Exploring the Role of Serious Leisure in Shaping Entrepreneurial Intention: Insights from Higher Education Students in China

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Abstract

Our study examines how serious leisure (SL) shapes entrepreneurial intention (EI) among Chinese university students. Grounded in Social Cognitive Career Theory (SCCT), we test a model in which SL enhances career adaptability (CA), which in turn fosters EI, with social support (SS) moderating the CA–EI link. A two-study design integrates external and internal validity: Study 1, a cross-sectional survey of 779 undergraduates from 28 Chinese universities, establishes construct validity and tests the hypothesised associations; Study 2, a 2×2 vignette experiment with 308 postgraduates, confirms causality and examines second-stage moderation. Findings consistently support the model: SL boosts EI both directly and indirectly via CA, and SS strengthens the CA–EI pathway. Theoretically, this research broadens SCCT by identifying SL participation as an informal yet significant adaptive career resource, especially when situated within enabling environments like China. Practically, it suggests that higher education institutions should recognise skill-based leisure as a scaffold for EI development. Methodologically, the sequential survey-experiment design provides a robust template for future research seeking ecological and causal validity in leisure, higher education, and entrepreneurship studies.

Keywords: Serious Leisure, Entrepreneurial Intention, Career Adaptability, Social Support, Vignette Experimental Study, Higher Education.

Word Count: 7,982 (excluding title and abstract)

Introduction

Approximately 30 per cent of university students worldwide plan to launch their own business within five years of graduation (Philipp et al., 2024). In China, however, entrepreneurial aspirations remain relatively low. Surveys indicate that only about 12 per cent of Chinese undergraduates express an intention to start a venture, and just 2 per cent do so after graduation, far below the 20 to 30 per cent startup rates observed in developed Western countries (Chen et al., 2022). This discrepancy highlights the need to understand what drives students' entrepreneurial career choices. Cultivating entrepreneurial intention (EI) is seen as critical, as EI is the strongest predictor of eventual entrepreneurial behaviour (Zhang et al., 2022). Since graduate entrepreneurs can contribute to innovation and job creation, fostering EI in higher education has become a priority for educators and policymakers (Sevilla-Bernardo et al., 2024). The central question remains: beyond formal training, how can we effectively encourage genuine entrepreneurial intent among students?

Research into the development of EI among university students has primarily drawn on two complementary frameworks: Ajzen's (1991) Theory of Planned Behaviour (TPB) and Shapero's (1982) Model of the Entrepreneurial Event (SEE). Both emphasise cognitive evaluation of ability and desire. TPB frames these as attitude toward the act, perceived behavioural control, and subjective norms (Ajzen, 1991). SEE employs closely allied constructs—perceived desirability, perceived feasibility, and propensity to act (Shapero & Sokol, 1982). Building on these theories, studies have shown that formal entrepreneurship education (Suto et al., 2025), supportive norms

(Wijayati et al., 2021), and attitudes (Taneja et al., 2024) reinforce the cognitive antecedents predicted by TPB and SEE, thereby enhancing EI.

However, much of this research focuses on *structured or trait-based influences* such as curricular interventions or stable personality traits, often overlooking *informal, self-directed experiences* that also shape students' entrepreneurial thinking (Liu et al., 2022). University students frequently engage in serious leisure (SL), defined as the systematic, intrinsically motivated pursuit of demanding hobbies that require skill, commitment, and ongoing learning, such as open-source coding, competitive sports, jazz ensembles, and volunteering (Nimmi et al., 2023; Stebbins, 2007). These pursuits cultivate mastery, creativity, resilience, and social capital; resources that support entrepreneurial cognition but have received scant attention outside formal educational contexts (Kumar & Ragini, 2024). Recently, Mouratidou et al. (2024) found that UK undergraduates deeply engaged in SL reported higher EI, while Tükel et al. (2025) observed that Turkish female university students with strong SL involvement showed enhanced entrepreneurial orientation.

Yet, such understanding remains nascent. First, existing evidence is sparse and geographically limited, primarily conducted in Anglo-European or Middle-Eastern contexts (Mouratidou et al., 2024; Tükel et al., 2025). Whether similar patterns exist in East-Asian higher-education systems where collectivist norms and a labour market strongly oriented toward secure public-sector and state-owned-enterprise employment may dampen private-venture aspirations is still unclear. Second, prior work has mainly treated SL as an input and EI as an output without identifying the psychological

mechanisms that mediate this relationship (Liu et al., 2022). This is a critical gap, as theoretical lenses such as Social Cognitive Career Theory (SCCT) posit that career outcomes crystallise through adaptivity and contextual affordances (Lent & Brown, 2019).

Third, the role of context is often neglected. Little is known about whether a supportive social environment (such as that in China) enhances or inhibits its influence on EI. Fourth, methodological limitations persist, with most studies relying on single-wave and self-reported surveys that constrain causal inference and risk common-method bias (Irwin et al., 2019). Finally, few studies distinguish between serious and casual leisure, leaving open the question of whether depth of engagement, rather than leisure in general, drives EI (Nimmi et al., 2023; Stebbins, 2007).

To address these gaps, the present study investigates how SL involvement may strengthen EI among university students in China. Drawing on SCCT, our study aims to conceptually develop and empirically validate a moderated mediation model examining how SL, career adaptability (CA), and social support (SS) influence EI. CA, defined as "a psychosocial construct that denotes an individual's resources for coping with current and anticipated tasks, transitions, and traumas in their occupational roles" (Savickas & Porfeli, 2012, p. 662) is particularly relevant for entrepreneurship, as it reflects the ability to adapt to changing circumstances and challenges. Additionally, SS, defined as "an interpersonal transaction that involves emotional concern, instrumental aid, information, or appraisal" (Carlson & Perrewé, 1999, p. 514), complements this framework by highlighting the importance of external support systems.

To achieve the research aim, we employ a two-study sequential survey-experiment design. Study 1, a cross-sectional survey of 779 undergraduates from 28 Chinese universities, establishes construct validity and tests the hypothesised associations; Study 2, a 2×2 vignette experiment with 308 postgraduates, confirms causality and examines second-stage moderation. Theoretically, this research broadens SCCT by identifying SL participation as an informal yet significant adaptive career resource, especially when situated within enabling environments like China. Practically, it suggests that higher education institutions should recognise skill-based leisure as a scaffold for EI development. Methodologically, the sequential survey-experiment design provides a robust template for future research seeking ecological and causal validity in leisure, higher education, and entrepreneurship studies.

Research Context

Four intersecting forces shape Chinese university students, which, taken together, create an ideal setting for examining how SL and SS jointly shape entrepreneurial intention.

1. Higher-education expansion and labour-market pressure. The number of students graduating each year in China has surged from 1.08 million in 1998 to an expected 12.22 million in 2025, exceeding job creation for new graduates in 2025 by 1.29 million (China Ministry of Education, 2024). In parallel, participation in skill-intensive hobbies such as competitive sports, the arts, and coding clubs has grown. These SL activities provide mastery experiences that strengthen confidence and

transferable skills. A recent study shows that Chinese Gen Z participants in SL report stronger EI (Mouratidou et al., 2024).

2. Entrepreneurship-oriented policies and culture.

"To support entrepreneurs, local governments and universities have been urged to implement supportive policies, including tax reductions and financial assistance. Targeted services will also be provided to help graduates commercialize their innovations" (China Ministry of Education, 2024, Online). Such policies are crucial as enrolment numbers continue to rise, suggesting graduate numbers will also continue on an upward trajectory in the years ahead. Additionally, previous surveys confirm that China exhibits a strong entrepreneurial culture and that students broadly endorse these policy measures (Li & DaCosta, 2016; Lin et al., 2022).

3. Evolving leisure values. While traditional norms emphasise diligence and academic excellence, contemporary youth also seek self-development through hobbies. Studies of Chinese leisure describe a synthesis of Confucian self-cultivation and Taoist creativity (Zhao & Wu, 2022), echoing the SL view that devoted participation fosters personal growth. In China's competitive environment, engagement in challenging hobbies can cultivate persistence and innovation, qualities prized in entrepreneurs. Cross-cultural work underscores this mechanism, evidencing that the positive association between SL, well-being, and employability is stronger among Chinese students than among their UK peers (Donald et al., 2024).

4. Pervasive social support. Career choices in China's collectivist culture are deeply social. Families, peers, and universities offer encouragement, resources, and

infrastructure like mentoring and seed funding (Li & Kang, 2025). Research shows that such multi-layered support bolsters students' entrepreneurial self-efficacy and amplifies the benefits of other policy initiatives (Zhang et al., 2022). Such high support environments increase opportunities for benefits from SL participation and CA to translate into entrepreneurial action.

In sum, the convergence of structural, cultural, and interpersonal factors makes China a rich setting for studying how SL fosters EI and for generating insights that may inform comparative research in other national settings.

Theoretical Framework and Hypothesis Development

Theoretical Framework

SCCT posits that self-efficacy and outcome expectations, shaped by learning experiences, drive people's career interests and goals (Lent & Brown, 2019). SL offers exactly such learning experiences: its mastery demands cultivate domain-specific self-efficacy and generate optimistic expectations about what sustained effort can achieve (Bandura, 1977). As confidence and positive expectancies accumulate, individuals set increasingly ambitious choice goals, often re-imagining the leisure activity as a viable occupational path (Lent, 2020). Thus, in SCCT terms, SL provides a focused arena in which entrepreneurial cognitions can form and strengthen.

When confidence-laden goals are pursued over time, SCCT predicts the development of adaptive personal resources that help individuals manage new vocational challenges. CA fits this description: it reflects readiness to cope with transitions through concern, control, curiosity and confidence (Savickas, 1997). The

long-term dedication and self-actualisation inherent in SL naturally foster these adaptive capacities, equipping individuals to handle the uncertainties of entrepreneurial careers (Ma et al., 2024). Concurrently, SCCT emphasises that environmental supports shape how self-efficacy and goals translate into action (Lent et al., 2016). In collectivist China, family encouragement, peer collaboration and university incubators offer abundant SS, reinforcing learners' confidence and sustaining their goal pursuit (Li & Kang, 2025; Zhang et al., 2022). By acknowledging personal adaptivity and supportive contexts, this study extends SCCT to show how informal learning in SL can foster entrepreneurial ambition.

Linking Serious Leisure (SL) to Entrepreneurial Intention (EI)

In contemporary society, the boundary between leisure and work is increasingly porous (Nimmi & Donald, 2023), allowing many hobbyists to transform SL pursuits into entrepreneurial ventures (Kim et al., 2015; Lim, 2020; Stebbins, 2014). SL involves sustained, self-directed effort to master specialised competencies (Stebbins, 2007), cultivating confidence, intrinsic motivation and a pronounced sense of efficacy, representative of key psychological drivers of entrepreneurial ambition (Mansourian, 2024). As the activity becomes central to one's self-concept, a strong leisure identity emerges (Lamont & Kennelly, 2012), prompting individuals to re-imagine their hobby as a viable career path. The patience, resilience, and problem-solving demanded by years of skill-building mirror the qualities required to launch a venture. High involvement in SL has also been linked to greater innovativeness and risk-taking, traits closely associated with entrepreneurial orientation (Tükel et al., 2025).

Empirical research echoes these theoretical connections. SL participation predicts heightened entrepreneurial alertness (Almeida & Daniel, 2020), broader networks (Philips & Fairley, 2014), enhanced creativity (Mareque et al., 2019), and stronger EI across various national contexts (Mouratidou et al., 2024). SL also deepens market-relevant expertise (Stebbins, 2014), contributing to the antecedents of EI.

However, this relationship is shaped by context. When leisure-based ventures arise from financial necessity rather than intrinsic enjoyment, the motivational benefits of SL and its impact on EI diminish (Mahayosnand & Sabra, 2024). Cross-cultural data evidence further boundary conditions. SL's positive effect on employability and entrepreneurial readiness appears weaker among UK students than among their Chinese peers (Donald et al., 2024), while time and resource constraints have been shown to dampen the effect among Turkish women (Tükel et al., 2025). As detailed earlier, Chinese universities combine far-reaching start-up policies with abundant maker and arts clubs, conditions that should amplify SL's impact on EI. Thus, we propose:

Hypothesis 1 (H1): SL positively predicts EI.

Linking Serious Leisure (SL) to Career Adaptability (CA)

Happenstance Learning Theory and the Theory of Occupational Engagement both argue that varied experiences serve as learning laboratories, equipping people with skills, preferences, and adaptive decision-making abilities (Krumboltz, 2009). SL, with its sustained commitment to complex, self-directed tasks, therefore has the potential to enlarge an individual's "career toolkit" and employability capital.

Empirical work largely supports this claim: SL participation has been linked to higher skills mastery, self-efficacy, and a stronger sense of purpose; resources that feed directly into CA (Phillips & Fairley, 2014; Stebbins, 2007). A recent study of Chinese undergraduates, for example, found that SL boosted well-being and perceived employability in part through enhanced CA (Ma et al., 2024).

Yet the relationship is not universally positive. When leisure tasks closely mirror job demands, extra time in SL can deplete rather than replenish career resources (Kelly et al., 2020). Likewise, heavy commitment to demanding non-work roles may sap emotional energy and harm work outcomes (Weer et al., 2010). These mixed findings suggest that SL's impact on CA depends on how well the leisure domain complements (rather than duplicates) the pressures of work or study. Because Chinese students' SL pursuits are institutionally supported yet distinct from their coursework (see Research Context), they provide an ideal platform for converting leisure experiences into higher CA. Therefore, we propose:

Hypothesis 2 (H2): SL positively predicts CA.

Linking Career Adaptability (CA) to Entrepreneurial Intention (EI)

Career Construction Theory positions CA as a pivotal psychosocial resource for navigating vocational change (Savickas & Porfeli, 2012). Entrepreneurship, viewed as an adaptive career response, should therefore benefit from higher CA. Indeed, several studies confirm a positive CA → EI pathway: Serbian undergraduates (Tolentino et al., 2014) and Chinese university students (Zhang et al., 2024) showed that greater CA predicts stronger EI.

Yet, results are not uniform. Among Togolese students and job seekers, CA failed to translate into EI, a null effect attributed to structural barriers that stifle new-venture formation (Atitsogbe et al., 2019). Other work shows the link emerges only under specific motivational profiles—for example, low future-time perspective combined with high promotion focus (Kumasey et al., 2024). Taken together, these findings imply that contextual enablers must be in place for CA to convert into entrepreneurial motivation. Given the robust entrepreneurial infrastructure described in the Research Context, the adaptive resources embodied in CA are especially likely to translate into EI among Chinese undergraduates. Accordingly, we posit:

Hypothesis 3 (H3): CA positively predicts EI.

The Mediating Role of Career Adaptability (CA)

Building on evidence supporting H1 (SL → EI), H2 (SL → CA), and H3 (CA → EI), we posit that CA mediates the relationship between SL and EI. SL, as an intense and sustained leisure activity, cultivates skills, attitudes, and knowledge that enhance individuals' adaptability in navigating vocational challenges (Celen-Demirtas et al., 2015). This adaptability, in turn, bolsters students' entrepreneurial inclination by equipping them with resilience, self-regulation, and problem-solving skills essential for entrepreneurship (Tolentino et al., 2014; Zhang et al., 2024). Although some studies have reported that CA fails to carry leisure-related benefits to career outcomes, particularly when leisure closely overlaps with existing work roles (Kelly et al., 2020) or when structural barriers suppress venture formation (Atitsogbe et al., 2019), these limitations appear context-specific and less salient for Chinese undergraduates, who

enjoy strong institutional support for entrepreneurship. Consistent with the view that personal and recreational engagements shape vocational outcomes, we therefore contend that CA is the critical psychological resource translating SL experiences into EI (Stebbins, 2014). Accordingly, the study posits:

Hypothesis 4 (H4): CA mediates the SL-EI relationship.

The Moderating Role of Social Support (SS)

Bandura's (2001) social cognitive theory argues that behaviour such as EI emerges from the continuous interplay between personal resources and environmental affordances. SS constitutes one of the most salient environmental resources: encouragement, modelling and tangible aid from family, peers, and institutions can bolster entrepreneurs' cognitions and motivation (Neneh, 2022). Conceptually, then, strong SS should help students convert the adaptive capacities embodied in CA into a clear intention to found a venture.

Empirical evidence is suggestive but mixed. In several student samples, higher SS amplified positive pathways toward EI. For example, by strengthening the indirect effect of entrepreneurial passion via self-efficacy (Neneh, 2022) or by enhancing the impact of entrepreneurship education (Fan et al., 2024). Yet other studies report weak or source-specific effects: institutional backing did not raise entrepreneurial well-being, and only partner (not family) support boosted positive emotions (Huang et al., 2024). Within the high-support environment outlined in the Research Context, SS should intensify the motivational payoff of CA. Therefore, we posit:

Hypothesis 5 (H5): SS moderates the CA–EI relationship.

Conceptual Model

Figure 1 presents the conceptual model.

FIGURE 1

Method

Research overview and rationale

Grounded in SCCT, our study examines how SL influences students' EI through CA, and when SS amplifies this pathway. A two-study sequential survey-experiment design was used to test correlation and causal links while enhancing generalisability.

Study 1 – Cross-sectional survey. An online questionnaire administered to 779 undergraduates established the psychometric properties of all focal constructs and provided externally valid evidence of the proposed relationships.

Study 2 – Scenario-based experiment. A 2 (SL: high vs. low) × 2 (SS: high vs. low) vignette experiment involving 308 postgraduate students manipulates the independent variables under controlled conditions, enabling causal inference and examination of second-stage moderated mediation.

Pairing a large-scale survey with a carefully designed experiment strengthens internal and external validity (Aguinis & Bradley, 2014). Both studies used validated Mandarin instruments, included identical demographic controls, and received prior ethical approval, ensuring methodological consistency and comparability across samples.

Study 1: Survey

Sample and Procedure

Study 1 was a cross-sectional study conducted among undergraduates from 28 Chinese universities to test the proposed model and assess external validity. Data were collected via an online questionnaire between August and September 2023, with ethical approval from the lead author's institution. Participants were recruited via WeChat and gave informed consent to participate. The questionnaire was translated into Mandarin and back-translated into English by the lead author for analysis. Of 793 responses, 779 were retained after removing implausible or incomplete entries. Participants had a mean age of 20.04 years (SD = 1.46); 404 were men and 375 were women, with 223 from urban and 556 from rural areas. Although convenience sampling limits generalisability, the gender split (49 per cent women) closely matched China's National Bureau of Statistics (2025) for the national undergraduate population (circa 50 per cent women).

Measures

All variables were measured using validated scales from prior research, with items rated on a 7-point Likert scale (1 = strongly disagree, 7 = strongly agree):

SL was assessed using an 18-item scale adapted from Gould et al. (2011), based on the Serious Leisure Inventory and Measure (SLIM; Gould et al., 2008). Example item: "My hobby has added richness to my life." Cronbach's $\alpha = 0.972$.

EI was measured using a 6-item scale from Liñán and Chen (2009). Example item: "I am ready to make anything to be an entrepreneur." Cronbach's α of 0.940.

CA was evaluated using a 12-item scale developed by Maggiori et al. (2017), encompassing concern, control, curiosity, and confidence. Example item: “Thinking about what my future will be like” (concern). Cronbach’s α of 0.946.

SS was assessed using a 12-item scale from Zimet et al. (1988). Example item: “My family really tries to help me.” Cronbach’s α of 0.888.

Control variables included gender, age, and urban/rural status, as these demographic factors are known to influence EI (Cardella et al., 2024).

Strategy of Analysis

We analysed Study 1 data with PLS-SEM in SmartPLS 4 (Ringle et al., 2022), following the four-step procedure recommended by Hair et al. (2019). 1) Measurement model: for each reflective construct, we assessed indicator reliability ($\lambda > 0.70$), internal consistency (Cronbach’s α & CR > 0.70), convergent validity (AVE > 0.50), and discriminant validity (HTMT < 0.85). 2）Structural model: we inspected inner-VIF values (< 3), R^2, and Q^2 before estimating path coefficients; significance relied on 10,000 BCa bootstrap resamples. 3）Mediation test: the indirect effect SL → CA → EI was evaluated with bias-corrected bootstrap Confidence intervals and 4) Moderation test: following Chin’s (2010) two-stage approach, mean-centred CA and SS indicators were multiplied to create the latent interaction term CA × SS; its path significance and confidence intervals obtained via the same bootstrap routine.

Common Method Bias

To address potential common method bias (CMB) from a single source (self-reported survey data), both procedural and analytical techniques were employed

(Reio, 2010). Procedurally, respondent anonymity was ensured, the survey was clear and concise, and dependent/independent variables were placed in separate sections, with demographic questions at the end. Analytically, variance inflation factor (VIF) values were examined, ranging between 1.221 and 2.181, below the recommended threshold of 3.3 (Kock, 2015), indicating that CMB was unlikely to affect the results significantly.

Study 2: Experiment

Sample and Procedure

To address the limitations of cross-sectional research in Study 1 and further test the internal validity of our model, Study 2 employed a 2 (SL: high vs. low) × 2 (SS: high vs. low) between-subject experimental design. The study, conducted in October 2023, involved 308 postgraduate students (average age = 23.13 years, SD = 1.35; 143 men, 165 women; 121 from rural areas, 187 from urban areas). Participants were randomly assigned to one of the four experimental groups: high SL & high SS, high SL & low SS, low SL & high SS, and low SL & low SS using a computer-generated randomisation procedure to ensure equal assignment probability. The demographic profile of this single-site sample (53 % women; 39 % rural origin) mirrors national postgraduate figures (≈51 % women; ≈46 % rural), lending confidence that the behavioural patterns observed here are not idiosyncratic to one subgroup. Together with the broad multi-site survey in Study 1, the experimental evidence reinforces the robustness of the proposed model across different student levels and research designs.

The experimental scenarios used photography as the context. Each participant was randomly assigned to read one of four scenarios that operationalised the high/low levels of SL and high/low levels of SS. Participants then completed a manipulation check to ensure that the experimental materials successfully activated the intended levels of SL and SS. Subsequently, they self-reported CA (Maggiori et al., 2017) and EI (Liñán & Chen, 2009), with EI serving as the dependent variable. Demographic information (gender, age, and urban/rural background) was collected as control variables, and participants were asked about their speculations regarding the study's purpose to mitigate demand characteristics.

Measures

Experimental materials were developed based on the theoretical characteristics of SL (Stebbins, 2007) and validated SL (Gould et al., 2011; Gould et al., 2008) and SS (Zimet et al., 1988) scales. High-SL scenarios featured sustained commitment, significant investment of time and resources, and a sense of personal achievement, while low-SL depicted casual engagement and a minimal investment of time or effort. High-SS scenarios illustrated strong emotional and instrumental support from family and friends, while low-SL scenarios depicted a lack of interest or encouragement from the social network. These descriptions were then paired to create four experimental conditions.

Experimental Scenarios

High SL and High SS

> "I've been passionate about photography for over a decade. To improve my skills, I've invested a considerable amount of time and money. Not only have I purchased high-quality photography equipment, but I also frequently attend seminars and even travel abroad for photography trips. With a spirit of exploration, I seek different perspectives and beautiful moments in life, which has led to my emerging prominence in the photography field." (SL Passage 1)

> "My family and friends have always supported me, providing endless emotional support and encouragement. Whenever I face challenges or uncertainties, they're always there to offer constructive advice and assistance. This continuous support has helped me make significant strides in photography and has earned me numerous awards and recognition." (SS Passage 1)

Low SL and Low SS

> "Occasionally, I capture life's lovely moments and sceneries with my phone. This hobby doesn't require complex equipment or techniques, nor a significant investment of time and energy—it's just a small part of my life." (SL Passage 2)

> "In my social life, the subject of photography seldom sparks interest among my family and friends. They don't show much curiosity about this minor passion of mine, rarely asking about or paying attention to the photos I take. Their lack of interest or support in my photography hobby means that taking pictures remains for me a simple pleasure and a way to document life." (SS Passage 2)

High SL and Low SS; Low SL and High SS

The other two scenarios were created by combining SL Passage 1 with SS Passage 2, and SL Passage 2 with SS Passage 1.

Pilot Study

A separate pilot study conducted in May 2023 confirmed that the scenarios effectively activated the intended levels of SL and SS. Aside from the experimental materials, the measurement of other variables, including CA, EI, and control variables, was consistent with Study 1.

Results: Study 1

Descriptive Statistics

Table I summarises the means, standard deviations, and correlations among study variables. Significant correlations were observed, supporting further exploration.

TABLE I

Measurement Model Assessment

This study employs a reflective measurement model, assessed following Hair et al. (2019). Key evaluation criteria included the model's indicator loadings, internal consistency reliability (Cronbach's α, composite reliability ρA), convergent validity (Average Variance Extracted, AVE), and discriminant validity (Heterotrait-Monotrait Ratio, HTMT).

Most indicator loadings exceeded the recommended threshold of 0.708. One SL item had a loading of 0.612 but was retained as the AVE for SL remained above 0.50, ensuring convergent validity. All constructs demonstrated strong reliability, with

Cronbach's α and composite reliability values exceeding 0.70. AVE values ranged from 0.684 to 0.822, exceeding the 0.50 threshold for convergent validity. HTMT values ranged from 0.517 to 0.716, well below the 0.85 threshold, confirming discriminant validity.

TABLE II

TABLE III

Structural Model Assessment

The structural model was evaluated for collinearity (Variance Inflation Factor, VIF), explanatory power (R^2), predictive relevance (Q^2), and out-of-sample predictive power (PLSpredict), following Hair et al. (2019).

VIF values (2.026 to 2.181) were below 3, indicating no multicollinearity issues. R^2 values for CA and EI were 0.422 and 0.350, suggesting medium explanatory power. Q^2 values (0.419 for CA, 0.318 for EI) indicated medium-to-large predictive relevance. For Sample Predictive Power (PLSpredict), Mean Absolute Error (MAE) was used to evaluate predictive power due to asymmetrically distributed prediction errors. Among the ten items, nine PLS-SEM MAEs exceeded LM-MAEs, while one was smaller, indicating low predictive power (Table IV). However, the objective of this study is explanatory (ability to explain relationships among constructs) rather than predictive modelling (out-of-sample predictive accuracy).

TABLE IV

The next step involved testing the statistical significance and relevance of the hypothesised path coefficients using a bootstrapping procedure with 10,000 resamples

Direct Effect

Shown in Figure 3, all hypothesised direct effects were positive and significant: H1: SL → EI ($\beta = 0.327$, $p < 0.001$), H2: SL → CA ($\beta = 0.651$, $p < 0.001$) and H3: CA → EI ($\beta = 0.276$, $p < 0.001$).

FIGURE 3

Mediation Analysis

The indirect effect of SL on EI through CA was positive and significant ($\beta = 0.180$, SE = 0.036, $p < 0.001$, 95% CI [0.111, 0.251]). Thus, H4 was supported.

Moderation Analysis

Using the two-stage PLS procedure detailed in Method, the interaction between CA and SS was positive and significant ($\beta = 0.072$, SE = 0.025, $p < 0.01$, 95% CI [0.031, 0.130]), thus supporting H5.

Results: Study 2

Manipulation Checks

The manipulation of SL and SS was successful. Participants in the high-SL group scored significantly higher on SL than those in the control group ($M_{\text{high-SL}} = 5.728$, $SD = 0.974$; $M_{\text{low-SL}} = 5.412$, $SD = 0.928$; $F(1, 304) = 9.029$, $p = .003$, $\eta_p^2 = .029$), indicating they perceived the activity as more serious with greater time and effort investment. Similarly, participants in the high-SS group scored significantly higher on SS than those in the low-SS group ($M_{\text{high-SS}} = 5.762$, $SD = 0.963$; $M_{\text{low-SS}} = 5.170$, $SD = 1.146$; $F(1, 304) = 23.356$, $p < .001$, $\eta_p^2 = .071$), suggesting they perceived a significantly greater

level of SS from others, such as family and friends, compared to those in the low-support group.

CA as the Dependent Variable

A 2 (SL: high vs. low) × 2 (SS: high vs. low) analysis of variance (ANOVA) was conducted with CA as the dependent variable. The analysis revealed a significant main effect of SL on CA, while no significant main effect of SS or interaction effect between SL and SS was observed (see Table V). Specifically, participants in the high SL group reported significantly higher CA compared to those in the low SL group ($M_{\text{high-SL}}$ = 5.529, SD = 0.972; $M_{\text{low-SL}}$ = 5.163, SD = 1.051; F (1, 304) = 10.519, p =.001, η_p^2 = .033). In contrast, the main effect of SS on CA was marginally non-significant (p = .059), and the interaction between SL and SS was not significant (p = .621). These findings indicate that SL positively influences CA, while SS does not have a direct effect on CA, nor does it moderate the relationship between SL and CA.

EI as the Dependent Variable

A 2 (SL: high vs. low) × 2 (SS: high vs. low) ANOVA was conducted with EI as the dependent variable. The analysis revealed a significant main effect of SL, while no significant main effect of SS or interaction effect between SL and SS was observed (see Table V). Participants in the high SL group reported significantly higher EI compared to those in the control group ($M_{\text{high-SL}}$ = 5.261, SD = 1.094; $M_{\text{low-SL}}$ = 4.922, SD = 1.295; F (1, 304) = 6.545, p =.011, η_p^2 = .021). In contrast, the main effect of SS on EI was marginally non-significant (p = .057), and the interaction between SL and SS was

not significant (p = .828). These findings suggest that SL positively influences EI, while SS neither directly impacts EI nor moderates the relationship between SL and EI.

TABLE V

Mediation Analysis

To test the mediating effect of CA between SL and EI, we conducted a bootstrap analysis with 10,000 resamples using Model 4 in PROCESS (Hayes, 2013). SL was entered as the independent variable (1 = high SL, 0 = low SL), EI as the dependent variable, and CA as the mediator (see Table VI). The results revealed a significant indirect effect of SL on EI through CA (β = 0.273, SE = 0.084, 95% CI = [0.110, 0.439]). The confidence interval did not include zero, confirming the mediation effect. These findings suggest that students engaged in high SL (vs. low SL) exhibit higher levels of CA, which, in turn, enhances their EI. Importantly, this mediating effect remained robust after controlling for potential confounding variables.

Moderated Mediation Analysis

To examine the moderating effect of SS in the hypothesised model, we conducted a second-stage moderated mediation analysis using 10,000 bootstrap samples (Hayes, 2013). Following Model 14 in PROCESS, the interaction between CA and SS was found to be significantly associated with EI (β = 0.278, SE = 0.108, p = 0.011), see Table VI. Furthermore, the bootstrap analysis revealed that under conditions of high SS, CA mediated the relationship between SL and EI, with a larger indirect effect size (β = 0.320, 95% CI = [0.129, 0.528]). Conversely, under conditions of low SS, the indirect effect remained significant but was smaller in magnitude (β = 0.219, 95% CI =

[0.088, 0.375]). Importantly, these findings remained robust after controlling for potential confounding variables. This indicates that while SL positively influences EI through CA, the strength of this mediated relationship is contingent on the level of SS, with stronger mediation effects observed in high-support contexts.

Table VI

FIGURE 2

Discussion

This study employed a two-study sequential survey-experiment design to test an SCCT model in which SL enhances Chinese students' EI directly and indirectly through CA, with SS amplifying the CA → EI pathway. All hypothesised relationships were supported across both studies.

Three favourable conditions in the Chinese context help explain why these effects emerged despite mixed findings in previous work in other settings. First, SL increases EI when pursued for intrinsic enjoyment within an opportunity-rich environment. In China, maker clubs and arts or sports teams are typically passion-driven, and government initiatives have lowered start-up barriers. This setting enabled the confidence and outcome expectations built in SL to evolve into entrepreneurial ambition, unlike necessity-driven side hustles reported elsewhere (Mahayosnand & Sabra, 2024). Second, SL enhanced CA most when SL complemented rather than duplicated academic study, avoiding the role-overlap fatigue that neutralised the SL → CA link in previous research (Kelly et al., 2020; Weer et al., 2010). Third, structural support proved essential for converting CA into EI. In contrast to settings where barriers

block action (e.g., Atitsogbe et al., 2019), China's dense network of campus incubators and funding schemes provided channels for adaptable students to act on entrepreneurial ideas.

The mediation via CA was likely detected here due to the novelty and challenge embedded in students' SL domains and our mixed-method design. This supports the development of adaptability into the "four Cs" (concern, control, curiosity, and confidence), which then translate into EI, a link often missed in cross-sectional surveys or engaging in repetitive hobbies (Kumasey et al., 2024; Tolentino et al., 2014; Zhang et al., 2022). The positive moderating role of SS aligns with findings from collectivist contexts (Huang et al., 2024), where aggregated support from family, peers and institutions significantly amplifies the motivational payoff of CA (Tolentino et al., 2014).

Taken together, the findings suggest that SL nurtures EI when three conditions co-occur: (i) SL activity is intrinsically motivated, (ii) SL is distinct from formal study, and (iii) there is an enabling social environment. These boundary conditions refine SCCT's person–environment-fit perspective within informal learning contexts such as SL.

Theoretical Implications

By foregrounding SL as a passion-driven arena for learning, this study broadens the conceptual lens through which EI is understood. Whereas previous work has emphasised formal coursework or dispositional traits (Caputo et al., 2025; Wang et al., 2016), our findings show that the sustained, self-directed pursuit of a demanding hobby

can foster an entrepreneurial mindset with comparable power. In doing so, we link entrepreneurship research with leisure studies (Stebbins, 2007; Mouratidou et al., 2024), showing how off-campus activities stimulate EI.

The study also clarifies how SL experiences shape career goals. Guided by SCCT (Lent & Brown, 2019), we identify CA as the psychological conduit linking SL to EI (Savickas & Porfeli, 2012). We also demonstrate that this pathway is contingent on SS, an environmental affordance long recognised in SCCT yet rarely tested in leisure-entrepreneurship research (Neneh, 2022; Huang et al., 2024). By embedding personal adaptivity within enabling social contexts, we respond to calls for greater attention to contextual contingencies in student entrepreneurship (Atitsogbe et al., 2019).

Beyond conceptual integration, our dual-method design (cross-sectional survey and vignette experiment) adds a causal lens seldom applied to leisure studies (Irwin et al., 2019). The experiment corroborates the correlational results and reduces common-method bias. By contrasting SL with casual leisure, we specify the boundary conditions of the effect: only sustained, skill-oriented pursuits appear to generate the adaptive resources needed for EI (Nimmi et al., 2023).

These insights reposition informal learning as key to EI, revealing its drivers and offering a methodological template for future causal tests.

Practical Implications

Our findings recast SL as a strategic resource for entrepreneurial development rather than a peripheral pastime. To harness this potential, universities should first weave leisure-based practice into the curriculum by offering elective credit for modules

in which students document the competencies cultivated through their long-term hobbies and connect them to career scenarios. When such recognition is embedded in assessment rubrics and transcript supplements, the energy students devote to leisure activities is channelled toward intentional career planning.

Curricular acknowledgement needs to be matched by supportive infrastructure. Purpose-built makerspaces, rehearsal studios or digital labs, when paired with micro-seed funds and targeted mentorship, give leisure communities the material scaffolding to experiment with turning their artefacts into marketable products or services while preserving the intrinsic motivation that drives sustained engagement. Partnership arrangements linking student clubs with campus entrepreneurial hubs and local start-up networks further shorten the distance between leisure competence and opportunity recognition.

Finally, universities must help students translate the tacit resources accumulated in SL into narratives that resonate with employers and investors. Career-service workshops can coach students to frame leisure experiences in terms of transferable skills; digital badges and competency transcripts make these skills visible beyond campus; and recruitment rubrics for graduate assistantships or early-career posts should explicitly reward evidence of leading or facilitating leisure communities.

These measures reposition SL from an extracurricular afterthought to a policy lever capable of nurturing opportunity-oriented graduates and advancing the entrepreneurial mission of mass higher education.

Limitations and Future Research

Although our research combines a cross-sectional survey (Study 1) with a vignette-based experiment (Study 2), several caveats limit the generalisability of our findings.

First, both studies were conducted in Chinese public universities situated within a Confucian-heritage, massified higher education system. Comparative research in other cultural and policy regimes (e.g., African, Anglo-American, or Nordic) is needed to verify whether the SL–CA–EI pathway generalises. Second, Study 1's cross-sectional, self-report design invites common-method bias. Although Harman's one-factor test indicated limited bias, future multi-wave or multi-source designs would strengthen causal inference. Additionally, the convenience sample, while gender and regionally diverse, may not fully represent the broader Chinese university population. Representative sampling or cross-country comparisons could enhance external validity.

Third, whilst Study 2's vignette design increases internal control, it sacrifices ecological validity. Field experiments embedded in authentic courses or university incubators (Harrison & List, 2004) could better capture SL's effects under authentic conditions. Fourth, EI was self-reported rather than verified via observed behaviour. Linking survey data to start-up registries or alum career records could assess whether EI leads to action. Fifth, SL was measured retrospectively; integrating learning-management logs or reflection diaries (Donald et al., 2025) could improve accuracy and reduce recall bias. Sixth, the study did not explore students' motivational or emotional processes. Qualitative methods, such as longitudinal interviews or case

studies (Lim, 2020), could illuminate how learners internalise SL. Finally, macro-level factors like regional entrepreneurial-ecosystem strength or national policy incentives were not modelled. Multi-level designs that nest individuals within institutional and regional contexts represent a valuable next step.

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Table I. Descriptive Statistics and Correlations

Variable	1	2	3	4	Mean	S.D
1 SL	1				5.529	1.134
2 CA	0.642**	1			5.796	1.123
3 SS	0.663**	0.619**	1		5.479	1.188
4 EI	0.529**	0.486**	0.510**	1	4.903	1.470

Notes. SL = Serious Leisure, SS = Social Support, CA = Career Adaptability, EI = Entrepreneurial Intention. ** $p<0.01$

Table II. Loadings, Internal Consistency Reliability and Convergent Validity

Variable	Indicator Loadings	Internal Consistency Reliability		Convergent Validity
		Cronbach's α	ρA	AVE
CA	0.899-0.920	0.946	0.947	0.822
EI	0.879-0.927	0.940	0.943	0.807
SL	0.612-0.871	0.972	0.974	0.684
SS	0.798-0.872	0.888	0.890	0.690

Notes. SL = Serious Leisure, SS = Social Support, CA = Career Adaptability, EI = Entrepreneurial Intention.

Table III. Discriminant Validity—HTMT Matrix

Variable	1	2	3	4
1 CA				
2 EI	0.517			
3 SL	0.674	0.549		
4 SS	0.682	0.558	0.716	

Notes. SL = Serious Leisure, SS = Social Support, CA = Career Adaptability, EI = Entrepreneurial Intention.

Table IV. MV Prediction

	PLS-SEM_MAE	LM_MAE
CA1	0.752	0.695
CA2	0.760	0.681
CA3	0.727	0.642
CA4	0.721	0.609
CA5	0.713	0.644
EI1	0.968	0.967
EI2	1.140	1.087
EI3	0.986	0.992
EI4	1.120	1.072
EI5	1.165	1.086

Notes. CA = Career Adaptability and EI = Entrepreneurial Intention.

Table V. Means and Standard Deviations for Career Adaptability and Entrepreneurial Intention

	Low support		High support	
	Serious Leisure	Control (n = 68)	Serious Leisure	Control (n = 73)
CA	5.451 (0.917)	5.021	5.612 (1.026)	5.296
EI	5.121 (1.006)	4.803	5.410 (1.169)	5.033

Notes. CA = Career Adaptability and EI = Entrepreneurial Intention.

Table VI. Mediation Model and Moderated Mediation Model (N = 308)

Process	Variables	Model 4				Model 14			
		β	SE	*t*	*p*	*β*	SE	*t*	*p*
1. Mediator variable model (CA)	Constant	5.163	0.088	58.484***	0	5.163	0.088	58.484***	0
	SL	0.366	0.115	3.175**	0.002	0.366	0.115	3.175**	0.002
2. Dependent variable model (EI)	Constant	1.076	0.319	3.370***	0.001	1.796	0.428	4.195***	0
	SL	0.066	0.108	0.614	0.539	0.081	0.107	0.754	0.451
	CA	0.745	0.055	13.525***	0	0.597	0.077	7.702***	0
	SS					-1.384	0.624	2.217*	0.027
	CA×SS					0.278	0.108	2.560*	0.011

Process	Variables	Effect	Boot SE	Boot 95% CI
3. Conditional indirect effects of SL on EI according to values of the moderator (SS)	Mediator CA, Low SS	0.219	0.073	[0.088, 0.375]
	Mediator CA, High SS	0.320	0.102	[0.129, 0.528]

Notes. SL = Serious Leisure, SS = Social Support, CA = Career Adaptability, EI = Entrepreneurial Intention. CI = Confidence Interval. All *β*s in this table are unstandardised coefficients. * $p < .05$(two-tailed). ** $p < .01$(two-tailed)

Figure 1

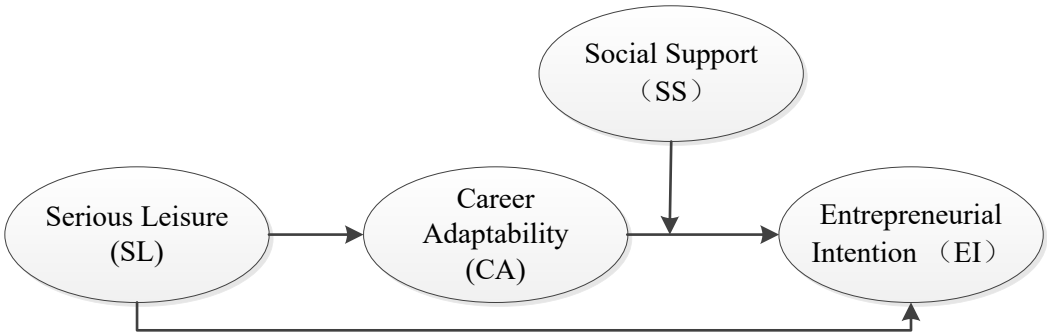


Figure 1 shows the conceptual model.

Figure 2

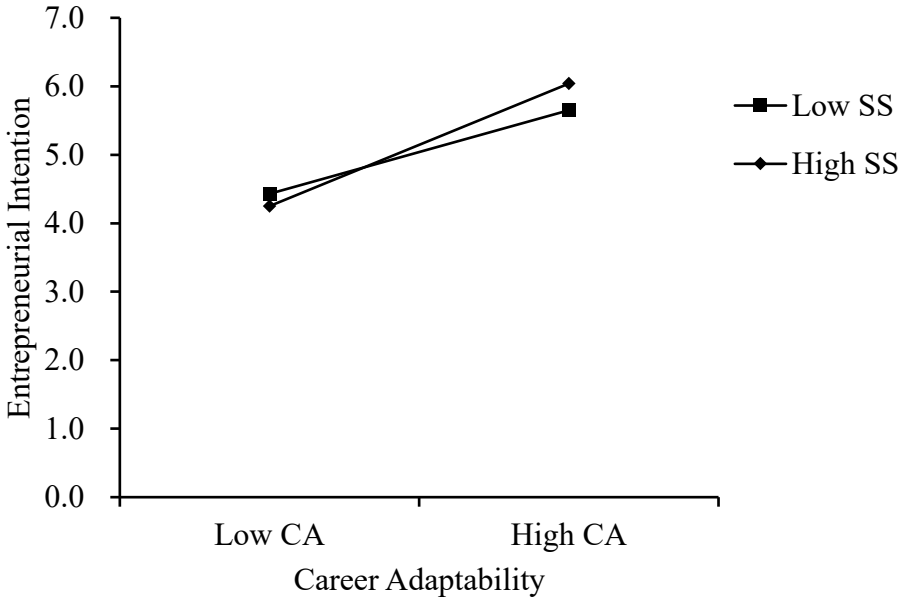
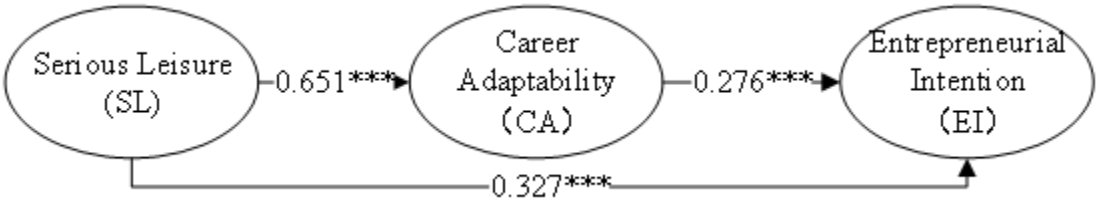


Figure 2 shows the moderation effect of SS between CA and EI.

Figure 3



Notes: *** p-value < 0.001

Figure 3. Standardized path coefficients and significance of structural model