

Examining secure childhood parental attachment, age, and academic progress in relation to vocational identity in undergraduate students

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Abstract

Vocational identity, a critical factor in career development, reflects an individual's clarity and commitment to career goals. This study examined the influence of age, secure childhood parental attachments to mother and father figures, and academic progress (credit hours) on vocational identity among undergraduate students. Using a cross-sectional design, data from 298 students were analysed via multiple linear regression and descriptive statistics. The My Vocational Situation Scale measured vocational identity, with mother safe and father safe assessed via the Adult Scale of Parental Attachment-Short Form. Results indicated that the model explained 15.7% of variance in the total score of My Vocational Situation Scale. Age, mother safe, and father safe were significant predictors, with credit hours marginally significant. Descriptive analyses revealed higher vocational identity means for high mother safe and high father safe groups, with the high mother safe/high father safe group showing the strongest vocational identity. Findings suggest that secure childhood parental attachments and younger age enhance vocational identity, with academic progress playing a marginal role. Implications for career counselling include attachment-informed interventions to support students' career clarity. Future research should explore longitudinal designs and additional predictors to enhance model explanatory power.

Keywords: vocational identity, career development, parental attachment, career counselling, academic progress

Introduction

Vocational identity, defined as an individual's clear and stable understanding of their career-related interests, values, goals, and roles, is a critical psychological construct in career development (Holland et al., 1980). It reflects the extent to which individuals feel confident in their career decisions and committed to their chosen paths, encompassing a coherent sense of self in occupational contexts. A well-developed vocational identity is associated with fewer career decision-making difficulties and greater career satisfaction (Holland et al., 1980; Super, 1990). As a dynamic construct, vocational identity is shaped by an interplay of personal, developmental, and contextual factors, including early attachment experiences, age, and academic engagement. Understanding these influences is essential for educators, counsellors, and policymakers to support healthy career development, particularly among undergraduate students navigating critical transitions in emerging adulthood.

The present study investigates the relationships between vocational identity (measured by the My Vocational Situation Scale, MVS) and selected predictors: age, secure childhood parental attachment (Mother Safe [MS] and Father Safe [FS]), and academic progress (credit hours). While prior research has explored the roles of attachment, gender, age, and socioeconomic status (SES) in vocational identity formation, preliminary analyses indicated that age and secure childhood parental attachment were particularly salient predictors, with credit hours showing a marginal effect. This study employs a simplified multiple linear regression model to examine these factors, complemented by descriptive analyses of MVS means across high and low MS and FS levels. By focusing on these predictors, the study aims to elucidate their contributions to vocational identity among undergraduate students, offering insights for career counselling and educational interventions.

Literature review

Vocational identity

Vocational identity, a central construct in vocational psychology, refers to an individual's clear and stable understanding of their career-related goals, interests, abilities, personality, and values (Holland et al., 1980; Jansen & Roodt, 2015). It seeks to answer the question, 'Who am I at work?' and serves as a critical framework for understanding career-related behaviour, decision-making, and commitment (Coetzee et al., 2003; Savickas, 2005, 2013). According to Holland et al. (1980), vocational identity represents 'the possession of a clear and stable picture of one's goals, interests, and talents' (p. 1191), which enables individuals to navigate uncertain labour markets and make informed career choices.

Drawing on Holland's (1996) definition and Savickas's Career Construction Theory (CCT), vocational identity is conceptualised as a lifelong process in which attitudes, interests, abilities, and values are individually constructed. Individuals with strong vocational identities demonstrate mature career behaviours, including exploration, goal-setting, and decisive action, whereas those with weaker vocational identities often experience career indecision, identity confusion, and difficulty committing to a career path (Holland et al., 1980; Savickas, 1985). Empirical research supports these claims; for example, adolescents and emerging adults with stronger vocational identities are more adept at making career-related decisions and navigating the complexities of occupational development (Holland et al., 1980; Arnett, 2000).

Vocational identity is also embedded within broader theories of identity development. Erikson (1968) emphasised that identity encompasses a coherent sense of self, consistency in beliefs and values, and a framework for personal commitments. Within this perspective, vocational identity is an essential component of overall identity formation, reflecting an individual's values and beliefs about work and providing a stable foundation for occupational decision-making. Together, these theoretical and empirical perspectives highlight vocational identity as a dynamic, developmentally influenced construct with significant implications for career counselling, educational interventions, and lifelong career development.

Early childhood attachment and vocational identity

Attachment theory (Bowlby, 1969) posits that early relationships with caregivers form a foundation for psychological development, influencing self-esteem, self-efficacy, and exploration behaviours critical to vocational identity. Secure attachments, characterised by consistent and supportive caregiving, foster confidence and autonomy, enabling individuals to explore career options with assurance (Ainsworth et al., 1978). Securely attached individuals tend to exhibit clearer career aspirations and more stable vocational identities, as they approach decision-making with trust in themselves and others (Ketterson & Blustein, 1997). Conversely, insecure attachments (e.g., anxious or avoidant) may lead to identity confusion, indecision, or reliance on external validation, hindering career commitment (Cassidy & Shaver, 2016).

In the university context, the transition to higher education mirrors Ainsworth's 'Strange Situation,' presenting opportunities for independence alongside challenges such as anxiety and loneliness (Hiester et al., 2009; Kenny & Rice, 1995). Secure parental attachments provide a 'secure base' for students to retreat to when facing academic or career-related stressors, facilitating exploration and resilience (Kenny & Donaldson, 1991). Specifically, secure mother and father attachments (MS and FS) may differentially influence vocational identity, with mothers often providing emotional support and fathers offering instrumental guidance (Blustein et al., 1991). Research suggests that secure attachments correlate with proactive career behaviours and stronger vocational identities, while insecure attachments may impede decision-making and exploration (Tokar et al., 2003).

A study by Strate, Michael, and Hammond (2023) further supports the role of childhood parental attachment in vocational identity among university students. Using structural equation modelling (SEM) with undergraduates, they examined the effects of childhood attachment, gender, age, and SES on vocational identity. Their findings indicated an acceptable model fit, with parental attachment significantly influencing vocational identity, suggesting that secure attachment experiences enhance career clarity and commitment. The study also explored gender and SES, finding nuanced effects on vocational identity. This research provides a robust empirical foundation for the current study, which focuses specifically on secure mother and father childhood attachments (MS and FS) using a simplified linear regression approach, excluding gender and SES based on preliminary findings of their non-significance.

Age and vocational identity

Vocational identity evolves across the lifespan, with distinct patterns in emerging adulthood (Arnett, 2000). Younger university students often engage in broad career exploration,

driven by optimism and openness, while older students may face pressures to commit to specific paths as graduation approaches, potentially leading to indecision or weakened vocational identity (Super, 1990). Age-related transitions can prompt shifts in career goals, influenced by developmental milestones and life experiences. Studies indicate that younger students may report stronger vocational identities due to exploratory freedom, whereas older students may experience identity re-evaluation (Savickas, 2002). Strate et al. (2023) included age in their SEM model, finding that it contributed to vocational identity, though the direction and magnitude of its effect were not specified. The current study tests age as a direct predictor, hypothesising a negative association based on preliminary findings.

Academic engagement and vocational identity

Academic progress, measured by credit hours, reflects students' investment in their educational and career trajectories. Greater academic engagement is associated with increased exposure to career-relevant experiences (e.g., coursework, internships), which may clarify vocational goals and strengthen identity (Super, 1990). Research suggests that students further along in their academic programmes exhibit greater career commitment, though this effect may vary based on individual and contextual factors (Pascarella & Terenzini, 2005). The current study includes credit hours as a predictor to capture the role of academic progress, building on prior work that links educational experiences to career development.

Study objectives

While prior studies, including Strate et al. (2023), have examined vocational identity in relation to attachment, age, gender, and SES, few have focused on the specific contributions of secure childhood parental attachment and academic progress within a simplified model. This study addresses this gap by testing a multiple linear regression model with vocational identity (MVS) as the dependent variable and age, Mother Safe (MS), Father Safe (FS), and credit hours as predictors, excluding gender and SES based on their non-significance in preliminary analyses. Additionally, descriptive analyses explore vocational identity means across high and low MS and FS levels to elucidate their combined effects. The research questions are: 1) To what extent do age, secure parental attachment, and credit hours predict vocational identity? 2) How do high and low levels of secure childhood mother and father attachment influence vocational identity? By integrating attachment theory and vocational psychology, this study aims to inform career counselling practices and support systems for undergraduate students.

Methodology

Study design and participants

This cross-sectional study examined the relationship between demographic, academic, and parental attachment factors and vocational identity among undergraduate students. Participants were 310 full-time undergraduates enrolled at a midsize public university in the south-eastern United States. Data were collected via an online survey administered through Qualtrics. Inclusion criteria required participants to be at least 18 years of age.

The sample was predominantly female ($n = 184$, 59.4%) and White ($n = 236$, 76.1%), with a mean age of 20.2 years ($SD = 2.1$, range = 18–31). Socioeconomic status was

self-reported on a five-point scale (1 = low, 5 = high), with a mean of 3.2 (SD = 1.1). Academic classification was distributed as follows: freshmen (n = 89, 28.7%), sophomores (n = 78, 25.2%), juniors (n = 72, 23.2%), and seniors (n = 71, 22.9%). The mean cumulative GPA was 3.1 (SD = 0.5, range = 0.0–4.0), and the mean number of credit hours completed was 52.4 (SD = 28.3). Nearly all participants had declared a major (n = 298, 96.1%), with 42.3% reporting at least one formal major change and 31.6% reporting informal changes.

After listwise deletion of cases with missing data on key variables (MVS, AGE, MS, FS, or Credit Hours), the final analytical sample included 298 participants, which was sufficient for regression analyses with four predictors (Green, 1991). Participants were recruited through department announcements, student organisations, and class presentations, and were entered into a raffle for one of four \$15 gift cards. All participants provided informed consent, and study procedures were approved by the university's Institutional Review Board (IRB). Participant confidentiality was maintained through a two-level identification system.

Measures

Dependent Variable. Vocational identity was measured using the My Vocational Situation Scale (MVS; Holland, Gottfredson, & Power, 1980), which assesses career-related confidence and clarity of vocational goals. The scale consists of 18 items scored on a five-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree), with total scores ranging from 18 to 90; higher scores indicate stronger vocational identity. In this study, MVS was calculated as the sum of all 18 items, with complete data available for all 298 participants. The scale has demonstrated adequate internal consistency in prior research (Cronbach's $\alpha = .85$).

Predictor variables

The Adult Scale of Parental Attachment–Short Form (ASPA-SF; Michael & Snow, 2019) is an instrument designed to obtain information about an adult's perception of their patterns of relating to both mother and father childhood figures. These relational patterns help determine an individual's attachment style, which influences how relationships are formed and maintained throughout life (particularly the parent–child relationship). By assessing these patterns, individuals gain insight into how early attachment experiences may shape relational tendencies. Individuals experiencing safe patterns of relating to parents typically feel secure and supported in relationships, which can influence emotional regulation and career-related confidence in adulthood. The ASPA-SF assesses parental attachment based on childhood experiences and includes five subscales: Safe, Dependent, Parentified, Distant, and Fearful. Items are rated on a five-point Likert scale (1 = Never, 5 = Constantly).

The following predictor variables were included in the analyses:

1. Age (AGE): A continuous variable representing participants' age in years, as reported in the demographic survey.
2. Mother Safe Attachment (MS): Secure attachment to the mother was measured using the Safe subscale of the ASPA-SF. This four-item subscale uses a 5-point Likert scale (1 = Never, 5 = Constantly), with total scores ranging from 4 to 20; higher scores indicate stronger secure attachment. An example item is, 'I had

my mother with me when I was upset.' Cronbach's alpha for MS was previously established as .92 (Michael & Snow, 2019).

3. **Father Safe Attachment (FS):** Secure attachment to the father was also measured using the Safe subscale of the ASPA-SF. This four-item subscale is rated on the same 5-point scale (1 = Never, 5 = Constantly), with total scores ranging from 4 to 20; higher scores indicate stronger secure attachment. An example item is, 'I turned to my father for many things, including comfort and reassurance.' Cronbach's alpha for FS was previously established as .91 (Michael & Snow, 2019).
4. **Credit Hours (CreditHours):** A continuous variable representing the total number of academic credit hours completed by participants, reflecting their academic progress.

Data collection

Data were collected via a comprehensive online survey that included demographic questions (e.g., age, gender), academic information (e.g., credit hours), and validated psychological scales (MVS and ASPA-SF). Responses were stored securely and processed using Python (version 3.9) with the *pandas* and *statsmodels* libraries.

Data Cleaning

The initial dataset contained 310 records. Cases with missing values on MVS, AGE, MS, FS, or Credit Hours were excluded via listwise deletion, resulting in 298 complete cases. The parental attachment scales (MS, FS) were provided as summed scores (4–20), and no further calculation was required. Descriptive statistics confirmed that MS and FS scores fell within the expected range (4–20), and MVS scores ranged from approximately 18 to 90, consistent with theoretical expectations.

Statistical analysis

Regression Analysis

A multiple linear regression was conducted to examine the effects of AGE, MS, FS, and Credit Hours on MVS. The model was specified as:

$$MVS = \beta_0 + \beta_1 \cdot AGE + \beta_2 \cdot FS + \beta_3 \cdot MS + \beta_4 \cdot CreditHours + \epsilon$$

where β_0 is the intercept, β_1 to β_4 are regression coefficients, and ϵ is the error term. The analysis was performed using the *statsmodels* library in Python. Model fit was assessed using R^2 , adjusted R^2 , and the F-statistic. Significance of individual predictors was evaluated using t-tests ($p < 0.05$). Assumptions of linearity, normality, and homoscedasticity were assessed via residual diagnostics (Omnibus test, Durbin-Watson statistic, and condition number).

Descriptive Analysis

To explore the effects of MS and FS on MVS, the sample was categorised into high and low attachment groups using a median split (MS median = 14; FS median = 14). Four groups were created: Low MS/Low FS, Low MS/High FS, High MS/Low FS, and High MS/High FS. Mean MVS scores and standard deviations were computed for each group using *pandas*. This analysis provided insight into the combined effects of maternal and paternal secure attachment on vocational identity.

Ethical considerations

The study used de-identified data to ensure participant confidentiality, with no personal identifying information included in the dataset. All Institutional Review Board (IRB) protocols and ethical guidelines were followed throughout the research process.

Results

The final analytical sample consisted of 298 undergraduate students after listwise deletion for missing values in MVS, AGE, FS, MS, and CreditHours. Descriptive statistics for the dependent variable and predictors were as follows: MVS (M = 52.27, SD = 8.65, range = 18–90), AGE (M = 20.24, SD = 2.12, range = 18–31), FS (M = 12.94, SD = 3.38, range = 4–20), MS (M = 13.22, SD = 3.14, range = 4–20), and CreditHours (M = 52.41, SD = 28.31, range = 0–150). The distributions of MS and FS were approximately symmetric, with medians of 14 for both. These medians were used to categorise participants into high (> 14) and low (\leq 14) attachment groups for the descriptive analyses. Assumptions for linear regression were assessed: residual plots indicated approximate linearity and homoscedasticity; however, the Omnibus test ($p = 0.001$) suggested non-normality of residuals (skew = -0.468). The condition number (112) indicated a low risk of multicollinearity, which was further confirmed by variance inflation factors (VIFs) for AGE (1.03), FS (1.24), MS (1.26), and CreditHours (1.05), all well below the commonly accepted threshold of 5.

Multiple linear regression

A multiple linear regression was conducted to examine the effects of AGE, FS, MS, and CreditHours on MVS. The model was significant, $F(4, 293) = 13.64$, $p < 0.001$, explaining 15.7% of the variance in vocational identity ($R^2 = 0.157$, adjusted $R^2 = 0.145$). Table 1 presents the regression results.

Table 1: Multiple Linear Regression Results for MVS Total (N = 298)

Predictor	β	SE	t	p	95% CI
Constant	46.723	3.963	11.789	<.0001	[38.921, 54.525]
AGE	-0.345	0.092	-3.734	<.0001	[-0.527, -0.163]
FS (Father Safe)	0.460	0.147	3.135	0.002	[0.171, 0.748]
MS (Mother Safe)	0.352	0.147	2.388	0.018	[0.062, 0.642]
Credit Hours	0.297	0.173	1.723	0.086	[-0.042, 0.637]

Significant predictors included AGE ($\beta = -0.345$, SE = 0.092, $t = -3.734$, $p < 0.001$), indicating that older students reported lower vocational identity, with a 0.345-point decrease in MVS per year of age. Father Safe attachment (FS) was significant ($\beta = 0.460$, SE = 0.147, $t = 3.135$, $p = 0.002$), suggesting that a one-unit increase in secure father attachment was associated with a 0.460-point increase in MVS. Mother Safe attachment

(MS) was also significant ($\beta = 0.352$, $SE = 0.147$, $t = 2.388$, $p = 0.018$), indicating a 0.352-point increase in MVS per unit increase in secure mother attachment. Credit Hours was marginally significant ($\beta = 0.297$, $SE = 0.173$, $t = 1.723$, $p = 0.086$), suggesting a trend where greater academic progress may enhance vocational identity.

Descriptive Analysis of MVS by MS and FS Levels

To further explore the effects of secure parental attachment, MVS means were compared across high (> 14) and low (≤ 14) levels of MS and FS using median splits (MS median = 14; FS median = 14). Independent-samples t-tests were conducted to assess group differences, with Cohen's d reported as an estimate of effect size. Results are summarised in Table 2.

Table 2: Mean MVS Total Scores by Mother and Father Safe Attachment Levels (N = 298)

Group	N	Mean	SD	Cohen's d
Mother Safe Attachment (MS)				
Low MS (≤ 14)	151	50.43	8.72	0.43
High MS (> 14)	147	54.12	8.45	
Father Safe Attachment (FS)				
Low FS (≤ 14)	153	50.25	8.69	0.47
High FS (> 14)	145	54.31	8.38	
Combined MS and FS Levels				
Low MS & Low FS	94	49.20	8.61	–
Low MS & High FS	57	52.39	8.63	0.37 (vs. Low MS & Low FS)
High MS & Low FS	59	51.51	8.59	0.27 (vs. Low MS & Low FS)
High MS & High FS	88	55.83	7.97	0.77 (vs. Low MS & Low FS)

MS Levels

Students with high MS ($M = 54.12$, $SD = 8.45$, $N = 147$) reported significantly higher MVS scores than those with low MS ($M = 50.43$, $SD = 8.72$, $N = 151$), $t(296) = -3.70$, $p < 0.001$, Cohen's $d = 0.43$. This moderate effect size indicates that stronger mother-safe childhood attachment is associated with enhanced vocational identity.

FS Levels

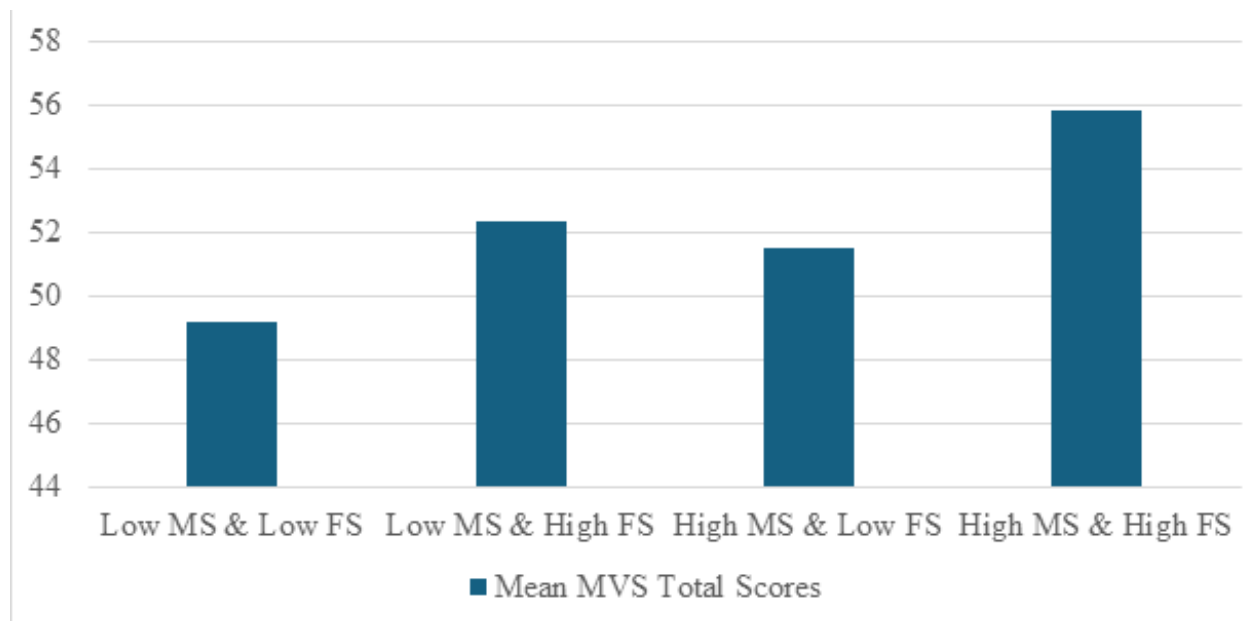
Students with high FS ($M = 54.31$, $SD = 8.38$, $N = 145$) reported significantly higher MVS scores than those with low FS ($M = 50.25$, $SD = 8.69$, $N = 153$), $t(296) = -4.02$, $p < 0.001$, Cohen's $d = 0.47$. This moderate effect size suggests that stronger father-safe attachment is linked to stronger vocational identity, with a slightly larger effect than MS.

Combined MS and FS Levels

Mean MVS scores were compared across four groups: Low MS/Low FS ($M = 49.20$, $SD = 8.61$, $N = 94$), Low MS/High FS ($M = 52.39$, $SD = 8.63$, $N = 57$), High MS/Low FS ($M = 51.51$, $SD = 8.59$, $N = 59$), and High MS/High FS ($M = 55.83$, $SD = 7.97$, $N = 88$). A one-way ANOVA confirmed significant differences, $F(3, 294) = 7.23$, $p < 0.001$. Post-hoc

Tukey tests revealed that the High MS/High FS group had significantly higher MVS scores than the Low MS/Low FS group ($p < 0.001$, Cohen's $d = 0.77$), indicating a large effect. The Low MS/High FS group ($p = 0.049$, Cohen's $d = 0.37$) and High MS/Low FS group ($p = 0.208$, Cohen's $d = 0.27$) showed smaller, non-significant differences compared to Low MS/Low FS, suggesting that secure attachment to both parents has a synergistic effect on vocational identity. Figure 1 illustrates the mean MVS scores across the four MS/FS groups, highlighting the highest vocational identity in the High MS/High FS group.

Figure 1. Mean MVS total scores across the four MS/FS groups



Discussion

The current study examined the associations between demographic, academic, and childhood parental attachment factors and vocational identity among undergraduate students, using a simplified multiple linear regression model and descriptive analyses. The findings highlight the significant roles of age, mother-safe attachment (MS), and father-safe attachment (FS) in predicting MVS scores, with a marginal effect of credit hours. These results contribute to the literature on vocational development by underscoring the influence of secure parental bonds on career-related confidence, while also revealing the diminishing role of vocational identity with age.

Consistent with prior research on vocational identity formation (e.g., Holland et al., 1980), age emerged as a robust negative predictor of MVS, with older students reporting lower vocational identity. This finding aligns with theories of emerging adulthood (Arnett, 2000), where younger students may exhibit greater optimism and exploration in career goals, whereas older students face increased pressures from impending graduation, leading to heightened indecision or barriers. The effect size ($\beta = -0.345$) suggests a meaningful impact, equivalent to a 3.45-point decrease in MVS for every 10-year increase in age, though the sample's age range (18–31) limits generalisability to non-traditional students.

Secure childhood parental attachments, particularly MS and FS, were significant positive predictors of vocational identity, supporting attachment theory's extension to career development (Bowlby, 1988; Ketterson & Blustein, 1997). Students with higher MS and

FS scores reported stronger MVS, with FS showing a slightly larger effect ($\beta = 0.460$ vs. 0.352). This may reflect differential parental influences, whereby father figures often provide instrumental career guidance (e.g., exploration, modelling), whereas mother figures offer emotional support (e.g., encouragement), both of which foster a secure base for vocational exploration (Blustein et al., 1991). The descriptive analysis reinforced this, with the high MS/high FS group exhibiting the highest mean MVS (55.83), significantly higher than the low MS/low FS group (49.20, Cohen's $d = 0.77$), indicating a large effect. Mixed attachment groups (e.g., high MS/low FS) showed intermediate means, suggesting compensatory effects where a secure relationship with one parent mitigates deficits in the other. These patterns extend prior work showing secure attachments correlate with career decisiveness (Tokar et al., 2003), emphasising the need for interventions targeting family dynamics in career counselling.

Credit hours was marginally significant ($p = 0.086$), with a positive trend suggesting that greater academic progress may enhance vocational identity. This could reflect cumulative experiences (e.g., internships, coursework) that clarify career paths, consistent with Super's (1990) life-span career development model. However, the marginal significance warrants caution and replication in larger samples.

The overall model explained 15.7% of the variance in vocational identity, representing a modest but meaningful proportion given the multifaceted nature of this construct. These findings suggest that while demographic and attachment factors play important roles, vocational identity is likely shaped by a broader set of influences, including environmental, relational, and contextual factors not captured in this model. Future research should employ longitudinal designs and incorporate additional predictors (such as peer relationships, mentoring experiences, or sense of belonging) to enhance explanatory power and provide a more comprehensive understanding of vocational identity development.

Implications

Theoretically, these findings strengthen the integration of attachment theory with vocational psychology, highlighting that secure parental bonds provide a critical foundation for career confidence and exploration during emerging adulthood. Students with strong mother and father attachments appear better equipped to navigate vocational decisions, suggesting that early relational security supports the development of career clarity, decisiveness, and resilience in the face of career-related challenges.

Practically, these results have several implications for career development and counselling practice. University career services and counselling centres could implement attachment-informed assessments to identify students with less secure parental attachments. For these students, targeted interventions (such as mentoring programmes, peer coaching, or structured career workshops) can help provide a 'secure base' similar to supportive parental relationships, fostering vocational exploration and identity consolidation. Additionally, the finding that younger students report higher vocational identity indicates that early interventions may be particularly effective, supporting proactive career planning initiatives during the first years of undergraduate study.

For older or non-traditional students, career counsellors should consider age-related barriers, including heightened pressure from impending graduation, work responsibilities, or delayed career exploration. Tailored programmes, such as re-entry workshops, career

decision-making support, and individualised counselling, can help these students enhance their vocational identity and navigate career transitions more effectively.

Moreover, the marginal influence of academic progress suggests that integrating experiential learning opportunities (such as internships, service-learning, and career-related coursework) into career counselling interventions may further strengthen vocational identity. Overall, these findings underscore the importance of relational and developmental factors in career counselling, emphasising that interventions addressing both family influences and individual career experiences can support students' vocational clarity, confidence, and long-term career development.

Limitations

Several limitations should be noted. First, the cross-sectional design precludes causal inferences; longitudinal studies are needed to track how parental attachments influence vocational identity over time. Second, the sample was from a single institution, predominantly White and female, limiting generalisability to diverse populations. Third, non-normal residuals (Omnibus $p = 0.001$) suggest potential violations of normality; future analyses could employ robust regression or transformations. Fourth, the median split for MS and FS simplifies continuous variables, potentially losing nuance; treating them as continuous in regressions mitigated this. Finally, self-report measures may introduce social desirability bias, and unmeasured variables (e.g., peer attachments, socioeconomic barriers) could confound results.

Future research

Future studies should employ longitudinal designs to examine how parental attachment, age, and academic experiences interact over time to influence vocational identity trajectories. Specifically, research could explore interactions between mother and father attachment (MS/FS) and age (e.g., moderated regression) to assess whether parental influences diminish with maturity. Expanding models to include environmental, relational, and institutional factors may enhance predictive power and provide a more comprehensive understanding of career development processes. Incorporating diverse samples and validating findings with objective career outcomes (e.g., employment post-graduation) would further strengthen the practical relevance of this work.

Conclusion

This study provides empirical evidence that secure parental attachments and age significantly influence vocational identity among undergraduate students, with academic progress playing a more limited role. Younger students and those reporting higher mother and father attachment security exhibited stronger vocational identity, highlighting the foundational role of relational security in career development. These findings underscore the value of integrating attachment theory into vocational psychology, suggesting that career confidence and clarity are shaped not only by educational experiences but also by early relational experiences.

From a practical perspective, the results support attachment-informed career counselling interventions, targeted mentoring programmes, and age-sensitive support strategies that promote vocational exploration and decision-making. By identifying students at risk for

lower vocational identity, career services can implement proactive interventions that foster career clarity, resilience, and confidence, ultimately supporting more successful transitions into post-graduate careers. Overall, this study contributes to the literature by emphasising the interplay of developmental, relational, and academic factors in shaping vocational identity and informing effective career counselling practices.

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