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Modeling Optimism with Positive affect Mediation: SEM Analysis in Surakarta Vocational Schools' Students

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Abstract. This study aims to examine the Optimism Model with positive affect as a mediator in the relationship between self-esteem, proactive personality, school connectedness, and parental attachment toward optimism among vocational high school students. The research was conducted quantitatively on 896 twelfth-grade students in Surakarta using simple random sampling. Data were collected using six standardized psychological scales: Rosenberg Self-Esteem Scale (RSES), Proactive Personality Scale (PPS), Measurement of School Connectedness (MOSC), Parental Attachment Scale, Life Orientation Test-Revised (LOT-R), and the Positive and Negative Affect Schedule (PANAS). Data analysis was carried out using Structural Equation Modeling (SEM) with Lisrel 9.10. The result indicate that the proposed model demonstrated good fit across several indices (RMSEA = 0.058; CFI: 0.97; GFI: 0.95; NFI: 0.96) supporting its structural validity. All four exogenous variables significantly influenced positive affect. However, positive affect did not significantly mediate optimism ($t=0.53$). optimism was more strongly influenced directly by self-esteem, proactive personality, and parental attachment. Although school connectedness showed no significant direct or indirect effects, its total contribution remained meaningful. These findings suggest that positive emotional experience is not the only pathway to optimism and highlight the direct role of psychosocial factors in fostering optimism among vocational students.

Keywords: Optimism; parental attachment; positive affect; proactive personality; school connectedness; self-esteem

INTRODUCTION

The global phenomenon of VUCA (Volatility, Uncertainty, Complexity, Ambiguity) depicts a world reality characterized by uncertainty, unexpected changes, complex interconnectedness, and ambiguity in interpreting cause-and-effect relationships (Bennett & Lemoine, 2014). This condition not only affects the industrial and economic sectors but also has consequences for the education sector (Abu et al., 2023). One of the groups vulnerable to the pressure of the VUCA era is Vocational High School (SMK) students, especially those in their final year of education. In this case, vocational education is required to equip students to face the uncertainties of the world of work, considering the separate demands of vocational school students.

Based on the mandate of Law No. 20 of 2003 of the Republic of Indonesia, vocational

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education aims to equip students with specific skills, enabling them to enter the workforce. However, reality shows that vocational school graduates are the highest contributors to the Open Unemployment Rate (TPT) in Indonesia, at 6.2% (Badan Pusat Statistik, 2024). This phenomenon suggests that a gap exists between the competencies possessed by vocational school graduates and the evolving needs of the workforce.

One of the factors that aggravates this condition is the mismatch between the interests and majors taken by students and the needs of the industry (Ridwan & Dwiyanti, 2024), thus affecting students' mental unpreparedness in facing the challenges of the world of work. Thus, one of the crucial psychological aspects to strengthen such readiness is optimism. Individuals with high levels of optimism tend to exhibit good adaptability, which improves their psychological well-being (Nasution et al., 2024). To clarify the role of optimism in the readiness of vocational school students, it is necessary to discuss the concept of optimism further.

Optimism, as posited by Scheier & Carver (1985), is a relatively stable dispositional tendency in individuals to expect positive outcomes and to believe that good things will happen in their lives. Individuals with a high level of optimism tend to evaluate situations more positively, including in the face of uncertainty, allowing them to settle more adaptively and constructively (Margolis & Lyubomirsky, 2018). In the context of education, students with optimism tend to exhibit a better ability to manage academic and social challenges through a healthy perception and self-control in problem-solving (Bassak et al., 2024).

Optimism also plays a crucial role in facilitating an individual's readiness for the world of work, as the positive emotions and expectations that accompany encourage readiness to face the demands of the professional environment (Kurniawan et al., 2022). This belief in the value of persistence arises in the presence of a positive evaluation of one's abilities, characteristic of an optimistic individual (Carver & Scheier, 2023). Thus, the concept of self-esteem, as a form of positive self-evaluation, is closely related to the formation of optimism.

Self-esteem, according to Rosenberg (1965), is an individual's overall assessment, including a positive or negative view, of his thoughts and feelings. Individuals with High Self-Esteem generally have respect for themselves, are aware of their own capacities, and are open to the process of self-development without positioning themselves a priori to others (Rosenberg, 1965). This positive self-assessment then serves as the foundation for growing optimism in achieving goals (Çikrikci et al., 2019). Empirical findings also support that self-esteem is a significant determinant of optimism in various groups, ranging from students (Safitri et al., 2022), people with disabilities (Widyati, 2020), job seekers (Ambarsari et al., 2023), and high school student (Sidabalok et al., 2019; Wahyudin et al., 2021). This matter demonstrates that positive self-evaluation is not only the foundation for forming optimism but also plays a crucial role in strengthening individual resilience in the face of developmental challenges.

Besides Self-esteem, proactive personalities have also been identified as supporting the formation of optimism through the individual's tendency to actively face pressure and seek to influence the surrounding environment in order to achieve goals (Bateman & Crant, 1993). This tendency aligns with the characteristics of optimism, which is characterized by the determination to achieve one's goals, thereby encouraging the courage to take preventive steps before problems arise (Scheier & Carver, 2018). Individuals with a proactive personality can recognize opportunities, act on their ideas, and demonstrate persistence to create meaningful environmental change (Rizkiani & Sawitri, 2015).

In this context, a proactive personality not only supports the individual in staying focused on the solution but also strengthens the individual's defensive behavioral mechanisms (Carver &

Scheier, 2023). Previous research has shown that individual differences, such as Self-esteem and proactive personality, are significant predictors of Psychological Capital (PsyCap), with optimism as one of its main dimensions (Avey, 2014). Similar findings were also confirmed by Wang et al. (2021), who found that proactive personality was positively correlated with students' levels of optimism.

Although internal factors, such as Self-esteem and a proactive personality, make an important contribution to the formation of optimism, this psychological construction is inseparable from the social context that surrounds the individual. Optimism, although it tends to be stable in individuals, is still necessary to understand that optimism can develop through dynamic interactions between individuals and their environment. Scheier & Carver (2018) emphasize that social support and parenting are crucial factors in shaping individuals' positive expectations for the future. In the context of social support for students, schools are an unavoidable source because they also serve as a social forum that contributes to the development and well-being of adolescents during the transition period, considering that adolescents spend most of their time in school (Karl, 2020). Therefore, a sense of connection with the school, as measured by School Connectedness, is also a crucial element that supports the formation of optimism in facing the future.

School connectedness is referring to the emotional and social attachment formed between students and the school environment as a whole, it is not only reflected in the sense of belonging to the school, but also from the quality of interpersonal relationships established with teachers, administrators, counselors, social workers, support staff, and other members of the school community (Sugar, 2012). The positive experiences formed from good interpersonal relationships then become the foundation for the formation of student optimism. The findings from Thomson et al. (2015) show that students who feel accepted and acknowledged at school tend to have lower levels of stress and build better optimism for the future. This issue is also supported by research from Oberle et al. (2018) and Taylor et al. (2019) that confirms that healthy relationships in the school environment are closely correlated with the development of optimism in adolescents.

Not stopping at the support of the school, the family also has a fundamental influence on the psychosocial development of children, primarily through the quality of attachment to good parents. It is because, from the earliest days of life, individuals begin to develop a mindset and expectations about the world based on the quality of the first relationship they experience—that is, the relationship with their caregiver (Carver & Scheier, 2014; Hadi & Alfiasari, 2023). For this reason, the emotional relationship formed in the family environment, especially between children and parents, is a crucial aspect that cannot be ignored. One of the concepts that explains the importance of this relationship is the theory of attachment.

Bowlby (1969) defines attachment as a psychological construct that explains the emotional relationship between the individual and the caregiver, which forms the individual's working model—the frame of mind that the individual uses to understand themselves, others, and the social world in general. A safe attachment is formed when the caregiver figure is consistently present, responsive, and sensitive to the child's needs (Bowlby, 1969). Warm and supportive attachment also forms a working model in children that the world is a safe and trustworthy place so that children are more encouraged to explore and understand the surrounding environment (Renaud et al., 2019), and then strengthen positive expectations of themselves and the social world, which is the basis for the formation of optimism (Young et al., 2019). In line with this, other findings also show that the higher the quality of parent-child relationships, the more children develop positive future expectations (Faria, 2023; Hadi & Alfiasari, 2023; Kealy et al., 2022; Renaud et al., 2019).

However, optimism does not just come from scratch, but grows through social-psychological

dynamics supported by the positive affectations that accompany it. Positive affectivity refers to an individual's tendency to experience pleasurable emotions, such as enthusiasm and happiness (Clark & Watson, 1995). Positive affectation often arises from individual success, social acceptance, and relationship experiences that are full of enthusiasm, fun, and satisfaction (Watson et al., 1988), which serves as a natural driver for individuals to form an overall optimistic outlook and confidence in overcoming future challenges (Gomes & Izzati, 2021; Winarsunu et al., 2021). When individuals consistently experience positive emotions, they tend to develop an expectation that good things will continue to happen in the future (Kurniawan, 2019). In fact, positive affects are also associated with high Psychological Capital, which includes optimism in the individual (Da et al., 2021). Thus, factors such as Self-esteem, proactive personality, School Connectedness, and Parental attachment play a role in fostering positive affect, which ultimately becomes an important path in the formation of optimism.

The interconnectedness of all these factors can be conceptualized through an ecological approach to human development, which explains that individual development is actively formed through the two-way interaction of individuals with various environmental systems that play a crucial role in shaping behavior and personality (Bronfenbrenner, 1979). Individuals are not seen as merely a *tabula rasa* (blank slate) who only receive the influence of their environment, but also actively participate in shaping and changing it.

The environment that influences development is not limited to a context, but includes the interconnectedness between various environmental systems (Bronfenbrenner, 1979). Self-esteem and proactive personality are personal characteristics that individuals possess. Meanwhile, school connectedness and parental attachment represent the individual's closest external environment (microsystem). The positive interaction between the two factors can have a profoundly positive impact on the individual's overall psychological development, fostering positive affects and promoting the development of optimism.

Self-esteem reflects self-evaluation that contains emotional content, such as pride and shame, which play a role in shaping the intensity of positive affectations experienced by individuals (Joshanloo, 2022). Individuals with high self-esteem tend to be more able to experience positive feelings because they accept themselves as a whole. Meanwhile, a proactive personality is a significant predictor of positive affect (Fu et al., 2024). This issue is reinforced by the Conservation of Resources Theory (COR), which posits that positive affectation serves as a psychological resource formed and maintained through proactive behavior (Hobfoll, 2010). Proactive individuals are more likely to experience happiness and satisfaction when facing challenges, which in turn increases and strengthens their optimistic tendencies for the future.

Meanwhile, for School Connectedness, when individuals are in a supportive and inclusive school environment, there are more positive interactions between students, teachers, peers, and the school as a whole, which in turn brings satisfaction to the school (Symeou et al., 2020). Satisfaction with this school experience later forms a positive emotional foundation, which is reflected in learning engagement and happiness during school activities (Liu et al., 2015). In this context, the teacher-student relationship is not only limited to the teaching process, but also serves as a second parent figure in the school. A teacher's inability to guide and supervise their students can contribute to students' failure to complete their education (Rosada & Lestari, 2023). Thus, when students feel appreciated, listened to, and have good relationships with teachers and peers, this condition will present an optimistic attitude in facing challenges, both academic and social (Oberle et al., 2018).

In line with the role of connectedness in school, attachment to parents also plays a similar role in fostering children's optimism. Secure attachment to parents is associated with increased

positive affect, including enthusiasm, interest, good mood, and pleasurable emotional experiences (Mónaco et al., 2019). In addition, when children feel a sense of attachment through support and presence from their parents, a feeling of emotional security will grow, allowing the child to express themselves and share their difficulties (Hadi & Alfiasari, 2023). When the feeling of security that children receive from this attachment is accompanied by affection and a healthy space for exploration, it can ultimately serve as a foundation for students to develop self-expectation (Izzaty & Ayriza, 2021). Thus, a good attachment with parents not only supports emotional stability but also encourages the formation of positive attachments that strengthen optimism in adolescents.

By understanding the importance of Self-esteem, proactive personality, School Connectedness, and Parental attachment in forming positive affects, it can be concluded that these four factors have a significant role in strengthening adolescents' psychological readiness to face various developmental challenges, including transitions to the world of work. The importance of these four factors underscores the need for a deeper understanding of the actual conditions faced by students in order to optimize their potential within their context.

A preliminary study, which was then conducted through interviews at four vocational schools in Surakarta involving 20 students in the August-September 2024 period, revealed the main problems faced by students, namely that students often do not have confidence in the majors they are taking, find it challenging to balance the burden of theory and practice, and experience demotivation due to academic and social pressure. When asked about the future, participants expressed deep concerns related to job uncertainty, family economic limitations, and anxiety about not being able to continue their education.

This condition reflects the low confidence of students in seeing the future positively and limited expectations for better opportunities, which, within the framework of optimism theory, can be understood as weak expectations and confidence in positive outcomes. Moreover, the uncertainty inherent in this era contributes to an individual's diminished ability to envision the future with confidence (Abu et al., 2023). Thus, psychological resources are needed that can strengthen students in adapting to future uncertainties, characterized by positive beliefs, one of which is optimism. These findings underscore the significance of examining the influence of psychological factors on student optimism, particularly in the context of vocational education.

In line with this urgency, previous studies have examined the contribution of each factor to optimism to optimism in adolescents—Self-esteem (Ambarsari et al., 2023; Safitri et al., 2022; Sidabalok et al., 2019; Wahyudin et al., 2021; Widyati, 2020), proactive personality (Avey, 2014; Hao et al., 2019; Wang et al., 2021), School Connectedness (Oberle et al., 2018; Taylor et al., 2019; Thomson et al., 2015), and Parental attachment (Faria, 2023; Hadi & Alfiasari, 2023; Kealy et al., 2022; Renaud et al., 2019). However, several population and knowledge gaps still require further exploration. Most previous research has been conducted on general students or adolescents (SMA/MA), without distinguishing between the characteristics of academic and vocational education pathways. In fact, vocational school students have interesting and distinctive developmental dynamics, namely being on the verge of transitioning to the world of work, which requires technical and practical readiness earlier than high school students, who are more focused on theory (Afifi et al., 2023), so optimism can be an internal resource that plays an important role. However, studies that specifically examine grade XII students of vocational schools in this context are still limited.

Conceptually, positive affectation has the potential to serve as a mediator that explains the influence of various factors on various aspects, including the relationship between optimism and

health, self-efficacy, happiness, and life satisfaction (Vera-Villarroel et al., 2012, 2016). However, most previous studies have only examined direct and partial relationships, without considering the underlying psychological mechanisms that underlie the relationship between these variables. In fact, theoretically, positive affectivity plays a role in strengthening self-meaning, emotional resilience, and expectations for the future (Hobfoll, 2010; Joshanloo, 2022), which is shaped by positive social experiences, such as support from schools and parents (Faria, 2023; Oberle et al., 2018). However, there have been few studies that have developed an integrative model to explain the psychological pathways that form optimism comprehensively. Previous studies have tended to separate these factors into separate studies. Within the framework of Social Cognitive Theory, Bandura (1991) emphasizes that human beings are individuals who actively regulate themselves while also being influenced by their environment. This statement means that internal and external factors cannot be separated because they interact with each other to form emotions, thoughts, and behaviors. Therefore, this study fills this gap by proposing a novel conceptual model that integrates internal and external factors, positing positive affect as a mediator in relation to optimism.

The subjects of grade XII vocational school students in Surakarta were selected with consideration for the fact that vocational education in Indonesia has a nationally standardized curriculum and goals. Thus, the results of this study can provide an overview or initial indication (attempted generalization) regarding the dynamics of optimism among vocational youth in Indonesia. However, they do not constitute a comprehensive generalization. According to Shadish et al. (2002), this view aligns with the limits of sample representativeness. Through the representation of vocational school adolescents and the development of an integrative model, this research is expected to make both theoretical and practical contributions to the literature on developmental psychology, which are more contextually relevant to the development of student optimism.

In addition, this research is expected to be the basis for effective interventions in shaping adolescents' optimism for the future. In line with the background and identification of research gaps, the objectives of this study are to: (1) find out the direct influence Self-esteem, proactive personality, School Connectedness, and Parental attachment against optimism; (2) test the relationship between positive affectation and optimism for the future; (3) examine the role of positive affectation mediators in the relationship between the four independent variables and optimism; and (4) develop and test structural models that explain the interconnectedness of internal and external factors through positive affectation in shaping adolescent optimism.

Based on these objectives, this study formulated a central hypothesis, namely that the student optimism model, reviewed in terms of self-esteem, proactive personality, School Connectedness, and Parental attachment, with a positive affective mediator, is suitable (fit).

In addition, there are nine more specific minor hypotheses, namely H1: Self-esteem has an influence relationship with positive affects; H2: Proactive personality has an influence relationship on positive affect; H3: School connectedness has an influence relationship with positive affects; H4: Parental attachment has an influence relationship with positive affects; H5: Positive affectation has an influence relationship on optimism; H6: Self-esteem have an influence relationship on student optimism, either directly or indirectly through positive affect; H7: Proactive personality has an influence relationship on student optimism, either directly or indirectly through positive affect; H8: School connectedness have an influence relationship on student optimism, either directly or indirectly through positive affect; H9: Parental attachment has an influence relationship on student optimism, either directly or indirectly through positive affect. To clarify the relationship between the variables described earlier, a conceptual model of the research is presented in Figure 1.

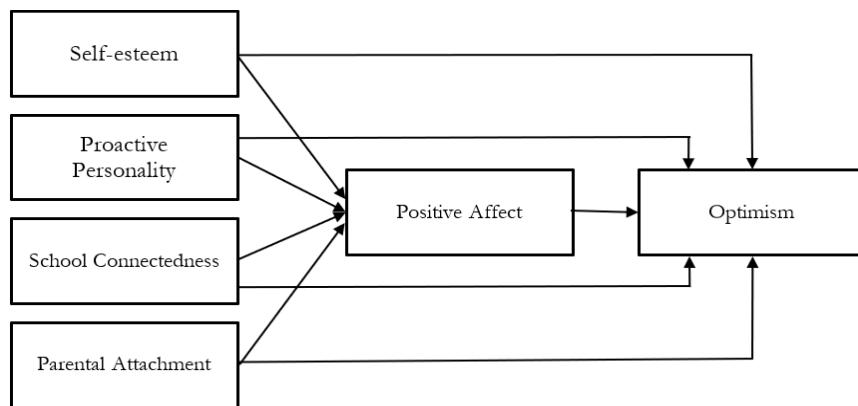


Figure 1
Conceptual Model

METHOD

This study aims to investigate the impact of exogenous variables on endogenous variables through mediator variables, utilizing multivariate analysis techniques to gain a comprehensive understanding of the overall model (Ghozali & Fuad, 2014). The exogenous variables in question are self-esteem, proactive personality, school connectedness, and parental attachment. The endogenous variable used was optimism with positive affectation as a mediator.

This study involved a population of vocational school students, comprising a total of 896 students from four vocational schools in Surakarta: SMKN 1 Surakarta, SMKN 3 Surakarta, SMKN 5 Surakarta, and SMKN 8 Surakarta. Samples were obtained through the simple random sampling method, in which a random generator was used to select the class, and all students in the selected class were asked to complete a research questionnaire. The researcher distributed six types of scales, representing each variable, online using Google Form and offline with a printed questionnaire, to the respondents.

The selection of grade XII students at SMK is based on the relevance of their transition phase to the world of work, where students are faced with important decisions related to their career, whether it involves work, entrepreneurship, or continuing education. This issue aligns with the goal of vocational education to produce human resources who are ready to enter the industrial world directly (Utomo, 2021). However, data show that vocational school graduates have dominated the Open Unemployment Rate (TPT) at 62% since 2022 (Badan Pusat Statistik, 2024). In line with the findings of Rahmadhani et al. (2022), the suitability of vocational school graduates for industrial needs is only 45.61%. Various factors, including a lack of career understanding, limited school support, and low optimism for the future, influence this incompatibility and unpreparedness. In fact, optimism is crucial for vocational school students in their late teens, particularly in the face of rapid changes and the demands of work transition (Burešová et al., 2020). Thus, vocational school students are chosen because of their unique characteristics in the uncertain phase of the work transition, so optimism is important to face challenges and make career decisions.

The self-esteem variable was measured using the Rosenberg Self-Esteem Scale (RSES), created by (Rosenberg, 1965) and adapted into the Indonesian version by (Alwi & Razak, 2022), which consists of 8 items. This scale uses 4 answer options in the form of Strongly Disagree (SD), Disagree (D), Agree (A), and Strongly Agree (SA). The reliability value of Cronbach's Alpha for this scale is 0.899, with a loading factor value ranging from 0.540 to 0.930 (Alwi & Razak, 2022). Some examples of items include "In general, I feel satisfied with myself," which represents the self-liking

indicator, and "I am capable of doing something as well as most people do," which represents the self-competence indicator.

The Proactive Personality Scale (PPS), a 10-item short version created by (Seibert et al., 1999), is used to measure the proactive personality of respondents. This instrument has been translated by (Masiroh, 2019) with a validity value of a loading factor ranging from 0.350 to 0.820 and a reliability coefficient of Cronbach's Alpha of 0.865 (Dayanti, 2023). This scale has four answer options, consisting of Strongly Disagree (SD), Disagree (D), Agree (A), and Strongly Agree (SA). Examples of items on this scale are "Wherever I am, I have always been a strong driving force for better change" (indicators indicate initiative); "There is nothing more exciting than seeing my idea come true" (an indicator takes action); "I choose to defend my ideas even if they are contrary to the opinions of others" (persistent indicator); and "I can spot good opportunities faster than others" (an indicator of the ability to identify opportunities).

The scale to measure school connectedness is the Measurement of School Connectedness (MOSC) developed by Sugar (2012) and translated by Astrini (2021). This scale comprises 24 items, with a reliability coefficient of Cronbach's Alpha of 0.941 and a validity value of the loading factor in the range of 0.357-0.777 (Astrini, 2021). This scale also consists of four answer options: Strongly Disagree (SD), Disagree (D), Agree (S), and Strongly Agree (SA). Items on this scale include "Other students like me for who I am" (an indicator of being liked by student); "I like the habits and activities at school" (belonging indicator); "People here pay attention and support the abilities I have" (communication indicator); and "I feel that the teachers here want me to succeed" (indicator of being liked by teacher).

The researcher utilized the Parent Attachment scale, compiled by Idriyani (2022), which was modified and adapted from the Parent and Peer Attachment Inventory (IPPA) by (Armsden & Greenberg, 1987). After reviewing the instrument trial, this scale yields 23 items with 5 answer options: Very Not True (VNT), Not True (NT), Sometimes True (ST), True (T), and Very True (VT). The reliability coefficient of this scale is 0.948, with a loading factor value ranging from 0.405 to 0.808. Some of the items on this scale include "Parents respect my feelings" (a trust indicator), "I ask my parents for their opinions on things I am worried about" (a communication indicator), and "I quickly get upset if I am around my parents" (an indicator of alienation).

The Life Orientation Test-Revised (LOT-R) scale was developed by Scheier et al. (1994) and has been translated into Indonesian by Suryadi et al. (2021), being used to measure the level of optimism. This scale consists of 10 items with four answer options: Strongly Disagree (SD), Disagree (D), Agree (S), and Strongly Agree (SA). The LOT-R scale has a reliability value of Cronbach's Alpha of 0.760, with a validity value of the loading factor in the range of 0.521-0.653 (Suryadi et al., 2021). Examples of items on this scale are "In uncertain situations, I usually hope for the best" (a positive expectation indicator); "If something bad happens to me, it will happen" (a negative expectation indicator); and "I am not easily angry" (filler).

For the mediator variable in the form of positive affect, the researcher used only items from the positive affect indicator on the Positive and Negative Affect Schedule (PANAS) scale, as developed by Watson et al. (1988) and translated by Akhtar (2019). The reliability coefficient of this scale is 0.861 for positive affect, with the total item correlation value ranging from 0.450 to 0.664 (Akhtar, 2019). This scale consists of 10 items in the form of adjectives that describe the positive feelings of respondents, such as "Excited" and "Enthusiastic" with 5 answer choices in the form of Almost Never (AN), Rarely (R), Sometimes (S), Often (O), and Almost Always (AA).

After testing the validity and reliability of the psychological instruments used in this study, the validity and reliability of the construct were confirmed through Confirmatory Factor Analysis

(CFA) in the measurement model, ensuring that the indicators truly reflect the constructed measured construct and have adequate internal consistency.

Table 1.
Validity and Reliability Test Results

Variable	Indicators	Loading Factor	Average Variance Extracted (AVE)	Composite Reliability (CR)
Positive Affectation (Z)	Z1	0.5	Fixed parameters	
Optimism (Y)	Y11	0.85	0.58	0.80
	Y12	0.52		
	Y13	0.87		
Self-Esteem (X1)	X11	0.85	0.66	0.79
	X12	0.77		
Proactive Personality (X2)	X21	0.91	0.53	0.81
	X22	0.66		
	X23	0.58		
	X24	0.71		
School Connectedness (X3)	X31	0.74	0.59	0.85
	X32	0.72		
	X33	0.77		
	X34	0.84		
Parental Attachment (X4)	X41	0.86	0.66	0.85
	X42	0.84		
	X43	0.73		

The results of the measurement model test in Table 1 above show that all indicators have a loading factor value above 0.5, indicating that the indicators are valid in measuring their respective constructs in terms of convergence. Z1 Special. Positive affect, the loading factor value is set as a fixed parameter to obtain a model estimation solution that produces an Average Variance Extracted (AVE) value in the range of 0.53-0.66. All AVE values have met the minimum criteria, indicating that all indicators in the model are convergently valid in measuring or explaining the construct variables. Additionally, the Composite Reliability (CR) value, obtained in the range of 0.79 to 0.85, indicates good internal consistency. Thus, all constructs in this measurement model have met the criteria of validity and reliability, making them suitable for use in further structural model testing. This study employs the Structural Equation Modeling (SEM) method using the LISREL 9.10 software. This method is used to obtain a causal model by combining Confirmatory Factor Analysis (CFA) and Path Analysis approaches with Covariance-Based Data (CBD) to prove the influence of several independent variables on dependent variables through the presence of mediator variables.

RESULTS AND DISCUSSION

The results of data collection showed that this study involved 896 vocational school students in Surakarta, with the characteristics of the respondents shown in Table 2. The respondents in this study were dominated by students of SMKN 5 Surakarta (32.37%) and males (53.68%). In addition, a considerable proportion of participants were from SMKN 5 Surakarta (32.37%), then SMKN 3 Surakarta (23.88%), followed by SMKN 8 Surakarta (22.54%) and SMKN 1 Surakarta (21.21%). This distribution shows a balanced representation across major vocational schools and reflects the general gender composition of vocational students in Surakarta.

Table 2.
Table of Respondent Characteristics

Characteristics		Sum	Percentage (%)
Original School	SMKN 1 Surakarta	190	21.21%
	SMKN 3 Surakarta	214	23.88%
	SMKN 5 Surakarta	290	32.37%
	SMKN 8 Surakarta	202	22.54%
Gender	Man	481	53.68%
	Woman	415	46.32%

The respondents' scores are categorized into 5 classes based on the normal distribution obtained by spreading the standard deviation values around the mean in accordance with the provisions of Azwar (2012). This categorization is based on the scores obtained by the respondents for each variable, as detailed in Table 3. Most responses fell within the average group for the X11 indicator. Self-loving; X23. Persistent; X34. Being liked by the teacher, and X42. Communication.

Table 3.
Items of the Multidimensional Lust Measurement Model

Indicators	Category	Σ	%
X11_Liking (Self-Esteem)	Very below average	57	6.4%
	Below average	167	18.6%
	Average	398	44.4%
	Above average	216	24.1%
	Very above average	58	6.5%
X12_Competence (Self-Esteem)	Very below average	67	7.5%
	Below average	274	30.6%
	Average	328	36.6%
	Above average	165	18.4%
	Very above average	62	6.9%
X21_Initiative (Proactive Personality)	Very below average	54	6.0%
	Below average	358	40.0%
	Average	158	17.6%
	Above average	250	27.9%
	Very above average	76	8.5%
X22_Action (Proactive Personality)	Very below average	126	14.1%
	Below average	297	33.1%
	Average	265	29.6%
	Above average	208	23.2%
	Very above average	0	0.0%
X23_Persistance (Proactive Personality)	Very below average	29	3.2%
	Below average	139	15.5%
	Average	547	61.0%
	Above average	96	10.7%
	Very above average	85	9.5%

Indicators	Category	Σ	%
X24_Opportunity (Proactive Personality)	Very below average	29	3.2%
	Below average	194	21.7%
	Average	546	60.9%
	Above average	71	7.9%
	Very above average	56	6.3%
X31_Student (School Connected)	Very below average	67	7.5%
	Below average	152	17.0%
	Average	446	49.8%
	Above average	173	19.3%
	Very above average	58	6.5%
X31_Belonging (School Connected)	Very below average	62	6.9%
	Below average	124	13.8%
	Average	484	54.0%
	Above average	160	17.9%
	Very above average	66	7.4%
X33_Communication (School Connected)	Very below average	54	6.0%
	Below average	144	16.1%
	Average	507	56.6%
	Above average	124	13.8%
	Very above average	67	7.5%
X34_Teacher (School Connected)	Very below average	55	6.1%
	Below average	141	15.7%
	Average	477	53.2%
	Above average	160	17.9%
	Very above average	63	7.0%
X41_Trust (Parental Attachment)	Very below average	73	8.1%
	Below average	173	19.3%
	Average	356	39.7%
	Above average	231	25.8%
	Very above average	63	7.0%
X42_Communication (Parental Attachment)	Very below average	61	6.8%
	Below average	173	19.3%
	Average	405	45.2%
	Above average	197	22.0%
	Very above average	60	6.7%
X43_Aleination (Parental Attachment)	Very below average	81	9.0%
	Below average	152	17.0%
	Average	364	40.6%
	Above average	257	28.7%
	Very above average	42	4.7%
Z_Afek_Positif	Very below average	49	5.5%
	Below average	226	25.2%
	Average	373	41.6%

Indicators	Category	Σ	%
Y11_Positif (Optimism)	Above average	177	19.8%
	Very above average	71	7.9%
	Very below average	40	4.5%
	Below average	258	28.8%
	Average	207	23.1%
	Above average	391	43.6%
Y12_Negatif (Optimism)	Very above average	0	0.0%
	Very below average	75	8.4%
	Below average	133	14.8%
	Average	419	46.8%
Y13_Filler (Optimism)	Above average	233	26.0%
	Very above average	36	4.0%
	Very below average	92	10.3%
	Below average	122	13.6%
	Average	436	48.7%
Y14_Filler (Optimism)	Above average	218	24.3%
	Very above average	28	3.1%

Before structural model analysis is carried out, the initial stage in SEM analysis is to test the suitability of the measurement model through several fit indices (Chi-square (χ^2), RMSEA, SRMR, CFI, NFI, and GFI). This test aims to assess the extent to which the built model can adequately represent empirical data. Here are the GoF values of the optimism model shown in Table 4.

Table 4.
 GoF Test Results and Optimism SEM Model Suitability

Fit Indices	Cutoff	Optimism Model	Conclusion
p-value of χ^2	>0.01	0.00	Not Fit
RMSEA	<0.08	0.058	Fit
Standardized RMR	<0.08	0.048	Fit
CFI	>0.90	0.97	Fit
NFI	>0.95	0.96	Fit
GFI	>0.90	0.95	Fit

Based on the results in Table 4 above, five of the six eligibility criteria were met, namely RMSEA values ($0.058 < 0.08$), SRMR ($0.048 < 0.10$), CFI ($0.97 > 0.90$), NFI ($0.96 > 0.95$), and GFI ($0.95 > 0.90$), so that they can be declared fit. Remember that p-values for Chi-squares are very sensitive to large sample sizes. Therefore, the results of other eligibility indices that have met the criteria can be used as a basis for measuring optimism in general. A good fit or consistency with empirical data makes it suitable for use in further analysis.

Value chart: Estimates used to provide a more precise visualization of the interaction between exogenous variables and endogenous variables. Based on the estimation value model, the exogenous variable, consisting of Self-esteem, proactive personality, School Connectedness, and Parental attachment, has a positive affect on optimism, both directly and through the mediation of positive affect. Details of the estimated value for this model are shown in Figure 2.

Because the measurement model has been declared valid and reliable, a structural model

test is then conducted to determine the extent to which exogenous variables, both directly and indirectly, influence endogenous variables, specifically student optimism. The results of the analysis showed that the four exogenous variables had a significant direct effect on positive affect, as indicated by the t-statistic values that exceeded the critical limit of 1.96 in each pathway. These findings suggest that these four variables can enhance the positive affect of students. However, the path from positive affect to optimism showed no significance ($t = 0.53$), so this variable did not act as a mediator in the relationship between exogenous factors and student optimism.

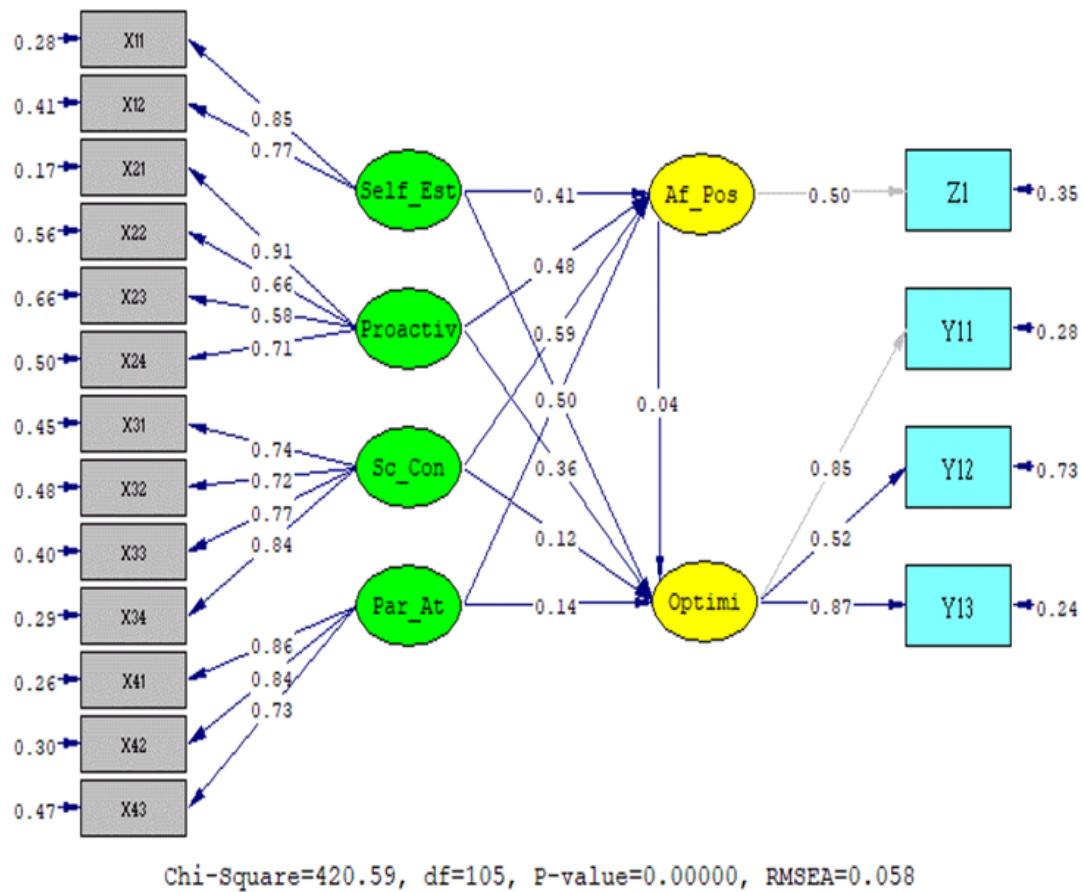


Figure 2
Value of Estimates Model SEM Optimism

Furthermore, the direct influence of Self-esteem ($t = 5.43$), proactive personality ($t = 4.24$), and parental attachment ($t = 2.17$) has a significant direct influence on optimism. In contrast, school connectedness has an indirect influence that is insignificant ($t = 1.58$) or very weak ($t = .052$). Interestingly, although each path is insignificant in terms of school connectedness, the total influence yields a t -value of 2.38, indicating a cumulative contribution that remains meaningful. All exogenous variables ultimately showed a significant total influence on optimism, with the direct pathway being the primary contributor. Finally, the results of the major hypothesis test strengthen the feasibility of this SEM model, as five out of six indicators of goodness of fit—i.e., RMSEA, SRMR, NFI, CFI, and GFI—have met the criteria, even though the Chi-square value has not yet been met. Thus, it can be concluded that the student optimism model, reviewed in terms of the four main factors and positive affectation as a mediator, is viable (fit), as seen in Figure 3.

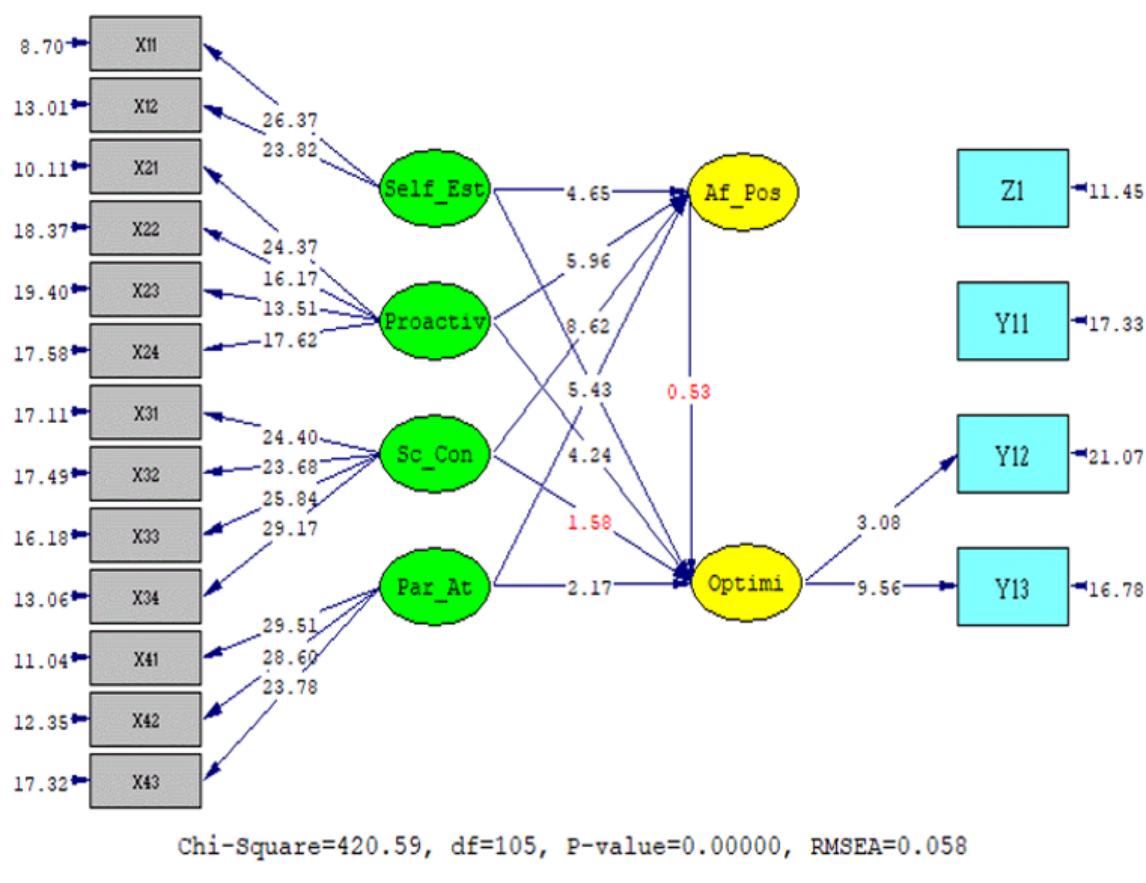


Figure 3
 SEM Model Optimism and t-statistic value

To support the feasibility of the model, a determination coefficient (R^2) test was conducted to assess the contribution of each exogenous variable in explaining the endogenous variable. Based on Table 3 below, it is evident that the R^2 value for positive affectation as a mediator variable is 0.62, indicating that 62% of the variance in positive affect can be explained by self-esteem, proactive personality, school connectedness, and parental attachment. Meanwhile, the R^2 value for student optimism reached 0.86, for both direct and total influences, indicating that these factors could explain 86% of the variance in optimism, with the remaining 14% attributed to other variables not included in the model.

Table 5.
 Determination Coefficient (R^2) and Regression Equation Test Results

Nature of Relationships	Regression equations	R^2
Immediately	Positive Affect = 0.41 Self-esteem + 0.48 Personality Proactive + 0.59 School Connectedness + 0.24 Parental Attachment	0.62
Immediately	Optimism = 0.041 Positive Affect + 0.50 Self-esteem + 0.36 Personality Proactive + 0.12 School Connectedness + 0.14 Parental Attachment	0.86
Total	Optimism = 0.51 Self-esteem + 0.38 Personality Proactive + 0.15 School Connectedness + 0.15 Parental Attachment	0.86

After all tests were performed, the path diagram analysis of the student's optimism model was carried out to explicitly describe the direction, strength, and type of influence, whether direct

or indirect, exerted by exogenous variables on endogenous variables. Based on Figure 3 below, it is evident that self-esteem contributes to optimism with a total influence of 0.517, proactive personality contributes 0.380, school connectedness contributes 0.14, and parental attachment contributes 0.15. Although the contribution of positive affect to optimism is only 0.041, it remains statistically significant, confirming that positive emotional experiences play a relatively important mediating role.

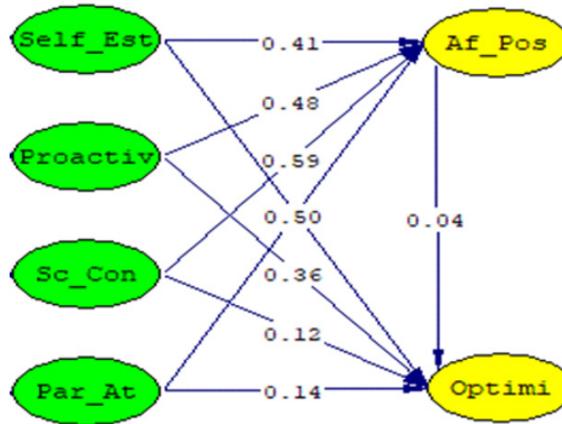


Figure 4
Student Optimism Model Path Diagram

The results of the study showed that student optimism was predicted by self-esteem, proactive personality, school connectedness, and parental attachment, with positive affective mediators forming a fit model. Self-esteem also has a direct, significant, and positive affect on optimism, which aligns with previous research (Çikrikci et al., 2019; Wahyudin et al., 2021). Another exogenous variable, namely proactive personality (Avey, 2014; Hao et al., 2019), school connectedness (Oberle et al., 2018; Taylor et al., 2019; Thomson et al., 2015), and parental attachment (Faria, 2023; Hadi & Alfiasari, 2023; Renaud et al., 2019) also have a significant and positive direct influence on optimism. However, this study found that positive affect did not have a significant direct effect on optimism. In other words, the influence of self-esteem, proactive personality, school connectedness, and parental attachment is more appropriately assessed as a direct effect on optimism than through a mediator in the form of positive affect. Individuals with high levels of self-esteem, a proactive personality, school connectedness, and parental attachment do not require experiencing positive emotions first to maintain an optimistic outlook.

Self-esteem has the most significant influence on optimism compared to other exogenous variables, with a value of 0.517. Vocational students with a thorough positive evaluation of themselves can strengthen the characteristics of optimism, which is having a strong drive to keep trying and believing that they can achieve the desired goals even though they have to face problems (Carver & Scheier, 2023), especially when preparing to enter the world of work after graduation. Individuals with High Self-Esteem can encourage positive attitudes and behaviors, leading to a more optimistic outlook on the future (Aisyah et al., 2015). A thorough, positive evaluation of oneself reinforces the characteristics of optimism, characterized by a strong drive to persist and believe that one is capable of achieving desired goals, even in the face of challenges (Carver & Scheier, 2023). Self-esteem enables individuals to perceive themselves as valuable, ultimately strengthening positive expectations for achieving their desired future (Hutz et al., 2014).

Proactive personality variables have a significant influence on optimism, aligning with

research that shows proactive personality is associated with PsyCap as a whole and in every dimension, including optimism (Hao et al., 2019). Vocational school students with proactive personalities will continue to strive to change their environment by taking advantage of the opportunities available, thereby fostering a positive outlook on the future. For example, they can utilize Field Work Practice (PKL) activities to enhance the relationships and skills required in the workplace.

School connectedness, as experienced by vocational school students, is characterized by a sense of security, acceptance, and social support within the school, which in turn fosters positive expectations for the future and strengthens students' optimism (Thomson et al., 2015). Additionally, affection from parents also serves as a source that reinforces positive expectations in individuals (Uddin et al., 2022). Emotional support from parents provides a sense of security, allowing children to explore their environment, cope with pressure, and foster confidence in their abilities (Idriyani, 2022). This matter can make vocational school students have a strong drive to achieve the desired future.

Positive affectation was found to have no significant effect on optimism. It shows that in vocational school students, daily positive emotional experiences are not enough to form an optimistic attitude. This matter is inversely related to research that suggests positive emotions experienced by individuals can reinforce an optimistic perspective. However, this study has different subject characteristics, namely, elementary school students. Another possibility is that the positive affect on vocational school students does not stand alone in forming optimism, but instead works in conjunction with or through other variables. For example, gratitude increases positive affect, which then encourages optimism, and social support increases Baourda et al., (2024) self-esteem, which in turn strengthens optimism and reduces depression (Emmons & McCullough, 2003; Symister & Friend, 2003). This issue demonstrates that positive affects can have a more substantial impact when combined with specific variables.

The results of this study, when viewed from the perspective of the ecological theory of human development (Bronfenbrenner, 1979) show that the optimism of vocational school students is formed through the interaction between personal factors (self-esteem and proactive personality) and the nearby environmental factors (school connectedness and parental attachment). These two factors simultaneously influence the expression of positive affectations and have a direct impact on optimism. Thus, the optimism model in vocational school students is not only determined by personal characteristics, but is the result of the dynamic relationship between individuals and their environment as described in the developmental ecological paradigm.

The positive affects on optimism, however, became a limitation in this study. Additionally, this study only examined four factors related to optimism, while other factors that may also affect optimism in vocational school students were not considered in this study. The subjects in this study are limited to vocational school students in Surakarta, so the results of these findings cannot necessarily be generalized to other subject groups.

CONCLUSION

The results of this study show that the model is related to optimism, with several variables, including self-esteem, proactive personality, school connectedness, parental attachment, and positive affect. This model fits several GoF criteria in accordance with existing rules. This model can serve as a methodological foundation for future research on optimism. Insignificant positive

affectors act as mediators in the relationship between self-esteem, proactive personality, School Connectedness, and Parental attachment, and their influence on the optimism of vocational school students. However, the direct effect of these four variables on optimism and positive affects has been proven in this study. Therefore, it can be said that vocational school students who possess a proactive personality, high school connectedness, and parental attachment are less likely to experience negative emotions in forming an optimistic outlook. This study suggests that the optimism of vocational school students can be formed directly through internal and external factors, without always involving positive affects, thus supporting the development of an integrative conceptual model in psychology studies. Meanwhile, practically, intervention programs to increase the optimism of vocational school students can be focused on strengthening Self-esteem, proactive personality, School Connectedness, and Parental attachment.

The results of this study can serve as a reference for researchers to explore further other factors that may be more relevant mediators in bridging the relationship between exogenous variables and optimism. Additionally, future research can involve subjects from all classes in vocational schools to obtain a more comprehensive understanding of the dynamics of optimism among vocational students. The expansion of the scope of schools beyond the four vocational schools currently being studied is also important for improving the validity of the results and the generalizability of the findings.

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