

Exploratory Factor Analysis of the Undergraduate Employability Skills Scale

Gideon Abayomi Oloyede

International Center for Educational Evaluation,
Institute of Education, University of Ibadan, Ibadan,
Nigeria

E-mail: gideonoloyede@yahoo.com
+2348037676540

Abstract: Undergraduate employability skills have become increasingly important as graduates are expected to navigate changing labor markets and demonstrate competencies beyond disciplinary knowledge. However, the lack of psychometrically sound and contextually relevant instruments for assessing these skills among Nigerian undergraduates makes it difficult for higher education institutions and researchers to evaluate students' readiness for the workplace and improve curriculum development. This study examined the factor structure and internal consistency of the Undergraduate Employability Skills Scale (UESS) among undergraduates in Southwestern Nigeria. Sequential exploratory mixed-method design was adopted. The preliminary 105-item scale was developed through a systematic review of the literature and interviews with employers, followed by expert review and pilot testing. Data obtained from undergraduates in federal, state, and private universities were analyzed using Principal Axis Factoring with Promax rotation, while Monte Carlo parallel analysis was used to determine the number of factors retained. The analysis revealed a seven-factor structure comprising communication, decision-making, digital literacy, interpersonal, leadership, problem-solving, and teamwork skills. Forty-one of the initial 105 items were retained, with factor loadings ranging from .712 to .846. The seven dimensions demonstrated strong internal consistency, with Cronbach's alpha coefficients ranging from .903 to .936, while the overall scale yielded an alpha coefficient of .957. The results suggest that undergraduate employability skills are multidimensional and can be measured using a relatively concise and internally consistent instrument. The UESS may therefore provide a useful tool for assessing students' employability skills, identifying competency gaps, evaluating curriculum and career development initiatives, and supporting evidence-based educational planning. Further validation using confirmatory factor analysis and independent samples is recommended to examine the stability and generalizability of the scale across disciplines and institutions.

Key words: undergraduate employability, employability skills, exploratory factor analysis, psychometric properties; higher education, workforce readiness

Introduction

Graduate employability has become a major concern for higher education systems worldwide as universities are progressively expected to prepare students for successful participation in the labor market. Although a university degree remains an important qualification, employers now place greater emphasis on graduates' ability to demonstrate transferable skills alongside disciplinary knowledge. Rapid technological advancement, digital transformation, and changing workplace practices have altered the competencies required for employment, making communication, critical thinking, teamwork, problem-solving, digital literacy, and adaptability essential for workplace success (Tushar & Sooraksa, 2023; Wynne et al., 2024). These developments suggest that employability should be cultivated throughout undergraduate education rather than regarded solely as an outcome of graduation.

The challenge is particularly evident in developing economies, where graduate unemployment persists despite continued expansion in higher education. Across Africa, increasing numbers of university graduates compete for limited employment opportunities, while employers frequently report deficiencies in practical and transferable workplace competencies. Studies have shown that graduate unemployment is influenced not only by labor market conditions but also by the extent to which university education equips students with skills that align with employer expectations (Habiyaemye et al., 2022). In Nigeria, concerns about graduate employability have intensified as the expansion of tertiary education has not been matched by comparable growth in quality employment opportunities. Evidence indicates that many graduates struggle to secure meaningful employment because their competencies do not adequately reflect the changing demands of the labor market (Ofor-Douglas, 2024; Tushar & Sooraksa, 2023).

These concerns have shifted attention from employment outcomes to the development of employability skills during undergraduate education. As future entrants into the workforce, undergraduates are expected to acquire competencies that extend beyond technical knowledge to include effective communication, teamwork, leadership, decision-making, problem-solving, digital competence, responsibility, initiative, and adaptability. Such competencies enhance graduates' ability to obtain employment, perform effectively in the workplace, and sustain long-term career development (Mokhtar et al., 2022; Wynne et al., 2024). Consequently, universities

are increasingly expected to integrate employability skills into teaching, learning, and co-curricular activities to ensure that students graduate with competencies that meet contemporary workforce expectations.

Employability skills have been widely described as the generic competencies that complement technical or discipline-specific knowledge and enable individuals to function effectively in diverse workplace settings. Unlike technical skills, which are occupation-specific, employability skills are transferable across professions and include interpersonal communication, teamwork, ethical conduct, critical thinking, decision-making, and problem-solving. These competencies have consistently been identified as important predictors of workplace effectiveness and career progression, making them indispensable in the twenty-first-century labor market (Shakir, 2009; Schulz, 2008). Their growing importance underscores the need for universities to assess the extent to which students develop these competencies before graduation.

Despite increasing scholarly interest in graduate employability, measuring employability skills among undergraduates remains a methodological challenge. Employability is a multidimensional construct that cannot be observed directly and therefore requires carefully developed measurement instruments with established psychometric properties. Existing studies have largely examined employer expectations, graduate employment outcomes, and determinants of employability, whereas relatively few have focused on developing and validating context-specific instruments for assessing employability skills among Nigerian undergraduates. The absence of such instruments limits researchers' and higher education institutions' ability to evaluate students' employability competencies, monitor curriculum effectiveness, and generate evidence to inform educational policy and practice.

Developing a valid and reliable instrument is therefore an important step toward advancing undergraduate employability research. Exploratory factor analysis (EFA) is a widely accepted statistical technique for identifying the underlying dimensions of latent constructs and establishing preliminary evidence of construct validity during scale development. By identifying clusters of related items and eliminating poorly performing indicators, EFA improves the psychometric quality of measurement instruments. Accordingly, this study applies exploratory factor analysis to examine the factorial structure of the Undergraduate Employability Skills Scale with the aim of providing a valid and reliable instrument for assessing employability skills among undergraduates in Nigerian universities.

Statement of the Problem

Graduate employability has become a major concern for higher education institutions as employers increasingly expect graduates to possess transferable skills in addition to disciplinary knowledge. Although universities have introduced various initiatives to promote employability skills among undergraduates, there is limited empirical evidence on how these competencies can be measured reliably within the Nigerian context. Existing research has focused primarily on employer expectations, graduate employment outcomes, and the importance of employability skills, with relatively little attention devoted to developing and validating context-specific instruments for assessing these skills among undergraduates. The absence of a psychometrically sound instrument limits the ability of researchers and higher education institutions to evaluate students' employability competencies, monitor curriculum effectiveness, and generate evidence to support educational planning and curriculum improvement. This study therefore addresses this gap by examining the factorial structure and internal consistency of the Undergraduate Employability Skills Scale using exploratory factor analysis.

Objectives of the Study

The main objective of this study is to examine the psychometric properties of the Undergraduate Employability Skills Scale using exploratory factor analysis.

Specifically, the study seeks to:

1. determine the underlying factor structure of the Undergraduate Employability Skills Scale;
2. examine the factor loadings and item retention of the Undergraduate Employability Skills Scale; and
3. determine the internal consistency reliability of the identified dimensions of the Undergraduate Employability Skills Scale.

Research Questions

1. What is the underlying factor structure of the Undergraduate Employability Skills Scale?
2. Which items are retained under the identified factors of the Undergraduate Employability Skills Scale based on exploratory factor analysis?

3. What are the internal consistency reliability coefficients of the identified dimensions of the Undergraduate Employability Skills Scale?

Methodology

This study adopted sequential exploratory mixed-method design. The scale development process began with construct identification through a systematic review of the literature and interviews with employers from diverse sectors. Evidence from both sources consistently identified seven core employability skill domains: communication, decision-making, digital literacy, interpersonal, leadership, problem-solving, and teamwork. These domains provided the conceptual framework for the development of the instrument. An initial pool of 175 scenario-based items was developed and subsequently subjected to face and content validation by experts in Educational Evaluation, Human Resource Management, and industry. Based on the experts' recommendations, ambiguous and redundant items were removed, resulting in a preliminary 105-item version of GUESS. The instrument was pilot-tested to assess clarity and preliminary reliability before being administered for psychometric evaluation.

Data were collected from undergraduate students selected from federal, state, and private universities in Southwestern Nigeria through a multistage sampling procedure. Exploratory Factor Analysis was conducted using Principal Axis Factoring with Promax rotation after confirming the suitability of the data for factor analysis. Parallel analysis based on Monte Carlo simulation was used to determine the appropriate number of factors to retain. Items were retained based on substantial factor loadings, conceptual relevance and the absence of problematic cross-loadings. The internal consistency of the retained dimensions and the overall scale was assessed using Cronbach's alpha coefficients.

Human Capital Theory

Human Capital Theory provides a widely accepted framework for understanding the relationship between education, skill acquisition, and employability. The theory, originally advanced by Schultz (1961) and further developed by Becker (1964), posits that investments in education, training, and experience enhance individuals' productive capacities and increase their economic value. It views education as an investment that develops knowledge, competencies, and skills, which subsequently improve productivity, employment prospects, and earning potential. Rather than serving merely as a means of obtaining academic qualifications, higher education is expected to equip students with the capabilities required to contribute effectively to the labor market. Consequently, Human Capital Theory emphasizes that graduates who possess relevant knowledge, technical expertise, and transferable skills are better positioned to meet employer expectations and succeed in an increasingly competitive, knowledge-based economy (Becker, 1964; Schultz, 1961).

The theory has become particularly relevant to discussions of employability because contemporary labor markets increasingly reward graduates who possess a combination of technical competence and transferable skills. While discipline-specific knowledge enables individuals to perform occupation-specific tasks, employability skills such as communication, teamwork, leadership, critical thinking, problem-solving, decision-making, self-management, and digital literacy enable them to adapt to changing workplace demands and perform effectively across diverse organizational settings. Human Capital Theory suggests that these competencies constitute valuable forms of human capital because they enhance productivity, innovation, workplace effectiveness, and long-term career success. As technological advancement, globalization, and evolving organizational practices continue to reshape workforce requirements, universities are expected to design curricula and learning experiences that intentionally develop these employability skills alongside academic knowledge, thereby improving graduates' readiness for employment and lifelong career development (Becker, 1964; Tomlinson, 2017).

Human Capital Theory provides the theoretical foundation for the present study because it supports the need to assess whether undergraduate education is successfully developing the competencies required for employment. If employability skills represent an important dimension of human capital, then higher education institutions must be able to evaluate the extent to which students acquire these competencies before graduation. This underscores the importance of developing valid and reliable instruments capable of measuring the multidimensional nature of employability skills. The Undergraduate Employability Skills Scale was therefore developed to assess key competencies considered essential for workplace success among undergraduates. By applying exploratory factor analysis to establish the scale's underlying factor structure and psychometric properties, this study contributes a contextually relevant instrument that can support educational evaluation, curriculum improvement and evidence-based decision-making aimed at strengthening graduate employability in Nigerian universities.

Literature Review

Employability Skills and Scale Development

Employability Skills

The demands of the twenty-first-century labor market have shifted beyond academic achievement alone, as changes in workplace structures, technological advancement and evolving employment patterns continue to reshape the nature of work. Graduates are no longer expected to rely solely on disciplinary knowledge but are increasingly required to demonstrate a broad range of transferable competencies that enable them to adapt to changing organizational environments. As careers become more dynamic and less linear, individuals are expected to update their knowledge continuously and apply their skills across different occupations and industries (Benson et al., 2014; Deeley, 2014; Jackson, 2014). Therefore, employability has become a central concern for universities, employers, and policymakers seeking to improve graduate workforce readiness.

Employability skills refer to the transferable competencies that complement technical knowledge and enable individuals to obtain employment, perform effectively, and sustain long-term career success. Unlike technical skills, which are occupation-specific, employability skills are applicable across different professions and workplace settings. Buck and Barrick (1987) described these competencies as personal qualities and generic skills that enhance an individual's value to employers. They include communication, teamwork, leadership, problem-solving, decision-making, interpersonal competence, leadership, and digital literacy, all of which contribute to effective workplace performance. Effective job performance therefore depends on the integration of technical expertise with these broader competencies (Andrews & Higson, 2008; Finch et al., 2013; Robles, 2012).

Researches indicate that employers place substantial emphasis on employability skills during recruitment and promotion decisions. While academic qualifications may determine entry into employment, long-term workplace success is often influenced by graduates' ability to communicate effectively, collaborate with colleagues, solve workplace problems, exercise sound judgment, and adapt to organizational changes. Studies have shown that employers constantly rank communication, teamwork, interpersonal competence, critical thinking, and problem-solving among the most desirable graduate attributes because they facilitate productivity, innovation, and organizational effectiveness (Hyams-Ssekasi & Spence, 2015; O'Connor & Bodicoat, 2017; Riebe & Jackson, 2014; Sinclair et al., 2014). These findings reinforce the growing recognition that employability extends beyond academic achievement to include the broader capabilities required for successful workplace participation.

The increasing importance of employability skills has significant implications for higher education. Universities are now expected to develop graduates who possess both disciplinary knowledge and the transferable competencies required by modern employers. However, many employers continue to report that graduates enter the labor market with inadequate communication, teamwork, leadership, and problem-solving abilities, resulting in additional workplace training and slower transitions into professional roles (Collet et al., 2015; Finch et al., 2013; Jackson, 2014; Tymon, 2013). This persistent gap between university preparation and labor market expectations unveils the need for valid instruments capable of assessing employability skills and evaluating the effectiveness of educational programs designed to develop them. Hence, exploratory factor analysis of undergraduate employability skills scale.

Scale Development and Exploratory Factor Analysis

Employability skills constitute a multidimensional and latent construct; therefore, their assessment requires a carefully designed and psychometrically sound measurement instruments. Scale development provides a systematic process for translating theoretical constructs into observable indicators through rigorous procedures such as construct definition, item generation, expert review, pilot testing, and statistical validation. These procedures help ensure that an instrument accurately measures the intended construct and produces reliable results across different populations (DeVellis & Thorpe, 2021). Well-developed scales not only strengthen the credibility of research findings but also provide dependable tools for educational evaluation and future research. This is often done with the aid of Exploratory Factor Analysis (EFA).

Exploratory Factor Analysis is widely recognized as one of the most important techniques in scale development because it identifies the latent dimensions underlying a set of observed variables without imposing a predetermined structure. By examining the relationships among survey items, EFA determines which items cluster together to represent common constructs while eliminating weak or poorly performing items. Before conducting EFA, researchers typically evaluate sampling adequacy using the Kaiser-Meyer-Olkin (KMO) statistic and Bartlett's Test of Sphericity, after which decisions regarding factor retention are guided by statistical evidence and theoretical interpretability (Costello & Osborne, 2005; Fabrigar et al., 1999; Hair et al., 2022). These procedures contribute considerably to establishing construct validity during instrument development. Methodological literature recommends parallel analysis as the most rigorous approach for determining the number of factors to retain. Horn (1965) proposed comparing observed eigenvalues with those generated from randomly simulated datasets, retaining only factors whose eigenvalues exceed the simulated values. More recent studies have also indicated that parallel analysis is outstanding because it reduces the likelihood of retaining spurious factors (Hayton et al., 2004; Watkins, 2018). Therefore, parallel analysis is an accepted best practice in recent exploratory factor analysis.

The multidimensional nature of employability further justifies the application of EFA in the development of the Undergraduate Employability Skills Scale (UESS). Yorke and Knight (2006) conceptualized employability as a combination of skills, knowledge, understanding and personal attributes that enable graduates to obtain and sustain employment, while Pool and Sewell (2007) emphasized that employability develops through the interaction of multiple competencies rather than a single characteristic. Empirical studies similarly identify communication, teamwork, leadership, interpersonal competence, and problem-solving as

important dimensions of graduate employability (Andrews & Higson, 2008; Finch et al., 2013; Jackson, 2013; Messum et al., 2016). These perspectives support the use of EFA to examine whether these competencies emerge as distinct but related dimensions and provide evidence for the construct validity of the UESS.

Data Analysis

To examine the underlying structure of the Undergraduate Employability Skills Scale (GUESS), the 105-item preliminary instrument was subjected to Exploratory Factor Analysis (EFA) using Principal Axis Factoring (PAF) with Promax rotation. Before factor extraction, the suitability of the data for factor analysis was assessed using the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's Test of Sphericity (Jaafari et al., 2023). The KMO value of .968 exceeded the recommended minimum threshold of .60 (Kaiser, 1970), indicating that the sample was adequate for factor analysis. Bartlett's Test of Sphericity was also statistically significant, $\chi^2(5,460) = 94,384.267$, $p < .001$, confirming that the correlation matrix contained sufficient interrelationships to justify factor analysis. Factor retention was guided by parallel analysis, supported by the Kaiser criterion (eigenvalues greater than 1), while items with factor loadings of .70 or higher were retained as indicators of their respective latent constructs (Kaiser, 1970).

Research Question 1: What is the underlying factor structure of the Undergraduate Employability Skills Scale?

To determine the underlying structure of the Undergraduate Employability Skills Scale (UESS), the 105-item instrument was subjected to Exploratory Factor Analysis (EFA) using Principal Axis Factoring (PAF). The number of factors to retain was determined through Monte Carlo parallel analysis, which is considered a more robust criterion than relying solely on eigenvalues greater than one. Although the initial extraction produced 26 factors with eigenvalues exceeding 1.00, only the first seven factors had eigenvalues that were larger than those generated from randomly simulated datasets. The retained factors had eigenvalues of 31.624, 18.211, 13.765, 10.584, 8.221, 6.307, and 5.163, respectively. From the eighth factor onward, the observed eigenvalues were lower than the corresponding parallel analysis values and were therefore discarded. These findings indicate that the Undergraduate Employability Skills Scale is best represented by a seven-factor structure, providing empirical support for the multidimensional nature of employability skills among undergraduates.

Research Question 2: Which items are retained under the identified factors of the Undergraduate Employability Skills Scale based on exploratory factor analysis?

The factor solution was further examined using Promax rotation to identify the items that best represented each dimension of the scale. Of the initial 105 items, 41 met the retention criteria and were retained in the final instrument. All retained items loaded strongly on their respective factors, with factor loadings ranging from .712 to .846, indicating good relationships between the observed variables and their underlying constructs. The final scale comprised seven dimensions: Communication Skills (6 items), Decision-Making Skills (6 items), Digital Literacy Skills (8 items), Interpersonal Skills (5 items), Leadership Skills (5 items), Problem-Solving Skills (5 items), and Teamwork Skills (6 items). No retained item exhibited weak or problematic loadings, suggesting that each contributed meaningfully to the measurement of its respective dimension. The resulting factor structure demonstrates that the retained items provide adequate coverage of the major domains of undergraduate employability skills.

Research Question 3: What are the internal consistency reliability coefficients of the identified dimensions of the Undergraduate Employability Skills Scale?

The reliability of the retained dimensions was assessed using Cronbach's alpha coefficients. The results showed that all seven dimensions demonstrated excellent internal consistency, with alpha coefficients ranging from .903 to .936. Specifically, Communication Skills recorded an alpha coefficient of .921, Decision-Making Skills .903, Digital Literacy Skills .936, Interpersonal Skills .914, Leadership Skills .928, Problem-Solving Skills .918, and Teamwork Skills .925. The overall Undergraduate Employability Skills Scale yielded a Cronbach's alpha coefficient of .957. These values exceed the recommended threshold for educational and psychological measurement, indicating that the items within each dimension consistently measure the same underlying construct. The findings therefore provide strong evidence that the Undergraduate Employability Skills Scale is a reliable instrument for assessing employability skills among undergraduates.

Discussion and implications of the scale

The findings of this study provide empirical support for the multidimensional nature of undergraduate employability skills. Exploratory factor analysis reduced the initial 105-item pool to a parsimonious 41-item Undergraduate Employability Skills Scale (UESS) comprising seven dimensions: communication, decision-making, digital literacy, interpersonal, leadership, problem-solving, and teamwork skills. The clear factor structure and strong factor loadings indicate that the retained items adequately represent their respective constructs and collectively capture the broad concept of employability. These findings are consistent with the multidimensional perspectives of employability advanced by Yorke and Knight (2006) and Pool and Sewell (2007), who argued that employability encompasses a combination of transferable skills, knowledge and personal attributes required for career success. The results also support recommendations by Horn (1965), Hayton et al. (2004), Fabrigar et al. (1999), and Watkins (2018), who

emphasized parallel analysis as one of the most accurate approaches for determining the appropriate number of factors in exploratory factor analysis.

The excellent reliability coefficients obtained for the seven subscales and the overall instrument further demonstrate that the UESS provides consistent and dependable measures of undergraduate employability skills. The findings align with previous studies that identified communication, teamwork, leadership, interpersonal, and problem-solving skills as important and measurable components of graduate employability (Andrews & Higson, 2008; Caballero et al., 2011; Finch et al., 2013; Jackson, 2013; Messum et al., 2016; Pool & Sewell, 2007). The strong psychometric properties of the scale suggest that it can serve as a reliable instrument for assessing employability skills among undergraduates and contribute to future research on graduate preparedness for employment.

Conclusion and Recommendations

The present study contributes to employability research by developing and validating the Undergraduate Employability Skills Scale (UESS), a multidimensional instrument designed to assess the employability skills of university undergraduates. The scale was developed through a systematic process that combined evidence from the literature with employers' perspectives to identify the core domains of employability. This was followed by scenario-based item development, expert review, content validation, pilot testing, and exploratory factor analysis. These procedures ensured that the instrument was grounded in theory while reflecting the competencies employers expect from university graduates. The final version of the UESS consists of 41 items organized into seven dimensions: communication skills, decision-making skills, digital literacy skills, interpersonal skills, leadership skills, problem-solving skills, and teamwork skills. Together, these dimensions capture the essential transferable skills that are increasingly recognized as critical for success in today's workplace.

The findings provide strong evidence that the UESS is a psychometrically sound instrument. Exploratory factor analysis identified a clear seven-factor structure, and all retained items demonstrated substantial factor loadings on their respective dimensions. The reliability analysis further showed excellent internal consistency across all seven subscales, indicating that the items within each dimension measure the same underlying construct consistently. These findings support the validity and reliability of the UESS as a measure of undergraduate employability skills. They also reinforce the growing consensus that employability is a multidimensional construct encompassing a range of transferable skills that complement disciplinary knowledge and prepare graduates for the demands of an evolving labor market.

The UESS has practical value for higher education institutions, researchers, employers, and policymakers. Universities can use the scale to evaluate students' employability skills, identify areas requiring improvement, and assess the effectiveness of curriculum and career development initiatives. Researchers may apply the instrument to investigate the factors that influence employability skills and examine how these competencies relate to academic achievement, career readiness, and employment outcomes. Future studies should validate the scale using confirmatory factor analysis with independent samples and examine its predictive validity across different disciplines, institutions, and cultural contexts. Additional evidence from such studies will further strengthen the usefulness of the UESS as a standardized instrument for assessing undergraduate employability skills and support its broader application in higher education research and practice.

References

- Ali, D. F., Adams, D., & Mohamed, A. (2012). Employability skills development among technical and vocational education and training (TVET) graduates. *Journal of Education and Practice*, 3(16), 129–135.
- Andrews, J., & Higson, H. (2008). Graduate employability, “soft skills” versus “hard” business knowledge: A European study. *Higher Education in Europe*, 33(4), 411–422. <https://doi.org/10.1080/03797720802522627>
- Becker, G. S. (1964). *Human capital: A theoretical and empirical analysis, with special reference to education*. National Bureau of Economic Research.
- Benson, V., Morgan, S., & Filippaios, F. (2014). Social career management: Social media and employability skills gap. *Computers in Human Behavior*, 30, 519–525. <https://doi.org/10.1016/j.chb.2013.06.015>
- Buck, L. L., & Barrick, R. K. (1987). They're trained, but are they employable? *Vocational Education Journal*, 62(5), 29–31.
- Collet, C., Hine, D., & du Plessis, K. (2015). Employability skills: Perspectives from a knowledge-intensive industry. *Education + Training*, 57(5), 532–559. <https://doi.org/10.1108/ET-07-2014-0079>
- Costello, A. B., & Osborne, J. W. (2005). Best practices in exploratory factor analysis: Four recommendations for getting the most from your analysis. *Practical Assessment, Research & Evaluation*, 10(1), Article 7. <https://doi.org/10.7275/jyj1-4868>
- Deeley, S. J. (2014). *Summative assessment, academic success and employability: Making the connections*. Palgrave Macmillan. <https://doi.org/10.1057/9781137344258>
- DeVellis, R. F., & Thorpe, C. T. (2021). *Scale development: Theory and applications* (5th ed.). Sage Publications.

- Fabrigar, L. R., Wegener, D. T., MacCallum, R. C., & Strahan, E. J. (1999). Evaluating the use of exploratory factor analysis in psychological research. *Psychological Methods*, 4(3), 272–299. <https://doi.org/10.1037/1082-989X.4.3.272>
- Finch, D. J., Hamilton, L. K., Baldwin, R., & Zehner, M. (2013). An exploratory study of factors affecting undergraduate employability. *Education + Training*, 55(7), 681–704. <https://doi.org/10.1108/ET-07-2012-0077>
- Habiyaremye, A., Habanabakize, T., & Nwosu, C. (2022). Bridging the labour market skills gap to tackle youth unemployment in South Africa. *The Economic and Labour Relations Review*, 33(4), 786–805. <https://doi.org/10.1177/10353046221138400>
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2022). *Multivariate data analysis* (8th ed.). Cengage Learning.
- Hashim, H. (2018). Application of technology in the digital era education. *International Journal of Research in Counseling and Education*, 2, 1–5. <https://doi.org/10.24036/002za0002>
- Hayton, J. C., Allen, D. G., & Scarpello, V. (2004). Factor retention decisions in exploratory factor analysis: A tutorial on parallel analysis. *Organizational Research Methods*, 7(2), 191–205. <https://doi.org/10.1177/1094428104263675>
- Horn, J. L. (1965). A rationale and test for the number of factors in factor analysis. *Psychometrika*, 30(2), 179–185. <https://doi.org/10.1007/BF02289447>
- Hyams-Ssekasi, D., & Spence, A. (2015). Job readiness: The employer perspective. *Education + Training*, 57(8/9), 899–917.
- Jackson, D. (2013). The contribution of work-integrated learning to undergraduate employability skill outcomes. *Asia-Pacific Journal of Cooperative Education*, 14(2), 99–115.
- Jackson, D. (2014). Modelling graduate skill transfer from university to the workplace. *Journal of Education and Work*, 29(2), 199–231. <https://doi.org/10.1080/13639080.2014.907486>
- Jaafari, M., Alzuman, A., Ali, Z., Tantry, A., & Ali, R. (2023). Organizational Health Behavior Index (OHBI): A tool for measuring organizational health. *Sustainability*, 15, Article 13650. <https://doi.org/10.3390/su151813650>
- Kaiser, H. F. (1970). A second generation little Jiffy. *Psychometrika*, 35, 401–415. <https://doi.org/10.1007/BF02291817>
- Messum, D., Wilkes, L., Peters, K., & Jackson, D. (2016). Senior clinicians' perceptions of graduate readiness. *Nurse Education Today*, 45, 148–153.
- Mokhtar, M., Danuri, M. S. M., Ibrahim, N. A., & Majid, N. A. (2022). Graduate employability: A review of current issues and employability skills. *International Journal of Academic Research in Business and Social Sciences*, 12(8), 1459–1472.
- O'Connor, A., & Bodicoat, M. (2017). Exploiting the entrepreneurial mindset. *Industry and Higher Education*, 31(2), 73–81.
- Ofor-Douglas, S. (2024). Managing university education for employability in a competitive Nigerian society. *International Journal of Innovative Education Research*, 12(1), 131–141.
- Pool, L. D., & Sewell, P. (2007). The key to employability: Developing a practical model of graduate employability. *Education + Training*, 49(4), 277–289. <https://doi.org/10.1108/00400910710754435>
- Riebe, L., & Jackson, D. (2014). The use of rubrics in benchmarking and assessing employability skills. *Journal of Management Education*, 38(3), 319–344.
- Robles, M. M. (2012). Executive perceptions of the top 10 soft skills needed in today's workplace. *Business Communication Quarterly*, 75(4), 453–465. <https://doi.org/10.1177/1080569912460400>
- Schultz, T. W. (1961). Investment in human capital. *The American Economic Review*, 51(1), 1–17.
- Schulz, B. (2008). The importance of soft skills: Education beyond academic knowledge. *Journal of Language and Communication*, 2(1), 146–154.
- Shakir, R. (2009). Soft skills at the Malaysian institutes of higher learning. *Asia Pacific Education Review*, 10(3), 309–315. <https://doi.org/10.1007/s12564-009-9038-8>
- Sinclair, J., McGuigan, K., & O'Toole, J. (2014). Integrating employability skills into higher education. *Education + Training*, 56(8/9), 733–746.
- Tomlinson, M. (2017). Forms of graduate capital and their relationship to graduate employability. *Education + Training*, 59(4), 338–352. <https://doi.org/10.1108/ET-05-2016-0090>
- Tushar, H., & Sooraksa, N. (2023). Global employability skills in the 21st century workplace: A semi-systematic literature review. *Heliyon*, 9(11), Article e21023. <https://doi.org/10.1016/j.heliyon.2023.e21023>

Tymon, A. (2013). The student perspective on employability. *Studies in Higher Education*, 38(6), 841–856. <https://doi.org/10.1080/03075079.2011.604408>

Watkins, M. W. (2018). Exploratory factor analysis: A guide to best practice. *Journal of Black Psychology*, 44(3), 219–246.

Wynne, K., Mwangi, F., Onifade, O., Abimbola, O., Jones, F., Burrows, J., Lynagh, M., Majeed, T., Sharma, D., Bembridge, E., Stubbs, M., Sunner, C., Bergmann, J., Bagade, T., & Malau-Aduli, B. S. (2024). Readiness for professional practice among health professions education graduates: A systematic review. *Frontiers in Medicine*, 11, Article 1472834. <https://doi.org/10.3389/fmed.2024.1472834>

Yorke, M., & Knight, P. T. (2006). *Embedding employability into the curriculum*. Higher Education Academy.