



The role of soft skills, technical skills and academic performance on graduate employability

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ABSTRACT

This study examined the role of soft skills, technical skills and academic performance on graduate employability. The study was underpinned by the Human Capital Theory. By using a positivist quantitative approach data were collected from one higher education institution in Tanzania. The study used a sample of 217 final year students who filled a standard questionnaire. Data analysis employed descriptive and inferential statistics. The study found that soft skills ($r=.644, p<.05$), technical skills ($r=.593, p<.05$) and academic performance ($r=.376, p<.05$) individually predict perceived graduate employability. As per the findings, students with better soft and technical skills have a higher chance of getting employed. On the other hand, students with higher academic performance as measured by grade point average (GPA) are more employable than those with lower performance. Controlling these three independent variables depends on efforts of various stakeholders. This research calls for collective efforts of educators, policy makers, students, regulatory authorities and other stakeholders to work in ensuring that right and relevant skills are provided in HEIs and there is a supportive environment for students to perform better academically.

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Introduction

Graduate employability has been a global concern among educators, policy makers and other education stakeholders (Bennett, 2018; Mwita, 2019; Tomlinson, 2012). It is the expectation of almost everyone that once a person invests in his/her education, particularly higher education, he or she will get certain returns on his/her investment. One of them is having sufficient knowledge and skills that will enable him/her to acquire a job immediately after graduation. Unfortunately, it is not always the case, graduates find themselves jobless and hopeless, something that is very stressful for them and their families (Mwita, 2018).

Some people think graduate employability is the pressing issue in developing countries only. In reality, even developed countries face the same problem, what differentiates the two is the magnitude. For instance, Pereira et al (2019) pose that youth unemployment, particularly for fresh graduates, is a serious problem in Europe, especially in southern European countries that have recorded alarming rates of youth unemployment. Developing countries experience an acute level of graduate employability for a number of reasons, one being the presence of few employment opportunities in their respective countries coupled with low quality of education provided by higher education institutions (Okolie et al., 2020). Approximately 75 million young people in developing countries are unemployed, and in most countries, youth unemployment rates are 2 to 4 times higher than adults (Fajaryati et al., 2020).

The situation in Sub-Saharan Africa needs special attention as the challenge of graduate employability continues to worsen. Various interventions have been put in place which range from education reforms to plans and policies that ensure students in higher education are equipped with relevant knowledge and skills.

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In Tanzania like in so many other African countries, the government has been striving to ensure quality education is provided to students in higher education. The country established various regulatory bodies that are responsible for overseeing the quality of education that higher education institutions provide. These bodies include the Tanzania Commission for Universities and National Council for Technical and Vocational Education and Training (NACTVET). Moreover, within higher education institutions (HEIs) there are quality control and assurance organs that form internal mechanisms for ensuring quality education is provided to students (Khamis & Scully, 2020; Magasi et al., 2022). Further, the government has been funding higher education to improve quality and expand learning infrastructure as well as developing human resources. These efforts have also helped to increase the number of students who are enrolled in higher education institutions and ultimately graduate (Mgaiwa & Ishengoma, 2023).

While appreciating the efforts to improve the quality of education in Tanzania, the issue of graduate employability is alarming. Employers and other graduate stakeholders are concerned with the quality of graduates produced by higher learning institutions. It is the position of a significant number of employers and researchers that the majority of graduates do not possess sufficient employable skills that are demanded in the current labour market demands (Kessy, 2020; Kibona, 2024; Mgaiwa, 2021).

Various researchers have attempted to explore factors that affect the quality of graduates produced by HEIs. Some relate them with the quality of educators that are directly involved in teaching and training in HEIs. Others criticize the quality of curricula used in these institutions as they seem not capable of producing competent graduates (Mgaiwa, 2021; Mutalemwa et al., 2020; Mwita et al., 2023). Kessy (2020) argues that education provided in HEIs do not expose the students to practical experiences that are highly demanded by employers. While these studies provide insightful findings, they do not provide a causal relationship between the independent variables and graduate employability, something that this study did.

Literature Review

Human capital theory posits that investing in education will result in making people productive and increase the chance of them being successful in life (Chankseliani et al., 2021). Human capital entails skills, knowledge, attitudes and competences that a person possesses and are useful in making him or her useful and productive in the labour market (Suleman, 2018). As per the theory, education is expected to transform an individual and develop his/her potential to foster his/her capabilities (Marginson, 2019). Education system is considered a tool of transformation that people invest in. When people go through this system and do not achieve the expected outcomes, they become concerned with how functional the system is.

Tanzania's education system has been under scrutiny by researchers, education practitioners, policy makers and other stakeholders on its ability to offer employable skills. The number of people who graduate from higher learning institutions without the expected employable skills have been increasing. While the problem has been alarming, there are people within the same education system who graduate and are considered employable by employers (Mwita, 2018). In the midst of this confusion, it is not clear on the determinants of graduate employability.

The literature provides various factors that influence graduate employability. There are employers that give more weight to technical skills when hiring and therefore graduates with higher levels of technical skills are considered more employable (Misra & Khurana, 2017). Conversely, there are employers who give soft skills more weight (Hirudayaraj et al., 2021; Jones et al., 2016). Academic performance is considered another important determinant of graduate employability. Some employers find best performers in academics as best graduates who can make the best employees when hired.

Graduate employability

There is no consensus on one definition of what graduate employability is (Succi & Canovi, 2020). Some authors and researchers consider employability as possession of relevant and knowledge of skills that can help a graduate acquire a job. Some literature posits that graduate employability does not stop after one has acquired a particular job rather his/her ability to meet employer's expectations as well as retaining the secured job (Bonnard, 2020; Gedy & Beaumont, 2018). This kind of thinking entails that one can be considered to have the needed skills but staying in the job requires additional skills that are necessary for one to keep that particular job. Clarke (2018) sees graduate employability in two major perspectives. The first one focuses on human capital aspects such as skills, knowledge and processes that can be acquired by individuals. The second one has to do with individual variables (such as personality, attitudes and career-related behaviours), labour market variables and current employment status. As per the author, these two aspects are separate but complementary literatures. On the other hand, Bridgstock & Jackson (2019) argue that graduate employability is separated into at least three major aims which are (i) short-term graduate outcomes; (ii) professional readiness; and (iii) living and working productively and meaningfully across the lifespan.

Technical Skills

Technical skills are professional field-related skills that are important for an individual to accomplish certain tasks (Pereira et al., 2019). These are skills needed for the actual doing of work that has to do with abilities to comply with procedures and proficiencies that one has to possess to handle a particular task. They are sometimes referred to as hard skills whose role in the labour market cannot be underestimated (Dolce et al., 2019). Technical skills often relate to the use of relevant tools, technologies and equipment to handle and accomplish work related tasks.

Soft Skills

Some employers consider soft skills more important than technical skills (Succi & Canovi, 2020). Arguably, individuals with soft skills are trainable and therefore easier to equip with necessary technical skills. It has been confirmed that soft skills are relevant and important across various disciplines (Sarker et al., 2021). People possessing soft skills are considered to be confident, able to effectively communicate with an ability to solve work-related and non-work-related problems. The dynamic world of work requires people with soft skills to meet various varied labour demands. Soft skills include but are not limited to communication skills, leadership, negotiation, team work, decision making, adaptability to change, and being tolerant to stress (Mwita et al., 2023). Higher learning institutions have been criticised for giving more weight to technical skills and less attention to soft skills (Majid et al., 2012; Okolie et al., 2020). Recently, some of the HEIs have started incorporating soft skills in their curricula to meet current and future labour market demands. Unlike technical skills, soft skills cannot be sufficiently developed in the traditional classroom environment. Researchers and education practitioners call for more creative and modern ways of imparting students with these skills.

Academic performance

Success of students in education institutions are generally and usually measured by their academic performance. Academic performance is considered as a prerequisite for securing good jobs, a better career and subsequently a quality life. Higher learning institutions tend to grade their students after assessing them by using various methods. There are numerous grading systems but a common one is Grade Point Average (GPA). GPA has been assumed to have a direct relationship with the general acumen and career potential of individuals owing to which GPA is considered as a standard measure of academic performance of students (Kumar et al., 2021).

Technical Skills and Graduate employability

The vast body of empirical literature links the possession of technical skills with employability. Hosain et al (2023) found a positive significant relationship between technical skills and graduate employability in a study which was done among two universities in Bangladesh. The new workspace environment demands employees to possess sufficient technical skills particularly digital competences is increasingly high and fresh graduates with these skills are more employable (Mahajan et al., 2022). Some professions consider technical skills to be the most important set of skills for graduates to get hired. For instance, a study of Ismail et al (2020) which was done in Malaysia among accounting students observed that employers who want a higher accountant consider specific technical skills more valuable. These skills include the use of appropriate spreadsheets and accounting software. Siddique et al (2022) emphasise that technical skills are more relevant for project-based assignments. This means employers whose organisations implement multiple projects are likely to prefer graduates with more technical skills than soft skills. Likewise, the study of Saleh (2019) which was done in the manufacturing industry found that technical skills are given more weight and therefore graduates who possess these skills have higher chances of being employed.

H1: Technical skills significantly influence graduate employability

Soft Skills and Graduate Employability

The study of Sarker et al (2021) which was done in Bangladesh among ten private and public Universities sought to establish the link between a set of soft skills and graduate employability. The study found significant relationships between three soft skills namely communication, critical thinking, teamwork and employability. The need for graduates to possess soft skills have been increasingly emphasised as they are becoming more preferred by employers. Graduates with soft skills are better off in the labour market (Succi & Canovi, 2020). The findings from the study of Bhatti (2023) which was done in Saudi Arabia confirms previous studies' findings in the relevance of the soft skills in making graduates more employable. The most relevant soft skills identified in this study include organisational skills, entry-level digital skills, problem-solving skills, teamwork, subject- related skills, goal-oriented characteristics, communication capabilities, decision-making abilities and creativity. Likewise, the study of Hossain & Alam (2020) found a positive relationship between possession of soft skills and graduate employability.

H2: Soft skills significantly influence graduate employability

Academic performance and graduate employability

Students' academic performance is one of the important determinants of a student's success. Students who perform well in higher education increase their chances of being successful in their careers as well. The study of Tentama and Abdillah (2019) which was in Indonesia found a significant positive relationship between academic performance and graduate employability. Similarly, the study of Ergün and Şesen, (2021) which was done amongst Turkish universities found academic performance to be one of the significant predictors of perceived employability. These findings are consistent with those of Hosain et al (2023) who conducted a study amongst Bangladesh students. The study found that students with higher academic performance have higher chances of being employable than those with lower academic performance.

H3: Academic performance significantly influences graduate employability

Research & Methodology

This is the quantitative study that used Mzumbe University (main campus) as a case study. The university is one of the oldest higher education institutions in Tanzania with over 70 years of providing education. The study collected data from the final year students pursuing bachelor degree programmes related to administration and management. From a total of 782 students in the School of Public Administration and Management, 265 were sampled randomly as determined by Yamane's formula. Questionnaires were distributed to the sampled students. Questionnaires were used to reach the sampled respondents conveniently and timely (Mwita, 2022). A total of 217 questionnaires were correctly filled and returned for analysis. The questionnaire had four parts measuring different variables. Soft and technical skills were measured by a scale developed by Hossain and Alam (2020). Academic performance was measured using Grade Point Average (GPA) of students who were asked to indicate their respective GPAs. Employability was measured by a self-perceived employability scale developed by Rothwell et al (2009) which has a total of 17 statements. Descriptive and inferential statistics were involved in data analysis. Descriptive statistics was used to measure means and standard deviations of constructs and variables used. On the other hand, inferential statistics was used to examine the relationships among the variables.

Findings

Reliability

The study tested for the reliability of the data collection instrument used. Cronbach alpha was used for the test. As per the rule of thumb, values equal to or above 0.7 signify reliability. As per the result presented in table 2 all the scales used for data collection were reliability since they are all above 0.7.

Table 2: Cronbach alpha values for the variables

Variable	Cronbach's Alpha	No. of items
Perceived graduate employability	.802	16
Technical skills	.852	3
Soft skills	.887	6

Linear regression assumptions tests

To confirm whether data used met all the linear regression assumptions, five assumptions were tested. Firstly, the study checked whether data was normally distributed. Normally distributed data are required to ensure they are representative enough for conclusion and generalisation (Mishra et al., 2019). The study used Kolmogorov-Smirnov test which detected a significant level of .698. The null hypothesis for the test is that the data set is normally distributed and therefore the null hypothesis was accepted since the value is greater than the acceptable level of significance.

Another tested assumption was multicollinearity. When the linear regression model contains independent variables that are not correlated with dependent variables but they are intolerably correlated with each other the problem of multicollinearity arises (Shrestha, 2020). Variance Inflation Factor (VIF) was used to test this assumption. The rule of thumb is, there is no multicollinearity when tolerances and variance inflation factor (VIF) are significantly greater than 0.1 and smaller than 10 respectively. This was the case in the data set used as presented in table 3.

The study tested another assumption known as linearity. As per this assumption, the independent and dependent variables have to be linearly related (Williams et al., 2023). The study used the ANOVA test to confirm whether linearity assumption was met. The significance value for deviation from linearity in academic performance was 0.685, for soft skills was 0.072 and for technical skills was 0.054. Significance values for deviation from linearity for all the independent variables was insignificant hence the null hypothesis was accepted that there was no deviation from linearity.

Another assumption is auto-correlation. Autocorrelation describes sample that are related to each other across time, space, or other dimensions (Salkind, 2010). The Durbin Watson test was used to test this assumption. The Durbin-Watson value detected was 1.565. As per the test, values ranging from 1.5 to 2.5 mean there is no auto-correlation. On the other hand, values less than 1.5 and greater than 2.5 imply there is an auto-correlation problem hence there was no autocorrelation detected.

The last assumption was heteroscedasticity. To test the assumption, the Breusch Pagan test was used. The null hypothesis for the test is that the data set has no heteroscedasticity problem. The significance value detected by the test is 0.350 which is greater than the acceptable significance level and therefore the null hypothesis was accepted which implies that the assumption was met

Table 3: Results for regression diagnostic tests results

Multicollinearity	<i>Variable</i>	<i>Tolerance</i>	<i>VIF</i>
	Academic Performance (GPA)	.823	1.214
	Soft skills (SS)	.487	2.053
	Technical skills (TS)	.455	2.199
Linearity	<i>Variables</i>	<i>Deviation of linearity (sig.)</i>	
	Employability*Academic Performance	.685	
	Employability * Soft Skills	.072	
	Employability * Technical Skills	.054	
Autocorrelation		<i>Durbin-Watson</i>	
		1.565	
Normality		<i>Kolmogorov-Smirnov (Sig.)</i>	
		0.698	
Heteroscedasticity		<i>Breusch Pagan Test (Sig.)</i>	
		.350	

Descriptive statistics

Descriptive statistics involved analysis of all constructs of the variables involved in the study. The analysis involved means and standard deviations. The weighted mean for technical skills was found to be 3.15 which means students perceived technical skills is slightly above the average level. On the other hand, standard deviation was 0.879 which implies the scores in technical skills were relatively close to the mean score.

The mean for soft skills was 3.26 which is also slightly higher than the average level. The standard deviation was 1.11 which means dispersion from the mean score was not a problem since the majority of the respondents filled in the questionnaire with the scores that are near the average score with low level of dispersion.

On the other hand, academic performance which was measured in terms of GPA was found to be 2.98. This entails that generally performance of the students was generally average which is equivalent to lower second class as per Tanzania GPA grading system. The standard deviation for academic performance was 1.23 which implies that there was no significant dispersion from the mean score among the respondents.

Perceived graduate employability had mean score of 3.33 and standard deviation of 1.75. This implies students perceive their employability to be above average. The standard deviation gives an impression that there was no significant dispersion from the mean score.

Table 4: Descriptive statistics results

<i>Statements (Constructs)</i>	<i>Mean</i>	<i>Std Deviation</i>
Technical skills		
Subject specific knowledge	3.39	.825
Ability to finish work assignment with accuracy and within timeframe	3.07	.875
Effectiveness in using IT related technologies at work	2.99	.936
<i>Weighted mean & standard deviation</i>	3.15	.879
Soft skills		
Communication skills (both oral and written)	3.15	.909
Innovation/creativity skills	3.30	1.679
Problem solving	3.20	1.003
Time management skills	3.18	1.031
Leadership skills	3.34	.995
Teamwork skills	3.36	1.048
<i>Weighted mean & standard deviation</i>	3.26	1.111
Academic performance (GPA)	2.98	1.230
Perceived graduate employability		
I achieve high grades in relation to my studies	3.30	.906
I regard my academic work as top priority	3.32	3.097
Employers are eager to employ graduates from my university	3.94	1.021
The status of this university is a significant asset to me in job seeking	3.08	.985

Table cont'd

Employers specifically target this university in order to recruit individuals from my subject area(s)	3.13	1.154
My university has an outstanding reputation in my field(s) of study	3.25	2.887
A lot more people apply for my degree than there are places available	3.08	1.047
My chosen subject(s) rank(s) highly in terms of social status	3.17	1.053
People in the career I am aiming for are in high demand in the external labour market	3.60	4.080
My degree is seen as leading to a specific career that is generally perceived as highly desirable	3.42	.920
There is generally a strong demand for graduates at the present time	3.20	.958
There are plenty of job vacancies in the geographical area where I am looking	3.37	3.144
I can easily find out about opportunities in my chosen field	3.39	2.896
The skills and abilities that I possess are what employers are looking for	3.22	1.092
I am generally confident of success in job Interviews and selection events	3.29	1.079
I feel I could get any job so long as my skills and experience are reasonably relevant	3.46	1.690
<i>Weighted mean & standard deviation</i>	3.33	1.751

Correlation analysis

The study performed correlation analysis to determine strength of relationship between independent variables and graduate employability. The study found academic performance has a weak positive relationship ($r=.376$, $p<.05$) with graduate employability. Technical skills have a strong positive relationship ($r=.644$, $p<.05$) with graduate employability. Further, soft skills have moderate positive relationship ($r=.593$, $p<.05$) with graduate employability

Table 5: Correlation matrix

Indicator		Academic performance	Technical Skills	Soft skills	Employability
Academic performance	Pearson Correlation	1			
	Sig. (2-tailed)				
Technical skills	Pearson Correlation	.411**	1		
	Sig. (2-tailed)	.000			
Soft skills	Pearson Correlation	.334**	.715**	1	
	Sig. (2-tailed)	.000	.000		
Employability	Pearson Correlation	.376**	.644**	.593**	1
	Sig. (2-tailed)	.000	.000	.000	

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

Hypothesis testing

The study tested the hypothesis using ANOVA. The study found that academic performance had an explanatory power of 14.1% which means one unit increase of academic performance will lead to an increase of 14.1% of perceived graduate employability. Moreover, it was found that academic performance has significant positive influence on graduate employability ($\beta=.310$, $P\text{-value}=.000$). On the other hand, technical skills were found to have 41.5% explanatory power on perceived graduate employability. Impliedly, one increased unit of technical skills will lead to 41.5% increase of perceived graduate employability. The study found that technical skills have significant positive influence on perceived graduate employability ($\beta=.845$, $P\text{-value}=.000$). Further, soft skills were found to have explanatory power of 35.1% on perceived graduate employability. On the other hand, soft skills were found to have a significant positive influence on perceived graduate employability ($\beta=.581$, $P\text{-value}=.000$).

Table 6: Hypothesis testing results

Variable	R	R²	Hypothesis	β	p-value	Decision
Academic performance	.376	.141	Academic performance significantly influences graduate employability (Ha1)	.310	.000	accept
Technical skills	.644	.415	Technical skills significantly influence graduate employability (Ha2)	.845	.000	accept
Soft skills	.593	.351	Soft skills significantly influence graduate employability (Ha3)	.581	.000	accept

Discussion

This study offers insightful findings especially to the stakeholders of higher education on what areas they should capitalise on to increase graduate employability. The study found technical skills, soft skills and academic performance to be significant determinants of graduate employability. These findings are consistent with various available empirical literature (Bhatti, 2023; Ergün & Şeşen, 2021; Hosain et al., 2023, 2023; Mahajan et al., 2022). With regard to technical skills, the literature shows that the higher education institutions give more weight to these skills. University curricula have been designed to offer more of these skills than any other. With reference to the Tanzanian context where this study was conducted, although higher education institutions have been criticised for not being able to provide employable skills, technical skills have been comparatively offered better than the soft skills (Mwita et al., 2023). While technical skills have been considerably well provided to students, the changing demand of these skills is another important area of concern. The labour market requires graduates who have the most current technical skills needed (Fajaryati et al., 2020). That being said, the role of universities to ensure the curricula are reviewed to keep up with the pace of the dynamic labour market cannot be under-estimated. On the other hand, soft skills are important and relevant not only for graduate employability but in life in general. The empirical literature shows that higher education has a big problem in providing soft skills compared to technical skills (Okolie et al., 2020). Perhaps, this was not initially a primary focus of higher education institutions due to the previous nature of the labour market demands. Recently, the labour market is in need of these skills more than ever. This makes soft skills one of the important skill sets that are assessed for a person to secure a job (Ritter et al., 2018). However, provision of these skills in higher education institutions is questionable. Some believe that these institutions do not have competent human resources to provide the skills while others believe that higher education institutions do not have a facilitative curriculum to equip students with these skills (Hurrell, 2015; Mwita et al., 2023). This study also found that academic performance plays a significant role in enhancing students' academic performance and therefore those with low GPAs have lower chances of being employable. Considering this fact, initiatives are needed to ensure that students perform well to increase their chances of being employable. That being said, the focus has to be on controlling variables that can lead to better academic performance. Admittedly, the issue of students' academic performance is affected by so many factors. While others are external factors like the learning environment and quality of educators, others are internal like intelligence quotient (IQ) and interests towards the course or subjects someone is undertaking (Alyahyan & Düşteğör, 2020; Wu et al., 2020).

Conclusion

This study examined the role of technical skills, soft skills and academic performance on graduate employability. All the three independent variables were found to have significant positive effects on graduate employability. Students with better soft skills, technical skills and higher academic performance have a higher chance of securing jobs in the labour market. Generally, it is the role of various stakeholders to make students employable. The role of higher education institutions to have curricula that are capable of equipping students with relevant skills is pivotal to enhance graduate employability. The literature informs that skill development requires competent trainers. Having a good curriculum without competent lecturers in higher education institutions will be less impactful. Students are the key stakeholders making themselves more employable, the use of self-initiatives and hard work have been proven to play a significant role in making students employable.

Theoretical and practical implications

Human capital posits that investing in education makes people more valuable and useful. Impliedly, when people acquire skills, they become more employable as they fit more in the labour market. The findings of this study show that having skills is important but having the right skills make graduates more relevant to the labour market particularly when they possess both technical and soft skills. Moreover, graduates become more attractive in the labour market context when they have better academic performance. This entails that human capital not only has to do with education and skills that people possess but their performance level in mastering knowledge and skills they have.

With regard to practical implications, HEIs that manage to have curricula that meet current and future labour market demands by offering relevant knowledge and skills are more likely to make their graduates more employable. Further, a learning environment

that fosters effective learning is a determinant to graduate employability. As academic performance is influenced by students' efforts, students who put more effort into learning and perform better are more likely to potentially explore opportunities offered by the labour market.

Limitations of the study and areas for future research

This study used a quantitative approach which limits collection of detailed insights through data collection methods like interviews and focus group discussions that this study didn't opt to use. Moreover, the study used one higher learning institution that limits its ability to generalise. Future studies may consider including more HEIs to increase their ability to generalise.

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