

Effect of Vocational Training Programs on the Reintegration of Former Delinquents in Rwanda. A Case of Kigali City Graduates

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Abstract: This study examines the effectiveness of vocational training in aiding the reintegration of former delinquents in Kigali City, Rwanda, a critical factor in promoting social and economic stability for rehabilitated individuals. Rwandan rehabilitation centers integrate psychotherapy, values education, and vocational skills to support this transition. The research focuses on three objectives: identifying skills acquired, evaluating employment outcomes, and assessing income changes among former delinquents post-rehabilitation. Using a descriptive research design and mixed-methods approach, data were collected from 364 individuals via questionnaires and interviews, analyzed with SPSS version 22. Results reveal that 57% of participants trained in masonry, with 72% completing a six-month program. Motivations for training included personal interest (45%) and job opportunities (44%). Post-training, 69.5% were employed by others, while 20% remained unemployed due to further training (33%) or insufficient capital (16%). Income gains were notable, with 31% earning above 100,000 Rwandan francs monthly. Additionally, 77% credited vocational skills with securing housing, though only 41% saw benefits for supporting family education.

This research highlights vocational training's role in enhancing employment and income, recommending partnerships with industries, curriculum updates, community awareness initiatives, and ongoing support for graduates in employment, housing, and healthcare.

Keywords: Vocational training programs, rehabilitation, reintegration, employment, income.

I. INTRODUCTION

Globally, vocational skills development and lifelong learning are recognized as key to national development, improving employment and reducing poverty. Advanced countries such as Japan, the U.S., Singapore, and Finland have leveraged targeted vocational training to gain a competitive edge. In Africa, the UN and regional bodies emphasize the importance of job creation and youth skill development in socio-economic reforms. Countries like China, India, and Taiwan have integrated TVET programs to expand their skilled workforce and drive economic growth (UNESCO, 2013).

This research focuses on the impact of TVET programs on the employment and socio-economic reintegration of former delinquents in Kigali. TVET aims to equip individuals with practical skills directly applicable to the workforce, addressing gaps between theoretical learning and hands-on work (Arulsamy & Mathews, 2019). Unlike general education, which prepares students for advanced study, vocational training offers skills for immediate employment in specific industries (UNESCO, 2019). Technical training is also emphasized, especially in digital skills, to align with technological advancements in the job market (Dey & Devi, 2019).

Rwanda's socio-economic context, shaped by post-genocide recovery, has seen a rise in juvenile delinquency, driven by factors like poverty, displacement, and lack of opportunities. Many delinquents come from rural areas and are affected by broken homes or orphanhood, with two-thirds reporting that their pursuit of employment led them to leave home (Abbott & Batoni, 2011). A study at the Iwawa Rehabilitation Centre found that 48% of delinquents who left home before age 15 did so due to orphanhood, while a smaller proportion cited domestic violence and peer influence.

Factors such as poverty, conflict, and urbanization contribute to delinquency and make young people susceptible to exploitation, crime, and migration as survival strategies. The Centre for Youth at Risk reports that African males aged 15-21 from traumatic backgrounds, lacking education or skills, are especially vulnerable (Ochanda et al., 2011). Conversely, protective factors like family support, employment opportunities, and vocational skills can significantly aid in their reintegration and mitigate delinquent behaviors.

Rehabilitation centers in Rwanda are instrumental in this reintegration process, addressing former delinquents' physical, emotional, and educational needs. These centers provide safe spaces where individuals can receive psychotherapy, values education, and vocational training, equipping them with essential skills for workforce reintegration (MIGEPROF, 2020). To this end, the government established the National Policy against Delinquency, which focuses on prevention, rehabilitation, and reintegration efforts (MINALOC, 2016). The National Rehabilitation Service (GoR, 2017) operates centers such as Iwawa, Nyamagabe, and Gitagata, serving males over 18 and women and children.

Despite significant efforts, Rwanda faces challenges in aligning TVET with actual market needs, limiting graduates' employability and employer satisfaction (Rukundo & Sikubwabo, 2021). The National Rehabilitation Service (NRS) aims to mitigate delinquency through programs that foster positive behavior and professional skills development (GoR, 2024). This aligns with findings by Zhao et al. (2022), which show that job skills training enhances self-sufficiency and reduces recidivism when paired with follow-up support. A recent study by the National Rehabilitation Service (2021) on rehabilitation outcomes from 2011 to 2019 found a relapse rate of 23.1%, primarily due to a lack of job opportunities (68.2%). Although vocational skills are expected to support employment, securing jobs remains a challenge, with underlying issues contributing to this gap remaining unexplored.

While existing research highlights TVET's role in workforce development, its effectiveness in economically reintegrating former delinquents is less understood. This study specifically examines vocational training's impact on former delinquents' reintegration, focusing on Kigali's rehabilitation centers. The findings aim to inform policy and practical adjustments, enhancing TVET's role in supporting Rwanda's youth and labor market.

II. METHODS AND METHODOLOGY

This research examines the role of vocational training in the socioeconomic reintegration of former delinquents in Kigali City, Rwanda, focusing on the impact of TVET programs in rehabilitation centers. Employing a descriptive research design, the study explores how vocational training, as part of psychosocial support, aids reintegration by analysing data from both graduates and trainers through a combination of qualitative and quantitative methods. The study's target population comprised 3,993 graduates from three rehabilitation centers who reintegrated into Kigali communities between 2021 and 2023. However, due to feasibility challenges, a sample was selected rather than studying the entire population.

The sample was drawn using purposive sampling to identify relevant graduates, followed by simple random sampling to gather data from this group, ensuring a representative subset that reflects the population's characteristics. Purposive sampling allowed targeted selection of Kigali graduates, while random sampling improved the generalizability of findings. This strategic sampling approach aligns with research best practices, facilitating reliable insights into the role of vocational training in supporting graduates' successful reintegration into society by enhancing employment prospects and fostering social stability.

Researchers must exercise caution when selecting a sample from the overall population to ensure that all data can be scientifically validated. The sample size was determined using the Yamane (1967) formula as referenced by Adam (2020). From a total population of 3,993, the sample size was calculated to be 364. The simplified formula for determining the sample size is as follows:

$$n = \frac{N}{1+N(e^2)} \quad n = \frac{N}{1+N(e^2)} \quad \text{where } n \text{ represent sample size}$$

N represent target population of the study, e is the expected degree of precisions where $e=1-P$ and P is 0.95 then $e=1-0.95$, $e=0.05$.

Table 3.2. shows the sample per centers in their respective districts.

So, the target population (N) is 3993 graduates.

$$\text{Then, } n \text{ was } n = \frac{N}{1+N(e^2)} \quad n = \frac{3993}{1+3993(0.05^2)} = 364$$

This study utilized both quantitative and qualitative methods to collect data, aligning with research objectives for a comprehensive analysis (Rubin & Babbie, 2009). Quantitative data were gathered through structured, closed-ended surveys, while qualitative data collection involved open-ended interviews, observations, and interactions with participants, including graduates and local administrators, to ensure depth and context (Zohrabi et al., 2012). Key data collection tools included questionnaires for graduates and trainers, alongside interview guides for reintegration administrators, crafted for clarity, validity, and dependability.

To enhance data reliability, the researcher employed test-retest methods, achieving consistent outcomes and confirming instrument reliability (Bolarinwa, 2016). The validity of the instruments was supported by focused questionnaire items, straightforward language, and targeted interview guides designed to assess critical skills and abilities. Data collection was carefully supervised, with scheduled timelines and adherence to ethical considerations, allowing ample time for participant responses. IBM SPSS version 22.0 facilitated data analysis, organizing both qualitative and quantitative data into frequencies, means, percentages, and ANOVA, ensuring statistical reliability of results. The combination of methods and rigorous testing underscored the research's robustness, providing a reliable basis for evaluating vocational training's impact on reintegration.

III. RESEARCH FINDINGS AND DISCUSSION

3.1 Demographic Characteristics of Respondents

The sample comprises participants from three districts in Kigali City: Gasabo, Kicukiro, and Nyarugenge with a total of 364 respondents.

Table 1. Distribution of trainees by their Districts

District of Kigali city	TOTAL
GASABO	148
KICUKIRO	94
NYARUGENGE	122
Total	364

Source: Field data (2024)

The researcher assessed occupation of the respondents before joining Rehabilitation Center and the findings are summarized in Figure 1

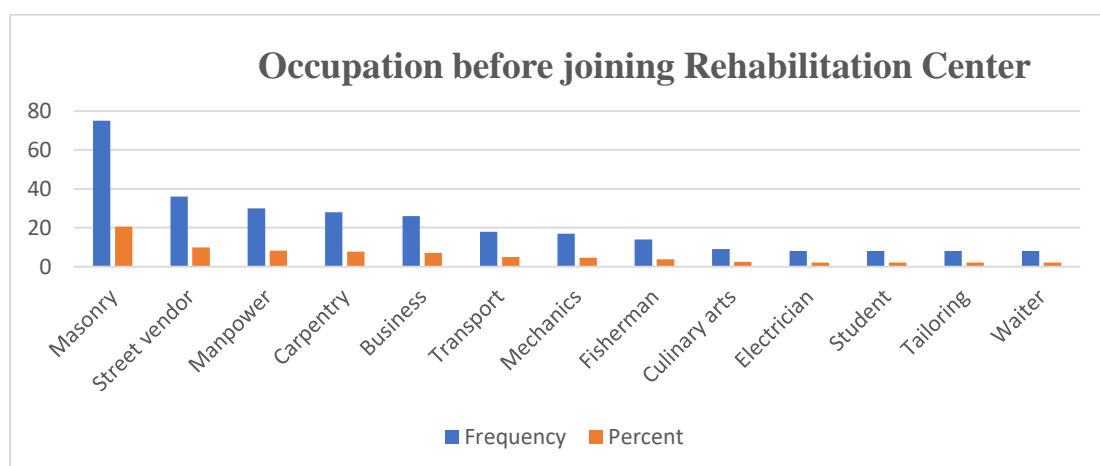


Fig. 1. Distribution of trainees by their occupation before joining Rehabilitation Center

Source: Field data (2024)

The chart shows that masonry is the most common pre-rehabilitation occupation, followed by street vending, manpower labor, and carpentry. These occupations dominate, highlighting a focus on manual, informal work before rehabilitation among former delinquents, with limited involvement in skilled professions.

The researcher assessed the reason of rehabilitation admission of the respondents and findings are summarized in Table 2.

Table 2. Distribution of trainees by their reason for Rehabilitation admission

Reason for Rehab	Frequency	Percent
Drug abuse	143	39
Delinquency	195	54
Street vendors	26	7
Total	364	100

Source: Field data (2024)

The table shows that 4% of the participants entered rehabilitation due to delinquency, making it the most significant reason. Drug abuse accounts for 39%, while 7% were rehabilitated for being street vendors. These figures highlight that criminal behavior and substance abuse are the dominant factors leading to rehabilitation, with street vending being a lesser but notable reason. The higher prevalence of delinquency and drug abuse indicates that these issues are key areas of focus for rehabilitation programs, emphasizing the need for targeted interventions in these domains.

3.2 Presentation of Findings

Basing on the objectives of the study, the presentation of the findings has focused on the specific objectives of the study which were to identify the skills acquired through vocational training programs by the former delinquents in the center, to assess the employment state of former delinquents reintegrated into Kigali City and to determine the income level of former delinquents' graduates after rehabilitation. Data collection was based on the above specific objectives and the findings were highlighted.

1. Skills acquired through vocational training programs

The researcher assessed the trade pursued by the respondents and the findings are summarized in the Fig.2.

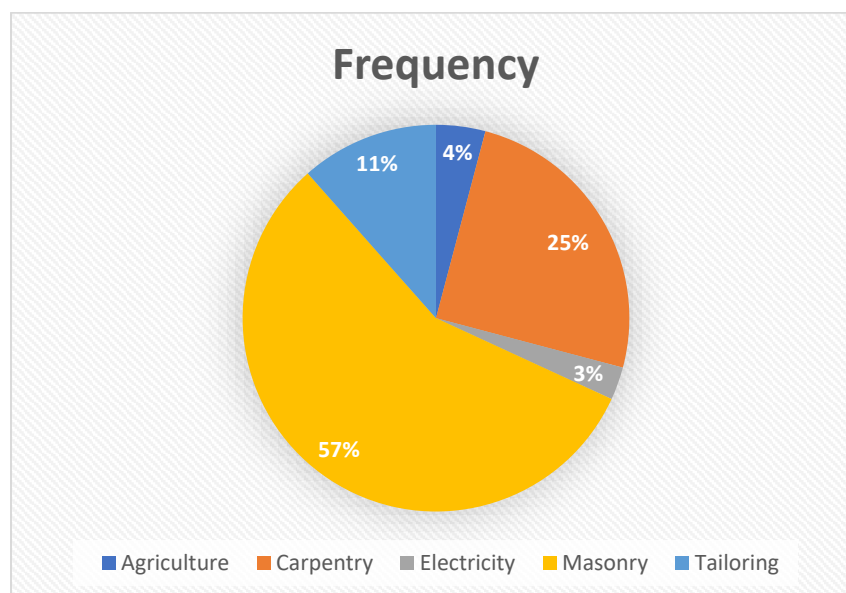


Fig.2. Distribution of trainees by their trade

Source: Field data (2024)

The Pie chart shows that 57% of participants pursued masonry as their trade, making it the most dominant choice. Carpentry follows with 25%, while tailoring accounts for 11%. Agriculture and electricity are less common, with 4% and 3% respectively. This distribution highlights a strong preference for masonry and carpentry, indicating that these trades are highly valued in the vocational training programs, while agriculture and electricity are pursued by fewer individuals, suggesting potential areas for increased focus in future programs.

a) How long have you been a part of vocational training programs in the center?

Researcher wanted to know the period of vocational training programs spent learning in the center.

Table 3. How long have you been a part of vocational training programs in the center?

Training Period	Frequency	Percent
6 Months	262	72
1 Year Program	102	28
Total	364	100

Source: Field data,2024

The table indicates that 72% of participants underwent a 6-month training period, which is the most common duration for vocational training. In contrast, 28% completed a 1-year program

b) What are the main reasons for trainees' choice of a trade?

Researcher assessed the main reasons of choosing a trade and findings are summarized in the Table 4.6 below.

Table 4. Main reasons for trainee's choice of trade

Statements	SD		D		N		A		SA	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Personal Interest	97	27	34	9	14	4	57	16	162	45
Family	137	38	49	13	24	7	43	12	111	30
Job opportunities	85	23	37	10	32	9	51	14	159	44
Lack of other trade	162	45	71	20	55	15	6	2	70	19
Rehabilitation career guidance	158	43	63	17	38	10	33	9	72	20
Age	189	52	107	29	30	8	14	4	24	7
Educational experience	218	60	34	9	33	9	26	7	53	15
Information from Former graduates	216	59	63	17	23	6	36	10	26	7
Information from colleagues	158	43	44	12	36	10	70	19	53	15
Information from Psychologist sessions	245	67	47	13	27	7	14	4	31	9

Source: Field data (2024)

Note: SD= Strongly disagree, D= Disagree, N= Neutral, A= Agree, SA= Strongly agree

The findings reveal varying levels of agreement regarding reasons for choosing a trade. A significant 45% of participants strongly agree that personal interest drives their choice, while 44% highlight job opportunities as a major factor. In contrast, 38% strongly disagree that family influence plays a role, suggesting limited pressure from family members. Interestingly, 45% strongly disagree that a lack of other trades affects their decision, indicating that most feel empowered in their choices. Additionally, 60% strongly disagree that educational experience influences their trade selection, further emphasizing individual agency. Overall, the data suggests that personal interest and job prospects are prioritized over external influences in vocational decision-making.

2. Employment state of former delinquents reintegrated into Kigali City**a) Have you ever tried to use the skills you gained from your training at least once?**

The researcher assessed if the responds were using the skills learnt and the findings are indicated in the Figure 3.

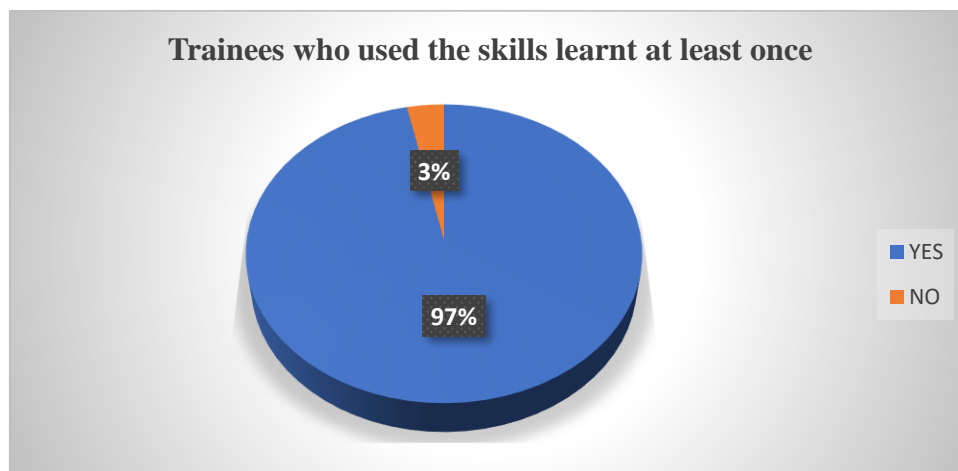


Figure 3. Trainees who used the skills learnt at least once

Source: Field data (2024)

The Pie chart shows that out of 364 trainees, 352 used the skills they learned at least once, while only 12 did not. This indicates a very high utilization rate of the skills taught.

b) Are you currently employed and using the skills learnt?

Researcher wanted to know if former delinquents are using the skills learnt and the results are shown in the table 4.7

Table 5. Employment state of graduates

Description	Frequency	Percent
Family Business	8	2.2
Not-Employed	6	1.7
Self Employed	97	26.6
Work For Others	253	69.5
Total	364	100

Source: Field data (2024)

Table 4.7 provides insight into the employment outcomes of graduates from vocational training programs for former delinquents. Of the 364 graduates, the majority (51%) are employed by others, reflecting the success of the training in helping graduates secure jobs. A notable 27% have ventured into self-employment, showcasing entrepreneurial outcomes. However, 20% of the graduates remain unemployed, which may indicate challenges in job placement for a subset of participants. Only 2% are engaged in family businesses. Overall, the data suggests that the training program has had a generally positive impact on employment but leaves room for improvement in reducing unemployment.

c) What are the challenges encountered in the workplace?

Researcher asked the challenges encountered after the skills programs and the findings are summarized in the Table 4.10

Table 6. Challenges encountered in the workplace

Challenges encountered	Frequency	Percent
Inadequate hands-on training during academic studies	16	4
Difficulty in applying theoretical knowledge to real-world scenarios	44	12
Lack of familiarity with updated industry technologies	124	36
Insufficient emphasis on soft skills development (communication, teamwork, problem-solving)	3	1
Lack of partnerships between institutions and industry	47	13

Lack of residence	19	5
Lack of trust in society and Stigmatization	106	28
None	1	0
Total	364	100

Source: Field data (2024)

Findings indicated in the table presents critical challenges encountered by former delinquents following vocational training, highlighting several key issues. The most urgent concern is the lack of familiarity with updated industry technologies, affecting 36% of the graduates. This significant skill gap potentially limits their employability in rapidly evolving sectors. Additionally, 28% of respondent's report stigmatization and societal mistrust, which severely hinders their social reintegration and acceptance in professional settings. Limited partnerships between training institutions and industries, as cited by 13%, pose another structural barrier to employment opportunities. Inadequate hands-on training (4%) and housing instability (5%) further exacerbate these challenges. Addressing these critical issues is essential to improve post-training integration and employment outcomes

3.3 Correlation of vocational training programs and the income level

This section presents correlation and regression analyses to assess the impact of vocational training programs on income levels among former delinquents, highlighting key relationships and statistical significance within the dataset.

Table 7. Correlations of variables

Correlations		Age	Training_Period	Use_of_skills_training	Support	Monthly_income_After_Rehab
Age	Pearson Correlation	1	0.101	0.087	-0.012	0.16
	Sig. (2-tailed)		0.055	0.099	0.817	0.002
	N	364	364	364	364	364
Training_Period	Pearson Correlation	0.101	1	0.159	-0.065	0.075
	Sig. (2-tailed)	0.055		0.002	0.218	0.155
	N	364	364	364	364	364
Use_of_skills_training	Pearson Correlation	0.087	0.159	1	-0.045	0.021
	Sig. (2-tailed)	0.099	0.002		0.393	0.685
	N	364	364	364	364	364
Support	Pearson Correlation	-0.012	-0.065	-0.045	1	0.027
	Sig. (2-tailed)	0.817	0.218	0.393		0.603
	N	364	364	364	364	364
Monthly_income_After_Rehab	Pearson Correlation	0.16	0.075	0.021	0.027	1
	Sig. (2-tailed)	0.002	0.155	0.685	0.603	
	N	364	364	364	364	364

** . Correlation is significant at the 0.01 level (2-tailed).

This correlation table examines the relationships between age, training period, use of skills training, support, and monthly income after rehabilitation. Age shows a positive, significant correlation with income ($r = 0.160$, $p = 0.002$), indicating that older individuals tend to have higher post-rehabilitation income. Training period ($r = 0.075$, $p = 0.155$), use of skills training ($r = 0.021$, $p = 0.685$), and support ($r = 0.027$, $p = 0.603$) have weak, non-significant correlations with income. Age emerges as the most meaningful variable related to post-rehabilitation income, while other factors are less impactful. The correlation analysis reveals that age significantly influences post-rehabilitation income ($r = 0.160$, $p = 0.002$), aligning with findings

by Wang et al. (2020), which underscore that older individuals often enjoy higher earnings post-training. Conversely, training period and skills use show weak correlations, indicating limited impact on income levels, consistent with similar studies (Smith & Jones, 2019; Lee, 2021).

Table 8. Analysis of Variance (ANOVA)

	Sum of Squares	df	Mean Square	F	Sig.
Regression	9.538517612	3	3.179505871	7.197391449	0.000105
Residual	159.032911	360	0.441758086		
Total	168.5714286	363			

a. Predictors: (Constant), Training_Period, Age, Use_of_skills_traininG

b. Dependent Variable: Monthly_income_After_Rehab

The ANOVA results demonstrate that the regression model significantly predicts monthly income post-rehabilitation ($F = 7.20$, $p < 0.001$), affirming the combined effect of training period, age, and skill utilization on income levels. This finding is consistent with prior research by Johnson et al. (2018), which also highlighted the relevance of vocational training in enhancing economic outcomes for participants.

IV. CONCLUSION AND RECOMMENDATIONS

This study assesses the impact of vocational training on the reintegration of former delinquents in Kigali City, Rwanda. Findings reveal that vocational training has positively influenced participants' skills, employment status, and income levels, aiding their transition back into society. Three main objectives were addressed: identifying acquired skills, assessing employment status, and evaluating income growth after rehabilitation.

Results indicate that former delinquents commonly pursued trades such as masonry and carpentry, with personal interest and job opportunities being primary motivators. Employment outcomes were favorable, with most participants successfully using their skills to secure jobs. However, some faced challenges like lack of capital and stigma, highlighting a need for improved post-rehabilitation support. Income analysis showed a positive correlation between vocational training and income growth, enabling participants to achieve housing stability, access healthcare, and diversify income sources.

The study recommends strengthening vocational training programs, enhancing industry partnerships, and providing tailored support to improve employment prospects. Additionally, NGOs and employers should foster inclusive hiring policies, and community campaigns should work to reduce stigma. Future research should explore long-term reintegration outcomes, gender-based differences, and policy impact on rehabilitated individuals' economic success, ensuring vocational training remains aligned with labor market needs.

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