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The Effect of Work Environment, Motivation, and Competence on Work Readiness Using a SEM-PLS Approach

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Abstract: Internship programs play an important role in enhancing participants' work readiness as a bridge between education and the labor market. This study aims to analyze the effect of work environment and participant motivation on work readiness, with achieved competence as a mediating variable. The research employed a quantitative approach using structural equation modeling–partial least squares (SEM-PLS). Data were collected through a Likert scale questionnaire (1–5) distributed to 40 internship participants. The results indicate that work environment and participant motivation have a positive effect on achieved competence. Furthermore, achieved competence positively influences work readiness and mediates the relationship between independent variables and work readiness. The findings conclude that improving interns' work readiness depends on a supportive work environment, strong internal motivation, and the acquisition of relevant competencies during the internship program.

Keywords: Competence, Participant motivation, Work environment, Work readiness, Structural Equation Modeling–Partial Least Squares (SEM-PLS)

Abstrak: Program pemagangan berperan penting dalam meningkatkan kesiapan kerja peserta sebagai jembatan antara dunia pendidikan dan dunia kerja. Penelitian ini bertujuan untuk menganalisis pengaruh lingkungan kerja dan motivasi peserta terhadap kesiapan kerja dengan kompetensi yang dicapai sebagai variabel mediasi. Metode penelitian menggunakan pendekatan kuantitatif dengan analisis *structural equation modeling–partial least squares* (SEM-PLS). Data dikumpulkan melalui kuesioner skala Likert 1–5 terhadap 40 responden peserta magang. Hasil penelitian menunjukkan bahwa lingkungan kerja dan motivasi peserta berpengaruh positif terhadap kompetensi yang dicapai. Kompetensi yang dicapai selanjutnya berpengaruh positif terhadap kesiapan kerja serta memediasi hubungan antara variabel independen dan kesiapan kerja. Kesimpulan penelitian ini menegaskan bahwa peningkatan kesiapan kerja peserta magang sangat ditentukan oleh kualitas lingkungan magang.

Kata Kunci: Kompetensi; Motivasi Peserta, Lingkungan Kerja, Kesiapan Kerja, Structural Equation Modeling–Partial Least Squares (SEM-PLS)

1. Introduction

Internship programs in Indonesia have increasingly assumed a strategic role in national employment development efforts. Through the Ministry of Manpower (Kemnaker), the government continuously promotes internships as a means to enhance the competitiveness and work readiness of young generations, while simultaneously addressing the gap between formal educational outcomes and the actual needs of industry. Internships are designed as a form of work-based learning that provides participants with direct exposure to real workplace environments, enhances technical competencies, and develops non-technical skills required in the labor market [1]. This model is aligned with the concept of work-integrated learning, which emphasizes the integration of academic learning and work experience as an integral component of lifelong education [2].

Numerous studies indicate that internship programs make a significant contribution to improving participants' competencies and work readiness; however, their effectiveness largely depends on implementation quality and compliance with existing regulations. An evaluative study of domestic internship programs at the regional level found that internships can enhance participants' skills and local labor absorption through systematic evaluation stages, ranging from needs analysis to outcome evaluation. Nevertheless, the study also identified several challenges, including limited budgets and low participation from partner companies, highlighting the need to strengthen stakeholder collaboration and align training content with industry demands [3]. Another study from a labor law perspective revealed deviations in internship implementation, particularly concerning the treatment of interns as contract workers without adequate legal protection. Internship practices lacking formal agreements, theoretical training components, and

excessive emphasis on productivity were found to contradict labor regulations and potentially alter employment relationships from a legal standpoint [4]. These findings underscore that the success of internship programs is determined not only by competency development but also by effective governance and regulatory compliance.

Several studies have applied the structural equation modeling–partial least squares (SEM-PLS) approach to analyze factors influencing internship participation and outcomes. Research shows that motivation, perceived program value, self-efficacy, and social support significantly affect students' interest in internship programs, with SEM-PLS producing valid and reliable models for examining complex latent relationships [5]. Other PLS-SEM–based studies confirm that internship experience positively influences students' work readiness, particularly when conducted in real workplace settings that enable more intensive learning processes [6]. Similar findings indicate that internship experience significantly enhances work readiness, with psychological characteristics acting as contextual moderators [7]. Additionally, studies integrating internship experience with student organizational activities demonstrate a direct and significant impact on soft skill development, analyzed using SEM-PLS [8]. Beyond the internship context, SEM-PLS is widely used in educational, technological, and social research. Studies on digital technology utilization in vocational high schools reveal that SEM-PLS effectively analyzes factors influencing technology acceptance and sustainability, emphasizing the relevance of hybrid learning models in the post-pandemic era [9]. Further research confirms that perception and knowledge significantly affect analytical competence, supported by strong validity and reliability results [10]. In the social domain, PLS-SEM has been employed to explain the development of competencies and values through mediating mechanisms, showing that sustainable leadership, cultural intelligence, and social adaptation jointly foster sustainable tolerance in multicultural communities [11]. Overall, these findings affirm SEM-PLS as a robust and versatile approach for analyzing complex structural relationships across internship, educational, technological, and social contexts.

Previous research has examined internship programs from various perspectives, including psychological aspects, practical experience, soft skill development, and work readiness. However, most of these studies remain partial in nature and tend to emphasize direct relationships between variables. Existing research generally analyzes the effects of internship experience or individual characteristics separately, without integrating the roles of work environment and participant motivation within a comprehensive structural model. Moreover, studies positioning competencies acquired during internships as a mediating variable in explaining participants' work readiness are still limited, particularly in the Indonesian context. Therefore, a research gap exists in the need for an integrated analytical model capable of simultaneously explaining the structural relationships among work environment, participant motivation, acquired competencies, and work readiness. Based on this gap, the present study aims to analyze the effects of work environment (LK) and participant motivation (MP) on work readiness (KK), with acquired competencies (KD) serving as a mediating variable. The structural equation modeling–partial least squares (SEM-PLS) approach is employed due to its ability to test complex causal relationships, its predictive nature, and its suitability for theoretical model development in social and educational research [12], [13].

2. Method and experimental

This study employed a quantitative approach with an explanatory research design to analyze the relationships among variables within an internship program. The analytical method used was structural equation modeling–partial least squares (SEM-PLS), which was selected due to its ability to simultaneously examine causal relationships among latent variables and its suitability for studies with relatively small sample sizes and data that do not require normal distribution assumptions [14]. This approach emphasizes the model's predictive capability and the testing of structural relationships among research constructs. The study involved 40 respondents who were participants in the internship program. The determination of the sample size was based on the relevance of respondent characteristics to the research objectives and data accessibility. Within the SEM-PLS framework, this sample size is considered adequate because the method is variance-based and tolerant of small samples, provided that the rule of thumb is satisfied, namely that the minimum sample size should be at least ten times the largest number of indicators within a single construct [15]. With four latent variables, each represented by three indicators, the number of respondents used in this study met this requirement.

The research instrument consisted of a structured closed-ended questionnaire developed based on the indicators of each research variable, namely work environment (LK) and participant motivation (MP) as independent variables, acquired competencies (KD) as a mediating variable, and work readiness (KK)) as the dependent variable. All indicators were measured using a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The use of the Likert scale aimed to systematically capture respondents' perceptions and attitudes while facilitating

quantitative data processing [16]. The operationalization of variables in this study comprised four constructs represented by twelve indicators. Detailed explanations of construct definitions, variable types, and indicator codes are systematically presented in Table 1 to provide a comprehensive understanding of the structure of the analyzed variables.

Table 1. Variable, Definition, dan Indicator

Variable	Type	Code	Indicator
Work Environment (LK)	Independent	LK 1.1	1. Are your coworkers willing to help when you encounter difficulties?
		LK 1.2	2. Do your coworkers treat you well?
		LK 1.3	3. Do you feel accepted by your coworkers at the internship workplace?
Participant Motivation (MP)	Independent	MP 1.1	1. Do you want to strengthen your personal capabilities through this internship?
		MP 1.2	2. Is your main reason for participating in this internship to improve your competencies?
		MP 1.3	3. Do you consider this internship important for enhancing your skills?
Acquired Competence (KD)	Mediator	KD 1.1	1. Has this internship improved your technical skills?
		KD 1.2	2. To what extent have your technical abilities developed after completing the internship?
		KD 1.3	3. Do you feel more competent in performing technical tasks after the internship?
Work Readiness (KK)	Dependent	KK 1.1	1. Do you feel more prepared to enter the workforce after completing the internship?
		KK 1.2	2. Has the internship helped you understand professional work practices?
		KK 1.3	3. Has the internship experience enhanced your mental readiness for work?

Based on the analytical framework, the relationships among variables are illustrated in a conceptual model that encompasses all constructs, indicators, and causal paths tested using the PLS-SEM approach, as shown in Figure 1.

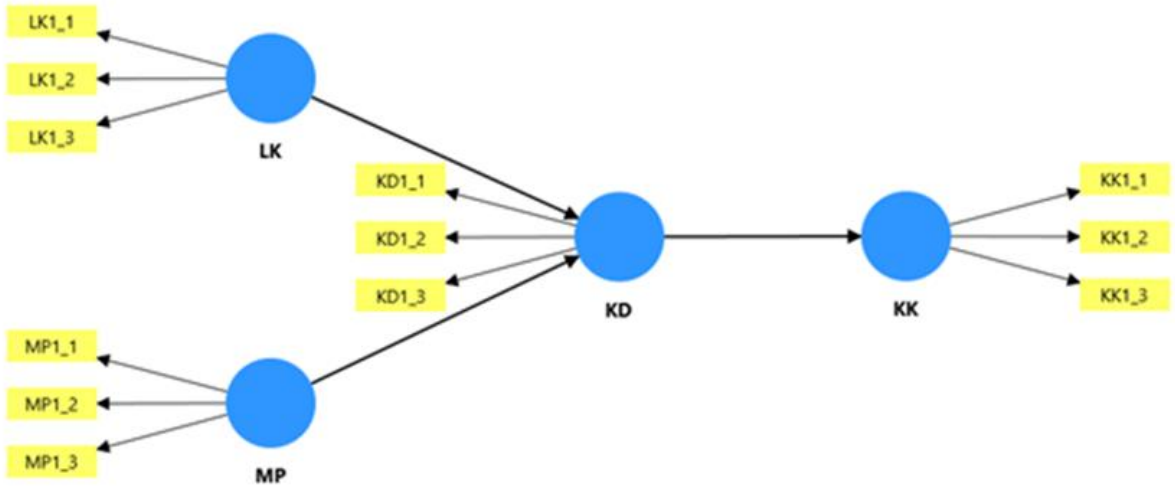

Fig. 1 Model Diagram and Intervariable Relationships

Data analysis was conducted using SmartPLS 4.0 software. The analysis stages comprised the evaluation of the outer model and the inner model. The outer model evaluation was performed by assessing convergent validity, discriminant validity, and construct reliability, which were measured using loading factors, average variance extracted (AVE), composite reliability, and Cronbach's alpha [14], [15].

3. Result and Discussion

The results of the measurement model evaluation indicate that all constructs in this study meet the criteria of validity and reliability. All indicator loading factors exceed the minimum threshold of 0.60, indicating adequate convergent validity. The indicators with the highest loading factors are found in the Work Environment and Competency Attainment constructs, suggesting that respondents' perceptions of social support and technical skill development during the internship are relatively strong. The Average Variance Extracted (AVE) values for all constructs are above 0.50, indicating that each construct explains more than 50% of the variance of its indicators. This finding confirms the overall fulfillment of convergent validity. In addition, the Composite Reliability and Cronbach's Alpha values for all variables exceed 0.70, demonstrating that the research instruments possess good internal consistency and reliability [17], [18]. Multicollinearity testing using the Variance Inflation Factor (VIF) shows that all indicators have VIF values below 5. Therefore, no multicollinearity issues are detected among the indicators in the measurement model, indicating that the model is suitable for further structural model evaluation [19].

The structural model evaluation was conducted to examine the causal relationships among latent variables as proposed in the conceptual framework. The analysis results show that the work environment (LK) and participant motivation (MP) have positive effects on acquired competence (KD) during the internship program. A supportive work environment—characterized by coworker assistance, positive interpersonal relationships, and social acceptance at the internship site—contributes to the enhancement of participants' technical skills and self-confidence in performing work tasks. Participant motivation (MP) is also proven to play a crucial role in promoting competency attainment. The drive for self-development and competence enhancement during the internship directly affects the level of technical skill mastery achieved by participants. These findings indicate that both internal and external factors interact in shaping work-based learning outcomes for internship participants [20]. Furthermore, acquired competence (KD) has a positive effect on work readiness (KK). Participants who experience improvements in technical skills and self-confidence tend to exhibit higher levels of readiness to enter the workforce, both in terms of professionalism and mental preparedness. This result confirms that competencies acquired during internships are a key factor in facilitating the transition from education to employment [21].

The findings also reveal that acquired competence (KD) functions as a mediating variable in the relationship between the work environment (LK) and participant motivation (MP) on work readiness (KK). A conducive work environment and high motivation not only exert direct effects on work readiness but also indirectly influence it through enhanced competencies. In other words, competency attainment strengthens the impact of the work environment and participant motivation in shaping work readiness. These results indicate that improving internship participants' work readiness cannot be separated from the quality of learning experiences obtained during the internship. Competency attainment serves as the primary mechanism through which work experience and internal motivation are transformed into readiness to meet labor market demands [22]. Overall, the findings reinforce previous studies asserting that internship programs are effective in enhancing work readiness when supported by a positive work environment and strong participant motivation. A supportive work environment functions as a learning context that enables participants to optimally apply knowledge and skills, while participant motivation acts as a driving force that determines the extent to which individuals utilize internship experiences for self-development. The presence of competency attainment as a mediating variable indicates that work readiness is not an immediate outcome of internship participation but rather the result of an accumulation of meaningful learning processes and work experiences. Therefore, efforts to improve the quality of internship programs should focus not only on providing practical work opportunities but also on creating supportive work environments and continuously strengthening participant motivation [23], [24].

Table 2. Construct Validity and Reliability

Construct & Indicator	Loading Factor	AVE	Cronbach's Alpha	Composite Reliability (rho_c)	VIF	Description
Work Environment (LK)		0.655	0.755	0.847		**Valid & Reliabel**
LK 1.1 - Coworker support	0.894				1.708	Valid
LK 1.2 – Positive interpersonal relationships	0.889				1.745	Valid
LK 1.3 – Social acceptance in the workplace	0.612				1.333	Valid

Participant Motivation (MP)		0.618	0.698	0.828		**Valid & Reliabel**
MP 1.1 – Self-development motivation	0.853				1.445	Valid
MP 1.2 – Competency improvement motivation	0.806				1.654	Valid
MP 1.3 – Career development orientation	0.690				1.264	Valid
Work Readiness (KK)		0.683	0.768	0.866		**Valid & Reliabel**
KK 1.1 – Readiness to enter the workforce	0.819				1.543	Valid
KK 1.2 – Understanding of professional work practices	0.820				1.525	Valid
KK 1.3 – Mental readiness for work	0.841				1.656	Valid
Achieved Competence (KD)		0.699	0.783	0.874		Valid
KD 1.1 – Improvement of technical skills	0.751				**1.406**	Valid
KD 1.2 – Mastery of technical competencies	0.889				**2.066**	Valid
KD 1.3 – Competence-related self-confidence	0.862				**1.867**	Valid

Conclusion

This study aims to analyze the effects of the work environment and participant motivation on work readiness, with achieved competence serving as a mediating variable, using the structural equation modeling–partial least squares (SEM-PLS) approach. The results indicate that a supportive work environment and high participant motivation contribute positively to the improvement of competencies achieved during the apprenticeship program. The competencies acquired were subsequently found to play a significant role in enhancing participants' work readiness, particularly in terms of understanding professional work practices and mental preparedness for entering the workforce.

Furthermore, the findings confirm the mediating role of achieved competence in the relationship between the work environment and participant motivation on work readiness. This suggests that work readiness is not only directly influenced by environmental and individual factors, but also indirectly shaped through learning processes and skill acquisition during the apprenticeship experience. Therefore, efforts to improve the quality of apprenticeship programs should focus on fostering a supportive work environment and strengthening participant motivation to ensure that competencies relevant to labor market demands are optimally and sustainably developed.

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Author Contribution

Taufik Hudha Nursyafaah contributed to investigation, formal analysis, quantitative analysis, and initial draft preparation. **Hulwatul Adzro** contributed to formal analysis manuscript editing, quantitative analysis. **Neni Alyani** contributed to conceptualization, methodology development, manuscript review. **M. Miftahul Madya** contributed to conceptualization, methodology development, investigation, quantitative analysis, initial draft preparation, manuscript review and editing

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