

Florence, Italy International Journal of Sciences and Research

DOI: https://doi.org/10.5281/zenodo.7265936

THE SKILLS FACTOR AS A PREDICTOR OF GRADUATE EMPLOYABILITY IN THE SOUTH AFRICAN CONTEXT

Samson Nambei Asoba, Department of Public Management and Administration, Walter Sisulu University Nteboheng Patricia Mefi, Department of Public Management and Administration, Walter Sisulu University Nancy Fanyana, Independent researcher

ABSTRACT

The study explored skills as a factor in graduate employability in South Africa. In formulating the focus of the study it was taken that South Africa suffers from high unemployment. It was found in this study that factors that contribute to graduate employability were mainly the scarce skills and networking skills of graduates. There was also evidence of bad labour market practices and corruption in the market such as nepotism which was affecting graduate absorption into the labour market. The study found that scarce skills are industry specific despite there being such general skills as communication and other social competencies. The study provided evidence that scarce skills are usually industry-driven and comprise specialized and context-specific technologies and knowledge domains. It was observed that scarce skills often require experience and university education alone is inadequate, hence there is a need for post-university further education that is specifically directed at the acquisition of scarce skills. While graduate employability is largely dependent on scarce skills, it was found that recruitment and employment processes face problems related to unfair labour practices and a high degree of subjectivity that affects employment. Often employers do not employ based on skills but use other criteria. There was evidence that employment is now also being influenced by factors such as networking and relationships among graduates and employers. Based on these results, Universities should foster the development of scarce skills for the employability of graduates.

Keywords: Skills, graduate, employability.

INTRODUCTION

In a country with high unemployment rate as South Africa, university graduates do not readily get employed after graduation. Unemployment of youth is not only a problem in emerging countries like South Africa, it is also evident in most emerging world (Bowmaker-Falconer & Herrington, 2020). The slow progress in addressing unemployment among the youths is largely not exclusive to South Africa but also a huge challenge in both developing and developed countries. As much as there is adequate literature on this subject which suggests many recommendations to government, little has been done to address young graduate unemployment (Venkatraman, de Souza-Daw & Kaspi, 2018). Unemployment has emerged as a major social and economic problem facing South African university graduates. According to Statistics South (2020) in 2017 there were more than 430 000 unemployed people in the country with about 58% of them being between



Florence, Italy International Journal of Sciences and Research

15 and 34 years of age. Most of them are graduates with qualifications, but do not get hired. Frey and Osborne (2017) stated that employability is largely being skewed in favour of highly skilled employees at present.

LITERATURE REVIEW

Skills and employability

Skills for graduate employability are those overall skills that are accepted as necessities required in industry and that allow for the achievement of specific industry outcomes (Omoruyi, Olamide, Gomolemo & Donath, 2017). Essentially, this denotes the skill-set, attitudes and capabilities that are compulsory for a specific jobs in certain industrial sectors and ought to be advanced beginning with those that are foundational at the workplace. In addition, it is important to have a skills match in relation to the curriculum of educational institutions as well as appropriate learning methodologies that match what is in demand in industries. Such expectations or necessities tend to be central to performance and are used to predict if a person can adequately meet the requirements of a job and in the absence of those necessities of the sector or industry, graduates encounter difficulties in securing employment (Comyn & Brewer, 2018). The presence of a skills gap tend to affect the employability of university graduates. (Ori, 2013) consider a skill gap as difference in what the employees do as associated to what the employers would presume them to do. Martin & Knudsen (2010) define skills deficiencies in terms specific training needs. This shows that the shortage of skills can be viewed to arise from two perspectives, either employers have not provided skills training or educational institutions are not adequately skilling graduates.

This study considers the problem from the conception that educational institutions are lacking somewhere and there is need for them to address the curricula that they offer so that it addresses the skills requirements of employers. It is also important to appreciate that whenever a skills deficiency exist, the nature of the skills deficiency should be established. In order to address the skills challenge, the gaps should be considered from industry or from educational deficiencies in which case the curriculum in educational institutions should be revamped to match industry demands. There have been suggestions that preparations for the labour market among graduates ought to consider such skills and capabilities as innovativeness, professionalism and accountability, Furthermore, such qualities as critical thinking, leadership, management, use of information communication technology, systems thinking, work ethics, and literacy and numeracy have also been mentioned as important (Van Laar, Van Deursen, Van Dijk & De Haan, 2017). It can be added that higher education institutions are also responsible for enhancing employability attributes. Mtawa, Fongwa and Wilson-Strydom, (2019:2) define employability as the possession of qualities, traits and knowledge that are required by the industry and that allows career progression. Hence the purpose of higher learning institutions is to offer graduates with relevant skills and attributes to secure employment and enhance their socio-economic stability. Lack of provision for work integrated learning (Internships), which may offer a fundamental chance and exposure for students to develop employability attributes also contributes to the quality of graduates released to the labour market (Jackson and Collings, 2018). The link between higher education and employment in the workplace has been a central matter of concern of government programs in many nations. There is greater need for higher education from both government and



Florence, Italy International Journal of Sciences and Research

employers to prepare graduates who are employable based on their attributes, qualities, capabilities, required skills and traits as well as attitudes to work successfully (Mtawa, Fongwa and Wilson-Strydom, 2019). The views and expectations of employers as well as the quality of graduates produced by our higher education institutions need to continuously be evaluated to ensure the desired outcomes from higher education. Klofsten, Fayolle, Guerrero, Mian, Urbano & Wright (2019) state that the role of higher education is to contribute to economic growth and societal progress. This has been their major role, in order to suit the job or human capital demand. After spending three to four years of tertiary education, most of the graduates still fail to find employment. In the view of Ismail and Mujuru (2020) for good development of career paths among graduates, higher education is expected to engage proactively with the skills requirements of the economy, and at the same time, to ensure through research, knowledge generation and innovation, the many crucial imperatives that affect South Africa as a developmental state and young democracy. Furthermore, in recognition of the global economic crisis that has prevailed since 2008, it has become critical that South Africa produce even more skilled graduates who are capable of competing within a shrinking global workforce

Methodology

This study was based on the ontological position of idealism. Consequently, the epistemological assumptions held by the researcher, in line with idealism were those of both post-positivism. In considering the approaches stated above, it should also be impressed that the positivist research design tends to be associated with the quantitative research approach whereas the constructivist paradigm is associated with the qualitative approach. The questionnaire survey method was appropriate in order to achieve the aims and objectives of the study as well as to answer the research questions which were stated earlier. Quantitative designs are often associated with close ended questionnaires and experimental observations (Kivunja & Kuyini, 2017). The design of this study was based on the collection of the same information from a large group of graduates from a selected university in South Africa as well as the determination of the opinions of employers. There was a need to collect data on the opinions and issues pertaining to the employment of the graduates. The population of the study was restricted to those graduates who sought employment, failed to get it for some reasons and decided to pursue further studies or those who got employed but decided to further their education for some reasons those who graduated three years and two years ago was taken with the assumption that such students would have experienced all the major challenges and opportunities in the labour market so as to be able to provide information that would be useful and that attends to the aims and objectives of this study. The selected University had an Alumni list where all former students of the University are listed. In addition, the University had an online social platform for alumni students where former students interact and share social, economic and political matters. Therefore, the sampling frame of interest for the study was the alumni students. a sample size of 60 former students of the selected University who graduated in 2018 was deemed suitable for the study. The same number was also to be selected for the 2019 class



Florence, Italy International Journal of Sciences and Research

Findings

Biographical information of respondents.

The gender of the respondents was as provided in Table 1. 47% of the respondents were males while females accounted for 53% per cent of the respondents. This is shown in Table 1.

Table 1: Gender distribution of respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	28	46.7	46.7	46.7
	Female	32	53.3	53.3	100.0
	Total	60	100.0	100.0	

Age distribution of respondents

Table 2 shows the age distribution of the participants for the study. The majority (42%) of the respondents, as shown in Table 2 were in the 20 to 30 age group. This is not surprising as most job seeks are often within the middle age groups. On the other, thirty three percent (33%) of the respondents were within the 30 to 40 age group, while the above forty age group was the least with only eight percent of the respondents. These results seem to suggest that the 20 to 40 age group represents the majority of the individuals facing the scarce skills challenge in the South African labour market. Most of these individuals are obviously those who have just completed tertiary education. These arguments support the concerns highlighted by such studies as those of Bowmaker-Falconer and Herrignton (2019).

	-	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than 20 years	10	16.7	16.7	16.7
	20 years to 30 years	25	41.7	41.7	58.3
	30 years to 40 years	20	33.3	33.3	91.7
	Above 40 years	5	8.3	8.3	100.0
	Total	60	100.0	100.0	

Table 2: the age distribution of respondents

Qualification of respondents

A key biographical element that is likely to influence employment and that is related to the concept of scarce skills is the educational qualifications and level of education of job seekers in the labour market. As such, it was important to consider the qualifications of the respondents who participated in this study. Table 3 shows the present qualifications of the respondents. As shown, the majority (31%) of the sixty (60) participants of the study held degrees in various fields while twenty four percent had Diplomas. This simply supports asserts that the education system in South Africa seem to be inadequate to produce graduates who are capable of solving the socio-economic issues facing the country. Reporting for the World Economic Forum [WEF] in its Global Competitiveness Report, Schwab (2019) support the literature in asserting that South Africa has suffered from an inadequate education system that has failed to accommodate graduates and ensure their absorption in the system. In their report on the state of entrepreneurship in South Africa, Bowmaker-Falconer and Herrington reflected other earlier literature assertions that there is need to re-consider the



Florence, Italy International Journal of Sciences and Research

preparedness of University graduates and their ability to suit in the labour market. While these lamentations are on-going, they are clear observations that the prevailing socio-economic environment has become highly dynamic. Changes in the technological environment have chiefly been responsible for making many traditional skills obsolete.

	-	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Degree	31	51.7	51.7	51.7
	Diploma	24	40.0	40.0	91.7
	Certificate	4	6.7 6.7		98.3
	Other	1	1.7	1.7	100.0
	Total	60	100.0	100.0	

Table 3: Highest qualification of respondents

Employment status of respondents

The employment status of respondents was asserted. Respondents were required to provide the status from being employed to unemployed/employed on contract basis. Table 4 shows that most (24%) of the respondents were unemployed of employed on a contract basis while twenty one percent (21%) were employed in permanently. These findings simply confirm the arguments that South Africa faces a serious problem of unemployment. In Bowmaker-Falconer and Herrignton (2019) the unemployment rate is stated to be 29.1% which has been described as higher than that of other countries in the Brazil-Russia-India-China and South Africa (BRICS) block. This study, therefore, becomes a critical enquiry to explain the notion of skills an important element in employment opportunities.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid Employment		21	35.0	35.0.0	35.0
Unemployme Part time	nt/ Employed on contract/	24	40.0	40.0.0	75.0
Other		11	18.3	18.3	93.3
4		3	5.0	5.0	98.3
5		1	1.7	1.7	100.0
Total		60	100.0	100.0	

 Table 4: Employment status of respondents

Industry or sector

Respondents were also required to indicator the sectors or industries in which they felt their skills most suited or in which they would prefer to find employment. This inquiry was established to establish was the skills problem was sector/industry specific or it was a generalized labour market problem that cuts across sectors and industries. The Table presented below shows the responses provided on the industry/sector preferences of the respondents. Table 5 shows the results. When



Florence, Italy International Journal of Sciences and Research

these results are considered it can be observed that the majority (30%) were interested in Information Technology sector while twenty two percent (22%) were in the Education sector. This observation are in line with the progression of the world to the Fourth Industrial revolution (Industry 4.0) which has been characterised by the widespread use of technologies (Maisiri, Darwish &Van Dyk, 2021).

_	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Manufacturing	6	10.0	10.0	10.0
Mining	5	8.3	8.3	18.3
Education	13	21.7	21.7	40.0
Finance and banking	8	13.3	13.3	53.3
Agriculture	3	5.0	5.0	58.3
Tourism and hospitality	4	6.7	6.7	65.0
Food processing	3	5.0	5.0	70.0
Information Technology	18	30.0	30.0	100.0
Total	60	100.0	100.0	

Table 1: Industry/sector preferences

Factors for the employability of graduates

The main objective of the study was to explore the employability of graduates and also to assess the nature of the skills factor as a critical component of the unemployment challenge in South Africa Graduates were required to indicate their level of agreement to statements in the research instrument. The level of agreement was assessed on a five-point Likert scale with: strongly agree (1), agree (2), neutral (3), disagree (4) and strongly disagree (5). In order to guide the analysis of the likert elements of the data collection instrument, it was necessary to perform a normality test on the level of agreeableness of respondents on the likert iterms. The analysis was done on the Statistical Package for the Social Sciences (SPSS) software. The results of the test for normality are indicated in Table4.6 and in Table 4.7. Table 6 shows the descriptive statistics for the normality test while Table 7 shown is a summary of the test statistics to establish whether the data was significant or not significant to be analysed following normally distributed data procedures.

Table 6: Descriptive statistics for the normality te
--

			Statistic	Std. Error
Level of agreeableness	Mean		2.4217	.06479
-	95% Confidence Interval for Mean	Lower Bound	2.2920	
		Upper Bound	2.5513	
	5% Trimmed Mean		2.4093	
	Median		2.4000	
	Variance		.252	
	Std. Deviation		.50189	
	Minimum		1.60	
	Maximum		3.60	
	Range		2.00	
	Interquartile Range		.80	
	Skewness		.366	.309
	Kurtosis		798	.608



Florence, Italy International Journal of Sciences and Research

The significance and of the test statistics to establish whether the level of agreeableness to the statements followed a normal bell-shaped distribution are shown in Table 8

	Kolmogorov	v-Smirnov ^a		Shapiro-Wilk			
	Statistic	df	Sig.	Statistic	df	Sig.	
SF	.104	60	.170	.960	60	.047	

Table 8: Decision statistics for the normality test

a. Lilliefors Significance Correction

The Kolmorov-Smirnov test is applicable in cases where there are more than one hundred (100) respondents, as a result, the Shapiro-Wilk normality test which applies to a data set of less than one hundred (100) respondents was used. Table 8 shows a significance value (0.047) which is less than 0.5 demonstrating that the level of agreeableness was not normally distributed. In addition, a further consideration of the histogram to show the mean level of agreement is indicated in Table 9. The histogram also showed that the level of agreement did not confirm to the normal distribution.



Table 9: The mean level of agreement to the statements

Having noted that the data set did not reflect a normal distribution of the level of agreeableness on the questionnaire items, it was necessary to assess whether certain factors stated on the questionnaire were more influential than others or to establish if the responses were clustered on certain key factors. This was considered in line with factor analysis. As a result, factor analysis was conducted to establish if the level of agreeableness was scattered on certain factors or the level of agreeableness demonstrated the significant influence of certain factors as distinct from others. The correlation Table for the assessment of any significant or underlying dimension for the skills requirement for employability is shown in Table 10. Table 10 provides an analysis of the significance of the correlation matrix. The ten factors which were loaded for analysis were coded from F1 to F10 and the correlation matrix is depicted in Table 10.



Florence, Italy International Journal of Sciences and Research

Correlation	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10
F1	1.000	042	.049	.293	.230	.310	006	164	.198	131
F2	042	1.000	.426	.166	.137	145	.241	.084	015	.281
F3	.049	.426	1.000	027	.167	251	.349	.267	.360	.284
F4	.293	.166	027	1.000	.032	.207	075	025	011	152
F5	.230	.137	.167	.032	1.000	.030	003	.117	.272	.030
F6	.310	145	251	.207	.030	1.000	154	228	090	222
F7	006	.241	.349	075	003	154	1.000	.104	.166	.273
F8	164	.084	.267	025	.117	228	.104	1.000	.164	.022
F9	.198	015	.360	011	.272	090	.166	.164	1.000	.342
F10	131	.281	.284	152	.030	222	.273	.022	.342	1.000
F1		.375	.356	.012	.038	.008	.483	.105	.064	.160
F2	.375		.000	.102	.148	.135	.032	.261	.455	.015
F3	.356	.000		.418	.102	.026	.003	.020	.002	.014
F4	.012	.102	.418		.403	.056	.285	.425	.467	.123
F5	.038	.148	.102	.403		.409	.492	.187	.018	.411
F6	.008	.135	.026	.056	.409		.120	.040	.248	.044
F7	.483	.032	.003	.285	.492	.120		.214	.102	.017
F8	.105	.261	.020	.425	.187	.040	.214		.105	.435
F9	.064	.455	.002	.467	.018	.248	.102	.105		.004
F10	.160	.015	.014	.123	.411	.044	.017	.435	.004	

Table 10: Factor analysis correlation matrix

Vol. 78 No. 4, 2022

E-ISSN:0032-6356

ISSN: 0032-423X

Table 11: KMO and Bartlett's Test^a

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.					
Bartlett's Test of Sphericity	Approx. Chi-Square	86.705			
	df	45			
	Sig.	.000			

a. Based on correlations

As shown in Table 11, the Bartlett's Test of Sphericity and Kaiser-Meyer-Olkin test shows that one or two underlying dimensions significantly correlated with each other. This implied that there were one or more factors that formed clusters for other dimensions. Table 12 considers the eigen values of the dimensions and four factors were found to be the main components.



Florence, Italy International Journal of Sciences and Research

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings				
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %		
1	2.397	23.966	23.966	2.397	23.966	23.966		
2	1.680	16.803	40.768	1.680	16.803	40.768		
3	1.172	11.722	52.491	1.172	11.722	52.491		
4	1.077	10.771	63.262	1.077	10.771	63.262		
5	.843	8.428	71.690					
6	.772	7.723	79.413					
7	.662	6.618	86.031					
8	.588	5.878	91.909					
9	.467	4.668	96.577					
10	.342	3.423	100.000					

Table 11: Variance explained by dimensions during factor analysis

Extraction Method: Principal Component Analysis.

As shown in Table 11, four (4) factors had an eigenvalue above 1 and these were the underlying dimensions on which all the other dimensions were underlying or clustered. As shown in Table 12, the component matrix shows that four factors were extracted through principal component matrix. The component matrix indicated that four components had to be treated as the key underlying dimensions for the skills problem in South Africa.

Table 12: Component matrix

	Raw				Resca	aled		
	Component				Com	oonen	t	
	1	2	3	4	1	2	3	4
The university is addressing the scarce skills requirement among graduates	.063	.987	- .080	.287	.050	.781	- .063	.227
Graduates fail to get employment to get employment because they lack scarce skills	.750	.000	.739	.160	.592	.000	.583	.126
After graduating from this university, I need further education to acquire scarce skills for employability	.886	- .099	.193	.166	.769	- .086	.167	.144
The university is informed of industry requirements	014	.860	.787	- .469	- .011	.639	.585	- .348
My qualifications are aligned to scarce skills	.750	.684	- .738	- .138	.525	.479	- .517	- .097
My university is focused on acquisition of scarce skills among graduates	378	.549	- .011	.074	- .359	.522	- .010	.071
The university should review its curriculum in line with scarce skills	.459	- .181	.193	.316	.448	- .177	.189	.308
After my initial graduation, I realised that I lacked scarce skills	.596	- .317	- .127	- .943	.470	- .250	- .100	- .743
I knew about scarce skills when I started looking for employment	.584	.173	- .341	.183	.532	.158	- .311	.167
Scarce skills seem to be changing	.417	- .231	.062	.362	.452	- .250	.067	.392

Extraction Method: Principal Component Analysis.



Florence, Italy International Journal of Sciences and Research

	Raw				Rescaled			
	Component			Component				
	1	2	3	4	1	2	3	4
The university is addressing the scarce skills requirement among graduates	.063	.987	- .080	.287	.050	.781	- .063	.227
Graduates fail to get employment to get employment because they lack scarce skills	.750	.000	.739	.160	.592	.000	.583	.126
After graduating from this university, I need further education to acquire scarce skills for employability	.886	- .099	.193	.166	.769	- .086	.167	.144
The university is informed of industry requirements	014	.860	.787	- .469	- .011	.639	.585	- .348
My qualifications are aligned to scarce skills	.750	.684	- .738	- .138	.525	.479	- .517	- .097
My university is focused on acquisition of scarce skills among graduates	378	.549	- .011	.074	- .359	.522	- .010	.071
The university should review its curriculum in line with scarce skills	.459	- .181	.193	.316	.448	- .177	.189	.308
After my initial graduation, I realised that I lacked scarce skills	.596	- .317	- .127	- .943	.470	- .250	- .100	- .743
I knew about scarce skills when I started looking for employment	.584	.173	- .341	.183	.532	.158	- .311	.167
Scarce skills seem to be changing	.417	- .231	.062	.362	.452	- .250	.067	.392

4 components extracted.

The four components were further subjected to a Varimax rotations to establish the principal factors for consideration. Table 13 shows the rotated matrix



Florence, Italy International Journal of Sciences and Research

	Raw Component				Rescaled				
					Component				
	1	2	3	4	1	2	3	4	
Graduates fail to get employment to get employment because they lack scarce skills	.959		.442	.133	.757		.348	.105	
After graduating from this university, I need further education to acquire scarce skills for employability	.831	.323		.253	.721	.280		.219	
Scarce skills seem to be changing	.548		235		.595		- .255		
The university should review its curriculum in line with scarce skills	.608				.593				
My qualifications are aligned to scarce skills		1.252				.877			
I knew about scarce skills when I started looking for employment	.312	.635	138		.285	.579	- .126		
The university is informed of industry requirements			1.253				.931		
After my initial graduation, I realised that I lacked scarce skills		.238		1.137		.187		.896	
The university is addressing the scarce skills requirement among gradutaes		.622	.503	649		.493	.398	- .513	
My university is focused on acquisition of scarce skills among graduates			.312	457	- .349		.296	- .434	

Table 4.2: Rotated correlation matrix

Vol. 78 No. 4. 2022

E-ISSN:0032-6356

ISSN: 0032-423X

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. a. Rotation converged in 5 iterations.

The four factors that emerged from the factor analysis process described were as shown in Table 14 As shown in Table 14 the factors seemed to cluster around certain four underlying themes, namely: (1) themes related to the impression that post-school skills acquisition determined employability, (2) themes related to the need for skills based education, (3) the need for industry driven skills acquisition as well as (4) labour market failure, (5) themes which found that the possession of post-school qualifications was a key determinant of employability. In other words, it was found that the education provided by universities on its own was not enough to ensure employment, there was need for to acquire post school competencies to match the industry requirements. This clearly related to the third them which was based on the need for skills-based education that is linked to industry requirements. In other words Universities should closely link with industries to ensure that they are in a strong position to adapt university curricular to the industry skills requirements. This also supports the need for industry skills acquisition. The last underlying factor for the employability of graduates related to labour market failures characterised by inability to absorb graduates and the existence of vices and unfair recruitment practices that is based on nepotism and other criteria and not educational qualifications.



International Journal of Sciences and Research

Florence, Italy

Vol. 78 No. 4, 2022 E-ISSN:0032-6356 ISSN: 0032-423X

Table 3: Underlying factors for the employability of graduates					
Post – school skills acquisition	Graduates fail to get employment to get employment because they lack scarce				
	skills				
	After graduating from this university, I need further education to acquire				
	scarce skills for				
	Scarce skills seem to be changing				
	My university is focused on acquisition of scarce skills among graduates				
Skills based education	My qualifications are aligned to scarce skills				
	I knew about scarce skills when I started looking for employment				
	After my initial graduation, I realised that I lacked scarce skills				
Industry driven skills	The university is informed of industry requirements				
acquisition	My university is focused on acquisition of scarce skills among graduates				
Labour market failure	I realised that I lacked scarce skills				
	After graduating from this university, I need further education to acquire				
	scarce skills for employability				
	Graduates fail to get employment to get employment because they lack scarce				
	skills				

CONCLUSION

This study found evidence that skills affect the employability of graduates. It was found that university education is generalized and lacks specificity in addressing industry needs. The study also found evidence that certain corrupt acts such as nepotism and relationshipbased employment are affecting the employability of graduates. Some solutions were provided for addressing the graduate skills challenge, including the need for reformulating university curricula and the creation of strong university-industry links that would ensure the transmission of industry skills to graduates. This study reviewed scarce skills that affect graduate employment, including skills based on the use of specific technologies that are essential for a sector or skill.

REFERENCES

- 1. Bowmaker-Falconer, A. & Herrington, M. 2020. Global Entrepreneurship Monitor South Africa (GEM SA) 2019/2020 report: Igniting start-ups for economic growth and social change. Cape Town: University of Stellenbosch Business School.
- 2. Venkatraman, S., de Souza-Daw, T. &Kaspi, S. (2018). Improving employment outcomes of career and technical education students. Higher Education, Skills and Work-Based Learning, 8(4): 469-483.http://dx.doi.org/10.1108/HESWBL-01-2018-0003
- 3. Statistics SA, 2020. Key Indicators: Summary.<u>http://www.statssa.gov.za/keyindicators/</u> keyindicators.asp [23 June 2022]
- 4. Frey, C.B. & Osborne, M.A. (2017). The future of employment: How susceptible are jobs to computerisation? Technological Forecasting and Social Change, 114: 254-280. https://doi.org/10.1016/j.techfore.2016.08.019
- 5. Omoruvi, E.M.M., Olamide, K.S., Gomolemo, G.& Donath, O.A. 2017. Entrepreneurship and economic growth: does entrepreneurship bolster economic expansion in Africa? Journal of Socialomics, 6 (4): 2-11.



Florence, Italy International Journal of Sciences and Research

- 6. Comyn, P. & Brewer, L. 2018. *Does work-based learning facilitate transitions to decent work?Employment Working Paper No. 242.* Geneva: International Labour Organisation, Employment and Labour Market Policies Branch.
- 7. Ori, S. 2013. Work-integrated learning and employability. *The African Journal for Work-Based Learning*, 1(1):1-2.
- Martin, C.J. & Knudsen, J.S. 2010. Scenes from a mall: Retail training and the social exclusion of low-skilled workers. *Regulation & Governance*, 4(3): 345-364. <u>https://doi.org/10.1111/j.1748-5991.2010.01085.x</u>
- 9. Van Laar, E., Van Deursen, A.J., Van Dijk, J.A. & De Haan, J. 2017. The relation between 21st-century skills and digital skills: A systematic literature review. *Computers in human behavior*, 72: 577-588.
- Mtawa, N., Fongwa, S. & Wilson-Strydom, M. 2019. Enhancing graduate employability attributes and capabilities formation: A service-learning approach. *Teaching in Higher Education*, 26(1): 1-17
- Jackson, D. & Collings, D. 2018. The influence of work-integrated learning and paid work during studies on graduate employment and underemployment. *Higher Education*, 76(3): 403-425.
- 12. Klofsten, M., Fayolle, A., Guerrero, M., Mian, S., Urbano, D. & Wright, M. 2019. The entrepreneurial university as driver for economic growth and social change-Key strategic challenges. *Technological Forecasting and Social Change*, 141: 149-158.
- 13. Ismail, Z. & Mujuru, S. 2020. Workplace based learning and youth employment in africa https://creativecommons.org/licenses/by/4.0/legalcode [20/08/2022]
- 14. Kivunja, C. & Kuyini, A.B. 2017. Understanding and Applying Research Paradigms in Educational Contexts. International Journal of Higher Education, 6(5):26-41
- 15. Schwab, k. 2019. The Global Competitiveness Report 2019. New York: Crown Business.
- 16. Bosma, N., Hill, S., Ionescu-Somers, A., Kelly, D., Levi, J. & Tarnawa, A. 2020. Global
- 17. Entrepreneurship Monitor, 2019/2020 Global Report. London: London Business School.
- 18. Maisiri, W., Darwish, H. & Van Dyk, L. 2019. An investigation of Industry 4.0 skills requirements. South African Journal of Industrial Engineering, 30(3): 90-105