



## The Effect of Competency and ICT Skills on Vocational Students' Work Readiness

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### Abstract

This study examined the role of internship in mediating and moderating the effect of competency and ICT skills on students' work readiness. The final sample of this study was 284 vocational accounting students in South Tangerang City. By using partial least square structural equation modeling (PLS-SEM) analysis, this study proved the direct effect of competency and internship on work readiness. On the other hand, this study also found that internships can mediate ICT skills and moderate competency on work readiness. However, this study failed in proving any direct effect of ICT skills on work readiness. This study implied that internship was critical in maximizing students' work readiness. In this context, students' ICT skills did not directly affect work readiness but must be mediated by internships. The internship is also essential to strengthen the effect of competency on student work readiness.

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### Abstrak

Penelitian ini bertujuan untuk menguji peran internship dalam memediasi dan memoderasi pengaruh kompetensi dan keterampilan teknologi informasi terhadap kesiapan kerja siswa. Sampel final penelitian ini adalah sebanyak 284 siswa SMK jurusan Akuntansi se-Kota Tangerang Selatan. Dengan menggunakan analisis partial least square structural equation modeling (PLS-SEM), penelitian ini berhasil membuktikan adanya pengaruh langsung kompetensi dan internship terhadap kesiapan kerja. Di sisi lain, penelitian ini juga menemukan bahwa internship dapat memediasi pengaruh keterampilan teknologi informasi serta memoderasi pengaruh kompetensi terhadap kesiapan kerja. Akan tetapi, penelitian ini tidak dapat menemukan adanya pengaruh langsung keterampilan teknologi informasi terhadap kesiapan kerja. Penelitian ini berimplikasi pada pentingnya internship dalam memaksimalkan kesiapan kerja siswa. Dalam konteks ini, keterampilan teknologi informasi siswa tidak berpengaruh langsung terhadap kesiapan kerja, melainkan perlu dimediasi oleh internship. Internship juga penting untuk memperkuat pengaruh kompetensi terhadap kesiapan kerja siswa.

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## INTRODUCTION

Indonesia was on getting the demographic bonus until 2023. The demographic bonus is the condition where 70% of populations are on productive ages. To utilize that momentum, the government of Indonesia has shifted its development focus from physical infrastructure into human resources (HR). President Joko Widodo issued Presidential Regulation No. 9 of 2019 concerning the revitalization of vocational high schools (SMK) to prepare the advance of Indonesia's HR. The resurgence of SMK is also one of the efforts to reduce the unemployment rate of SMK graduates. In 2020, for example, SMK graduates contributed to the highest unemployment rate in Indonesia, which was 13.55 percent. The vocational student accounting department is one of the most significant contributions to the unemployment rate. The reason is that accounting expertise is one of the majors with the most considerable interest. For example, in South Tangerang City, from 33,964 SMK students registered until 2021, 4,034 students are majoring in accounting (Data Pokok, 2021).

The Minister of Education of the Republic of Indonesia, Nadiem Makarim, admits that most SMKs have not produced graduates ready to work (Putra, 2021). Therefore, the problem of work readiness is one of the main reasons for the high unemployment rate of SMK graduation. Research by Salleh et al. (2019) mentioned that work readiness could decrease the unemployment rate of SMK graduates. Likewise, increasing student work readiness will also decrease the unemployment SMK graduates on the field of accounting major. In addition to facing global competition, work readiness can also support a graduate to enter the world of work. Work readiness is considered necessary as a criterion in job recruitment and needs to be checked systematically by the employer (Caballero, 2010). Work readiness is the extent to which a student or graduate has the attributes that are prepared for them to succeed in the workplace (Caballero, 2010). In more detail, work readiness is a general and fundamental attribute that allows graduates to apply their technical knowledge. The students' technical knowledge is needed to identify and solve problems they face when entering the workforce (Jollands et al., 2012).

Prikshat et al.'s (2019) use the resource-based view theory to develop an integrated competency model for work readiness. In his study, Prikshat et al. (2019) state that graduate work readiness is a dynamic integration of competencies that requires reconfiguration, synthesis, and integration of 4 dimensions: intellectuality, personality, meta-skills, and specific skills jobs that will attract the attention of prospective employers. Based on this, improving vocational students' work readiness in accounting can be done by strengthening competency. Research by Baiti and Munadi (2014), Widiyatmoko (2016), Nurhayati and Kusmuriyanto (2019) prove that competency has a positive effect on work readiness, especially for SMK students majoring in Accounting. In this case, competency is a person's ability to complete a task or job (Wilcox & King, 2014). Based on this concept, each person's competency varies according to their respective fields.

The student's competency in vocational accounting school means completing tasks or jobs around the accounting field. In Indonesia, the competencies for accounting SMK students are summarized in the Indonesian National Work Qualification Standard (SKKNI) number 182 of 2013. In the SKKNI, accounting SMK students must have seven units of competencies as junior accounting technicians (level 2). After being declared to have passed these seven competencies, a vocational student majoring in accounting can be recognized as competent. Unfortunately, not many SMK students majoring in South Tangerang accounting have taken the competency test from BNSP until now. All SMK students must take the skill competency test. However, most of the skill competency tests in SMK currently do not refer to the BNSP. The schools can design their competency test concept, so the students' skills tend to be unstandardized.

Moreover, another variable that is also important to improving students' work readiness is ICT skills. Students majoring in accounting in particular also really need ICT skills. There are several competency units in accounting technician positions related to ICT skills, including operating numeric applications, managing databases, and operating an accounting information system. Sihotang & Santosa (2019) prove that mastery of information technology positively affects work readiness. Likewise, the research by Lestari and Santoso (2019) emphasizes the importance of digital literacy for vocational students because it should increase their work readiness. On the

other hand, referring to constructivism learning theory, the internship is also an important variable that can improve work readiness. Several kinds of research have proved the positive effect of internship on work readiness, including a study from Diani and Sumiati (2018), Mustikawanto et al. (2019), and Kapareliotis et al. (2019).

Other studies related to the work readiness of students and graduates tend to have been widely carried out. However, there are still contradictions between the results of the studies concerning work readiness. Some studies have proven that competency affects work readiness, but some others have stated otherwise. Some studies reveal that ICT skills affect work readiness, but others deny it. This study seeks to fill this gap by examining the role of internships in mediating and moderating the effect of competency and ICT skills on work readiness, which is different from other studies. The object of this study is the vocational students of accounting in accounting in South Tangerang City. The decision to use this object is because unemployment in South Tangerang was still high. In 2019, for example, the unemployment rate in this capital's buffer zone reached 48 thousand students (IDN Times, 2019). From this number, SMK graduates contributed the most significant digit. This condition tends to be ironic considering the level of job opportunities in South Tangerang tends to be substantial. Besides, South Tangerang's economic growth has always been higher than the national average.

Competency is the knowledge, skills, personal characteristics, and social attitude combinations needed to support job performance (Johansen et al., 2020). In simple words, competency is finishing some jobs or tasks (Wilcox & King, 2014). Diaz et al. (2020) defined competency as the relationship of knowledge, skills, and attitude on persons finishing specific tasks. People who only have knowledge and concepts can not be said to be competent. Instead, a person can be declared qualified if they can complete a task based on a specific unit of competency. Skorková (2016) was defined competency as a human quality that can allow them to gain success and get some position in a company. A skill, knowledge, ability, talent, and involvement in a job. Based on this opinion, competency can be a determinant of one's success. The more competent a person is, the more he is needed by the world of work. However, there is no definite agreement on competency definition (Dante & Ignacio, 2012). Competency is also a summary of the professional skills and behavior patterns of a person. Competency forms the basis of proficiency at work and a crucial level of maturity to maximize performance (Blašková et al., 2014).

Vocational students obtain competency from learning and internships. However, there is a relationship between competency and internship. The competencies can determine the level of satisfaction of the internship provider to vocational students. The researcher usually uses the constructivism learning theory from Vygotsky and Piaget as the basis for the importance of internships. Constructivism learning theory emphasizes the importance of social activities, where increasing knowledge comes from experience (Gunduz & Hursen, 2015). By using constructivist learning theory, several studies have attempted to analyze the effect of competency on internships. Sofiani (2019) proves that there is a positive effect of competency on the internship results. Suppose students have proper basic skills or competencies. In that case, it will increase the intern provider's trust to provide tasks under their field of work. The internship will be more successful if more new assignments are given to the students that match their competencies. In addition, using product-moment correlation analysis, research by Amelia and Sojanah (2019) and research by Nurcahyo and Dharmayanti (2019) proves a positive relationship between competency and internship. Based on that early study, the first hypothesis in this study is:

H<sub>1</sub>: Competency has a positive effect on internship

However, most research analyzes the effect of internship on competency. In other words, the internship is the independent variable that affects competency. It is because the main reason for the existence of the internship program is also to increase competency. Research by Barbarash (2016), Lutfia and Rahadi (2020), and Mashudi and Widjaja (2016), for example, succeeded in proving that internships can increase competency. However, the study by Hakim and Fitri (2020) found a significant negative effect of competency on internships. Based on this, the relationship or influence between internship and competency is relatively unclear, depending on the context, situation, quality, and other relatively multidimensional factors.

If viewed from the aspect of learning, the core of implementing vocational education is forming competency. The principal capital of SMK graduates in entering the world of work is none other than competency. Competency is essential for a student to enter the world of work. Without adequate competency, it is difficult for someone to enter the world of work according to education. It shows that competency is essential to improve student work readiness. In this context, work readiness is a condition in which a person can respond in the face of work challenges by using the physical health, mind, understanding, skills, and knowledge needed (Trisnawati, 2017).

According to Bandaranaike and Willison (2015), every student who wants to enter the world of work needs to have emotional work readiness as the key to working with knowledge and competency. There is a reasonably close relationship between competency and work readiness. The importance of competency for increasing work readiness invites many researchers to conduct empirical testing on this matter. For example, Suttipun (2014) proved the positive effect of competency, knowledge, and ethics on students' work readiness. Various studies include Baiti and Munadi (2014), Widiyatmoko (2016), Nurhayati and Kusmuriyanto (2019), Afriani and Setiyani (2015), and Eliyani et al. (2016) discover the effect of competency on work readiness. On that basis, the second hypothesis in this study is:

H<sub>2</sub>: Competency has a direct positive effect on student's work readiness

Furthermore, the aspect of technology or ICT skills is also considered important for vocational students. Adequate ICT skills are regarded as valuable capital for students to succeed in the internship program to build their work readiness in the future. In this context, the minimum ICT skill for SMK students is their ability to operate an introductory level computer. For example, they can use Microsoft Office applications well to support their work or daily tasks. The industry will relatively give students with better ICT skills more significant opportunities to carry out their internships. Hakkarainen et al. (2000) mention that using computers in learning will make learning more meaningful. Likewise, internship activities are considered to be more successful if students have more skills in terms of ICT. Miller et al. (2013) even mention that ICT skills are one of the basic skills that must be possessed to support successful study and work.

According to Mlambo et al. (2018), ICT skills need to be integrated into the learning process. On that basis, ICT skills are essential for vocational students in any major. However, there have been many studies discussing the importance of ICT skills. No research focuses on analyzing the influence of ICT skills on internship success. On that basis, by considering the urgency of ICT skills for vocational students, this study assumes that:

H<sub>3</sub>: ICT skill has a positive effect on internship

Entering the MEA (Asian Economic Community) era, ICT skills are indispensable for improving student work readiness. Boahin & Hofman (2014) stated that ICT skills are one part of professional skills available for every workforce. Students need to be equipped with competent ICT skills to become future leaders and prepare them to enter the world of work (Umar & Jalil, 2012). Arguments regarding the importance of ICT skills are reinforced by the skills-biased technological change (SBTC) hypothesis that the demand for educated human resources will increase if technology develops. Knowledgeable human resources, as referred to, really need to have qualified ICT skills to carry out technology adoption in the industry.

Based on the importance of ICT skills, several studies have attempted to examine the effect of ICT skills on work readiness. For example, Sihotang and Santosa (2019) and Nur'Aini and Nikmah (2020) found the impact of ICT skills or mastery of information technology on students' work readiness. Some other studies use information technology variables in different variables. Lestari and Santoso (2019) and Putri and Supriansyah (2021) use digital literacy as an assessed variable to affect work readiness. As a result, both studies state that digital literacy has a positive effect on work readiness. Another survey from Sabilah et al. (2021) uses digital skills to reflect information technology capabilities. The research of Sabilah et al. (2021) also proved the influence of digital skills on work readiness. Based on the previous studies that have been mentioned, ICT skills can be an essential aspect for students to face competition in the world of work. Therefore, the fourth hypothesis in this study is:

H<sub>4</sub>: ICT skill has a positive direct effect on work readiness

Smith et al. (2014) mentioned that integrative work learning (WIL) could also improve work readiness. WIL is an integrated learning concept with the world of work. The internship idea in SMK is relatively similar to WIL because they prioritize work experience for students. The importance of work experience in internships for students is based on the constructivism learning theory. Constructivism learning theory emphasizes the importance of social activities, where increasing knowledge comes from experience (Gunduz & Hursen, 2015). Based on this theory, some learning models have been developed. One of them is learning by doing. Constructivism learning theory implies that cognitive development is influenced by values and beliefs in culture, strategies for problem-solving. Teachers, in this case, must encourage the active participation of students with cooperative learning exercises. It must also provide the support that is tailored to the students' skills and monitors their progress.

Research by Ornellas et al. (2019) explains that the constructivist education paradigm is based on various types of learning, one of which is authentic learning, which is considered to increase students' work readiness. Constructivism learning theory holds that learning is an active process and a constructive approach. The change influences the constructivism of knowledge, learning, and teaching through experience (Nugroho, 2017). The constructivist-based learning process believes that the new knowledge will be constructed with collaboration, reflection, and making the learner's personal experience (Jordan, 2013).

Many researchers also use the matching theory from Jovanovic (1979) to examine work readiness. The matching theory is an economic theory that compiles a framework in analyzing employment conditions, both micro and macro (Moscarini, 2005). Usually, the matching theory is used to examine the state of labor mismatch. Based on the matching theory, unemployment and the use of labor skills reflect a mismatch between graduates' and employers' qualifications for some reasons (Mason et al., 2009). One of them is the lack of work readiness, both vocational school graduates and college graduates. In addition, the lack of information is also one of the crucial reasons why graduates cannot access the world of work. Therefore, internships in this context are used to minimize the lack or imperfection of the information. With the internship, students can prepare skills that are considered indispensable by the world of work to build work readiness.

With the constructivism and matching theory, several studies have proved the influence of internships on work readiness. Kapareliotis et al. (2019), Diani and Sumiati (2018), Purnama and Suryani (2019), Rusliyanto and Kusmuriyanto (2019), Mustikawanto et al. (2019), Doe (2015), Eliyani et al. (2016), Utami and Raharjo (2020), and Sapriadi et al. (2019) proved that there is a positive effect of internship on work readiness. Therefore, the fifth hypothesis in this study is:

H<sub>5</sub>: Internship has a positive effect on work readiness

However, several other studies, including Hilmi and Lukmantoro (2020), and Khairani et al. (2019), said that internship could not affect work readiness. One of the reasons underlying this situation is because not all internships undertaken by students tend to be successful. Many assignments given to the students are not under their fields during the internship. Therefore, the internship does not always allow students undergo to improve their competencies. Internships must be adequately programmed and can maximize the competency of students. On the other hand, Herbert et al. (2020) explain that for employers, work readiness is not only about increasing the level of competency in specific tasks, but rather the minimum requirements and being able to work independently and contribute to specific formal jobs.

Work readiness is not solely about increasing competency. In this context, Suttipun (2014) mentions four elements of student readiness in facing the competitive world of work: physical enthusiasm, intelligence, sensitivity to the environment, and emotional. Meanwhile, Caballero et al. (2011) mention ten categories that indicate work readiness: motivation, maturity, self-development, organizational awareness, technical focus, interpersonal orientation, work attitude, problem-solving, adaptability, and resilience. Based on the elements in work readiness, most of them are more likely to be obtained from internships. Masole & Dyk (2016) mention that graduate students with technical skills do not have qualified work readiness. According to Masole & Dyk (2016), graduates also need to increase their capacity to deal with work stress and pressure later in

the workplace. On that basis, competency needs to be balanced with work experience in internships. Given the possibility that competency can affect internship results, as well as previous research which states that competency has a direct effect on work readiness, the sixth hypothesis in this study is:

H<sub>6</sub>: Internship plays a significant role in mediating the indirect effect of competency on work readiness

Entering the MEA and the era of the digital economy today, students need to master the ICT. In improving ICT skills, learning in the classroom is considered insufficient. Students need to find more learning resources and gain hands-on experience related to applying their ICT skills to the world of work. He et al. (2017) prove that internship can be a mediator variable. However, He et al. (2017) tested the indirect effect of social media skills in students' career development. As a result, He et al. (2017) found that internship plays a significant role in mediating the effect of mastering social media on students' employability skills. In this context, social media skill has similarities with ICT skills because they are both related to the use of information technology.

Referring to Baron and Kenny (1986), mediation models can be built if the independent variable affects the mediator variable. Then, the independent and mediating variables affect the dependent variable. Therefore, this study also suspects that internships can mediate the effect of ICT skills on work readiness. The consideration is that there are allegations that ICT skills can affect internships and work readiness, and internships can also affect work readiness. Based on these considerations, the seventh hypothesis in this study is:

H<sub>7</sub>: Internship plays a significant role in mediating the indirect effect of ICT skills on work readiness

According to Harkins (2000), there needs to be an alignment between learning and practice in the real world. This process is critical and effective in preparing young people for their future careers. In the context of learning in SMK, students are initially given essential competencies from the learning process in the classroom. Then, these competencies will be matured through internships as the principal capital in facing the world of work. According to Smith et al. (2014), experience from practical work can maximize competency, as seen from WIL-based learning. Therefore, with the internship, student competencies can be maximized to improve student work readiness.

The internship can also be an adjustment of student competencies obtained from school into the world of work. In this context, internship becomes quite logical if it is used as a moderating variable that can maximize the effect of competency on work readiness. Referring to Baron and Kenny (1986), moderating variables are proposed if an unexpectedly weak or inconsistent relationship exists between the independent and dependent variables. Therefore, by considering the inconsistency of the influence of competency on work readiness, this study suspects that internships can moderate the effect of competency on work readiness. Thus, the eighth hypothesis in this study is as follows:

H<sub>8</sub>: Internship plays a significant role in moderating the effect of competency on work readiness

Theories that explicitly mention ICT skills can affect work readiness are relatively undiscovered. However, in the context of vocational students majoring in accounting, ICT skills are considered indispensable. It is partly because the work of an accountant is currently quite intersected with information technology. For example, accounting technicians must operate number processing applications, manage databases, and operate accounting information systems. However, not infrequently, the ICT skills possessed by students are not used in work. In this context, internships are needed so that students' ICT skills can match the world of work.

On the other hand, the influence of ICT skills on students' work readiness is also somewhat inconsistent, so the internship is needed as a moderating variable. In this context, Baron and Kenny (1986) mention that the moderating variable is independent and can change the influence of the independent variable on the dependent variable. It means that internships are considered to strengthen or even weaken the impact of ICT skills on students' work readiness. However, when viewed from its function, if there is a moderating role for internships on the influence of ICT skills

on work readiness, then the moderation should be positive. By doing an internship, students have a more significant opportunity to implement and improve their ICT skills at work. Based on this rationalization, the ninth hypothesis in this study is:

H<sub>9</sub>: Internship plays a significant role in moderating the effect of ICT skills on work readiness

## METHOD

This study's data were collected by late 2019 to early 2020, or before the Covid 19 pandemic spread in Indonesia. Therefore, this study uses questionnaires, tests, and documentation instruments taken directly. The total population in this study was 981 students of class XII from 10 schools in South Tangerang City. Using the statistical formula Slovin's margin of error of 5%, the final sample taken is 284. The sample distribution is a randomized sampling method with the following distribution:

Tabel 1. The Distributions of Samples

| No    | Vocational Schools            | Types   | Location    | Sample     |
|-------|-------------------------------|---------|-------------|------------|
| 1     | SMKS DARUSSALAM               | Private | Ciputat     | 23         |
| 2     | SMKS LETRIS INDONESIA 2       | Private | Pamulang    | 34         |
| 3     | SMKS YADIKA 5 PONDOK AREN     | Private | Pondok Aren | 24         |
| 4     | SMKS MUHAMMADIYAH 01 CIPUTAT  | Private | Ciputat     | 20         |
| 5     | SMKS SASMITA JAYA 1           | Private | Pamulang    | 30         |
| 6     | SMKN 2 KOTA TANGERANG SELATAN | Public  | Pondok Aren | 40         |
| 7     | SMKN 1 KOTA TANGERANG SELATAN | Public  | Serpong     | 38         |
| 8     | SMKS LETRIS INDONESIA         | Private | Ciputat     | 30         |
| 9     | SMK PUSTEK SERPONG            | Private | Setu        | 24         |
| 10    | SMKS ISLAMIAH CIPUTAT         | Private | Ciputat     | 21         |
| Total |                               |         |             | <b>284</b> |

Notes: Determination of the sample size from each school is proportional. Meanwhile, the distribution of the sample is random, not differentiated by gender or others.

The operationalization of variables in this study are as follows:

Tabel 2. Variable's Operationalisation

| Variable       | Label | Theoretical Concept  | Measurement  | Data Collecting Method |
|----------------|-------|--|--|------------------------|
| Work Readiness | WR    | Attributes that students need to succeed in the workplace (Caballero, 2010). | Reflected by the following indicators: Motivation, Self Development, Work Attitude, Interpersonal Orientation, Adaptability, Resilience, Intelligence, Sensitivity to the Environment, Emotional Intelligence, Initiative, Communication Skill, Teamworking, and Organizing Skill. These indicators are adopted from Caballero et al. (2011) dan Suttipun (2014) | Questionnaire          |
| Internship     | INTS  | Practical work activities carried out by students in specific companies or   | Assessment results from internship providers   | Documentation          |

|            |       |   |   |               |
|------------|-------|---|---|---------------|
|            |       | institutions to provide work experience for students  |   |               |
| Competency | COMPT | Unity of knowledge, attitudes, skills, and behaviors that exist in a person to complete a specific task (Diaz et al., 2020) | Composite values from the test adopted from SKKNI 182 in 2013 are as follows:<br>1. Processing the <i>entry</i> journal<br>2. Processing the ledger<br>3. Preparing financial statement | Test          |
| ICT Skill  | ICTS  | Students' ability to operate programs to help complete work and students' ability to utilize information technology         | The Value of Learning Outcomes of Computer Subjects   | Documentation |

This study uses three data collection methods: questionnaires to measure work readiness, documentation to measure internship and ICT skills, and tests to measure competency. The variable of work readiness in this study is an endogenous latent variable. On that basis, this study uses partial least square structural equation modeling (PLS-SEM) analysis to analyze research data. Apart from having latent variables, using PLS-SEM in this study is because PLS-SEM can be more accurate in explaining the relationship of many variables at once.

Referring to Hair et al. (2018), the equations that can be used to explain the relationship between latent variables (constructs) and their indicators are as follows:

$$x = l * y + e.....(1)$$

Where x=latent variable, l= loading factor, y = indicator, and e= error measurement.

Based on these equations, the equations that can be arranged to show the relationship between the latent variable of work readiness and the indicators in this study are as follows:

$$WS = l_1 * CS + l_2 * MAT + l_3 * TW + l_4 * SC + l_5 * INTLG + l_6 * ENSE + l_7 * RES + l_8 * ORGS + l_9 * MO + l_{10} * WA + l_{11} * EQ + l_{12} * INTV + l_{13} * IO + l_{12} * ADP + e ..... (2)$$

Where:

- l = loading factor
- CS= Communication Skill
- MAT= Maturity
- TW= Teamworking
- SC= Self Control
- INTLG= Intellegence
- ENSE= Environment Sensitivity
- RES= Resilience
- ORGS= Organisation Skill
- MO= Motivation
- WA= Work Attitude
- EQ= Emotional Quotient
- INTV= Initiative
- IO= Interpersonal Orientation
- ADP= Adaptability

e= Measurement error

Meanwhile, the structural equations that show the relationship between variables in this study are as follows:

$$\text{INTS} = p_1\text{COMP} + p_2\text{ICTS} + e \dots\dots\dots(3)$$

Equation 3 shows the impact of competency and ICT Skills on internships. Furthermore, the equation that shows the entire relationship of exogenous variables to the work readiness as an endogenous variable in this study is as follows:

$$\text{WS} = p_1\text{INTS} + p_2\text{COMP} + p_3\text{ICTS} + e \dots\dots\dots(4)$$

Because this study also examines the moderating effect of the internship variable, the mathematical equation for the moderating effect is as follows:

$$\text{WS} = p_1\text{COMPT} + p_2\text{INTS} + p_3(\text{COMT} * \text{INTS}) \dots\dots\dots(5)$$

Equation 5 shows the relationship between variables on the moderating effect of internship for the impact of competence on work readiness. Meanwhile, the equation that shows the moderating effect of internship for the impact of ICT skills on work readiness is as follows:

$$\text{WS} = p_1\text{ICTS} + p_2\text{INTS} + p_3(\text{ICTS} * \text{INTS}) \dots\dots\dots(6)$$

## RESULTS AND DISCUSSION

The results of descriptive statistical analysis in this study are as follows:

Table 2. The Results of Descriptive Statistic Analysis

|              | ICT Skill | Internship | Competency | Work Readiness |
|--------------|-----------|------------|------------|----------------|
| Mean         | 82.35     | 87.90      | 60.08      | 55.39          |
| Median       | 81.00     | 87.00      | 57.00      | 55.00          |
| Maximum      | 97.00     | 99.00      | 100.00     | 68.00          |
| Minimum      | 70.00     | 75.00      | 27.00      | 45.00          |
| Std. Dev.    | 4.373     | 5.706      | 19.57      | 4.814          |
| Skewness     | 0.775     | 0.026      | 0.430      | 0.129          |
| Kurtosis     | 3.531     | 2.145      | 2.356      | 2.421          |
| Observations | 284       | 284        | 284        | 284            |

Notes: The maximum scale value for ICT skill, Competency, and Internship is on a scale of 100. Meanwhile, the ultimate value of Work Readiness is 70, which is generated from 14 questionnaire items multiplied by five as the maximum value.

Table 2 shows that the ICT skill and internship scores are reasonably good, while work readiness is in the medium category. As for competency, it is getting the average score is relatively the lowest. It means that the competency of SMK students majoring in Accounting in South Tangerang City is moderately unsatisfactory. Moreover, referring to the principle of competency testing from BNSP, the percentage of vocational students who can be declared competent will be very small. Referring to the direction of the BNSP competency test, a person is declared competent if they pass all competency units with zero mistakes. So, if it is converted into numbers, only students who get a score of 100 can be declared competent.

### Measurement Model

The outer model testing determines the relationship quality between the indicators and the latent variables (construct). In the first stage of testing, the variables of Average Variance Extracted (AVE) and Composite Reliability values did not meet the criteria. It indicates that not all indicators used to reflect the work readiness are valid and reliable. In this context, the minimum required

value of AVE and Composite reliability is 0.5 (Ghozali & Hengky, 2016; Hock & Ringle, 2006). Meanwhile, J. Hair et al. (2017) mentioned that the value of composite reliability in explanatory studies ranges from 0.6 to 0.7. In addition, if the loading factor is less than 0.04, then the indicator needs to be removed. Meanwhile, if the load is more significant than 0.4 but smaller than 0.7, then the removal needs to consider the minimum composite reliability acceptance (J. Hair et al., 2017). The results of the measurement model as bellow:

Table 3. Measurement Model

| Latent Variable     | Indicators                | Description             | First Stage |       |       |       | Second Stage |       |       |       |
|---------------------|---------------------------|-------------------------|-------------|-------|-------|-------|--------------|-------|-------|-------|
|                     |                           |                         | Loading     | AVE   | CR    | VIF   | Loading      | AVE   | CR    | VIF   |
| Work Readiness (WR) | CS                        | Communication Skill     | 0.551       |       |       | 1.437 | -            |       |       | -     |
|                     | MAT                       | Maturity                | 0.550       |       |       | 1.427 | -            |       |       | -     |
|                     | TW                        | Teamworking             | 0.465       |       |       | 1.259 | -            |       |       | -     |
|                     | SC                        | Self Control            | 0.485       |       |       | 1.282 | -            |       |       | -     |
|                     | INTLG                     | Intellegence            | 0.370       |       |       | 1.292 | -            |       |       | -     |
|                     | ENSE                      | Environment Sensitivity | 0.390       |       |       | 1.278 | -            |       |       | -     |
|                     | RES                       | Resilience              | 0.527       |       |       | 1.403 | -            |       |       | -     |
|                     | ORGS                      | Organisation Skill      | 0.520       | 0.272 | 0.824 | 1.406 | -            | 0.516 | 0.808 | -     |
|                     | MO                        | Motivation              | 0.669       |       |       | 1.506 | 0.682        |       |       | 1.186 |
|                     | WA                        | Work Attitude           | 0.574       |       |       | 1.308 | 0.606        |       |       | 1.173 |
|                     | EQ                        | Emotional Quotient      | 0.238       |       |       | 1.188 | -            |       |       | -     |
|                     | INTV                      | Initiative              | 0.490       |       |       | 1.305 | -            |       |       | -     |
| IO                  | Interpersonal Orientation | 0.593                   |             |       | 1.767 | 0.779 |              |       | 1.677 |       |
| ADP                 | Adaptability              | 0.597                   |             |       | 1.730 | 0.791 |              |       | 1.682 |       |

Notes: In the first stage, all indicators are tested for validity by reviewing the loading factor value. Then, the indicators that get a value less than 0.4 will be deleted instantly. Meanwhile, the loading factor value which is less than 0.7 but greater than 0.4 will be selected according to the limit of AVE, and CR values. Based on that, this study only took 4 indicators, namely MO, WA, IO, and ADP.

Table 3 shows that only four indicators are declared valid and reliable in reflecting work readiness in this study. The four indicators are motivation, work attitude, interpersonal orientation, and adaptability. However, this does not mean that other invalid indicators are not necessary. It can indicate that the development period of vocational students on the personal characteristics of these weak indicators is relatively not maximized. Maturity, for example, will usually begin to appear and develop in a person while they in college. Table 3 shows that the construct of the work readiness variable met the requirements because the AVE value is more significant than 0.5 and the CR value is greater than 0.7.

### Model Fit

As for the fit model or the suitability of the constructs in this study, they are as follows:

Table 4. Research Construct Fit Model

|                | R Square | Adj R Square | Remarks |
|----------------|----------|--------------|---------|
| Internship     | 0,233    | 0,227        | Weak    |
| Work Readiness | 0,186    | 0,172        | Weak    |

Notes: If the R Square value is in the range of 0.190 to 0.330, the model construct is considered weak. If it is in the field of more than 0.330 to 0.670, the model construct is moderate. Meanwhile, if the value of R Square is more than 0.670, then it is categorized as vital.

The relatively weak fit model shows that both the internship and work readiness constructs are multidimensional. That is, the two constructs are determined by many other variables and dimensions outside the research model. Table 4 shows that changes in the internship variable are determined by competence and ICT skills by 23.3%. In contrast, other variables outside the research model determine the rest. Meanwhile, the simultaneous influence of competence, ICT skills, and internships on work readiness is only 18.6%. Furthermore, related to the predictive ability of this research model or construct, it can be seen from the following table:

Table 5. Research Construct Prediction Ability

|                | RMSE  | MAE   | Q <sup>2</sup> _predict | Remarks |
|----------------|-------|-------|-------------------------|---------|
| Internship     | 0.887 | 0.709 | 0.222                   | Weak    |
| Work Readiness | 0.950 | 0.757 | 0.108                   | Weak    |

Notes: If Q<sup>2</sup> is less than 0.25, then the model construct is declared to have a weak predictive ability. Meanwhile, the RMSE and MAE values also show predictive power. The smaller the RMSE and MAE values, the higher the predictive ability of the model construct

Table 5 shows that the predictive ability of the research model or construct tends to be at a low level. These conditions show that the relationship between variables resulting from this research can change over time and the context of the prevailing situation. Furthermore, the size of the fit model in this study was determined through the values of the Root Mean Square Residual covariance (RMSttheta) and the Standardized root mean square Residuals (SRMR). If the RMSttheta and SRMR values are below the threshold, then the research model is considered well-fit. The details are as follows:

Table 6. Overall Model Fit Measurement

|           | Value | Treshold | Remarks     |
|-----------|-------|----------|-------------|
| SRMR      | 0.086 | 0.080    | Lack of Fit |
| RMS Theta | 0.204 | 0.120    | Lack of Fit |

Notes: Although there is no good fit model, it does not mean that the results of this study cannot be trusted. Model fit tends only to show the suitability of the structural model built.

Furthermore, the structural model in this study are as follows:

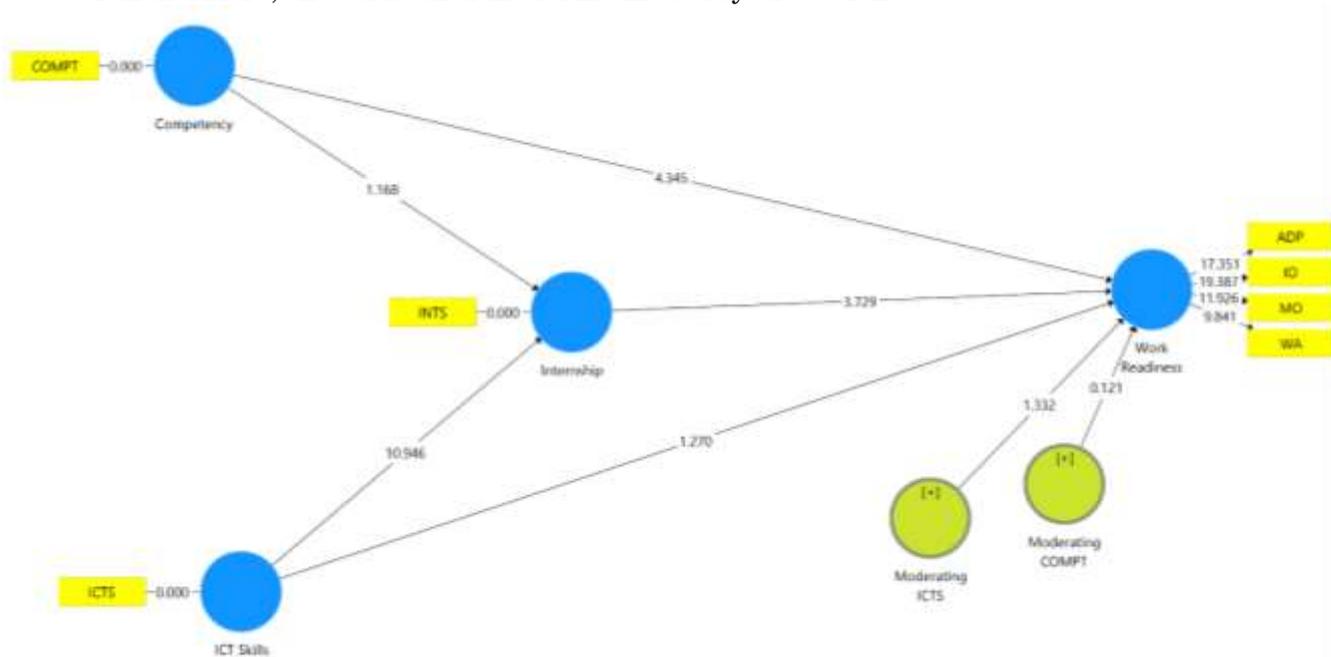


Figure 1. Structural Model

## Hypotheses Testing Results

The procedure to test the hypotheses in this study is from the *significant* value of Alpha 0,05. The results are in the following table:

Table 6. Hypothesis Testing Results

|   | Original<br>Sample<br>(O) | Sample<br>Mean<br>(M) | Standard<br>Deviation<br>(STDEV) | T Statistics<br>( O/STDEV ) | P<br>Values |
|---|---------------------------|-----------------------|----------------------------------|-----------------------------|-------------|
| Competency -> Internship                      | -0.062                    | -0.059                | 0.052                            | 1.181                       | 0.238       |
| Competency -> Work Readiness                  | 0.268                     | 0.273                 | 0.058                            | 4.651                       | 0.000*      |
| ICT Skill -> Internship                       | 0.495                     | 0.496                 | 0.049                            | 10.147                      | 0.000*      |
| ICT Skill -> Work Readiness                   | 0.059                     | 0.061                 | 0.071                            | 0.829                       | 0.407       |
| Internship -> Work Readiness                  | 0.266                     | 0.266                 | 0.065                            | 4.126                       | 0.000*      |
| Competency -> Internship -> Work<br>Readiness | -0.019                    | -0.020                | 0.018                            | 1.048                       | 0.295       |
| ICT Skill -> Internship -> Work<br>Readiness  | 0.154                     | 0.155                 | 0.038                            | 4.046                       | 0.000*      |
| Moderating Effect C-> Work Readiness          | 0.116                     | 0.123                 | 0.057                            | 2.020                       | 0.044**     |
| Moderating Effect ICT -> Work Readiness       | 0.004                     | 0.002                 | 0.064                            | 0.060                       | 0.952       |

Notes: \*significant at 0,01, \*\*significant at 0,05, \*\*\*significant at 0,1. The original sample is the real coefficient without bootstrapping procedure. Meanwhile, the sample mean is the coefficient value after bootstrapping. There is no significant difference between the original and sample mean values because this study uses a huge sample size.

Based on table 6, there are five accepted research hypotheses. From the hypothesis testing, competency and internship have positively affected work readiness. Meanwhile, ICT Skills positively affect internships, but competency could not prove to affect internships. The results of hypothesis testing also found that internship was confirmed to mediate the effect of ICT skills on work readiness but could not mediate the effect of competency on work readiness. On the other hand, the internship has been shown to moderate the impact of competency on work readiness but cannot reconcile the effect of ICT skills on work readiness.

### The Effect of Competency on Internship

This study failed to prove the influence of competence on internship. It means that the competency possessed by students is not a critical aspect that determines the success of their internship. This result is relatively different from the primary studies, including Sofiani (2019) and Nurcahyo and Dharmayanti (2019), who stated that internship and competency are correlated. The difference between this study and these two was the method used. The technique used by the two studies is a correlation analysis, while this study uses SEM PLS based on variance. In the research that uses correlation, the relationship between variables can affect each other. Competency can affect internship, vice versa. Most studies use competency as the dependent variable that is influenced by internship.

Research by Amelia & Sojanah (2019) and Marsono et al. (2017) mentions that internships increase competence. Moreover, the main reason for the existence of the internship program is also to increase competence. Barbarash (2016) notes that a quality internship program will increase students' competence or capacity and workability. Therefore, the competence of students before the internship becomes less meaningful when entering the internship. Not infrequently, the internship opportunities give priority to the soft skill aspect in assigning tasks to the students participating in the internship. The insignificant effect of competence on the internship shows that the learning carried out in schools as long as students have not participated in the internship needs further improvement. Usually, schools strengthen their students before joining the internship to get maximum results during the internship.

## **The Direct Effect of Competency on Work Readiness**

The results of hypothesis testing prove that there is a direct influence between competences on work readiness. In other words, competence is one of the most important aspects for students to work immediately after graduating from school. The effect of competence on work readiness in this study is in line with previous research conducted by Baiti and Munadi (2014), Widiyatmoko (2016), and Nurhayati and Kusmuriyanto (2019)). Based on this, competence for SMK students majoring in Accounting in South Tangerang City is an essential aspect that students must have. Thus, the low competence of SMK students, as indicated by descriptive statistical analysis, is thought to be one of the main factors causing the high unemployment rate for SMK graduates in South Tangerang City. Work readiness is critical to reducing the unemployment rate for vocational school graduates because it is a minimum requirement and contributes to specific formal jobs (Herbert et al., 2020). Every student who wants to enter the world of work needs to have work readiness (Bandaranaike & Willison, 2015).

Students with better competency tend to have better self-confidence than others. Herbert et al. (2020) state that works readiness can be shown from self-confidence and acceptability when working in a team. Self-confidence is also part of the interpersonal orientation that will encourage self-actualization in someone. On that basis, self-confidence is vital for vocational students when entering the world of work. The existence of competence for students will also relatively determine what jobs will be obtained. When referring to the KKNI level, ideally, graduates of SMK majoring in accounting can become junior accounting and finance staff. The functions of this occupation are supporting the senior accountants in handling all financial transactions of the company or institutions.

## **The Effect of ICT Skill on Internship**

This study proves the positive influence of ICT skills on internships. The point is that students' ICT skills will support these students to achieve success in the internship program. In other words, students who have higher ICT skills will relatively get more lessons and experience because they tend to be given tasks with a higher level of complexity. For example, students who can operate Microsoft Excel better will be assisted in journalizing financial transactions during their internship. Moreover, most companies and agencies where the internship is being targeted by students majoring in accounting currently use computers to handle all of their financial transactions. Therefore, students need to be given special briefings about mastering basic ICT skills to carry out internships.

The results of testing the third hypothesis also indicate that students who have better ICT skills will get a higher appreciation from the internship provider. The results of this study strengthen the opinion of Miller et al. (2013) related to the importance of ICT skills in supporting successful research or work. Thus, the school needs to equip its students with qualified ICT skills from classroom learning and internships and through training and extracurricular activities. Moreover, ICT skills, especially those related to the ability to operate number processing applications and accounting system applications, are a unit of competence required for a student to reach the junior accounting technician qualification level following the KKNI.

## **The Direct Effect of ICT Skill on Work Readiness**

This study fails to prove the effect of ICT skills on work readiness. This condition shows that the ICT skills obtained from the learning process are considered unable to build students' self-confidence in facing the world of work. Thinking that the ICT skills of vocational students in this study were measured based on the evaluation results of learning computer subjects, the absence of a direct effect of ICT skills on students' work readiness tends to be logical and understandable. The rationale is that computer learning in class alone is considered inadequate to make students proficient in operating basic computer applications. For students to be talented in computers, practice is needed that occurs continuously. It means that students need to be accustomed to using computers to support their daily activities. ICT skills are required for students to prepare them to become future leaders (Umar & Jalil, 2012).

The results of this study are contradictory to previous studies, including those conducted by

Sihotang & Santosa (2019) and Nur'Aini & Nikmah (2020). The differences in method, number of samples, and process of measuring variables are considered to be the reasons for these mixed results. The research of Sihotang & Santosa (2019), for example, only uses a total sample of 36 students with simple regression analysis. In addition, the research by Sihotang & Santosa (2019) also measured the mastery of information technology with a questionnaire, in contrast to this study, which used the evaluation of student learning in computer subjects. Meanwhile, Nur'Aini & Nikmah (2020) examine the influence of information technology on student work readiness. In this case, the ICT skills of students are certainly much better than those of SMK students due to differences in the KKN level.

### **The Effect of Internship on Work Readiness**

This research proves the effect of internships on work readiness. Quality internships in this study are shown from the results of student work during the internship based on the employer's assessment. The effect of internship on work readiness in this study is relatively consistent with constructivism learning theory regarding the importance of social activities and learning experiences. This study also supports Smith et al. (2014) findings that work-based learning can improve work readiness. On that basis, efforts to improve work readiness can be carried out by optimizing the meaningfulness of learning outcomes from the internship.

The results of this study are also quite relevant to the matching theory that imperfect information will cause students to have difficulty accessing the world of work. The internship is one of the efforts to correct the inadequate information. In this context, imperfect information for students in accessing the world of work is related to what skills are needed. Meanwhile, this study strengthens the results of previous research conducted by Kapareliotis et al. (2019), Diani and Sumiati (2018), Purnama and Suryani (2019), Rusliyanto and Kusmuriyanto (2019), Mustikawanto et al. (2019), Doe (2015), Eliyani et al. (2016), Utami and Raharjo (2020), and Sapriadi et al. (2019) that internship has a positive effect on work readiness.

### **The role of internship in mediating the effect of competency on work readiness**

The results of hypothesis testing in this study cannot prove the role of internship as a mediator variable that mediates the effect of competence on work readiness. Referring to Baron & Kenny (1986), the independent variable must affect the mediator to build the mediation model. Meanwhile, when referring to the first hypothesis result, this study did not find any competency influence on the internship. Therefore, an internship cannot be used as a mediator variable for the indirect effect of competence on work readiness. The absence of an internship mediating role on the influence of competence on work readiness in this study emphasizes the direct impact of competence on work readiness. In other words, the competencies obtained in any way will still be able to affect work readiness.

### **The role of internship in mediating the effect of ICT skills on work readiness**

This study found that internships can mediate the indirect effect of ICT skills on work readiness. In other words, ICT skills cannot directly affect work readiness but must be mediated first by internships. Following the third hypothesis testing in this study, it found the effect of ICT skills on internships. The ICT skills that students get before participating in the internship will be more developed, improving students' work readiness. Based on this, the internship for accounting vocational students in South Tangerang City that has been implemented so far has become an effective means of converting students' ICT skills into aspects that can affect work readiness. Without an internship, students' ICT skills will be less explored. Thus, the ICT skills given to students must match the needs of the world of work.

This study tends to support the findings of He et al. (2017) that internship can be positioned as an intervening variable in the context of student career development. Research He et al. (2017) used social media skills as an exogenous variable, while this study used ICT skills. There are similarities between social media skills and ICT skills because they relate to the mastery of technology and information. The ICT skills possessed by students need to be mediated by internships to suit the needs of the world of work.

### The role of internship in moderating the effect of competency on work readiness

This study proves that the internship moderates the effect of competence on students' work readiness. The moderation that was built is quasi-moderation because individual internship variables also affect work readiness. Due to the nature of quasi-moderation, in specific contexts, the internship can also be used as an independent variable. Furthermore, because the coefficient in this moderation is positive, the internship can strengthen the influence of competence on students' work readiness. Students' competency can be maximized by improving their work readiness if they have carried out an internship. These findings emphasize the importance of classroom learning as an effort to build competence. In other words, classroom learning is still the primary means of improving the competence of vocational students. The competencies obtained by these students will further mature with the internship.

The results of this study confirm that internships are moderating or increasing the influence of competence on work readiness, not mediating. This condition shows that students' competence is mainly obtained from classroom learning, not from internships. However, internships can improve, maximize, and synchronize the competencies possessed by students with the needs of the world of work. These results tend to support the opinion of Harkins (2000), which emphasizes the importance of aligning learning with practical experience in the world of work in increasing job readiness.

### The role of internship in moderating the effect of ICT skill on work readiness

This study did not find a moderating role for internships on the influence of ICT skills on work readiness. This result confirms the internship as a mediator of the effect of ICT skills on students' work readiness, not as a moderator. The ICT skills possessed by students before they carry out internships are relatively inadequate to enter the world of work. It is necessary to strengthen and implement the ICT skills possessed by students into the world of work through internships. Therefore, the internship carried out by students needs to be directed to the use of information technology. In this context, internships need to be a means to explore and improve students' ICT skills.

The results of this study indicate that internships play a role in mediating ICT skills, not memorization. In addition, these results also show that the ICT skills gained from the learning process can support success in internships. In other words, students who have better ICT skills will relatively get tasks closer to information technology when carrying out internships. By doing tasks related to information technology in the internship, ICT skills will indirectly affect students' work readiness. If not supported through internships, ICT skills cannot directly affect students' job readiness.

### Robustness Checks

This study checks robustness by including an analysis based on ordinary least squares regression. The results can be seen from the table as follows:

Table 7. Results of OLS Method

|                    | Model I<br>Dependent: Internship | Model II<br>Dependent: Work Readiness |
|--------------------|----------------------------------|---------------------------------------|
| Constant           | 35.81                            | 24.228                                |
| Competency         | -0.017 (0.255)                   | 0.060 (0.000)*                        |
| ICT Skill          | 0.645 (0.000)*                   | 0.078 (0.260)                         |
| Internship         | -                                | 0.239 (0.000)*                        |
| Moderating 1       | -                                | 0.005 (0.025)**                       |
| Moderating 2       | -                                | 0.001 (0.893)                         |
| Sobel Test 1       | -                                | -0.108 (0.913)                        |
| Sobel Test 2       | -                                | 4.177 (0.000)*                        |
| R <sup>2</sup>     | 0.232                            | 0.184                                 |
| Adj.R <sup>2</sup> | 0.227                            | 0.175                                 |
| SE                 | 5.016                            | 4.371                                 |
| F-Statistic (Prob) | 42.654 (0.000)                   | 21.106 (0.000)                        |
| Jaque-Bera (Prob)  | 3.860 (0.145)                    | 3.344 (0.187)                         |
| Durbin Watson      | 1.474                            | 1.892                                 |

Based on table 6, it can be seen that there is no significant difference in the research hypothesis that was built. All the results of hypothesis testing using PLS-SEM are in the same picture as the significance value of the OLS-based analysis. The difference between the results from PLS-SEM and OLS is only the magnitude of the coefficient. The results of PLS-SEM in this study relatively provide a value of the relationship between variables greater than the results based on OLS. One of the reasons is that PLS-SEM performs a bootstrapping method or resampling, which provides more accurate results. In addition, the results of the PLS-SEM analysis also provide a more precise measurement of the work readiness variable. Then, the data analyzed in this study were usually distributed. It is because the Jaque Bera significance value is more significant than 0.05. In other words, this study can also be analyzed by the OLS-based path analysis. Therefore, the results of this study can be stated as robust based on the perspective of PLS and OLS analysis

## CONCLUSIONS AND SUGGESTION

This study proves that competency and internship have a positive effect on work readiness. This study also demonstrates that internships can moderate the effect of competence on work readiness. On the other hand, ICT skills cannot affect work readiness directly but must be mediated by internships. The findings in this study confirm that internships are critical in maximizing the effect of competence on work readiness. On the other hand, the ICT skills possessed by students can support their success in the internship. Students with better ICT skills tend to have the opportunity to optimize their ICT skills through internships. The improvement of ICT skills through the internship will indirectly affect students' work readiness.

This study emphasizes the urgency of internships in the education series for vocational students majoring in accounting. Therefore, efforts and the best formula are needed to get a more meaningful work experience through internships. In this context, the government, schools, parents, and companies or agencies where internships tend to be crucial in building student work readiness. In particular, the school needs to direct students to do internships in companies or institutions that support the development of students' ICT skills. Schools also need to encourage students to take competency tests at LSPs licensed by BNSP so that their competencies can be standardized. The limitation of this research is the lack of a fit model and predictive ability. Furthermore, the measurement of ICT skills and internship, which in this study only uses the final grades of student report cards, can cause bias. Therefore, future studies are expected to measure ICT skills and internships using tests to get more accurate results.

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