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Empowering Gen Z International Students: The Serial Mediating Role of Psychological Resources in Linking University Support to Perceived Employability

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ABSTRACT: *This study investigates how host-university support is associated with the perceived employability of Generation Z Chinese international students in Malaysia. Navigating a dual labor-market paradox—host-country mobility restrictions and home-country hyper-competition—these students require robust cross-cultural adaptation. Grounded in Social Cognitive Career Theory, we examined the serial mediating roles of career decision self-efficacy and career adaptability. Data from 412 final year undergraduates were analyzed using CB-SEM. Results reveal that university support significantly relates to perceived employability directly and indirectly through individual and serial mediation, explaining 43.3% of the variance. Theoretically, institutional support acts as a vital acculturative buffer internalized via a cognitive-to-adaptive sequence, establishing cognitive confidence as a prerequisite for adaptive resource mobilization. Practically, this study advocates a "confidence-first, adaptability-second" intervention strategy to help international graduates overcome systemic barriers and enhance global competitiveness.*

Keywords: University Support, Perceived Employability, Generation Z, International Students, Quality Education

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INTRODUCTION

The accelerating globalization of higher education has transformed universities into primary drivers of cross-border talent mobility. In this context, fostering global graduate employability has become a central mission for higher education institutions (Knight, 2004). This mission aligns closely with the United Nations Sustainable Development Goals (SDGs), particularly SDG 4: Quality education, which advocates for inclusive and equitable education to promote lifelong learning and workforce readiness. According to UNESCO (2025), the global population of international students surged from 2.1 million in 2000 to 6.3 million in 2021, with Asia—led by China—accounting for more than 57% of this growth. This unprecedented mobility coincides with the entry of Generation Z (Gen Z) into the competitive global job market. Preparing these mobile learners for modern careers involves far more than academic instruction; it requires facilitating a complex international student transition and cross-cultural adaptation process. International students must cultivate psychological and adaptive capabilities to navigate the distinct socio-cultural norms and volatility of unfamiliar labor markets (Lazar et al., 2023).

Despite strategic investments in transnational education, international students—particularly the massive cohort of Chinese students—cannot be treated merely as generic university students. They are transnational actors whose international status fundamentally alters their employability perceptions. Malaysia has emerged as a premier non-Western educational hub, attracting a large volume of Chinese students seeking quality education and multicultural exposure. However, navigating this specific mobility corridor presents distinct cross-cultural career barriers. In the host country, international students face systemic structural hurdles, including strict visa restrictions, limited post-study work opportunities, and host-country employers' skepticism regarding the integration of international graduates (Ameen et al., 2022). Indeed, equitable access to host-country labor markets remains a profound challenge, demanding that universities play a more proactive role in bridging the gap between international graduates and local workforce integration (Li et al., 2024; Nguyen & Sharma, 2024). Consequently, their ability to convert academic knowledge into host-country job readiness is severely constrained. Conversely, Chinese graduates returning to their home country confront an intensely saturated domestic labor market (often characterized by hyper-competition or "involution") and a diminishing premium on overseas degrees, which significantly undermines their perceived employability (Hao et al., 2016; LinkedIn, 2022). Thus, their transition

and integration pose unique psychological challenges that domestic students do not face.

Although prior studies acknowledge the importance of university support, several critical gaps remain in the literature on international student career development. As highlighted in recent systematic reviews, targeted higher education strategies—such as culturally responsive work-integrated learning and tailored career support—are essential to address the unique employability dimensions of international cohorts in the post-pandemic era (Xu et al., 2025). First, existing research often treats international students as generic undergraduates, failing to account for how mobility and cross-cultural adaptation demands interact with institutional resources. Second, while the psychological predictors of employability are known, the sequential role of self-efficacy and adaptability as mediators of institutional support remains underexplored in cross-cultural contexts (Creed et al., 2009; Koen et al., 2012). Most importantly, Gen Z international students are underrepresented in employability research, particularly regarding how they leverage host-institution resources to overcome dual-labor-market disadvantages.

To address these needs, the present study adopts the Social Cognitive Career Theory (SCCT) Model of Career Self-Management (CSM) to investigate the mechanism of psychological resources transformation among Gen Z international students. Moving beyond distal background factors, this study conceptualizes university support as a critical proximal contextual influence that buffers the anxiety of international student adjustment. By testing the core path hypotheses of the CSM model, we argue that external host-university support must be internalized through cognitive appraisal and behavioral regulation to yield employability outcomes. Specifically, this study develops a serial mediation model to examine how university support (proximal input) enhances career decision self-efficacy (cognitive process), which in turn activates career adaptability (cross-cultural adaptive resource), ultimately fostering perceived employability (outcome expectation).

By focusing on Chinese international students in Malaysian universities, this research extends the explanatory power of SCCT into non-Western international student mobility and offers evidence-based insights for designing culturally responsive support systems. Practically, the findings help institutions empower Gen Z students with the psychological resilience and adaptive capacities necessary for global competitiveness.

Consequently, the study aims to achieve the following objectives:

RO1: To evaluate the direct association of university support with perceived employability among Gen Z international students.

RO2: To examine the individual mediating roles of career decision self-efficacy and career adaptability in the relationship between university support and perceived employability.

RO3: To examine the sequential mediation effect of career decision self-efficacy and career adaptability in translating institutional support into employability perceptions.

SUPPORTING THEORIES AND LITERATURE REVIEW

SCCT Theory and International Student Adjustment

SCCT was proposed by Lent et al. (1994) to explain the psychological mechanisms behind career behaviors from a dynamic "person-environment-behavior" perspective. Addressing the complex context of international students, the extended SCCT Model of Career Self-Management (SCCT-CSM) provides a robust framework for understanding international student adjustment and cross-cultural adaptation. For this cohort, the transition from campus to the workplace is not merely an educational milestone; it is a profound process of navigating transnational mobility, transition, and integration in host countries (Cheng & Liu, 2021).

Within the SCCT framework, environmental factors are subdivided into distal background influences and proximal contextual influences. This study defines university support as a core proximal contextual influence. For international students grappling with the anxiety of cross-cultural mobility, university support acts as an institutional buffer against acculturative stress and cross-cultural career barriers (Lent et al., 2000). According to the core path hypothesis of SCCT, such proximal support does not directly yield career outcomes but functions by enhancing individuals' self-efficacy beliefs. In a cross-cultural context, tailored career guidance and mentor support serve as an external push, effectively relating to higher students' confidence to decode unfamiliar foreign labor markets, namely career decision self-efficacy.

Furthermore, SCCT proposes that self-efficacy is a prerequisite for facilitating individuals to demonstrate adaptive behaviors (Lent & Brown, 2013). Driven by high self-efficacy, international students can proactively deploy psychological resources to cope with an uncertain, dual-labor market. The improvement of this adaptive capability ultimately points toward positive outcome expectations—specifically manifested as perceived employability (Rothwell et al., 2007). Through this theoretical path, this study contextualizes the SCCT logical chain of "support-efficacy-resource-expectation" within the unique, stressful environment of international student career development.

Research Hypotheses and Conceptual Framework

University Support and Perceived Employability

Within the framework of SCCT, university support (US) is conceptualized as a critical proximal contextual influence that directly interacts with students' cognitive appraisals during their cross-border school-to-work transition. US

encompasses resource-based provisions—such as curriculum design, career counseling, and internships (Pitan & Muller, 2020). However, generic support is often insufficient for international cohorts. Effective university support must explicitly address international student career development, providing targeted resources to navigate host-country systems (Xu et al., 2025).

Perceived employability (PE) represents an individual's outcome expectation regarding their ability to obtain and maintain employment. For international cohorts, PE is closely tied to the concept of perceived graduate employability, which is significantly challenged by systemic mobility barriers. In the host country, international students face profound structural disadvantages, including strict visa restrictions, limited post-study work opportunities, and negative host-country labor market perceptions of international graduates (Ameen et al., 2022; Hao et al., 2016). Employers' skepticism regarding international students' cultural fit and visa sponsorship costs often exacerbate feelings of career insecurity. Consequently, student-centered, culturally responsive university support plays a pivotal role in stabilizing career-related outcome expectations by helping students bridge the gap between academic qualifications and local labor market demands (Yang et al., 2022; Mills & Stefaniak, 2020). Thus, we hypothesize:

H_1: University support is positively related to perceived employability among international students.

The Mediating Role of Career Decision Self-Efficacy

Career decision self-efficacy (CDSE) is a central cognitive pillar of SCCT, representing individuals' confidence in their ability to perform tasks related to career exploration and decision-making (Taylor & Betz, 1983). Grounded in SCCT-CSM, CDSE functions as a primary psychological mechanism through which proximal supports shape career behaviors. Empirical research demonstrates that enhanced university support significantly predicts higher levels of CDSE, which promotes proactive engagement in career planning (Huang, 2014; Ni, 2024).

In cross-cultural contexts, cross-cultural career barriers—such as information asymmetry, unfamiliar recruitment practices, and language anxiety—often severely undermine an international student's CDSE (Wei-Cheng Mau, 2000). For Chinese international students, navigating these barriers requires robust cognitive confidence. Institutional support tailored to international needs (e.g., cross-cultural alumni networks and visa-specific career counseling) directly mitigates these uncertainties, fostering bicultural identity integration and stronger efficacy beliefs (Jin et al., 2022). Therefore, CDSE acts as a critical cognitive bridge linking proximal university support to the employability perceptions of transnational actors:

Hypothesis 2: The positive relationship between university support and perceived employability is mediated by career decision self-efficacy.

The Mediating Role of Career Adaptability

Within the SCCT framework, career adaptability (CA) is conceptualized as a vital adaptive resource for managing career tasks and transitions across the life span (Savickas & Porfeli, 2012). For international students, CA extends beyond general career readiness; it functions as a core competency for cross-cultural adaptation and integration in host countries. It comprises the psychosocial resources—concern, control, curiosity, and confidence—required to proactively navigate systemic labor market volatility and mobility constraints.

Structured university initiatives, including work-integrated learning, significantly improve students' CA (Saleem, 2024; Chiesa et al., 2024). Students with higher CA demonstrate the resilience to pivot their career strategies when traditional pathways are blocked by visa restrictions or unfavorable host-country labor market perceptions. Research indicates that CA mediates the relationship between social support and employability, allowing international students to transform institutional resources into flexible, cross-cultural coping strategies (Xia et al., 2020). Given the unique transitional challenges faced by Chinese international students, CA acts as a critical adaptive mechanism:

> Hypothesis 3: The positive relationship between university support and perceived employability is mediated by career adaptability.

Serial Mediation of Career Decision Self-Efficacy and Career Adaptability

To advance the understanding of international student transition, this study applies the SCCT-CSM to propose a sequential interplay between cognitive and adaptive resources. Admittedly, the directional relationship between these two psychological constructs remains a subject of debate in broader vocational psychology. Existing literature frequently conceptualizes career decision self-efficacy and career adaptability as reciprocal, parallel, or even reverse-causal constructs, where ongoing adaptive behaviors are thought to gradually build self-efficacy (Guan et al., 2016; Hirschi et al., 2015). However, by contextualizing SCCT-CSM within the unique, high-stress environment of international student mobility, we argue that a strict cognitive-to-adaptive sequence is theoretically imperative. When transnational students are thrust into unfamiliar host-country labor markets laden with systemic hurdles, they often experience severe 'decision paralysis'(Arthur, 2017). In such culturally alien and highly uncertain contexts, cognitive confidence acts as a functional prerequisite (Lent & Brown, 2013). Students must first cultivate the internal belief that they can successfully decode foreign employment systems before they can actively mobilize their psychosocial resources to adapt to those systems.

According to SCCT, proximal institutional supports first enhance students' self-efficacy beliefs, which subsequently act as a psychological catalyst to foster adaptive resources and behaviors (Lent et al., 1994; Stead et al., 2022). By focusing on this SCCT-driven sequential mechanism, we propose that university support first relates to higher CDSE, which in turn is associated with stronger CA, ultimately being associated with higher perceived employability (Figure 1). This

framework clarifies the multi-stage psychological pathways through which external proximal resources translate into the internal career capital required for students navigating cross-cultural labor markets. For international students, cognitive confidence is a functional prerequisite to decoding a foreign employment system; only when this confidence is established can they effectively mobilize their adaptive resources to overcome structural mobility barriers.

Hypothesis 4: Career decision self-efficacy and career adaptability sequentially mediate the positive relationship between university support and perceived employability.

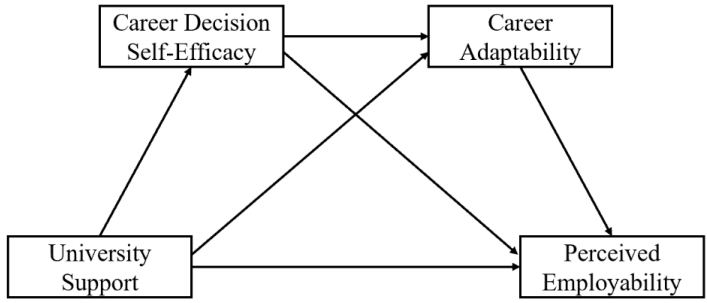

Figure.1 Conceptual Framework

METHOD

Data Collection

This study adopted a cross-sectional survey design to investigate the role of university support in shaping Chinese international students' perceived employability and the underlying psychological mechanisms. The research focused on final-year Gen Z Chinese international undergraduates enrolled in three leading public universities located in Malaysia's Klang Valley region. Klang Valley serves as Malaysia's primary educational hub, characterized by its multicultural learning environment and rich higher education resources, which collectively attract a significant proportion of Chinese international students (Yee et al., 2020).

This population was selected because final-year students are at a critical transition stage between academia and the labor market, making them highly reflective about their future careers. Furthermore, as international students navigating unfamiliar labor markets, they are highly reliant on institutional resources. According to official statistics provided by the international offices of the three universities, the total target population consisted of 1,635 students.

Sampling Strategy and Participants

To ensure analytic generalizability, a proportionate stratified random sampling method was employed. The sampling frame was established in formal collaboration with the Chinese International Students Associations at each of the three institutions, which provided anonymized enrollment lists of final-year Chinese undergraduates (2022 intake). Using a random number generator, participants were systematically selected within each university stratum to proportionally reflect their population sizes. To recruit the selected international students, formal invitations containing the research objectives, ethical assurances of anonymity, and secure online survey links (via Survey Star) were distributed through targeted emails and official international student network groups. A total of 518 survey invitations were distributed to the selected students. Following data cleaning to remove incomplete or unengaged responses, 412 valid responses were retained, yielding a strong effective response rate of approximately 79.5%. This final sample size comfortably satisfies the recommendations of Hair et al. (2010) regarding sample size adequacy for Structural Equation Modeling (SEM), ensuring robust statistical power.

The participants consisted of Chinese international students in Malaysia belonging to Generation Z, aged between 21 to 26 years. Female students accounted for 60.68% of the sample, while 39.32% were male. These participants represented a diverse range of academic disciplines, with the largest proportion enrolled in Social Sciences, Business, and Law (40.14%).

Instruments

This study followed the translation–back translation procedure proposed by Brislin (1986) to ensure semantic and conceptual equivalence of the measurement tools in the cross-cultural context. All variables were assessed using anonymous self-report questionnaires. To clarify the operationalization of the constructs, sample items for each scale are provided below.

University Support

University support was measured using the Employability Development Opportunities (EDOs) Scale developed by Pitan and Muller (2020). The culturally adapted scale consists of 27 items across six dimensions: curriculum, work experience, personal development planning, career guidance, real-world activities, and extracurricular activities. Sample items include: "My university courses have equipped me with technical skills relevant to my graduate employment" and "My university has made career counseling services available to me." Items were rated on a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree). In this study, the internal consistency was excellent (Cronbach's $\alpha = 0.95$). While the EDOs scale captures multiple domains of support, this study conceptualizes university support as a holistic proximal resource within the SCCT framework.

Career Decision Self-Efficacy

CDSE was assessed using the Career Decision Self-Efficacy Scale – Short Form (CDSES-SF) (Taylor & Betz, 1983), adapted by Hampton (2005) for the Chinese university student population. The adapted version comprises 13 items across three dimensions: decision making, information gathering, and problem solving. A sample item is: "I am able to make a plan for my goals over the next 5 years." Items were measured on a 5-point Likert scale assessing confidence levels (1 = no confidence to 5 = complete confidence). The scale demonstrated high reliability (Cronbach's $\alpha = 0.93$).

Career Adaptability

Career adaptability was measured using the Career Adapt-Abilities Scale – Short Form (CAAS-SF) (Savickas & Porfeli, 2012), validated in the Chinese context by Yu et al. (2020). The instrument consists of 12 items representing four core dimensions: concern, control, curiosity, and confidence. Sample items include: "I prepare for the future" (Concern) and "I look for opportunities to grow as a person" (Curiosity). Items were scored on a 5-point Likert agreement scale. The internal consistency of the scale was high (Cronbach's $\alpha = 0.90$).

Perceived Employability

Perceived employability was measured using the Self-Perceived Employability Scale (S-SPE) short form, validated by Vargas et al. (2018). The scale comprises 12 items measuring two dimensions: internal employability (self-assessed skills and job search confidence) and external employability (perceived labor market demand). Sample items include: "The skills and abilities that I possess are what employers are looking for" (Internal) and "There is generally a strong demand for graduates at the present time" (External). Items were rated on a 5-point Likert agreement scale. The internal consistency was excellent (Cronbach's $\alpha = 0.93$).

Data Analysis

All data analyses were conducted using SPSS version 27.0 and AMOS version 26.0. First, descriptive statistics were employed to summarize participants' sociodemographic characteristics. Second, prior to evaluating the structural relationships, the psychometric properties of the measurement scales were rigorously validated using Confirmatory Factor Analysis (CFA). As detailed in the Results section, indicator reliability was evaluated via standardized factor loadings. Construct validity was established by calculating Composite Reliability (CR) and the Average Variance Extracted (AVE) for convergent validity, while discriminant validity was confirmed using the Fornell-Larcker criterion.

Following measurement validation, a Covariance-Based Structural Equation Modeling (CB-SEM) approach was adopted to test the hypothesized relationships. Following recommendations from previous research (Little et al., 2002), a

domain-representative parceling strategy was employed. While parceling can potentially obscure the multidimensionality of latent constructs, its application is justified in the current study for two key reasons. First, the primary objective of this research is to evaluate the macro-level structural relationships among the constructs, rather than to re-validate the well-established internal dimensional structures of the adopted scales. Second, by utilizing a domain-representative approach—where items from different sub-dimensions are deliberately distributed across parcels—the multidimensional nature of the constructs is preserved within each parcel rather than masked. Ultimately, this technique significantly reduces idiosyncratic measurement error, improves the indicator-to-sample-size ratio, and yields more stable parameter estimates for testing complex structural models (Little et al., 2002). Finally, the significance of the simple and serial mediation effects was tested using the bootstrapping technique with 5,000 resamples to generate bias-corrected 95% confidence intervals (CI). An indirect effect was considered statistically significant when the CI did not include zero.

RESULTS

Common Method Deviation Analysis

Harman's single-factor test was conducted to assess the potential impact of common method bias (Podsakoff et al., 2012). The results revealed that 12 factors had eigenvalues greater than 1, and the first factor accounted for 30.54% of the total variance, which is below the recommended threshold of 40%. This indicates that common method bias is not a serious concern in this study and is unlikely to compromise the validity of the results.

Measurement Model

To validate the psychometric properties of the study's constructs (US, CDSE, CA, and PE), a measurement model was established using confirmatory factor analysis (CFA) (Figure 2) (Reinartz et al., 2009). The reliability of the measurement items was first evaluated through their standardized factor loadings. The results indicated that all loadings ranged between 0.614 and 0.817, surpassing the recommended threshold of 0.6 (Chin et al., 1998), thereby confirming the significance of the indicators. Subsequently, the overall goodness of fit was examined (Table 1). The analysis yielded a Chi-square/df ratio (CMIN/df) of 3.498, which aligns with the acceptable range of 1–4 (Wheaton et al., 1977). Furthermore, the GFI (0.905), TLI (0.903), and CFI (0.922) all exceeded the 0.90 benchmark. Finally, the RMSEA value of 0.078 fell below the 0.08 upper limit suggested by MacCallum et al. (1996). Taken together, these indices demonstrate that the measurement model fits the data well.

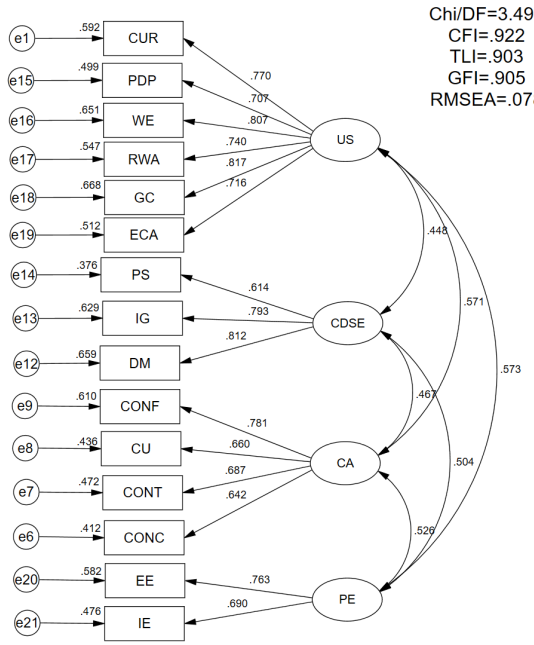

Figure 2. Measurement model

Table 1. CFA model fit indices.

Fit Indices	Recommended Value	Source	Obtain Value
CMIN/df	1-4	Wheaton et al., 1977	3.498
GFI	>0.90	Shevlin et al., 1998	0.905
TLI	>0.90	Hu et al., 1999	0.903
CFI	>0.90	Hu et al., 1999	0.922
RMSEA	<0.08	MacCallum et al., 1996	0.078

Note: CMIN/DF: Minimum discrepancy divided by degrees of freedom, GFI: Goodness of the Fit Index, TLI: Tucker–Lewis's Index, CFI: Comparative Fit Index, RMSEA: Root Mean Square Error of Approximation.

Construct reliability was assessed using Composite Reliability (CR) and Cronbach's alpha (α). As presented in Table 2, the CR values ranged from 0.692 to 0.891, while α coefficients varied between 0.901 and 0.959. All values surpassed the recommended thresholds of 0.60 for CR (Bagozzi & Yi, 1988) and 0.70 for α (Gefen et al., 2000), thereby demonstrating robust internal consistency.

Table 2. Results of CFA

Constructs	Components	B	S.E.	z-value	P	Factor Loading	CR
US	CUR	1.000				0.770	0.891
	PDP	0.865	0.059	14.557	***	0.707	
	WE	1.023	0.060	16.936	***	0.807	
	RWA	0.931	0.061	15.338	***	0.740	
	GC	1.044	0.061	17.186	***	0.817	
	ECA	0.882	0.060	14.769	***	0.716	
CDSE	DM	1.000				0.812	0.787
	IG	0.993	0.073	13.610	***	0.793	
	PS	0.781	0.068	11.443	***	0.614	
CA	CONC	1.000				0.642	0.788
	CONT	1.088	0.099	10.979	***	0.687	
	CU	1.033	0.097	10.669	***	0.660	
	CONF	1.239	0.105	11.846	***	0.781	
PE	EE	1.070	0.113	9.469	***	0.763	0.692
	IE	1.000				0.690	

Subsequently, validity was examined through convergent and discriminant measures. Convergent validity was primarily assessed using the Average Variance Extracted (AVE). Most constructs exhibited AVE values exceeding the 0.50 benchmark. Notably, while the AVE for CA (0.482) fell marginally below this strict threshold, its corresponding Composite Reliability (CR) was 0.788, which is well above the acceptable level of 0.70. As argued by Fornell and Larcker (1981) and further supported by Malhotra and Dash (2011), AVE is often a more conservative measure than CR. Consequently, on the basis that the CR value is robust (CR > 0.70), the convergent validity of the construct is still considered established. Therefore, CA was confidently retained in the measurement model without compromising measurement reliability. Finally, discriminant validity was confirmed via the Fornell–Larcker criterion, where the square root of the AVE for each latent variable exceeded its highest correlation with any other construct (Table 3).

Table 3. Discriminant validity

	PE	CA	CDSE	US
PE	**0.727**			
CA	0.526	**0.694**		
CDSE	0.504	0.467	**0.745**	
US	0.573	0.571	0.448	**0.761**

Note: The diagonal in the table represent the square root of AVE

Structural Model

The structural model was developed to test four primary hypotheses regarding the direct and indirect influence of US on PE. As shown in Figure 3, the model includes all paths necessary to evaluate the simple and serial mediation

effects of CDSE and CA. The fit indices (CMIN/df = 3.498, CFI = 0.922, TLI = 0.903, GFI = 0.905, RMSEA = 0.078) confirm that this hypothesized structure is an acceptable representation of the data.

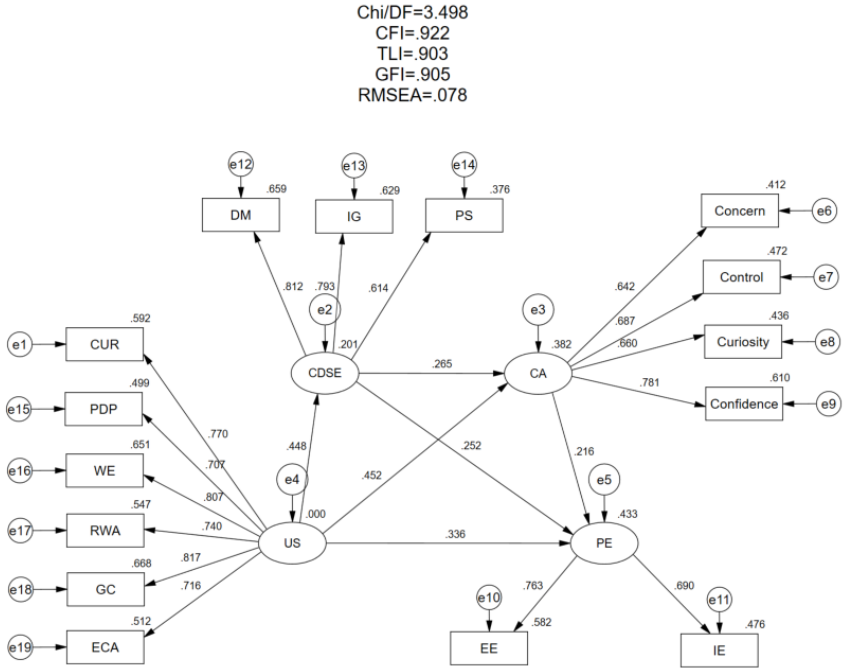

Figure 3. Structural Model

Direct Effects

The hypothesized direct paths within the structural model were examined using standardized path coefficients (β). As illustrated in Figure 3, the results indicated that US was significantly and positively associated with PE (β= 0.336, $p < 0.001$), thereby providing strong empirical support for Hypothesis 1.

Regarding the explanatory power of the model, the predictors collectively accounted for a substantial proportion of the variance in the endogenous variables. Specifically, the structural model explained 20.1% of the variance in CDSE (R^2 = 0.201), 38.2% in CA (R^2 = 0.382), and 43.3% in PE (R^2= 0.433). These results underscore the robustness of the proposed framework in explaining the employability perceptions of Gen Z international students.

Indirect Effects

A bootstrapping procedure with 5,000 resamples was conducted to examine the mediating roles of CDSE and CA in the relationship between US and PE. As

shown in Table 4, results showed that three significant indirect pathways emerged. First, US was positively associated with PE through CDSE, with an indirect effect of 0.113 (95% CI = [0.041, 0.211], p < 0.001), US was indirectly associated with PE via CA, with an indirect effect of 0.098 (95% CI = [0.010, 0.233], p < 0.01), supporting H3. Third, a significant serial mediation effect was identified, showing that US was positively associated with CDSE, which in turn was related to CA and ultimately PE (β = 0.026, 95% CI = [0.003, 0.077], p < 0.05), providing support for H4.

The total indirect effect of US on PE through CDSE and CA was 0.237, accounting for approximately 41.2% of the total effect, while the total effect of US on PE remained significant (β = 0.573., 95% CI = [0.426, 0.710], p < 0.001). Overall, these findings highlight that both CDSE and CA serve as key mediators in explaining how university support enhances perceived employability, and the significant serial mediation pathway further suggests the presence of a multi-stage psychological mechanism underlying this relationship.

Table 4. Results of mediation effect

Effect	Path relationship	Effect	P Value	95% CI	
				Lower	Upper
Direct effect	US→PE	0.336	<0.001	0.139	0.546
	US→CDSE→PE	0.113	0.002	0.041	0.211
Mediation effect	US→CA→PE	0.098	0.025	0.010	0.233
	US→CDSE→CA→PE	0.026	0.018	0.003	0.077
Total mediation effect		0.237	0.045	0.054	0.521
Total effect	US→PE	0.573	<0.001	0.426	0.710

Note: US represents university support, CDSE indicates career decision self-efficacy, CA indicates career adaptability, PE indicates perceived employability

To interpret the magnitude of these effects, we followed Cohen's (1988) guidelines. The direct effect of US on PE (β = 0.336, p < .001) is considered medium-to-large, indicating that institutional support is a primary correlate of employability perceptions. Regarding the mediation structure, the total indirect effect (0.237) accounts for 41.2% of the total effect (0.573), while the direct effect retains the remaining 58.8%. This pattern confirms a partial mediation mechanism, suggesting that while internal psychological resources are essential for processing external support, the university's direct affordances—such as institutional reputation or direct industry linkages—continue to play a dominant role in shaping Gen Z students' career confidence.

DISCUSSION

This study examined how university support is associated with perceived employability among Chinese international students in Malaysia through the serial mediation of career decision self-efficacy and career adaptability. Grounded

in the SCCT-CSM framework, the results supported all four hypotheses, revealing both direct and indirect pathways that collectively explained 43.3% of the variance in perceived employability. Crucially, these findings contextualize psychological resources development within the dual labor-market paradox these students face—host-country mobility restrictions and home-country hyper-competition—suggesting that, for transnational actors navigating such pressures, adaptive resource mobilization may be contingent upon prior decisional confidence.

The direct positive association between university support and perceived employability ($\beta = 0.336$, $p < 0.001$) supports the role of institutional support as a proximal contextual influence during the school-to-work transition (Lent et al., 1994). For final-year international students caught between Malaysian visa restrictions and China's saturated labor market, culturally tailored career guidance and industry networking may serve as an institutional buffer in the acculturation process, helping stabilize outcome expectations in an otherwise restrictive environment (Yang et al., 2022; Ameen et al., 2022; Jiang, 2023;).

The two individual mediators operated through distinct psychological functions. career decision self-efficacy partially mediated the university support–employability link (indirect effect = 0.113, $p < 0.01$), consistent with its theorized role as the "cognitive pillar" of SCCT. For students prone to decision paralysis—unsure whether to pursue host-country opportunities or prepare for home-country involution—targeted career services may reduce cross-cultural uncertainty and foster the confidence needed to navigate unfamiliar labor markets (Wei-Cheng Mau, 2000; Ahmed et al., 2019; Jin et al., 2023). Career adaptability also emerged as a significant mediator (indirect effect = 0.098, $p < 0.05$), reframing adaptability as a cross-cultural adaptation competency rather than merely a general career resource (Savickas et al., 2013). Consistent with Saleem (2024), the mediation suggests that institutional support helps students translate resources into flexible strategies—such as pivoting between host- and home-country job markets when structural barriers arise—thereby strengthening resilience against systemic rejections (Gerçek, 2023; Xia et al., 2020).

The study's most distinctive finding is the significant serial mediation pathway ($\beta = 0.026$, $p < 0.05$), which links university support to perceived employability through career decision self-efficacy followed by career adaptability. While prior literature has conceptualized these constructs as reciprocal or parallel (Guan et al., 2016; Hirschi et al., 2015), our results are consistent with a sequential model in cross-cultural transition contexts, where cognitive confidence functions as a conditional precursor to adaptive resource mobilization (Creed et al., 2009). For Gen Z international students facing the dual-paradox, this pattern suggests that institutional support is first internalized as decisional confidence, which then enables proactive adaptation to host or home labor markets.

THEORETICAL AND PRACTICAL IMPLICATIONS

This study advances the SCCT-CSM framework by contextualizing it within international student adjustment and perceived employability. A critical theoretical contribution is clarifying the hierarchical sequence of psychological resources during cross-cultural career transitions. Addressing the logical inquiry of whether adaptability precedes confidence in new environments, our results provide empirical evidence that for international students, CDSE acts as a functional prerequisite for CA. Our data suggests that in the specific domain of transnational career management, students often encounter indecision caused by unfamiliar foreign labor market expectations. By first building students' confidence in their ability to make informed decisions (CDSE), host-institution support provides the foundational cognitive stability necessary for students to actively mobilize their adaptive resources (CA) to navigate cultural complexities. Thus, we establish that in the career development of international students, cognitive confidence is the essential gateway to, rather than a consequence of, cross-cultural adaptive capacity.

Practically, these findings mandate a paradigm shift for university administrators and career counselors, moving from generic student support to culturally responsive interventions. Counselors should adopt a "confidence-first, adaptability-second" intervention strategy. This strategy is defensible because pushing students toward adaptability before they possess the confidence to navigate their structural disadvantages often exacerbates anxiety. Interventions must initially focus on building self-efficacy to counteract cross-cultural career barriers. For instance, universities should establish "International Alumni Success Circles" where senior international graduates share mastery experiences regarding navigating visa regulations and overcoming employer skepticism.

Once cognitive confidence is established, institutions must transition from passive information provision to mandatory experiential learning. To address the integration challenges in host countries, universities should embed credit-bearing, cross-cultural industry projects directly into the curriculum. This allows students to apply their newfound confidence to real-world host-country challenges, practicing the adaptability required to either break through local employment barriers or flexibly transfer those skills back to their home country. Furthermore, recognizing the cultural transition from paternalistic educational backgrounds to autonomous, highly competitive labor markets, stakeholders must prioritize funding for targeted psychological resilience initiatives that help international students reframe their bicultural identity as a unique competitive advantage in the global workforce.

LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

Despite its contributions, this study has several limitations that warrant attention. First, the operationalization of university support as a singular, holistic construct may conceal meaningful differences and independent effects among its various dimensions. Future research should disaggregate institutional support to identify which specific provisions most effectively foster international students' distinct psychological resources. Second, while Harman's single-factor test suggested common method bias was not a severe issue, this test alone is insufficient to entirely rule out its presence. Future studies should employ additional procedural or advanced statistical remedies to better control for method variance.

Third, the sampling procedure restricts the analytic generalizability of the findings. Data were collected from Chinese international students across only three universities in Malaysia, and relying on international student associations for recruitment may introduce self-selection bias—proactive or career-anxious students might have been more inclined to participate. Future cross-national investigations should adopt broader sampling frames, potentially collaborating directly with university registries. Fourth, the data were collected using self-reported measures, which capture perceived employability rather than objective employment outcomes. Future research could incorporate multi-source data, such as host-country employer evaluations, to triangulate the findings. Finally, the study did not empirically measure macro-structural barriers. Future investigations should operationalize and test external structural factors—such as host-country visa policies, regional labor market discrimination, and cultural dimensions—as moderating variables. This would deepen the understanding of the boundary conditions under which institutional environments shape international students' career development trajectories.

CONCLUSION

This study advances the understanding of the mechanisms through which university support is associated with the perceived employability of Chinese international students. Framing employability as a complex process of cross-cultural adaptation, the results indicate that host-university support not only directly relates to perceived employability but also has indirect associations through CDSE and CA, which function in a sequential chain. These findings provide robust empirical evidence that tailored institutional support is an indispensable catalyst for international student transition. Ultimately, the study advocates that to foster globally competitive graduates, higher education institutions must explicitly address the unique structural and cultural hurdles of international mobility, ensuring that external support is successfully internalized into cognitive confidence and adaptive resilience.

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☐ Some sections, with extensive editing

The authors acknowledge the use of ChatGPT to Polish the language and improve the grammar. The prompts used include: "Please review the following text and provide suggestions for revision to improve grammar, eliminate redundancy, and enhance clarity." The output from these prompts was used to improve the quality and clarity of writing, making it easier for readers to understand. While the authors acknowledge the usage of AI, they maintain that they are the sole authors of this article and take full responsibility for the content therein, as outlined in COPE recommendations.

Data availability statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

Declarations

The authors have no relevant financial or non-financial interests to disclose.

Ethical approval

The research protocol for this study was approved by the Research Ethics Committee of Universiti Kebangsaan Malaysia (UKM). Ethics Ref. No. JEP-2025-815

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