

## Adaptation and validity of the vocational identity status assessment among high school and university students

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**Abstract:** The present study adapted and validated the Vocational identity Status Assessment (VISA) among high school and university students, and examined the VISA score associations to academic achievement, depression and life satisfaction. A total sample of 694 Chinese senior high school students (53.9% females, mean age = 16.72 years, SD = 1.02) and 871 university students (47.2% females, mean age = 18.90 years, SD = 1.45) were tested in three independent cross-sectional rounds over a six-month period. The results showed a six-factor structure of the VISA with 26 items, which divided vocational identity into six types: achievement, foreclosure, moratorium, searching moratorium, diffusion and carefree diffusion. Therefore, the Chinese version of VISA fielded good psychometric properties (i.e., reliability and validity of scores). Differences in vocational identity statuses between high school and university students were found regarding their academic achievement, depression and life satisfaction. Specifically, moratorium (high exploration with low commitment), diffusion (low exploration and low commitment), and carefree diffusion (unconcerned absence of vocational direction) were associated with less adaptive statuses in career development. These findings suggest a need for student career counseling and educational interventions to focus on students supporting youth with less adaptive vocational identity statuses, such as those in moratorium, diffusion, and carefree diffusion statuses.

**Keywords:** vocational identity status; identity processes; psychometric properties; cross-age invariance

### Introduction

As students progress through schooling, they increasingly adopt a vocational identity orientation (Erikson, 1968; Creed et al., 2020; Solberg et al., 2023). Vocational identity refers to “the possession of a clear and stable picture of one’s goals, interests, and talents” (Holland et al., 1993, p. 1), it is considered an important aspect of one’s overall identity (Cheung et al., 2024). As a core development task during adolescence and early adults, the formation of vocational identity is widely recognized as central to career development and adaptation to the social context (Baumeler et al., 2021). A growing body of empirical literature has associated vocational identity with a range of psychological and behavioral outcomes, including psychological well-being (Gazo et al., 2024), mental health (Lannegrand-Willems et al., 2016; Kim et al., 2023), core self-evaluation (Brehmer & Strauser, 2023; Li et al., 2024), career adaptability (Kvasková et al., 2023; Zhang et al., 2021), and decision-making style (Wang & Yang, 2022).

While establishing vocational identity and choosing a career is one of the most important tasks for individuals during transition from adolescence to adulthood, the need for vocational identity measures with cross-cultural transportability remains to be met for use to predict students’ academic achievement and mental health wellbeing for timely counseling intervention. The Vocational Identity Status Assessment (VISA; Porfeli et al., 2011) is a widely disseminated measure of which the cross-cultural transportability is less well established. We aimed to adapt and validate the VISA for use with Chinese adolescents and early adults, and to examine the utility of VISA

score associations to academic achievement, depression and life satisfaction.

### Vocational identity status assessment (VISA)

Vocational Identity Status Assessment (VISA) was developed by Porfeli et al. (2011) in response to the need for more nuanced tools to measure the vocational identity status, building on prior calls for integrative approaches to identity measurement (e.g., Crocetti et al., 2008a; Luyckx et al., 2011). Porfeli et al. divided career exploration into “in-breadth exploration” and “in-depth exploration”, and career commitment into “commitment making” and “identification with commitment”. Further, a new dimension of “career reconsideration”, based on the three-factor model, was divided into “commitment flexibility” and “career self-doubt”, which represent the positive and negative aspects of career reconsideration, respectively (Porfeli et al., 2011). “In-breadth exploration” refers to a broad exploration of career diversity, and “in-depth exploration” is a deep exploration of the limited career goals. “Commitment making” is to make decisions about future career choices, and “identification with commitment” is the degree to which individuals feel confident about current choices. “Career self-doubt” refers to concerns and worries about current career choices, and “commitment flexibility” is a positive and flexible consideration of career commitment and the ability to recognize and accept the variability of career choices.

### Vocational identity status and psychological well-being

Besides, in recent years, researchers have also begun to explore how digitalization and professionalization

shape vocational identity development and its psychological consequences (Zhao, 2022), reflecting a shift from individual-level analyses toward broader occupational and contextual perspectives. Specifically, a three-wave longitudinal study revealed that career adaptability and vocational identity are dynamically interrelated dimensions of adolescent career development (Negru-Subtirica et al., 2015). Similarly, another three-wave longitudinal study documented significant positive reciprocal cross-lagged effects between career decision-making self-efficacy and vocational identity (Li et al., 2019). More recent longitudinal research has confirmed that vocational identity processes not only predict future career goals but also exhibit reciprocal associations with psychological adjustment over time (Lee et al., 2022; Zhao et al., 2024).

In summary, prior research consistently demonstrates that different vocational identity statuses are associated with distinct patterns of mental health and academic adaptation. Specifically, studies have documented significant links between vocational identity and academic achievement (Luyckx et al., 2011), depression (Lan-negrand-Willems et al., 2016), and life satisfaction (Kvasková et al., 2023). These relationships require study in the Chinese context to inform vocational identity counselling with students.

### ***The China vocational education context***

Several cultural factors specific to the Chinese context necessitate a systematic adaptation of the VISA. First, the strong influence of familism and parental involvement in career decision-making (Sarouphim & Issa, 2020) may shape how Chinese youth experience and report career exploration and commitment, potentially altering the factor structure of the VISA. Second, the highly competitive, exam-oriented education system (i.e., the Gaokao) often delays career exploration until late adolescence or early adulthood, which may lead to distinct identity status configurations (e.g., a higher prevalence of carefree diffusion) compared to Western samples. Third, cultural values such as collectivism and interdependence (Beltrán-Jaimes & Esteban-Guitart, 2025) may influence the meaning of “commitment” and “flexibility”, as career choices are often viewed not as individual projects but as family-invested endeavors. These cultural considerations underscore the importance of testing the VISA’s applicability in the Chinese context before its widespread use.

While the VISA has been validated in several countries, including the United States (Weigold et al., 2021) and among Chinese technical college students (Zhang et al., 2019), no study to date has systematically examined its psychometric properties among Chinese high school and university students across different developmental stages. This gap is particularly salient given the context of career education in China. In this study, “career education” refers to structured programs and interventions designed to equip individuals with the knowledge, skills, and awareness necessary to make informed career decisions and navigate career transitions (OECD, 2004). Although career education policies have been gradually implemented in recent years (Zhou et al., 2016), research suggests that career

development among Chinese youth remains underexplored, with many students exhibiting delayed vocational identity formation and related adaptability problems.

The vocational identity of Chinese adolescents and early adults remains relatively understudied, largely due to the absence of psychometrically sound measurement tools. This gap in research is problematic because career education in China started late, and the insufficient attention to youth career development may lead to adaptability problems for students with delayed vocational identity (Chen et al., 2023; Wang et al., 2023).

### ***The current study***

The present study aims to directly explore these differential associations in the Chinese context, contributing to the growing literature on vocational identity and psychological well-being across cultural settings.

The present study had two primary aims. First, we sought to adapt the VISA for use in China and evaluate its reliability and validity among Chinese high school and university students. Second, we aimed to identify the vocational identity status profiles of Chinese youth using the adapted VISA and examine their associations with three key adjustment indicators: academic achievement, depression, and life satisfaction. Our specific questions were:

- (1) Does the Chinese version of the VISA demonstrate satisfactory reliability and validity among Chinese high school and university students?
- (2) What vocational identity status profiles can be identified using the adapted VISA, and do students with different statuses differ in academic achievement, depression, and life satisfaction?

Addressing these aims and related questions will not only provide a culturally appropriate tool for career research and counseling in China, but also contribute to the cross-cultural literature on vocational identity development (Kim et al., 2023; Weigold et al., 2021).

## **Methods**

### ***Participants and setting***

Our dataset consisted of students from 3 high schools (N = 694, 53.9% female) and 4 universities (N = 871, 47.2% female) in Nanjing and Wuhan. We recruited three rounds of samples, the demographic information of each round and scales used are presented in Table 1.

### ***Procedure***

This study was carried out in accordance with the principles of the Declaration of Helsinki and was approved by the Biomedical Ethics Committee of Wuhan Polytechnic University (Approval No. BME-2026-1-2). All the students provided signed informed consent forms and received course credit for their participation as part of extracurricular practice activities.

### ***Measures***

We first translated the original VISA into Chinese using a standardized translation/back-translation procedure to ensure semantic equivalence and cultural appropriateness.

**Table 1.** Demographic Information and scales in each sample

|         | Demographic information                                                                                                               | Scales used                   |
|---------|---------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
| Sample1 | $n = 394$ , $M_{age} = 19.93$ , $SD_{age} = 1.28$<br>Female = 211, male = 183;<br>High school students = 176, college students = 218. | VISA                          |
| Sample2 | $n = 333$ , $M_{age} = 18.91$ , $SD_{age} = 2.27$<br>Female = 166, male = 167;<br>High school students = 137, college students = 196. | Revised VISA, EISI            |
| Sample3 | $n = 838$ , $M_{age} = 18.27$ , $SD_{age} = 2.16$<br>Female = 408, male = 430;<br>High school students = 381, college students = 457. | Revised VISA, SWLS, CES-D, AA |

*Note.* VISA = Vocational Identity Status Assessment, EISI = Ego Identity Status Inventory, SWLS = Satisfaction with life Scale, CES-D = Center for Epidemiologic Studies Depression Scale, AA = Academic achievement.

**Vocational Identity Status Assessment (VISA).** The original VISA comprised 30 items, with five items for each of its six dimensions. After performing EFA, we eliminated four items, yielding a 26-item Chinese version. The retained subscales were: in-breadth career exploration (5 items, e.g., “Right now, I’m trying to have many different experiences so that I can find several jobs that might suit me”), in-depth career exploration (4 items, e.g., “Right now, I’m identifying my strongest talents as I think about careers”), career commitment making (5 items, e.g., “No other career is as appealing to me as the one I expect to enter”), identification with career commitment (4 items, e.g., “My career will help me satisfy deeply personal goals”), career self-doubt (4 items, e.g., “I doubt I will find a career that suits me”), and career flexibility (4 items, e.g., “What I look for in a job will change in the future”). Participants responded on a 5-point Likert scale (1 = *strongly disagree*, 5 = *strongly agree*). The VISA contained no reverse-scored items. The internal consistency for VISA scores was 0.86 in the present study.

**Ego Identity Status Inventory (EISI).** The EISI (Kato, 1983) is a 12-item tool assessing three ego identity dimensions: present commitment (4 items, e.g., “I am working toward achieving my goals”), past crisis (4 items, e.g., “I have seriously thought about what kind of person I am and what I should do”), and future commitment pursuit (4 items, e.g., “I am striving to find something I can dedicate myself to”). Items are rated on a 6-point scale (1 = *strongly disagree*, 6 = *strongly agree*). Six items are reverse-scored (items 2, 4, 5, 7, 10, 12). The widely used Chinese version, validated by Zhang (2000), was employed for construct and criterion-related validity checks. The internal consistency of the EISI scores was 0.74 in the present study.

**Satisfaction with Life Scale (SWLS).** Life satisfaction was measured with the SWLS (Diener et al., 1985), which consists of five items (e.g., “In most ways, my life is close to my ideal”). Respondents use a 7-point scale (1 = *strongly disagree*, 7 = *strongly agree*). No items are reversed. We adopted the Chinese adaptation of the SWLS (Qiu & Zheng, 2007), which has demonstrated good reliability and validity in Chinese populations (Wang et al., 2025). Its internal consistency for SWLS scores 0.82 in the present study.

**Center for Epidemiologic Studies Depression Scale (CES-D).** Depressive symptoms were assessed using the short Chinese version (Zhang & Li, 2011) of the CES-D (Radloff, 1977). This 13-item instrument (e.g., “I felt depressed”) uses a 4-point frequency scale (1 = *rarely or none of the time*, 4 = *most or all of the time*). Three items (6, 9, 11) are reverse-scored. The internal consistency of the CES-D scores was 0.88 in the present study.

**Academic Achievement.** Because the participants came from different schools and educational levels, direct comparison of grades was not feasible. Therefore, we used a single self-report item asking students to rate their academic achievement on a 7-point scale (1 = *worst*, 7 = *best*).

### Data analyses

The statistical analyses proceeded in five sequential stages. In Stage 1, we conducted an EFA on Sample 1 to identify the factor structure of the VISA. Stage 2 involved a CFA on Sample 2 to cross-validate the factor solution. Stage 3 used the same Sample 2 to evaluate the internal consistency, test-retest reliability, and construct validity of the Chinese VISA. Stage 4 examined measurement invariance across age groups (high school versus college students) by performing multiple-group CFA on Sample 3, testing both configural and metric invariance. Stage 5 consisted of a cluster analysis on Sample 3 to derive vocational identity status profiles based on the VISA dimensions; we then examined how these profiles related to life satisfaction, depression, and academic achievement, and reported initial evidence for the applicability of the VISA in Chinese settings.

## Results

### Exploratory factor analysis

We first examined the factor structure of the VISA using EFA on Sample 1. The Kaiser-Meyer-Olkin measure of sampling adequacy was 0.870, and Bartlett’s test of sphericity was significant ( $\chi^2 = 3676.52$ ,  $p < 0.001$ ) confirming that the data were suitable for EFA. Because factors were expected to correlate, we applied principal component analysis with Promax rotation to the 30 items. Following conventional criteria (Tabachnick & Fidell,

2007), we deleted items based on three rules: (a) communality below 0.4, (b) factor loading below 0.4 on the intended factor or cross-loadings of 0.4 or higher on two or more factors, and (c) eigenvalue below 1 for factor retention.

An initial six-factor solution emerged, accounting for 54.53% of the total variance. One item (“*I’m thinking about all the aspects of working that are important to me*”) was dropped because it had a low loading on the in-depth career exploration subscale. Three additional items were removed due to high cross-loadings (above 0.40) on two factors: “*My family feels confident that I will enter my chosen subject or career*”, “*I may not be able to get the job I really want*” and “*I need to learn a lot more before I can make a career choice*”. After excluding these four items, we reran the EFA with the remaining 26 items. Six factors with eigenvalues exceeding 1 were again retained, and the rotated solution now explained 56.55% of the total

variance (Kaiser-Meyer-Olkin = 0.859; Bartlett’s Test of Sphericity = 3181.80;  $p < 0.001$ ). All communalities were above the 0.40 threshold. The final rotated factor matrix is presented in Table 2.

### Confirmatory factor analysis

We next performed a CFA on Sample 2 to evaluate how well the revised VISA model fitted the observed data. Two competing models were specified. Model 1 was a six-factor solution derived from the EFA, which aligned with the original scale structure: *in-breadth career exploration* (5 items), *in-depth career exploration* (4 items), *career commitment making* (5 items), *identification with career commitment* (4 items), *career self-doubt* (4 items), and *career flexibility* (4 items). Model 2 represented a three-factor alternative based on the identity status model described by Crocetti et al. (2008b)—the same framework that informed the development of

**Table 2.** Rotated factor matrix

| Factors                                   | Items                                                                                                             | Communalities | 1     | 2     | 3     | 4     | 5     | 6     |
|-------------------------------------------|-------------------------------------------------------------------------------------------------------------------|---------------|-------|-------|-------|-------|-------|-------|
| F1. In-Breadth Career Exploration         | Casually learning about careers that are unfamiliar to me in order to find a few to explore further.              | 0.526         | 0.704 |       |       |       |       |       |
|                                           | Trying to have many different experiences so that I can find several jobs that might suit me.                     | 0.516         | 0.590 |       |       |       |       |       |
|                                           | Thinking about how I could fit into many different careers.                                                       | 0.444         | 0.551 |       |       |       |       |       |
|                                           | Learning about various jobs that I might like.                                                                    | 0.617         | 0.833 |       |       |       |       |       |
|                                           | Keeping my options open as I learn about many different careers.                                                  | 0.562         | 0.584 |       |       |       |       |       |
| F2. In-Depth Career Exploration           | Identifying my strongest talents as I think about careers.                                                        | 0.619         |       | 0.806 |       |       |       |       |
|                                           | Learning as much as I can about the particular educational requirements of the career that interests me the most. | 0.574         |       | 0.698 |       |       |       |       |
|                                           | Learning what I can do to improve my chances of getting into my chosen career.                                    | 0.557         |       | 0.765 |       |       |       |       |
|                                           | Trying to find people that share my career interests.                                                             | 0.480         |       | 0.476 |       |       |       |       |
| F3. Career Commitment Making              | I know what kind of work is best for me.                                                                          | 0.560         |       |       | 0.633 |       |       |       |
|                                           | No other career is as appealing to me as the one I expect to enter.                                               | 0.500         |       |       | 0.496 |       |       |       |
|                                           | I have known for a long time what career is best for me.                                                          | 0.594         |       |       | 0.747 |       |       |       |
|                                           | No one will change my mind about the career I have chosen.                                                        | 0.602         |       |       | 0.803 |       |       |       |
|                                           | I have invested a lot of energy into preparing for my chosen career.                                              | 0.518         |       |       | 0.673 |       |       |       |
| F4. Identification with Career Commitment | My career will help me satisfy deeply personal goals.                                                             | 0.576         |       |       |       | 0.505 |       |       |
|                                           | Becoming a worker in my chosen career will allow me to become the person I dream to be.                           | 0.549         |       |       |       | 0.436 |       |       |
|                                           | I chose a career that will allow me to remain true to my values.                                                  | 0.566         |       |       |       | 0.604 |       |       |
|                                           | My career choice will permit me to have the kind of family life I wish to have.                                   | 0.655         |       |       |       | 0.864 |       |       |
| F5. Career Self-Doubt                     | Thinking about choosing a career makes me feel uneasy.                                                            | 0.539         |       |       |       |       | 0.746 |       |
|                                           | When I tell other people about my career plans, I feel like I am being a little dishonest.                        | 0.591         |       |       |       |       | 0.688 |       |
|                                           | People who really know me seem doubtful when I share my career plans with them.                                   | 0.518         |       |       |       |       | 0.698 |       |
|                                           | I doubt I will find a career that suits me.                                                                       | 0.646         |       |       |       |       | 0.733 |       |
| F6. Career Flexibility                    | My work interests are likely to change in the future                                                              | 0.649         |       |       |       |       |       | 0.799 |
|                                           | What I look for in a job will change in the future.                                                               | 0.582         |       |       |       |       |       | 0.733 |
|                                           | I will probably change my career goals.                                                                           | 0.593         |       |       |       |       |       | 0.682 |
|                                           | My career choice might turn out to be different than I expect.                                                    | 0.569         |       |       |       |       |       | 0.439 |

Note. The item loadings <0.40 were omitted in the table.

**Table 3.** Goodness-of-fit indices for two models of the VISA

| Model                  | $\chi^2$ | df  | $\chi^2/df$ | RMSEA | NFI  | IFI  | CFI  |
|------------------------|----------|-----|-------------|-------|------|------|------|
| Model 1 (six-factor)   | 672.78   | 284 | 2.36        | 0.064 | 0.91 | 0.95 | 0.95 |
| Model 2 (three-factor) | 1694.65  | 296 | 5.73        | 0.119 | 0.84 | 0.87 | 0.87 |

**Table 4.** Means, standard deviations, reliability coefficients and correlations among dimensions of Sample 2

|       | Mean | SD   | Cronbach's $\alpha$ | Test-retest 7 weeks | 1       | 2        | 3        | 4        | 5       | 6 |
|-------|------|------|---------------------|---------------------|---------|----------|----------|----------|---------|---|
| 1. BE | 3.60 | 0.58 | 0.69                | 0.76                | 1       |          |          |          |         |   |
| 2. DE | 3.90 | 0.62 | 0.76                | 0.73                | 0.537** | 1        |          |          |         |   |
| 3. CM | 2.99 | 0.77 | 0.80                | 0.78                | 0.098   | 0.352**  | 1        |          |         |   |
| 4. IC | 3.48 | 0.68 | 0.68                | 0.72                | 0.379** | 0.581**  | 0.589**  | 1        |         |   |
| 5. SD | 2.60 | 0.85 | 0.78                | 0.81                | -0.142* | -0.431** | -0.413** | -0.432** | 1       |   |
| 6. CF | 3.54 | 0.70 | 0.79                | 0.74                | 0.390** | 0.034    | -0.393** | 0.114*   | 0.427** | 1 |

Note. N = 333. The six vocational identity dimensions are BE, DE, CM, IC, SD and CF. Abbreviations: BE, in-breadth career exploration; DE, in-depth career exploration; CM, career commitment making; IC, identification with career commitment; SD, career self-doubt; CF, career flexibility. \* $p < 0.05$ , \*\* $p < 0.01$ .

the original VISA. This model comprised *career exploration* (combining in-breadth and in-depth exploration, 9 items), *commitment making* (combining commitment making and identification with commitment, 9 items), and *career reconsideration* (combining career self-doubt and flexibility, 8 items). Model 2 was included solely for comparative purposes.

Goodness-of-fit was assessed using the root mean square error of approximation (RMSEA), comparative fit index (CFI), incremental fit index (IFI), normed fit index (NFI), and the  $\chi^2$  value. Following Hu and Bentler (1999), we considered  $RMSEA \leq 0.08$  and CFI, IFI, and  $NFI \geq 0.90$  as indicators of acceptable fit. As shown in Table 3, Model 1 (six-factor) demonstrated good fit, whereas Model 2 (three-factor) showed poor fit. The difference in fit was significant ( $\Delta\chi^2 = 1029.74$ ,  $\Delta df = 12$ ,  $p < 0.001$ ), favoring the six-factor solution. Moreover, standardized factor loadings of the six-factor model ranged from 0.44 to 0.78, supporting the robustness of the revised VISA factor structure.

### Reliability

Overall, internal consistency of the VISA was acceptable given that factors were comprised of four to five items, Cronbach's alpha of each of the six factors was greater than 0.68. To examine temporal stability, 67 students from Sample 2 (28 males and 39 females;  $M_{age} = 15.91$ ,  $SD_{age} = 0.66$ ) completed the VISA again after a 7-week interval. The test-retest correlations ranged from 0.72 to 0.81, indicating adequate stability over time. The inter-correlations for the six vocational identity dimensions ranged from 0.034 to 0.589. The summary statistics for the VISA factors are shown in Table 4.

### Validity

As the above results of EFA and CFA shows, The VISA has good construct validity when it was applied to Chinese youth in adolescence and early adulthood. Furthermore, we examined correlations among vocational identity dimensions and ego identity processes of the *Ego Identity*

*Status Inventory* (Kato, 1983), shown in Table 5. Past crisis had the strongest relations with in-breadth career exploration and in-depth career exploration. Present commitment also showed the strongest positive relations with career commitment making and identification with career commitment. And future commitment pursuit exhibited large positive correlations with career flexibility.

### Measurement invariance

We first examined configural invariance by running separate CFAs for high school students and college students. Metric invariance was then assessed using Multiple-group CFA. Following standard practice, a change in CFI ( $\Delta CFI$ ) of  $\leq 0.01$  between nested models was taken as evidence of measurement invariance. As summarized in Table 6, both configural (construct) and metric (factor loading) invariance held across age group. This finding indicates that the items in the revised VISA were interpreted and responded to similarly by Chinese high school and university students.

### Vocation identity statuses of Chinese students

A cluster analysis based on the Z-score means of six dimensions was conducted on Sample 3 to derive vocational identity statuses of Chinese students. The optimal solution consisted of six clusters, which differed somewhat from the statuses originally reported by Profeli et al. (2011). Notably, we observed a "carefree diffusion" pattern not described in the original study, whereas the "undifferentiated" status did not emerge in our sample. Figure 1 displayed the mean level of each of the six identity dimensions separately for the six clusters.

Specifically, the *achievement* cluster was characterized by high scores on both exploration and commitment dimensions, together with moderately low scores on self-doubt and flexibility. The *moratorium* cluster showed high flexibility, low scores on both breadth and depth of exploration, and very low commitment. The *searching moratorium* cluster had high scores across all six

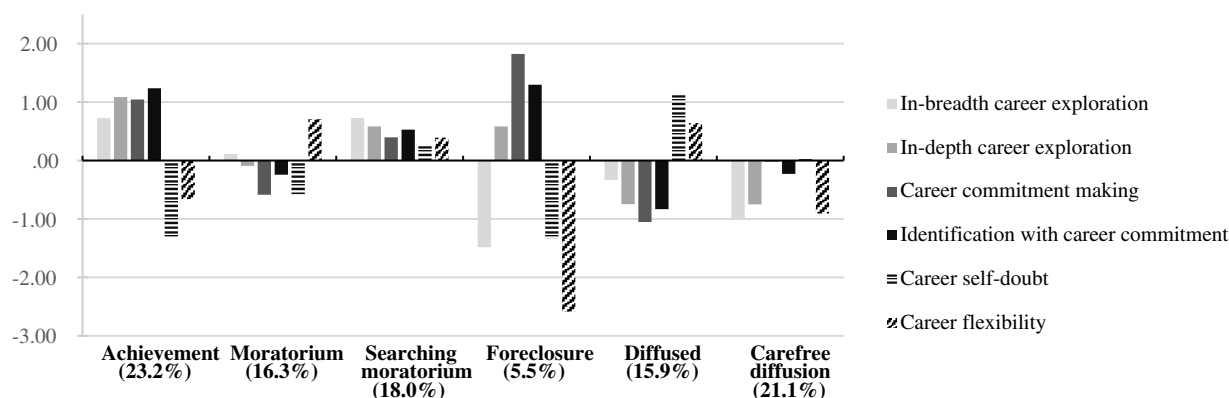
**Table 5.** Correlations between VISA subscales and Ego Identity processes.

|                           | In-breadth<br>career<br>exploration | In-depth<br>career<br>exploration | Career<br>commitment<br>making | Identification<br>with career<br>commitment | Career<br>self-doubt | Career<br>flexibility |
|---------------------------|-------------------------------------|-----------------------------------|--------------------------------|---------------------------------------------|----------------------|-----------------------|
| Past crisis               | 0.408**                             | 0.344**                           | 0.103                          | 0.254*                                      | −0.204*              | −0.005                |
| Present commitment        | 0.343**                             | 0.463**                           | 0.485**                        | 0.552**                                     | −0.491**             | −0.159                |
| Future commitment pursuit | 0.410**                             | 0.578**                           | 0.285*                         | 0.362**                                     | −0.162               | 0.515**               |

Note. \* $p < 0.05$ , \*\* $p < 0.01$ .

**Table 6.** Fit statistics for configural and metric invariance across subsamples.

| Model                | <i>N</i> | $\chi^2$ | <i>df</i> | $\chi^2/df$ | <i>SRMR</i> | <i>RMSEA</i> | <i>TLI</i> | <i>CFI</i> | $\Delta CFI$ |
|----------------------|----------|----------|-----------|-------------|-------------|--------------|------------|------------|--------------|
| High school students | 381      | 632.93   | 284       | 2.229       | 0.060       | 0.057        | 0.900      | 0.921      |              |
| College students     | 457      | 627.24   | 284       | 2.209       | 0.052       | 0.052        | 0.910      | 0.930      |              |
| Configural           |          | 1262.83  | 568       | 2.223       | 0.054       | 0.054        | 0.904      | 0.925      |              |
| Metric               |          | 1300.66  | 588       | 2.212       | 0.057       | 0.054        | 0.905      | 0.921      | 0.004        |

**Figure 1.** Six cluster solution for vocational identity statuses

dimensions. The *foreclosure* cluster exhibited low breadth of exploration, very low scores on both reconsideration-related dimensions (self-doubt and flexibility), and high commitment. The *diffused* cluster was defined by low exploration in breadth, very low exploration depth and commitment, but high self-doubt and flexibility. Finally, the *carefree diffusion* cluster was marked by low scores on both exploration dimensions and on flexibility, together with moderately low commitment and self-doubt.

#### Academic performance, depression, and life satisfaction by vocation identity differences

MANOVAs were performed to explore the effects of vocational identity statuses on Academic performance, Depression, and Life satisfaction, and also to provide further evidence for the external validity of the scale (see Table 7 and Figure 2). The results revealed individuals with different type of career identity status reported significant differences in Academic achievement ( $F(5, 832) = 8.81, p < 0.001, \eta^2 = 0.05$ ), depression ( $F(5, 832) = 33.44, p < 0.001, \eta^2 = 0.16$ ), and life satisfaction ( $F(5, 832) = 13.99, p < 0.001, \eta^2 = 0.08$ ). Tukey post-hoc tests were conducted to distinguish differences among them. In terms of academic achievement, participants with

achievement status had a higher mean score than those with diffused and carefree diffusion, whereas participants with diffused and carefree diffusion scored lower than those in achievement and foreclosure. In terms of life satisfaction, participants in achievement and foreclosure had a higher mean score than those in diffused and moratorium, whereas participants in diffused had a lower mean score than those in achievement and foreclosure, and this trend was consistent with the academic achievement results. Conversely, in terms of depression, participants in diffused identity scored higher than those with all the other identity statuses, whereas participants in achievement and foreclosure scored lower than those with searching moratorium and diffused diffusion.

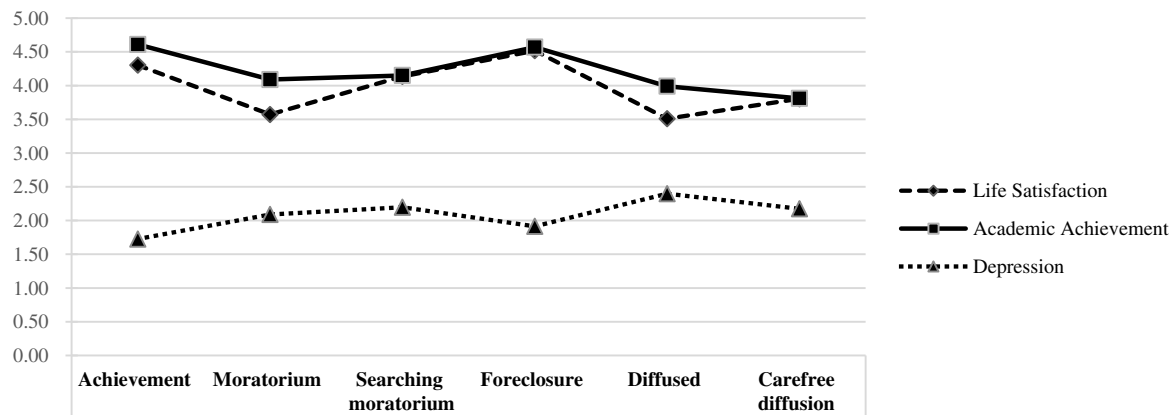
#### Discussion

The results confirm the six vocational identity processes model by Profeli et al. (2011), comprising in-breadth career exploration (5 items), in-depth career exploration (4 items), career commitment making (5 items), identification with career commitment (4 items), career self-doubt (4 items), and career flexibility (4 items). Although the factor configuration of the adapted Chinese version is largely consistent with the original, the final scale was shortened

**Table 7.** Academic performance, depression, and life satisfaction by vocational identity statuses

| Variable             | Vocational identity status |                           |                            |                           |                          |                           | <i>F</i> | $\eta^2$ |
|----------------------|----------------------------|---------------------------|----------------------------|---------------------------|--------------------------|---------------------------|----------|----------|
|                      | Achievement                | Moratorium                | Searching moratorium       | Foreclosure               | Diffused                 | Carefree diffusion        |          |          |
| Academic achievement | 4.61 <sup>c</sup> (1.18)   | 4.09 <sup>ab</sup> (1.25) | 4.15 <sup>abc</sup> (1.34) | 4.57 <sup>bc</sup> (1.46) | 3.99 <sup>a</sup> (1.33) | 3.81 <sup>a</sup> (1.30)  | 8.81***  | 0.05     |
| Depression           | 1.73 <sup>a</sup> (0.43)   | 2.09 <sup>bc</sup> (0.57) | 2.20 <sup>c</sup> (0.58)   | 1.91 <sup>ab</sup> (0.57) | 2.40 <sup>d</sup> (0.46) | 2.17 <sup>c</sup> (0.50)  | 32.44*** | 0.16     |
| Life Satisfaction    | 4.30 <sup>c</sup> (1.10)   | 3.57 <sup>a</sup> (1.23)  | 4.14 <sup>bc</sup> (1.26)  | 4.52 <sup>c</sup> (1.19)  | 3.51 <sup>a</sup> (1.09) | 3.80 <sup>ab</sup> (1.09) | 13.99*** | 0.08     |

*Note.* Standard deviations are in parentheses. Within each row, means were compared using Tukey post-hoc tests following a significant one-way ANOVA (\*\* $p < 0.001$ , as indicated in the *F* column). Means that do not share the same superscript letter within a row differ significantly at  $p < 0.05$ ; means sharing a common letter are not significantly different.

**Figure 2.** Patterns of academic performance, depression, and life satisfaction by identity status

from 30 to 26 items. The retained items demonstrated satisfactory fit in both EFA and CFA. Four items were eliminated during the validation process. Item 26 (“I’m thinking about all the aspects of working that are important to me”) was removed from the *in-depth career exploration* subscale due to low factor loading as it failed to reflect the in-depth exploration of the self and the working world. Item 29 (“I may not be able to get the major or job I really want”) showed high cross-loadings on both *career self-doubt* and *career flexibility*, failing to distinguish the positive (flexibility) and negative (doubt) aspects of career reconsideration. Item 30 (“I need to learn a lot more before I can make a career choice”), similarly exhibited high cross-loadings on *in-breadth exploration* and *career flexibility*, so it was therefore removed. Finally, Item 10 (“My family feels confident that I will enter my chosen major or career”) cross-loaded heavily on *identification with commitment* and *career self-doubt*, leading to its exclusion.

These four problematic items may be understood differently by students from Western versus Eastern cultural backgrounds. For example, unlike the other 4 items within the identification with career commitment subscale, which assess personal career identification, Item 10 explicitly refers to family attitudes toward one’s career. For Chinese participants, such an item may reflect not only personal commitment but also a sense of self-family attachment, thereby blurring its intended meaning. Further research is needed to explore the mechanisms underlying such cross-cultural differences.

The Chinese version of the VISA demonstrated satisfactory reliability and validity among adolescents and

young adults. As expected, vocational identity scores correlated with ego identity scores, confirming earlier findings of a positive link between vocational and overall identity (Creed et al., 2020; Solberg et al., 2023). Interestingly, prior work suggests that vocational identity development may play a leading role in the broader identity formation process (Skorikov & Vondracek, 2011). That is, achieving vocational clarity does not necessarily require prior ego identity consolidation; instead, progress in vocational identity might facilitate identity development in other domains. Additionally, measurement invariance analyses revealed configural and metric invariance across high school and university students, indicating that the revised VISA functions equivalently for both age groups.

Our findings provide the initial evidence that Chinese youth can be classified into six vocational identity statuses—achievement, foreclosure, moratorium, searching moratorium, diffusion and carefree diffusion—a typology that partly differs from results obtained in some western countries (Negru-Subtirica et al., 2018; Porfeli et al., 2011). Notably, the “undifferentiated” status was not observed; instead, a “carefree diffusion” pattern emerged. The concept of carefree diffusion originated in Luyckx’s dual-cycle model (Luyckx et al., 2011, 2013) and describes a state characterized by detachment from adult responsibilities and a passive “wait-and-see” stance toward career goals. Students in this status tend to avoid identity-related exploration and remain unbothered by their lack of commitment.

In this study, the carefree diffusion cluster scored low on both exploration dimensions and on career flexibility,

intermediate low on both commitment dimensions and on self-doubt dimension. In contrast, the undifferentiated status described by Profeli et al. (2011) was defined by scores near the average across all six dimensions. Thus, whereas the original undifferentiated status signifies an unclear career identity without strong direction, the care-free diffusion pattern observed here suggests that many Chinese high school and college students have only a limited understanding of vocational identity and are not actively concerned with career issues. Overall, these students appear to be at a relatively early stage of vocational identity development, indicating that identity formation is still incomplete.

Of particular concern, participants classified as “care-free diffusion” account for 21.1% of the total sample. This high prevalence may stem from the relatively late introduction of systematic career education in China, which leaves many students without adequate vocational awareness or exploration. For decades, and to a large extent still today, Chinese elementary and secondary education has provided limited systematic guidance on career planning. The exam-oriented nature of the education system, particularly under the influence of the college entrance examination (Gaokao), has historically delayed career exploration until late adolescence (Xiong, 2023; Yuan et al., 2021). Most senior high school students do not seriously consider their career options until this stage (Rezayat & Sheu, 2020; Ali, 2025). After entering university, some students continue to lack clarity regarding their abilities and career interests. Rather than suggesting a direct translation from goal-setting to self-insight, the literature indicates that delayed career exploration and the absence of structured goal-setting are associated with lower self-understanding and greater adaptability difficulties (Luyckx et al., 2013; Kim et al., 2023). Moreover, research on skill-based education suggests that early exposure to career guidance and structured skill development can help students better understand their abilities and career interests (Ali, 2025; Goncharenko & Semenkova, 2021).

Since the early 2010s, and particularly following the National Vocational Education Conference in 2014, Chinese policymakers have gradually begun to prioritize vocational guidance services. The Ministry of Education has encouraged universities to embed career education throughout the entire student experience, and some developed cities have extended such programs to high schools and even compulsory education (State Council of the PRC, 2019). These developments align with broader international trends in career education research, which emphasize the importance of early intervention and skill-based approaches (Yuan et al., 2021; Ali, 2025). The fact that over one fifth of our sample exhibited a carefree diffusion status underscores the continued need for such interventions and highlights the importance of implementing career education before university.

Consistent with prior ego-identity research, our results showed that students in achievement status and foreclosure statuses had higher academic achievement, whereas those in diffusion and carefree diffusion had lower academic achievement. Earlier studies have similarly found

that college students with achievement or foreclosure statuses exhibit greater academic adaptability (Luyckx et al., 2011; Kim et al., 2023). Likewise, these students reported higher life satisfaction and lower depression, indicating better psychological adjustment. In contrast, students in diffusion and moratorium statuses reported lower life satisfaction and higher depression, confirming that vocational identity status is a multifaceted construct encompassing cognitive, emotional, and adaptive components. As such, it is closely linked to mental health (Lannegrand-Willems et al., 2016).

Based on the observed relationships among vocational identity status, academic achievement, depression, and life satisfaction, we conclude that achievement, foreclosure, and searching moratorium represent more adaptive identity statuses—they are associated with superior academic outcomes, greater life satisfaction, and fewer depressive symptoms, in line with previous reports (Kim et al., 2023). By contrast, moratorium, diffusion and carefree diffusion reflect less adaptive patterns, warranting greater attention in career counseling interventions.

### *Limitation and future directions*

There are several limitations in our study that need to be considered and can be addressed by further research. First, our study relies on cross-sectional and self-reported data, which may be subject to social desirability bias. Future studies should be conducted to assess the relationship between the VISA and objective outcome criteria (e.g., grades for academic transcripts) and its predictive value in longitudinal assessments. Second, the samples of this study were taken from the developed areas in China (Nanjing and Wuhan), and education quality is at a relatively high level in these areas. Although the total number of participants is relatively large ( $N = 1631$ ), future studies should pay more attention to sample diversity and regional differences. Third, our study finds that the classification of vocational identity status of Chinese students is different from that of western countries, but we did not directly compare it with samples from other countries. In addition, cross-cultural differences in the classification of vocational identity statuses likely reflect variations in economic development, educational systems, and sociocultural values between Eastern and Western contexts (Beltrán-Jaimes & Esteban-Guitart, 2025). Future research should further explore these mechanisms across diverse settings.

### **Conclusion**

The current work is the first study to assess the psychometric properties of a Chinese version of Vocational Identity Status Assessment (VISA) among Chinese adolescents and early adults. In addition, we classified the vocational identity statuses of senior high school students and college students, and examined the relationships between vocational identity, academic performance, depression and life satisfaction.

In conclusion, the present study has demonstrated the reliability and validity of the revised Chinese version of the Vocational Identity Status Assessment, providing a valid research tool for systematically examining vocational identity status among Chinese adolescents and early adults.

These findings also have important implications for career education policy and career counseling practice.

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**Availability of Data and Materials:** The data that support the findings of this study are available from the corresponding author upon reasonable request.

**Ethics Approval:** This study was carried out in accordance with the principles of the Declaration of Helsinki and was approved by the Biomedical Ethics Committee of Wuhan Polytechnic University (Approval No. BME-2026-1-2). All participants received a clear explanation of the study purpose and procedures. Written informed consent was obtained from each participant before data collection. Confidentiality and anonymity were assured, and all participation was voluntary.

**Conflicts of Interest:** The authors declare no conflicts of interest.

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