KENYA INSTITUTE OF HIGHWAYS AND BUILDING TECHNOLOGY

REGIONAL FLAGSHIP TVET INSTITUTE IN HIGHWAYS TECHNOLOGY

YEAR SEVEN TRACER STUDY REPORT FINDINGS AND RECOMMENDATIONS

AUGUST 2025

EASTRIP
Skills for Transformation & Regional Integration

WORLD BANK GROUP

EXECUTIVE SUMMARY

The Kenya Institute of Highways and Building Technology (KIHBT), a Regional Flagship TVET Institute in Highway Technology under the World Bank–funded EASTRIP programme, conducted a tracer study to assess how effectively its 2024 graduates have integrated into the labour market. The study targeted graduates of the Diploma in Highway Engineering (DHE) and Craft Certificate in Road Construction (CCRC) programmes, along with their employers, to evaluate the relevance of training, employment outcomes, and skills match to industry needs.

Between January and June 2025, the survey engaged 61 out of 72 graduates (85% response rate) and 27 employers. Data was collected via structured questionnaires and interviews, using both direct outreach and snowball sampling to reach participants. Ethical considerations were observed, ensuring voluntary participation and confidentiality.

The findings paint a generally positive picture. Overall, 78% of graduates were engaged in employment, self-employment, or further studies within six months to one year after graduation. The female employment rate stood at 69%, reflecting an encouraging but still modest gender balance in the sector. Most graduates (92%) reported that their work aligned with their field of study, and employers expressed high satisfaction with graduates' discipline, accuracy, and overall quality.

Nevertheless, gaps were evident. Many graduates reported finding their first jobs through personal connections rather than formal industry placements. This reliance on networks reflects the limited structured pathways available for entry into the labour market. Several respondents also pointed to the slowdown in the construction sector, noting that the scarcity of relevant vacancies was a major obstacle. Employers, while generally satisfied with the solid theoretical and practical training graduates had received, emphasised the need for sharper ICT abilities, stronger customer service orientation, and more entrepreneurial initiative.

The study underscores the importance of boosting hands-on learning, updating workshop facilities and equipment, and weaving career guidance, mentorship, and structured internships into the training cycle. Long-term success will depend on deepening partnerships with road sector agencies, contractors' associations, and professional bodies to open doors to sustained employment.

The report recommends that KIHBT adopt a robust graduate database system, promote female participation in technical courses, and formalise a Graduate Internship Programme in partnership with industry stakeholders.

Overall, the tracer study reaffirms KIHBT's role as a leading provider of market-relevant technical training, while identifying strategic areas for growth to ensure graduates remain competitive in a changing labour market.

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List of Abbreviations

CAD: Computer-Aided Design

CCRC: Craft Certificate in Road Construction

CEO: Chief Executive Officer

CV: Curriculum Vitae

DCE: Diploma in Civil Engineering

DHE: Diploma in Highway Engineering

EASTRIP: East Africa Skills for Transformation and Regional Integration Project

HELB: Higher Education Loans Board

ICT: Information and Communication Technology

KENHA: Kenya National Highways Authority

KERRA: Kenya Rural Roads Authority

KIHBT: Kenya Institute of Highways and Building Technology

KNEC: Kenya National Examination Council

KRB: Kenya Roads Board

KURA: Kenya Urban Roads Authority

KWS: Kenya Wildlife Services

LVSR: Low Volume Seal Road

MSME: Micro, Small and Medium Enterprises

NCA: National Construction Authority

PBC: Performance-Based Contract

PDO: Project Development Objectives

RTK; Real-Time Kinematic

TVET; Technical and Vocational Education and Training

1. INTRODUCTION

1.1 BACKGROUND OF THE STUDY

The Kenya Institute of Highways & Building Technology (KIHBT) traces its roots back to May 1948, when it was first established as a Training Division within the Public Works Department. At the time, the focus was simple but critical; equipping Roads Foremen, Water Foremen, Inspectors, and Survey Assistants with the technical skills needed to maintain Kenya's growing infrastructure network.

Over the decades, the Institute has transformed into a leading hub for infrastructure-focused training, serving the needs of Ministry Departments, Agencies, County Governments, and the private sector. In collaboration with development partners, KIHBT has extended its expertise to neighbouring countries within the sub-Saharan region, becoming a truly regional player.

Today, KIHBT offers a wide range of training programs across civil, mechanical, and electrical engineering, as well as architecture, quantity surveying, and land surveying. With a highly skilled teaching team and an annual trainee intake exceeding 3,000, the Institute continues to shape the technical workforce that builds and maintains Africa's infrastructure.

The vision is **"To be the Preferred Infrastructure Training Institution in Africa and Beyond"** and the mission: **"To facilitate the provision of high-quality training, research, and consultancy in infrastructure development and maintenance in Africa and beyond."**

In 2018, KIHBT's leadership in technical and vocational education was further recognised when it was competitively selected by the World Bank and the Government of Kenya as one of only five Regional Flagship TVET Institutes (RFTIs) under the East Africa Skills for Transformation and Regional Integration Project (EASTRIP). As the regional centre of excellence in Highway Technology, KIHBT has since been at the forefront of skills development that drives regional growth and integration.

1.2 PURPOSE AND OBJECTIVES OF THE STUDY

This tracer study was conducted to assess how effectively KIHBT's training programs equip graduates with the knowledge, skills, and competencies needed to thrive in today's competitive labour market. It focused specifically on graduates from 2024 in two programs under EASTRIP priority areas: the Diploma in Highway Engineering (DHE) and the Craft Certificate in Road Construction (CCRC).

By tracking these graduates six months to one year after completion, the study sought to understand not only their employment outcomes but also the alignment between what they

learned and what the job market demands. The results provide valuable feedback for refining curricula, strengthening industry partnerships, and improving career support services.

The specific objectives were to:

I. Assess employer perceptions of the quality, skills, and work readiness of KIHBT graduates.
II. Evaluate graduates' own views on the relevance of their training, the quality of their jobs, and the pathways they have taken after graduation.
III. Determine the adequacy of KIHBT's training in preparing graduates for real-world employment.
IV. Update the graduate database to support ongoing monitoring, planning, and alumni engagement.

This tracer study is not just an academic exercise, it is a feedback loop connecting the classroom to the construction site, the lecture hall to the boardroom, and the training plan to the realities of the job market. The findings will guide strategic decisions that ensure KIHBT graduates remain not only employable but indispensable in Kenya's and the region's infrastructure development journey.

2. METHODOLOGY

This tracer study was conducted between January and June 2025, targeting both graduates and their employers. The aim was to gather meaningful, accurate, and actionable insights on graduate employment outcomes, the relevance of training, and areas for program improvement. The methodology combined structured questionnaires, direct interviews, and follow-up calls to ensure a rich dataset.

2.1 DATABASE OF POTENTIAL PARTICIPANTS

The graduate database used for this study was drawn from the official list of final-year students who sat the Kenya National Examination Council (KNEC) examinations in 2024.

The study population focused on graduates from two programs under EASTRIP's priority areas: Diploma in Highway Engineering (DHE) and Craft Certificate in Road Construction (CCRC).

Employers were identified based on details provided by graduates, supplemented by existing KIHBT records. Where necessary, additional contact information was obtained through snowballing techniques, with graduates and employers referring others who could participate.

2.2 TARGET GROUPS FOR THE SURVEY

2.2.1 Graduates

Out of a total of 72 graduates (51 male, 21 female), the study successfully reached 61 graduates (43 male, 18 female) an impressive 85% response rate. The remaining 11 graduates (7 male, 4 female), representing 15%, could not be contacted despite repeated attempts.

Graduates were classified as:

- Employed (including both formal and informal sectors)
- Self-employed
- Pursuing further studies
- Unemployed

This classification helped determine not just the direct employment rate, but also the overall engagement rate; a combination of those employed, self-employed, or in further education.

2.2.2 Employers

A total of 27 employers completed the survey. These included both public and private sector organisations employing KIHBT graduates, providing critical insight into industry expectations and satisfaction levels.

2.3 ACCESS TO THE RESPONDENTS

Two main communication channels were used; phone calls the primary method for reaching graduates and employers. We also used Email for those who could receive and respond electronically. We also conducted face-to-face sessions to administer the questionnaire in person.

2.4 SURVEY INSTRUMENTS AND TOOLS

Two structured questionnaires were used:

- Graduate Survey Questionnaire: 32 questions, 136 variables, combining closed- and open-ended items to capture both measurable outcomes and personal experiences.
- Employer Survey Questionnaire: 18 questions, 77 variables, focusing on recruitment experiences, satisfaction with graduates, and skill needs.

Questionnaires were administered via email, telephone interviews, and in-person sessions. Data collection was supported by KIHBT staff, ensuring standardised administration and quality control.

2.5 ETHICAL CONSIDERATIONS

Ethical integrity was central to this study. All participants were informed of the study's purpose and objectives, assured of confidentiality i.e. responses would be used only for research purposes and given the right to decline participation without any consequence.

2.6 SAMPLING STRATEGY

Given the relatively small graduate population, a census approach was used where possible attempting to contact every graduate and relevant employer. Convenience sampling was applied where full coverage was not possible, focusing on those reachable within the study period. Snowball sampling proved particularly effective, with graduates and employers referring others who could participate.

2.7 METHODOLOGICAL CHALLENGES AND MITIGATIONS

The graduates were identified through a list of final year students who sat for the Kenya National Examination Council (KNEC) exam.

Graduates who were available to participate in the survey were encouraged to speak to their employers to inform them of the visit by KIHBT staff.

2.7.1 Methodological Challenges

While these approaches were expected to facilitate and increase the response rate, the fieldwork indicated otherwise. The main recorded constraints included the following:

- Outdated or incorrect contact details for some graduates.
- Reluctance to respond among unemployed graduates, often due to social stigma.
- Incomplete or unclear responses, particularly regarding employment status.
- Internet access limitations, making online survey completion difficult for some respondents

2.7.2 Mitigation Measures

Despite the above-mentioned challenges and in a bid to secure a high response rate, the researchers reverted to snowball sampling techniques where both graduates and employers were asked to identify other graduates that could participate in the study. This meant that while graduates could identify both employed and unemployed peers, employers on the other hand could only identify other employed graduates. The unemployed graduates were reached through the provided databases and snowballing techniques.

It is important to note that target respondents also indicated if they are pursuing further education. Although graduates in this category would be neither employed nor unemployed, they have been considered employed in this study. The study also considered graduates who pursued self-employment or were working in the informal sector as employed graduates.

3. DATA ANALYSIS

3.1 INTRODUCTION

This Chapter presents the data analysis of tracer study conducted on graduates of the year 2025. The analysis of Graduates' Findings is contained in Section 3.2 and those of the Employers are in Section 3.3 below. Both quantitative and qualitative data were compiled and analysed using Microsoft Excel 2013 and presented in statistical methods, mean and standard deviation. The results are presented in percentage, tabular, graphical forms, and described in verbatim qualitative statements. The results form the basis of discussion, conclusion, and recommendations of this report.

3.2 GRADUATES' FINDINGS

The Graduate Survey focused on the long-term courses covered under the EASTRIP priority area, Craft Certificate in Road Construction and Diploma in Highway Engineering. All the traced graduates were based in Kenya from different regions; Nairobi, Kiambu, Lamu, Kitui, Nakuru, Naivasha, Machakos, Murang'a, Isiolo, Meru, Kisii, Emali, Rongo, Kisumu, Migori, Bomet, Kajiado, Eldoret, Kericho and Narok. The data obtained from the completion of the questionnaires was analysed and interpreted as follows:

3.2.1 Demographic Information of the Graduates Respondents

In this section, the Demographic Information of the responsive traced graduates; gender, age, county of residence, level of qualification attained, employment and further academic situation in the first six months post graduation is presented.

3.2.1.1 Graduates traced by gender.

Table 1 summarizes the gender distribution of graduates. It shows that **70%** are male (**43 graduates**) and **30%** are female (**18 graduates**), making a total of **61 graduates**. This indicates a predominance of male graduates in the cohort.

Table 1 *Graduates traced by gender.*

	Gender		Total Graduates
	Male	**Female**	
Frequency	43	18	61
Percent Distribution	70	30	100%

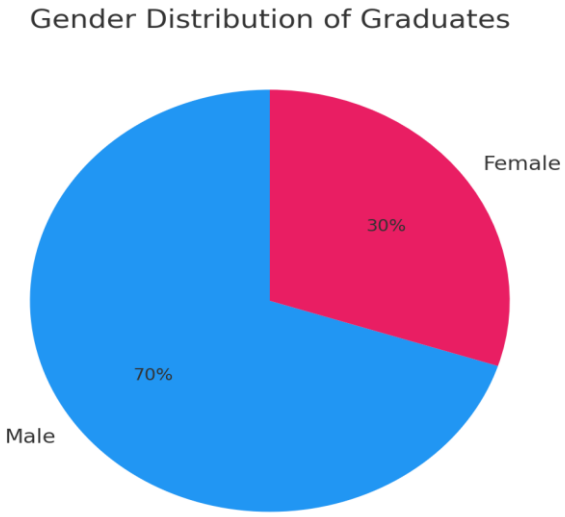

Figure 1 *Graduates traced by gender.*

3.2.1.2 Graduate traced by Age.

Table 2 presents the age distribution of traced graduates. Of the 61 graduates, 75% were aged below 25 years, 21% fell within the 25–35 age bracket, and 4% were aged above 35 years.

Table 2 Graduates traced by age.

	Age Bands in Years		
	Below 25	**25 -35**	**Above 35**
Frequency	46	13	2
Percent	75	21	4

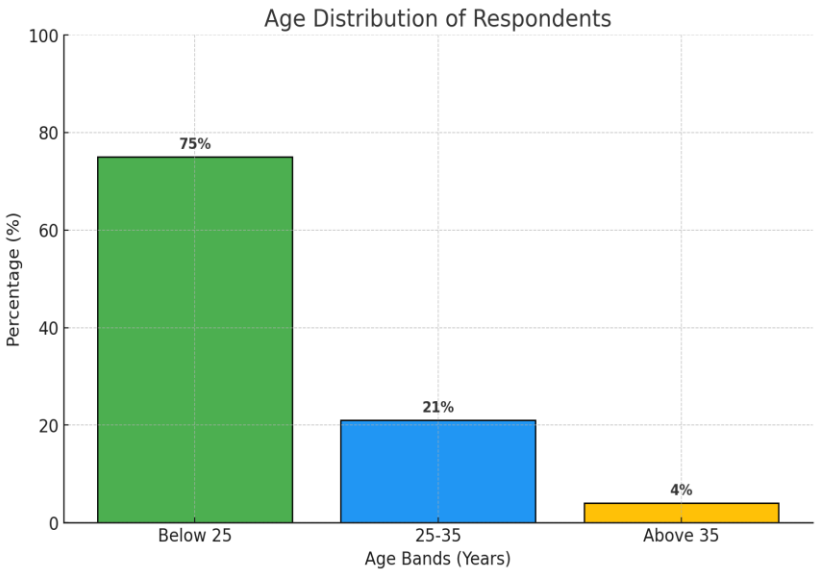

Figure 2 Graduates traced by age.

3.2.1.3 Level of qualification of traced graduates

Table 3, shows that most graduates (67%) hold a Craft Certificate, while 33% possess a National Diploma. No respondents reported holding a Higher National Diploma, Artisan Certificate, National Skills Certificate, or other qualifications. This indicates that most graduates from the program enter the workforce with mid-level technical qualifications.

Table 3 Level of qualification of traced graduates.

Level of Qualification	Higher National Diploma	National Diploma	Craft Certificate	Artisan Certificate	National Skills Certificate	Others
Frequency	0	20	41	0	0	-
Per cent	0	33%	67%	0	0	-

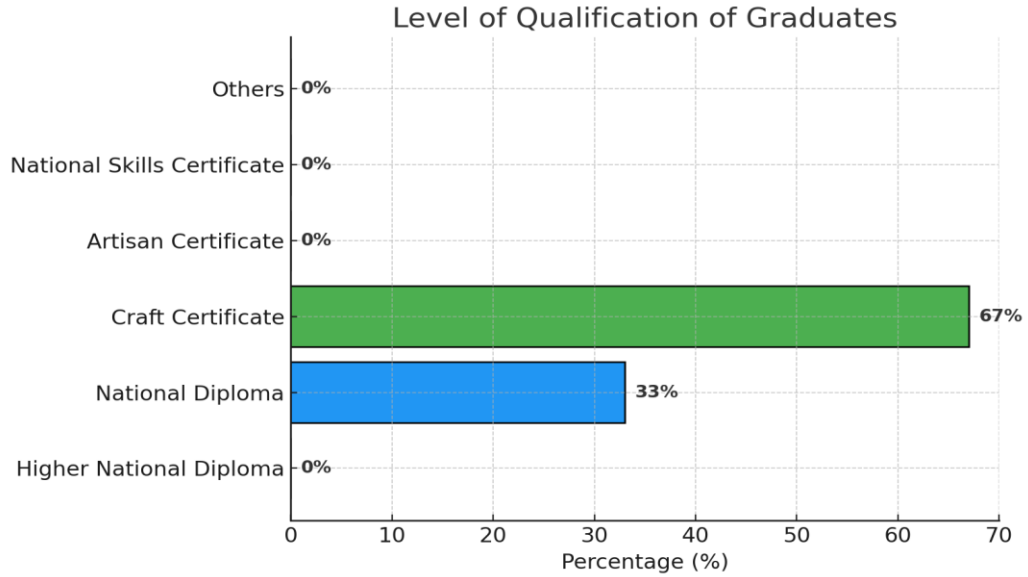

Figure 3 Level of qualification attained by traced graduates.

3.2.1.4 Graduates situation in the first six months post-graduation

Table 4 summarizes the situation of the traced graduates in the first six months after graduation. Amongst the 61 graduates that were traced in the study, 27 (44%) were Employed within the first six months after graduating, 9 (15%) were Self-Employed none went pursuing Further Academic Education, 11 (18%) are pursuing Further Vocational Education, 14 (23%) are unemployed.

Table 4 Situation in the first six months after graduation.

Situation six months after graduation	**Employed**	**Self-employed**	**Further Academic Education**	**Further Vocational Education**	**Unemployed**	**Others**
Frequency	27	9	0	11	14	0
Percent	44%	15%	0%	18%	23%	0%

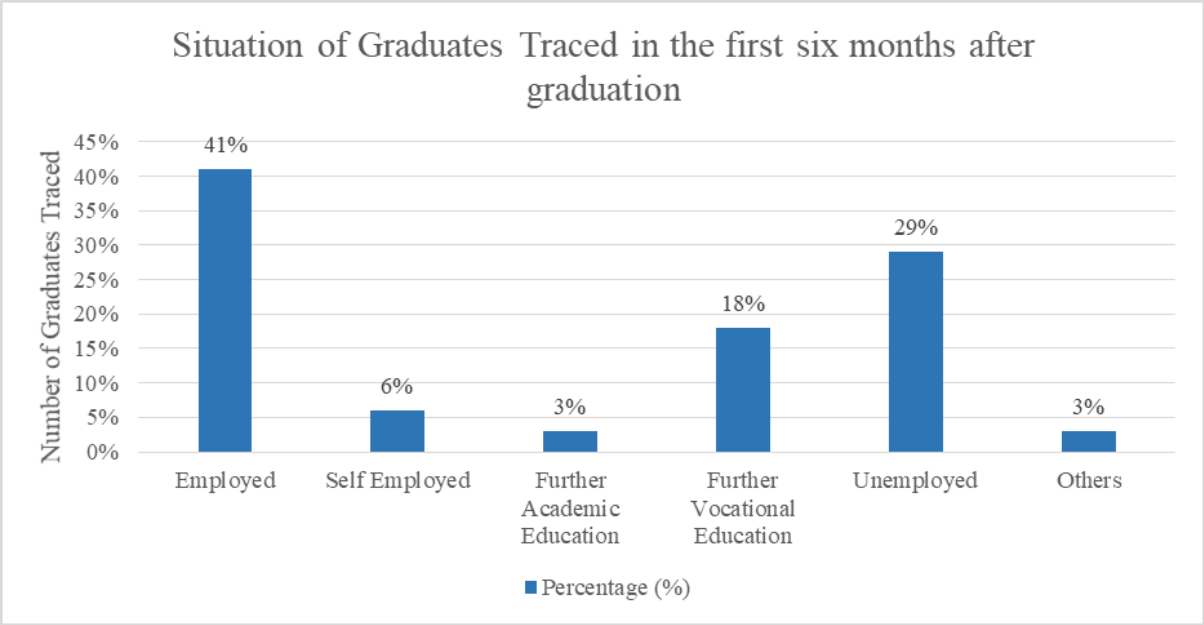

Figure 4 Situation in the first six months after graduation.

3.2.2 Graduates Employment Status

In this section the study examines the employment status of the traced graduates. If employed, the industry sector they are engaged in, their present employment status, type of employment contracts they hold, number of hours worked per week, time taken to find their first job and how they found their job. Those not employed, the reasons they are not in employment.

3.2.2.1 Present Employment Status

Table 5 summarizes the Present Employment Status of the traced graduates. The results show that six months after graduation, 44% of graduates were employed, 15% were self-employed, 18% had enrolled in further vocational education, and 23% were unemployed. No graduates pursued further academic education in universities.

This suggests that while a significant portion of graduates are absorbed into employment or self-employment, a notable share remains unemployed or continues with vocational training.

Table 5 Present Graduate employment status.

Employment Status	Employed	Self-employed with employees	Self-employed without employees	Neither employed nor self-employed
Frequency	27	1	8	25
Percent	44%	2%	13%	41%

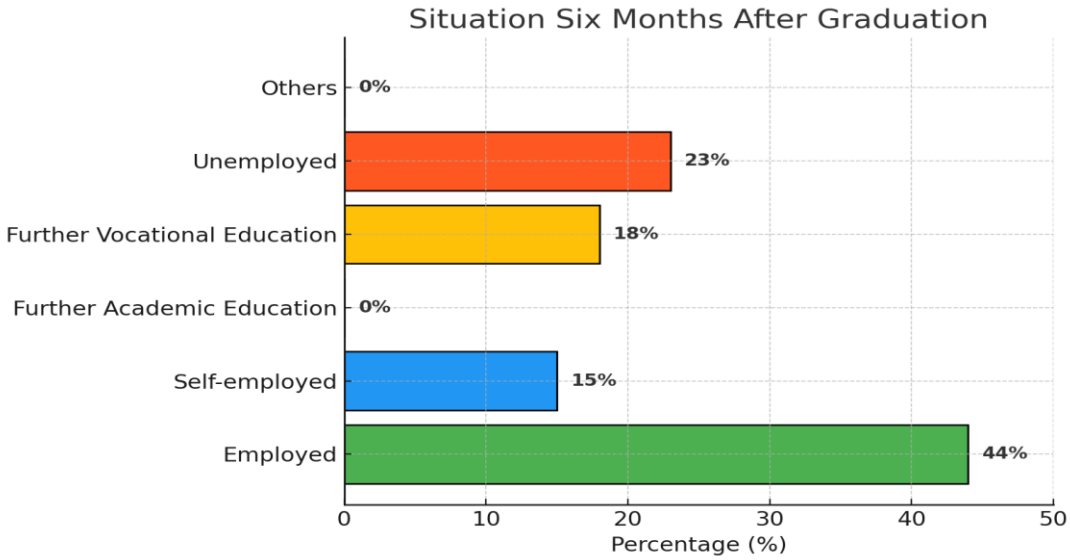

Figure 5 Present employment status.

3.2.2.1.1 Graduate Employment Status by Gender

Table 6 summarizes the present graduate employment status by gender. Employment rates are slightly higher for males at 79% compared to females 72%, with 34 employed males versus 13 employed females.

Table 6 Graduate employment status by gender.

Employment Status	Female	Male
Employed	13	34
Not employed	5	9
Total	18	43
Percentage (%)	72%	79%

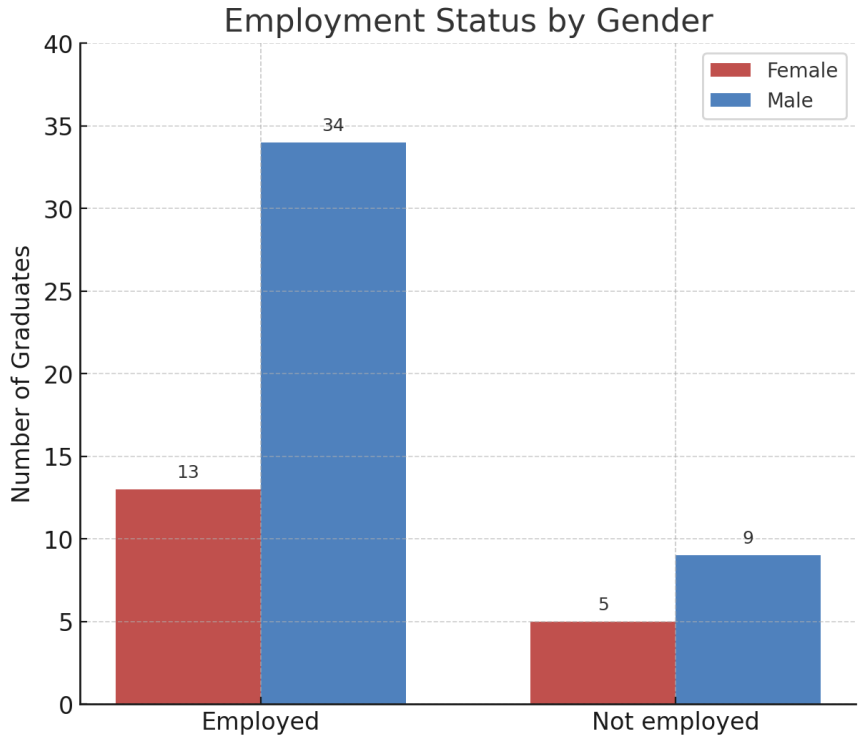

Figure 6 Employment status by gender.

3.2.2.2 Nature of Employment

Table 7 summarizes the Nature of Employment held by the traced graduates after graduating from KIHBT. The data shows that most employed graduates (63%) were working on a contractual basis, followed by 26% in temporary positions. Smaller proportions held job order roles (7%) or part-time work (4%), while none had secured permanent employment. This suggests that most graduates enter the job market through short- to medium-term contracts rather than long-term, stable positions, highlighting the prevalence of non-permanent work arrangements in the sector.

Table 7 Nature of employment of graduates traced.

Nature of Employment	**Part-time**	**Job order**	**Contractual**	**Temporary**	**Permanent**
Frequency	1	2	17	7	0
Per cent	4%	7%	63%	26%	0%

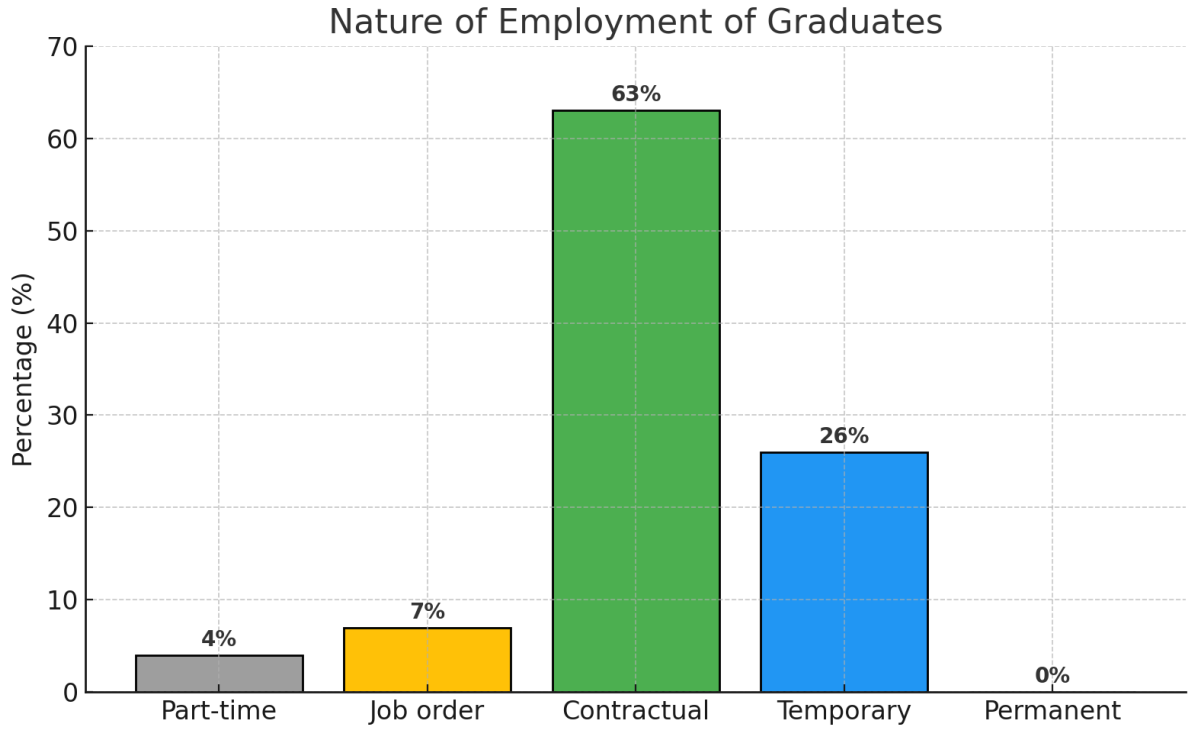

Figure 7 Nature of employment of graduates traced.

3.2.2.3 Working Hours per Week

Table 8 below summarizes the Number of Working Hours per Week for the graduates traced in employment. Out of the 36 graduates, the data shows that most graduates (92%) work more than 40 hours per week, while only 8% work 40 hours or less.

This suggests that most graduates are engaged in full-time employment with extended working hours, which may reflect industry demands, especially in sectors like construction where long workweeks are common.

Table 8 Number of hours worked per week by employed graduates.

Working hours	**Number of Hours Worked Per Week**	
	0 - 40	**Above 40**
Frequency	3	33
Percent	8%	92%

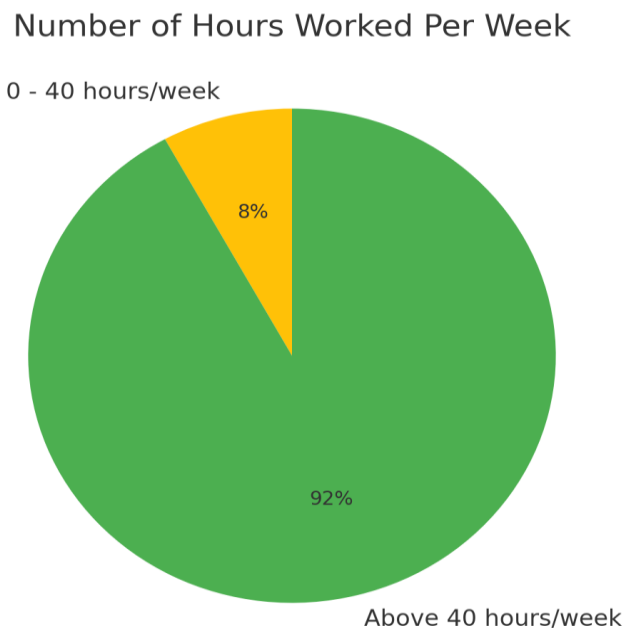

Figure 8 Number of hours worked per week by employed graduates.

3.2.2.4 Employment of Graduates by Industry Sector

Table 9 summarizes how the traced graduates secured employment in different Industry Sectors after graduating. The data shows that the construction industry is by far the largest employer of KIHBT graduates, absorbing 67% of the total. The wholesale and retail trade sector follows at a distant second with 12%. Several other sectors including agriculture, forestry and fishing, mining and quarrying, manufacturing, electricity, gas, steam and air conditioning supply, transportation and storage, accommodation and food services, and arts, entertainment, and recreation each employ only 3% of graduates. Many industry sectors reported no KIHBT graduate employment at all. This pattern indicates a heavy concentration of employment opportunities within construction, with limited representation in other industries.

Table 9 Employment of graduates by industry sectors.

EMPLOYMENT OF TVET GRADUATES BY INDUSTRY SECTOR		
Industry Sector	**Frequency**	**Percent**
Agriculture, forestry and fishing	1	3%
Mining and quarrying	1	3%
Manufacturing	1	3%
Electricity, gas, steam and air conditioning supply	1	3%
Water supply; sewerage, waste management and remediation activities	-	-
Construction	24	67%
Wholesale and retail trade	5	12%
Transportation and storage	1	3%
Accommodation and food service activities	1	3%
Information and communication	-	-
Financial and insurance activities	-	-
Real estate activities	-	-
Professional, scientific, and technical activities	-	-
Administrative and support service activities	-	-
Public administration and defence; compulsory social security	-	-
Education	-	-
Human health and social work activities	-	-
Arts, entertainment, and recreation	1	3%
Welding	-	-
Other service activities	-	-
Other	-	-
Total	**36**	**100%**

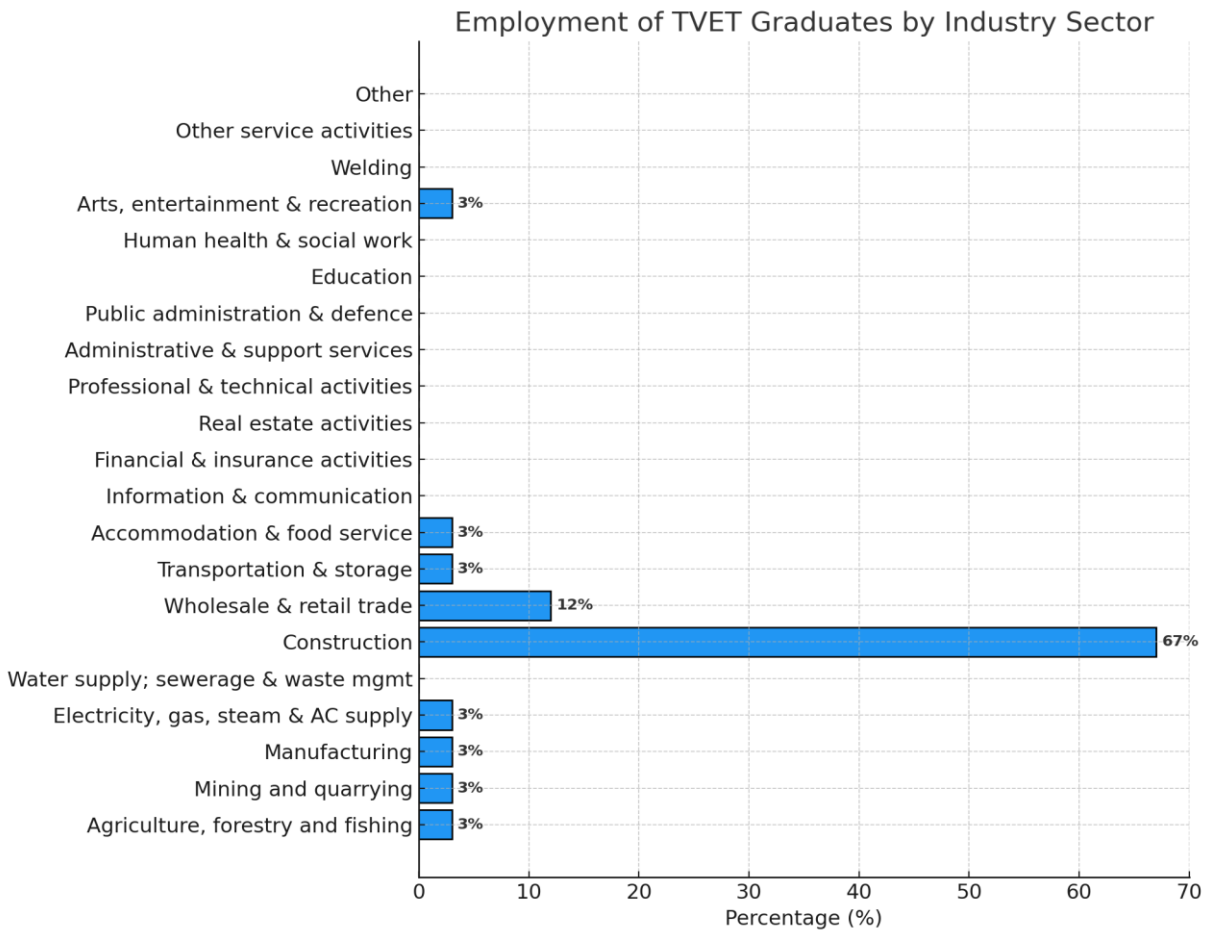

Figure 9 Employment of graduates by industry sectors.

3.2.2.5 First job by graduates traced after graduating.

Table10 summarizes if this was the first job obtained by graduates traced immediately after graduating. Of the 36 graduates who were employed; The findings indicate that for most graduates (86%), their current position was their first job after graduating, while 14% had held other jobs before.

This suggests that the majority transition directly into their current roles upon leaving the institution.

Table 10 First job obtained after graduation.

First job after graduating?	**Yes**	**No**
Frequency	31	5
Per cent	86%	14%

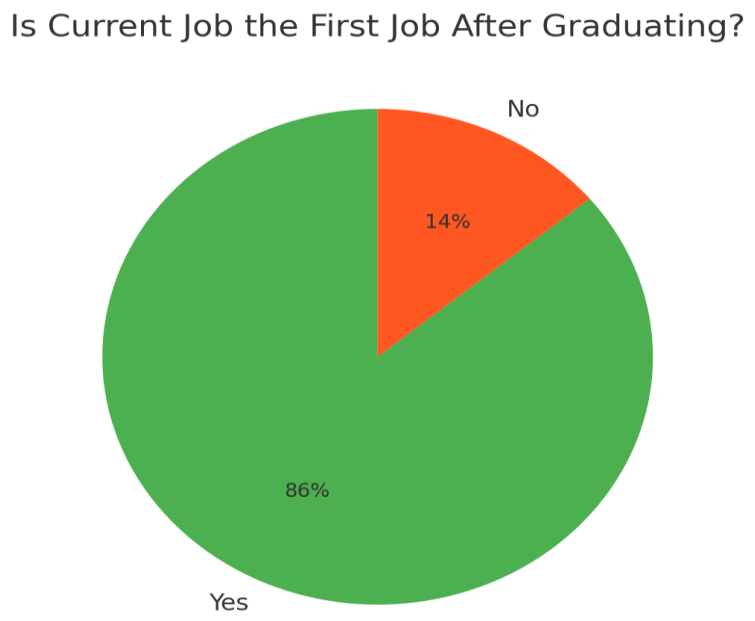

Figure 10 First job obtained after graduation.

5(14 %) of the graduates who have held more than one job since graduation failed to declare how long it took them to secure their first job after graduation

3.2.2.6 Duration Taken to Secure Present Job.

Table 11 captures data on the duration taken to secure the present job. Out of 30 responsive graduates to this question, the results show that more than half of the graduates (53%) secured their current jobs within the first three months after graduation. A further 27% found employment within four to six months, while 17% took seven to nine months. Only 3% of graduates reported taking 10 to 12 months to secure their present roles.

This indicates that most graduates enter the job market relatively quickly, with most securing work within half a year of completing their studies.

Table 11 Duration taken to secure the present job.

Duration Taken to Secure Present Job	**Duration in Months**				**Total**
	0-3	**4-6**	**7-9**	**10-12**	
Frequency	16	8	5	1	30
Percent	53%	27%	17%	3%	100%

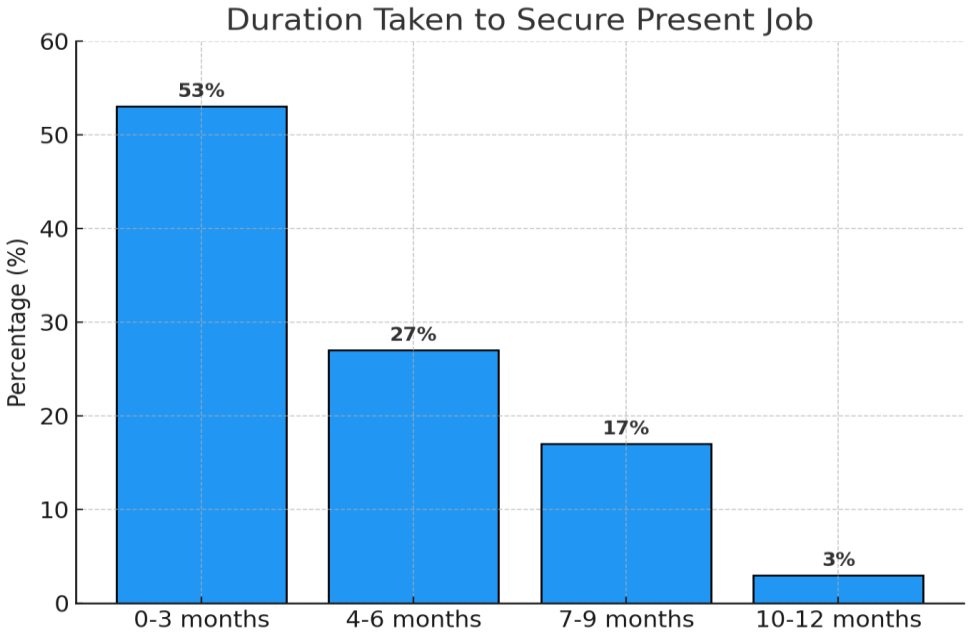

Figure 11 *Duration taken to secure the first job after graduating.*

3.2.2.7 How Graduates Found Their Jobs.

Table 12 captures how graduates found their jobs. The results have been taken from the graduates who are presently in employment. Out of 30 graduates who were responsive to this question, the data shows that they most found their present jobs through relatives, friends, and colleagues (30%) and direct applications (30%). Industry linkages and referrals/endorsements each accounted for 17% of job placements, while internet sources contributed 6%. No graduates reported finding jobs through newspapers/television/radio or social networks.

This suggests that personal networks and direct outreach remain the most effective job search strategies for graduates, with formal media channels playing little to no role.

Table 12 *How graduates found their present jobs.*

How graduates Found their Present Jobs	Newspaper /Television / Radio	Internet	Relatives, friends & Colleagues	Industry Linkages	Referral/ Endorsement	Direct application	Social networks
Frequency	0	2	9	5	5	9	0
Per cent	0%	6%	30%	17%	17%	30%	0%

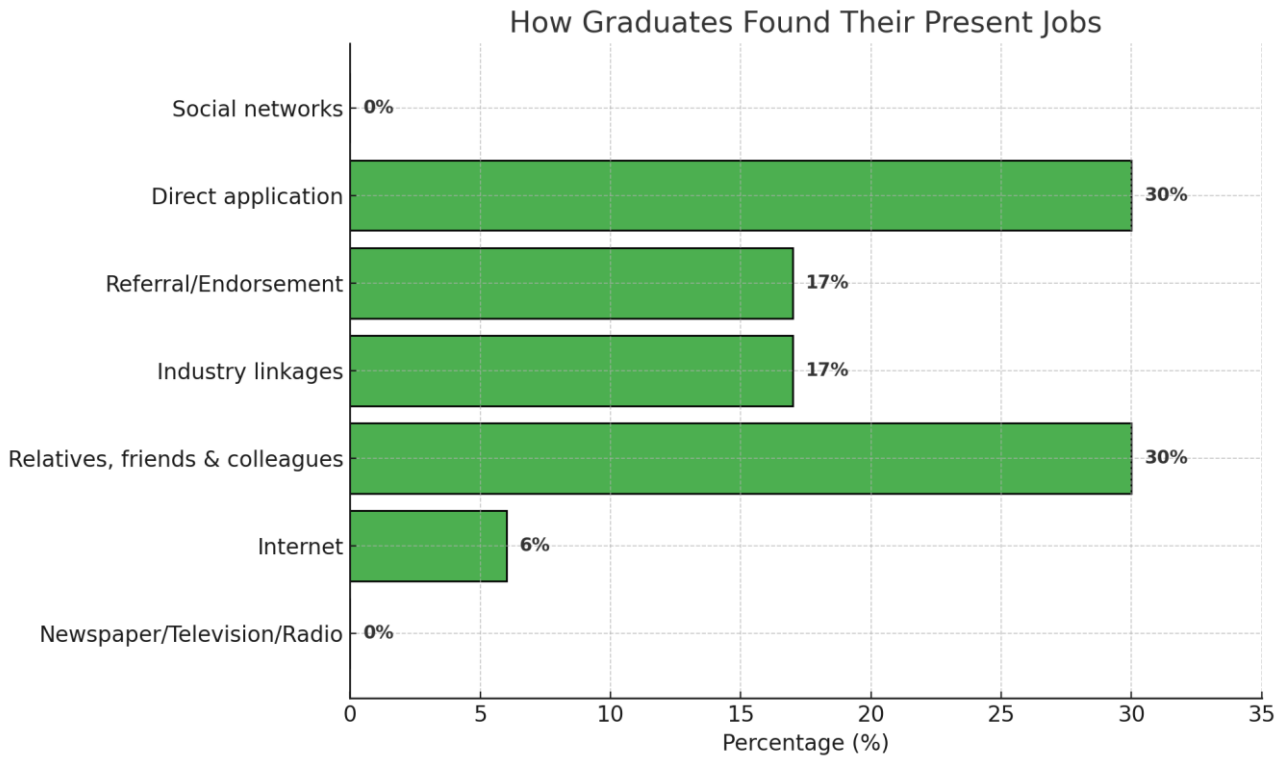

Figure 12 How graduates found their present jobs.

3.2.2.8 Reasons for not Being Employed

Table 13 below captures the reasons why graduates are not in employment. These results have been taken from a sample of 25 graduates who are not in employment. The main reason given by graduates for their current employment situation was pursuing further studies (44%), followed closely by unsuccessful job applications (40%). Lack of opportunities accounted for 16% of responses. No graduates cited family concerns, losing a previous job, or other reasons.

This suggests that most non-working graduates are either upgrading their skills through further education or facing challenges in securing employment, with relatively few hindered by external personal factors.

Table 13 *Reasons why graduates are not in employment.*

REASONS	Further Studies	Family concerns	Unsuccessful application	Lost previous job	No opportunity	Others
Frequency	11	0	10	0	4	0
Percent	44%	0	40%	0	16%	0

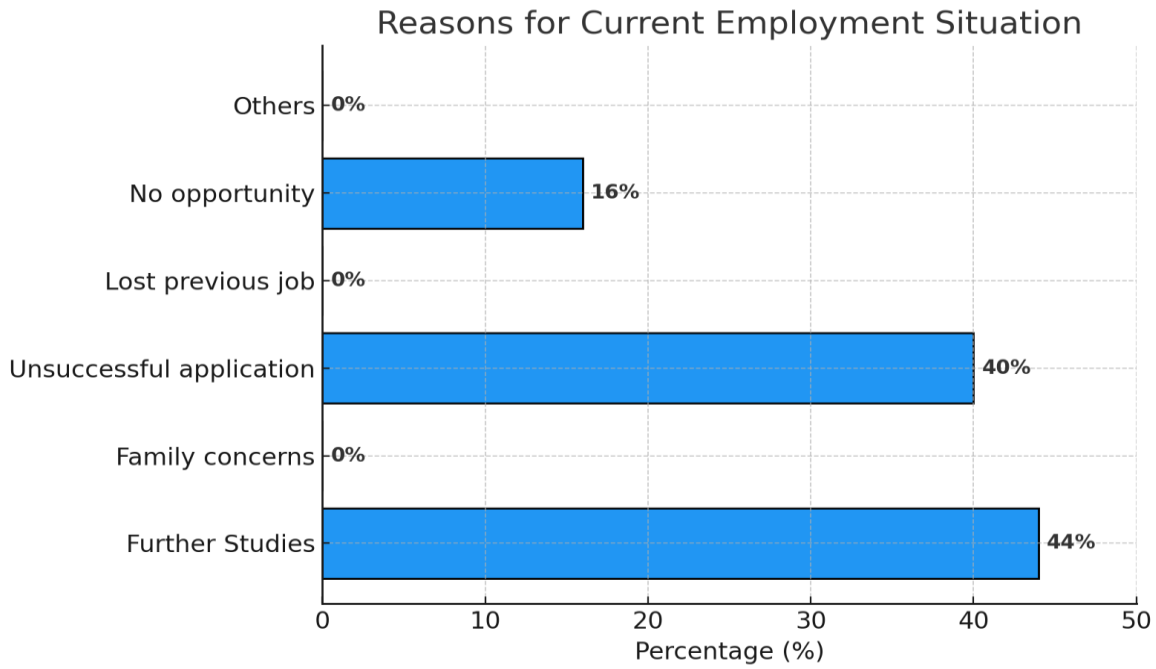

Figure 13 *Reasons why graduates are not in employment.*

3.2.2.9 Overall Employment rate

Table 14 shows the overall employment rate of the traced graduates. The study has three (3) categories of graduates that are considered employed; self employed and those pursuing further studies. Out of the 61 respondents: 27 are employed,9 self-employed,11 is in further studies. Therefore, the graduate employment rate is 77% for this reporting year.

Table 14 Overall employment rate.

Categories of Employment	**Frequency**
Employed	27
Self Employed	9
Further studies	11
Total Employed graduates	47
Employment Percentage rate	77%

3.2.2.10 Female Employment rate

Table 15 shows the overall employment rate of female graduates. Out of the 18 female respondents: 8 are employed and 5 are pursuing further studies. Therefore, the overall female employment rate is 72%.

Table 15 Female employment rate.

Categories of Female in Employment	**Frequency**
Employed	8
Further studies	5
Total Female	13
Female Employment rate	72%

3.2.3 Relevance of training received by graduates.

In this section the Tracer Study report examines the relevance of training received by traced graduates. It examines the relationship between work and the course followed, the areas of training that are most helpful in performing the present job; details of further training undertaken post-graduating. It also checks if graduates could be interested to attend further training.

3.2.3.1 Relation between work and the course followed.

Table 16 captures Relation between work and the course followed. Results have been taken from 36 respondents. The results show that 80% of graduates indicated their current job is related to the course they studied, while 20% reported working in areas unrelated to their training.

This suggests that the majority are applying their acquired skills directly in their employment.

Table 16 Relation between work and the course followed.

Relation	**Yes**	**No**
Frequency	29	7
Percent	80%	20%

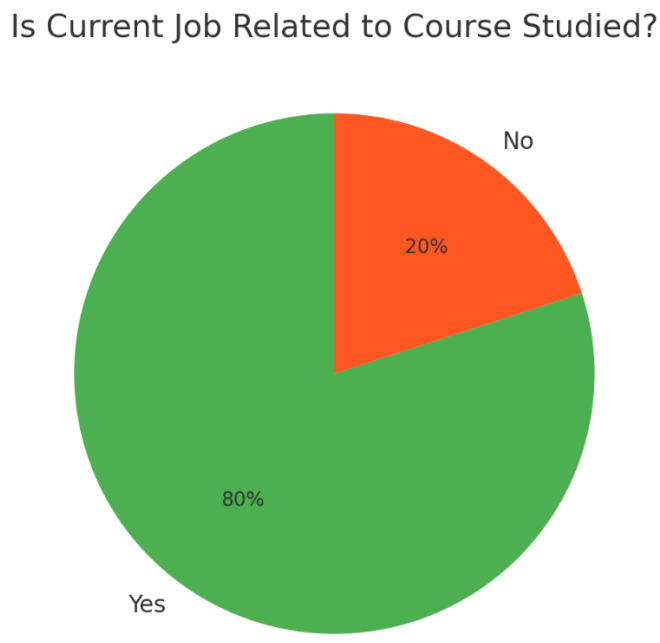

Figure 14 Relation between work and the course followed.

3.2.3.1.1 Degree of Relevance Between Study and Work

Table 17 illustrates the degrees of relevance of graduates' studies to their work. Out of 29 traced graduates responsive to this question; the majority (about 76%) reported the relationship as *highly related*, while 24% described it as *moderately related*. None reported only a slight relation.

This indicates that, for most graduates in related jobs, the connection between their training and current work is strong.

Table 17 Degree of relevance between study and work.

Degree of Relation	**Highly**	**Moderately**	**Slightly**	**Total**
Frequency	22	7	0	29
Percent	74%	26%	0%	100%

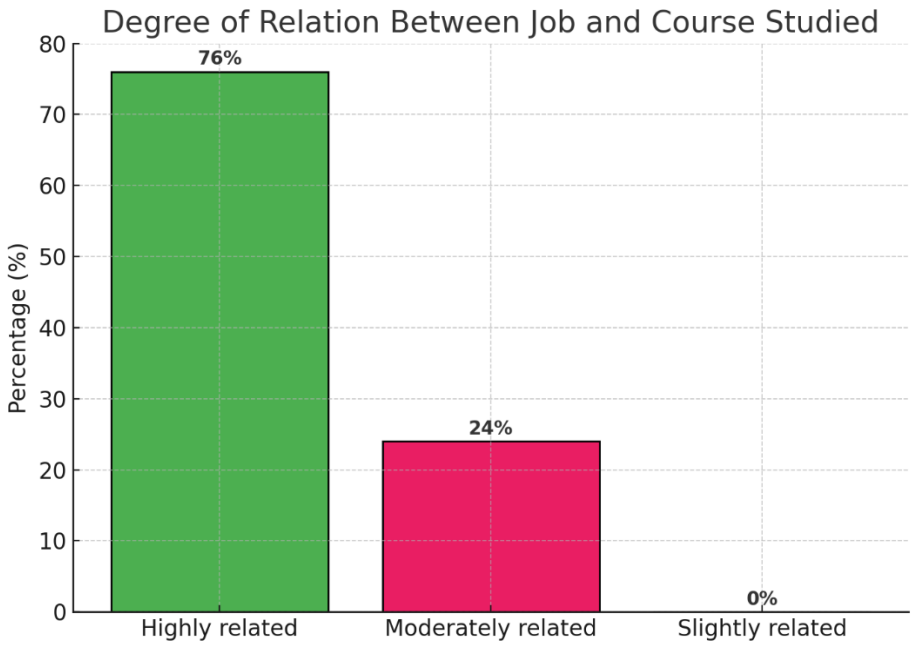

Figure 15 Degree of relevance between study and work.

3.2.3.1.2 Reasons for lack of relationship between Study and Work

About 7 graduates indicated that their present job was not related to the course they studied. 2 cited lack of a job opportunity related to their field of study as their reasons, 3 indicated that they found job opportunities unrelated to the course of study but had better salaries and benefits,1 found a job not related to their area of study but close to their residence while 1 had a clear vision of establishing their own business after graduation.

3.2.3.2 Areas of study helping in the performance at present job

Table 18 captures the areas of study that helped graduates in their performance at work. The analysis shows that knowledge (theoretical and practical related to specialization) and practical job-related skills (use of tools, equipment, and machinery) were ranked the highest, each cited by 22% of respondents as being most helpful in performing their duties. Work ethics (13%), communication skills (12%), and problem-solving skills (12%) were reported as moderately helpful. In contrast, customer service skills (8%), entrepreneurship skills (6%), and ICT skills (5%) were seen as having the least impact on job performance.

These findings highlight that while technical competencies dominate in contributing to job success, soft skills still play a role—albeit to a lesser extent.

Table 18 Areas of study helping in the performance at present job.

Areas	Knowledge	Practicals	Communication skills	ICT Skills	Problem Solving Skills	Work Ethics	Entrepreneurship Skills	Customer Service Skills
Frequency	32	32	16	8	18	19	9	12
Percentage (%)	22%	22%	12%	5%	12%	13%	6%	8%

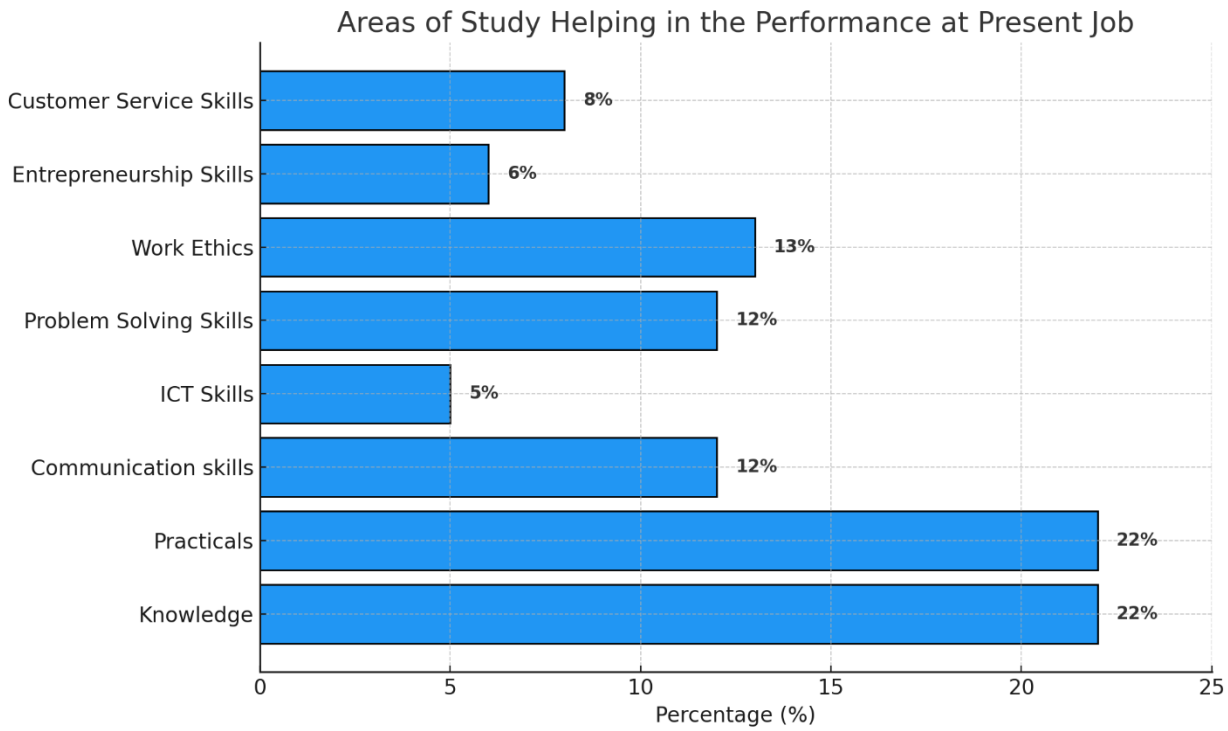

Figure 16 Areas of study helping in the performance at present job.

3.2.3.3 Access to further training

Table 19 Indicates the number of graduates who have participated in further training since graduation and the reasons given by those who did not participate in further training. It also indicates the number of graduates interested in pursuing further training in future.

Out of the total graduates, only 30% of graduates reported having participated in further training since completing their studies, while the majority (70%) had not. Among those who did not participate, the most common reason was lack of money (76%), followed by other reasons (18%), and a small proportion (6%) citing no suitable course. None indicated “no need” for further training.

Despite the barriers, all respondents (100%) expressed a willingness to participate in further training courses in the future, indicating strong demand if accessibility issues, especially financial constraints are addressed.

Among the type of courses undertaken as part of further training include:

- Diploma in Highway Engineering
- Diploma in Civil Engineering
- Auto CAD
- Low volume sealed roads
- Craft Certificate in Road Construction
- Performance Based Contractors Course

Table 19 Participation in further training, Reasons for not participating and likelihood of attending further training courses.

	Have Participated		Reasons for not Participating				Likely to Participate	
	Yes	**No**	**No Course**	**No Need**	**No Money**	**Others**	**Yes**	**No**
Frequency	14	33	2	0	25	6	33	0
Per cent	30%	70%	6%	0%	76%	18%	100 %	0%

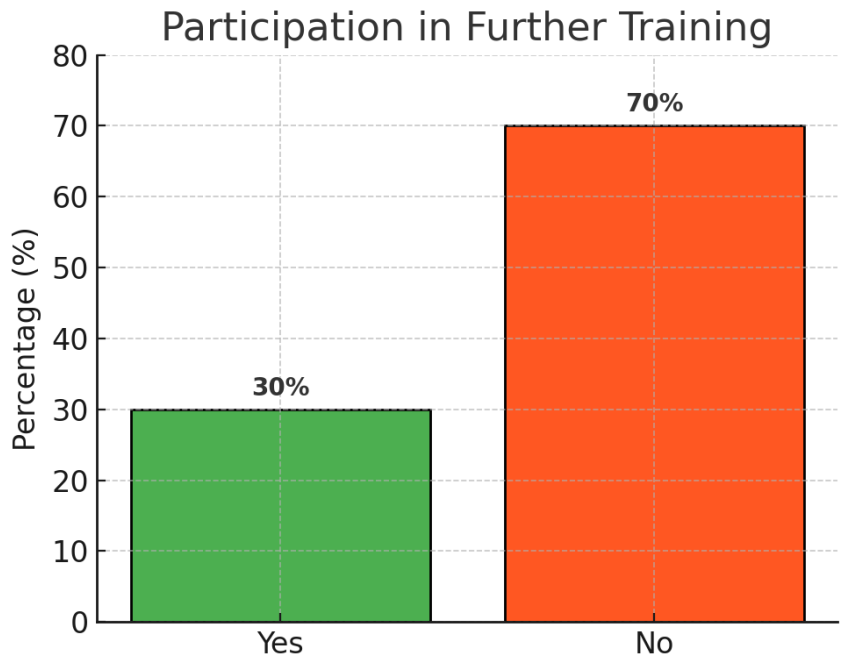

Figure 17 Participation in further training after graduation.

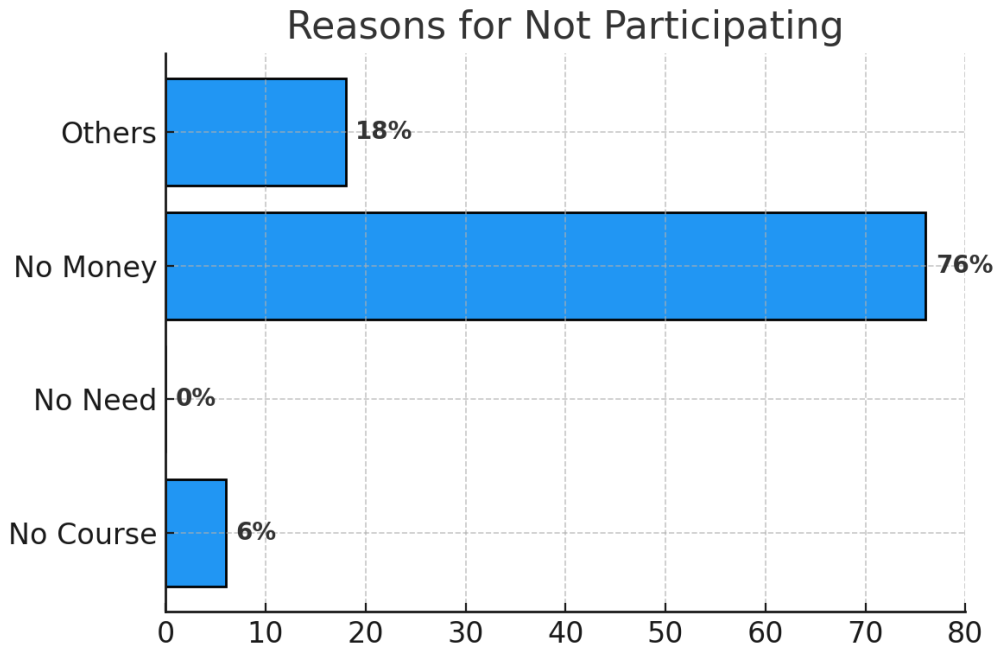

Figure 18 *Reasons for not participating in further studies.*

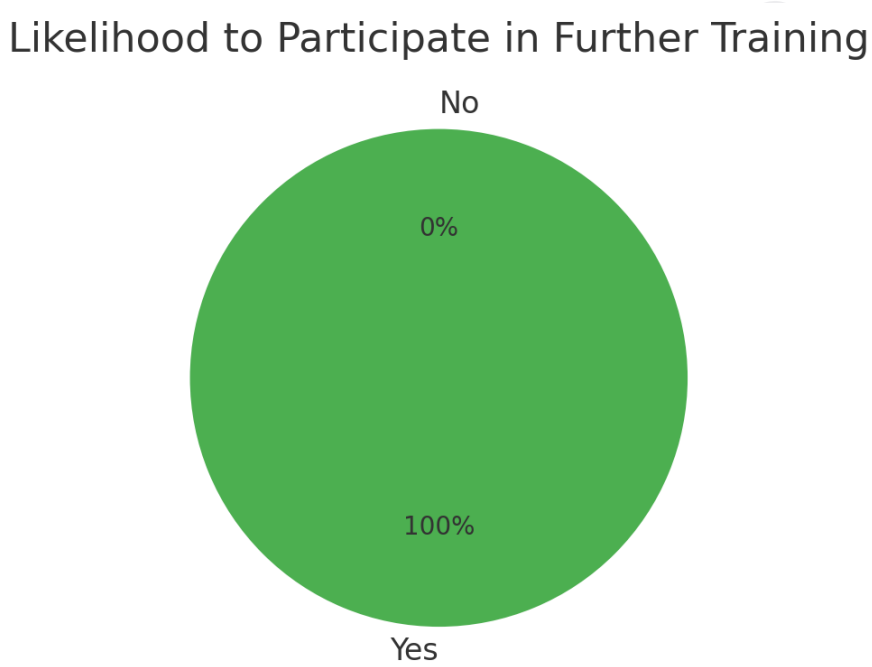

Figure 19 *Likelihood of attending further training courses.*

3.2.4 Assessment of job satisfaction by graduates

The following sections of this tracer study report will outline findings of the study with regards to employment issues. This section examines job satisfaction by the traced graduates. It is an assessment of employees towards their present jobs.

First the general satisfaction is measured on a five-point scale. This is followed with the measurement of eleven parameters on the same scale. The eleven parameters include: interesting work tasks, working with some independence, clear and regulated work tasks, applying what was learned when studying, job security, social status and recognition, putting own ideas into practice, income and benefits, good social climate / work setting, good career advancement prospects and ability to coordinate/ supervise work.

3.2.4.1 Assessment of job satisfaction by graduates

Table 20 captures general satisfaction of the graduates with their present job. Out of 36 traced graduates responsive to this question. The results show that 72% of graduates are satisfied with their present jobs, while 28% are not. This indicates that most graduates view their current employment positively, though over a quarter express dissatisfaction, suggesting room for improvement in job quality, conditions, or alignment with career expectations.

Table 20 General satisfaction with present job.

SATISFACTION WITH PRESENT JOB			
SATISFACTION	**Yes**	**No**	**Total**
Frequency	26	10	36
Per cent	72%	28%	100%

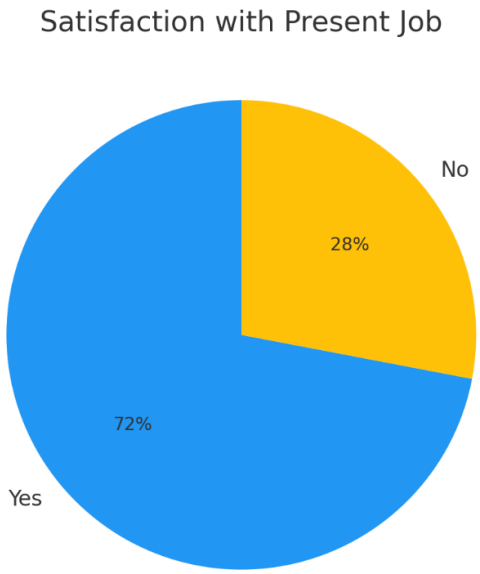

Figure 20 General satisfaction with present job.

3.2.4.2 Degree of job satisfaction alongside 11 individual job parameters

The degree of satisfaction alongside 11 individual job parameters is measured on a five-point Likert scale as shown in Table21 below.

The results are analysed based on the level of satisfaction on individual job parameters among the graduates.

This level of satisfaction has been defined as either not satisfied (1 - 1.4), least satisfied (1.5 - 2.4), moderately satisfied (2.5 - 3.4), satisfied (3.5 - 4.4) and very satisfied (4.5- 5.0).

Table 21 Interpretation of level of job satisfaction.

INTERPRETATION OF THE LEVEL OF SATISFACTION					
Scale of satisfaction	**1 – 1.4**	**1.5 – 2.4**	**2.5 – 3.4**	**3.5 – 4.4**	**4.5 – 5.0**
Level of satisfaction	**Not satisfied**	**Least Satisfied**	**Moderately Satisfied**	**Satisfied**	**Very Satisfied**
Colour Code					

Table 22 below indicates that graduates are very satisfied with a mean satisfaction level of 4.7-5.0 by the fact that they apply what they learned, are assigned interesting work tasks that are clear and regulated and they can work with some independence.

Table 22 Measurement of satisfaction along individual job parameters.

Job parameters (a)	**Job Satisfaction (b)**					**Mode (Most frequent satisfaction level)**	**Standard Deviation**	**Mean Satisfaction Score**
	1	**2**	**3**	**4**	**5**			
Interesting work tasks	0	0	6	17	15	4	0.70	4.24
Being able to work with some independence	0	2	7	9	20	5	0.93	4.24
Clear and regulated work tasks	0	0	6	13	17	5	0.74	4.31
Possibilities for applying what you learned when studying	1	0	3	11	21	5	0.86	4.42
Job security	4	6	9	9	8	3	1.29	3.31
Social status and recognition	2	5	14	8	7	3	1.11	3.36
Possibilities to put your own ideas into practice	0	0	7	8	21	5	0.79	4.39
Income and benefits	2	8	10	8	8	3	1.20	3.33
Good social climate / work setting	0	5	11	8	12	5	1.06	3.75
Good career advancement prospects	0	0	8	11	17	5	0.79	4.25
Being able to coordinate/supervise work	0	0	4	9	23	5	0.69	4.53

The mean satisfaction scores across the job parameters indicate generally high levels of satisfaction among respondents. The highest mean score was recorded for *being able to coordinate or supervise work* (4.53), followed closely by *possibilities for applying what was learned when studying* (4.42) and *possibilities to put one's own ideas into practice* (4.39). Other parameters with strong satisfaction levels include *clear and regulated work tasks* (4.31), *good career advancement prospects* (4.25), *being able to work with some independence* (4.24), and *interesting work tasks* (4.24).

Moderate satisfaction was observed for *good social climate/work setting* (3.75), while comparatively lower satisfaction levels were noted for *social status and recognition* (3.36), *income and benefits* (3.33), and *job security* (3.31).

Overall, the results suggest that respondents derive the greatest satisfaction from autonomy, opportunities to apply skills, and career growth prospects, while financial and job stability aspects appear less satisfying.

3.2.5 Relationship between study and employment

In this section the report examines the teaching/learning conditions and provisions experienced by the 42 responsive traced graduates.

3.2.5.1 Teaching-learning conditions and provisions experienced at KIHBT.

The measurement of the teaching/learning conditions and provisions uses 27 parameters on a five-point Likert scale as shown below.

The results were analysed based on the level of satisfaction on teaching/learning conditions and provisions among the graduates.

This scale of satisfaction has been defined as either not satisfied (1 - 1.4), least satisfied (1.5 - 2.4), moderately satisfied (2.5 - 3.4), satisfied (3.5 - 4.4) and very satisfied (4.5 - 5.0).

Table 23 Interpretation of level of satisfaction with teaching/learning conditions and provisions.

INTERPRETATION OF THE LEVEL OF SATISFACTION					
Level of satisfaction	**1 – 1.4**	**1.5 – 2.4**	**2.5 – 3.4**	**3.5 – 4.4**	**4.5 – 5.0**
Satisfaction	**Not satisfied**	**Least Satisfied**	**Moderately Satisfied**	**Satisfied**	**Very Satisfied**
Colour Code					

Table 24 Rating the teaching-learning conditions and provisions experienced at KIHBT.

Teaching-learning Conditions and Provisions	Job Satisfaction					Mode (Most frequent satisfaction level)	Standard Deviation	Mean Satisfaction Score
	1	2	3	4	5			
Theoretical training related to the occupation	1	0	8	9	23	5	0.76	4.39
Practical use of computers	1	3	13	5	7	3	1.07	3.48
Practical use of working tools	2	1	4	9	19	5	1.12	4.20
Practical use of machines and equipment	1	1	9	5	17	5	1.08	4.09
Practical use of materials and parts	2	1	6	13	17	5	1.07	4.08
Theory and practice of equipment maintenance	2	2	6	8	18	5	1.18	4.06
Understanding and producing drawings	2	1	9	12	12	4	1.08	3.86
Doing measurements at work	2	1	4	11	18	5	1.09	4.17

Teaching-learning Conditions and Provisions	Job Satisfaction					Mode (Most frequent satisfaction level)	Standard Deviation	Mean Satisfaction Score
	1	2	3	4	5			
Use of written instructions and working guides	0	2	4	8	22	5	0.89	4.39
Communication	0	1	3	7	25	5	0.76	4.56
Working with other people	0	1	2	3	30	5	0.69	4.72
Knowledge of Construction laws	1	1	1	11	20	5	0.91	4.41
How to work in a safe way	0	0	4	5	27	5	0.67	4.64
How to do high quality work	0	0	2	6	28	5	0.56	4.72
Discipline and accuracy at work	0	0	4	3	29	5	0.66	4.69
How to start a business	0	2	2	20	12	4	0.76	4.17
General education subjects	0	1	2	12	21	5	0.73	4.47
Management of the institution	0	0	6	11	19	5	0.75	4.36
Standard of buildings, classrooms, and workshops/labs	1	3	10	16	6	4	0.95	3.64
Recreational activities	3	0	14	11	8	3	1.09	3.58
Support from teachers	0	0	7	7	22	5	0.79	4.42
Competence of teachers	0	0	5	6	25	5	0.72	4.56
Teachers' experience of industry	0	1	3	10	22	5	0.76	4.47
Careers advice	0	0	3	10	23	5	0.64	4.56

Teaching-learning Conditions and Provisions	Job Satisfaction					Mode (Most frequent satisfaction level)	Standard Deviation	Mean Satisfaction Score
	1	2	3	4	5			
Providing internship/industry-based training	1	4	15	4	12	3	1.14	3.61
Help in finding a job	5	2	15	7	7	3	1.23	3.25
Extent of satisfaction with studies in general	0	0	3	9	24	5	0.64	4.58

Most factors scored above 4.0 on the 5-point scale, reflecting strong positive perceptions, particularly in areas such as *Working with other people*, *how to do high quality work*, *Competence of teachers*, *Careers advice*, and *Extent of satisfaction with studies in general*, all of which achieved mean scores above 4.7, suggesting exceptional satisfaction.

Areas like *Theoretical training related to the occupation* (4.29), *Practical use of working tools* (4.20), and *Management of the institution* (4.65) also scored highly, indicating that both theoretical and administrative aspects meet learner expectations.

However, certain aspects, notably *Practical use of computers* (3.48), *Help in finding a job* (3.94), and *Providing internship/industry-based training* (4.05), scored comparatively lower, highlighting opportunities for improvement in digital literacy application, structured job placement support, and stronger industry-based training linkages.

Overall, the mean satisfaction rates suggest that while the institution is performing strongly across most areas, targeted enhancements in specific practical and employment-related services could further elevate graduate satisfaction.

3.2.6 Comments and recommendations by graduates

In this section, traced graduates shared their opinions on areas they would recommend being improved in the programs offered by the Institute. Essentially these are areas that require professional attention to apply knowledge and skills to perform the job perfectly and efficiently. They also gave their comments and suggestions regarding the survey.

3.2.6.1 Graduates Comments and suggestions regarding this survey

Table25 summarizes the important changes recommended for the Institute's program of study by the graduates. The findings indicate that the most common changes recommended are:

1) Enhance practical teaching.
2) Enhance quality and quantity of teachers.
3) Equip the laboratories and workshop
4) Improve their facilities conditions
5) Enhance Attachment, Job placement and career guidance.
6) Enhance online visibility through advertisements
7) Offer sponsorship to students to further studies
8) Training on Auto CAD
9) Incorporate academic tours
10) Capitation for learners to reduce school fees burden

Table 25 Important changes recommended for the program of study.

IMPORTANT PROGRAMS	**CHANGES RECOMMENDED BY GRADUATES ON THE**
Themes	**Recommended Changes**
Attachment and Internship	● Establish a structured system to connect students with attachment, internship, and job opportunities to enhance skills development and integration into the workforce. ● Extend the duration of attachment periods. ● As a leading TVET institute, KIHBT should connect Highway Engineering students with relevant parastatals such as KeNHA, KERRA, KURA, and KRB. ● Facilitate the transition from internships to job opportunities. ● Liaise with organizations and companies to offer benefits such as retention of interns. ● Link students to upcoming projects, both locally and internationally, to allow early preparation.

	● Support students in searching for internships and jobs.
Practicals	● Make training more practical-oriented. ● Provide more training projects. ● Equip the institution with additional tools and machinery for practical work. ● Offer more practical lessons and site visits for Highway Engineering students to connect theory with real-world applications.
Quality of Teachers	● Increase the number of trainers. ● Provide continuous training to lecturers to enhance their capacity. ● Commend the management and skilled lecturers for their dedication and support to students.
Curriculum	● Strengthen drawing lessons in ArchiCAD, AutoCAD, and Civil 3D. ● Enhance training on the total station machine and Real Time Kinematic (RTK) technology.
Administration	● Offer scholarships to needy students. ● Facilitate access to government student loans through the Ministry of Education. ● Sponsor graduates for capacity-building courses such as PBC and Contract Management offered at KIHBT. ● Allow flexible fee payment options. ● Incorporate academic tours into programs. ● Improve the institution's online visibility through advertisements.
Facilities	● Build a well-equipped material testing laboratory for Highway Engineering students. ● Establish a fully equipped computer laboratory. ● Improve Wi-Fi coverage across the entire institution, not just in the library.
Job Opportunities	● Provide structured support to help graduates secure job placements.

3.2.6.2 Graduates comments and suggestions regarding this survey

Table 26 below summarizes comments and suggestions made by graduates traced regarding this survey. These comments were captured under three themes:

1) Good survey: where the graduates commended the Institute for doing a postgraduate follow up.
2) Administration: where graduates are looking forward to an improved KIHBT
3) Job Opportunities: Graduates recommended the Institute to consider them for job placement.

Table 26 Graduates comments and suggestions regarding this survey.

Themes	Comments and Suggestions
Good survey	● The survey was well-conducted, professional, relevant, and a positive reflection on the institution. ● Helped students reflect on how their training prepared them for the field and recognize the skills they gained. ● Encouraged students to continue further studies and maintain learned skills. ● Strengthened the connection between the institution, alumni, staff, and management, making graduates feel cared for and supported. ● Serves as a valuable follow-up tool to track alumni progress and strengthen relations with former students. ● Plays a role in guiding graduates' career paths and improving the institution. ● Motivates students by showing that KIHBT values them even after graduation. ● Recommended for administration to also conduct with current attachés. ● Encourages visiting as many students as possible. ● Appreciation for the follow-up and industry liaison engagement. ● Suggestions: provide ample advance notice before visitations. ● Overall sentiment: "Well done, fantastic, excellent, and much appreciated."
Administration	● They hope the findings from the survey contribute to a better and improved KIHBT. ● Gratitude for following up after completion of studies. ● Suggestion to improve the Craft Certificate in Road Construction to better meet student needs.
Job Opportunities	● Gratitude to the institution for securing internship opportunities. ● Support unemployed graduates in securing jobs. ● Provide internships and attachments for learners. ● Liaise with employers to offer contracts to unemployed graduates.

3.3 EMPLOYERS' FINDINGS AT THE KENYA INSTITUTE OF HIGHWAY & BUILDING TECHNOLOGY

This section presents the Employers' views on graduates' performance at work enabling the Institute to evaluate the effectiveness of its current curricula and identify areas of improvement on it to meet the market/industry demands. This was achieved by assessing how the Employers conduct their recruitment procedures in their organisation, if the training prepared the graduates adequately and if graduates can apply knowledge and skills acquired at KIHBT.

The survey aimed to highlight education and employment reforms and policies where decision makers in the Institute should focus on.

3.3.1 Organisation's Information

Section 3.3.1. captures the organisation's information by the industry sectors they are in and the role/position of the respondent.

3.3.1.1 Role/Position of traced Employers

The survey was able to trace 27 employers in total. The statistics in Table27 indicates the largest proportion of respondents (48%) were Section Supervisors, followed by Heads or Deputy Heads of Department (26%). Human Resource Managers and Engineers each accounted for 11%, while Deputy Directors made up 4%. There were no responses from Directors or CEOs.

This distribution suggests that feedback was primarily obtained from mid-level management, particularly those directly supervising day-to-day operations.

Table 27 The role/position of traced employers

THE NUMBER OF EMPLOYERS AND THEIR ROLE/POSITION						
	Role/Position					
	Director/CEO	Deputy Director	Human Resource Manager	Head/Deputy Head of Department	Section Supervisor	Engineer
Frequency	0	1	3	7	13	3
Per cent	0%	4%	11%	26%	48%	11%

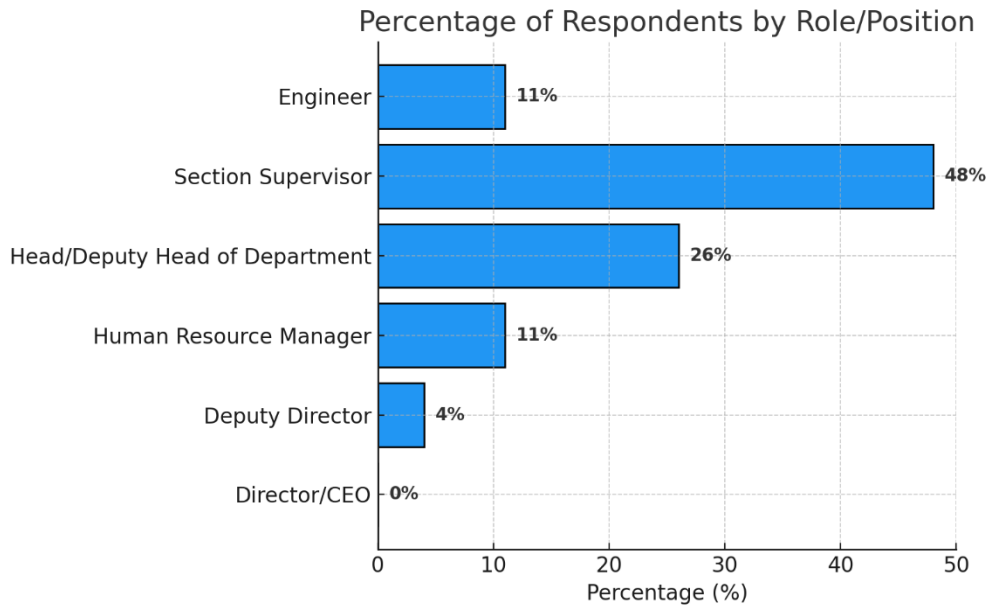

Figure 21 The role/position of traced employers.

3.3.1.2 Traced Employers of Graduates by Industry Sector

The industry sectors were grouped to adequately accommodate all sampled employers.

Table 26 summarizes how the traced employers spread across different industry sectors. The statistics indicate that of the 27 employers traced, the construction industry overwhelmingly dominates as the primary employer of KIHBT graduates, accounting for 81% of respondents. Other sectors employing graduates include electricity, gas, steam and air conditioning supply (7%), manufacturing (4%), wholesale and retail trade (4%), and education (4%). All other sectors reported no graduate employment.

This pattern highlights a heavy concentration of graduate employment in construction, with limited diversification into other industries.

Table 28 Employers of graduates by industry sectors.

EMPLOYERS OF GRADUATES BY INDUSTRY SECTOR		
Industry Sector	**Frequency**	**Per cent**
Agriculture, forestry and fishing	-	-
Mining and quarrying	-	-
Manufacturing	1	4%
Electricity, gas, steam and air conditioning supply	2	7%
Water supply; sewerage, waste management and remediation activities	-	-
Construction	22	81%
Wholesale and retail trade, repair of motor vehicles and motorcycles	1	4%
Transportation and storage	-	-
Accommodation and food service activities	-	-
Information and communication	-	-
Financial and insurance activities	-	-
Real estate activities	-	-
Professional, scientific and technical activities	-	-
Administrative and support service activities	-	-
Public administration and defence; compulsory social security	-	-
Education	1	4%
Human health and social work activities	-	-
Arts, entertainment, and recreation	-	-
Other service activities	-	-
Other	-	-
Total	27	**100%**

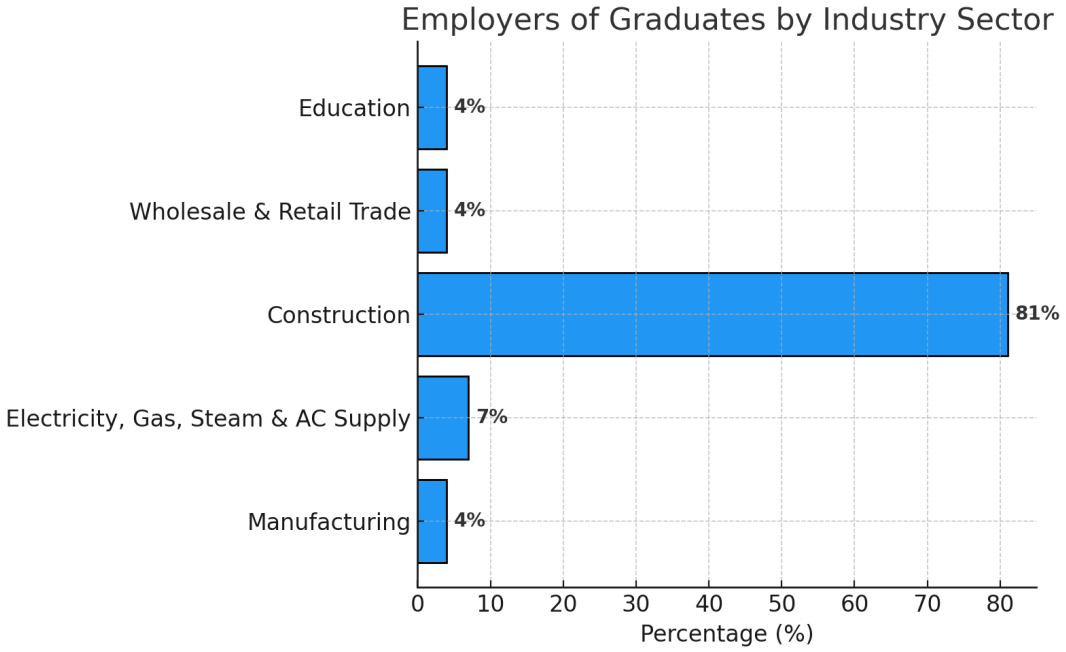

Figure 22 Employer of graduates' industry sector.

3.3.2 Recruitment Procedures and Criteria

The survey examined the procedures and criteria applied by Employers during recruitment as follows:

- Recruitment Procedures
- The number of KIHBT graduates employed.
- Gender preference
- Important aspects for recruitment of TVET graduates
- Satisfaction with quality of training received by TVET graduates.
- Satisfaction with demonstration of knowledge and skills
- Training gap
- Skills shortage

3.3.2.1 How Employers Recruit KIHBT Graduates

Table 29 captures the means and ways with which employers recruit graduates. 15% of the traced employers recruit graduates through advertisements of vacancies in the newspapers,18% through the internet advertisement,16% through internal advertisements processes,29% via direct application,3% via career advisory agency at the TVET institute,7% through other contacts to TVET institute,7% through personal contacts to graduates,1.5% through manpower allocation,6% via public service administration and 1.5% through private employment agencies

Table 29 How employers recruit graduates.

How Employers Recruit Graduates	**Frequency**	**Per cent**
Advertisements of vacancies in newspapers (*Such as, daily papers, special periodicals*)	10	15%
Advertisements on the Internet	12	18%
Internal advertisements of vacancies	11	16%
Direct application by graduates	20	29%
Career advisory agency at the TVET Institute	2	3%
Other contacts to the TVET Institute	2	3%
Personal contacts to graduates	5	7%
Manpower allocation	1	1.5%
Public service administration (*Such as, public placement services, manpower allocation system*)	4	6%
Private employment agencies	1	1.5%
Binding students by scholarships	-	-
Other	-	-
Total		**100**

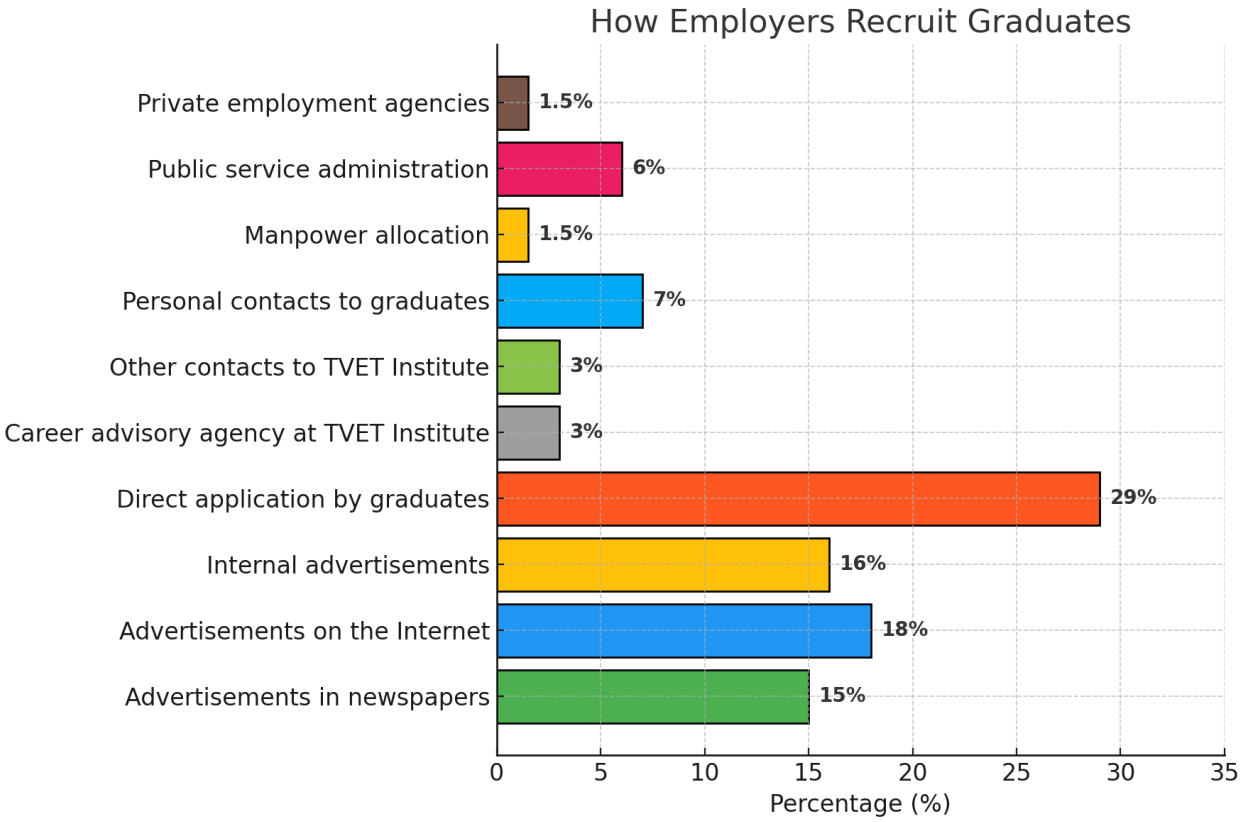

Figure 23 How Employers recruit KIHBT graduates.

3.3.2.2 Statistics of Graduates in Employment

The statistics in Table30 shows that the traced employers have engaged **75%** male and **25%** female graduates from TVET.

Table 30 Number of Graduates in Employment.

KENYA INSTITUTE OF HIGHWAY AND BUILDING TECHNOLOGY GRADUATES IN EMPLOYMENT BY GENDER			
	Male	**Female**	**Total**
Total	**101**	**34**	**135**
Per cent	**75%**	**25%**	**100%**

3.3.2.3. Aspects Considered in the recruitment of TVET Graduates

Employers were asked to rate the degree of importance for each of the eleven (11) aspects they consider during recruitment of TVET Graduates. The degree of importance for each aspect is represented using a five-point Likert scale as shown below.

Table31 below captures the degree of importance for each of the aspects considered when recruiting TVET Graduates. Results have been taken from a sample of 27 Employers who presently employ TVET graduates. This scale of Importance has been defined as either not satisfied (1 - 1.4), least satisfied (1.5 - 2.4), moderately satisfied (2.5 - 3.4), satisfied (3.5 - 4.4) and very satisfied (4.5 - 5.0).

Table 31 Interpretation of degree of importance.

INTERPRETATION OF THE DEGREE OF IMPORTANCE					
Scale of Importance	**1 – 1.4**	**1.5 – 2.4**	**2.5 – 3.4**	**3.5 – 4.4**	**4.5 – 5.0**
Level of Importance	**Not important**	**Less Important**	**Moderately Important**	**Important**	**Very Important**
Colour Code					

Table 32 Importance of aspects for the recruitment of graduates.

Recruitment Aspects	Degree of Importance					Mode (Most frequent level of importance)	Standard Deviation	Mean Importance Score
	1	2	3	4	5			
Field of study	0	0	1	10	16	5	0.57	4.56
Main focus of subject area/specialization	0	0	5	10	12	5	0.75	4.26
Grades of examinations at the TVET Institute	0	0	3	9	15	5	0.68	4.44
Practical experience acquired during course of study	0	0	2	9	16	5	0.63	4.52
Reputation of TVET Institute	0	0	0	10	17	5	0.48	4.63
Recommendations/references from third persons	0	0	3	10	14	5	0.68	4.41
Results of recruitments tests	0	0	2	11	14	5	0.63	4.44
Communication skills	0	0	1	8	18	5	0.55	4.63
Personal presentation	0	0	1	6	20	5	0.53	4.70
Personality and behaviour	0	0	0	6	21	5	0.42	4.78
Candidate's own world view	0	0	4	9	14	5	0.73	4.37

The analysis of the recruitment aspects shows that graduates rated most factors as highly important, with mean importance scores ranging from 4.26 to 4.78 on a 5-point scale.

The highest-rated aspects were Personality and behaviour (mean = 4.78), Personal presentation (4.70), Reputation of the TVET Institute and Communication skills (both 4.63), reflecting a

strong emphasis on personal attributes and institutional standing in recruitment considerations. Other critical factors included Practical experience acquired during study (4.52), Field of study (4.56), and Grades of examinations at the TVET Institute (4.44), highlighting the value placed on both academic credentials and hands-on skills.

The Main focus of subject area/specialization received the lowest mean score at 4.26, though still indicating high importance. Standard deviations across factors were relatively low (0.42–0.75), suggesting consensus among respondents. Overall, the findings indicate that recruiters prioritize a blend of professional competence, personal qualities, and institutional reputation when evaluating graduates.

3.3.2.3 Employer's preference regarding gender of graduates

Table 33 indicates most employers (82%) indicated no gender preference when recruiting graduates, reflecting an emphasis on skills and qualifications over gender considerations. A smaller proportion expressed a preference for female candidates (11%), while an even smaller group favoured male candidates (7%). These results suggest that recruitment practices among most employers are largely gender neutral.

Table 33 Employer's preference regarding gender of graduates.

Gender	**Male**	**Female**	**No preference**
Frequency	2	3	22
Percent (%)	7%	11%	82%

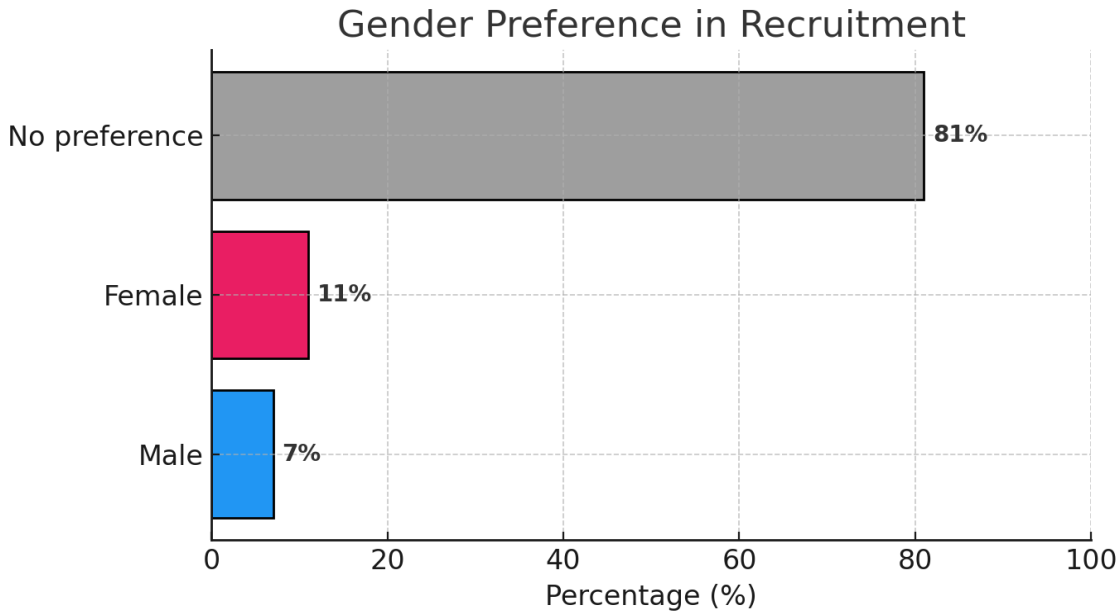

Figure 24 Employer's preference regarding gender of graduates.

Reasons for 'Male gender recruitment' by Employers

i. They consider them fit for physically demanding work.
ii. Men can handle field-based work in remote areas
iii. They are available for overtime or irregular shifts due to fewer personal or family constraints.

Reasons for 'Female gender recruitment' by Employers

i. Females majorly have strong communication and interpersonal skills, which are valued in customer-facing or team-oriented roles.
ii. They have attention to detail and accuracy, seen as advantageous in administrative, compliance, or quality control tasks.
iii. Balancing gender representation in male-dominated industries, to promote diversity and inclusivity.

Reasons for 'No gender preference' by Employers

i. The organization adheres to non-discrimination policies that promote diversity and inclusion in hiring.
ii. Employers prioritize competence, experience, and the ability to perform the job over gender.

iii. Roles may not require specific physical attributes or gender-related considerations, making performance potential the key factor.

iv. As an employer they aim to maintain balanced representation in their workforce, so they remain open to all qualified applicants.

v. They follow the Labor laws in Kenya which discourage gender bias in recruitment, encouraging merit-based hiring.

vi. As part of their organisational culture, they value inclusivity and often avoid limiting talent pools based on gender to maximize the chance of hiring the best fit.

3.3.2.4 Employers' Satisfaction with quality of training received by graduates.

Employers measured their degree of satisfaction with the training received by the Graduates using a five-point Likert scale. This scale of satisfaction has been defined as either not satisfied (1 - 1.4), least satisfied (1.5 - 2.4), moderately satisfied (2.5 - 3.4), satisfied (3.5 - 4.4) and very satisfied (4.5 - 5.0).
Table 34 outlines the levels of satisfaction among employers regarding the quality of training received by graduates.

Table 34 Interpretation of level of satisfaction with the quality of training.

Interpretation of level of satisfaction					
Range	**1 -1.4**	**1.5-2.4**	**2.5-3.4**	**3.5-4.4**	**4.5-5.0**
Satisfaction	**Not satisfied**	**Least satisfied**	**Moderately Satisfied**	**Satisfied**	**Very Satisfied**
Colour Code					

Table 35 Employers' satisfaction with the quality of training received by graduates.

Satisfaction	Satisfaction with Quality of Training					Mode (Most frequent satisfaction level)	Standard Deviation	Mean Satisfaction Score
	1	2	3	4	5			
Frequency	0	0	0	6	21	5	0.42	4.78

Table 35 captures the employer's degree of satisfaction with the quality of training received by graduates. Employers expressed exceptionally high satisfaction with the quality of training received by graduates, reflected in a mean score of 4.78 out of 5 and a low standard deviation of 0.42, indicating strong consensus across respondents. The most common rating (mode) was 5, signifying the highest level of approval. These results highlight that employers regard the training provided by the institution as highly effective in equipping graduates with the skills and competencies needed for the workplace.

3.3.2.5 The need for additional training of TVET graduates

Table 36 Employers opinions on the need for additional training of graduates.

EMPLOYERS' PERSPECTIVE ON EXTENT OF ADDITIONAL TRAINING REQUIRED BY KENYA INSTITUTE OF HIGHWAY & BUILDING TECHNOLOGY GRADUATES		
	Frequency	**Per cent**
Normally they are fully prepared to do the work well	6	22%
They need only an introductory training	7	26%
They need to learn some additional skills	7	26%
They need serious skills upgrading to start working	7	26%
They need completely new training	0	-
Total	27	100%

Table 36 summarizes the employers' feedback on the extent of additional training required by Kenya Institute of Highway & Building Technology graduates. It indicates that preparedness levels vary. About 22% of employers believe graduates are normally fully prepared to perform their work effectively, while 26% feel only introductory training is needed. Another 26% report that graduates must acquire some additional skills, and a further 26% indicate the need for serious skills upgrading before graduates can begin working. None of the employers expressed a need for completely new training. These findings suggest that while a small proportion of graduates are job-ready, the majority would benefit from targeted post-graduation training to enhance their workplace readiness. as shown in Figure 3.24 below.

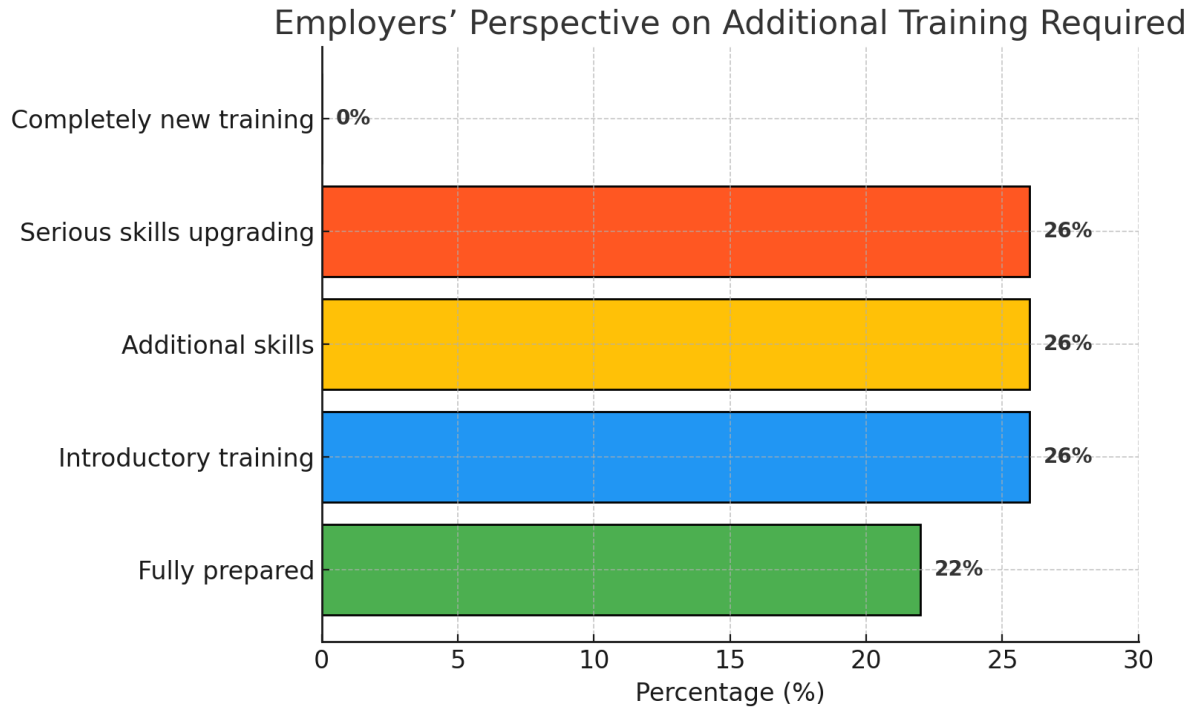

Figure 25 Employers' Opinions on the need for additional training of graduates.

3.3.2.7 Employers' responses to the importance of knowledge and skills of graduates

Employers measured their level of satisfaction with the knowledge and skills of the graduates using a five-point Likert scale. This scale of level satisfaction has been defined as either not satisfied (1 - 1.4), least satisfied (1.5 - 2.4), moderately satisfied (2.5 - 3.4), satisfied (3.5 - 4.4) and very satisfied (4.5 - 5.0).

Table 37 Interpretation of level of satisfaction on the importance of knowledge and skills.

Range	**1-1.4**	**1.5-2.4**	**2.5-3.4**	**3.5-4.4**	**4.5-5**
Satisfaction level	**Not at all Satisfied**	**Somewhat not Satisfied**	**Neither Satisfied Nor Dissatisfied**	**Satisfied**	**Very Satisfied**
Colour Code					

Table 38 Employers' level of satisfaction with the knowledge and skills of graduates.

EMPLOYERS' LEVEL OF SATISFACTION WITH THE KNOWLEDGE AND SKILLS OF GRADUATES								
Knowledge and Skills Aspects	**Level of General importance**					**Mode**	**Standard Deviation**	**Mean level of satisfaction**
	1	**2**	**3**	**4**	**5**			
Theoretical training related to the occupation	0	0	4	14	9	4	0.67	4.19
Practical use of computers	0	0	5	14	8	4	0.68	4.11
Practical use of working tools	0	0	10	9	8	3	0.81	3.93
Practical use of machines and equipment	0	0	5	12	10	4	0.72	4.19
Practical use of materials and parts	0	0	2	10	15	5	0.63	4.48
Theory and practice of equipment maintenance	0	0	2	13	12	4	0.62	4.37
Understanding and producing drawings	0	0	1	11	15	5	0.57	4.52
Doing measurements at work	0	0	3	10	14	5	0.68	4.41
Use of written instructions and working guides	0	2	0	10	15	5	0.83	4.41
Communication	0	1	3	6	17	5	0.83	4.44
Working with other people	0	0	0	7	20	5	0.44	4.74
Knowledge of the industry	0	0	3	10	14	5	0.68	4.41

EMPLOYERS' LEVEL OF SATISFACTION WITH THE KNOWLEDGE AND SKILLS OF GRADUATES								
Knowledge and Skills Aspects	**Level of General importance**					**Mode**	**Standard Deviation**	**Mean level of satisfaction**
	1	**2**	**3**	**4**	**5**			
How to work in a safe way	0	0	2	9	16	5	0.63	4.52
How to do high quality work	0	0	1	13	12	4	0.57	4.42
Discipline and accuracy at work	0	0	0	10	17	5	0.48	4.63
How to start a business	0	2	13	10	2	3	0.74	3.44
General education subjects	0	0	4	15	8	4	0.65	4.15
Research and innovation	0	1	6	11	9	4	0.84	4.04
The quality of the TVET graduates in general	0	0	1	11	15	5	0.57	4.52

Table 38 illustrates employers' satisfaction with the knowledge and skills of graduates. It shows generally high ratings across most areas, with mean scores ranging from approximately 3.93 to 4.63 on a 5-point scale. Employers expressed the highest satisfaction with aspects such as *Working with other people* (mean 4.74), *Discipline and accuracy at work* (4.63), *Use of written instructions and working guides* (4.59), and *Communication* (4.48). These areas also recorded low standard deviations, indicating strong consensus among respondents. Lower, though still positive, ratings were observed for *Practical use of working tools* (3.93) and *how to start a business* (3.41), suggesting potential areas for improvement, particularly in entrepreneurial preparation and certain practical skills. Overall, the findings indicate that graduates are well-regarded for their workplace competencies, especially in teamwork, discipline, and communication, though targeted enhancements in specific technical and business-related skills could further boost employer satisfaction.

3.3.2.8 Employers' Perspective on Problems finding employees with the needed skills.

Table39 summarizes the responses from employers on their experience in finding employees with the needed skills. Most employers representing 85% reported no difficulties in finding employees with the skills they need, suggesting that the talent pool; particularly graduates from the Kenya Institute of Highway & Building Technology, is generally meeting industry requirements. However, a smaller proportion of about 15% indicated that they do face challenges in sourcing suitably skilled employees, highlighting that while most skill needs are being met, there remains niche or specialized areas where recruitment can be more difficult as shown in Figure 3.27 below.

Table 39 Problems experienced in finding employees with the needed skills.

PROBLEMS EXPERIENCED IN FINDING EMPLOYEES WITH THE NEEDED SKILLS		
YES/NO	**Yes**	**No**
Frequency	4	23
Per cent	**15%**	**85%**

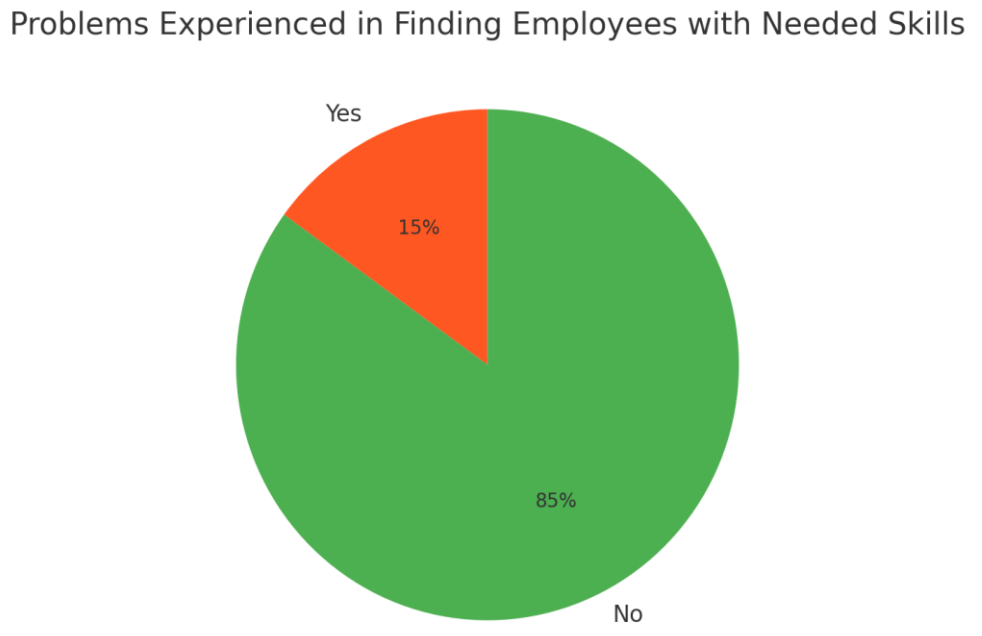

Figure 26 Problems Experienced in finding employees with needed skills.

3.3.2.9 Severity of the skills shortages

Employers measured their level of severity on the skills shortages using a five-point Likert scale. This scale of level of severity on the skills shortages has been defined as either very severe (1 - 1.4), severe (1.5 - 2.4), moderately severe (2.5 - 3.4), adequate (3.5 - 4.4) and very adequate (4.5 - 5.0).

Table 40 Interpretation of level of severity on the skills shortages.

Range	**1-1.4**	**1.5-2.4**	**2.5-3.4**	**3.5-4.4**	**4.5-5.0**
Verbalisation	**Very Severe**	**Severe**	**Moderately severe**	**Adequate**	**Very adequate**
Colour Code					

Table 41 Severity of the skills shortages

	Frequency					**Mean Level of severity**
	1	**2**	**3**	**4**	**5**	
Semi-skilled	2	1	0	0	1	2.25
Skilled worker	0	1	0	1	2	4.00
Technician/ engineer	0	0	1	1	2	4.25
Supervisory/ management	0	1	1	0	2	3.75

Table 41 Summarizes the Employers' views on the extent of severity of the skills shortages. The results suggest that employers view semi-skilled roles (mean 2.25) as having the most significant skill shortages, falling closer to the "severe" end of the scale. Supervisory/management (3.75), skilled workers (4.00), and technicians/engineers (4.25) are rated much higher, indicating that employers generally consider skills in these categories to be adequate. Overall, the findings point to the greatest recruitment and competency challenges being in the semi-skilled category, while higher-skilled positions are largely seen as sufficiently staffed.

3.3.3 Comments and Recommendations

The traced employers gave their recommendations regarding equipping graduates with additional skills that would enable them to perform their job efficiently. They also gave their comments and suggestions regarding this survey.

3.3.3.1 Programs recommended by Employers.

Table 42 summarizes the various training programs recommended for adoption at the Institute by Employers. The analysis indicates that the most common recommendations for the Institute's program is the need to introduce more practical work for learners and programs that are responsive to the current trends in the industry.

Table 42 Important changes recommended for the programme of study.

PROGRAMS OF STUDY RECOMMENDED BY EMPLOYERS	
1	Interpretation of Technical Drawings
2	CAD Design Drafting (Civil 3D and AutoCAD)
3	Offer more practicals on survey equipment
4	More practicals for better understanding of the theoretical aspects
5	ICT skills training
6	Field work for inspectorate works
7	Entrepreneurship skills. Be trained on change of attitude from employment jobs to entrepreneur
8	Material testing training
9	Project planning and management
10	Emphasis on Life Skills for change of attitude, consultation, public participation programs and public speaking

3.3.3.2 Employers' Comments and suggestions regarding this survey

Table 43 presents employers' comments and suggestions on the survey. All respondents agreed that the survey was relevant and praised the institution for undertaking such a commendable initiative.

Table 43 Employers' comments and suggestions regarding this survey.

Comment regarding survey	Frequency	Percent (%)
Relevant	27	100%
Not Relevant	0	0%
Any other	0	100%

4. SUMMARY OF FINDINGS AND RECOMMENDATIONS

This tracer study provides an in-depth look at the employment outcomes of KIHBT graduates, the relevance of their training, and the feedback from employers in the highway engineering and construction sector. The findings are drawn from both quantitative data and qualitative feedback gathered from graduates and employers between January and June 2025. This report highlights findings from Graduates of Highway Engineering related programs such as Diploma in Highway Engineering and Craft Certificate in Road Construction (CCRC) at KIHBT's results show that KIHBT graduates are making a strong entry into the labour market, but there are clear opportunities for strengthening industry linkages, upgrading facilities, and increasing the emphasis on practical training to ensure graduates remain competitive in a changing job environment.

4.1. GENERAL FINDINGS

The Institute has made consistent progress in managing its graduate database, particularly for Highway Engineering-related programmes. The data collection process has followed established methods from previous tracer studies, allowing for consistency and comparability over time.

Recommendation: Establish an integrated digital alumni management system to store graduate and employer data, track career progression, and support continuous industry engagement. Use registered student email accounts for follow-up surveys and strengthen alumni associations to keep contact information up to date.

4.2. SPECIFIC FINDINGS OF THE TRACER STUDY

4.2.1. Graduate findings

Gender Balance:

68% of respondents were male and 32% female, indicating the need for increased efforts to attract women into highway and road construction programs.

Graduate Employment Rate:

70% of graduates were engaged in employment (employed, self-employed, or in further studies). The female employment rate stood at 69%, reflecting improvement compared to previous year.

Media of Employment:

The majority secured work through personal networks (43%) or direct applications (40%), with fewer through media adverts, industry linkages, or social media.

Reasons for Lack of Employment:

Key reasons included limited job opportunities in the sector, economic slowdowns, and stalled infrastructure projects.

Relevance of Training:

92% of respondents reported that their jobs aligned with their field of study, while 8% worked in unrelated fields mainly due to lack of available opportunities.

Further Training:

23% were currently pursuing further studies, while 77% were not—primarily due to financial constraints. However, all expressed interest in future training.

Job Satisfaction:

Graduates expressed high satisfaction (mean score 4.7–5.0) with the ability to apply learned skills and undertake meaningful tasks, but moderate satisfaction with income, benefits, and job security.

Teaching-Learning Conditions:

High satisfaction levels with discipline and accuracy acquired during training, but room for improvement in job placement assistance and internship to facilitate uptake of graduates in the sector.

4.2.2. Employers' perspectives

Employer Profile:

Most employers (88%) operated within the construction sector, with the remainder spread across energy, manufacturing, utilities, and education.

Recruitment Methods:

23% recruited via online adverts, 20% via newspapers, and 20% via internal job postings, with smaller numbers using professional referrals or direct contact with the Institute. The prevalence

of both digital and traditional channels highlights the need for graduates to be versatile in their job search strategies.

Performance and Skills:

Employers expressed high satisfaction with graduates' discipline, accuracy, and overall work quality. However, they identified practical tool usage and equipment handling as an area needing reinforcement in training.

Additional Skills Needs:

50% recommended more training in digital tools, advanced equipment operation, and sector-specific emerging technologies to enhance workplace readiness.

Hiring Trends and Gender:

53% of employers had hired male graduates, while 43% had hired females. Notably, 84% reported no gender preference in recruitment decisions, signalling an equitable hiring environment.

Key Hiring Criteria:

Personality, behaviour, communication skills, and technical specialization ranked highest in importance, with a mean score of 4.0.

Skills Shortages:

Employers cited a moderately severe shortage of skilled and semi-skilled technicians, underscoring the need for competency-based curricula that heavily prioritize practical training.

4.3. SUMMARY OF RECOMMENDATIONS

To better prepare graduates for the demands of the modern labour market, KIHBT should take a more holistic approach to training and career support. A good starting point is to build a dedicated Careers and Placement function within the Industry Liaison Office. This unit would actively connect students with employers by organising job matching services, CV and portfolio clinics, mock interviews, and career fairs. It would also run a graduate tracking dashboard, so that outcomes at three, six, and twelve months after graduation can be monitored and acted upon.

Equally important is the institutionalisation of a Structured Internship and Attachment Programme. By signing formal agreements with key sector players such as KeNHA, KURA, KeRRA, KRB, NCA, and leading contractors, KIHBT can guarantee clear internship arrangements with defined roles, supervision, and evaluations. The goal should be to secure 100% attachment coverage for Highway and Road Construction cohorts, with at least a 30% internship-to-job conversion rate.

On the academic side, practical training should take centre stage. The Institute can raise the proportion of hands-on learning to around 70% of total contact hours, particularly focusing on priority tools and systems like AutoCAD, Civil 3D, total station and RTK surveying, materials testing, and plant/equipment operation. Alongside this, upgrading facilities and digital infrastructure such as equipping a modern materials testing laboratory, expanding computer lab networks, and improving Wi-Fi coverage beyond the library will ensure graduates are well-versed in current technology.

Financing remains a key barrier to lifelong learning, so KIHBT should fast-track access to funding for further training. Scholarships, bursaries, alumni-supported awards, and even Ministry of Education/HELB support could help break the cycle of skill stagnation.

To address employers repeated calls for well-rounded professionals, the Institute should integrate employability and soft skills into every programme. This could be done through regular student presentations, internal and inter-college competitions, and reinforcing a culture of discipline even considering a professional dress code to help students transition smoothly into workplace expectations.

Given the growing number of self-employed graduates, KIHBT should also launch an Entrepreneurship and MSME Track. This would include training in small works contracting, tendering, cost estimating, inventory management, and customer service, backed by mentorship from alumni entrepreneurs.

In terms of equity, gender inclusion efforts must be strengthened. With female employment at 72%, there is room to grow through targeted high-school outreach, mentorship circles for women, workplace safety and dignity training, and improved campus facilities.

Partnerships with industry should not end at internships. KIHBT could strengthen industry co-delivery and quality assurance by inviting industry experts to co-teach, facilitating short industrial attachments for lecturers, and running annual joint curriculum reviews to ensure job relevance.

A robust alumni network and graduate database will also be key. Programme-specific alumni chapters, mandatory contact updates at exam clearance, and automated tracer surveys will ensure the Institute stays connected to its graduates and gathers meaningful data.

KIHBT should advocate for fair compensation and career growth for its graduates. By engaging contractors and industry bodies on wage standards, transparent promotion paths, and recognition of KIHBT certifications, the Institute can help improve job satisfaction and retention in the sector.

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