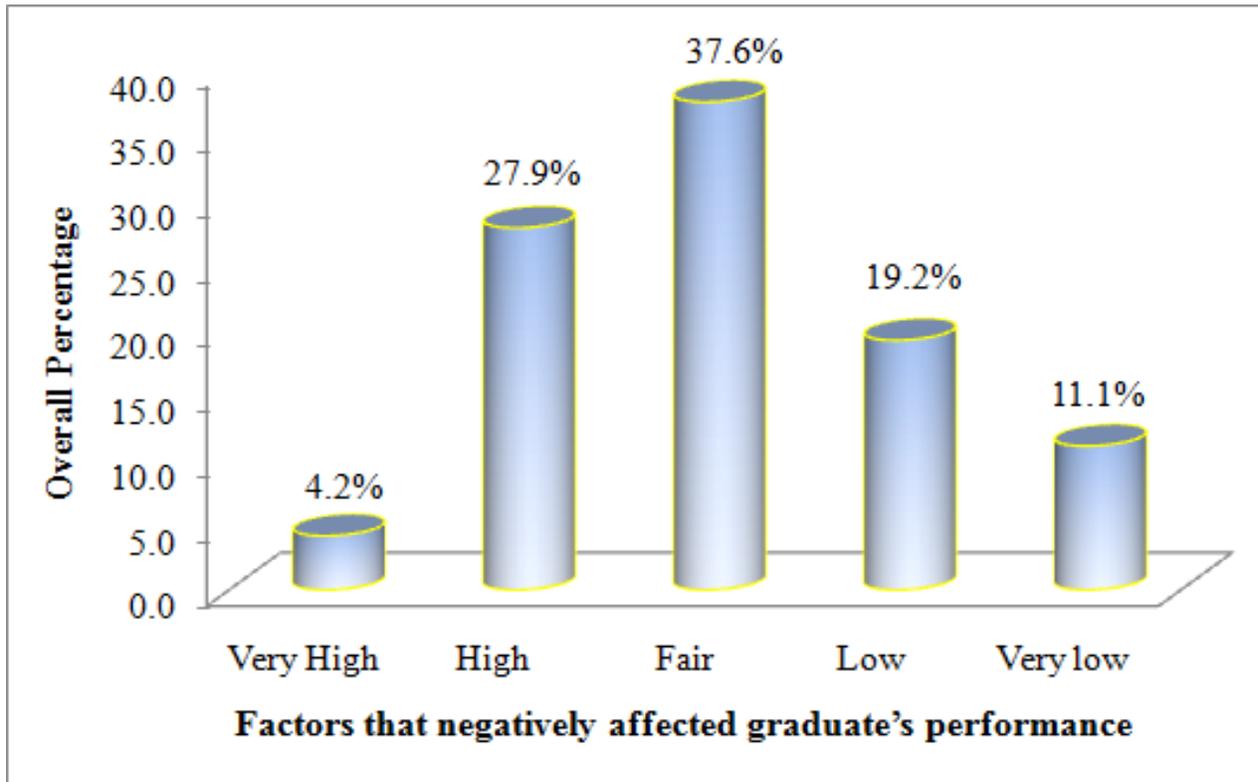
Source: Field Data, 2021

3.4. Graduate employment status

3.4.1. Status of Employment among Graduates since their graduation

One of the main objectives of this exercise was to know the employment status of these TVET graduates in the country. Here below is a table showing this employment status disaggregated by sex, status of disability and form of employment

Table 5: Current Status of Employment among Graduates since their graduation

Employment Status	Sex		Disability Status		Total
After Graduation	Male	Female	Yes	No	
Employed	136(37.5%)	54(14.9%)	6(1.7%)	184(50.7%)	190(52.3%)
Not Currently employed but he/she has got employment after graduation	94(25.9%)	72(19.8%)	6(1.7%)	160(44.1%)	166(45.7%)
Not employed since his/her graduation	4(1.1%)	3(0.8%)	0(0.0%)	7(1.9%)	7(1.9%)
Total	**234(64.5%)**	**129(35.5%)**	**12(3.3%)**	**351(96.7%)**	**363(100.0%)**

Source: Field Data, 2021

This tabulated data indicates that out of the 363 graduates of TVET registered, 190 (52.3%), were employed, 166(45.7%) were not currently employed but he/she has got employment after graduation while only 7(1.9%) did not get employment since their graduation. The assessment of sex in line with employment status showed that the number of employed male outcompete the number of female. With respect to availability of disability of graduates, the survey results revealed that the majority 351(96.7%) were not disabled whilst only 12(3.3%) were disabled. The study also identified that all twelve graduates living with disability (PLW) were employed or experienced any form of employment since their graduation.

The fact that around 98% of the surveyed graduates from RP-IPRCs have experienced employment is good indicator that skills acquired from Rwandan TVET schooling system are relevant to the current labour market. This relevancy needs to be maintained and aligned to how the labour market is evolving. This is will be in response to new and emerging technologies. TVET curricula should reflect the evolving situation to enable TVET graduates to acquire relevant skills on the labour market. The survey through interview with representatives of IPRCs described the effect of TVET training on Rwandan labour market. In this regard, they said that TVET graduates are found in different economic sectors, and they are contributing positively.

RP-IPRCs representatives added that most TVET need to boost the level of knowledge, skills and attitude as well as innovations and entrepreneurship for being conversant with labour market needs. The views of key informants from other stakeholders revealed that students are in general given the necessary and useful skills to get the job done. Moreover, there is always need of increasing the skills gained at school by the exposure to the industry. On the side of labour market demand, one of main challenges that graduates faced was insufficient training equipment, machinery and materials for practical training. The collaboration between companies and institutions is very important to bridge the observed practical skills gaps as well as new technological skills upgrading to ensure advanced level of competencies.

Figure 19. Graduates Employment by trade
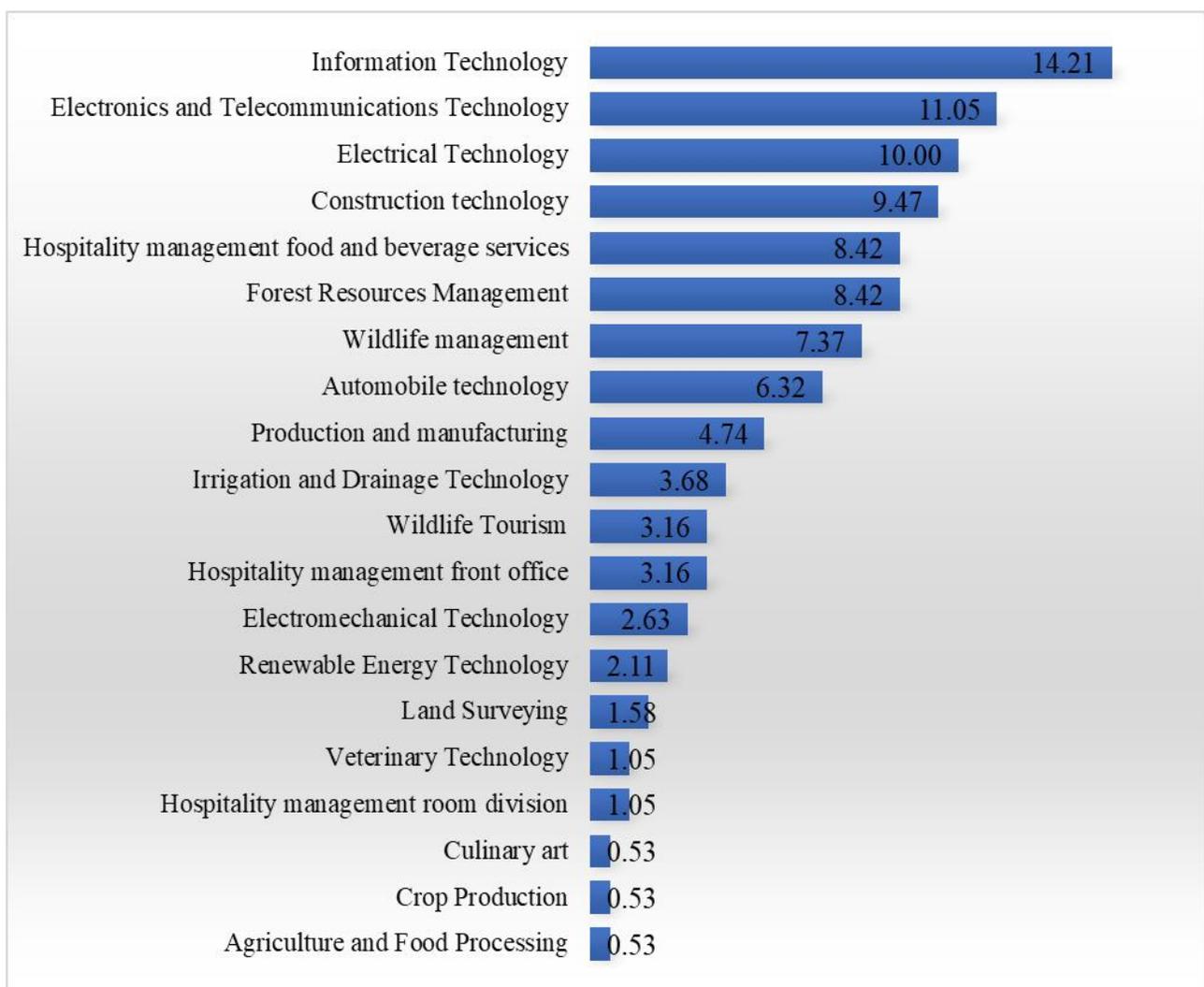
The survey results presented on the **figure 19** above show that some of the training trades offer high chance of employment while other have low employability rate. For example Information technology was found to have a high employment rate, with 14.21% of all employed graduates, followed by electromechanical technology with 11.05% of all employed graduate. The trades with a very low rate

of employment are agriculture and food processing, crop production and culinary art, with 0.53% of employed graduates each.

Figure 20. Graduates Employment by Economic sector
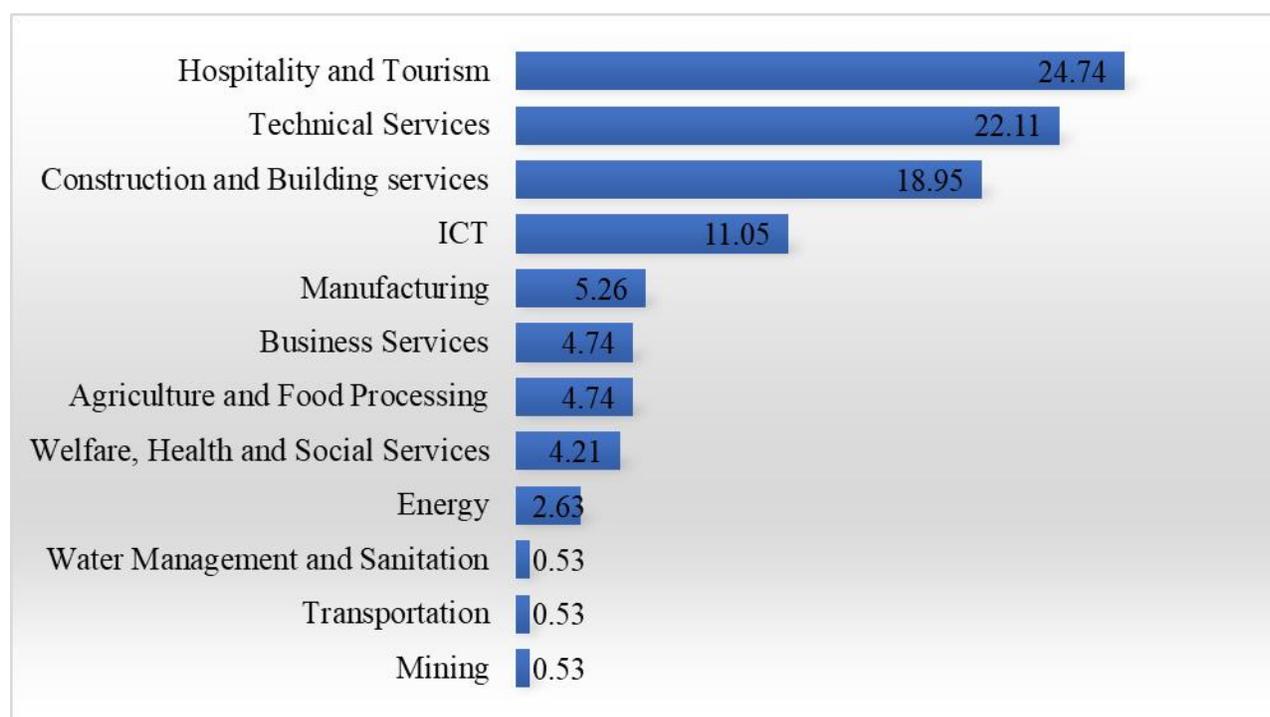
Source: Field Data, 2021

The figure 20 above shows that economic sectors do not absorb the graduates on the same rate. Example we have here in the employment rate for hospitality and tourism which accommodate 24.74% of all employed graduates, followed by technical services which host 22.11% of all employed graduates and Construction and building services sector comes at the third position employing 18.95% of all employed graduates. The economic sectors with low employment rate include but not limited to mining, transportation and water management and sanitation (all representing 0.53% of all employed graduates each). The low employment in mining may be justified by the fact that until 2021 IPRCs did not have the mining trade and at the time of this survey they did not yet graduated. In the transportation sector there you find graduate of TVET from IPRCs working as drivers because no trade directly related to transportation exist in current curricula. This also may be the same reason for water management and sanitation because IPRCs do not have specialized trade in this sector.

It is important to note that generally TVET graduates regardless of their trades are employed in 12 economic sectors as illustrated by the figure 18 above.

Table 6: Description of current situation without Employment

	Gender		Disability Status		Total
	Male	**Female**	**Yes**	**No**	
I continued studying / training	8(4.8%)	2(1.2%)	0(0.0%)	10(6.0%)	10(6.0%)
I am busy with my family	8(4.8%)	5(3.0%)	2(1.2%)	11(6.6%)	13(7.8%)
I am doing an internship	3(1.8%)	2(1.2%)	0(0.0%)	5(3.0%)	5(3.0%)
I am currently looking for employment	75(45.2%)	63(38.0%)	4(2.4%)	134(80.7%)	138(83.1%)
Total	**94(56.6%)**	**72(43.4%)**	**6(3.6%)**	**160(96.4%)**	**166(100.0%)**

Source: Field Data, 2021

As previously explained, it is clear that among 166 (45.7%) who were not currently employed but once experienced any form of employment after graduation, 94(56.6%) were male while 72(43.4%) were female. Again among them only 6(3.6%) have disability. Considering the description of the current situation of graduates without employment, 138(83.1%) are looking for employment, 13(7.8%) are busy with their families, 10(6.0%) continued their studies / training while 5(3.0%) were doing internship. Overall, a higher percentage of those looking for employment is linked to insufficient employment opportunities on the Rwandan labour market. Thus, RP-IPRCs also needed to integrate entrepreneurial culture among RP-TVET graduates.

Figure 21: Time spent on job searching
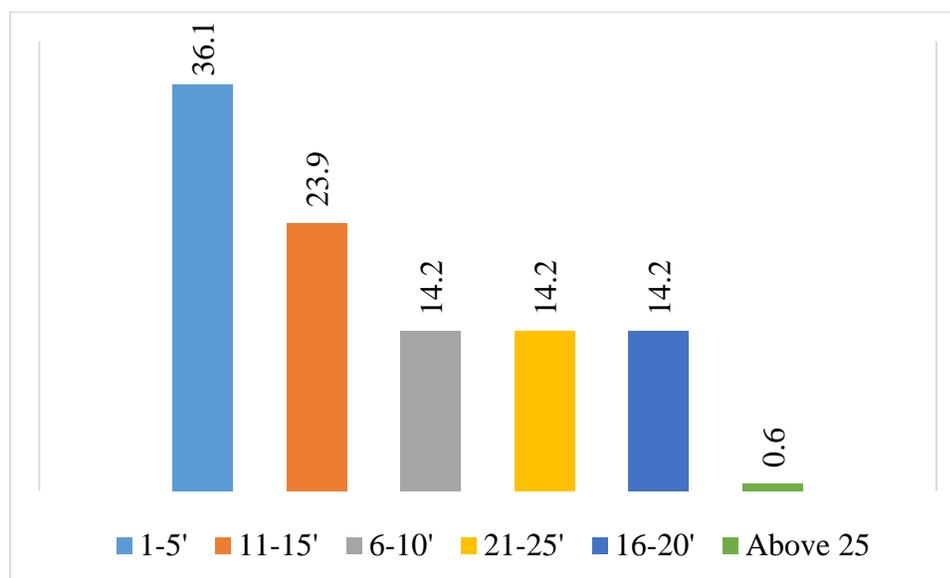
Source: Field Data, 2021

From this figure, it is evident that most of the surveyed graduates from RP-IPRCs who were not at the time of the study employed the majority of then spent 1 to 5 months searching for a job followed by those who spent 11 to 15 months searching for a job.

Table 7: Means used by unemployed graduates searching for Job

Means of finding Job	Number of graduates	Percentage
I applied for advertised job vacancies (e.g. internet, newspaper, advertisement boards etc.)	63	42.9
I contacted companies directly (Speculative application)	28	19.0
I launch advertisements by myself (e.g. internet, newspaper, advertisement boards etc.)	2	1.4
I was contacted by the company	11	7.5
I established contacts during an internship / cooperative training / a job after school	18	12.2
I used relations/personal contacts (e.g. parents, relatives, friends)	24	16.3
I sought assistance by the public employment agency	1	0.7
Total	**147**	**100.**

*Source: **Field Data**, 2021*

The survey explored the job search process. it was noted that that respondents applied for advertised job vacancies (e.g. internet, newspaper, advertisement boards etc.), Contact companies directly (speculative application) as well as use relations / personal contacts (e.g. parents, relatives, friends).

Table 8: Type of Employment and whether it is first job since graduation

| Job Category | Whether it is first job or not | | Total |
	Yes	No	
I have a permanent job	24(16.3%)	34(23.1%)	58(39.5%)
I have a temporary / fixed-term job	28(19.0%)	36(24.5%)	64(43.5%)
I do casual jobs	9(6.1%)	16(10.9%)	25(17%)
Total	61(41.5%)	86(58.5%)	147(100.0%)

Source: *Field Data*, 2021

From this table, it emerged that among employed graduates, 64(43.5%) were holding a temporary / fixed-term job (19% in their first job and 24.5% not in their first job since graduation), 58(39.5%) were holding a permanent job (16.3% were in their first job and 23.2% were not in their first job since graduation). It was also found that 25(17%) were doing casual jobs (6.1% in their first job and 10.5 not in their first job since graduation). Among these graduates, 61(41.5%) were at their first job after graduation contrary to their counterparts 86(58.5%)

During the survey, it was expressed by TVET graduates, there was a problem in getting employment because some employers expressed that they would prefer getting some people outside TVET institutions and train them and pay them a little money instead of getting TVET graduates who will require a lot of money, yet have low skills. This perception is associated with the availability of many informal workers doing hands on skills on the current labour market.

Thus it was clear that the informal sector itself has the means to increase the skills and qualification levels of employees and micro-entrepreneurs, and make a positive contribution to their working conditions and the profitability of their activities. It is on this basis that RP-IPRCs through both formal and informal sectors have potential stakeholders in the journey of developing highly qualified hand-on skills employees on the labour market.

Figure 22. Source of Start-up Capital for self -employment
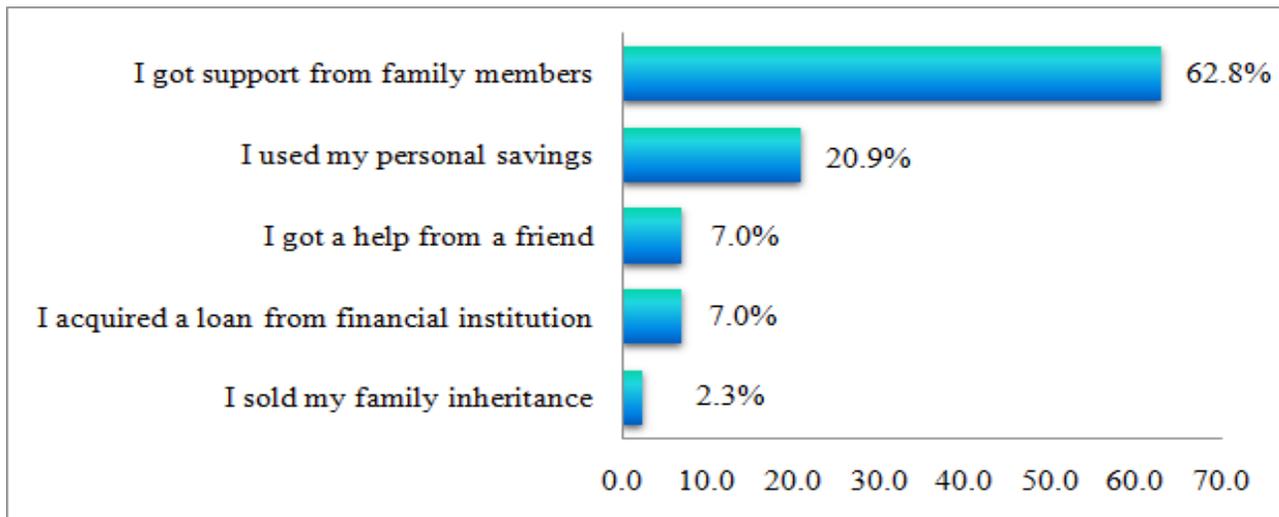
Source: *Field Data*, 2021

Figure 22 indicates that among graduates who have managed to create their own jobs, the most common source of start-up capital for self-employment, 62.8% was support by their family members while 20.9% used their personal savings. Only few of them approached financial institutions or got a help from a friend (7% for each), the survey showed that it is rarely among TVET graduates to have properties from family inheritance that can be sold for start-up capital as confirmed by 2.3% of the self-employed graduates.

Figure 23: The duration it took to get the current job
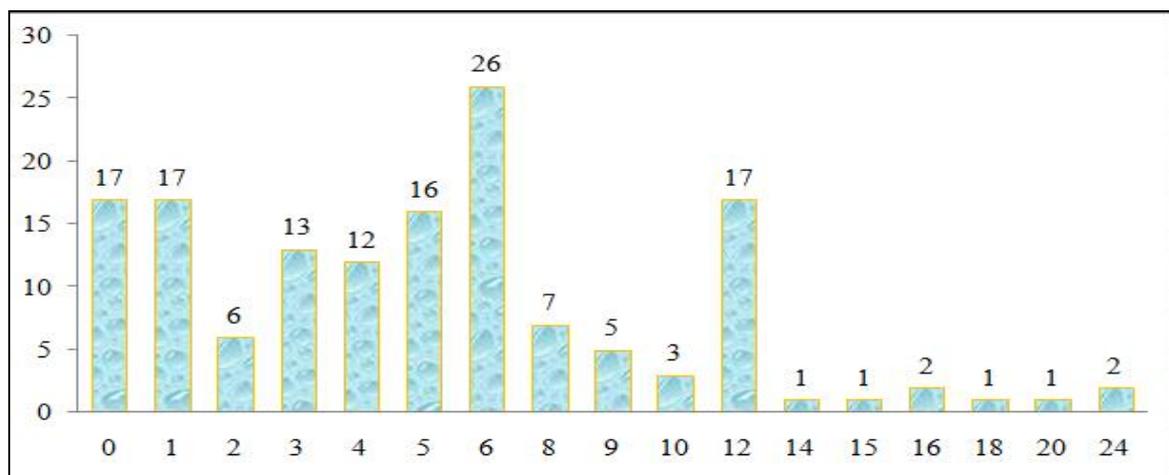
*Source: **Field Data**, 2021*

The survey went further to analyse the time it took to get the current job for TVET graduates. It is in this regard that the figure 23 depicted that the majority of TVET graduates took 6 months, followed by 12 months to get current jobs. In this assessment, it was also found that there were a significant number of graduates who got their jobs within a period of less than one month after graduation.

Table 9: Employment based on a written contract or agreement

Sex	Employment based on a written contract or agreement		Total
	Yes	**No**	
Male	74(50.3%)	37(25.2%)	111(75.5%)
Female	29(19.7%)	7(4.8%)	36(24.5%)
Total	**103(70.1%)**	**44(29.9%)**	**147(100.0%)**

*Source: **Field Data**, 2021*

A significant percentage 103(70.1%) of TVET graduates who were employed said that they had written or oral agreement whilst another considerable proportions 44(29.9%) did not have any form of agreement either written or oral. With respect to gender disaggregation, male dominate female since they represented 50.3% of the total number of employed TVET graduates under contract or agreement while female were 19.7%.

Having employees without a work agreement is another cause of increasing informal employment. It is also not questionable that these employees do not have access to employment benefits.

Figure 24: Type of Employer for employed graduates
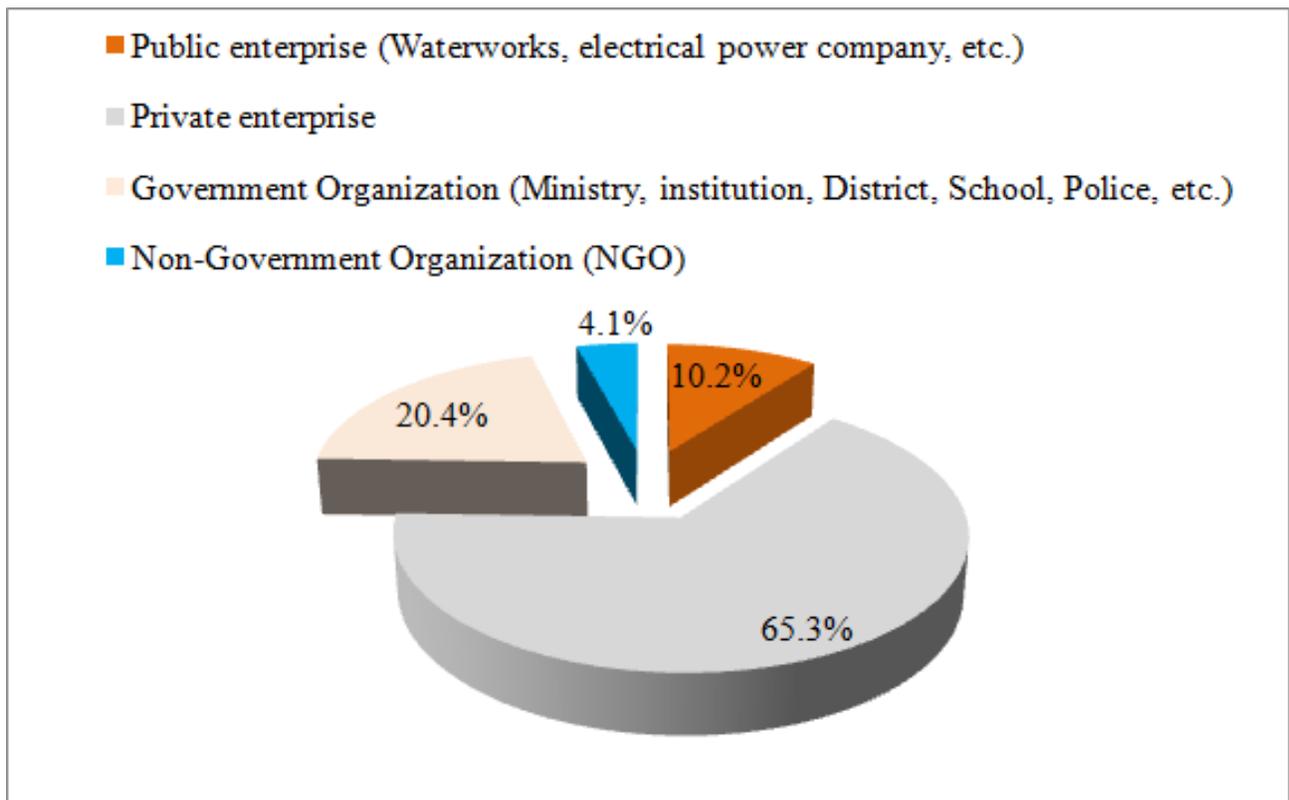
*Source: **Field Data**, 2021*

Figure 24 depicted that among employed TVET graduates, 65.3% representing the majority were in employed in private sector. This category is followed by government organizations (20.4%) while public enterprises account for 10.2% and Non-Government Organizations occupied around 4.1% of graduates. It is important to note that having many TVET graduates in the private sector implies both the needs of TVET graduates in the private sector and also the ability of TVET graduates to integrate there. This is linked to the fact that TVET sector in employment is widely dominated by private companies operating in different economic sectors.

Table 10: Importance of training aspects for current employment

Training aspect	Very Important n(%)	Important n(%)	Don't know n(%)	Not important n(%)	Not at all important n(%)
Matching professional qualification	63(42.9%)	73(49.7%)	5(3.4%)	3(2%)	3(2%)
Reputation of TVET college that I graduated from	49(33.3%)	51(34.7%)	17(11.6%)	12(8.2%)	18(12.2%)
The grades in my diploma	57(38.8%)	66(44.9%)	9(6.1%)	8(5.4%)	7(4.8%)
Deficit of employees in my profession	21(14.3%)	60(40.8%)	29(19.7%)	11(7.5%)	26(17.7%)
Social and individual competencies	41(11.3%)		84(23.1%)	13(3.6%)	9(6.1%)
Professional connections	36(24.5%)	73(49.7%)	7(4.8%)	19(12.9%)	12(8.2%)
General Total	**267**	**323**	**144**	**66**	**75**
General Percentage	**30.5%**	**36.9%**	**16.5%**	**7.5%**	**8.6%**

Source: Field Data, 2021

During this tracer survey, TVET graduates have been asked about the importance of training aspects for current employment. It is in this regard, the table 11 and figure 23 below showed that in general the majority of graduates agreed that training aspects were very important for current employment/job. Though they are all important, the following aspects: matching professional qualification, deficit of employees in the profession and professional connections were the most important.

Figure 25: Importance of training aspects for current employment
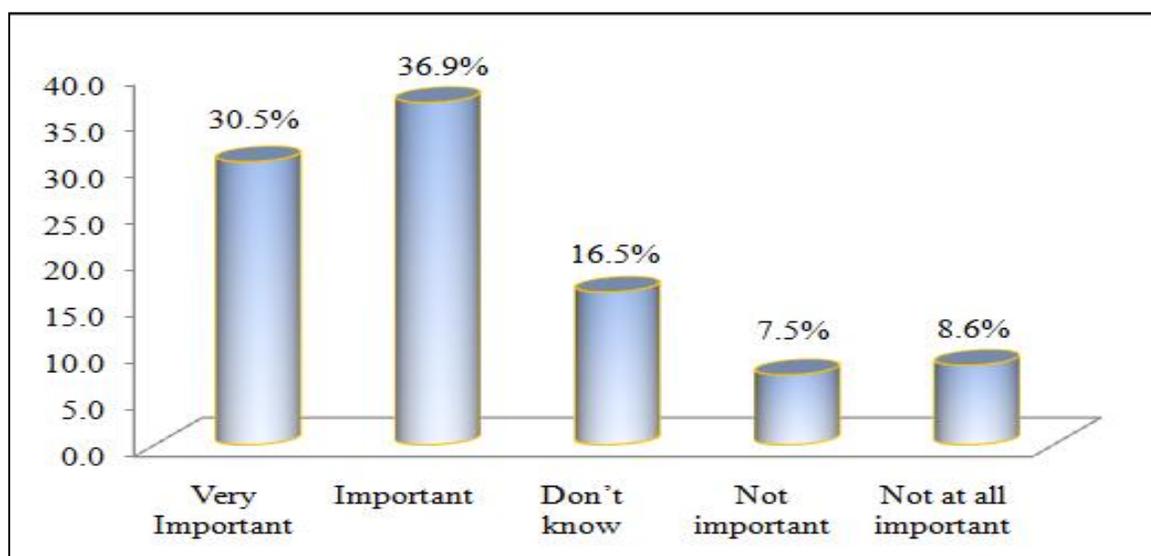
Source: Field Data, 2021

Table 11: Average hourly Working per day

Mean	Median	Mode	Std. Deviation	Minimum	Maximum
8.517	8	8	2.01145	3	20

*Source: **Field Data**, 2021*

Table 12 presents the average hourly working per day for employed TVET graduates where they worked normal working hours compared to other employees in normal circumstances. But it has been also observed that among them we have time related underemployment specifically from those who were working for at least 3 hours per day. On the other hand, in the surveyed TVET graduates, there were some of them who were exploited (working overtime).

3.5. Employers Satisfaction Findings

Technical and Vocational Education and Training (TVET) was introduced to equip people with the skills that enable them to work in an occupation, either for themselves or a company. For young people in particular it can be a direct bridge between education and employment. It is with this regard that this section of the report assessed employers' satisfaction with TVET graduates in terms of knowledge, understanding, attitudes, values, skills and competences.

3.5.1. Employers 'Profile

In this section of the report, the emphasis was put on two main aspects of employers. Those aspects are the age range of companies, company size and companies' area of operation.

Figure 26: Age range of companies
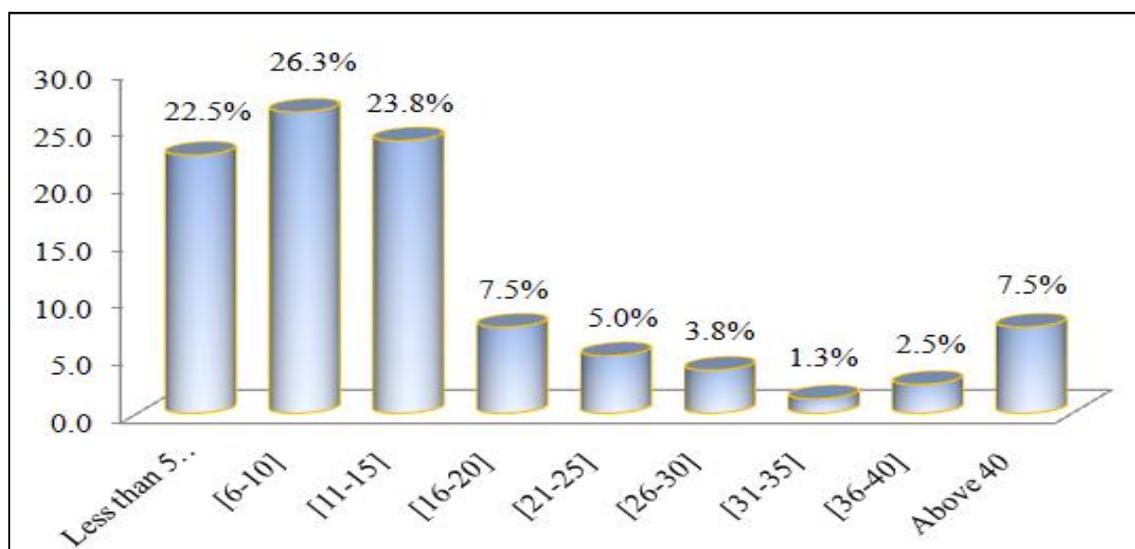
Source: Field Data, 2021

From the results, it is evident that the majority of TVET graduates work in companies that have 6 to 10 years in operation, this is confirmed by 26.3% of the surveyed employers in their respective companies. This age category of employers is followed by 23.8% who confirmed that the said that the companies have 11 to 15 years in operation. The survey results also showed that there were even companies that have less than 5 years in operation and companies with more than 40 years in operation. These findings are showing that new companies are starting justified by the fact that the majority of companies are less than 15 year in operation.

Figure 27: Company Size
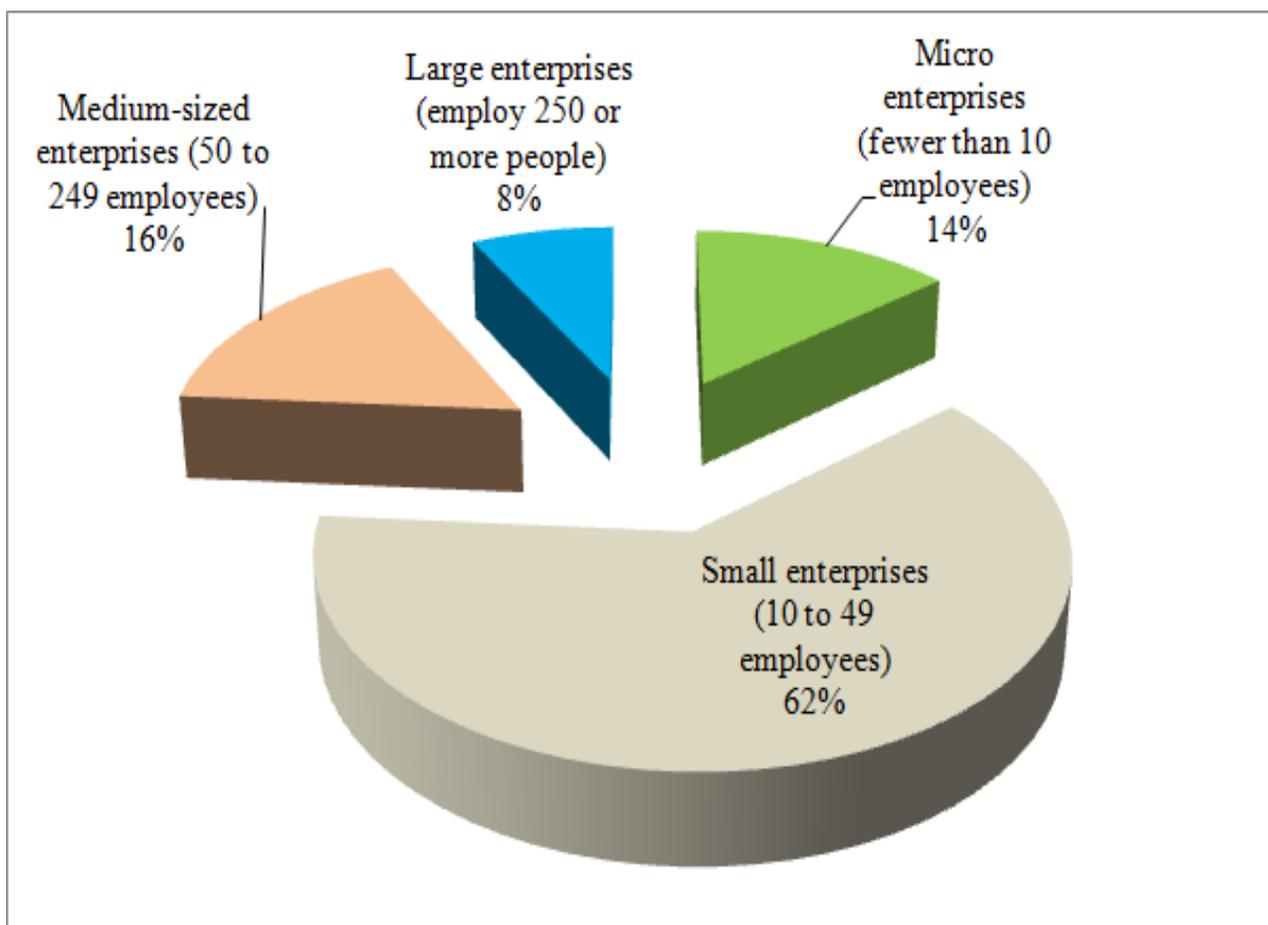
Source: Field Data, 2021

Figure 27 further indicates that the majority 62% of employers are companies are small enterprises (they have between 10 to 49 employees). This shows that many IPRCs graduates are employed in small enterprises. The category of small enterprises is followed by 16% of employees who have medium sized companies. It has been also shown that IPRCs graduates are less employed in large size enterprises, 8% of employers have large enterprises that employ 250 or more people. Again, the survey result also indicated that a considerable number of graduates are employed in micro enterprises because 14% of employers said that they have micro enterprises.

3.5.2. Knowledge and understanding of graduates

A distinct feature for TVET is that it can be provided at all stages of the learners. This makes it easy to not only respond to different skills needs of enterprises but also to training needs of learners from different academic backgrounds and prepare them for gainful employment and sustainable livelihoods[13]. One of the aspects needed by employers are quality of graduates in terms of knowledge and understanding of graduates.

Accordingly this survey analysed the perception of employers on graduates' knowledge and understanding of their employment requirements and associated factors towards best performance.

Table 12: Company' satisfaction with the graduates' knowledge and understanding

Elements of Knowledge and understanding	Very satisfied n(%)	Satisfied n(%)	Moderately satisfied n(%)	Not satisfied n(%)	Not satisfied at alln(%)
Understanding of job-related information	8(10%)	53(66.3%)	17(21.3%)	2(2.5%)	-
Specific technical knowledge required for the job	11(13.8%)	42(52.5%)	25(31.3%)	2(2.5%)	-
Knowledge of specific computer applications required for job	8(10%)	34(42.5%)	31(38.8%)	5(6.3%)	2(2.5%)
Understanding of organizational context	8(10%)	41(51.3%)	29(36.9%)	2(2.5%)	-
Understanding of international business environment	1(1.3%)	31(38.8%)	41(51.3%)	4(5%)	3(3.8%)
Understanding of systems and organizations	3(3.8%)	38(48.1%)	33(41.8%)	4(5.1%)	1(1.3%)
Knowledge in employee's field of study	11(13.8%)	41(51.3%)	25(31.3%)	3(3.8%)	-
General Total	**50**	**280**	**201**	**22**	**6**
General Percentage	**8.9%**	**50.1%**	**36.0%**	**3.9%**	**1.1%**

*Source: **Field Data**, 2021*

Findings of the tracer survey as depicted by the table 15 and figure 13 about company' satisfaction level Vis à Vis the knowledge and understanding of IPRCs' graduates showed that in general, employers in their respective companies were satisfied with knowledge and understanding of IPRCs'

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[13] Afeti, G. (2009). Technical and Vocational Education and Training for Industrialization. Paper presented at the African Research and Resource Forum 2009, Nairobi Kenya. Africa: Juta &Co. Ltd.

graduates. As it is obviously seen in the table 12, employers were particularly satisfied by graduates 'understanding of job-related information, understanding of organizational context, knowledge in employee's field of study and specific technical knowledge required for the job. On the other hand, employers were not satisfied by understanding of international business environment.

Figure 28: Overall Company' satisfaction with the IPRCs graduates' knowledge
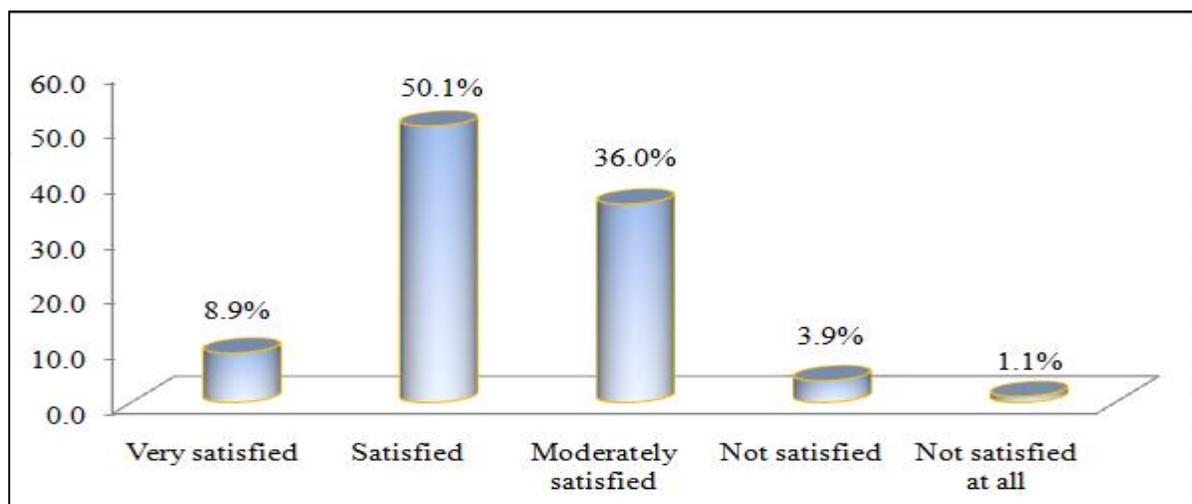
Source: *Field Data*, 2021

3.5.3. Graduates' attitudes and values

Occupational Standards describe the competence a person has to reach in order to be considered as "qualified" at a given level in a given field. Competence includes skills, knowledge and attitudes required to perform a specific occupation[14]. The undertaken tracer survey assessed the perception of employers about attitudes and values of TVET graduates.

Table 13: Company' satisfaction level of graduates' attitudes and values

Graduates' attitudes and values	Very satisfied n(%)	Satisfied n(%)	Moderately satisfied n(%)	Not satisfied	Not satisfied at all n(%)
Integrity	16(20%)	48(60%)	15(18.8%)	1(1.3%)	
Commitment to service	18(22.5%)	45(56.3%)	16(20%)	1(1.3%)	
Punctuality	29(36.3%)	41(51.3%)	9(11.3%)		1(1.3%)
Diligence Hard work	18(22.5%)	44(55%)	16(20%)		2(2.5%)
Honesty	13(16.3%)	55(68.8%)	11(13.8%)	1(1.3%)	
Compassion	4(5%)	54(67.5%)	20(25%)	2(2.5%)	
Confidence	7(8.8%)	52(65%)	21(26.3%)		
General Total	**105**	**339**	**108**	**5**	**3**

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[14] *Technical and Vocational Education and Training (TVET) Policy in Rwanda (2008)*

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General Percentage	18.8%	60.5%	19.3%	0.9%	0.2%

*Source: **Field Data**, 2021*

The survey results as described by the table 14 and figure 14 indicated that the majority of employers were satisfied by the level of graduates' attitudes and values. The table 14 highlights that employers are particularly satisfied by honesty, integrity, compassion, confidence, commitment to service of graduates among others. Only very few employers are not satisfied by punctuality and diligence hard work. This gives a task for RP-IPRCs to reinforce attitudes and values of TVET graduates for labour market employability and productivity.

Figure 29: Overall Company' satisfaction level of graduates' attitudes and values
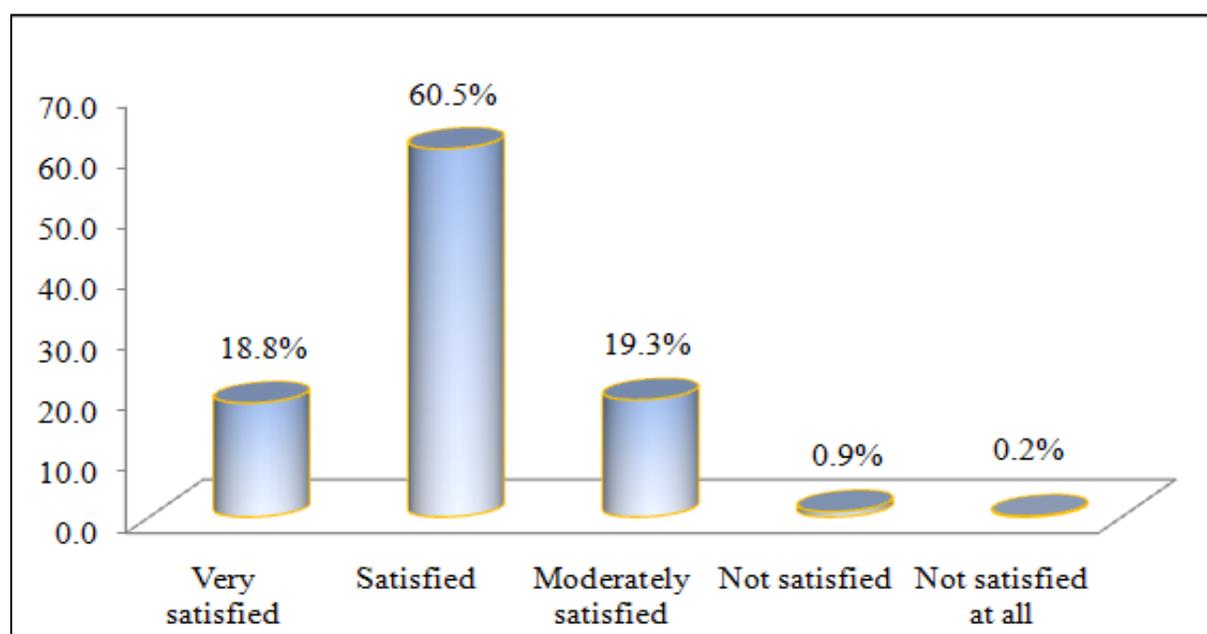
*Source: **Field Data**, 2021*

3.5.4. Skills and competences of graduates

The fundamental of TVET is based on the integration of knowledge and skills which hold the principle of holistic education approach.[15] Employers expect graduates to have employability skills. Employability skills refer to non-technical skills needed to effectively function as an employee and work for the betterment of oneself and the organization. Yorke (2006) defined employability skills as a set of skills, knowledge, and personal attributes that makes an individual more likely to secure

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[15] *Omar, Muhd Khaizer, Farah Nadia Zahar, and Abdullah Mat Rashid. "Knowledge, skills, and attitudes as predictors in determining teachers' competency in Malaysian TVET institutions." Universal Journal of Educational Research 8.3C (2020): 95-104.*

and be successful in their chosen occupation(s), to the benefit of themselves, the workforce, the community, and the economy.

The basic objectives of TVET education are to produce functional graduates with knowledge and skills, both in terms of technical abilities and in terms of employability skills (Bakar, 2013). The analysis of the undertaken tracer survey went further to find out the perception of employers' satisfaction level of graduates' skills and competencies. This has been achieved through academic oriented skills, work-oriented skills and personal skills. All these skills are skills relevant to the labour market.

Table 14: Company's satisfaction level of Graduates' Skills and competencies

Skills and competencies of graduates	Very satisfied n(%)	Satisfied n(%)	Moderately satisfied n(%)	Not satisfied n(%)	Not satisfied at all n(%)
Academic oriented skills					
Technical skills	14(17.7%)	45(57%)	16(20.3%)	4(5.1%)	-
IT skills	6(7.5%)	39(48.8%)	24(30%)	11(13.8%)	-
Entrepreneurial skills		36(45%)	32(40%)	10(12.5%)	2(2.5%)
Communication skills	9(11.3%)	40(50%)	23(28.8%)	8(10%)	-
Risk taking	-	37(46.3%)	38(47.5%)	5(6.3%)	-
Creativity or creative mind	5(6.3%)	38(47.5%)	32(40%)	4(5%)	1(1.3%)
Critical thinking	5(6.3%)	38(47.5%)	35(43.8%)	4(5%)	-
General Total	**39**	**273**	**200**	**46**	**3**
General Percentage	**7.0%**	**48.7%**	**35.7%**	**8.2%**	**0.5%**
Work-oriented skills					
Judgment and decision-making skills	5(6.3%)s	31(38.8%)	41(51.3%)	3(3.8%)	-
Time Management skills	18(22.5%)	39(48.8%)	23(28.8%)	-	-
Teamwork skills	26(32.5%)	32(40%)	20(25%)	2(2.5%)	-
Organizational skills	10(12.5%)	45(56.3%)	24(30%)	1(1.3%)	-
Ability to work under pressure	12(15%)	37(46.3%)	30(37.5%)	1(1.3%)	-
Emotional intelligence skills	3(3.8%)	41(51.3%)	33(41.3%)	3(3.8%)	-
Complex problem-solving skills	4(5%)	32(40%)	41(51.3%)	3(3.8%)	-
General Total	**78**	**257**	**212**	**13**	**-**
General Percentage	**13.9%**	**45.9%**	**37.9%**	**2.3%**	**-**
Personal skills					
Work independently	12(15%)	43(53.8%)	22(27.5%)	3(3.8%)	-
Negotiation skills	5(6.3%)	30(37.5%)	36(45%)	9(11.3%)	-
Leadership skills	4(5%)	41(51.3%)	31(38.8%)	4(5%)	-
Human relations skills	12(15%)	39(48.8%)	28(35%)	1(1.3%)	-
Cognitive flexibility skills	7(8.8%)	46(57.5%)	26(32.5%)	1(1.3%)	-
General Total	**40**	**199**	**143**	**18**	**-**
General Percentage	**10%**	**49.7%**	**35.7%**	**4.5%**	**-**

*Source: **Field Data**, 2021*

In line with the assessment of the perception of employers with regard to satisfaction level of graduates' skills and competencies as depicted by the table 15 and the figure 15, results showed that the majority of employers are moderately satisfied and satisfied with skills and competencies of

TVET graduates. With respect to specificity, in terms of academic oriented skills, employers were mainly satisfied by technical skills and communication skills.

On the side of work-oriented skills employers were comfortable with TVET graduates' time management skills, teamwork skills and ability to work under pressure while on the side of personal skills employers through their companies appreciate the following abilities on TVET graduates: Work independently, Leadership skills and Cognitive flexibility skills. In a view of the fact that companies/ industry are the end users of the TVET graduates, collaborations in curriculum design helps to incorporate those aspects employers expect to find among the graduates when they employ them.

Figure 30: Overall Company's satisfaction level of graduates' skills and competencies
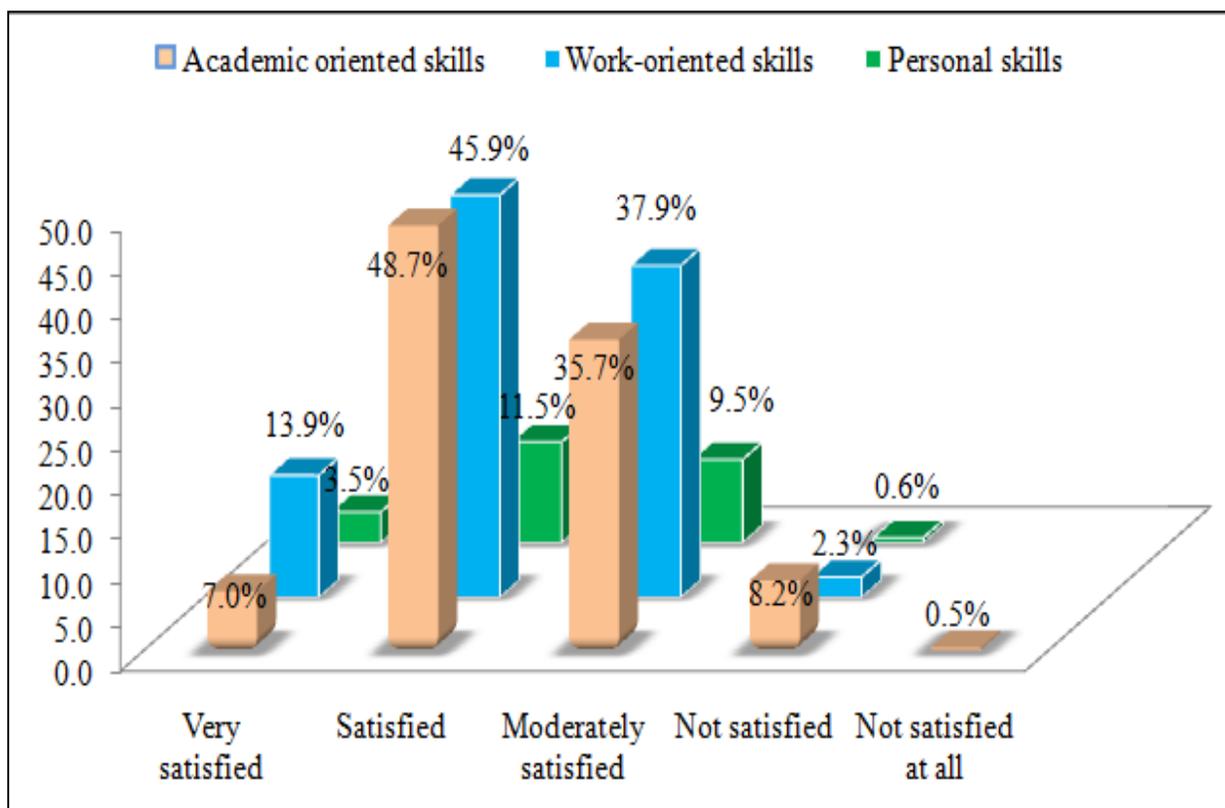
*Source: **Field Data**, 2021*

The results of the survey took into consideration employers 'personal suggestion for TVET higher learning institution to produce competent graduates. In this regard, the main points in their suggestion turned around the aspects:

✓ Intensive training in communication skills and customer care;

✓ More practical training at the work place;

✓ Instilling among TVET graduates innovation culture;

✓ Provision of enough skills in IT related programs;

✓ Continuous curriculum review and alignment with current and future need of labour market.

3.5.5. Industrial attachment and its associated challenges

Industrial attachments usually refer to the formal placement of trainees in the workplace to facilitate the achievement of specific learning outcomes that would potentially lead to their employability on completion of a training program. Industrial attachments typically involves training providers and industries (through employers) forming partnerships to offer situated learning opportunities in the workplace so that learners and technical and vocational education and training (TVET) practitioners have access to authentic experiences that only the workplace can offer[16]. It is in this context, the undertaken tracer survey tried to find out contribution of employers through their companies towards TVET graduates that are successful on labour market.

Table 15: Challenges faced by companies in accommodating students for industrial attachment

		Whether company accommodate students for internship or not		Total
		Yes	No	
Do you face any challenge implementing students' industrial attachment?	Yes	22(27.5%)	5(6.2%)	27(33.8%)
	No	22(27.5%)	31(38.8%)	53(66.2%)
Total		44(55.0%)	36(45.0%)	80(100.0%)

*Source: **Field Data**, 2021*

As depicted by the table 16 about accommodation of students for industrial attachment and whether the companies faced challenges in implementing industrial attachment, showed that the majority of the surveyed employers 44(55.0%) accommodate students for industrial attachment whereas 36(45.0%) did not. The table 16 also highlights that among companies that accommodate students for industrial attachment, companies that faced challenges in implementing industrial attachment are equal to those who do not (27.5% each).

Regarding challenges faced by companies while hosting students for internship, these were expressions of host companies:

✓ Sometimes internees do not understand the requirements of work place learning;

✓ Sometimes internees are not interested;

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[16] https://link.springer.com/chapter/10.1007/978-1-4020-5281-1_91 Accessed on July 12, 2021

- ✓ Some internees do not respect regulations;

- ✓ Insufficiency of equipment;

- ✓ Sometimes internees get tired easily;

- ✓ Management of the internees is hard;

- ✓ Insufficient materials and infrastructure to support them;

- ✓ sometimes the graduates come in the industrial attachment with low capacity especially how to manage equipment;

- ✓ Sometimes internees don't bring protective clothes and we don't always have enough that will fit all of them;

- ✓ Lack of enough utilities for all the internees;

- ✓ Many internees want to be placed in Kigali site;

- ✓ No insurance for damage caused by internees.

4. CONCLUSION AND RECOMMENDATIONS

Rwanda needs highly-skilled workforce to support growth of the industry in its changing labour market and tremendous technological change. It is in this perspective that TVET is concerned with the acquisition of knowledge and skills for the world of work. RP-IPRCs through its introspective process and in partnership with relevant stakeholders has initiated this tracer survey to assess the current status of graduates from 1st, 2nd and 2rd RP-IPRCs graduations and their employer satisfaction, to achieve the objectives of this survey, a sample of 363 TVET graduates together with 80 companies of employers provided appropriate data for analysis. The following key findings are presented objective wise.

4.1. Key findings

The first specific objective of this tracer survey was an evaluation of employability rate of graduates and job creation status as well as financial support for starting their own businesses. The survey results revealed that 52.3 % of the surveyed TVET graduates were employed at the time of the survey, 45.7% were not employed at the time of the survey but had previously been employed after their graduation, while only 1.9% had never been employed since their graduation. Among those who had been employed, 11.8% had started up their own jobs, with the support of family members and/or with personal savings.The second specific objective of the survey was about comparing the employability of graduates by gender and people with disabilities. The results of the survey indicated that among 52.3% equivalent to 190 in total out 363 graduates who had employment, male graduates represented 37.5% while female graduates corresponded to 14.9% and people with disabilities were 6 corresponding to 1.7% of the surveyed TVET graduates.

The third specific objective of the survey was to assess the trends and changes of employment and employer satisfaction against the current labor market dynamics. For this case, the majority of employers were moderately satisfied and satisfied with skills and competencies of TVET graduates. On the other hand, employers were not satisfied with punctuality and diligence hard work as aspects of graduates 'attitude and values.

The fourth specific objective was to assess the impact of training programs on Graduates performance during employment. The survey results showed that in general the majority of graduates confirm that training aspects were important and very important for their current employment/job. Though they are all important, specificity may be attributed to the following aspects: matching professional qualification, deficit of employees in the profession and professional connections.

The fifth specific objective was to find out the time taken between graduation and employment. The survey results found that for the majority of TVET graduates it took them 6 months to get jobs. The long period was 12 months and short period was 1 moth.

The sixth specific objective was to determine the proportion of graduates in employment, unemployment and underemployment. For this objective, it was found that among the surveyed 363 TVET graduates, 52.3% were in employment during the time of the survey while 47.6% were unemployed. With regard to time related underemployment, 16.3% equivalents to 24 TVET graduates were working less than 8 hours per day.

The seventh specific objective was to evaluate satisfaction of employers and graduates in terms of their knowledge, skills and attitude on the jobs; In line with the perception of employed graduates through academic oriented, work oriented and personal skills considered dimensions, the survey results indicated that graduates were mainly moderately, highly and very high satisfied. Specifically by the following competences that are helping them to succeed on labour market: Technical skills, Critical Thinking, Creativity or creative mind, Communication skills, IT and Entrepreneurial skills were highly and very highly appreciated, Judgment and decision-making skills, Time Management skills, Teamwork skills, Organizational skills, Ability to work under pressure, Emotional intelligence skills, and Complex problem-solving skills, Work independently, Human relations skills and Cognitive flexibility skills. Tough the majority of surveyed graduates were moderately, highly and very highly satisfied by the acquired competencies in RP-IPRCs. There were also other considerable proportion of TVET graduates who were poorly and fairly satisfied especially by communication skills, ability to work under pressure, negotiation skills and leadership skills.

The last specific objective was to identify the current gaps between TVET and labor market demands and propose strategic recommendations to improve individual training programs. The survey results through perception of employers indicated that TVET graduates generally had issues of communication skills, practice, and innovation culture. To overcome these issues, employers have suggested to RP-IPRCs to provide intensive training in communication skills and customer care, increase practical training at the work place, instilling among TVET graduates innovation culture and finally to continuously review and align curriculum with current and future need of labour market dynamics.

4.2. Recommendations

The findings of this tracer study provided some invaluable insights to improve the linkage between TVET and labor market demands. Based on the findings from the survey, the following recommendations were proposed:

For Students/Graduates

TVET students/Graduates are recommended to note that employability skills is nothing like combining curriculum based skills and soft skills;

TVET students /Graduates are recommended to enhance entrepreneurial skills for to create own employment and take advantage of opportunities in the labour market;

TVET students /Graduates are recommended to leverage industrial attachment period for networking

For Employers/Industry/Companies

Employers / industry /companies are recommend to facilitate RP-IPRCs in teaching and learning process especially through provision of effective workplace learning facilities for industrial attachment for students;

Employers / industry /companies are recommend to collaborate with RP-IPRCs in the design of curriculum for its alignment with new emerging technology and available workplace sites;

For RP-IPRCs

- RP-IPRCs are recommended to consider designing the curriculum with the objective of developing and enhancing students' employability skills;

- RP-IPRCs in partnership with industry/employers are recommended to establish mechanism to reinforce practice of students both at schools and in companies during industrial attachments;

- RP-IPRCs are recommended to integrate in their curriculum soft skills relevant to the labour market for making easier school to work transition of TVET graduates;

- RP-IPRCs are recommended to regularly conduct public private dialogue to discuss the role of all relevant stakeholders involved in TVET education system towards improving employability of TVET graduates while also satisfying employers;

- It is further recommended that the employers, parents, and trainers in the TVET institutions should work together to nurture employability skills amongst the trainees regardless of gender or trainees' field of study; It is recommended that there should be an increase of staff exchange programmes between TVET training institutions and industry to enhance the practical skills of TVET trainers so that the gap between theory taught at the institutions and practice as demonstrated in the industry are enriched;

- The TVET institutions should properly guide their trainees on the current labour market requirements and provide appropriate education which fulfils the requirements. This is possible by revising the curriculum after a certain period of time;

- The duration of industrial training attachment should be increased and its effectiveness should be regularly monitored through a vibrant quality assurance system to ensure that the trainees acquire the necessary skills;

- There should be continuous research by TVET institutions about the essential characteristics of the labor market to analyse the main features which influence employment companies' hiring needs.

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ANNEXES

Annex-1 Tracer Survey questionnaire

Dear participant,

My name is …………………………………….and I am working with the RMI (Rwanda Management Institute). RMI in partnership with RP (Rwanda Polytechnic) are conducting a tracer survey to assess the RP-IPRCs graduates' employability and employers' satisfaction.

We will treat all data and responses confidentially. This means that we will not share your personal data with anyone and the provided information / responses will be analysed anonymously and the information you provide will only be used for this purpose.

The interview will take approximately 15 minutes.

THANK YOU FOR YOUR PARTICIPATION!

PART I. GRADUATES' PERSONAL DATA

Gender of respondent

Gender	Male	
	Female	

Age of respondents

Age bracket	Less than 18	
	18-20	
	21-40	
	41-50	
	51-60	

Graduate's Education level

Graduates education level	Advanced level certificate	
	Diploma(A1)	
	Bachelor's degree	
	Master's	

Field of training (trade)

………

………………………………………………………………………………………………………

A

Geographical location of respondents

Geographical location of the graduate	KIGALI	
	SOUTH	
	WEST	
	NORTH	
	EAST	
	ABROAD	

Graduate' Urban or Rural location

Location (Urban/ Rural)	Urban	
	Rural	

Do you have any disability

Yes	
No	

PART II. GRADUATES EMPLOYABILITY AND EMPLOYERS SATISFACTION

SECTION A. GRADUATE'S SATISFACTION WITH QUALITY OF EDUCATION

How do you perceive the quality of training programme you graduated in?

Please tick (√) the cell that best describe your level of satisfaction with quality of education.

1=Very dissatisfied, 2=Dissatisfied, 2=Moderately, 4=Satisfied, 5=Very satisfied

Elements of quality of education	5	4	2	2	1
Labour market relevancy					
The teacher and teaching methods					
Educational content					
Learning environment					
Student centred learning					
Student workload					
Institution management					
Laboratory sessions					
Proper or desired conditions for students					

Any other indicator

………………………………………………………………………………………………………

…………………………………………………………………………………………

What your own experience after graduation in relation to the program you graduated in.

………………………………………………………………………………………………………

………………………………………………………………………………………

SECTION B. GRADUATES' COMPETENCIES

How do you perceive you competencies?
Please tick (√) the cell that best describe your level of competencies.

Area of competencies	Poorly	Fairly	Moderately	Highly	Very Highly
Academic oriented					
Technical skills					
IT skills					
Entrepreneurial skills					
Communication skills					
Critical Thinking					
Risk taking skills					
Creativity or creative mind					
Work-oriented skills					
Judgment and decision-making skills					
Time Management skills					
Teamwork skills					
Organizational skills					
Ability to work under pressure					
Emotional intelligence skills					
Complex problem-solving skills					
Personal skills					
Work independently					
Negotiation skills					
Leadership skills					
Human relations skills					

Cognitive flexibility skills					

Do you have other potentials employable skills?

Yes	
No	

If yes elaborate

…………………………………………………………..………………………………………

…………………………….……………………………………………………………………

…………………………………………………………………….………………………………

SECTION C. FACTORS THAT NEGATIVELY AFFECTED GRADUATE'S PERFORMANCE AT COLLEGE

At what level the following factors negatively affected your performance at college?

Please tick (√) the cell that best describe at which level the factors negatively affected your performance. 1=Very low, 2=Low, 2=Fair   High   Very High

Factors that negatively affected graduate's performance	5	4	2	2	1
Equipment, tools, machinery for practical training at the institution					
Safety conditions during practical training					
Accommodation and meals					
Hygiene and sanitation facilities					
Infrastructure of training institution					
Lecturers' qualifications					
Classrooms and Training theatres					
Training costs					
Parental support					
Cultural pressure					

SECTION D. JOB SEARCH AND EMPLOYMENT

(Employment here means any type of work performed or services rendered in exchanged for compensation under a contact of hire which create the employer and employee relations)

D

Are you presently employed?

Yes		*Please continue with question 19*
No		*Please continue with question 12*
Never		

If not, what describes your current situation? (Multiple answers are possible)?

I continued studying / training		→*Please continue with question 12*
I am busy with my family		→ *No more questions*
I am doing an internship		→ *No more questions*
I am currently looking for employment		→*Please continue with question 14*

Other reasons, please specify:

……………………………………………………………………………………………………

……………………………………………………………………………………………………

……………………………………………………………………………………………………..

Please specify your field of studies / training and the type of education / training institution that you are currently enrolled in

Field of studies (please specify):

Higher Education Institution: ……………………………………………………………………

Institution of adult education / continuing education: …………………….……………………….

Other (please specify): …………………………………………………………………………..

How long have been searching for a job? *(Only for those who are still looking for a job)*

	Months

How do you search for a job (multiple answers are possible)?

I apply for advertised job vacancies (e.g. internet, newspaper, advertisement boards etc.)	
I contact companies directly (speculative application)	
I launch advertisements by myself (e.g. internet, newspaper, advertisement boards etc.)	
I use relations / personal contacts (e.g. parents, relatives, friends)	
I seek assistance by the State employment office	

Other (please specify): ………….…………………………………………………………….

For which jobs have you been applying? (Multiple answers are possible)

Jobs related to my profession	
Jobs unrelated to my profession	
Other/specify	

Did you get any paid work (including self-employment) since you graduated from polytechnic?

Yes		
No		*If No, no more questions*

In total, how many months of paid work (including self-employment) have you had since graduation from IPRC?

	Months

Only for employed persons

What type of employment are you in?

I have a permanent job	
I have a temporary / fixed-term job	
I do casual jobs	
I am self-employed → *please continue with question 21*	

In the event that you currently have more than one job, the next questions are about the job where you work the most hours.

Is this your first job since graduation?

Yes		
No		→ *Please specify how many employers you have worked for since graduation:* ……………..

How long did it take you before you get your <u>first</u> job?

	Months

For how long have you been working in your <u>current</u> job?

	Months

By what means did you find your current job? (Multiple answers possible)

plied for advertised job vacancies (e.g. internet, newspaper, advertisement boards etc.)

ntacted companies directly (Speculative application)

unch advertisements by myself (e.g. internet, newspaper, advertisement boards etc.)

as contacted by the company

tablished contacts during an internship / cooperative training / a job after school

ed relations/personal contacts (e.g. parents, relatives, friends)

ught assistance by the public employment agency

tablished my own business

Is your employment based on a written contract or agreement?

Yes	
No	

Who is your employer?

Public enterprise (Waterworks, electrical power company, etc.)	
Private enterprise	
Government Organization (Ministry, institution, District, School, Police, etc.)	
Non-Government Organization (NGO)	

Other, please specify: ……………………………………………………………….

How important were the following training aspects for your current employment?
Please tick (√) the cell that best describe your level of importance of training aspects. 1=Not at all important, 2=Not important, 2=Don't know, 4=Important, 5=Very Important

Training aspect	5	4	2	2	1
Matching professional qualification					
Reputation of TVET college that I graduated from					
The grades in my diploma					
Deficit of employees in my profession					
Social and individual competencies					
Professional connections					

Other, specify: ……………………………………………………………………….

G

How many employees does your current company / organization have approximately?

One	
Less than 10 employees	
10-49	
50-249	
More than 250	

What is your job title? (Support question: What type of work do you do in your job? / Example: Machine technician, cook etc.)

………………………………………….…………………………………………………

In what kind of industry/economic sector, business or service do you currently work? (Support question: Please describe what your employer makes or does?)

Construction and Building services	
Energy	
Agriculture and Food Processing	
Hospitality and Tourism	
Manufacturing	
Mining	
Technical Services	
ICT	
Arts and Crafts	
Media and Film Making	
Welfare, Health and Social Services	
Water Management and Sanitation	
Beauty and Aesthetics	
Transportation	
Water Management and Sanitation	
Business Services	
Security Services	
Physical Fitness and Sports Services	

How many hours do you work on average per day? (without overtime)?

H

	Working hours per day

Only for self-employed persons

Why did you start your own business?

It was my own wish	
I inherited business	
I did not find wage employment	

Other, specify: ……………………………………………………………………

If you started the business for your own, where did you get the start-up capital?

I acquired a loan from financial institution	
I got a help from a friend	
I got support from family members	
I used my personal savings	
I sold my family inheritance	

Annex-2 Employers Satisfaction Questionnaire

Dear participant,

My name is ………………………………….and I am working with the RMI (Rwanda Management Institute). RMI in partnership with RP (Rwanda Polytechnic) are conducting a tracer survey to assess the RP-IPRCs graduates' employability and employers' satisfaction.

We will treat all data and responses confidentially. This means that we will not share your personal data with anyone and the provided information / responses will be analysed anonymously and the information you provide will only be used for this purpose.

The interview will take approximately 15 minutes.

THANK YOU FOR YOUR PARTICIPATION!

PART I. EMPLOYERS DEMOGRAPHIC INFORMATION

How old is your company? (in years)

Less than 5	
6-10	
11-15	
16-20	
21-25	
26-20	
21-25	
26-40	
Above 40	

What is the size of your company?

Micro enterprises (fewer than 10 employees)	
Small enterprises (10 to 49 employees)	
Medium-sized enterprises (50 to 249 employees)	
Large enterprises (employ 250 or more people)	

What is your area of operation?

Construction and Building services	
Energy	
Agriculture and Food Processing	
Hospitality and Tourism	
Manufacturing	
Mining	
Technical Services	
ICT	
Arts and Crafts	
Media and Film Making	
Welfare, Health and Social Services	
Water Management and Sanitation	
Beauty and Aesthetics	
Transportation	
Water Management and Sanitation	
Business Services	
Security Services	
Physical Fitness and Sports Services	

PART II. QUESTIONS RELATED TO EMPLOYERS' SATISFACTION

Section A. Knowledge and understanding of graduates

How are you satisfied by the knowledge and understanding of IPRCs' graduates?

Please tick (√) the cell that best describe your level of satisfaction. 1=Not satisfied at all, 2=Not satisfied, 2=Moderately satisfied, 4=Satisfied, 5=Very satisfied

Elements of Knowledge and understanding	5	4	2	2	1
Understanding of job-related information					
Specific technical knowledge required for the job					
Knowledge of specific computer applications required for job					
Understanding of organizational context					
Understanding of international business environment					
Understanding of systems and organizations					
Knowledge in employee's field of study					

Other:

………………………………………………………………………………………………

…………………………………………………………………………………………………..

Section B. Graduates' attitudes and values

How are you satisfied by the graduates' attitudes and values?

Please tick (√) the cell that best describe your level of satisfaction. 1=Not satisfied at all, 2=Not satisfied, 2=Moderately satisfied, 4=Satisfied, 5=Very satisfied

Graduates' attitudes and values	5	4	2	2	1
Integrity					
Commitment to service					
Punctuality					
Diligence Hard work					
Honesty					
Compassion					
Confidence					

Other: …………………………………………………………………………………………

Section C. Skills and competences of graduates

How are you satisfied by the graduates' skills and competencies?

Please tick (√) the cell that best describe your level of satisfaction. 1=Not satisfied at all, 2=Not satisfied, 2=Moderately satisfied, 4=Satisfied, 5=Very satisfied

Skills and competencies of graduates	5	4	2	2	1
Academic oriented skills					
Technical skills					
IT skills					
Entrepreneurial skills					
Communication skills					
Risk taking					
Creativity or creative mind					
Critical thinking					
Work-oriented skills					
Judgement and decision-making skills					
Time Management skills					
Teamwork skills					
Organizational skills					
Ability to work under pressure					
Emotional intelligence skills					
Complex problem-solving skills					
Personal skills					
Work independently					
Negotiation skills					
Leadership skills					
Human relations skills					
Cognitive flexibility skills					

Other: ……………………………………………………………………………………………

What is your personal suggestion for TVET higher learning institution to produce competent graduates? ……………………………………………………………………………………………

Do your company accommodate students for industrial attachment?

No	
Yes	

If yes, how many per month? ....

Do you face any challenge implementing students' industrial attachment?

Yes	
No	

If yes what are they?

……………………………………………………………………………………………………

………………………………………………………………………………………

Annex-3 Interview Guide

This Interview guide is to be addressed to Rwanda Polytechnic (RP) representatives and principle of IPRCs

a) The effect of the training offered.

b) The trainees labour market absorption after graduation and the adequacy of their earned income.

c) Graduates' failure in the labour market.

d) The extent to which graduates apply the skills and knowledge imparted. Whether they are trained the right skills or not.

e) The competencies gap

f) The need for further training (i.e. skill upgrading courses) and other post training support mechanisms in order to promote employment of our graduates.

g) The curricula update to improve training delivery

h) The training relevant to the needs of the market

i) The match between training offered and the expectations/ employment criteria of potential employers.

j) The labour market trends: trade areas that offer growth potential, and the ones that face stagnation.

k) The availability of measurable and positive social and economic impact attributed to the training offered (e.g. on the social status of the ex-trainee, on the living standard/ income).

Annex 4. List of Participants in KIIs

Level	INSTITUTION	POSITIONS
National Level	MIFOTRA	Directorate of employment promotion (1)
	MINEDUC	Designated representative (1)
	RDB	Department of skills development (1)
	RP	Designated representative (1)
	PSF	Designated representative (1)
Local Level	IPRCs	Principals
	Companies/graduates employers	Designated representatives(1per company)

Source: Authors' Compilation, 2021

……...............

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