



Revisiting Career Decision-Making: Career Maturity as a Key Mediator Between Career Information and Students' Career Decisions

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ABSTRACT

Career information services are widely implemented in secondary schools to support students' career decision-making; however, empirical evidence regarding their direct effectiveness remains inconclusive. This study examines the mediating role of career maturity in the relationship between career self-efficacy, parental social support, career information services, and career planning decisions among senior high school students. A quantitative cross-sectional design was employed with data collected from 200 students through validated and reliable questionnaires. Path analysis using LISREL was conducted to test direct and indirect effects. The findings reveal that career self-efficacy, parental social support, and career information services significantly predict career maturity. Career maturity shows the strongest direct effect on career planning decisions. Notably, career information services do not directly influence career planning decisions but exert a substantial indirect effect through career maturity. These results suggest that providing career information without strengthening students' career maturity may limit the effectiveness of career guidance programs. This study contributes to career development literature by empirically demonstrating the central mediating function of career maturity in adolescents' career decision-making and offers practical implications for school-based career guidance interventions.

Keywords

Career
Information Services
Self-efficacy
Parental Support
Planning Decisions

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Introduction

Career decision-making during adolescence is a major developmental task that shapes later educational and occupational trajectories [1], [2]. Senior high school students must evaluate pathways such as higher education, vocational training, and direct entry into employment while also negotiating identity development and external expectations [2], [3]. These demands can generate uncertainty and career indecision, particularly when students lack readiness or a structured decision process [4].

Career development research identifies personal cognitive factors as important determinants of effective career behavior [5]. Career self-efficacy refers to beliefs about one's capability to perform tasks involved in career exploration, planning, and decision-making [6], [7]. Social Cognitive Career Theory proposes that efficacy beliefs shape goals, persistence, and responses to career-related barriers [5]. Meta-analytic evidence also links stronger career decision self-efficacy with more adaptive career-choice outcomes [8].

Career development is also embedded in social contexts [9]. Parents can provide emotional encouragement, occupational information, instrumental assistance, and autonomy support. Career-specific parental behaviors are associated with adolescents' exploration and developmental readiness [10], while the effects of parental support may operate partly through career decision-making self-efficacy and may differ across cultural orientations [11].

Schools address career uncertainty through counseling, career seminars, experiential activities, and access to educational and labor-market information [12]. Career interventions generally improve career-choice outcomes, but their effectiveness depends on program components and how students process the support they receive [13], [14]. Cognitive Information Processing theory likewise emphasizes that useful information must be integrated with self-knowledge, decision skills, and readiness [15].

Taken together, these findings indicate that career decision-making cannot be adequately explained by either contextual support (e.g., parental support and career information) or individual characteristics (e.g., career self-efficacy) alone. Rather, existing studies imply that career decision-making results from the interaction between external resources and students' developmental readiness. Nevertheless, previous research has

generally examined these variables independently or focused only on their direct effects, leaving limited understanding of the underlying mechanism through which career information contributes to effective career decision-making.

One explanation for the inconsistent direct effect of information is career maturity. Developmental career theory introduced career maturity as readiness to manage age-appropriate vocational tasks [16], [17], and career construction theory later situated such readiness within an adaptive process of constructing vocational choices [18]. Students with stronger career maturity typically show better planning, exploration, and decision readiness [19]. Accordingly, students may receive similar information yet differ in their ability to interpret it and translate it into realistic career decisions. This study therefore examines career maturity as a mechanism through which career information contributes to career decision-making.

Previous research has established relationships among self-efficacy, contextual support, adaptability, exploration, and career planning, but these constructs have often been examined as direct predictors or outcomes rather than as components of one mediating process [20]–[23]. Evidence from collectivist settings further shows that parental influence and individual agency are intertwined in adolescents' career behavior [11], [24]. The present study addresses this gap by proposing a Layered Career Development Model (Fig. 1) in which career self-efficacy, parental social support, and career information services contribute to career maturity, which in turn supports career planning decisions. Positioning career maturity as the intervening construct provides a testable explanation of how personal, family, and institutional resources may be converted into developmentally appropriate decisions.

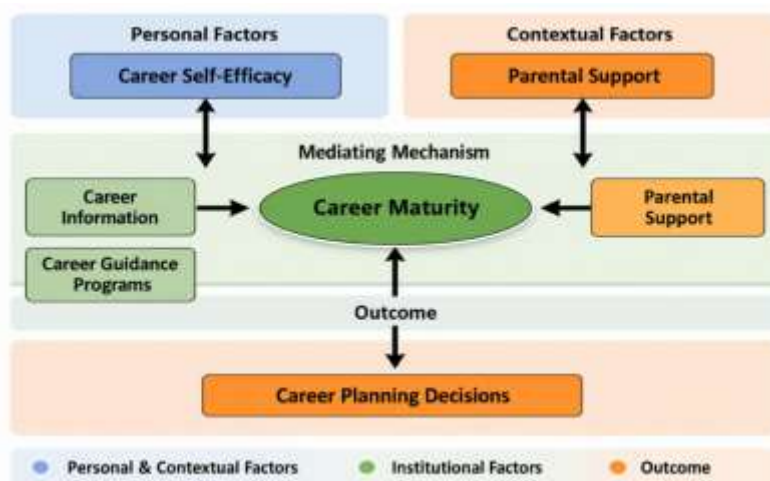


Fig. 1. Integrated Layered Career Development Model

Addressing this research gap, the present study investigates the mediating role of career maturity in the relationships between career self-efficacy, parental social support, career information services, and career planning decisions among senior high school students.

By positioning career maturity as an intervening variable, this study seeks to clarify the mechanisms through which personal and contextual factors influence adolescents' career decision-making processes. In doing so, the study contributes to the literature by offering an integrative developmental perspective that connects personal agency, contextual support, and psychological readiness within a unified framework of career planning behavior.

Methodology

This study employed a quantitative cross-sectional design and path analysis to examine direct and indirect associations among the proposed variables. Because mediation represents a process unfolding over time, cross-sectional estimates are interpreted as evidence of statistical indirect effects rather than proof of temporal causation [25]. The model focused on associations among individual, familial, and institutional factors, with career maturity specified as a mediator of students' career planning decisions.

The study was conducted in four public senior high schools (SMA Negeri 1 Adiluwih, SMA Negeri 1 Pringsewu, SMA Negeri 1 Gadingrejo, and SMA Negeri 1 Ambarawa) in Pringsewu Regency, Lampung Province, Indonesia. The target population comprised approximately 520 Grade XI students enrolled during the 2025/2026 academic year. The Slovin formula with a 5% margin of error produced an initial target of 226 students; after screening and removal of incomplete questionnaires, 200 valid responses remained. This final sample was analyzed with attention to model complexity, estimation method, and measurement quality, consistent with general multivariate-analysis guidance [26]. Simple random sampling was implemented from complete Grade XI student lists. Each student received a unique identification number, and respondents were selected using a computer-generated random procedure so that every student in the sampling frame had an equal selection probability.

The students were aged between 15 and 18 years and had previously participated in school-based career guidance programs, which ensured that all respondents possessed basic exposure to career-related information. The sample included both male and female students, allowing for gender-balanced representation. Five latent constructs were measured using self-report questionnaires developed based on established theoretical frameworks and previous empirical studies. Career Self-Efficacy was assessed using five items measuring students' confidence in career decision-making, planning, and overcoming career-related obstacles. Parental Social Support was measured through five items capturing emotional, informational, instrumental, and appraisal support, as well as parental involvement in career-related activities. Career Information Services were measured using five items evaluating the

availability, accessibility, relevance, understanding, and utilization of career-related information provided by schools. Career Maturity reflected students' readiness to explore, plan, and make realistic career decisions, while Career Planning Decisions represented the clarity, confidence, and commitment associated with students' chosen career pathways.

The measurement model was evaluated using Confirmatory Factor Analysis (CFA) in LISREL. Convergent validity was assessed from standardized factor loadings, Average Variance Extracted (AVE), and Composite Reliability (CR). Loadings ranged from 0.68 to 0.89; AVE values exceeded 0.50 and CR values exceeded 0.70, supporting convergent validity and internal consistency [26]–[28]. Model fit was evaluated using chi-square divided by degrees of freedom, RMSEA, CFI, TLI, SRMR, GFI, and AGFI, with multiple indices considered jointly [27], [29]. Discriminant validity was assessed with the Fornell-Larcker criterion and the heterotrait-monotrait ratio [28], [30]. Cronbach's alpha coefficients ranged from 0.81 to 0.89. Data were analyzed in SPSS and LISREL. Indirect effects were tested with 5,000 bootstrap resamples and bias-corrected 95% confidence intervals because resampling is preferable to normal-theory tests for the often-asymmetric sampling distribution of an indirect effect [31], [32].

Results and Discussion

The path analysis results indicate that career self-efficacy, parental social support, and career information services significantly predict career maturity. Career maturity exerts the strongest direct effect on career planning decisions. While career self-efficacy and parental support have significant direct effects on career planning decisions, career information services do not demonstrate a significant direct effect. However, career information services show a substantial indirect effect on career planning decisions through career maturity. These findings confirm the mediating role of career maturity.

Before testing structural relationships, a Confirmatory Factor Analysis (CFA) evaluated the five correlated latent constructs: Career Self-Efficacy, Parental Social Support, Career Information Services, Career Maturity, and Career Planning Decisions. Maximum likelihood estimation was applied in LISREL. The measurement model showed satisfactory fit: chi-square/df = 1.87, CFI = 0.95, TLI = 0.94, RMSEA = 0.066, and SRMR = 0.052. Considered jointly, these indices were consistent with commonly used SEM guidance [27], [29]. All standardized loadings were significant ($p < .001$) and ranged from 0.68 to 0.89. AVE values ranged from 0.56 to 0.65, and CR values ranged from 0.86 to 0.91, supporting convergent validity and reliability [26], [28]. Discriminant validity was examined with the Fornell-Larcker criterion and HTMT [28], [30].

A. Measurement Model Evaluation

1. Confirmatory Factor Analysis (CFA)

Prior to testing the structural model, CFA was conducted in LISREL to evaluate the

measurement properties of the five latent constructs. Each construct was specified with five observed indicators, and maximum likelihood estimation was applied. As presented in Table 1, the five-factor model demonstrated acceptable fit ($\chi^2/\text{df} = 1.87$; CFI = 0.95; TLI = 0.94; RMSEA = 0.066; SRMR = 0.052) when evaluated across multiple indices [27], [29]. All standardized factor loadings were significant and met acceptable levels, while reliability estimates supported the internal consistency of the constructs [26], [28].

Table 1. Model Fit Indices of the Confirmatory Factor Analysis

Fit Index	Recommended Cutoff	Model Value	Interpretation
χ^2/df	< 3.00	1.87	Good fit
CFI	≥ 0.90	0.95	Good fit
TLI	≥ 0.90	0.94	Good fit
RMSEA	≤ 0.08	0.066	Acceptable
SRMR	≤ 0.08	0.052	Good fit

Note: χ^2/df (Chi-square divided by degree of freedom); CFI (Comparative Fit Index); TLI (Tucker-Lewis Index); RMSEA (Root Mean Square Error of Approximation); SRMR (Standardized Root Mean Square Residual)

Taken together, the fit indices indicate that the measurement model adequately represents the observed data under commonly used SEM evaluation guidance [27], [29].

2. Factor Loadings

All standardized factor loadings were statistically significant ($p < .001$) and ranged from 0.68 to 0.89, supporting indicator reliability and convergent validity [26], [28]. Table 2 summarizes the loading ranges for each latent construct.

Table 2. Factor Loading Ranges of the Latent Constructs

Construct	Loading Range
Career Self-Efficacy	0.71 – 0.84
Parental Social Support	0.73 – 0.87
Career Information Services	0.68 – 0.82
Career Maturity	0.75 – 0.89
Career Planning Decisions	0.72 – 0.88

These results indicate strong convergent validity.

3. Convergent Validity

Convergent validity was evaluated by examining the Average Variance Extracted (AVE) and Composite Reliability (CR) for each construct. AVE values were used to assess the extent to which the indicators explain the variance of their respective latent constructs, while CR values were examined to determine internal consistency reliability. The results of the convergent validity assessment are summarized in Table 3.

Table 3. Results of Convergent Validity Assessment (AVE and CR)

Construct	AVE	CR
Career Self-Efficacy	0.59	0.88
Parental Social Support	0.62	0.90
Career Information Services	0.56	0.86
Career Maturity	0.65	0.91
Career Planning Decisions	0.61	0.89

All AVE values exceeded 0.50 and all CR values exceeded 0.70, supporting convergent validity and internal consistency [26], [28].

4. Discriminant Validity

Discriminant validity was evaluated using the Fornell-Larcker criterion: for each construct, the square root of AVE exceeded its inter-construct correlations [28]. All HTMT ratios were also below 0.85, providing additional evidence of discriminant validity [30].

B. Structural Model Fit

After establishing the measurement model, the structural model was tested to assess the proposed relationships among the latent variables. Model fit was evaluated across complementary indices rather than from a single cutoff [27], [29]. Table 4 summarizes the structural-model fit.

Table 4. Evaluation of Structural Model Fit

Fit Index	Model Value
χ^2/df	1.94
CFI	0.94
TLI	0.93
RMSEA	0.069
SRMR	0.056

These values confirm that the proposed mediation model adequately represents the observed data.

1. Upgraded Mediation

Bootstrapping with 5,000 resamples was used to evaluate mediation and generate bias-corrected confidence intervals, avoiding reliance on the normality assumption of the Sobel test [31], [32]. The standardized indirect effects and 95% confidence intervals are reported in the following results and illustrated in Fig. 2. An indirect effect was considered statistically significant when its confidence interval did not include zero.

After confirming the adequacy of the measurement model, the structural model was evaluated to test the hypothesized direct and indirect relationships among variables. The structural model also demonstrated acceptable fit ($\chi^2/df = 1.94$, CFI = 0.94, TLI = 0.93, RMSEA = 0.069, SRMR = 0.056), indicating that the proposed mediation model was supported by the data. Career maturity significantly predicted career planning decisions ($\beta = 0.42$, $p < .001$). Career self-efficacy and parental social support exerted both direct and

indirect effects on career planning decisions, whereas career information services demonstrated a significant indirect effect through career maturity. To test indirect effects, bootstrapping with 5,000 resamples was conducted. The results indicated that: *Career Self-Efficacy* → *Career Maturity* → *Career Planning Decisions* ($\beta = 0.201$, 95% CI [0.142, 0.278]); *Parental Social Support* → *Career Maturity* → *Career Planning Decisions* ($\beta = 0.142$, 95% CI [0.091, 0.214]); *Career Information Services* → *Career Maturity* → *Career Planning Decisions* ($\beta = 0.088$, 95% CI [0.032, 0.151]). Since none of the confidence intervals included zero, mediation effects were confirmed.

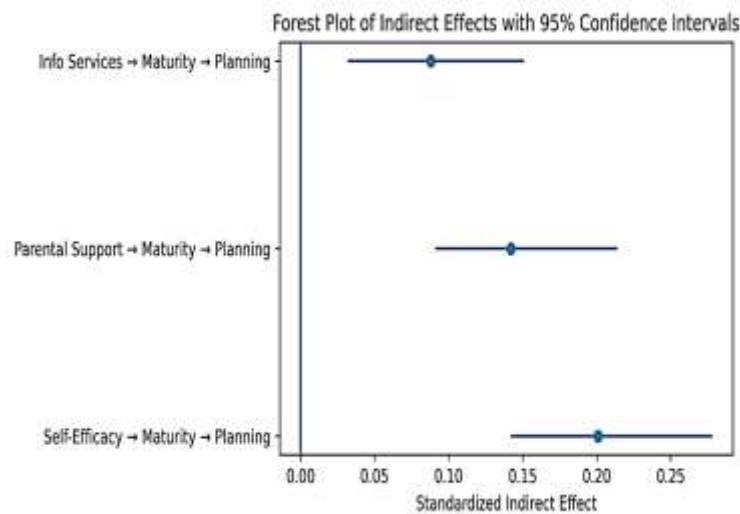


Fig. 2. Bootstrapped Indirect Effects of the Proposed Mediation Model

The structural model and standardized path coefficients are presented in Figure 2 to provide a comprehensive visualization of the hypothesized relationships. As shown in the figure, career self-efficacy ($\beta = .421$, $p < .001$), parental social support ($\beta = .298$, $p < .001$), and career information services ($\beta = .184$, $p < .001$) exhibit significant positive effects on career maturity. Among these predictors, career self-efficacy demonstrates the strongest contribution to career maturity, highlighting the central role of internal belief systems in shaping adolescents' developmental readiness for career decision-making.

Furthermore, career maturity emerges as the most substantial predictor of career planning decisions ($\beta = .478$, $p < .001$), indicating that students' readiness to engage in self-exploration, planning, and realistic evaluation of alternatives is the primary mechanism driving effective career decision outcomes. In comparison, while self-efficacy ($\beta = .201$, $p < .01$) and parental social support ($\beta = .146$, $p < .05$) maintain significant direct effects on career planning decisions, career information services do not demonstrate a statistically significant direct influence ($\beta = .072$, n.s.). This finding suggests that exposure to career

information alone is insufficient to directly translate into concrete decision-making without adequate developmental processing.

The bootstrapped mediation results support the same interpretation. Career maturity significantly mediated the relationships of career self-efficacy, parental social support, and career information services with career planning decisions because none of the corresponding 95% confidence intervals included zero. The non-significant direct path from career information services, together with its significant indirect effect, is consistent with indirect-only mediation. Career self-efficacy and parental support retained significant direct and indirect paths, indicating complementary partial mediation.

Overall, Fig. 3 substantiates a mechanism-based explanation of adolescent career decision-making: personal beliefs and contextual support exert their strongest influence through enhancing career maturity, which functions as the proximal determinant of career planning decisions. The magnitude and consistency of the standardized coefficients, together with the significant mediation effects depicted in Figure 4, provide robust empirical support for a developmentally grounded model of career decision-making aligned with Social Cognitive Career Theory and life-span career development perspectives.

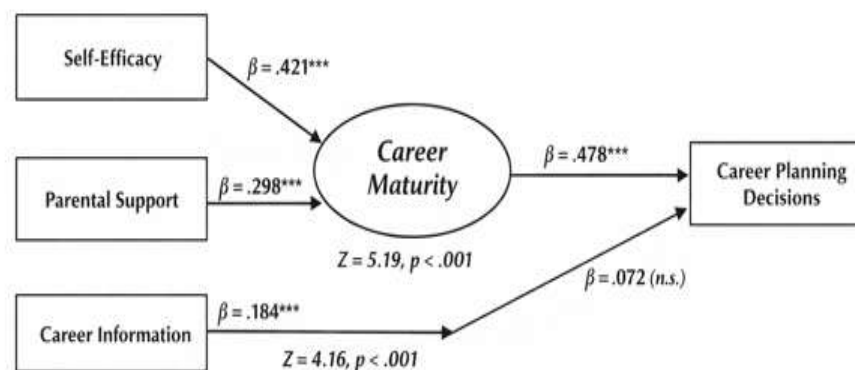


Fig. 3. Structural path model illustrating the mediating role of career maturity in career planning decisions

The present study supports the mediating role of career maturity in the associations of career self-efficacy, parental social support, and career information services with career planning decisions. The structural model demonstrated satisfactory fit when assessed using established multivariate and SEM guidance [26], [27], [29]. More importantly, the findings identify career maturity as a central developmental mechanism rather than a peripheral outcome.

2. Career Self-Efficacy as a Foundational Personal Resource

The strongest indirect effect emerged from career self-efficacy through career

maturity. This pattern is consistent with Social Cognitive Career Theory, which identifies self-efficacy as a central determinant of career interests, goals, persistence, and choice behavior [5]. It also accords with Bandura's broader social cognitive account of how efficacy beliefs shape effort and persistence [6] and with evidence on career decision self-efficacy [7], [8].

Research shows that career self-efficacy is associated with adaptability, decision readiness, and proactive exploration [8], [20]–[22]. Within career construction theory, efficacy-related confidence is one of the adaptability resources that supports vocational coping and choice [18], [20]. The present results extend this literature by suggesting that confidence contributes to planning decisions partly through developmental readiness. This interpretation also aligns with the social cognitive model of career self-management, which links person-level beliefs to adaptive career behaviors over time [33].

C. Parental Social Support within an Ecological Perspective

Parental social support also showed a significant indirect effect through career maturity. Ecological systems theory locates the family within the adolescent's immediate developmental context [9]. Empirical studies indicate that parental encouragement, autonomy support, and career-specific guidance are associated with exploration, career maturity, and decision self-efficacy [10], [11], [24], [34]. Recent evidence also suggests that career self-efficacy can transmit the effects of parental and school career support to career-related doubt [35].

The smaller parental-support effect relative to self-efficacy is theoretically plausible. Social Cognitive Career Theory proposes that contextual supports often work through personal cognitive variables [5], [33]. In collectivist contexts, family expectations and relational interdependence may have particular importance for vocational decision-making [11], [24]. The present pathway therefore warrants validation across cultural groups and educational systems.

D. Career Information Services as Conditional Catalysts

Career information services exhibited a significant but weaker indirect effect. This suggests that exposure to information alone may not directly produce a career decision without sufficient readiness to interpret and apply it. Meta-analytic research indicates that effective interventions combine information with written exercises, individualized interpretation, modeling, and support-building activities [13], [14], [36]. Cognitive Information Processing theory similarly proposes that decision quality depends on the integration of occupational knowledge, self-knowledge, and decision skills [15]. In the present model, career maturity appears to represent the readiness that helps convert institutional information into meaningful planning behavior.

E. Methodological Strength and Mediation Robustness

The bootstrap procedure indicated significant indirect effects because none of the 95% confidence intervals crossed zero. Resampling methods are recommended for mediation because the product of coefficients commonly has a non-normal sampling distribution [31], [32], [37]. By estimating the empirical sampling distribution directly, bootstrapping provides more defensible standard errors and confidence intervals than a normal-theory Sobel test.

Bias-corrected confidence intervals additionally account for asymmetry in the indirect-effect distribution and are especially useful when indirect effects are modest [31], [32], [37]. Nevertheless, statistical precision does not resolve the temporal limitations of a cross-sectional design; the estimates should therefore be interpreted as indirect associations rather than confirmed causal mechanisms [25].

Furthermore, the consistency of significant indirect effects across resamples suggests stability in the parameter estimates, reinforcing the internal validity of the structural model. The convergence between theoretical expectations and empirically robust indirect pathways indicates that the mediating role of career maturity is not a statistical artifact but reflects a substantively meaningful developmental mechanism. Overall, the methodological rigor applied in the mediation analysis strengthens confidence in the stability, replicability, and explanatory power of the proposed mediation model.

F. Theoretical Contribution and Integrative Advancement

The main theoretical contribution is the positioning of career maturity as an explanatory construct connecting Social Cognitive Career Theory, ecological systems theory, and career construction theory [5], [9], [18]. Whereas earlier studies often treated maturity or adaptability as an outcome, the present model specifies career maturity as a mediator that translates personal and contextual resources into planning behavior. This integrative approach is consistent with calls to broaden vocational psychology beyond isolated person-level processes and to account for relational and structural contexts [38]. Fig. 4 presents the proposed Layered Developmental Integration Model.

Practically, the findings suggest that career guidance should strengthen career maturity through mastery experiences, reflective exploration, goal clarification, decision skills, and parental engagement rather than rely on information delivery alone [12]–[15]. Several limitations qualify the findings. First, cross-sectional mediation cannot establish temporal ordering or causal effects [25]. Second, the exclusive use of self-report measures may increase common-method bias [39]. Third, the context-specific sample limits generalizability. Longitudinal, multi-informant, cross-cultural, and multi-group studies are needed, and future models could examine career adaptability, socioeconomic status, school climate, and digital career literacy as additional mediators or moderators.

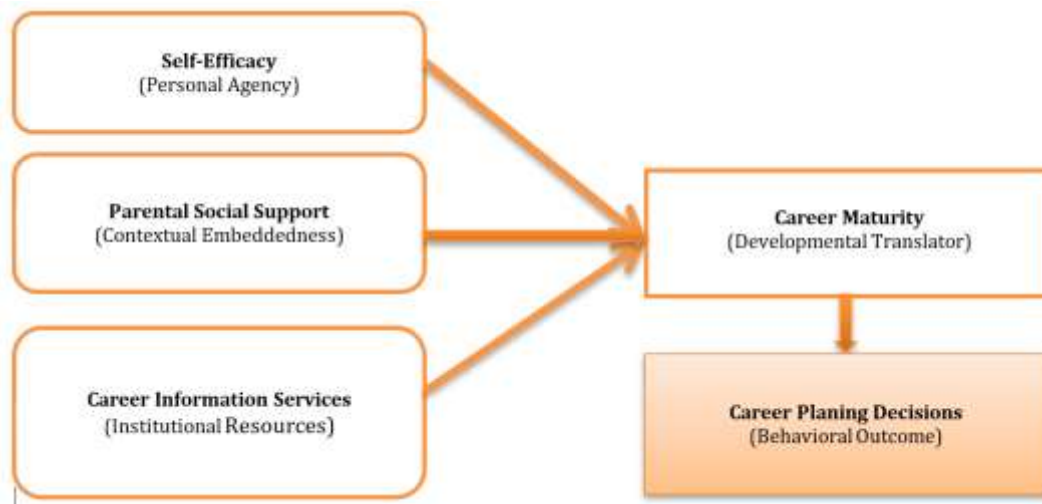


Fig. 4. Developmental Integration Model of Career Planning

Conclusion

This study provides robust empirical evidence that career maturity functions as a central mediating mechanism linking career self-efficacy, parental social support, and career information services to career planning decisions among senior high school students. The findings confirm that career maturity is not merely an outcome of developmental processes but a pivotal psychological construct that translates personal agency and contextual support into structured and realistic career planning behavior. Among the antecedent variables, career self-efficacy demonstrated the strongest indirect effect, reinforcing its foundational role within the framework of Social Cognitive Career Theory. Parental social support and career information services also contributed significantly, although their effects operated primarily through the enhancement of developmental readiness. These results highlight that informational exposure and external encouragement alone are insufficient unless students possess the attitudinal preparedness, decision-making competence, and self-appraisal capacities reflected in career maturity.

The study advances an integrative developmental perspective by empirically synthesizing principles from Albert Bandura's social cognitive framework, Urie Bronfenbrenner's ecological systems theory, and Mark Savickas' career construction theory. By positioning career maturity as a developmental bridge between internal beliefs and external supports, the findings contribute to a more coherent and mechanism-based understanding of adolescent career decision-making. This study makes several important contributions. Theoretically, it reconceptualizes career maturity as a dynamic mediator rather than a peripheral outcome, addressing calls for integrative models in vocational psychology. Methodologically, the combination of structural equation modeling and bootstrapping

strengthens the robustness and credibility of the mediation results, while the alignment between theoretical assumptions and significant indirect effects reinforces the explanatory power of the proposed model. Practically, the findings suggest that school-based interventions should prioritize strengthening developmental readiness such as reflective exploration, goal clarification, and decision-making competence rather than relying solely on information delivery. Integrating self-efficacy enhancement and parental engagement may yield more sustainable career planning outcomes, particularly in contexts where family influence is strong. Despite these contributions, several limitations warrant consideration. The cross-sectional design limits causal inference, and longitudinal research is needed to confirm developmental sequencing. The reliance on self-report measures may introduce common method bias, and the context-specific sample restricts generalizability. Moreover, the model focused on a limited set of predictors and did not incorporate broader structural or socioeconomic influences on career development. Future research should employ longitudinal or cross-lagged designs, conduct cross-cultural and multi-group analyses, and incorporate multi-informant or experimental approaches to enhance methodological rigor. Expanding the model to include additional mediators or moderators such as career adaptability, socioeconomic status, school climate, or digital career literacy would further refine the framework and deepen understanding of adolescent career decision-making processes.

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