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The Readiness of Indonesian Workers on Facing The Future World of Work

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A R T I C L E I N F O

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ABSTRACT

This study aims to examine the effect of digital skills, industry 4.0 skill-sets, and instructor competencies on the work readiness of trainees at BLK Padang in facing the future world of work, by using a total sampling technique of 160 trainees, then the data analyzed by assisting of SPSS V 26, Mc. Excel, and PLS software 3.3. Results of the research show that digital skills, industry 4.0 skill-sets, and instructor competencies have a positive and significant effect on work readiness. Then, the moderation test showed that instructor competencies not only affect the work readiness of BLK Padang trainees but also strengthen the effects between digital skills and industry 4.0 skill-sets on work readiness of BLK Padang trainees

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1. Introduction

The covid-19 outbreak has changed some elements of life, including the world of work. And believe it or not, it has accelerated the future of work because almost all sectors have to adopt modern work systems to prevent the spread of Covid-19, even in developing countries like Indonesia. But unfortunately, many Indonesian workers were not ready for that change. Therefore unemployment rate increased by 37% during the pandemic (BPS, 2020). Kumar & Ayedee (2021) explains the problem of unemployment during the Covid-19 is due to a lack of skills and training in modern work methods. Besides, most studies highlight that lack of skills is a fundamental problem faced by the companies in industry 4.0 (Abdullah et al., 2020; Ahmad et al., 2019). Muswapi & Lestari (2020) stated that a lack of skills indicates a lack of work readiness. Work readiness is known as the readiness of the workers to work and have a career in a changing global environment by equipping themselves with knowledge and skills that are considered crucial for success in the future (Rahmat et al., 2019). Kam in The Asean (2020) reported the factors that affect work readiness in the future work are digital skills and a set of other skills. Ismail et al. (2020) also explained that the workforce needs to develop digital skills and soft skills to face the future of work. Next, Deloitte (2018) reported that entrepreneurs in the future demand a better mix of skills, a combination of digital skills with academic skills, soft skills, and social skills.

Digital skills are a new concept that describes technology-related skills (Ilomäki et al., 2016). Digital skills are not only about the ability to perform basic practical tasks online but also a more general set of skills related to the ability to communicate across cultural and institutional boundaries, work within remote teams, create and share knowledge in digital environments, and adapt to changing requirements in the workplace (Ananiadou & Claro, 2009; Van Laar et al., 2019). Many think that not all fields of work require digital skills, and this is true, but according to Karr et al. (2020), these workers have a high chance of losing their jobs in the future. In addition to digital skills, other skills that need to be possessed by the workforce are industry 4.0 skill-sets. The World Economic Forum (2016) mentioned that skills considered important today will have changed over one-third in the

future. There are ten critical skills of industry 4.0 that the workforce must-have in the future: complex problem solving, critical thinking, creative thinking, people management, coordinating with others, emotional intelligence, decision-making, service orientation, negotiation, and cognitive flexibility. In post industry 4.0, these skills are no longer seen as soft skills but as critical core skills for the worker's future career (Rahmat et al., 2019). Skill-sets of industry 4.0 have an important role in the initial career of the workforce (Anthony et al., 2020: Ahmad et al., 2019). Without the Skill-sets of industry 4.0, the workforce's could fail to compete in the labor market (Rahmat et al., 2019). Next, Lubis (2021) found that a combination of soft and social skills is considered important due to their contribution to work readiness. Moreover, Faitar & Faitar (2013) revealed that the readiness of graduates to face the future world of work are closely related to the instructor. Instructors responsible in preparing their students to face the real world after they graduate (Ngussa & Charles, 2019). Ganayem & Zidan (2018) and Abualrob (2019) research found that instructors have a big role in developing students' skills because instructors meet the needs of the students in three areas; academic, career/skills, and personal/social development. Sulaiman et al. (2017) explained that instructors must have competence in teaching by that students' knowledge and skills can be develop. Next, Mariah & Sari (2019) hilight that instructors are the spearhead of vocational learning because they have to prepare for all the needs of students, be it knowledge or skills thus the students can be ready to face the world of work after they graduate.

The findings of previous research indicate that digital skills and skill-sets of industry 4.0 can help the workforce adapt quickly to changes in work systems that occur in the future, and with the help of instructors, graduates can develop these skills thus they have the readiness to enter the world of work. However, this certainly needs further proof because working conditions and demand for labor in each country are not the same. In addition, research conducted by previous researchers generally analyzes the world of work in developed countries, and the qualifications of the workforce are certainly different from the qualifications of the Indonesian workforce, especially the qualifications of the workforces' that is participating in work training places like Balai Latihan Kerja (BLK) Padang where the majority of the participants are junior and high school graduates. Therefore, this study attempts to conduct a more in-depth analysis of the readiness of Indonesian workers to face the future world of work in terms of digital skills and industry 4.0 skill-set. Moreover, this study also tries to analyze its relationship with the competence of instructors of BLK Padang.

Based on the background of the problems, objectives, theoretical basis, and literature reviews of previous research, the framework of the study formulated in figure 1.

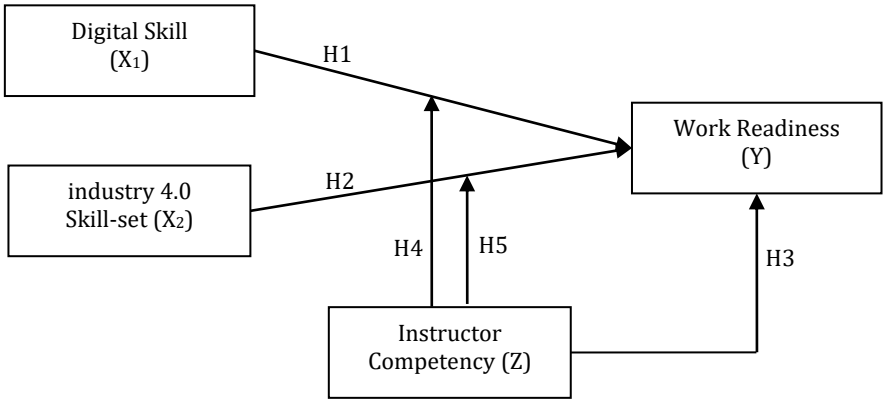

Figure 1. Conceptual Framework

2. Methods

The population in this study were all the trainees at BLK Padang in the session III 2021, totaling 160 people. The sampling technique used is Total Sampling by taking the entire population as the research sample (Sekaran & Bougie, 2016). Data collection techniques using a questionnaire. The questionnaire is divided into four sections: digital skills, industry 4.0 skill-sets, instructor

competencies, and work readiness. There are 35 questions in total: 14 questions for digital skills, 10 questions for industry 4.0 skill-sets, 4 questions for instructor competence, and 7 questions for job readiness. All the items in the questionnaire use a five-point Likert scale, ranging from "strongly disagree" to "strongly agree". The measurement for digital skills adopted from Bashir & Miyamoto (2020), industry 4.0 skill-sets adopted from Adnan et al. (2021), instructor competencies adopted from Mukhtar & Luqman (2020), and work readiness adopted from Usman & Choirunnisa (2020). The Partial Least Squares (PLS) approach through SmartPLS 3 software is used to test the research model and hypotheses, which is an exploratory study.

3. Results and Discussion

3.1 Respondent Profile

Demographic profile of respondent can be seen in the following Table 1.

Table 1.
Demographic Profile of Respondents

Demographic	Item	Number of Respondents	Percentage (%)
Gender	Male	99	61.9
	Female	61	38.1
Age	Below 20	31	19.4
	21-30	88	55.0
	31-40	36	25.5
	Above 40	5	3.1
Education Level	Junior High School	13	8.1
	High School	91	56.9
	Associate Degree	22	13.8
	Bachelor Degree	34	21.2

Table 1 shows the demographic profile of BLK Padang trainees. The number of male trainees (61.9%) is higher compared to female (38.1%). The age group of most trainees is within the range of 21-30 (51.0%), and the highest educational qualification for most of the trainees (56.9%) is a High School.

3.2 Descriptive Statistics

The means and descriptive statistics for all the study variables are presented in Table 2.

Table 2.
Descriptive Statistics

Variable	Mean	Standard Deviation
Digital Skills	3.36	0.186
Industry 4.0 Skill-sets	3.49	0.100
Instructor Competency	3.47	0.112
Work Readiness	3.79	0.098

Table 2 shows that the work readiness variable scored the highest mean, followed by industry 4.0 skill-sets, and instructor competency, while digital skills received the lowest score. This means that the most important thing in facing the future world of work according to the trainees of BLK Padang is work readiness.

3.3 Validity and Reliability

This study conducted a validity test with reference to two methods, convergent validity and discriminant validity. The outer loadings was to assess convergent validity of the items, and items that are loaded less than 0.7 are dropped from the analysis (Hulland, 1999). Table 3 presents the final outer loading of individual items on their respective constructs.

Table 3.
Final Outer Loadings

	Digital Skill	Industry 4.0 Skill-Set	Work Readiness	Instructor Competency
DS1	0,859			
DS12	0,717			
DS13	0,875			
DS14	0,856			
DS2	0,861			
DS3	0,825			
DS4	0,814			
DS5	0,867			
DS6	0,922			
DS7	0,760			
DS8	0,855			
KI1				0,852
KI2				0,878
KI3				0,851
KI4				0,824
KK1			0,801	
KK2			0,770	
KK3			0,722	
KK4			0,746	
KK5			0,739	
KK6			0,721	
KK7			0,754	
SS1		0,888		
SS10		0,900		
SS3		0,872		
SS4		0,906		
SS5		0,897		
SS7		0,888		
SS8		0,787		
SS9		0,890		

The items that dropped from the analysis in the first test were three items in the digital skills, and two items in industry 4.0 skill-set thus the final outer loadings show the respective constructs are above 0.7 (Table 3). Convergent validity is also assessed by examining the average variance extracted (AVE). As a rule of thumb, a value of 0.5 or more signifies the adequacy of the convergent validity (Fornell & Larcker, 1981). The constructs in this study show that the values of the AVE are above 0.5, thus fulfilling the requirement (Table 4).

Table 4.
Average Variance Extracted (AVE), Reliability and Discriminant Validity

	AVE	Cronbach's Alpha	Composite Reliability	Discriminant Validity			
				Digital Skill	Industry 4.0 Skill-Set	Work Readines	Instructor Competency
Digital Skill	0,704	0,957	0,963	0,839			
Industry 4.0 Skill-Set	0,773	0,958	0,965	0,555	0,879		
Work Readiness	0,564	0,871	0,900	0,558	0,643	0,751	
Instructor Competency	0,725	0,874	0,914	0,693	0,596	0,717	0,852

To assess discriminant validity, the loading of each item on its respective construct should be more than the loading of the same item on different constructs; as portrayed in Table 4. Another technique to assess discriminant validity is to examine the square roots of the AVE, which should be greater than the correlations among the different constructs. As shown in Table 4, all the constructs are verified successfully. Another way of examining internal consistency and reliability is to evaluate the composite reliability and Cronbach alpha of the constructs. Both coefficients should be more than 0.7 to be regarded as having satisfactory reliability,otherwise, if they are below 0.6, the latent variable

lacks reliability (Fornell & Larcker, 1981). Table 4 shows that the composite reliability and Cronbach alpha of the constructs meet the requirements.

3.4 Hypothesis Results

A bootstrapping procedure was used to assess the structural model and the hypotheses by reviewing the path coefficients and the level of significance computed by PLS. The relationship between variables is seen through the value of t-statistics and p-value. It is said to have a significant effect if the p-value is 0.05 and the t-statistic value must be > 1.65 for one-way (Hair et al., 2010). The results of the hypothesis are shown in Table 5.

Tabel 5.
Hypothesis Result

	Original Sample (O)	Sample Mean (M)	T Values	P Values	Information
Digital Skill -> Work Readiness	0,598	0,605	7,414	0,000	Significant
Industri 4.0 Skill-Set -> Work Readiness	0,168	0,163	2,433	0,015	Significant
Instructor Competency -> Work Readiness	0,244	0,242	4,054	0,000	Significant
Moderating Effect 1 -> Work Readiness	0,228	0,231	4,218	0,000	Significant
Moderating Effect 2 -> Work Readiness	0,163	0,168	2,883	0,004	Significant

Table 5 shows three direct effects and two moderating effects. The results show that digital skills have a positive and significant effect on work readiness, with a t-statistic value of 7.414 > 1.65 and a p-value of 0.000 < 0.05, which means H1 is supported. Then, the effect of the industry 4.0 skill-set on work readiness is positive and significant with a t-statistic value of 2.433 > 1.65 and a p-value of 0.015, which means H2 is supported. Furthermore, the effect of instructor competency on work readiness is significant and positive, with a t-statistic value of 4.054 > 1.65 and a p-value of 0.000 < 0.05, which means H3 is supported.

The results of moderating effect showed that the interaction of digital skills with instructor competencies had a positive and significant effect on work readiness, with a t-statistic value of 4.218 > 1.65 and a p-value of 0.000 < 0.05. Furthermore, the interaction of industry 4.0 skill-sets with instructor competencies has a positive and significant effect on work readiness, with a t-statistic value of 2.883 > 1.65 and a p-value of 0.004 < 0.05. The results of the moderating means H4 and H5 are supported.

3.5 Discussions

The findings showed that digital skills had a positive impact and significant effect on work readiness. These results indicate an increase in digital skills will increase the readiness of trainees of BLK Padang to enter the future world of work. The findings are in line with research conducted by Sabilah et al. (2021) and Lestari & Santoso (2019). Ahmad et al. (2019) found that digital skills can encourage graduates to be ready to face the world of work. In addition, these digital skills are very useful in getting information and interacting with many people globally. Therefore, graduates should be equipped with digital skills, thus they would be ready to face the modern world of work (Saubari & Baharuddin, 2016). The importance of digital skills for students such as trainees at BLK Padang because to compete in the world of work that is constantly changing due to the times and modernization graduates must-have digital skills. In addition, the technology-intensive and automation in industry 4.0 makes the future world of work even more complex. Therefore, for graduates it is not enough to know the field of work they want to enter but also technical skills such as digital skills and non-technical skills (Maisiri et al., 2019).

Industry 4.0 skill-set has a positive and significant impact on work readiness. These findings mean that the readiness of trainees of BLK Padang in facing the future world of work is determined by the set of industry 4.0 skills. The higher the industry 4.0 skills set possessed by trainees of BLK Padang the more prepared they are to face the future world of work. A set of industry 4.0 skills can make trainees

more critical, creative, able to coordinate with others and have emotional intelligence and cognitive flexibility. This set of skills can make trainees able to compete in the labor market. As stated by Adnan et al. (2021) that a set of industrial 4.0 skills is very crucial for graduates who will enter the world of work because the construction of industrial 4.0 skills set can explain the level of readiness of graduates to find work and build their future careers. The findings are also supported by Rahmat et al. (2019) who state that the industrial 4.0 skills set are a bridge for work readiness and future careers.

Instructor competence has a positive and significant effect on work readiness. The more competent the instructors, the more ready the trainees of BLK Padang entering the world of work in the future. According to Abualrob (2019), the instructor has a big role in developing students' skills. Therefore, the competent instructor is needed. If the instructors are not competent, thus students' skills will not develop properly, and the impact is that the trainees' work readiness is low because the skills and talents they possess do not match the demands of the labor market. Moreover, In preparing graduates to face the world of work, the role of instructor becomes crucial because the demand for workforce qualifications continues to increase. In addition, global competition in the world of work requires universities to better equip their graduates not only with basic knowledge in certain domains but also with the skills that are needed in the world of work in the future (Lestari & Santoso, 2019). This problem should be a concern in many educational institutions because these educational institutions are in fact responsible for preparing students to enter the world of work (Rahmat et al., 2019).

Ismail et al. (2020) explain that educational institutions are responsible for preparing competent instructors because these instructors will later be the main actors in developing the skills of the students, thus the students ready to work in industry 4.0. This is accordance with the findings that the interaction of instructor competencies with digital skills and a set of industry 4.0 skills can strengthen the work readiness of BLK Padang trainees. Prayogi & Estetika (2019) explain that instructors who have 21st-century competencies in line with digital competencies will improve students' 21st-century skills thus they can be ready to enter the world of work. Furthermore, Taddeo (2019) stated that instructors who have high digital skills will develop students' digital skills well, and when they graduate, their digital skills will be under the company's needs. According to Rahmat et al. (2019), instructors who can improve and develop the skills of their students that mean the instructor have prepared them to be ready to compete in the labor market.

4. Conclusions

The findings of the research lead to the conclusion that digital skills and industry 4.0 skill-sets are skills that can help the workforce adapt quickly to the changes in work and work systems that will occur in the future. Through digital skills and industry 4.0 skill-sets, workers and graduates have the readiness to face all possibilities that happens in the future world of work. Lack of digital skills and industry 4.0 skill-set can reduce the readiness of trainees at BLK Padang to face the world of work because the finding shows that digital skills and industry 4.0 skill sets have a significant effect on the work readiness of the trainees, and with the help of competent instructors, the trainees can be more ready to work in a constantly changing work environment. Therefore, digital skills and skills-sets of the industry 4.0 are significant to develop, and instructors have a big role in this matter because the interaction of instructors with trainees' skills can strengthen trainees' readiness to face challenges in the future world of work.

This study was limited to trainees at BLK Padang. Besides, the training materials at BLK Padang are more focused on certain fields. Therefore, it is recommended for future studies to take objects that can generalize research findings, such as college students. The limitation of the study also lies in the number of samples, thus the researcher recommended for further researchers take a larger sample.

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