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Association between Double Track Policy Implementation Quality and Students' Entrepreneurial Orientation and Work Readiness in Senior High Schools in Bojonegoro Regency

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Abstract

This study examines the association between Double Track policy implementation quality, students' entrepreneurial orientation, and work readiness. Double Track is an East Java program combining senior high school education with certified skills and entrepreneurship training for students unlikely to pursue university education. A cross-sectional survey involved 252 students (37.2% of the population of 678), selected through proportionate stratified random sampling from ten state senior high schools in Bojonegoro Regency. Data were collected using a 45-item, four-point Likert questionnaire measuring implementation quality, entrepreneurial orientation, and work readiness. All items were valid, and the three scales demonstrated reliability (Cronbach's α = 0.832–0.913). Simple regression indicated positive associations between implementation quality and entrepreneurial orientation (β = 0.763, R^2 = 0.583) and work readiness (β = 0.808, R^2 = 0.654). Multivariate analysis also showed a significant joint association with both outcomes ($p < .001$). These findings suggest that stronger implementation quality is related to students' entrepreneurial orientation and work readiness. However, cross-sectional student-perception data do not establish causality. Longitudinal and multi-source research is recommended.

Keywords Double Track; Policy Implementation; Entrepreneurial Orientation; Work Readiness; Senior High School

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INTRODUCTION

Senior High Schools (SMA) in Indonesia are designed with an academic orientation to prepare students for higher education, but most of their graduates immediately enter the workforce or business. In East Java, only 32.16% of high school graduates, or about 55,341 students, continue to higher education, while 67.84% or about 116,722 other students directly work or start a business (East Java Provincial Education Office, 2022). For this group,

secondary school is the last formal opportunity to gain experience, even though the academic curriculum is not specifically designed to build work skills or the ability to start a business. They face two future pathways that require different but complementary skills: work readiness for those who choose to become workers and entrepreneurial competence for those who choose to start a business. The educational challenge is ensuring that general high schools can convert part of their study time into competencies that can be used in both pathways.

Employment data shows that both pathways are not yet safe for high school graduates. In August 2025, the national open unemployment rate (TPT) was recorded at 4.85%, with 6.88% among high school graduates and 8.63% among vocational high school (SMK) graduates; high school graduates contribute 30.74% of all open unemployment (Central Bureau of Statistics, 2025). A similar pattern is seen in Bojonegoro Regency: the regency TPT drops to 3.90% in 2025, but the figures at the high school level (4.88%) and vocational high school (10.99%) remain higher than the aggregate figures (Bojonegoro Regency Central Statistics Agency, 2025). The improving aggregate rate not followed by secondary school graduates indicates a persistent double gap, namely readiness to enter the formal labor market and the ability to create jobs for oneself.

The East Java Provincial Government addresses this issue through the Double Track Program that began in 2018 (Governor Regulation Number 139 of 2018, amended by Governor Regulation Number 43 of 2022; East Java Provincial Government, 2018, 2022). This program is intended for high schools whose students are not projected to continue to higher education. The logic aligns with the work-based learning principle in the dual pathway education policy in countries like Germany, namely that the most effective work skills are formed through a combination of classroom theory with direct practice with direct practice with the business and industrial world (Cedefop, 2024); Double Track consists of additional training in general high schools and not industrial internships, so the alignment lies in principles. Certified skills and entrepreneurship training, facilitated by the Sepuluh Nopember Institute of Technology (ITS) Surabaya, is conducted alongside regular learning to pursue two outputs simultaneously: economic independence through entrepreneurship and job absorption through work readiness. By 2025, the program will cover 144 schools in 28 regencies/cities and collaborate with 432 DUDI partners opening 899 job opportunities (East Java Provincial Education Office, 2025). These achievements are the administrative outputs at the program level; the next evaluative question is whether students in schools with better program implementation also have better competencies.

This question is relevant in Bojonegoro Regency, which has ten public high schools implementing the Double Track Program in the fields of culinary arts, fashion design, multimedia, automotive, and beauty design. Differences in skills, practice facilities, trainers, and partners between schools show that the quality of policies on paper is not necessarily equal to the quality of policies experienced by students. Therefore, the quality of implementation perceived by students as service recipients is an appropriate measure to be

linked to their achievements.

Policy implementation theory provides a major premise for this review. Van Meter and Van Horn (1975) explain that policy performance is determined by six variables: policy standards and objectives, resources, inter-organizational communication and reinforcement activities, characteristics of implementing organizations, implementer disposition, and social, economic, and political conditions. Edwards III (1980) emphasizes communication, resources, disposition, and bureaucratic structure as determinants of implementation effectiveness, Grindle (1980) shows that policy content and context of implementation determine their impact on target groups, and Matland (1995) adds that ambiguity of goals and level of conflict shape implementation patterns. All four converge on one proposition: policy achievement depends on the quality of implementation, so the quality of implementation needs to be measured rather than assumed. In the reviewed study, these models are more often used as descriptive or diagnostic frameworks, for example in village road infrastructure policies (Muksin et al., 2024) or school-level education policies like Free Nutritious Meals (Wahyuningtias & Hazin, 2025), so their testing of individual student competencies serves as a contribution space for education policy.

Studies on the Double Track Program have developed and provided a rich contextual foundation. Ridhwanah and Werdiningsih (2022) reviewed program management and graduate competencies in Ponorogo, Felani (2024) reviewed implementation in Kediri, Cholidah et al. (2024) evaluated students' entrepreneurial skills in Trenggalek, Mayudho et al. (2023) discussed Independent Double Track management, Asrori et al. (2022) highlighted life *skill* improvement, and Santoso Putri et al. (2025) studied implementation at SMA Negeri 1 Dander, Bojonegoro. A recent study in East Java reported that program management in partnership with ITS and business partners runs well at SMA Sunan Giri Menganti, Gresik (Suryaningrum et al., 2025), and that the role of the principal in implementing Double Track at SMA Negeri 1 Puncu, Kediri, positively impacts work readiness, technical skills, self-confidence, and students' entrepreneurial orientation (Rohmawati et al., 2025). These studies consistently report the benefits of the program for students' skills and competencies, while also identifying facilities, coordination, and management as implementation factors. Quantitatively, Wati et al. (2025) tested the pathway from entrepreneurship education to entrepreneurial intention through entrepreneurial orientation among Double Track students at two private schools in Mojokerto City and found that proactivity and innovation significantly affect intention. These studies open up a follow-up question raised here: to what extent the quality of policy implementation is associated with student competence across all organizing schools in a single area.

Literature outside Double Track shows a similar direction. Entrepreneurship education research extensively discusses intentions and mediation mechanisms (Mykolenko et al., 2022; Sun et al., 2023) as well as broader entrepreneurial outcomes (Alakaleek et al., 2023); in Indonesia, secondary studies are mostly conducted on vocational students (Mahmudah et al., 2023; Sagita et al., 2025), while in high school students Ling and Kurniawan (2023) examine

intentions through entrepreneurial orientation and financial literacy, and Subiantoro and Karwanto (2016) examine entrepreneurship-based curriculum management from planning to evaluation. Susantiningrum et al. (2023) show that family background and type of school are related to the entrepreneurial skills of vocational high school students. Work readiness studies tested individual predictors and industry practices such as emotional intelligence, motivation, self-efficacy, industrial work practice, career guidance, soft skills, 5S work culture, and *teaching factory*, especially among vocational high school students (Febriyana et al., 2023; Maulanada et al., 2024; Maulidina & Wijanarka, 2023; Pratiwi et al., 2024; Puspitasari & Bahtiar, 2022; Rosidah & Sutirman, 2023), and Rahmaningtyas and Widiatami (2026) show that integrated learning of the workforce is positively associated with students' job readiness. Yoana et al. (2024) link vocational education with unemployment in Indonesia. Overall, both outcomes are commonly discussed separately, with explanations at the individual level or learning methods, and in the context of vocational high schools or higher education.

From this synthesis, this study fills four interrelated gaps. Conceptually, the Double Track policy assumes that the same implementation package forms entrepreneurial competence as well as work readiness, and this assumption can be tested by examining whether the same quality of implementation is associated with both and is in the same direction or not; the results serve as information for decisions on whether the entrepreneurship pathway and the work path need to be designed and funded separately or reinforced as a single system. Empirically, measuring how much feasible outcomes are expected from implementation improvements is needed for resource allocation decisions. Methodologically, testing two correlated outputs requires a multivariate approach with stratified random samples across schools, and Miller's entrepreneurial orientation construct, which was originally organization-scale, needs to be applied to students. Practically, the Education Office and schools in Bojonegoro need evidence to determine improvement priorities when high high school graduate unemployment and interschool implementation is not uniform.

The reasoning of this research is deductive. *The main premise*: policy performance is a function of the quality of its implementation (Van Meter & Van Horn, 1975; Edwards III, 1980; Grindle, 1980). *First minor premise*: The Double Track program combines formal education with entrepreneurial skills programs so that graduates are ready to enter the workforce (East Java Provincial Government, 2018, 2022), so that performance is measured in two outcomes: entrepreneurial competence and work readiness. *The second minor premise*: implementation with clear targets, sufficient resources, and accompanied by implementers committed to providing orderly practical experience, which according to Bird (1995) and McClelland (1961) becomes a building factor for competence and entrepreneurial motivation, and according to Brady (2010) and Caballero et al. (2011) shapes responsibility, adaptation, skills, communication, self-perception, and occupational safety compliance. *Deductive conclusion*: students who perceive better implementation will have higher scores on both

outcomes. This conclusion is formulated into three hypotheses: the quality of policy implementation perceived by students is positively associated with entrepreneurial orientation (H1), with work readiness (H2), and with a combination of both outcomes combined (H3). H1 and H2 were tested unidirectionally ($\beta > 0$) because theory predicted positive directions; H3 was tested as a multivariate omnibus test to control for type I errors and obtain a combined association size, with directions read from the coefficient signs H1 and H2. The two outputs were treated parallel without mediating each other.

The purpose of this study is to estimate these three associations across all public high schools implementing the Double Track Program in Bojonegoro Regency. Its contributions are fourfold: theoretically, expanding the use of the implementation model from implementation assessment to its relation to student orientation and readiness, as well as applying Miller's entrepreneurial orientation and Brady's work readiness dimension at the individual level; empirically, presenting estimates of association size among the ten implementing schools in one district; methodologically, testing both outcomes partially and combined with *the multivariate General Linear Model*; and practically, providing a basis for the education office and schools in designing results-based program evaluations.

METHOD

Research Design and Location

The study uses a quantitative approach based on positivism (Sugiyono, 2022) with a *cross-sectional correlational survey design* (Creswell & Creswell, 2023). All variables are measured once at the same time so that the results are read as associations. The quantitative approach was chosen because the problem formulation demands estimation of the magnitude of relationships, both partial and combined: partial associations are tested through two simple linear regressions, and combined associations through *multivariate* General Linear Models.

The research was conducted at all public high schools officially implementing the Double Track Program in Bojonegoro Regency based on the determination of the East Java Provincial Education Office, namely SMA Negeri 1 Malo, Dander, Kedungadem, Kalitidu, Gondang, Tambakrejo, Ngraho, Balen, Kepohbaru, and Kasiman. The location was chosen because it has ten active implementing schools, so all public schools in the area can be covered; there is no quantitative research yet examining the association between implementation quality and both outputs simultaneously in this area, and its socio-economic characteristics (agriculture, trade, and oil and gas industry) are relevant for competencies based on local potential.

Population and Sample

The population consists of all active students in the Double Track Program at these ten schools in the 2026 academic year, which is N = 678, based on program implementation documentation and confirmation from the Bojonegoro Regional Education Office. The

sample was selected using *proportionate stratified random sampling* with schools as the stratum (Sugiyono, 2022). The sample size was determined using the Slovin formula at a 5% error rate, namely n = 678 / (1 + 678 × 0.05²) = 251.6, rounded to 252, so the sample fraction reached 37.2% of the population. Because Slovin's formula is not variance-based (Tejada & Punzalan, 2012), the adequacy of these measurements was checked using sensitivity power analysis: at n = 252, α = 0.05, and power 0.80, simple regression was able to detect effects as small as $f^2 \approx 0.03$, *while the effects obtained* ($f^2 = 1.40$ *and* 1.89) *were more than 40 times the threshold. The sample size for each school was allocated according to n*i = (Ni/N) × n (Cochran, 1977; Sugiyono, 2022) using the largest *remainder*: ordinary rounding produced 249 respondents, so the three schools with the largest fractions (SMA Negeri 1 Kedungadem, Balen, and Kasiman; each 33.45) were rounded up to 34, with a total of exactly 252. Respondents in each school were selected simply randomly from the main list of program participants as the sample frame so that each student had an equal chance of being selected.

Table 1. *Population, Skill Fields, and Sample Allocation per School*

School	Double Track skill area	Population	Sample
State Senior High School 1 Malo	TKR, multimedia	48	18
Dander State Senior High School 1	Fashion, Fashion	60	22
State Senior High School 1 Kedungadem	Fashion, Beauty	90	34
Kalitidu State Senior High School 1	Multimedia, daddy of God	60	22
Gondang State Senior High School 1	Multimedia, daddy of God	60	22
Tambakrejo State Senior High School 1	Beauty Care, TKR	60	22
Ngraho State High School 1	Dad of God, multimedia	60	22
Balen State Senior High School 1	Dad of God, multimedia, TKR	90	34
Kepohbaru State Senior High School 1	Fashion, Beauty	60	22
Kasiman State High School 1	Culinary arts, multimedia, beauty	90	34
Total		**678**	**252**

Note. TKR = light vehicle engineering. Sample allocation: ni = (Ni/N) × 252 with rounding the largest residual method (33.45 to 34 in three schools). Source: program implementation documentation, processed.

Variables, Instruments, and Data Sources

The independent variable (X) is the quality of policy implementation of the Double Track Program as perceived by students, measured through six variables by Van Meter and Van Horn (1975) complemented by the views of Edwards III (1980) and Grindle (1980). The first dependent variable (Y1) is entrepreneurial orientation with three dimensions according

to Miller (1983), which is clarified and expanded by Lumpkin and Dess (1996), namely *innovativeness* (the tendency to generate new ideas, products, and methods), *risk-taking* (the courage to make decisions in uncertain conditions with measurable consequences), and *proactiveness* (initiative to anticipate market changes). The dimensions originally formulated at the organizational level are operationalized as the disposition and mental readiness of students to start a business; the term orientation, not competence, is used because what is measured is attitude tendencies and self-perception (compare EntreComp; Bacigalupo et al., 2016). The second dependent variable (Y2) is work readiness with six dimensions according to Brady (2010), namely *responsibility*, *flexibility*, *skills*, *communication*, *self-view*, and *health and safety*, which together with personal characteristics form work readiness (Caballero et al., 2011) (Table 2).

Operationalization refers to the instrument development guidelines (Clark & Watson, 2019) and applies three principles: theoretical continuity, measurability, and parsimony: each indicator can be traced to theory, formulated as perceptions or behaviors that students can respond to, and represented by three items. Items are answered on a four-point Likert scale without neutral categories (Azwar, 2012). Students were chosen as data sources because they are direct service recipients and parties who best understand daily implementation experiences, such as target clarity, availability of materials and tools, scheduling accuracy, coach support, and contact with partners. Thus, X measures the quality of implementation as experienced by the service recipients.

Table 2. *Operational Definition of Research Indicators (Three Items Each)*

Code	Indicator	Operational definition
X1.1	Standards and policy objectives	Clarity of program objectives and success standards
X1.2	Resources	Adequacy of budget, facilities, and trainers
X1.3	Inter-organizational communication	Coordination and consistency of information among parties
X1.4	Characteristics of the implementing organization	Structure, capacity, and competencies of managers
X1.5	Attitude/disposition of the implementers	Support and commitment from principals and coaches
X1.6	Social, economic, and political environment	Local economic potential, parental support, and business partners
Y1.1	Innovativeness	Supporting new ideas, experimenting, and creating products/services
Y1.2	Risk-taking	Dare to take measured risks in entrepreneurship
Y1.3	Proactiveness	Proactively seize business opportunities and act first
Y2.1	Responsibility	Responsibility and discipline in carrying out duties and rules

Y2.2	Flexibility	Adapting to changing situations and new tasks
Y2.3	Skills	Mastery of basic/technical skills and continuous learning
Y2.4	Communication	Communicate and interact effectively in the work environment
Y2.5	Self-view	Self-confidence, self-efficacy, and self-motivation
Y2.6	Health and safety	Awareness and compliance with occupational safety and health

Note. X = policy implementation (Van Meter & Van Horn, 1975); Y1 = entrepreneurial orientation (Miller, 1983); Y2 = work readiness (Brady, 2010). Source: research instruments.

Instrument Validity and Reliability

Content validity was assessed by two expert lecturers on the suitability of items with indicators and language proficiency using Aiken's V coefficient (Aiken, 1985) with a valid item limit of $V \geq 0.75$; all 45 items met this threshold with an average V of 0.89 (Table 3). Item validity was tested through trials on 30 Double Track students outside the sample with characteristics similar to the population. All items were valid because *the calculated r* (total item correlation) ranged from 0.375 to 0.793, exceeding the *table r* value of 0.361 ($\alpha = 0.05$; *df* = 28), so no items are dropped. Reliability is estimated using Cronbach's Alpha with a reliability criterion if $\alpha > 0.70$, and all three scales meet this criteria with values ranging from 0.832 to 0.913 (Table 3). The instrument structure (six, three, and six dimensions with three items each) relies on established theory and parsimony operationalization.

Table 3. *Instrument Validity and Reliability (Trial, n = 30)*

Variable	Grain	Track V Aiken	Range *r*	Cronbach's α
Policy implementation (X)	18	0,88	0,375–0,793	0,903
Entrepreneurial orientation (Y1)	9	0,91	0,509–0,811	0,832
Work readiness (Y2)	18	0,88	0,441–0,782	0,913

Note. r table = 0.361 (*df* = 28, $\alpha = 0.05$). Source: processed research data.

Data Collection Procedures

The questionnaire was distributed directly at the school from August to September 2026 after obtaining permission from the East Java Provincial Education Office and the organizing school principal. Before filling out, respondents received an explanation sheet and *informed consent* form, were guaranteed anonymity, and were given the freedom to quit at any time without consequences for grades or participation status in the program; data were reported in aggregate form for academic purposes. Sections X, Y1, and Y2 were placed separately with instruction breaks and answers were guaranteed anonymous to reduce

general method bias (Podsakoff et al., 2003).

Data Analysis Techniques

Analysis was performed using IBM SPSS Statistics. Variable scores were categorized into five levels according to ideal norms with μ = 1/2 (maximum score + minimum score) and σ = 1/6 (maximum score − minimum score), so μ = 45 and σ = 9 for X and Y2 (range 18–72), and μ = 22.5 and σ = 4.5 for Y1 (range 9–36). Before hypothesis testing, residuals were checked for normality using the Kolmogorov–Smirnov test with Lilliefors correction, linearity with ANOVA linearity measured in the *linearity line* (significant linear relationship if Sig. < 0.05), and homoscedasticity using a scatter diagram and Glejser test. H1 and H2 (β > 0) were tested using one-tailed simple linear regression at α = 0.05 (t table = 1.651; df = 250) and rechecked at α = 0.025 Bonferroni correction result (t table = 1.969) because there were two dependent variables. H3 was tested with a *multivariate General Linear Model* that placed Y1 and Y2 as the dependent variables and X as the covariate (Tabachnick & Fidell, 2019) using Wilks' Lambda statistics (F table = 3.03; df = 2 and 249); because there was only one predictor, Pillai's Trace, Hotelling's Trace, and Roy's Largest Root were equivalent and produced the same F. Because multivariate tests are omnibus, the direction of association is read from the regression coefficient sign. The magnitude of the effect is reported as R^2, *Cohen's* f^2 *(Cohen, 1988), and partial multivariate* η^2 $(1 - \Lambda)$*, accompanied by a 95% confidence interval for coefficient B. Analysis was performed at the individual level.*

RESULTS AND DISCUSSION

Respondent Profile and Data Completeness

All 252 questionnaires were reallocated and feasible to process, so the data return and processing rate reached 100% without data loss in any of the 45 items, and the number of respondents in each school was exactly the same as the sample allocation (Table 1). As shown in Table 4, respondents consisted of 72.6% females, 80.2% under 18 years old, and 60.7% eleventh-grade students. Culinary arts was the largest skill field (40.5%), followed by multimedia (25.8%). The composition of fields and genders reflected patterns of skill choices that existed before the program started: all 43 beauty students were female and 30 out of 31 light vehicle engineering (TKR) students were male, while multimedia was relatively balanced (34 females and 31 males). Since most respondents were not yet in grade XII, measurable work readiness was perceptual and prospective, meaning the readiness felt by students while undergoing the program.

Table 4. *Respondent Profile (N = 252)*

Features	Category	*n*	%
Gender	Women	183	72,6
	Male	69	27,4
Age	< 18 years old	202	80,2
	≥ 18 years old	50	19,8
Class	XI	153	60,7
	XII	99	39,3
Skill area	Layout	102	40,5
	Multimedia	65	25,8
	Beauty	43	17,1
	TKR/automotive	31	12,3
	Fashion	11	4,4

Note. Source: processed research data.

Description of Variables

Students rated all three variables in the very high category (Table 5). The average score per item was 3.44 for policy implementation, 3.41 for entrepreneurial orientation, and 3.42 for work readiness, with average positive scores (agree and strongly agree) of 96.52%, 96.43%, and 96.27% respectively, with no very disagree answers. A total of 232 students (92.1%) rated implementation in the very high category, as did 204 students (81.0%) in entrepreneurship orientation and 230 students (91.3%) in work readiness. Variation among respondents remained adequate to estimate the correlation gradient: observed scores ranged from 42–69 on X and Y2 (27 points or 50% of the theoretical range 18–72) and 20–34 on Y1 (14 points or 52% of the theoretical range 9–36), with a standard deviation of 5.117; 2,705; and 5.207. Eighteen students (7.1%) consistently scored lower on all three variables simultaneously (42–48 in X and Y2 and 20–24 in Y1), so the relationship was observed on the continuum from low to very high, while the other 234 students were at the top of the scale.

Table 5. *Descriptive Statistics and Score Categories*

Variable	Observed range	M (per piece)	SD	Skewness	Kurtosis	Very high, n (%)
Implementation (X)	42–69	61,88 (3,44)	5,117	−2,41	5,82	232 (92,1)
Entrepreneurial orientation (Y1)	20–34	30,65 (3,41)	2,705	−1,92	4,10	204 (81,0)
Work readiness (Y2)	42–69	61,54 (3,42)	5,207	−2,42	5,89	230 (91,3)

Note. Possible score ranges: X and Y2 = 18–72; Y1 = 9–36. Source: processed research data.

For the implementation variable, the average per indicator ranged from 3.42 to 3.46: the highest resources (3.46), while standards and targets as well as inter-organizational communication each scored 3.42. At the item level, the clarity of competency targets was positively rated by 97.6% of students, and the timing of schedule and material information was delivered on time by 98.8% of students, while the availability of practical materials (94.4%), adequacy of equipment (95.2%), and accuracy of implementation according to schedule (95.2%) were the items with the lowest relative positive percentage, still above 94%. This pattern of materials and equipment aligns with the findings of Santoso Putri et al. (2025) regarding the Double Track facilities at SMA Negeri 1 Dander, and marks the aspect most worthy of strengthening. In the outputs, the average dimension of entrepreneurial orientation ranged from 3.39 (*innovativeness*) to 3.43 (*proactiveness*), with the highest positive rating in *risk-taking* (96.8%), while the average dimension of work readiness ranged from 3.39 (*skills*) to 3.44 (*communication*); the lowest items were compliance with program rules (94.4%) and willingness to try opportunities with uncertain results (95.6%). The high and evenly distributed achievements across these dimensions reflect the overall good implementation felt across the ten schools.

Prerequisite Test Results for Analysis

The prerequisite test results are summarized in Table 6. The Lilliefors-corrected Kolmogorov–Smirnov test did not reject residual normality in both models (p = 0.200 and 0.059), and the Glejser test showed constant residual variance (p = 0.578 and 0.185). In the linearity test, the *linearity* row showed a Sig. < 0.001 (< 0.05) for both models (F = 482.443 for Y1 and 900.114 for Y2), which means there is a significant linear relationship between implementation quality and each output; the linear component accounts for 81.1% and 78.7% of the intergroup variation. Thus, all prerequisite assumptions are fulfilled and regression analysis can proceed.

Table 6. *Summary of Prerequisite Test Analysis*

Assumptions	Test	Model Y1	Model Y2	Results
Normality	K–S (Lilliefors), *p*	0,200	0,059	Fulfilled
linearity	ANOVA, baris *Linearity*, Sig.	< 0.001	< 0.001	Fulfilled
Homoskedasticity	Glaciers, *p*	0,578	0,185	Fulfilled

Note. Linearity is read in the *Linearity row* of the ANOVA table (Sig. < 0.05 means a significant linear relationship). Source: processed research data.

The Relationship Between Policy Implementation Quality and Entrepreneurial Orientation (Hypothesis 1)

Hypothesis 1 lowers the prediction that implementation quality is positively associated

with entrepreneurial orientation, and the data confirm this prediction (Table 7). The regression equation Y1 = 5.687 + 0.404X with t = 18.680 (p < 0.001; F model = 348.941) far exceeds *the t table value* of 1.651, and the result is the same at Bonferroni limit (1.969). Every one-point increase in the implementation score is associated with a 0.404-point increase in entrepreneurial orientation (95% CI [0.361; 0.447]), and a difference of one standard deviation in implementation (5.117 points) corresponds to a difference of 2.07 points or 0.76 points in standard deviation of entrepreneurial orientation. Implementation is associated with 58.3% variation in entrepreneurial orientation (corrected R^2 = 0.581), and the estimated standard error of 1.751 points is 35.3% smaller than the standard deviation Y1 (2.705). The effect size f^2 *= 1.40 exceeds Cohen's (1988) large effect threshold of 0.35 four times. Thus, H1 is supported.*

Table 7. *Partial Test Results of the Relationship between Policy Implementation Quality (X) and Entrepreneurial Orientation (Y1)*

Exterior	***B***	***SE***	**b**	***t***	***p***	**R^2**	**f^2**	**95% IK for *B***
Entrepreneurial orientation (Y1)	0,404	0,022	0,763	18,680	< 0.001	0,583	1,40	0,361–0,447

Note. Source: processed research data.

This direction aligns with the proposition of Van Meter and Van Horn (1975) and Edwards III (1980) that the quality of implementation is related to policy performance, which in this study is an entrepreneurial orientation according to Miller (1983). Theoretically, good implementation provides practical experience that forms the basis of three dimensions: experimenting with new materials, designs, and methods fosters *innovativeness*; willingness to try opportunities with uncertain results fosters *risk-taking*; and initiative to offer products fosters *proactivity.* Bird's (1995) view that entrepreneurial competence is formed through structured learning and McClelland (1961) that achievement drive leads to measurable risk strengthens this path of reasoning, and at the high school level, the management of a structured entrepreneurship curriculum from planning to evaluation (Subiantoro & Karwanto, 2016) aligns with this path. Descriptive data align with this: 96.8% of students stated they did not bear personal costs for materials or tools, 96.4% rated the implementers' attitude consistent, and 96.4% gained opportunities to interact directly with business partners, conditions that make the risk of trying a measurable venture and open up examples and market information for student initiatives. These results are also in line with the findings of Wati et al. (2025) that innovation and proactivity play a role in Double Track students as well as with Alakaleek et al. (2023) about broad entrepreneurial outcomes, and with the report by Rohmawati et al. (2025) that the implementation of Double Track has a positive impact on students' entrepreneurial orientation and complements the qualitative study of Double Track (Ridhwanah & Werdiningsih, 2022; Felani, 2024; Cholidah et al., 2024; Santoso Putri et al., 2025; Suryaningrum et al., 2025) measured by association magnitude. This

coefficient summarizes the direct path and the path that passes through attitudes and mindsets as modeled by Mykolenko et al. (2022) and Sun et al. (2023); The remaining 41.7% variation is open to personal factors such as mindset and motivation (Sun et al., 2023).

The Relationship Between the Quality of Policy Implementation and Work Readiness (Hypothesis 2)

Hypothesis 2 lowered the same prediction for work readiness, and was confirmed (Table 8). Equation Y2 = 10.634 + 0.823X with t = 21.720 (p < 0.001; F model = 471.745) exceeded the t table 1.651 and Bonferroni limit 1.969. One additional point in implementation scores was associated with a 0.823 point increase in work readiness (95% CI [0.748; 0.898]); The difference of one standard deviation of the implementation corresponds to a difference of 4.21 points or 0.81 standard deviation of work readiness. Implementation is associated with 65.4% variation in work readiness (corrected R^2 = 0.652; f^2 = *1.89), and the estimated standard error is 3.071 points, 41.0% smaller than the standard deviation Y2 (5.207). Thus, H2 is supported.*

Table 8. *Partial Test Results of the Relationship between the Quality of Policy Implementation (X) and Work Readiness (Y2)*

Exterior	***B***	***SE***	**b**	***t***	***p***	**R^2**	**f^2**	**95% IK for *B***
Work readiness (Y2)	0,823	0,038	0,808	21,720	< 0.001	0,654	1,89	0,748–0,898

Note. Source: processed research data.

Table 9 compares the practical values of both associations. Within the observed implementation score range (42–69), the regression line predicts an increase in entrepreneurial orientation from 22.7 to 33.6 and work readiness from 45.2 to 67.4, equivalent to 40.4% and 41.2% of the theoretical score range, respectively. The relative slope to the score range is almost identical in both outputs (0.404/27 = 1.50% and 0.823/54 = 1.52%), so the same implementation quality is related to both outputs to a comparable degree. R^2 and slightly higher work readiness β (0.654 and 0.808 compared to 0.583 and 0.763) are consistent with the nature of work readiness as a construct formed through orderly and accompanied experience.

Table 9. *Practical Magnitude of the Implementation Quality Association (X) with Both Outputs*

Size	Entrepreneurial orientation (Y1)	Work readiness (Y2)
Difference Y for difference 1 SD X (points)	2,07	4,21
Difference Y for difference 1 SD X (in output SD)	0,76	0,81

The predicted Y score is at X = 42 → X = 69	22,7 → 33,6	45,2 → 67,4
Predicted increase (% of theoretical range Y)	40,4%	41,2%
Relative slope (B ÷ theoretical range Y)	1,50%	1,52%
Standard error estimation vs SD output	1,751 vs 2,705 (−35,3%)	3,071 vs 5,207 (−41,0%)
f^2 compared to the detected threshold (≈ 0.03)	≈ 45 times	≈ 61 times

Note. Calculated from the regression coefficients and descriptive statistics in Tables 5, 7, and 8. Source: processed research data.

Such experiences are described by Brady (2010) as shaping work readiness, namely experiences that demand responsibility, adaptation, skill application, communication, and safe work practices, and Caballero et al. (2011) emphasize that work-related competencies and personal characteristics are equally part of it. Descriptive data show supporting conditions: 97.2% of students understand graduation requirements, 98.8% receive timely schedule and material information, 98.0% assess the program runs orderly from start to finish, 97.6% know whom to ask for help, and 96.8% assess the coach to guide seriously. Clear standards and organized procedures (Van Meter & Van Horn, 1975; Edwards III, 1980) creates an orderly training environment so that responsibility, openness to input, and the application of skills can grow, in line with the principles of work-based learning (Cedefop, 2024). The findings that adequate facilities and support from the government, schools, and community are supporting factors for the implementation of education policy (Firmansyah et al., 2023), and that coordination and collaboration among stakeholders are the main issues in its implementation (Hazin et al., 2025), in line with the dimensions of communication, resources, and support from the implementers in the Van Meter and Van Horn model. The direction of the relationship is also consistent with findings that integrated learning is positively associated with students' job readiness (Rahmaningtyas & Widiatami, 2026), the report by Rohmawati et al. (2025) that the implementation of Double Track has a positive impact on high school students' work readiness, as well as literature on industrial work practice, career guidance, and soft skills (Pratiwi et al., 2024; Maulanada et al., 2024; Maulidina & Wijanarka, 2023), noting that these studies test a single component on vocational high school students or university students, while this study tests the quality of implementation as a policy package. The remaining 34.6% variation is open to personal factors such as self-efficacy, work motivation, and industrial practice experience (Maulanada et al., 2024; Puspitasari & Bahtiar, 2022; Febriyana et al., 2023).

Combined Relationship with Both Outputs (Hypothesis 3)

Multivariate tests showed a significant combined association (Table 10). Because there was only one predictor, all four multivariate statistics were equivalent and produced *F*(2,

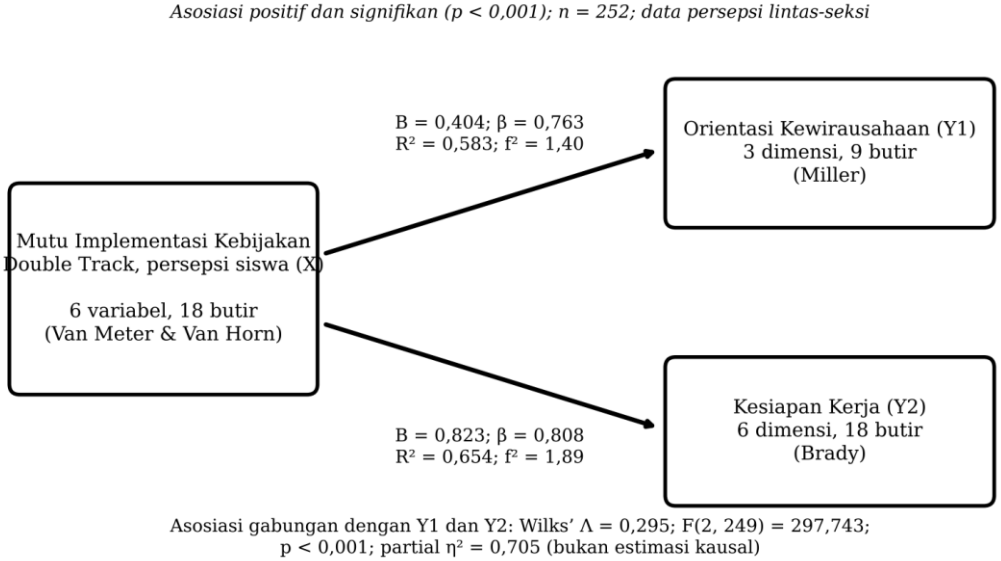
249) = 297.743 with $p < 0.001$, far exceeding the F table value of 3.03. Wilks' Lambda of 0.295 resulted in *a partial* $\eta^2 = 0.705$, meaning policy implementation was associated with 70.5% variation in the best linear combination of both outputs. This value is equivalent to the square of the canonical correlation and mathematically greater than the R^2 of each output because the combination is optimized for both variables simultaneously. Since both regression coefficients are positive, H3 is supported. Figure 1 summarizes the tested model.

Table 10. *Multivariate Test of the Relationship Between the Quality of Policy Implementation (X) and Y1 and Y2*

Statistics	**Value**	***F***	***DF* (hypothesis, Galat)**	***p***
Wilks' Lambda	0,295	297,743	2, 249	< 0.001

Note. Pillai's Trace = 0.705; Hotelling's Trace and Roy's Largest Root = 2.392; all produce the same F and p because there is only one predictor. Source: processed research data.

Figure 1. *Summary of Tested Models*



Note. Quality association model for the implementation of the Double Track policy (X) with entrepreneurship orientation (Y1) and work readiness (Y2) along with their coefficients. Source: processed research data.

The correlation between the quality of implementation and the two outcomes was 0.763 (Y1) and 0.808 (Y2), respectively, while the two outcomes correlated *with* $r \approx 0.76$ to each other; after controlling for implementation, the partial correlation between the two was about 0.38. This means that most of the relationship between entrepreneurial orientation and work readiness is associated with perceived implementation quality, while the rest reflects a shared foundation of initiative, responsibility, self-confidence, and skill mastery. There is no indication that high scores in one outcome pair with low scores in others: students who

perceive better implementation tend to be higher in both outcomes simultaneously. These results support the logic of the two outputs of the Double Track Program at the association level, namely that a good implementation package relates to both the entrepreneurship pathway and the work pathway simultaneously, so that strengthening implementation can be designed as a single system. This model differs from the mediation structure in Mykolenko et al. (2022) and Sun et al. (2023) because the two outcomes are placed side by side. Considering that the high school graduate unemployment rate in Bojonegoro is still 4.88%, the graduate tracing will complement this overview with information on the chosen pathways after graduation.

Compared to previous research, these findings add cross-school quantitative estimates to the Double Track literature, which are mostly descriptive and tied to specific schools. Qualitative studies and case studies (Cholidah et al., 2024; Ridhwanah & Werdiningsih, 2022; Santoso Putri et al., 2025; Suryaningrum et al., 2025; Rohmawati et al., 2025) report program benefits as well as facilities and coordination factors, while this study estimates the association size across all ten organizing schools in one regency. Wati et al. (2025) examined entrepreneurship education and intention in two private schools in Mojokerto City using a mediation structure, while this model places quality of implementation as a predictor and compares two outcomes side by side, so that both complement each other.

The recap (Table 11) shows that all three hypotheses are supported and the deductive conclusion is confirmed: the performance of the Double Track policy, which includes entrepreneurial orientation and work readiness, is strongly associated with the quality of its implementation.

Table 11. *Hypothesis Testing Recapitulation*

Hypothesis	Statement	Test statistics	*p*	Results
H1	Policy implementation is positively associated with entrepreneurial orientation (partial test)	$t = 18.680$; $B = 0.404$; $R^2 = 0.583$	< 0.001	Supported
H2	Policy implementation is positively associated with work readiness (partial test)	$t = 21.720$; $B = 0.823$; $R^2 = 0.654$	< 0.001	Supported
H3	Policy implementation was positively associated with both outcomes combined (multivariate test)	$F = 297.743$; $\lambda = 0.295$; *partial* $h^2 = 0.705$	< 0.001	Supported

Note. Source: processed research data.

Theoretical and Practical Implications

Theoretically, the results show that the perceived quality of implementation, as formulated by Van Meter and Van Horn (1975) and supplemented by Edwards III (1980) and Grindle (1980), is strongly associated with entrepreneurial orientation and work readiness in vocational policies identified as two targets at the upper secondary level. These results expand the use of implementation models from administrative implementation assessment to their relationship with student outcomes. Miller's (1983) entrepreneurial orientation construct, which was originally organizational-scale, and Brady's (2010) work readiness construct can be operationally applied to students with high reliability (α = 0.832–0.913) and produce a pattern of relationships consistent with theory. Multivariate test results are also consistent with the idea that both outcomes share foundations such as initiative, responsibility, self-confidence, and skill mastery.

Practically, the difference of one standard deviation in implementation quality corresponds to a difference of 0.76 SD for entrepreneurship orientation and 0.81 SD for work readiness, so improvement in implementation has the potential to benefit both outputs simultaneously. For the East Java Provincial Education Office, these results direct program monitoring from output indicators (number of participants and certificates) to measurable outcome indicators for entrepreneurship orientation and work readiness, accompanied by graduate tracing together with ITS Surabaya to determine graduate choices and absorption. For the Bojonegoro Regional Education Office Branch, these results support regular supervision and monitoring for equitable distribution of facilities, materials, and the quality of trainers between schools, an integrated implementation calendar for the ten schools, as well as memorandums of understanding between schools with local business and business and MSMEs. At the school level, the results support comprehensive implementation management: including programs into the school work plan and budget, appointing a daily implementation coordinator, planning material and equipment needs from the beginning of the academic year (the lowest positive assessment aspects, 94.4%–95.2%), delivering competency targets, standards, and graduation requirements in writing to students, parents, and coaches, and providing early support to small groups of students (7.1%) who rate the program and achievements lower. Coaches can document the results of practice, products, and each student's development as a basis for evaluation.

Scope of Inference and Direction of Further Research

The findings were read at the association level and applied to public high schools implementing the Double Track Program in Bojonegoro Regency (all ten schools) in the 2026 academic year. The cross-sectional design with direct recipient perception data produced an estimated magnitude of the relationship consistent with theory, while causal direction determination required a longitudinal or quasi-experimental design with a comparison group. Scores centered on the upper side of the scale (*skewness* ≈ −2.4) and student data nested in the school formed the basis for further testing in the form of sensitivity analysis,

robust regression, and multilevel models, and the directional fit and significance of Bonferroni correction along with the dominance of linear components (78.7%–81.1%) provided a strong foundation for the test. Future research can (a) combine data sources, namely principals, coordinators, trainers, DUDI partners, as well as objective data on certification graduation and job absorption; (b) confirm factor structure and discriminant validity in field data and control for gender, skill field, and class; (c) analyze implementation dimensions separately using multiple regression, *dominance analysis*, or SEM to determine the component with the greatest leverage; and (d) use instruments with higher discrimination power in the upper range and expand the sample to grade XII and schools outside Bojonegoro.

CONCLUSION

The quality of the implementation of the Double Track policy, perceived by students, is positively and strongly associated with entrepreneurial orientation ($B = 0.404$; $\beta = 0.763$; $R^2 = 0.583$; $f^2 = 1.40$), *with work readiness* ($B = 0.823$; $\beta = 0.808$; $R^2 = 0.654$; $f^2 = 1.89$), *and with both combined (Wilks'* $\Lambda = 0.295$; $F(2, 249) = 297.743$; $p < 0.001$; *partial* $\eta^2 = 0.705$) in all ten public high schools operating in Bojonegoro Regency. All three hypotheses are supported, and the decision to maintain Bonferroni's correction is upheld. The difference of one standard deviation in implementation is equivalent to a difference of 0.76 elementary schools oriented towards entrepreneurship and 0.81 elementary schools for work readiness, and no indication was found that strengthening one output pairs with weakening other outcomes. Thus, the deductive conclusion from the implementation theory is empirically confirmed: the better the program implementation perceived by students, the higher the reported entrepreneurial orientation and work readiness, so the Double Track Program is feasible to manage and evaluate as a single system with two outputs. These results represent statistical associations from cross-sectional perception data; Its main contribution is a cross-school quantitative estimation of the relationship between implementation quality and two parallel outputs of a single secondary education policy, which serves as the basis for subsequent longitudinal and multi-source testing.

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