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Managerial Strategies to Enhance Vocational High School Graduates' Work Readiness: The Roles of Internships, Motivation, and Self-Efficacy

Zulkarnaen[1], Jun Surjanti[1], Meylia Elizabeth Ranu[1], & Elginitatea Ratigo[2]

[1]Faculty of Economics and Business, Universitas Negeri Surabaya, Indonesia

[2]Faculty of Business and Management, UCSI University, Malaysia

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Corresponding Author:

24080925010@mhs.unesa.ac.id

ABSTRACT

Work readiness of vocational high school graduates represents a primary key performance indicator in vocational education management. The persistently high youth unemployment rate among vocational high school graduates demands outcome-based educational governance. This study examines how the quality of field work practice (PKL) experience and work-entry motivation predict student work readiness, with self-efficacy as a psychological mediator, and formulates evidence-based managerial implications for school managers. A quantitative explanatory research design was applied to a sample of 346 grade XII students from 17 schools in the industrial city of Kota Dumai, Riau Province, Indonesia (N=2,555), selected via proportional random sampling. To ensure unbiased randomization, individual student respondents within each class were selected by lottery. Data were collected using a validated 54-item questionnaire and analyzed using PLS-SEM in SmartPLS 4. Normality assessment via skewness and kurtosis confirmed that the data did not deviate extremely from normality. The reflective measurement model demonstrated satisfactory convergent validity (AVE = 0.374–0.543), reliability (CR = 0.893–0.934), and discriminant validity (HTMT < 0.85). Structural model evaluation showed an acceptable fit (SRMR = 0.076) and explained 34.0% of the variance in work readiness (R^2 = 0.340). Hypothesis testing via 5,000-subsample bootstrapping confirmed all seven hypotheses were supported: PKL quality (β=0.284, p<0.001) and motivation (β=0.226, p<0.001) directly predict work readiness; both also predict self-efficacy (β=0.307, p<0.001 and β=0.297, p<0.001). Self-efficacy is the strongest direct predictor of work readiness (β=0.332, p<0.001) and significantly mediates both paths (PKL VAF=26.4%; Motivation VAF=30.4% based on Hair et al. (2019) VAF criteria. Three managerial agendas are proposed for SMK administrators: optimizing PKL quality management, developing a school motivational climate, and integrating structured self-efficacy-building programs to facilitate successful school-to-work professional transitions.

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■ INTRODUCTION

Vocational education management in the contemporary era faces substantial challenges in equipping graduates to enter a dynamic, highly competitive labor market. The fundamental goal of establishing a vocational high school is to supply a technically skilled, independent, and industry-relevant workforce. However, the ketenagakerjaan reality in Indonesia presents a serious structural concern. According to the Central Board of Statistics (BPS) reports for late 2024, the open unemployment rate among vocational high school graduates reached troubling levels of 9.01% in August 2024 and 8.60% in August 2025, consistently the highest among all educational tiers. By comparison, in August 2024, high school graduates recorded 7.05%, university graduates (D-IV/S1/S2/S3) 5.25%, and Diploma I/II/III holders 4.83%; while in August 2025, high schools' graduates dropped to 5.59%, yet Diploma I/II/III holders rose to 6.40% and university graduates to 5.90%, indicating that the vocational high school unemployment premium persists across reporting periods (Badan Pusat Statistik, 2024, 2025). From an educational management perspective, the persistent gap between

graduate competencies and the expectations of business and industry partners (*Dunia Usaha dan Dunia Industri* or DUDI) suggests that traditional school governance is failing to achieve optimum results. This outcome-based approach is particularly crucial for students from low-income families, who face unique structural and economic barriers in refining their employability (Wang et al., 2026). School administrators must pivot from traditional, input-centric administrative compliance to outcome-based governance that systematically cultivates actual graduate work readiness.

At the regional operational level, such as in the industrial hub of Kota Dumai, Riau Province, which hosts large-scale petroleum refineries, manufacturing facilities, busy international ports, and extensive logistics operations, the economic relevance of vocational high school graduates' work readiness is direct and immediate. The local labor market requires technicians who possess not only hard technical skills but also soft professional skills, such as work discipline, professional ethics, and high adaptability, to meet the challenges of the World of Work 5.0 (Suranto et al., 2025). The persistent youth unemployment rate among vocational high school graduates in Indonesia demands outcome-based educational governance (Badan Pusat Statistik, 2024). While local school tracer studies indicate an immediate absorption rate of approximately 74.2% within six months of graduation, confirming the utility of cohort monitoring in TVET programs (Putra et al., 2022). The Indonesian Education Report Card (Rapor Pendidikan) for Dumai indicates operational friction in the quality of school-industry partnerships. The mandatory Field Work Practice (PKL), which serves as the primary vehicle for school-to-work integrated learning and is a mandatory subject under the Merdeka Curriculum (Direktorat Jenderal Pendidikan Vokasi, 2024), frequently lacks placement suitability for students' specializations. This operational mismatch underscores the persistent challenges in implementing work-integrated learning (WIL) to bridge the industry readiness gap (Wahyuningsih et al., 2025). Educational managers, including school principals, vice-principals of industrial relations (hubinmas), vocational department heads, and school supervisors, hold primary administrative accountability for addressing these misalignments systematically using evidence-based approaches. However, when effectively scaffolded and integrated into the curriculum, work-based work-integrated learning (WIL) significantly enhances students' perceived employability, builds essential human and social capital, and improves full-time graduate employment outcomes (Jackson & O'Connor, 2026).

A growing body of empirical literature has underscored the pivotal role of self-efficacy as a psychological determinant of career-related outcomes in vocational education settings. Innab et al. (2024) demonstrated that structured licensure review programs significantly enhanced nursing students' clinical self-efficacy and subsequent work readiness, suggesting that systematic competency-building interventions can elevate students' confidence in executing professional tasks. In the Indonesian vocational context, Permana et al. (2023) found that self-efficacy was a significant predictor of work readiness among vocational high school students in the era of Building Information Modeling technology, highlighting that students' belief in their ability to operate advanced technological tools directly influenced their preparedness for industry demands. Similarly, Mahfud et al. (2022) reported that career self-efficacy mediated the effects of teaching quality and social support on career adaptability skills among Indonesian polytechnic students, reinforcing the notion that self-efficacy serves as a critical psychological conduit in TVET systems. International evidence further corroborates these findings: Fu et al. (2023) established a positive relationship between student self-efficacy and learning engagement at Chinese vocational colleges during internship periods, while Tohari (2024) compared Indonesian students' experiences in Japan and Indonesia, concluding that self-efficacy significantly predicted work readiness regardless of the country of study. Hong et al. (2021) extended this line of inquiry by demonstrating that academic self-efficacy influenced vocational students' behavioral engagement both at school and during firm internships through an engagement-value model of achievement motivation. Additionally, Deprez et al. (2021) highlighted that internships are critical settings for developing students' intrapreneurial self-efficacy, demonstrating how individual agency and structural factors interact during work placements. In the broader TVET landscape, Pandya et al. (2023) argued that preparing the future workforce for 2030 requires higher education institutions to explicitly develop students' self-efficacy alongside technical competencies. Despite this accumulating evidence, the mediating role of self-efficacy in channeling both the quality of experiential learning and motivational drive into work readiness remains underexplored in Indonesian vocational high school contexts,

particularly in industrial cities where the gap between school outputs and industry expectations is most acute. This study addresses this gap by positioning self-efficacy as a dual mediator within an integrated structural model.

Furthermore, while prior studies have predominantly examined self-efficacy as a single mediator or direct predictor, the simultaneous dual mediation of self-efficacy between two distinct antecedents—experiential learning quality and achievement motivation—and its direct effect on work readiness have received limited empirical attention in the vocational education management literature. Deprez et al. (2021) and Mason et al. (2022) confirmed that industrial internships play a significant role in developing work self-efficacy among automotive engineering students. However, neither study modeled the motivational pathway simultaneously. Hu et al. (2025) examined personality traits and employability, with internship attitudes as a mediator, among Chinese vocational students, but did not incorporate self-efficacy as a mediating mechanism. Derk et al. (2023) investigated collaborative internship programs to prepare diverse leaders but did not examine the psychological self-efficacy pathway. In contrast, Salisu et al. (2026) explored psychological pathways to perceived employability by modeling self-efficacy and resilience as key mediators. However, their study focused on general career development programs rather than vocational high school contexts. This fragmented approach limits the theoretical understanding of how school-managed inputs interact through psychological mechanisms to produce employment-ready graduates. The present study, therefore, seeks to fill this methodological and theoretical gap by developing an integrated structural equation model that simultaneously tests the dual-mediation pathways, thereby providing vocational school administrators with a comprehensive, evidence-based framework for strategic decision-making.

Student work readiness is shaped by the dynamic interaction among the quality of workplace experiential learning, students' motivation for entering the workforce, and students' cognitive self-belief. Kolb's (1984) Experiential Learning Theory suggests that developmental learning occurs through the transformation of concrete experiences in real-world settings into transferable competencies. Simultaneously, McClelland's (1961) Achievement Motivation Theory positions the need for achievement (n-Ach) as the key psychological driver that prompts students to set high career goals, proactively prepare themselves, and seek constructive feedback. Both PKL quality and work-entry motivation are school inputs that can be strategically managed through sound educational leadership. Studies in various professional settings have shown that structured experiential placements directly build student self-efficacy and subsequent work readiness (Liaw et al., 2023; McGregor et al., 2025). However, these factors require a micro-level psychological mechanism to successfully translate into employable, ready-to-work behaviors during early professional transitions.

Bandura's (1997) Social Cognitive Theory provides a comprehensive explanatory framework through the construct of student perceived self-efficacy, the cognitive self-appraisal of one's capability to organize and execute courses of action to manage prospective situations. Self-efficacy serves as the psychological mediator that translates school inputs (PKL quality and work motivation) into active work-readiness behaviors. A high-quality PKL program facilitates successful mastery experiences (successful task completion), which represents the single most potent source of self-efficacy. Simultaneously, high motivation shapes positive emotional and physiological states. Recognizing the urgent need to understand these structural pathways to improve school accountability, this study develops and tests an integrated structural equation model that positions self-efficacy as a dual mediator linking PKL quality and work-entry motivation to work readiness among 346 vocational high school students in Dumai. Based on this theoretical integration, the overarching research question guiding this study is: To what extent do the quality of field work practice (PKL) experience and work-entry motivation predict work readiness among vocational high school students, and does student self-efficacy significantly mediate these structural pathways? Specifically, the following seven hypotheses are formulated and tested: (H1) PKL experience quality directly and positively predicts student work readiness; (H2) Work entry motivation directly and positively predicts student work readiness; (H3) PKL experience quality directly predicts student self-efficacy; (H4) Work entry motivation directly predicts student self-efficacy; (H5) Student self-efficacy directly and positively predicts student work readiness; (H6) Student self-efficacy significantly mediates the relationship between PKL quality and work readiness; and (H7) Student self-efficacy significantly mediates the relationship between

work entry motivation and work readiness. These empirical findings are then utilized to formulate three concrete managerial agendas for vocational school leaders.

• THEORETICAL FRAMEWORK

Work readiness is defined as the aggregate portfolio of technical, personal, social, and psychological attributes that enable graduates to successfully enter, adapt to, and sustain productive employment. Mageza-Mokhethi and Adekanmbi (2024) and Suranto et al. (2025) conceptualize modern work readiness across five primary dimensions: technical competence (mastery of field-specific tools and operational SOPs), personal quality (responsibility, discipline, and work ethics), interpersonal skills (communication and teamwork), psychological readiness (emotional stability and self-confidence under pressure), and career adaptability (continuous learning orientation). In educational management, work readiness is the outcome of accumulated vocational human capital. School leaders must design learning environments and practical curricula that explicitly target these five interdependent dimensions to ensure graduate employability in the era of Industry 5.0 (Andersen et al., 2022).

The administration of the mandatory PKL program represents a critical managerial accountability for vocational high school leaders. Grounded in Kolb's (1984) Experiential Learning Theory, PKL provides the concrete experience phase, in which students apply school-acquired theoretical concepts in authentic industrial settings. PKL quality is a multidimensional construct determined by five core managerial dimensions: placement suitability (aligning the student's major with their industrial assignment), mentoring quality (regular, high-quality guidance from both school teachers and industrial mentors), task relevance (involvement in productive, technical tasks rather than administrative routines), duration adequacy, and evaluation feedback quality. High-quality PKL management ensures that students socialize into professional workplace cultures, refine practical problem-solving capabilities, and build strong technical competence, directly predicting superior work readiness (Derk et al., 2023). Specifically: H1: PKL directly and positively predicts student work readiness; H3: PKL quality directly predicts self-efficacy.

Student work-entry motivation reflects their psychosocial preparation for transitioning into the workforce. Grounded in McClelland's (1961) Achievement Motivation Theory, students with a high need for achievement (n-Ach) proactively set career goals, invest efforts in developing competencies, and actively seek constructive feedback. Work entry motivation encompasses intrinsic motivation (interest in the vocational field), extrinsic motivation (aspirations for financial independence and family support), and clarity in career planning. Students who possess strong work-entry motivation demonstrate proactive career-preparation behaviors and high persistence in the face of obstacles, which directly predict superior work readiness at graduation (Makhitha, 2024). Specifically: H2: Work entry motivation directly and positively predicts work readiness; H4: Work motivation directly predicts student self-efficacy.

In the social cognitive framework (Bandura, 1997), self-efficacy serves as the proximal determinant of work readiness, regulating behavioral choice, effort expenditure, and emotional resilience under pressure. A high-quality PKL experience builds self-efficacy by providing structured mastery experiences, which help dispel student self-

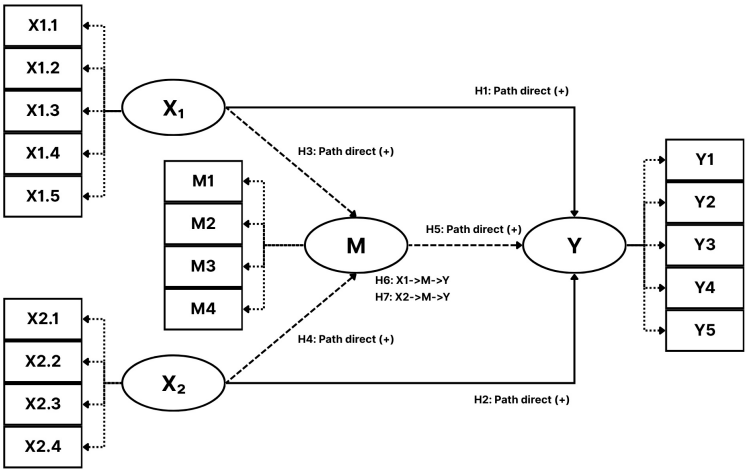

Figure 1. Conceptual Framework of the Study

doubt, as validated in various clinical and vocational settings (McGregor et al., 2025; O Yang et al., 2025). Similarly, high motivation promotes positive emotional activation. Efikasi diri subsequently channels these inputs into active readiness, serving as a significant partial mediator of both the PKL path (H6) and the motivation path (H7). By integrating these three grand theories into a unified structural model, vocational school managers obtain a robust conceptual framework to design highly effective, evidence-based managerial interventions.

■ METHOD

Research Design

This study adopted a quantitative explanatory survey design to examine the predictive structural relationships among PKL experience quality, work entry motivation, student self-efficacy, and graduate work readiness. Structural Equation Modeling (SEM) was applied to statistically test the hypothesized direct and indirect structural pathways within the integrated model. Specifically, variance-based Partial Least Squares Structural Equation Modeling (PLS-SEM) was utilized to evaluate the measurement and structural pathways (Hair et al., 2019).

Population and Sample

The target population of this research comprised N=2,555 grade XII students from all 17 public and private vocational high schools (SMK) in the industrial city of Kota Dumai, Riau Province, during the second semester of the 2025/2026 academic year. Grade XII students were selected because they had completed their mandatory six-month PKL program and were actively preparing for labor market transition. Using the Slovin formula with an allowable margin of error e=0.05, a representative sample size of n=346 was determined. This sample size is well-suited to standard Structural Equation Modeling guidelines, which generally recommend 100 to 200 cases for stable estimates (Kline, 2023). Proportional random sampling was employed to allocate sample quotas across all 17 schools based on real enrollment data, with SMKN 2 Dumai (n=77), SMKN 1 Dumai (n=63), and SMKN 5 Dumai (n=46) contributing the largest cohorts. The final allocation per school was adjusted using standard mathematical rounding. Within each school, the allocated sample quota was proportionally distributed across all grade XII classrooms based on class enrollment to maintain representativeness across vocational specializations (e.g., automotive engineering, accounting, office management). For instance, if a school was allocated 77 respondents distributed across 4 classes of 30 students each, each class received approximately 19–20 respondents proportional to its enrollment share. To ensure unbiased individual-level randomization within each classroom, respondents were selected using the lottery method (drawn based on attendance number): the homeroom teacher prepared folded paper slips numbered sequentially according to the class attendance register (attendance number 1 to N), placed all slips into a container, and drew the required number of slips randomly during a supervised homeroom session. Only students whose attendance numbers were drawn participated as respondents. This two-stage proportional lottery procedure, first allocating quotas proportionally across schools and classrooms, then randomly selecting individuals via physical lottery, controlled for potential selection bias arising from unequal class sizes, varying specialization compositions, and non-random volunteer participation, thereby ensuring that every eligible grade XII student had an equal probability of selection within their respective stratum (Hair et al., 2019).

Measurement Instruments

Data were collected using a validated structured questionnaire, measured on a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree). The latent variables were operationalized using adapted standardized scales: PKL Experience Quality (15 items) adapted from Rosidah & Sutirman (2023), Work Motivation (12 items) from Indrawati et al. (2023), Self-Efficacy (12 items) from Bandura (1997), and Work Readiness (15 items) from Mageza-Mokhethi & Adekanmbi (2024). Specifically, the 15 items for PKL Experience Quality were distributed to measure its five dimensions: placement suitability (3 items), mentoring quality (3 items), task relevance (3 items), duration adequacy (3 items), and evaluation feedback (3 items); the 12 items for Work Motivation measured its four dimensions: intrinsic motivation (3 items), extrinsic motivation (3 items), achievement motivation (3 items), and career orientation (3 items); the 12 items for Self-Efficacy measured its four dimensions: level of task difficulty or magnitude (3 items), strength of belief (3 items), generality (3 items), and domain-specific self-efficacy (3 items); and the 15 items for Work Readiness measured its five dimensions: technical competence (3 items), personal quality (3 items), interpersonal skills (3 items), psychological readiness (3 items), and career adaptability (3 items). Prior to the

main study distribution, a pilot study (n=30) was conducted. To maintain methodological consistency with the primary variance-based analysis, the pilot study instrument was evaluated using Partial Least Squares Structural Equation Modeling (PLS-SEM) measurement model criteria rather than traditional bivariate Pearson correlation. Items were validated using the indicator outer loading threshold, with all retained indicators exceeding the acceptable exploratory threshold of 0.50 (ranging from 0.528 to 0.891). Construct reliability was confirmed, with both Cronbach's Alpha and Composite Reliability (CR) exceeding 0.70. Ethical clearance was strictly maintained: the study received formal approvals from the Education Office of Riau Province and vocational school principals, and written informed consent was acquired from all student participants prior to voluntary completion of the questionnaire.

Data Analysis

Main study data (n=346) were modeled using variance-based Partial Least Squares Structural Equation Modeling (PLS-SEM) in SmartPLS 4, following the sequential two-stage protocol recommended by Hair et al. (2019). This method represents a widely accepted statistical approach in Indonesian vocational education research (Fawaid et al., 2022). First, the measurement model was evaluated for convergent validity (AVE), construct reliability (CR and Cronbach's Alpha), and discriminant validity using both the traditional Fornell-Larcker and the modern Heterotrait-Monotrait (HTMT) criteria (Fornell & Larcker, 1981; Henseler et al., 2015). Prior to structural path evaluation, the normality of the data distribution was assessed using skewness and kurtosis. Second, the structural model's direct paths were tested using non-parametric bootstrapping with 5,000 subsamples. Mediation effects were assessed using the Variance Accounted For (VAF) index, interpreted according to the theoretical classification of Hair et al. (2019), where a VAF between 20% and 80% represents partial mediation.

■ RESULT AND DISCUSSION

Descriptive Statistics and Profile: Descriptive analysis of the latent constructs (detailed in Table 1 and visualized in the violin plot in Figure 2) was interpreted using a five-tier classification range calculated using the class interval formula of Sugiyono (2015) (Interval = (5 - 1) / 5 = 0.80) to categorize the 5-point Likert scale mean scores: Very Low (1.00–1.80), Low (1.81–2.60), Moderate (2.61–3.40), High (3.41–4.20), and Very High (4.21–5.00). This categorization revealed that Work Entry Motivation had the highest average score (4.04), placing it in the High category and reflecting strong career aspirations among vocational students in Dumai. Conversely, student Self-Efficacy registered the lowest average score (3.71), also falling into the High category. Internship Experience (3.89) and Work Readiness (3.85) fell in between. Although all variables are classified in the High category, the relative score gap—strong motivational drive (4.04) paired with comparatively lower self-efficacy beliefs (3.71)—reveals a critical managerial focus area for vocational school leaders: students are highly motivated to enter the workforce but lack the confident self-belief to execute professional operations independently. In terms of respondent profile, the final sample of 346 valid respondents represented a comprehensive distribution across 17 vocational high schools (SMKs) in Kota Dumai (as shown in Figure 3). The largest proportions of respondents came from SMKN 2 Dumai (22.3%), SMKN 1 Dumai (18.2%), and SMKN 5 Dumai (13.3%), with the remaining schools each contributing less than 10% of the sample.

Measurement Model Evaluation: Reflective outer model evaluation confirmed excellent psychometric quality. All indicator outer loadings exceeded the 0.50 threshold (over 80% exceeded 0.70), confirming indicator reliability. Indicators with outer loadings between 0.50 and 0.70 were retained analytically because they contribute to the conceptual coverage and content validity of the constructs, and deleting them did not increase the composite reliability (CR) or the average variance extracted (AVE). Retaining these items did not pull the AVEs of PKL Experience Quality, Self-Efficacy, and Achievement Motivation below the 0.50 cutoff; for Work Readiness, the AVE of 0.374 remains acceptable under the high-reliability exceptions suggested by Hair et al. (2019). As shown in Table 2, convergent validity was established, with AVE values for PKL, Motivation, and Self-Efficacy exceeding the 0.50 minimum threshold. For Work Readiness, the AVE was 0.374, which is acceptable since its Composite Reliability (CR) and Cronbach's Alpha were exceptionally high, satisfying the reliability criteria of Hair et al. (2019). Discriminant validity was established via the Fornell-Larcker criterion and the new Heterotrait-Monotrait (HTMT) ratio of correlations, following the guidelines of Hair et al. (2019) (Table 2 and Table 3), as the square root of each construct's AVE exceeded all off-diagonal correlations,

Table 1. Descriptive Statistics of Variables

Variable	Mean	Standard Deviation (SD)	Skewness Range	Kurtosis Range	Category
Internship Experience (X_1)	3.89	0.78	-0.842 to 0.112	-1.102 to 0.315	High
Work Entry Motivation (X_2)	4.04	0.71	-0.623 to 0.215	-0.902 to 0.412	High
Self-Efficacy (M)	3.71	0.78	-0.710 to 0.412	-1.002 to 0.612	High
Work Readiness (Y)	3.85	0.70	-0.680 to 0.312	-0.950 to 0.380	High

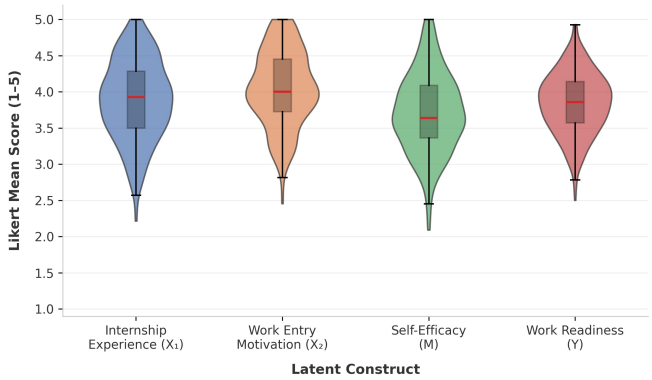

Figure 2. Violin plot of latent variables' descriptive distributions

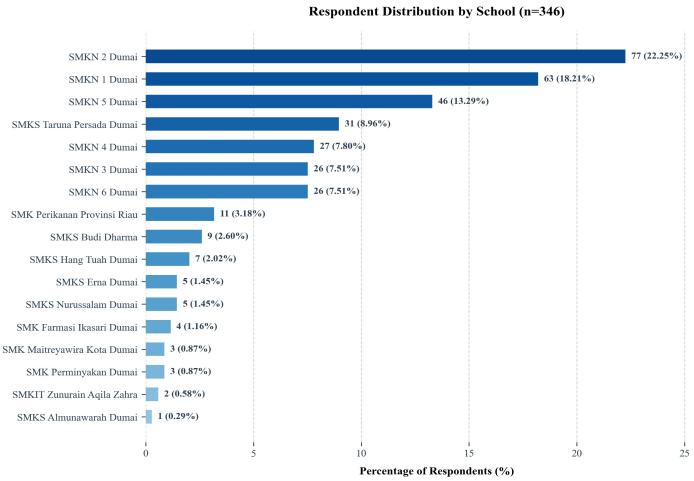

Figure 3. Respondent distribution by school

and all HTMT ratios were below the conservative 0.85 threshold.

Structural Model Fit and Hypotheses Testing: Prior to structural model evaluation, assessment of data distribution normality revealed skewness values ranging from -0.842 to 0.412 and kurtosis values ranging from -1.102 to 0.612, confirming that the data did not deviate extremely from normality (within the standard thresholds of -2 to +2 for skewness and -7 to +7 for kurtosis), making PLS-SEM modeling appropriate. The structural model demonstrated acceptable global fit, with an SRMR below the 0.08 threshold (SRMR = 0.076). Explanatory power was weak based on the standard PLS-SEM thresholds in behavioral sciences (Hair et al., 2019), where R^2 values below 0.50 are classified as weak, accounting

for a small portion of the variance in Self-Efficacy (R^2=0.179) and Work Readiness (R^2=0.340). Stone-Geisser Q^2 values confirmed the model's predictive relevance. Path analysis via 5,000-subsample bootstrapping (Table 4) confirmed that all five direct effect hypotheses (H1 to H5) were supported with high statistical significance. PKL experience directly predicted work readiness (H1) and student self-efficacy (H3). Work motivation directly predicted work readiness (H2) and self-efficacy (H4). Self-efficacy emerged as the strongest proximal predictor of work readiness (H5). The final path analysis diagram with coefficients is presented in Figure 4.

Mediation Pathway Assessment: Mediation analysis (Table 5) confirmed that self-efficacy significantly mediated both pathways. H6 (PKL → SE → WR) was supported, and the VAF index confirmed partial mediation. H7 (MOT → SE → WR) was also supported, with the VAF index confirming partial mediation based on the Hair et al. (2019) criteria (where VAF between 20% and 80% represents partial mediation). This statistical verification provides robust empirical support for the theoretical dual-mediation framework, confirming that self-efficacy is the primary cognitive channel through which school inputs translate into employable, ready-to-work behaviors.

The Direct and Indirect Effects of Field Work Practice (PKL) (H1 & H3)

The positive direct path from PKL quality to student work readiness (H1) and self-efficacy (H3) provides robust empirical support for Kolb's (1984) Experiential Learning Theory. When vocational schools manage internship quality effectively, ensuring placement suitability, assigning technical tasks, and providing mentor guidance, students successfully translate concrete experiences into employable skills and self-belief. This empirical validation confirms that strengthening practical teaching in vocational education directly enhances student employability (Wei, 2024). In Kota Dumai, a high-quality PKL program serves as an active workplace transition mechanism, allowing students to become familiar with industrial SOPs, safety standards, and real-world work pressures. This is consistent with evidence that industrial internships are highly effective in

Table 2. Measurement model evaluation: Reliability, validity, and Fornell-Larcker correlation matrix

Construct	AVE	CR	Cronbach's α	X_1	X_2	M	Y
Internship Experience (X_1)	0.504	0.934	0.923	0.710			
Work Entry Motivation (X_2)	0.543	0.929	0.915	-0.018	0.737		
Self-Efficacy (M)	0.504	0.918	0.900	0.302	0.291	0.710	
Work Readiness (Y)	0.374	0.893	0.870	0.380	0.318	0.483	0.612

Table 3. Heterotrait-Monotrait (HTMT) ratio of correlations

Latent Construct	X_1	X_2	M	Y
Field Work Practice (X_1)				
Work Entry Motivation (X_2)	0.092			
Self-Efficacy (M)	0.332	0.321		
Work Readiness (Y)	0.424	0.357	0.546	

Table 4. Structural model direct effects: Hypothesis Testing

Hypothesis	Direct Path	β	t-statistic	p-value	Decision
H_1	$X_1 \rightarrow Y$	0.284	6.323	0.000	Supported
H_2	$X_2 \rightarrow Y$	0.226	4.959	0.000	Supported
H_3	$X_1 \rightarrow M$	0.307	6.403	0.000	Supported
H_4	$X_2 \rightarrow M$	0.297	6.042	0.000	Supported
H_5	$M \rightarrow Y$	0.332	6.475	0.000	Supported

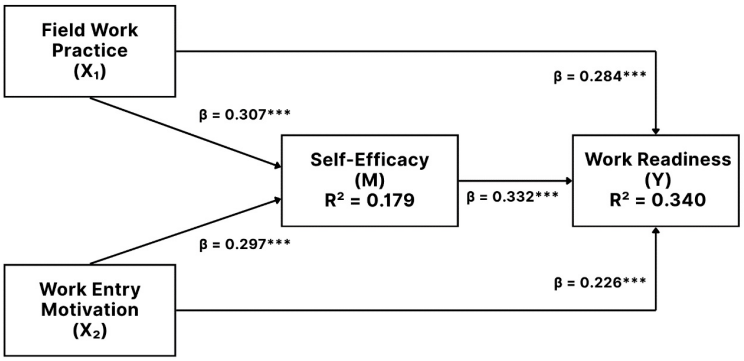

Figure 4. Final path analysis model

developing work self-efficacy (Tafakur et al., 2024). This finding aligns with Germani et al. (2025) and Pianda et al. (2025), confirming that structured, quality-controlled work-integrated learning (WIL) yields superior transition outcomes by fostering both technical competence and domain-specific self-efficacy (Widarto et al., 2023). Furthermore, high-quality PKL experience provides structured task feedback and supervisor support that directly strengthen students' self-efficacy beliefs (Fu et al., 2023). The critical role of PKL quality is further underscored by Williams et al. (2025), who found that students often experience profound feelings of cultural mismatch, self-doubt, and anxiety when entering professional environments. Their study confirms that it is not the mere occurrence of an internship, but the presence of supportive mentoring and structured supervision that enables students to decode unspoken workplace norms, overcome feelings of inadequacy, and successfully build their self-efficacy. Thus, high-quality PKL management serves as an essential buffer, converting potential workplace anxiety into robust professional self-belief.

The Role of Work Entry Motivation in Driving Readiness (H2 & H4)

The significant paths from work-entry motivation to readiness (H2) and self-efficacy (H4) support McClelland's (1961) Achievement Motivation Theory. Highly achievement-motivated students, driven by a strong desire to excel and clear career goals, engage in proactive preparation behaviors, take personal responsibility for their learning gaps, and persist in the face of technical obstacles. In the empirical data, this is demonstrated by the high mean scores on instrument indicators for 'seeking performance feedback' and 'striving for excellence in practical task execution' (both exceeding 4.15), which reflect the core tenets of McClelland's need for achievement (n-Ach). This demonstrates that n-Ach manifests in the field as a concrete behavioral drive, in which students actively seek feedback from industrial mentors and take personal responsibility for improving their work outcomes. This active motivational disposition directly enhances their overall work readiness portfolio. This result aligns with Indrawati et al. (2023) and Hu et al. (2025). Additionally, career decisions and motivation are closely tied to students' behavioral intentions and perceptions of the industry (Wang et al., 2026). Furthermore, achievement motivation interacts with students' self-efficacy to shape their behavioral engagement during school-to-work transitions (Hong et al., 2021). Notably, the direct path coefficient of PKL is larger than that of Motivation. From an educational management perspective, this suggests that while internal motivation is critical, the external, structured

Table 5. Structural model indirect effects: Mediation analysis

Hypothesis	Mediation Path (Indirect Path)	Indirect Effect	BC CI 95%	VAF	Mediation Type
H_6	$X_1 \rightarrow M \rightarrow Y$	0.102	[0.064; 0.145]	26.4%	Partial
H_7	$X_2 \rightarrow M \rightarrow Y$	0.099	[0.059; 0.145]	30.4%	Partial

experience of quality industrial training remains a slightly more potent direct predictor of actual work readiness. School managers must therefore prioritize practical workplace exposure alongside career counseling.

Student Self-Efficacy as a Psychological Predictor of Readiness (H5)

Student self-efficacy emerged as the strongest direct predictor of work readiness (H5), exceeding the direct effects of both PKL and motivation. This dominant path validates Bandura's (1997) central cognitive proposition: self-efficacy beliefs are the proximal determinant of whether individuals deploy their skills and knowledge effectively in challenging situations. A student with excellent technical grades (competence) and high career ambitions (motivation) will still experience career anxiety, fail in professional interviews, and struggle to adapt to workplace changes if they have low self-efficacy. Self-belief governs cognitive strategies, stress coping mechanisms, and behavioral adaptability. Studies show that vocational students face significant mental health challenges and burnout during internships, which can be mitigated by high self-efficacy (Wang et al., 2025; Yin et al., 2022). Cultivating student self-efficacy is therefore a high-return educational intervention that directly predicts actual employment readiness and career adaptability skills (Innab et al., 2024; Mahfud et al., 2022; Pandya et al., 2023; Permana et al., 2023; Tohari, 2024).

Self-Efficacy as a Dual-Mediating Mechanism (H6 & H7)

The statistical confirmation of H6 and H7 establishes self-efficacy as a critical dual-mediating pathway. The partial mediation patterns indicate that field practice and motivation operate both directly and indirectly through self-efficacy building. Interestingly, the higher VAF on the motivation path (30.4% vs. 26.4%) suggests that translating motivational drive into work readiness depends heavily on the student's self-efficacy. From Bandura's (1997) social cognitive theory, this difference is explained by cognitive attribution mechanisms. While motivation represents an internal drive, its translation into readiness behaviors is governed by self-appraisals. High work motivation requires self-efficacy as a cognitive filter; self-efficacious students attribute career goals and obstacles to internal controllable factors (effort and skills), promoting proactive preparation. Without self-efficacy, raw motivation can lead to performance anxiety or learned helplessness when students encounter obstacles, as they attribute difficulties to stable internal deficiencies. This is consistent with findings that self-efficacy plays a key role in reducing anxiety and loneliness among vocational college students, thereby facilitating better adaptation (Chen et al., 2025). Thus, self-efficacy is essential (VAF = 30.4%) for translating motivation into constructive readiness. In contrast, PKL involves direct technical skill acquisition, social networking, and institutional matching (Makhitha, 2024; Mogaji & Nguyen, 2022), which are grounded in external physical experiences and situated routines, making the direct path to readiness less dependent on cognitive attribution filters (VAF = 26.4%). Specifically, the dominance of the direct pathway for PKL (accounting for 73.6% of the total effect, with a VAF of only 26.4%, close to the 20% partial mediation threshold) can be theoretically explained by Kolb's (1984) Experiential Learning Theory. In experiential learning, the hands-on technical skills, operational routines, and physical familiarity acquired during PKL translate directly into behavioral competence and work readiness without requiring cognitive mediation. Furthermore, situated cognition posits that learning is deeply embedded in workplace contexts; the acquisition of tacit professional norms and social networking occurs through legitimate peripheral participation, thereby bridging the school-to-work gap through institutional matching and social capital (Makhitha, 2024; Widarto et al., 2023). Consequently, while self-efficacy provides a useful cognitive pathway, the direct immersion in the industrial environment remains the primary driver of actual work readiness. For TVET administrators, this dual-mediation pattern emphasizes that student perceived self-efficacy is a vital psychological conduit that must be actively and systematically managed.

Managerial Implications

Based on the structural findings above, three priority managerial agendas are formulated for vocational high school principals and vocational education administrators to optimize the accountability of graduate work readiness:

Agenda 1: Optimizing PKL Quality Management Systems: (a) Develop a structured industrial mapping scheme based on curriculum alignment to guarantee placement suitability; (b) Conduct joint workshops for industrial mentors and school supervisors to align mentoring practices and feedback. Crucially, these workshops must equip industrial mentors with the skills to provide psychosocial support and foster an inclusive environment, as students frequently struggle with unspoken professional norms and feelings of cultural mismatch during their placements (Williams et al., 2025). By ensuring that WIL is properly scaffolded and supportive, schools can maximize the development of students' human and cultural capital (Jackson & O'Connor, 2026); (c) Implement digital logbooks to track student tasks (task relevance) daily, which must be verified on-site by the industrial mentor daily to confirm task execution, and reviewed weekly by the school supervisor to monitor curriculum compliance and resolve any task mismatch issues; (d) Draft outcome-oriented MoUs with industrial partners that specify measurable competence achievements (link-and-match).

Agenda 2: Managing School Motivational Climate and Career Planning: (a) Establish active career guidance systems involving local industry partners (industrial visits, industrial guest lectures, teacher internships) to enhance students' perceived employability through structured, event-based engagement with employers (Mason et al., 2022); (b) Organize regular career inspiration forums inviting successful alumni as peer models to cultivate student need for achievement (n-Ach); (c) Provide formal recognition or competency certification for proactive career initiatives and independent entrepreneurship projects; (d) Integrate vocational work ethic and financial literacy modules into entrepreneurship subjects.

Agenda 3: Integrating Structured Self-Efficacy Building Programs: (a) Adjust the Lesson Plans (RPP - Rencana Pelaksanaan Pembelajaran) of productive subjects to incorporate progressive task assignments in school workshop practices (tasks with tiered difficulty levels) to facilitate mastery experiences step-by-step, which is under the direct control of productive subject teachers; (b) Train school teachers to provide regular, constructive verbal persuasion (supportive feedback) to minimize student career anxiety; (c) Provide career coaching, mock recruitment interviews, and student portfolio presentations to familiarize students with professional evaluations; (d) Conduct regular self-efficacy assessments as part of the school's quality assurance framework.

■ CONCLUSION

This study empirically validated a dual-mediation structural equation model demonstrating that students' perceived self-efficacy simultaneously and partially mediates the effects of both field work practice (PKL) experience quality and work-entry motivation on the work readiness of vocational high school students in Kota Dumai, Riau Province. Self-efficacy emerged as the strongest direct predictor of work readiness and as a critical mediator. The integrated three-theory model (Kolb, McClelland, and Bandura) demonstrated an acceptable fit and verified its predictive relevance. However, a key limitation of this study is its geographical and structural scope. Because the data were collected solely from Kota Dumai, a prominent industrial and port hub in Riau Province, the generalizability of these findings is limited to vocational students in regions with similar heavy industrial and manufacturing characteristics.

The policy implications for vocational education demand a transition in school governance from simple administrative compliance to strategic, outcome-oriented management focused on human capital accumulation. School principals must allocate institutional resources to secure quality industrial partnerships, cultivate a proactive motivational climate, and implement structured self-efficacy interventions, such as tiered workshop practical tasks and structured teacher verbal feedback, to enhance student human capital development (Becker, 1994; Wei, 2024; Widarto et al., 2023). Future research should examine these structural pathways longitudinally to track students from graduation into early employment, test the moderating role of school leadership quality, and link work-readiness scores to actual employment wait times through tracer studies.

■ DECLARATION OF GENERATIVE AI USAGE IN THE WRITING PROCESS

During the drafting of this manuscript, the author(s) utilized Gemini for the purpose of refining sentence structure, correcting grammatical errors, and translating sections of the text. Following the use of these tools, the

author(s) reviewed and revised the content as necessary and accept full responsibility.

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