The Journal of Teaching and Learning for Graduate Employability

ISSN: 1838-3815 (online) Journal Homepage: https://ojs.deakin.edu.au/index.php/jtlge/

The nexus of work integrated learning and skills among engineering students in Nigerian Universities: A structural equation model approach

Waliu Mulero Adegbite [1] and Crystal Hoole [1]

Corresponding author: Waliu Mulero Adegbite (adegbitewaliu@gmail.com)
[1] Department of Industrial Psychology and People Management, University of Johannesburg

Abstract

Higher education providers have redefined their focus to include work-integrated learning (WIL) as an alternative way to prepare graduates for professional and future employment. Although WIL was designed to enhance graduates' work readiness, there is little evidence that the program supports the development of behavioural and employability competencies among participating students. Thus, this study aims to predict the effect of WIL through the partial least square path model on seven employability competencies. The sample consisted of 375 final-year engineering students from two Nigerian universities who had participated in a WIL program. A two-stage composite-based structural equation modelling was used to analyse the data. The average variance extracted and Heterotrait-Monotrait ratio were used to establish the validity and reliability of the instruments. A structural model was used to test the hypothetical constructs' relationship and level of significance. The findings supported all hypothesized direct relationships that WIL enhances graduate employability skills. The study concludes that WIL has immense benefits for students, including developing employability skills (i.e., Analytical, adaptability, communication, fundamental, ICT, interpersonal, and 4IR skillsets) for future employment. Consequently, it was recommended that higher education providers strengthen and establish frameworks for effective work-integrated learning program to enhance graduate employability.

Keywords

Work-integrated learning, employability skills, future job, 4IR skillset, graduate employability, structural equation model, Engineering students, Nigerian universities

Introduction

The core of the work-integrated learning (WIL) approach in higher education is for the participant to realise their potential within the nexus of employability and career development (Jackson, 2015; Smith et al., 2018; Young et al., 2019). Developing student employability and future career competencies needs is an iterative and continuous process for career development resilience and work readiness. The recent experience, especially in Africa, attests that unemployment is one of the problematic macroeconomic issues in many economies. The situation becomes worrisome as higher education graduates' unemployment increases due to a lack of requisite skills and competencies for employment in the 21st century.

Many authors have attributed the development to the current technological transformation as the world changes from machine-based to knowledge-based systems of production (Alibaygi et al., 2013; Pitan & Atiku, 2017). According to Fenta et al. (2019), the employability problem among higher education graduates is exceptionally high, particularly in Sub-Saharan African countries.

The industry's dissatisfaction with graduates' lack of capability to contribute to organisational goals has become a global concern due to job roles and changes in requirements. Thus, many universities have redefined their focus and agenda to include employability as a legitimate outcome of higher education (Briant & Crowther, 2020). Employers have also stressed that most graduates are not employable due to a lack of required job skills and competency. Many graduates lack basic employment skills and competencies as most university's curricula only focus on theoretical knowledge. The assertion that graduates of higher education lack employability skills has been documented in the literature. As stated by Kiong et al. (2019), McKenzie and Schweitzer (2010), Yang et al. (2016), and Yanew (2019), low level of soft skills that are related to self-efficacy and confidence, less technological know-how, lack of numerical and professional knowledge are crucial factors affecting the employability of graduates. As highlighted in the literature, it is difficult for higher education providers to equip students with appropriate employability skills since the university curriculum does not sufficiently emphasize developing behavioural skills to prepare graduates for professional life (Yang et al., 2016). Therefore, the introduction of work-integrated learning provides an alternative to support the development of behavioural and employability skills.

Over the years, the academic practice of engaging students in activities that expose them to the world of work in their chosen profession has been said to foster employability skills (Jackson, 2015). The introduction of WIL to the university system has been adjudged as an appropriate strategy that can support students' academic excellence and offer participants the opportunity to enrich practical knowledge. Yanew (2019) stated that WIL was designed as a strategy for curriculum transformation, bridging knowledge gaps, and assisting students in transitioning from university to practice. While the value of WIL is widely acknowledged, higher education providers only include work-integrated learning to satisfy the requirement of graduation. There are no mechanisms to evaluate the impact of WIL on workplace experience, acquired employability skills, and readiness for future employment. Although WIL is generally meant to enhance graduates' work readiness, the program proponent emphasized the general outcome, with less focus on the role and contribution of WIL in building fundamental skills required to fit into future employment. This is not to say that WIL as a program is deficient in promoting work-ready graduates; the argument is that there should be clear evidence on whether WIL enhances specific employability competencies.

Amidst the saturated graduate labour market, economic uncertainty, and technological transformation, scholars are greatly concerned about the strategies higher education adopted for developing employable graduates (Govender & Adegbite, 2021). Studies have highlighted that enhanced competency can assist in developing strong employment outcomes and enable graduates to self-manage their career paths (Yang et al., 2016). According to Oliver (2015), WIL provides the most effective means of developing graduates with the required competencies, as such programs foster the development of technical, non-technical, and behavioural skills. Due to the foregoing, there is pressure on higher education providers to produce graduates who are adequately skilful and competent to navigate the current highly competitive market and make career choices. Thus, the university's efforts in fostering graduate employability must extend to developing multiple career competencies among students.

Indeed, a successful WIL program is a panacea to several outcomes, including improved academic performance and greater skill acquisition (Rowe & Zegwaard, 2017). Despite the potential benefits of WIL to students, measuring the nexus between work-integrated learning and specific employability competency is grossly under-explored. Specifically, the precise nature of the relationship and extent of WIL's contribution to the bundle of employability competencies among graduates is of little concern to researchers. Enhancing current understanding will assist and provide documentary evidence on how best WIL programs can foster and support employability competency among university students.

Unlike other fields in social sciences, the area of work-integrated learning and graduate employability has received limited attention from researchers over the years. Some work has been done by researchers from North America, Asia, Australia, Europe, and New Zeeland (Bhola & Dhanawade, 2013; Deaconu et al., 2014), specifically around the employability of students, the specific skills employers require, the potential skills gap they may have and how to bridge it. However, researchers from Africa are yet to fully explore studies investigating skills that can facilitate graduate employability through student engagement in work-integrated learning. Oliver (2015) concluded that supervisors' support, personal planning, organisational skills, motivation, trustworthiness, and communication skills are employers' most demanded competencies while recruiting graduates.

More importantly, WIL facilitates students' awareness of labour market expectations and the industry's types of skills. This study sought to develop a current understanding of how graduates possess employability competencies. Specifically, our research objective is to evaluate the role of work-integrated learning in developing employability competencies among engineering graduates in Nigerian Universities. This study identified seven employability competencies from the extant literature and sought to establish whether work-integrated learning can cause their improvement. The essence is to establish the relationship between work-integrated learning and employability competencies among university students. This paper is structured into these sections: literature review, methodology, results, discussion, practical implications, and conclusion.

Literature Review

Employability and Graduate Employability

As a set of achievements that makes individuals gain employment, employability connotes the possession of required abilities and attributes employed to succeed in a chosen occupation, which benefits the individual, the workforce, and the community (Oliver, 2015). Having a set of personal attributes, skills, understanding, and knowledge that aid in choosing, securing, retaining, satisfying, and succeeding determines employability (Ayoubi et al., 2017). As an act of moving from the state of unemployment to employment, employability is a set of skills and attributes that help an individual access a job (Bhola & Dhanawade, 2013; Rowe & Zegwaad, 2017). According to Pheko and Molefhe (2017), employability is described as the ability to gain initial employment after graduation. The concept could also mean changing to a new position within an organisation, securing the best and most exciting work to attain personal goals.

Mason et al. (2009) described employability as work readiness and possessing attributes, skills, and knowledge to attain organisational goals from the employers' perspective. It entails both generic and academic skills and their progressive application over time. Therefore, in this study, we conceptualize employability as possessing those characteristics, attributes, and qualities of the student to secure, maintain, and perform in an occupation. From the foregoing, the skills, attributes, and knowledge that can facilitate graduates to ensure and sustain a job and help them achieve work and life aspirations are referred to as employability.

Graduate employability is one of the critical concerns for higher education institutions (HEIs), industry, and policymakers alike (Tomlinson, 2012). One of the dominant themes focusing on graduate employability centres around HEI's ability to adequately prepare graduates for the world of work as well as match the industry's specific needs (Bowers-Brown & Harvey, 2004; Tomlinson, 2012). It has also been found that despite increases in graduates entering the labour market, they struggle to find employment (Crawford et al., 2020). This begs the question on whether HEIs understand the range of competencies that are required for graduates to find work, what it means to be work-ready, and how to ensure their students acquire these skills.

Literature provides abundant evidence on graduate employability skills from different perspectives. Deaconu et al. (2014), for instance, mentioned skills such as planning and efficient time management, assuming responsibility, the ability to complete tasks, and specialized knowledge related to specific jobs. A similar study by Alibaygi et al., (2013) concluded that leadership skills and achievement

orientation are more critical when considering graduates for employment. According to Oliver (2015), employability is when a graduate can discern, acquire, adapt, and continually enhance the skills, understanding, and personal attributes to find and create satisfying employment. Mason et al., (2009) argued that employers prefer a proactive graduate who possesses skills that include analysis, critique, synthesis, and communication during recruitment. The study further emphasizes that employers find it difficult to deny graduates who can adapt to the workplace and exhibit critical thinking skills instrumental to innovation and change. Mason et al., (2009) identify competencies such as communication, numeracy, information technology, and learning as more important to graduate employability. In a broader sense, it is essential to note that employability comprises cognitive and generic competencies, personal capabilities, technical ability, business awareness, critical evaluation, and reflection skills (Adegbite & Adeosun, 2021; Briant & Crowther, 2020; Yanew, 2019). The National Centre for Vocational Education Research (NCVER) (2003) has identified eight employability skills, i.e., communication, teamwork, initiative and enterprise, self-management, learning, technology, problem-solving, and planning and organizing. This also aligns with the views of Deaconu et al. (2014), who stated that these transversal skills are more valued by employers. Crawford et al. (2020) argue that these generic skills can be acquired through WIL.

WIL and Employability Competency

Work-integrated learning is the term used to refer to a range of strategies and offerings, including workplace learning, industry-based learning, practicum, cooperative learning, internship, and work-based learning, among others. Despite numerous attempts to define and categorize the concept, there is a lack of consensus among authors over the meaning of WIL (Kay et al., 2019). In Nigeria, Student Industrial Work Experience Scheme (SIWES), teaching practice (TP), internship, industrial training (IT), and clinical are all forms of work-integrated learning. It is a structured combination of classroom education and practical work experience to improve student employability and industry-based competencies (Briant & Crowther, 2020). According to Cooperative Education and Work-Integrated Learning Canada (CEWILC), work-integrated learning is a mode of experimental education that intentionally integrates academic theory with learning in a workplace (CEWILC, 2019). However, it needs to be borne in mind that there are prerequisites for WIL to work. Crawford et al., (2023), in a study of students studying a Master of Professional Accountancy in Australia, identified several factors that influence the success of a WIL program. The authors found that factors such as the mismatch in expectations between industry and students, communication skills, the recruitment process of graduates, experience and expectations, and having a clear understanding on the purpose of WIL will influence the outcome and success of the program. There is no gainsaying that WIL does not have ability to broaden student work-related competencies and improve graduate employability (Ayoubi et al., 2017; Govender & Adegbite, 2021). However, previous studies fail to develop a bundle of employability competencies and assess the contribution of WIL to enhancing such competencies among graduates. As highlighted in the literature, WIL improves students' academic performance and knowledge (Kay et al., 2019). It further expands the work-based knowledge of students (Peters et al., 2014) and enhances students' employability skills by broadening not only their professional skills (Pitan & Atiku, 2017) but also their transversal and ‘softer’ skills (Adegbite & Adeosun, 2021).

It is also important to define what is meant by employability competency. From a theoretical perspective, competency can be defined as the ability of individuals to apply their knowledge and skills, values and attitudes to a specific standard. From an industry perspective, however, competency can also be seen as underlying personal characteristics that contribute to a specific standard of performance (Sampson & Fytros, 2008). When an individual possesses both the generic skills and attributes to execute the job, he or she is deemed competent (Coll & Zegwaard, 2006). Although many scholars use attributes, skills, and behaviours interchangeably, there are distinct differences. We can differentiate between cognitive and behavioural skills, technical skills, analytical skills, behavioural skill, organizational skills, and the like (see Fleming et al., 2009). Graduate employability competency refers to a combination of all of these.

As an experimental education, WIL is to bring stakeholders (students, institutions, and employers) in the higher education sector together for value co-creation and self-efficacy on the part of the students (Peters et al., 2014). Most studies on WIL focus on the general contribution of the program to student competency development, skill acquisition, and employability (Jackson, 2015; Reddan, 2017; Rowe & Zegwaad, 2017). It suggests that WIL enhances student competencies; however, research has not yet determined whether students' participation in WIL fosters a form of competencies. According to Briant and Crowther (2020), most organisations encourage learning during WIL, and such learning creates the opportunity for students to link their coursework, work experience, and career plans. It is a fact that during WIL, students are exposed to actual work situations, thus acquiring significant practical knowledge in operational building (Govender & Adegbite, 2021). Students across all fields of discipline value industry-based learning because it provides an interface and assists with the acquisition of workplace-requisite employability skills.

Employability competencies, especially among students, involve acquiring appropriate knowledge, skills, and personal attributes to help students gain employment and contribute effectively to work (Kiong et al., 2019). One of the gaps in the literature is that WIL should begin to investigate its relationship with employability competencies in distinct disciplines like engineering and medicine. This will showcase the applicability of WIL in different fields and recognize the peculiarity of every profession within the context of work-integrated learning. Fazriyah et al. (2014) noted that the development of employability competencies among university students is not adequately harnessed because most curricula focus on classroom and theory building. As a result, WIL has been considered an alternative platform for successfully developing employability competencies (Young et al., 2021). Employability competencies span the acquisition of skills critical to workers' roles and responsibilities toward achieving the organisation's goal (Kiong et al., 2019). Accordingly, it includes fundamental, analytical, critical thinking, adaptability, interpersonal, and communication skills, and recently encompasses the fourth industrial revolution skillset and ICT skills. For graduate students, the advantage of proficiency in employability competency is to enhance self-efficacy, focus on a future career, and identify employment pathways. According to Govender and Adegbite (2021), these competencies sometimes improve graduate employment outcomes and provide a sustainable life-long approach to developing employability skills.

WIL and Employability Competency Development

Work-integrated learning as experimental education aims to bring stakeholders (students, institutions, and employers) in higher education together for value co-creation (Konstantinou & Miller, 2020; Peters et al., 2014). Most research on WIL focuses more on the program's effectiveness in terms of skill acquisition and employability (Jackson, 2015; Rowe & Zegwaad, 2017). It is suggested that WIL enhances student competencies (Reddan, 2017). This study identifies seven main competencies from the literature on WIL and graduates' employability. The competencies are drawn from the work of Al-Alawneh (2014), Jonck and Minner (2015), and Suarta et al. (2017). According to our reviews, adaptability, fundamental, analytical, communication, interpersonal, information communication and technology, critical thinking, and fourth industrial revolution skill sets are competencies identified.

The transition to the workplace offered by work-integrated learning is a way of adjusting to the work environment. Students adjust to fit into the reality of a typical work organisation to cope with changes; thus, adaptive skill is required. A student engaged in the WIL program is expected to adequately develop competency to adjust to unprecedented changes within the work context. The ability to execute new tasks and effectively meet the need to change the workplace is known as adaptability. This competency helps individuals handle uncertainty and ambiguity, cope with stress, and work effectively outside geographical boundaries. According to Suarta et al. (2017) and Yang et al. (2016), adaptability skills can be enhanced through training and individual work experience. A graduate who participated in WIL must have developed some resilience and experienced changes during the experimental learning. Harvey (2000) conducted research in the United Kingdom and found that graduates' attributes were more important than their technical skills in finding suitable employment. Other authors, such as Konstantinou and Miller (2020) and Crawford-Lee (2020), emphasized that WIL

programs, such as degree apprenticeships, offer the opportunity for employers and students to engage in terms of the particular skills needed by employers. Konstantinou and Miller (2020) found that the success of WIL and degree apprenticeships lies in its embeddedness in the formal learning experience.

Specifically to engineering, Vailasseri et al. (2021) reported that Engineering education in Australia, as well as worldwide, experiences challenges with WIL programs and that due to the short nature of the WIL programs, there is not enough time to gain the necessary skills in workplace learning opportunities. The authors noted that WIL needs to form a much more substantial part of the engineering training and needs to be specifically structured to ensure the obtainment of the full range of skills (adaptability skills, technical skills, and transversal skills).

Based on the above discussion, this study intends to examine whether student participation in the WIL program influences their adaptability skill, thus proposing that:

> H_1: Work-integrated learning positively and significantly enhances the adaptability skill among engineering graduates

Furthermore, one of the primary determinants of graduate employability is having fundamental and general know-how about their chosen profession. Logic, dedication, and basic knowledge about operational activity in one's profession are essential for successful employment. Basic and general knowledge are needed to keep the job and perform effectively; thus, communication, personality traits, taking the initiative, and flexibility are parts of the fundamental skills required by engineering graduates. Proficiency in numerical, scientific principles and procedures, emotional intelligence, self-awareness, and ability to work independently are core. To improve the fundamental skills of engineering graduates, WIL must equip the student with the above skills. It is believed that during work-integrated learning, participants have access to operational procedures in the organisation with other technical and cognitive knowledge. Based on the foregoing, this study predicts that WIL can enhance the fundamental skills of engineering graduates.

> H_2: Work-integrated learning positively and significantly enhances the fundamental skill among engineering graduates

Analytical and critical thinking skills are another significant employability competence engineering graduates require. The need to improve the critical thinking ability of higher education students has been documented in the literature. Fazriyah et al. (2014) concluded that during work-integrated learning, students experience improvement in cognitive and critical thinking ability. Accordingly, analytical and critical thinking competency is an internal factor affecting employability outcomes. It includes several domains, like cognitive behaviour, affective behaviour, and psychomotor behaviour (Fazriyah et al., 2014). These are behaviours that expand graduates' thought processes, including the brain's work, the tendency to make choices or decide to act in a particular environment, and the ability to recognize the dimension of knowledge. Analytical and critical thinking skills are the competencies that determine the extent of an individual's creative tendency, the ability to solve work-related problems, analyse issues, make good decisions, and undertake essential planning and organising functions at work. It is expected that WIL will enhance the student's critical and analytical skills since they face several work-related challenges, including tasks that require decision-making. Therefore, this study proposed that:

> H_3: Work-integrated learning positively and significantly enhances the analytical and critical thinking skill among engineering graduates

Studies conducted by Jonck and Minner (2015), Suarta et al. (2017), Adegbite and Adeosun (2021) emphasized that communication, interpersonal, information, and communication technology (ICT) as well as fourth industrial revolution (4IR) skill sets are part of the essential competencies necessary for graduate employability in the era of technological transformation. Similarly, Ahmad and Noor (2014) stressed that it is necessary for the university to place their students on compulsory soft skills, including communication skills, to enhance their employability. Suarta et al. (2017) stated that in addition to other competencies, graduates must possess ICT and 4IR skillsets to increase their

marketability in the labour market. The job market requirement entails developing relevant skills, including enhancing oral, writing, and presentation skills. The entire communication process in the organisation is aimed at workers' problem-solving capabilities. According to Bharathi (2016), strong communication skills will change the working attitude and improve individual employment opportunities. Because students have the opportunity to communicate and engage in many activities during participation in WIL, this study proposed the hypothesis below:

> H_4: Work-integrated learning positively and significantly enhances communication skill among engineering graduates

Another important competency reviewed in this study is interpersonal skills. According to the literature, this is the ability to work with teams or groups and help others learn (Fenta et al., 2019). It also includes good negotiating skills and the ability to work in a multicultural setting. Accordingly, graduates are expected to equip themselves with technical skills and, more importantly, soft skills that guarantee diversity. According to Fenta et al. (2018), individuals who have developed strong interpersonal skills are often more successful in professional and personal engagement. It is also important to state that interpersonal skills will enable graduates to interact successfully in their future employment. During WIL placement, students interact with colleagues and other members of the organisation; thus, they are expected to learn the basic tenets of understanding the dynamics of teams, working effectively with others, and responding to and respecting the opinion of others. Possessing the above skills could enhance their employability; therefore, it is hypothesized that:

> H_5: Work-integrated learning positively and significantly enhances the interpersonal skill among engineering graduates

The current transition to the knowledge-based economy has necessitated the inclusion of information and communication technology and fourth industrial revolution skillsets among the essential competencies demanded by employers (Adegbite & Adeosun, 2021). Accordingly, the emergence of 4IR has changed the dynamics and dimension of learning, as learning outcomes turn different from the previous revolutions. The challenge for higher education providers is to design a matching curriculum that will facilitate learning in ICT and 4IR competencies. Although most organisations are transitioning from machine-based to knowledge-based production, the participation of engineering students in WIL is expected to equip the graduates with requisite ICT skills that will enhance their employability in the 21st century. There is a high demand for skills in ICT as proficiency in computer packages and social media is in great demand. Also, computer programming, data and information processing, and data security knowledge are part of the required skills for employment in the 4IR era. On this note, this study intends to examine whether the participation of engineering student in WIL will enhance their ICT and Fourth Industrial Revolution skillsets. It is therefore hypothesized that:

> H_6: Work-integrated learning positively and significantly enhances the ICT skill among engineering graduates

> H_7: Work-integrated learning positively and significantly enhances the fourth industrial revolution skillsets among engineering graduates

Methodology

Design, Population, and Sample Size Determination

This study adopted a non-experimental research design. Undergraduate students in the final year of the engineering program were the unit of analysis. Therefore, those who participated in work-integrated learning programs constituted the study population. To test the proposed hypotheses, 375 final-year students were drawn from two universities in southern Nigeria (174 participants from university 1 and 201 participants from university 2, respectively). For the purpose of this study, a combined sample was used. Participants were enrolled in the following programs: Civil Engineering, Mechanical Engineering, Electrical Electronics Engineering, Agricultural and Environmental Engineering, Wood Production Engineering, Petroleum Engineering, and Industrial Engineering. The

descriptive statistics can be seen in Table 1. Their ages ranged between 16 and 31 years, with 303 (80.8%) males and 72 (19.2%) females. Following Barclay et al.'s (1995) sample size determination technique, the construct with the highest number of indicators should be used to determine the minimum sample size in a study. The work-integrated learning construct has ten indicators, the highest among all constructs. Accordingly, Barclay et al. (1995) suggested that each indicator must be itself ten times (i.e., 10 x 10=100). The expected minimum sample size for this study is 100 cases; therefore, the data from 375 students was sufficient for the study. A modified questionnaire titled work-integrated learning (WIL) scale and graduate employability (GE) scale was adopted for the current study. The SmartPLS version 3.3.3 software was used to implement structural equation modelling. A non-parametric multivariate approach based on ordinary least square (OLS) regression using partial least square (PLS) path modelling was used to test the hypothesized model. The method is based on Wold's (1982) view that PLS path modelling based on iterative OLS regression is suitable for estimating models with latent variables, including their direct and indirect relationships. It is essential to state that latent constructs cannot be observed directly. However, it can be measured indirectly through indicators (i.e., work-integrated learning and graduate employability were measured using several indicators based on responses from the questionnaire).

Table 1: Descriptive Statistics

AGE			
	Frequency	**Percentage**	**Cumulative percentage**
Less than 16 years	1	.3	.3
16-20 years	34	9.1	9.3
21-25 years	251	66.9	76.3
26-30 years	82	21.9	98.1
31 years and above	7	1.9	100.0
Total	**375**	**100.0**	
GENDER			
Female	72	19.2	19.2
Male	303	80.8	100.0
Total	**375**	**100.0**	
PROGRAM/COURSE			
Civil Engineering	45	12.0	12.0
Mechanical Engineering	129	34.4	46.4
Electrical Electronics	98	26.1	72.5
Agric Environ & Engineering	17	4.5	77.1
Food Tech	35	9.3	86.4
Wood Production Engineering	24	6.4	92.8
Petroleum Engineering	11	2.9	95.7
Industrial Engineering	16	4.3	100.0
Total	**375**	**100.0**	

Instrument and Measures

The study adopted modified scales used in previous studies (i.e., Al-Alawneh 2014; Jonck & Minner, 2015; Suarta et al., 2017) to measure work-integrated learning and graduate employability competencies, with minor modifications for contextual appropriateness. A structured questionnaire was used to generate data. 41 Items measured the employability competencies using a five-point Likert scale ranging from 1= Very low to 5=Very high. The work-integrated learning scale had ten items using a five-point Likert scale ranging from 1= Never to 5= Very often. The content validity index of 0.77 and 0.72 and the ordinal alpha reliability coefficient of 0.83 and 0.88 were established.

Result and Discussion

The study confirmed the structural validity of the instrument used through the measurement model and implemented the test of the hypothesis via SmartPLS software. The analysis showed that the instrument measures what it was designed to measure (i.e., average variance extracted greater than 0.05). The Cronbach Alpha and Composite reliability for measuring all construct's consistency is greater than 0.70 (i.e., CA and CR > 0,70).

Measurement Model

PLS path analysis modelling was used in this study because the approach has gained popularity among academics in the global research community (Hair et al., 2012). Hair et al. (2014) and Henseler et al. (2016) stated that partial least square structural equation modelling is implemented in two stages, as shown later in this study. The first is the measurement model, otherwise called the outer model. The measurement model can be assessed reflectively or formatively to evaluate the validity and reliability of the survey instrument. On the other hand, the structural model of PLS-SEM is designed to assess the causal relationship between the exogenous and endogenous constructs (Hair et al., 2016). It is important to emphasize that all variables in this study are measured reflectively. Thus, the measurement model in this analysis was examined through indicator reliability, internal consistency reliability, and convergent and discriminant validity (Kock, 2013). The measurement model is presented in Figure 1, with exogenous and endogenous constructs displayed. The endogenous construct is employability competencies with seven sub-constructs, namely: fundamental skill (EM_FS), analytical and critical thinking skills (EM_AC), adaptability skill (EM_AS), interpersonal skill (EM_IS), communication skill (EM_CS), information communication and technology skills (EM_ICT), and fourth industrial revolution skillset (F4IR_DLK). The exogenous construct is work-integrated learning experience (WILE), as indicated in Figure 1.

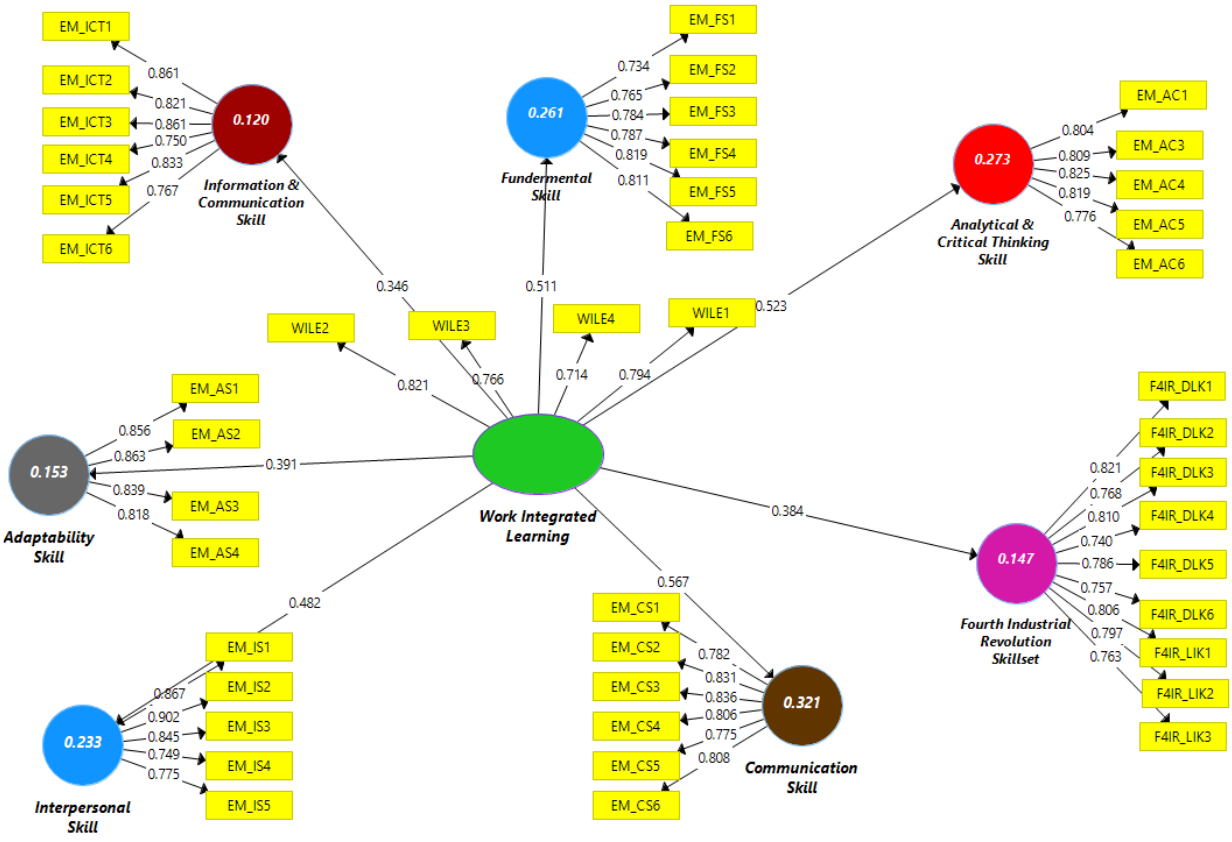

Figure 1: Measurement Model

Indicator Reliability

According to Hair et al. (2012), the external loading values from the measurement model are used to determine whether an indicator is reliable or not. An external loading greater than 0.70 is desirable, while values less than 0.40 are considered not reliable and, therefore, deleted from the items. Hair et al. (2017b) further stated that whether to remove items with loading between 0.40 and 0.70 depends on how high the loading of other items is. In this study, the outer loading for all constructs was above 0.70, with items such as WILE5, WILE6, WILE7, WILE8, WILE9, WILE10, and EM_AC2 having loadings less than 0.70, thus, considered not reliable and subsequently deleted from the measurement model. Based on the above, this study met the cut-off for item reliability.

Internal Consistency

Another important exercise in the measurement model is the measure of composite reliability. This assesses the constructs' internal consistency, for which the composite reliability must be 0.70 or higher (Hair et al., 2017b). Table 2 shows that the composite reliability coefficient for all constructs was above 0.70. The table further shows the reliability coefficient for each construct, which varied between 0.85 and 0.93. Again, the above indicates sufficient internal consistency reliability, as Hair et al. (2017) recommended.

Convergent Validity

Convergent validity explains how close a construct or variable is to other measures in the study. It is the extent to which the construct has accounted for the variance of the reflective indicators. While Hair et al. (2017) recommended a minimum of 0.40 average variance extracted (AVE), Chin (2010) and Fornell and Larcker (1981) recommended that the average variance extracted value must be 0.50 or higher for convergent validity to be considered substantial. As displayed in Table 2, the AVE values indicate that the study's construct achieved the minimum benchmark, as Chin (2010) and Fornell and Larcker (1981) suggested.

Discriminant Validity

This study adopted two approaches to examine the models' discriminant validity. The Fornell-Larcker criterion was used to estimate each variable's average variance extracted (AVE) square root. The Hetero Trait – Mono Trait (HTMT) correlation ratio was also used to estimate the discriminant validity. According to Henseler et al. (2016), HTMT offers superior performance compared with other approaches to assessing discriminant validity. Gold et al. (2001) and Henseler et al. (2016) stated that discriminant validity is established when the HTMT value is less than 0.90. The HTMT values in this study are below 0.90, as shown in Table 3; thus, model discriminant validity was confirmed.

Table 2: Reliability and Convergent Validity of Measurement

Construct	Indicators	Indicator Reliability	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Analytical & Critical Thinking Skills	EM_AC1	0.804	0.867	0.903	0.651
	EM_AC3	0.809			
	EM_AC4	0.825			
	EM_AC5	0.819			
	EM_AC6	0.776			
Adaptability Skill	EM_AS1	0.856	0.865	0.908	0.713
	EM_AS2	0.863			
	EM_AS3	0.839			
	EM_AS4	0.818			
Communication Skill	EM_CS1	0.782	0.893	0.918	0.651
	EM_CS2	0.831			
	EM_CS3	0.836			
	EM_CS4	0.806			
	EM_CS5	0.775			
	EM_CS6	0.808			
Fundamental Skill	EM_FS1	0.734	0.874	0.905	0.614
	EM_FS2	0.765			
	EM_FS3	0.784			
	EM_FS4	0.787			
	EM_FS5	0.819			
	EM_FS6	0.811			
Information Communication & Technology Skill	EM_ICT1	0.861	0.9	0.923	0.667
	EM_ICT2	0.821			
	EM_ICT3	0.861			
	EM_ICT4	0.751			
	EM_ICT5	0.833			
	EM_ICT6	0.767			
Interpersonal Skill	EM_IS1	0.867	0.886	0.917	0.688
	EM_IS2	0.902			
	EM_IS3	0.845			
	EM_IS4	0.749			
	EM_IS5	0.775			
Fourth Industrial Revolution Skillset	F4IR_DLK1	0.821	0.923	0.935	0.614
	F4IR_DLK2	0.768			
	F4IR_DLK3	0.813			
	F4IR_DLK4	0.747			
	F4IR_DLK5	0.786			
	F4IR_DLK6	0.757			
	F4IR_LIK1	0.806			
	F4IR_LIK2	0.797			
	F4IR_LIK3	0.763			
Work Integrated Learning	WILE2	0.821	0.777	0.857	0.6
	WILE3	0.766			
	WILE4	0.714			
	WILE1	0.794			

Table 3: Hetero Trait-Mono Trait (HTMT) Ratio

Construct	I	II	III	IV	V	VI	VII	VIII
I. Adaptability Skill	-							
II. Analytical & Critical Thinking Skill	0.63	-						
III. Communication Skill	0.61	0.71	-					
IV. Fourth Industrial Revolution Skillset	0.59	0.63	0.59	-				
V. Fundamental Skill	0.55	0.60	0.54	0.61	-			
VI. Information & Communication Skill	0.52	0.59	0.51	0.57	0.55	-		
VII. Interpersonal Skill	0.48	0.56	0.49	0.54	0.47	0.55	-	
VIII. Work-Integrated Learning	0.39	0.52	0.44	0.38	0.31	0.34	0.48	-

Structural Model Assessment

Hair et al. (2016) posited that the structural model assessment is suitable for testing the causal relationship between the exogenous and endogenous variables. While the measurement model represents the outer model, the structural model is the inner model of structural equation modelling designed to estimate the relationship between constructs. This study used the bootstrapping technique to check for the structural path of significance, implemented using SmartPLS software. The seven hypotheses stated in this study were tested using the structural model. Using the 95% bias-corrected and accelerated bootstrapping confidence interval, as recommended by Henseler et al. (2016), the paths coefficient significance was measured. This method used 375 cases and 500 bootstrap samples to establish the significance level and direct effect between the exogenous and endogenous construct. Thus, in Figure 2 and Table 4, the comprehensive estimates of the structural model with statistics relating to the direct relationship between the constructs were presented.

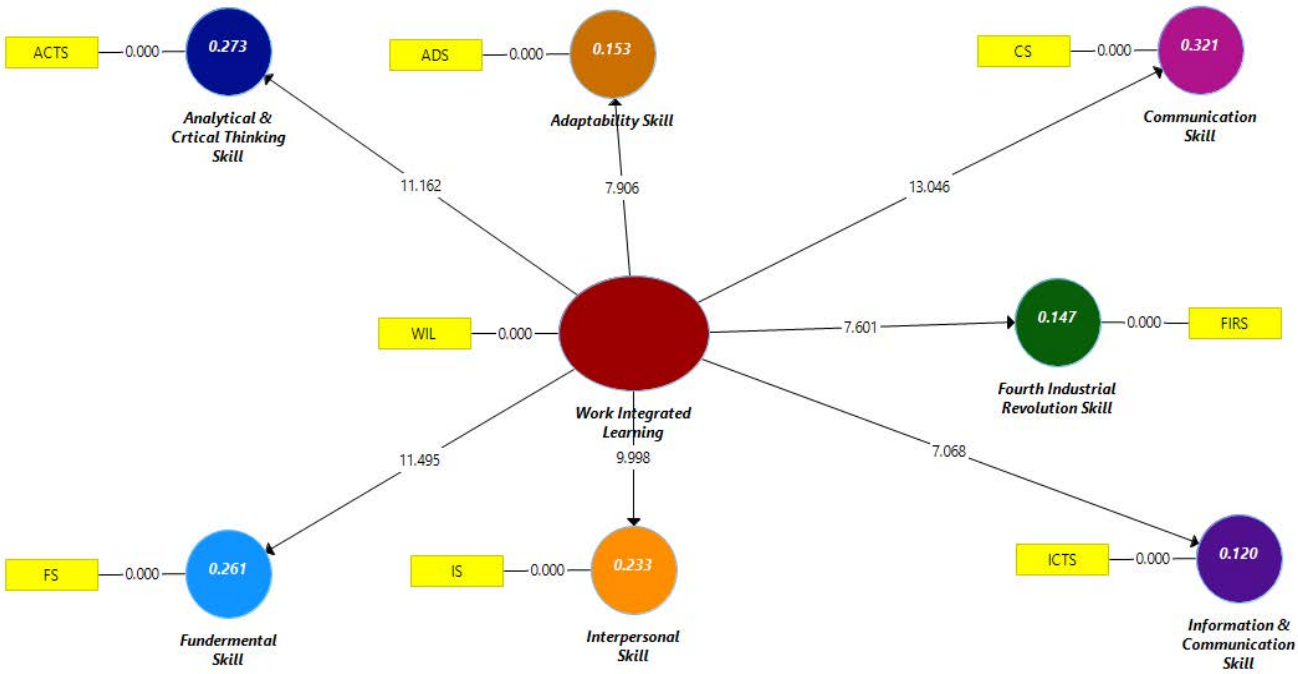

Figure 2: Structural Model

Table 4: Path Coefficient in the Structural Model (Bootstrapping)

Hypothesis	Constructs Relationship	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	Bias	T Statistics (|O/STDEV|)	Sig	Remarks
H_1	WIL -> Adaptability Skill	0.391	0.39	0.04	0.00	7.91	0.00	Accept
H_2	WIL -> Analytical & Critical Thinking Skill	0.523	0.521	0.04	0.00	11.16	0.00	Accept
H_3	WIL -> Communication Skill	0.567	0.566	0.04	0.00	13.04	0.00	Accept
H_4	WIL -> Fourth Industrial Revolution Skill	0.384	0.384	0.05	0.00	7.60	0.00	Accept
H_5	WIL -> Fundamental Skill	0.511	0.51	0.04	0.00	11.49	0.00	Accept
H_6	WIL -> Information & Communication Skill	0.346	0.346	0.04	0.00	7.06	0.00	Accept
H_7	WIL -> Interpersonal Skill	0.482	0.482	0.04	0.00	9.99	0.00	Accept

The magnitude, direction, and extent of the model's relationship (direct effect) are presented in Table 4. The result from the model showed that the direct effect of work-integrated learning (WIL) experience on the adaptability skill of the students was 39 ($p < 0.05$). Thus, there was a significant direct causal relationship between work-integrated learning and the adaptability of engineering students. The above result implies that every unit increase in work-integrated learning increases the adaptability skills of the students by 39% at 0.05 standard deviation, controlling for other factors in the model. Similarly, Table 4 also showed positive causal effects and significant relationship between work-integrated learning and i) analytical and critical thinking skill ($\beta= 0.52$, $t=11.16$, $p < 0.05$), ii) communication skill ($\beta= 0.56$, $t=13.04$, $p < 0.05$), iii) fourth industrial revolution skillset ($\beta= 0.38$, $t=7.60$, $p < 0.05$), iv) fundamental skill ($\beta= 0.51$, $t=11.49$, $p < 0.05$), v) information communication and technology skill ($\beta= 0.34$, $t=7.06$, $p < 0.05$), as well as vi) interpersonal skill ($\beta= 0.48$, $t=9.99$, $p < 0.05$). Consequently, the stated hypotheses H1 – H7 were accepted. Therefore, all the hypotheses' paths representing the effect of work-integrated learning on employability competencies among engineering graduates were accepted since positive and significant causal relationships were established in the structural model.

Discussion

Literature has shown a paucity of evidence indicating the effectiveness of WIL programs and whether they indeed facilitate employability competencies. This study attempted to illustrate how work-integrated learning among engineering students could improve their employability competencies. The extant literature on graduate employability revealed that continuous exposure of students to the real-work situation and technical knowledge outside the classroom provides an opportunity for work-ready graduates. Findings from the structural model showed that all the seven sub-constructs of

employability competencies (adaptability, analytical and critical thinking, communication, interpersonal, information communication and technology, fundamental, and fourth industrial revolution skillsets) had a positive and significant relationship with work-integrated learning. The competencies explored are representative of the skills, attributes and behaviours identified in the literature as important to ensure graduate employability. A significant direct causal relationship between work-integrated learning and the adaptability of engineering students was found. The outcome of this study attests to the position of Briant and Crowther (2020) that work-integrated learning experience is a panacea for improved academic performance and greater skill acquisition. The result of the study also laid credence to the findings of Ayoubi et al. (2017), Kay et al. (2019), Pheko and Molefhe (2017). Reddan (2017) also submitted that during experimental education (i.e., WIL), students exhibit improvement in technical knowledge acquisition after a work-integrated learning program. In addition, students' participation in work-integrated learning enhances essential employability skills among graduates. Also, the studies of Bharathi (2016), Fazriyah et al. (2014), and Suarta et al. (2017) corroborate the findings from this study. These studies affirm that students interact with colleagues and employees of placement organisation during work-integrated learning, thus learning the basic tenet of work dynamics and acquiring essential core competencies for future employment.

Practical implications and recommendations for future research

Action and real-life research in the WIL space is scant. The strong positive results of this study hold tremendous promise for HEIs, students, and employers alike. The results of this study have shown that WIL programs have the ability to improve graduate employability competencies. This indicates the importance that HEIs must ascribe to WIL. It also calls for a much closer collaboration between industry HEIs and students. When HEIs have a clear idea of the skills and competencies the industry is looking for, their curricula and WIL programs can be tailored to address that. A more realistic student experience that resembles the world of work will also enable students to bridge the gap between theory and practice. This study, in particular, explored engineering programs. Future studies should extend this type of study to other countries, cultures, and disciplines to further assess the generalizability of WIL programs.

Conclusion

Amidst a scarcity of empirical evidence, this study aimed to explore whether WIL could predict employability competencies. Seven employability competencies were assessed, namely adaptability, analytical and critical thinking, communication, interpersonal, information communication and technology, fundamental, and fourth industrial revolution skillsets. It utilized a partial least square structural equation model approach to work-integrated learning and graduate employability using a Nigerian sample. Results indicated that a strong positive effect existed between the seven employability competencies and WIL and that the exogenous construct (WIL) plays an essential role in explaining the employability competency of the students. The study provides information to all stakeholders in the higher education sector that work-integrated learning has immense benefits for participating students, especially in developing their employability skills for future employment. Based on the above, this study recommends that higher education providers strengthen and establish frameworks that will support effective work-integrated learning programs due to their attendant benefits to graduate employability.

References

Adegbite, W. M. & Adeosun, O. T. (2021). Fourth industrial revolution skillsets and employability readiness for future job. *Global journal of social science studies*, *7*(1), 35-49. https://doi.org/10.20448/807.7.1.35.49

Al-Alawneh, M. (2014). Measuring students' employability skills as they are perceived at Yarmouk University. *Canadian Social Science*, *10*(1),10-20. https://doi.org/10.3968/j.css.1923669720141001.4023

Ahmad, W. A. W. & Noor, A. S. B. I. (2014). Communication skills and impact on the marketability of UKM graduate. *International journal of higher education*, *3*(4), 64-71. https://doi.org/10.5430/ijhe.v3n4p64

Alibaygi, A. H., Barani, S., Karami, E., & Pouya, M. (2013). Employability determinants of senior agricultural students in Iran. *Journal of Agricultural Science and Technology, 15*(4), 673-683.. https://dorl.net/dor/20.1001.1.16807073.2013.15.4.7.0

Ayoubi, R. M., Alzarif, K., & Khalifa, B. (2017). The employability skills of business graduates in Syria: Do policymakers and employers speak the same language? *Education + Training*, *59*(1), 61–75. https://doi.org/10.1108/ET-10-2015-0094

Barclay, D., Thompson, R., & Higgins, C. (1995), The Partial Least Squares (PLS) approach to causal modeling: Personal computer use as an illustration. *Technology Studies*, *2* (2), 85–309.

Bharathi, A. V. (2016). Communication skills-core of employability skills: Issues and concern. *Higher learning research communication*, *6*(4). https://doi.org/10.18870/hlrc.v6i4.358

Bhola, S. S., & Dhanawade, S. (2012). Higher education and employability- A review. *Pravara Management Review, 11*(1), https://ssrn.com/abstract=2222597

Bowers-Brown, T. & Harvey, L. (2004). Are there too many graduates in the UK?' *Industry and Higher Education*, *18*(4), 243–254. https://doi.org/10.5367/0000000041667538

Briant, S. & Crowther, P. (2020). Reimagining internship through online experience: multi-disciplinary engagement for creative industries students. *International Journal of work-integrated learning*, *21*(5), 617-628. https://www.ijwil.org/files/IJWIL_21_5_617_628.pdf

Chin, W. W. (2010). How to write up and report PLS analyses. In V. E. Vinzi, W. W. Chin, J. Henseler, & H. Wang (Eds.), *Handbook of partial least squares: Concepts, methods and applications: Vol. 2. Springer handbooks of computational statistics series* (pp. 655– 690). https://doi.org/10.1007/978-3-540-32827-8_29

Coll, R. K., & Zegwaard, K. E. (2006). Perceptions of desirable graduate competencies for science and technology new graduates. *Research in Science and Technological Education, 24*(1), 29-58. https://doi.org/10.1080/02635140500485340

Co-operative Education and Work-Integrated Leaning Canada. (2019). What is WIL? Work-Integrated Learning (WIL) Definitions. https://www.cewilcanada.ca/_Library/2019/WIL-Def-ENGLISH_-_Updated_2019.pdf

Crawford, A., Weber, M. R., & Lee, J. (2020). Using a grounded theory approach to understand the process of teaching soft skills on the job so to apply it in the hospitality classroom. *Journal of Hospitality, Leisure, Sports and Tourism Education, 26,* 1-11. https://doi.org/10.1016/j.jhlste.2020.10023

Deaconu, A., Osoian, C., Zaharie M, et al., (2014) Competencies in higher education system: an empirical analysis of employers' perceptions. *Amfiteatru Economic, 16*(37), 857–873. http://hdl.handle.net/10419/168862

Fazriyah, N., Supriyati, Y. & Rahayu, W. (2017). The effect of integrated learning model and critical thinking skills of science learning outcomes. *Journal of Physics Conference*, *812*, (012014), 1–5. https://doi.org/10.1088/1742-6596/812/1/012014

Fenta, H. M., Asnakew, Z. S., Debele, P. K., Nigatu, S. T., & Muhaba, A. M. (2019). Analysis of supply-side factors influencing employability of new graduates: A tracer study of Bahir Dar University graduates. *Journal of Teaching and Learning for Graduate Employability*, *10*(2), 67–85. https://doi.org/10.21153/jtlge2019vol10no2art801

Fleming, J., Martin, A.J., Hughes, H., & Zinn, C. (2009). Maximizing work integrated learning experiences through identifying graduate competencies for employability: a case study of sport studies in higher education. *Asia-Pacific Journal of Cooperative Education*, *10*(3), 189-201 https://api.semanticscholar.org/CorpusID:204395453

Fornell, C., & Larcker, D.F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research, 18* (1), 39-50. https://doi.org/10.2307/3151312

Gold, A.; Malhotra, A. & Segars, A (2001). Knowledge management: An organisational capabilities perspective. *Journal of Management. Information System. 18,* 185–214. https://doi.org/10.1080/07421222.2001.11045669

Govender, C. M. & Adegbite, W. M. (2021). Effect of undergraduate student age on work-integrated learning preparation and experience. *EUREKA: Social and Humanities*, *5*, 101-112. https://doi.org/10.21303/2504-5571.2021.002015.

Jackson, D. (2015). Employability skill development in work-integrated learning: Barriers and best practice. *Studies in Higher Education*, *40*(2), 350-367. https://doi.org/10.1080/03075079.2013.842221

Jonck, P. & Minnaar, R. (2015). Validating an employer graduate-employability skills questionnaire in the faculty of management sciences. *Mediteranean journal of social science*, *6*(2), 230-237. https://www.semanticscholar.org/reader/dbe6c5617f048dfafd668b10e639dba321d049a0

Hair Jr, J. F., Sarstedt, M., Hopkins, L., & Kuppelwieser, V. G. (2014). Partial least squares structural equation modelling (PLS-SEM). *European Business Review, 26*(2), 106-121. https://doi.org/10.1108/EBR-10-2013-0128

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2017). *A primer on partial least squares structural equation modelling (PLS-SEM)* (2nd ed.). Thousand Oaks: Sage. https://us.sagepub.com/en-us/nam/a-primer-on-partial-least-squares-structural-equation-modeling-pls-sem/book244583

Hair, J. F., Ringle, C. M., & Sarstedt, M. (2012). Partial least squares: The better approach to structural equation modelling? *Long Range Planning, 45*(5–6), 312–319. https://doi.org/10.1016/j.lrp.2012.09.011

Hair, J. F., Hult, G. T. M., Ringle, C. & Sarstedt, M.A. (2016). *Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM).* Thousand Oaks, CA: Sage Publications.

Harvey, L. (2000). New realities: The relationship between higher education and employment*. Tertiary Education and Management, 6,* 3-7. https://doi.org/10.1080/13583883.2000.9967007

Henseler, J., Ringle, C. M. & Sarstedt, M. (2016). A new criterion for assessing discriminant validity in variance-based structural equation modelling, *Journal of Academic. Marketing Science*, *43*(1), 115–135. https://doi.org/10.1007/S11747-014-0403-8

Kay, J., Ferns, S., Russell, L., Smith, J., & Winchester-Seeto, T. (2019). The emerging future: Innovative models of work integrated learning. *International Journal of Work Integrated Learning, 20*(4), 401-413. https://api.semanticscholar.org/CorpusID:219957873

Kiong, T. P., Cheng, E. H., Pei, O. S., & Siew, H. K. (2019). Factors influencing employability of Chinese graduates in Malaysia upon returning to China*. Proceeding of 3rd Asia International Multidisciplinary Conference,* Pakistan, *4*(1), 118–121. https://doi.org/10.31580/apss.v4i1.630

Kock, N. (2013). *WarpPLS 4.0 User Manual*. Loredo, Texas: ScriptWarp Systems.

Konstantinou, I. & Miller, E. (2020). Investigating work-integrated learning and its relevance to skills development in degree apprenticeships. *Higher-Education, Skills and Work-Based Learning*, *10* (5), 767-781. https://doi.org/10.1108/HESWBL-05-2020-0112

McKenzie, K., & Schweitzer, R (2010). Who succeeds at the university? Factors predicting academic performance in first-year Australian university students. *Higher Education Research and Development., 20*(1), 21–33. https://doi.org/10.1080/07924360120043621

Mason, G., Williams, G., & Cranmer, S. (2009). Employability skills initiatives in higher education: What effects do they have on graduate labor market outcomes? *Education Economics, 17*, 1–30. https://doi.org/10.1080/09645290802028315

National Centre for Vocational Education Research (2003). *Defining generic skills: at a glance*. https://www.ncver.edu.au/__data/assets/file/0020/4457/nr2102b.pdf

Oliver, B. (2015). Redefining graduate employability and work-integrated learning: Proposals for effective higher education in disrupted economies. *Journal of Teaching and Learning for Graduate Employability*, *6*(1), 56-65. https://doi.org/10.21153/jtlge2015vol6no1art573

Peters, J., Sattler, P., & Kelland, J. (2014). *Work-integrated learning in Ontario's postsecondary sector: The pathways of recent college and university graduates.* Toronto, Canada: Higher Education Quality Council of Ontario.

Pheko, M. M., & Molefhe, K. (2017). Addressing employability challenges: a framework for improving the employability of graduates in Botswana. *International Journal of Adolescence and Youth*, *22*(4), 455–469. https://psycnet.apa.org/doi/10.1080/02673843.2016.1234401

Pitan, O. S., & Atiku, S. O. (2017). Structural determinants of students' employability: Influence of career guidance activities. *South African Journal of Education*, *37*(4). https://doi.org/10.15700/SAJE.V37N4A1424

Reddan, G. (2017). Enhancing employability of exercise science students. *Asia-Pacific Journal of Cooperative Education, 18*(1), 25-41. https://www.ijwil.org/files/APJCE_18_1_25_41.pdf

Rowe, A. D., & Zegwaard, K. E. (2017). Developing graduate employability skills and attributes: Curriculum enhancement through work-integrated Learning. *Asia-Pacific Journal of Cooperative Education, Special Issue, 18*(2), 87–99. https://www.ijwil.org/files/APJCE_18_2_87_99.pdf

Sampson, D., & Fytros, D. (2008). Competence models in technology-enhanced competence-based learning. *In H. H. Adelsberger, Kinshuk, J. M. Pawlowski, & D. Sampson (Eds.), Handbook on Information Technologies for Education and Training* (pp. 155–177). Heidelberg: Springer-Verlag. https://doi.org/10.1007/978-3-540-74155-8_9

Smith, M., Bell, K., Bennett, D., & McAlpine, A. (2018). Employability in a global context: Evolving policy and practice in employability, work integrated learning, and career development learning. *Graduate Careers Australia*. https://doi.org/10.6084/m9.figshare.6372506

Suarta, I. M., Suwintana, I. K., Sudhana, I. F. P., & Hariyanti, N. K. D. (2017), September). Employability skills required by the 21st century workplace: A literature review of labor market demand, Advances in Social Science, Education and Humanities Research, *102*, 337 -341. https://doi.org/10.2991/ictvt-17.2017.58

Tomlinson, M. (2012). Graduate Employability: A Review of Conceptual and Empirical Themes. *Higher Education Policy*, 25, 407–431. https://doi.org/10.1057/hep.2011.26

Vailasseri, P., Long, J.M., Joordens, M. (2021). Embedding Bachelor of Engineering University Education with Enhanced Work-Integrated Learning. *Educational Science*, 11, 756. https://doi.org/10.3390/educsci11110756

Wold, H. (1982). Soft modeling: the basic design and some extensions. In K. G. Jöreskog & H. Wold (Eds.), *Systems Under Indirect Observation: Causality, Structure, Prediction, Part 2*, 1-54. North-Holland.

Yenew, A. M. (2019). Factors associated with women unemployment in Ethiopia. *International Journal of theoretical and applied mathematics, 5*(5), 68–73. https:// doi. org/ 10. 11648/j. ijtam. 20190 505. 11

Yang, H., Cheung, C., & Song, H. (2016). Enhancing the learning and employability of hospitality graduates in China. *Journal of Hospitality, Leisure, Sport & Tourism Education*, *19*, 85–96. https://doi.org/10.1016/j.jhlste.2016.08.004

Young, K., Palmer, S., Binek, C., Tolson, M., & Campbell, M. (2019). Assessment-led reform: Creating a sustainable culture for WIL. *Journal of Teaching and Learning for Graduate Employability, 10*(1), 73–87. https://doi.org/10.21153/jtlge2019vol10no1art784