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Your success should be internally attributed: The role of performance accomplishment in entrepreneurial practice on entrepreneurial intention

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ABSTRACT

Prior literature has shown the inconsistent relation between entrepreneurial practice and entrepreneurial intention. One recent study has noted the significance of direct personal experience in entrepreneurial practice and indicated that problems experienced during practice inhibited the development of consequent entrepreneurial intentions. However, the understanding of whether and how performance accomplishment (direct experience about personal mastery) during entrepreneurial practice impacts entrepreneurial career intention has yet to be discovered. Moreover, we are unaware of who could be more inspired by performance accomplishment. Drawing on social cognitive career theory, we propose a moderated mediation model demonstrating that performance accomplishment in entrepreneurial practice impacts entrepreneurial intention via outcome expectation. This indirect effect is stronger for those with internal locus of control. Two studies (a field experiment and a correlational survey) supported our assumptions.

1. Introduction

Entrepreneurship is a crucial way to pull economic development (Patel & Devaraj, 2022), decrease poverty levels (Lin et al., 2020), and promote regional growth (Monte et al., 2020). The basis for facilitating the move toward entrepreneurship is generally to reinforce entrepreneurial intention (Gieure et al., 2020; Santos et al., 2021). Entrepreneurial intention can be nourished by developing entrepreneurial skills and positive entrepreneurial cognition (Barba-Sánchez et al., 2022; Ferri et al., 2024; González-Serrano et al., 2023). Entrepreneurship education or training is a widely recognized approach to enhancing entrepreneurial intention in the above manners (e.g., Rivo-López et al., 2022; Wegner et al., 2020). Among them, entrepreneurial practices have increasingly captured the attention of entrepreneurship scholars (Bohlayer & Gielnik, 2023; Melyoki & Gielnik, 2023).

Research has shown that engagement in entrepreneurial practice, including practical entrepreneurial activities and action-based entrepreneurship training, can significantly enhance individuals' self-efficacy toward entrepreneurship (Gielnik et al., 2015), fuel their passion (Gielnik et al., 2017), foster venture intentions (Walter & Dohse, 2012) and promote business creation (Melyoki & Gielnik, 2023). The majority of studies indicated that any practical entrepreneurial activity might positively impact individuals'

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attitudes and behaviors related to entrepreneurship. However, some research found no or opposite effect (Pérez-Pérez et al., 2021; Walter & Dohse, 2012; Wegner et al., 2020). Meanwhile, Bohlayer and Gielnik (2023) suggested that problems encountered during entrepreneurial action training might reduce individuals' entrepreneurial goal intentions. Therefore, it seems that it is not the participation in entrepreneurial training that matters, but people's direct personal experiences during this training determine individuals' consequent intentions.

Performance accomplishment, which represents direct experience in actually participating in and successfully completing a specific activity (Lent et al., 1994; Usher & Pajares, 2009), however, has hardly been empirically investigated in entrepreneurial studies, despite its theoretical importance in entrepreneurship (Adebusuyi et al., 2022; Wilson et al., 2007; Zhao et al., 2005). The studies in the career domain have recognized that performance accomplishment is the mastery experience that elicits positive career-related beliefs and impacts development of career goals or choices (Lent & Brown, 2019; Lent et al., 1994; Sheu et al., 2018). Thus, we want to address the following questions–whether and how performance accomplishment in entrepreneurial practice impact one's propensity to embark on an entrepreneurial career? Who could benefit more from performance accomplishment in entrepreneurial practice?

To address these questions, the first aim of this study is to explore the impact and the internal mechanism of performance accomplishment in entrepreneurial practice on entrepreneurial intention. Social cognitive career theory (SCCT) suggests that mastery experience (conceptualized as performance accomplishment) could intensify one's positive beliefs of competence or outcomes, influencing subsequent career choices (Lent & Brown, 2019; Lent et al., 2017). One of the vital cognitive mechanisms of mastery experience in prior career-related activities influencing the formation of corresponding career choice refers to outcome expectation (Lent & Brown, 2013; Lent et al., 2017). Entrepreneurial outcome expectation, which involves imagined consequences of starting a new business (Lanero et al., 2016), affects the process by which individuals regard entrepreneurship as their career choices (Bergenholtz et al., 2023; Blaese et al., 2021; Liguori et al., 2018) or pull motivation for forming intention (Martínez-Cañas et al., 2023). In line with this, we expect that the performance accomplishment may increase entrepreneurial outcome expectation and then strengthen the intention of starting a business.

In addition, SCCT (Lent et al., 1994) indicated that the extent to which direct experience influences positive career cognition and intentions could depend on personality traits. Entrepreneurial education can also benefit from knowing which potential entrepreneurs are more likely to be motivated by performance accomplishments in practice. Thus, the second aim of this study is to examine the moderating role of possible personality traits. Particularly, we focus on locus of control, defined as an individual's perception of control over events (Rotter, 1966). Prior research has indicated that locus of control influences the interpretation of personal performance on a specific task (Galvin et al., 2018; Keller & Blomann, 2008). Individuals with internal locus of control attribute task results to their abilities and behaviors, whereas individuals with external locus of control believe that the task outcomes are caused by external factors such as luck and fate (Hohnemann et al., 2022; Galvin et al., 2018; Twenge et al., 2004). Given this, locus of control may be a key boundary condition that amplifies the influence of performance accomplishment on entrepreneurial intention via entrepreneurial outcome expectation. Fig. 1 depicts our research model.

Two studies (a field experiment and a correlational survey) are used to test our research model. We first conducted a field experiment to establish the causal relationship between performance accomplishment and entrepreneurial intention (Williams et al., 2019) while close to actual entrepreneurial practice. Meanwhile, we added a correlational survey following Hsu et al. (2019) to provide more evidence for the proposed model in a real practical context. The mixed method approach promotes complementarity between the two methods and strengthens the robustness of our results (Stevenson et al., 2022; Turner et al., 2017; Williams et al., 2019).

There are three main contributions for existing research. First, our study extends the investigation of Bohlayer and Gielnik (2023), which only paid attention to adverse experiences during entrepreneurial practice and suggested that encountered problems affected individuals' entrepreneurial intentions via reduced self-efficacy. Our work suggests that performance accomplishments during entrepreneurial practice are important for entrepreneurial intentions. Specifically, personal accomplishments during entrepreneurial practice would positively affect people's entrepreneurial intentions via boosted entrepreneurial outcome expectations. In this way, our work contributes to the research on entrepreneurial practice (Pérez-Pérez et al., 2021; Walter & Dohse, 2012; Wegner et al., 2020). We suggest that measuring personal accomplishments in practical activities is crucial as they would directly affect people's entrepreneurial attitudes and behaviors so that entrepreneurial training programs could be designed to incorporate practical experiences that may positively influence a wider range of individuals, not just those with inherently entrepreneurial traits.

Second, we discuss how performance accomplishment affects entrepreneurial intention and consider the mediating role of

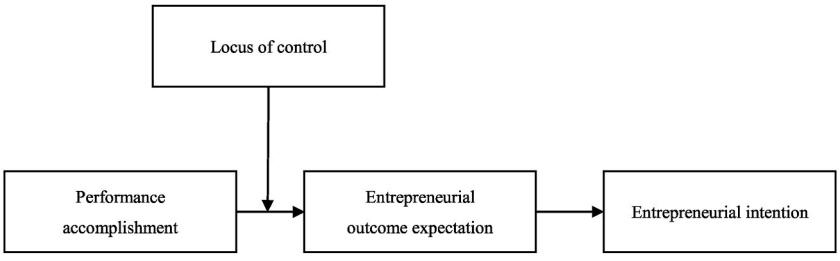

Fig. 1. Research model.

entrepreneurial outcome expectation. Our study complements existing literature on changing entrepreneurial intention via entrepreneurial self-efficacy in experiential learning (Bohlayer & Gielnik, 2023; Sánchez, 2013; Zhao et al., 2005). Entrepreneurial outcome expectation is a vital cognitive factor that helps understand individuals' cognitive responses to entrepreneurial learning experience (Adebusuyi & Adebusuyi, 2023; Adebusuyi et al., 2022) and entrepreneurial education (Duong et al., 2023). Uncovering the entrepreneurial outcome expectation as a mediator in experiencing entrepreneurial practice contributes to a multifaceted understanding of the cognitive process of fostering entrepreneurial willingness in practical entrepreneurial experiences.

Third, by investigating the role of locus of control, we delineate how performance accomplishments and individual characteristics jointly induce high entrepreneurial outcome expectations and intentions. Examining individual differences in the entrepreneurial practicing process helps to determine when accomplishment experience will be more motivational. This investigation provides more precise predictions of the differentiated effects of performance accomplishments. By doing so, we also contribute to the locus of control literature (Hohnemann et al., 2022; Galvin et al., 2018; Kahn et al., 2023) by introducing a novel context where personal accomplishment motivates the internals to prefer entrepreneurship as a career choice.

2. Theoretical background and hypotheses development

Social cognitive career theory (SCCT) helps to explain the process of developing career interests and goals (Lent et al., 1994), including in the context of entrepreneurship (e.g., Belchior & Lyons, 2021; Meoli et al., 2020). From a career perspective, entrepreneurship can be considered as a career choice with great promise (Burton et al., 2016). Accordingly, *entrepreneurial intention* can be defined as the intention to choose entrepreneurship as one's career goal.

SCCT suggested that four experimental sources–performance accomplishment, vicarious learning, social persuasion, and physiological states (Bandura, 1986)–influence the cognitive process of forming and modifying career goals (Lent & Brown, 2019; Lent et al., 1994). Although several studies (Austin & Nauta, 2016; Bloemen-Bekx et al., 2019) based on SCCT have examined the influence of entrepreneurial role models or social persuasion on entrepreneurial intention, few scholars have focused on the role of performance accomplishment, even though it has been endorsed to be the most potent experiential source (Lent & Brown, 2019). Several entrepreneurial scholars (Adebusuyi et al., 2022; Wilson et al., 2007; Zhao et al., 2005) have deemed that accomplishment experience in entrepreneurial tasks may be conducive to establishing high confidence and expectations in taking on entrepreneurial roles but were primarily theoretical about how they might influence entrepreneurial willingness. Therefore, this study aims to explore whether and how performance accomplishment in entrepreneurial practice impacts entrepreneurial intention.

2.1. Performance accomplishment and entrepreneurial outcome expectation

Performance accomplishment captures the personal mastery (i.e., success or failure) experienced in a specific activity (Garriott et al., 2021; Usher & Pajares, 2009), which reflects one's interpretation of experienced events (Bandura, 1997). Higher performance accomplishment (i.e., success experience) could be regarded as a positive experience because it motivates individuals to develop positive perceptions and beliefs (Bandura, 1986; Lent et al., 1994). Similarly, we define *performance accomplishment* as the experience of personal mastery within the entrepreneurial practice (such as developing a viable business plan, securing funding, or reaching a sales target).

Performance accomplishment as a result of engagement in a specific activity would affect the subsequent anticipation of whether a similar activity would bring positive outcomes, which is called outcome expectation (Lent et al., 2017). The higher the performance accomplishment one experiences in a particular area, the higher the expectation of outcomes one could obtain (Garriott et al., 2013; Sheu et al., 2018). In the entrepreneurial context, performance accomplishment may be a vital determinant of entrepreneurial outcome expectation, defined as one's belief about probable entrepreneurial consequences and outcomes of performing entrepreneurial activities (Adebusuyi et al., 2022; Lanero et al., 2016).

Performance accomplishment might impact entrepreneurial outcome expectation by setting up ability-related beliefs for entrepreneurial works. Individuals generalize established ability-related beliefs regarding tasks to evaluate the expectancy of success for similar tasks (Gorges & Göke, 2015; Santos & Liguori, 2020). In entrepreneurial practice, high personal accomplishment represents high entrepreneurial ability that could inspire the individual to look forward to the positive consequences of being an entrepreneur, compared to low personal accomplishment representing low entrepreneurial ability. Moreover, high accomplishment experience may trigger an individual's sense of inner achievement, which in turn activates the expectation of positive consequences from endeavors (Custers et al., 2009; Engeser & Baumann, 2014). Individuals experiencing high performance accomplishments may have positive expectations of entrepreneurial outcomes by inspiring inner achievement. Additionally, a prior study has found that personal mastery in entrepreneurship was positively associated with entrepreneurial outcome expectation (Adebusuyi et al., 2022). Therefore, higher performance accomplishments in entrepreneurial practice might lead to higher expectations for entrepreneurial outcomes.

H1. Performance accomplishment positively affects entrepreneurial outcome expectation.

2.2. Entrepreneurial outcome expectation and entrepreneurial intention

The behavioral choice depends on the belief about the possible behavior outcomes (Lent et al., 1994). In the career domain, high positive outcome expectations could motivate individuals to develop high career intentions (Lent et al., 2017; Navarro et al., 2007). In the specific context of entrepreneurship, entrepreneurial outcome expectation is put forward to understand how to develop

entrepreneurial career goals (Santos & Liguori, 2020).

Individuals choose to start a business because it can bring higher benefits than employment (Sorensen & Sharkey, 2014), and such benefits can fit personal needs (Hsu et al., 2019). Individuals are more willing to engage in entrepreneurship if they believe the associated expected outcomes are more desirable (Blaese et al., 2021; Liguori et al., 2018). In addition, prior studies found that high positive expectation for entrepreneurial outcomes pulls nascent entrepreneurs to start a business (Carter et al., 2003; Martínez-Cañas et al., 2023). Therefore, we argue that individuals are more likely to start a business if they believe they can get positive entrepreneurial outcomes.

H2. Entrepreneurial outcome expectation positively predicts entrepreneurial intention.

2.3. The mediating effect of entrepreneurial outcome expectation

SCCT suggested that individuals' performance accomplishments in prior career-related activities greatly impact their career goals by reshaping career-related cognition (Lent & Brown, 2013; Lent et al., 2017). Along similar lines, individuals' entrepreneurial outcome expectations can be stimulated after obtaining performance accomplishments in entrepreneurial practice. These outcome expectations are then used to guide individuals toward changing their entrepreneurial intentions (Lanero et al., 2016; Liguori et al., 2018). Meanwhile, performance accomplishment reflects one's entrepreneurial behavior effectiveness, which can promote the expectations of ideal outcomes and thus affect his/her intention to pursue entrepreneurship (Santos & Liguori, 2020). Therefore, high performance accomplishment may improve the individual's belief in achieving the expected entrepreneurial outcomes, thus increasing the willingness to start a business. Conversely, low performance accomplishment may cause the individual believe it is challenging to obtain the desired entrepreneurial outcomes in business endeavors, thus reducing the intention to engage in entrepreneurship.

H3. Entrepreneurial outcome expectation has a mediating effect on performance accomplishment and entrepreneurial intention.

2.4. The moderating role of locus of control

Lent et al. (1994) indicated that personal factors could lead to heterogeneous effects of personal experience on an individual's cognition response during career exploration. Locus of control, which reflects an individual's attribution for the results of events (Galvin et al., 2018; Rotter, 1966), is a personal characteristic that links to entrepreneurship (Uysal et al., 2022). Based on the attribution of event results (Galvin et al., 2018), locus of control can be classified into two types–internal and external. We posit that individuals with different types of locus of control may exhibit different cognitive responses to performance accomplishments in entrepreneurial practice.

Individuals with internal locus of control tend to make internal attributions about task outcomes (Chen et al., 2016; Galvin et al., 2018). Making internal attribution for high performance accomplishments would build individuals' beliefs in abilities and perceived inner achievement, inspiring higher positive outcome expectations for engaging in entrepreneurship. However, when experiencing low performance accomplishments (i.e., failure experience) in tasks, the internals tend to experience significantly lower sense of control and are more sensitive to the imbalance between their competencies and task demands (Hohnemann et al., 2022; Keller & Blomann, 2008), which can impede their ability beliefs and the sense of achievement. That is, low performance accomplishments may weaken the internals' positive expectations of entrepreneurial outcomes.

Individuals with external locus of control tend to believe that the task results are largely beyond their control (Galvin et al., 2018). Meanwhile, the externals may prefer to make external attributions (Galvin et al., 2018; Twenge et al., 2004), which can lead to a weak association between performance accomplishments and their ability perceptions or the sense of inner achievement. On the ground of the above, the externals view entrepreneurship as unpredictable and may not use current performance accomplishments to predict entrepreneurial consequences. Ultimately, whatever high or low performance accomplishments may not significantly impact their expectations of the venture outcomes.

H4. The effect of performance accomplishment on entrepreneurial outcome expectation is moderated by locus of control such that the positive effect is stronger for individuals with internal (vs. external) locus of control.

Combined with H1 to H4, high performance accomplishments make individuals with internal rather than external locus of control have higher expectations for positive entrepreneurial outcomes, which then prompt them to be more eager to start a business. Conversely, low performance accomplishments are not good news for individuals with internal locus of control; it reduces their positive expectations about the outcomes of entrepreneurship, which then discourage them from considering starting a business. Thus, we infer that the internals would be more susceptible to performance accomplishments and accordingly lead to higher entrepreneurial outcome expectations, thereby triggering greater entrepreneurial intentions, as compared with the externals.

H5. The indirect effect of performance accomplishment on entrepreneurial intention via entrepreneurial outcome expectation is moderated by locus of control such that the indirect effect is stronger for individuals with internal (vs. external) locus of control.

3. Methods

To examine our hypotheses, we conducted two studies with independent samples. Study 1 was used a field experiment with pre-and post-tests. We have chosen to conduct a field experiment due to their unique strength in providing empirical evidence of causal

relationships within real-world settings. This approach allows us to observe the effect of performance accomplishment on entrepreneurial intention in an environment that closely mimics actual practical activities. In Study 2, we conducted a correlational survey investigating whether the experimental findings from Study 1 withstand the concern of other confounding/unobserved variables in the natural context.

3.1. Study 1

We designed a field experiment that involved pre- and post-tests with college students. The experimental design centered around entrepreneurial outcome expectation and entrepreneurial intention influenced by performance accomplishment during participation in a practical entrepreneurial activity. We chose business planning as the experimental situation because it is a crucial aspect of the early entrepreneurial process (Chwolka & Raith, 2012). Developing an early business plan can be seen as a forward-looking cognitive exercise (Gavetti & Levinthal, 2000), which is beneficial to the viability of a startup (Chwolka & Raith, 2012). As a popular practical exercise in entrepreneurial push strategy in universities (Wegner et al., 2020), business planning is conducive to students' acquisition of entrepreneurial competencies (Ferreras-Garcia et al., 2021; Tounés et al., 2014). Working on a business plan in our field experiment, participants engaged in an actual practical activity consistent with the context of entrepreneurial practice in this study.

Student sampling is appropriate in our experiment because it meets the criteria for using student samples from Hsu et al. (2017) and Grégoire et al. (2019). First, students are the target population in entrepreneurial intention research (Bergenholtz et al., 2023; Hsu et al., 2019). Second, there exists a potential concern that the impact of our manipulation may be polluted by participants' prior professional or entrepreneurial experience (e.g., employees or ex-entrepreneurs). Third, SCCT is widely used to predict individuals' career interests and goals (including college students) in the early stage of career development (Lent et al., 1994; Lent & Brown, 2019).

Given that prior entrepreneurial experience could potentially interfere with the impact of our experimental manipulation, we carefully screened our sample to include only college students with no direct entrepreneurial experience. This approach ensured the baseline for measuring the impact of performance accomplishment on entrepreneurial intention because direct experience in a startup could develop positive perceptions and feelings about performing the entrepreneurial role (Türk et al., 2020; Zhao et al., 2005). It minimizes confounding influences from past startup experience and allows a clearer interpretation of the relationship under investigation.

3.1.1. Procedure

The experiment was conducted in the situation of a specific practical entrepreneurial activity. The experimental process is as follows:

Pre-test. Participants were invited to complete a pre-questionnaire survey through posters on social media under the pretext of the entrepreneurial potential evaluation activity. They were told this activity was a real opportunity to test their entrepreneurial abilities. The purpose of the pre-test survey was to collect control variables (discipline, family business background, gender, pre-entrepreneurial outcome expectation, and pre-entrepreneurial intention), the moderator - locus of control, and the information about prior entrepreneurial experience. Participants with no direct entrepreneurial experience were invited for the subsequent on-site activity.

Entrepreneurial activity participation. Two days after the pre-test, participants with no entrepreneurial experience participated in the on-site activity in a classroom. Firstly, participants entered an introductory 5-min session by an entrepreneurial professor, who introduced the activity's purpose and flow. Through the activity introduction by the entrepreneurial professor, participants were led to believe that the activity was actual entrepreneurial practice. Then, participants were instructed to work on a business plan according to the given entrepreneurial practice situation. They were given 2 h to complete the task without discussing or collaborating with others. Meanwhile, they were not allowed to use additional tools except pen and paper. After that, participants submitted their created business plans and were informed that in three days, they would receive a performance evaluation of their own business plans from an expert review team on WeChat, a widely used social networking platform in China.

Post-test. Three days after the activity, each participant randomly received an evaluation result in a formal electronic report from a trained activity assistant on WeChat, which was the experimental manipulation. To maintain privacy and protect project copyright, participants were instructed not to share their evaluation results with others. They were also asked to complete an activity feedback questionnaire immediately after reading their own evaluation results. The feedback questionnaire was used to collect post-questionnaire data, including the manipulation check item, post-entrepreneurial outcome expectation, and post-entrepreneurial intention. One week after completing the post-questionnaire, each participant was given a ¥100 reward for participation and was informed that the practical entrepreneurial activity was an experiment and their received evaluations were based on random assignment rather than their real performance.

3.1.2. Sample

A total of two hundred and twenty-seven final-year students from three universities in China answered the pre-test questionnaire. The college students in their final year are identifying their career choices and paths that fit our research goal–developing entrepreneurial intention. To select appropriate participants for the subsequent on-site practical entrepreneurial activity, we excluded students with previous entrepreneurial experience ($N = 18$). Finally, two hundred and nine participants were invited to the on-site practical activity. However, participants who did not answer our invitation or failed to arrive for consequent on-site activity due to personal reasons ($N = 79$) were also excluded from our sample. One hundred and thirty students (62.2%) participated in the on-site practical activity. This response rate for participation is common in similar experimental studies (e.g., Hsu et al., 2019, Study 1).

To control for the potential selection bias due to the loss of participants, we examined whether there were significant differences

between the non-participants ($N = 79$) and participants ($N = 130$) in the on-site activity. A chi-square test showed no differences in gender, family business background, or the major (all $p > 0.05$). Meanwhile, the independent sample T-test showed no significant differences in locus of control, entrepreneurial outcome expectation, or entrepreneurial intention (all $p > 0.05$). The results indicated no significant differences between the non-participants and participants.

Due to one participant's business plan was missing and another one received failure results answered no "E", we had to exclude the two participants from the follow-up data analyses. The final sample size was 128, including 64 participants in the high performance accomplishment group and 64 participants in the low performance accomplishment group. All 128 participants were between 18 and 25; 49% were male; 34% have family business backgrounds; 57.8% majored in natural sciences, 33.6% majored in business or management, and 8.6% majored in other disciplines. To address the concern of potential bias, we conducted comparative analyses across the different majors and coded natural sciences as 1 and other majors as 0. The results showed that pre-entrepreneurial outcome expectation ($Mean_1 = 4.95$; $Mean_0 = 4.78$), post-entrepreneurial outcome expectation ($Mean_1 = 4.97$; $Mean_0 = 4.85$), pre-entrepreneurial intention ($Mean_1 = 4.06$; $Mean_0 = 3.91$), and post-entrepreneurial intention ($Mean_1 = 4.24$; $Mean_0 = 4.06$) had no significant differences between natural sciences and other majors (all $p > 0.05$), suggesting non-significant bias from the sample.

We conducted a post hoc power analysis in G*Power (Faul et al., 2007) to further provide statistical justification for the final sample size of Study 1. Specifically, we set a conventional medium effect size ($f^2 = 0.15$) according to Cohen (1988), a sample size of 128, and 9 predictors as the baseline. The results showed that with the alpha level of 0.05, the power to detect the obtained effect for the whole regression in the prediction of entrepreneurial intention was 0.86, which was above the suggested value of 0.80 (Cohen, 1988; Faul et al., 2007), representing that the final sample of Study 1 was appropriate.

3.1.3. Entrepreneurial practice situation

During the activity participation, all participants were presented with the same practical entrepreneurial activity based on campus entrepreneurship (see APPENDIX A). After reading the situation, participants were asked to come up with a viable campus business plan and answer six open-ended questions. Adapted from the experiment of Frederik et al. (2019), the questions covered various aspects such as product positioning, profit model, marketing channels, team building, operation ideas, business partners, and competitive advantages.

3.1.4. Manipulation and measures

Performance accomplishment manipulation. To manipulate performance accomplishment in the practical entrepreneurial activity, we randomly divided participants into two groups: the high performance accomplishment group, which received entrepreneurial performance grade "A" and a positive comprehensive comment about his or her work in the practical activity, and the low performance accomplishment group, which received entrepreneurial performance grade "E" and a negative comprehensive comment about his or her work in the entrepreneurial activity (see APPENDIX B).

We have conducted comparative analyses to check for any differences in responses between the high and the low performance accomplishment groups. Chi-square tests showed no significant differences between the two groups in gender ($\chi^2 = 0.03$, $p = 0.86$), family business background ($\chi^2 = 0.04$, $p = 0.85$), or the major ($\chi^2 = 3.02$, $p = 0.55$). Independent-samples T test showed no statistically significant differences between the two groups in pre-entrepreneurial outcome expectation ($t = 0.44$, $p = 0.66$) or pre-entrepreneurial intention ($t = 0.08$, $p = 0.93$), suggesting that the random assignment was valid.

As participants in this study were from China, we translated the scales of locus of control, entrepreneurial outcome expectation, and entrepreneurial intention from English to Chinese using the translation-back translation procedure of Brislin (1980). For the scale measures, participants rated their responses on a seven-point scale ranging from 1 (strongly disagree) to 7 (strongly agree).

Locus of control. We utilized the 10-item scale adapted by Mueller and Thomas (2001). A sample item was "Whether or not I am successful in life depends mostly on my ability". Based on the exploratory factor analysis, we had to remove one item. The remaining items demonstrated an acceptable level of reliability ($\alpha = 0.76$).

Entrepreneurial outcome expectation. To investigate whether performance accomplishment would influence entrepreneurial outcome expectation, we excluded certain expected outcomes resulting from participation itself in entrepreneurial activities. We ultimately chose six items developed by Lanero et al. (2016) to measure expected entrepreneurial outcomes in this study. The six items are: "If I choose to start a business, I would receive: 1) good economic compensation, 2) high social status, 3) prestige and social recognition, 4) personal fulfillment, 5) professional satisfaction, 6) a positive self-image." The scale had an acceptable level of reliability (pre-test, $\alpha = 0.85$; post-test, $\alpha = 0.92$).

Entrepreneurial intention. We adopt the 6-item entrepreneurial intention scale of Liñán and Chen (2009). A sample item is "I have a strong intention to start a venture". The scale demonstrated acceptable reliability (pre-test, $\alpha = 0.94$; Post-test, $\alpha = 0.96$).

Control variables. We included several variables as controls. *Family business background*. Previous studies have shown that individuals exposed to family business tend to be optimistic about their own pursuit of entrepreneurship (Zellweger et al., 2011). *Gender*. Previous studies have found that males tend to have higher entrepreneurial intentions than females (Wilson et al., 2007). *Entrepreneurship-related disciplines (ERD)* were virtualized as 1 for ERD and 0 for non-ERD, based on the categorization of entrepreneurship-related disciplines by Lanero et al. (2016).

3.1.5. Manipulation check

Participants were asked to evaluate their perceived performance accomplishments ranging from A (i.e., high performance accomplishment) to E (i.e., low performance accomplishment) in the practical entrepreneurial activity. Those who received high performance accomplishments but answered no "A" or received low performance accomplishments but answered no "E", were

excluded from subsequent analyses. The manipulation check is similar to the identifying method in the experiment of Chandler et al. (2024).

3.1.6. Results

Table 1 shows the variables' means, standard deviations, and correlations. As seen in Table 1, post-entrepreneurial outcome expectation was strongly correlated to post-entrepreneurial intention ($r = 0.76$, $p < 0.01$). To further examine whether the strong correlation poses a threat to construct validity, we perform a Chi-square difference test, following Hsu et al. (2019). We employed a CFA to compare two models, each of which contains only two factors (post-entrepreneurial outcome expectation and post-entrepreneurial intention) and their respective items. The first model ($\chi^2 = 239.57$, $df = 54$, $p < 0.01$) set that the two factors were not correlated, while the second model ($\chi^2 = 122.75$, $df = 53$, $p < 0.01$) allowed for correlation. The result was significant ($\Delta\chi^2 = 116.82$, $\Delta df = 1$, $p < 0.01$), indicating that our measurements had discriminant validity. In addition, the average variance extracted (AVE) for the post-entrepreneurial outcome expectation is 0.65, and the AVE for post-entrepreneurial intention is 0.79, demonstrating convergent validity. Moreover, the squared correlation between post-entrepreneurial outcome expectation and post-entrepreneurial intention (0.58) is lower than the AVE for the two factors, demonstrating acceptable discriminant validity.

Hypotheses testing. We used hierarchical linear regression to verify the first two hypotheses. We regressed post-entrepreneurial outcome expectation on the control variables and performance accomplishment ($R^2 = 0.46$, $p < 0.01$). As seen in model 1 in Table 2, we found performance accomplishment had a significant positive effect on post-entrepreneurial outcome expectation ($\beta = 0.25$, $p < 0.01$), supporting H1.

We regressed post-entrepreneurial intention on the control variables and performance accomplishment ($R^2 = 0.69$, $p < 0.01$). As seen in model 4 in Table 2, we found that performance accomplishment had a significantly positive effect on post-entrepreneurial intention ($\beta = 0.26$, $p < 0.01$). After adding post-entrepreneurial outcome expectation ($R^2 = 0.79$, $p < 0.01$), as seen in model 5 in Table 2, we found that post-entrepreneurial outcome expectation ($\beta = 0.41$, $p < 0.01$) had a significantly positive effect on post-entrepreneurial intention, which supported H2.

We then used path analysis to examine the mediated effect of entrepreneurial outcome expectation. The results showed that performance accomplishment had a positive indirect effect on post-entrepreneurial intention via post-entrepreneurial outcome expectation ($ab = 0.13$, $SE = 0.14$, *95%CI* [0.06, 0.23]), providing support for H3.

To test H4, we examined the interaction effect between performance accomplishment and locus of control on entrepreneurial outcome expectation ($R^2 = 0.50$, $p < 0.01$). As seen in model 3 in Table 2, we found that locus of control had a significant interaction effect on the relation between performance accomplishment and post-entrepreneurial outcome expectation ($\beta = 0.14$, $p < 0.05$). We calculated and plotted the simple slopes at conditional values of locus of control (i.e., 1 SD above and below the mean) to clarify the above interaction effect. A simple slope test (Fig. 2) showed that the relationship between performance accomplishment and post-entrepreneurial outcome expectation was significantly positive for participants with internal locus of control ($p < 0.01$) but was not significantly positive for participants with external locus of control ($p = 0.22$). That is, performance accomplishment significantly increased entrepreneurial outcome expectations of the internals rather than the externals. Thus, H4 was supported.

We further examined the moderated indirect effect by following the four conditions proposed by Preacher et al. (2007). The indirect effect of performance accomplishment on post-entrepreneurial intention via post-entrepreneurial outcome expectation was significant for individuals with internal locus of control ($ab = 0.23$, $SE = 0.06$, *95%CI* [0.12, 0.36]) and was not statistically significant for individuals with external locus of control ($ab = 0.07$, $SE = 0.06$, *95%CI* [−0.04, 0.19]); difference value = 0.16, $SE = 0.08$, *95%CI* [0.01, 0.33], supporting H5.

3.2. Study 2

Study 2 was conducted to replicate the findings of Study 1 in actual entrepreneurial practice. Meanwhile, acknowledging the potential limitation in generalizing to a broader population with varied entrepreneurial backgrounds in Study 1, we controlled prior entrepreneurial experience rather than eliminated the sample with startup experience. In addition, we added the measure of entrepreneurial self-efficacy as a competitive mediator in Study 2, given that previous research demonstrated that entrepreneurial self-

Table 1
Means, standard deviations, and correlations (Study 1).

Variables	*Mean*	*S.D.*	1	2	3	4	5	6	7	8
1.Entrepreneurship-related disciplines	0.70	0.46	–							
2.Family business background	0.34	0.47	−0.10							
3.Gender	0.49	0.50	0.24**	−0.04						
4.Locus of control	4.96	0.74	−0.08	0.11	0.01					
5.Performance accomplishment	0.50	0.50	0.02	−0.02	−0.02	−0.12				
6.Pre-entrepreneurial outcome expectation	4.88	0.96	0.23**	0.23**	0.18*	0.25**	−0.04			
7.Post-entrepreneurial outcome expectation	4.92	0.98	0.13	0.10	0.12	0.26**	0.22*	0.63**		
8.Pre-entrepreneurial intention	3.99	1.39	0.22*	0.19*	0.16	0.22*	0.01	0.63**	0.57**	
9.Post-entrepreneurial intention	4.17	1.37	0.13	0.17	0.12	0.26**	0.26**	0.50**	0.76**	0.79**

Note. $N = 128$. *, $p < 0.05$; **, $p < 0.01$. Entrepreneurship-related disciplines: 1 = yes; 0 = no; Family business background: 0 = no, 1 = yes; Gender: 1 = male, 0 = female; Performance accomplishment: 1 = high performance accomplishment, 0 = low performance accomplishment.

Table 2
Regression results (Study 1).

	Post-entrepreneurial outcome expectation			Post-entrepreneurial intention	
	Model 1	Model 2	Model 3	Model 4	Model 5
Entrepreneurship-related disciplines	−0.04	−0.02	−0.03	−0.06	−0.05
Family business background	−0.05	−0.05	−0.03	0.03	0.03
Gender	0.01	0.02	0.04	0.02	0.00
Pre-entrepreneurial outcome expectation	0.66**	0.62**	0.64**		
Pre-entrepreneurial intention				0.79**	0.56**
Performance accomplishment	0.25**	0.26**	0.26**	0.26**	0.17**
Locus of control		0.14*	0.14*		
Performance accomplishment × Locus of control			0.14*		
Post-entrepreneurial outcome expectation					0.41**
R^2	0.46**	0.48**	0.50**	0.69**	0.79**

Note. $N = 128$. Table entries represent standardized parameter estimates with standard errors. *, $p < 0.05$; **, $p < 0.01$.

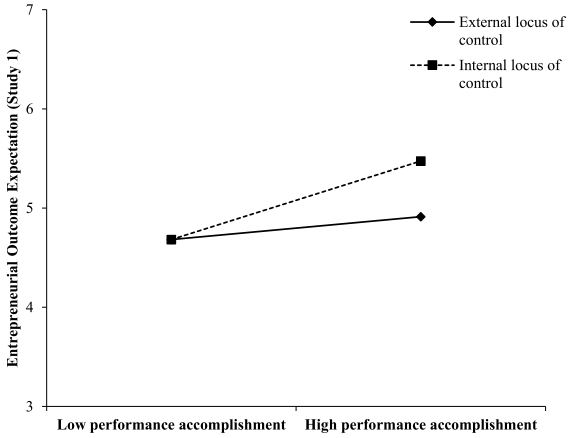

Fig. 2. Moderating effects of locus of control on performance accomplishment and entrepreneurial outcome expectation (Study 1).

efficacy mediates the relationship between experiencing problems and entrepreneurial intention in action-oriented training (Bohlayer & Gielnik, 2023).

3.2.1. Sample

The sample came from Chinese college students who had participated in entrepreneurial plan competitions in 2023, which Chinese universities held to promote innovation and entrepreneurship among college students. All the students worked in teams during the competitions and engaged in hands-on entrepreneurial practice by developing potential entrepreneurial opportunities and formulating business plans. Their business plans were then reviewed by experienced entrepreneurs, angel investors, and entrepreneurial experts, in which some of the business plans would get awards.

We invited the target students by sending e-mails or recruiting on online platforms. The students took the survey two months after participating in entrepreneurship plan competitions. In the survey, after evaluating the level of locus of control, participants were asked to recall their participation during entrepreneurial plan competitions and to respond to remaining measurements and control variables. We guaranteed anonymity and privacy to participants to minimize social desirability bias (Hsu et al., 2019; Podsakoff et al., 2003).

Three hundred and twenty-six students participated in the study in an online survey. Forty-eight failed the attention checks and were thus removed from the subsequent analyses, resulting in a final sample of 276 surveys (85.3%). In the final sample, 67.0% of participants were female. The average age was 22.21 (SD = 2.15). 14.1% had entrepreneurial experiences before participating in the competitions. 28.6% had a family business background. 37.7% majored in business and economics. 87.3% were pursuing a bachelor's degree, 10.2% were pursuing a master's degree, and 2.5% were pursuing a doctorate. 56.3% were team leaders. 34.4% won project awards for their participation.

A post hoc power analysis in G*Power was conducted to further provide statistical justification for the final sample size of Study 2, setting a medium effect size ($f^2 = 0.15$), the sample size of 276, and 13 predictors as the baseline. The results showed that with the alpha level of 0.05, the power to detect the obtained effect for the whole regression in the prediction of entrepreneurial intention was 0.99, which was above the suggested value of 0.80 (Cohen, 1988; Faul et al., 2007), representing that the final sample of Study 2 was appropriate.

3.2.2. Measures

Performance accomplishment was measured by adapting the 6-item scale from Usher and Pajares (2009), which was constructed mastery experience in mathematics. Concerning performance accomplishment in entrepreneurial practice, we have replaced "math/math test/math assignments" in the original scale with "practical entrepreneurial activity", which refers to entrepreneurship plan competitions the respondents have engaged in. A sample item is "I got good performance in the practical entrepreneurial activity" ($\alpha = 0.86$). *Entrepreneurial outcome expectation* was adopted the 4-item scale from Krueger et al. (2000), following the measurement in the recent entrepreneurial study (Santos & Liguori, 2020). A sample item is "To what extent do you expect to achieve the following outcomes by starting your business?–Financial rewards (personal wealth, increase personal income, etc.)" ($\alpha = 0.70$). The measurements of *locus of control* ($\alpha = 0.82$) and *entrepreneurial intention* ($\alpha = 0.96$) were the same as Study 1.

We controlled for several demographic variables, including gender, age, education level, field of study, family business background, prior entrepreneurial experience, and entrepreneurial self-efficacy. Entrepreneurial self-efficacy was measured on the 4-item scale by Zhao et al. (2005). A sample item is "I am confident in successfully identifying new business opportunities" ($\alpha = 0.87$). We also controlled for two variables about the participating team–team leader and winning awards. The above scale measures were adopted on a seven-point Likert-type scale ranging from 1 (totally disagree) to 7 (totally agree).

3.2.3. Results

Common method variance (CMV). We first conducted Harman's single-factor test to check the risk of CMV. The results of exploratory factor analysis showed that the first factor explained 26.33% of the total variance, which is below the threshold of 50%. We also performed an unmeasured latent method construct factor model (ULMCF) to test CMV (Podsakoff et al., 2012). We used Confirmatory Factor Analyses (CFA) with Mplus 7.4 to test scale reliability. Since prior studies sometimes decomposed locus of control into two factors–external and internal (Asante & Affum-Osei, 2019; Churchill et al., 2023), we followed them to construct a six-factor model (six items for external locus of control, four items for internal locus of control, six items for performance accomplishment, four items for entrepreneurial outcome expectation, four items for entrepreneurial self-efficacy, and six items for entrepreneurial intention). The results of CFA (see Table 3) showed that the fit of the six-factor model ($\chi^2/df = 1.573$, RMSEA = 0.046, CFI = 0.952, TLI = 0.947) was significantly better than that of the single-factor model ($\Delta\chi 2 = 1813.387$, $\Delta df = 15$, $p < 0.001$). The fit indices of the six-factor model did not differ from those of the measurement model with ULMCF ($\Delta CFI = 0.014$, $\Delta TLI = 0.012$, $\Delta RMSEA = 0.006$), which were below the suggested thumb rule of 0.05 according to prior research (Bagozzi & Yi, 1990; Yan et al., 2022). Thus, CMV should not cause serious bias in this study.

The means, standard deviations, and correlations of variables are shown in Table 4.

Hypotheses testing. Hierarchical linear regression and path analysis were respectively used to test all the hypotheses again. The regression results are shown in Table 5. In model 2, performance accomplishment was positively related to entrepreneurial outcome expectation ($\beta = 0.35$, $p < 0.01$), supporting H1. In model 6 and 7, entrepreneurial outcome expectation ($\beta = 0.30$, $p < 0.01$) was positively related to entrepreneurial intention even if we controlled entrepreneurial self-efficacy ($\beta = 0.15$, $p < 0.01$), supporting H2.

The results of path analysis with process macro 3.4.1 showed that, while controlling entrepreneurial self-efficacy as another mediator (*ab* = 0.31, *SE* = 0.06, *95%CI* [0.20, 0.44]), performance accomplishment still had a significantly indirect effect on entrepreneurial intention via entrepreneurial outcome expectation (*ab* = 0.07, *SE* = 0.03, *95%CI* [0.01, 0.14]), supporting H3.

As seen in model 3 in Table 5, we found that locus of control had a significant interaction effect on the relation between performance accomplishment and entrepreneurial outcome expectation ($\beta = 0.13$, $p < 0.05$). We calculated and plotted the simple slopes at conditional values of locus of control (i.e., 1 SD above and below the mean) to clarify the above interaction effect. The simple slope test (Fig. 3) showed that the relationship between performance accomplishment and entrepreneurial outcome expectation was more significantly positive for individuals with internal locus of control (*effect* = 0.33, *SE* = 0.06, $p < 0.01$, *95%CI* [0.22, 0.44]) than for those with external locus of control (*effect* = 0.15, *SE* = 0.07, $p < 0.05$, *95%CI* [0.02, 0.28]), supporting H4.

In the same way, the results of path analysis showed that the indirect effect of performance accomplishment on entrepreneurial intention via entrepreneurial outcome expectation was more significant for individuals with internal locus of control (*ab* = 0.09, *SE* = 0.04, *95%CI* [0.02, 0.18]) and was not statistically significant for individuals with external locus of control (*ab* = 0.04, *SE* = 0.03, *95% CI* [−0.00, 0.11]); index of moderated mediation = 0.03, *SE* = 0.02, *95%CI* [0.00^{+}, 0.07], supporting H5.

4. General discussion

We conducted two studies to investigate the causal relationship and the internal mechanism between performance accomplishment

Table 3
Results of CFA measurement Instruments (Study 2).

Model	Variables	χ^2	df	χ^2/df	CFI	TLI	RMSEA
Six-Factor	*ELOC, ILOC, PA, EOE, ESE, EI*	613.494	390	1.573***	0.952	0.947	0.046
One-Factor	*ELOC + ILOC + PA + EOE + ESE + EI*	2426.881	405	5.992***	0.568	0.536	0.134
Seven-Factor	*ELOC, ILOC, PA, EOE, ESE, EI, ULMCF*	519.883	361	1.440***	0.966	0.959	0.040

Note: *N* = 276. *ELOC* = external locus of control, *ILOC* = internal locus of control, *PA* = performance accomplishment, *EOE* = entrepreneurial outcome expectation, *ESE* = entrepreneurial self-efficacy, *EI* = entrepreneurial intention; ULMCF = unmeasured latent method construct factor. ***, $p < 0.001$.

Table 4
Means, standard deviations, and correlations (Study 2).

Variables	Mean	*S.D.*	1	2	3	4	5	6	7	8	9	10	11	12
1.Locus of control	4.77	0.81												
2.Performance accomplishment	5.21	1.06	0.35**											
3.Entrepreneurial outcome expectation	5.43	0.80	0.15*	0.36**										
4.Entrepreneurial self-efficacy	4.84	0.99	0.23**	0.50**	0.51**									
5.Entrepreneurial intention	4.79	1.43	0.16**	0.30**	0.45**	0.65**								
6.Gender	0.33	0.47	−0.05	0.13*	0.13*	0.19**	0.18**							
7.Age	22.21	2.15	0.02	0.19**	0.11	0.22**	0.21**	0.20**						
8.Family business background	0.29	0.45	0.14*	0.10	0.22**	0.32**	0.25**	−0.00	0.03					
9.Prior entrepreneurial experience	0.14	0.35	0.12*	0.14*	0.23**	0.29**	0.29**	0.11	0.18**	0.16**				
10.Education level	0.13	0.33	−0.13*	0.16**	0.02	0.06	0.03	0.17**	0.48**	−0.03	0.06			
11.Field of study	0.38	0.49	0.07	0.04	−0.04	−0.09	−0.09	−0.13*	−0.19**	−0.05	−0.08	−0.14*		
12.Team leader	0.56	0.50	0.03	0.09	0.20**	0.29**	0.22**	0.08	0.25**	0.16**	0.21**	0.12	−0.10	
13.Winning awards	0.34	0.48	0.20**	0.43**	0.10	0.26**	0.06	0.06	0.11	0.13*	0.01	0.09	0.16**	0.12

Note. $N = 276$. *, $p < 0.05$; **, $p < 0.01$. Gender: male = 1, female = 0. Age: self-reported actual age. Family business background: yes = 1, no = 0. Prior entrepreneurial experience: yes = 1, no = 0. Education level: undergraduate = 0, under postgraduate = 1. Field of study: business and economics = 1, others = 0. Team leader: yes = 1, no = 0. Winning awards: yes = 1, no = 0.

Table 5
Regression results (Study 2).

	Entrepreneurial outcome expectation			Entrepreneurial intention			
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Gender	0.10	0.07	0.08	0.13*	0.11*	0.09	0.05
Age	0.05	0.02	0.02	0.15*	0.12	0.12	0.08
Family business background	0.16**	0.15**	0.15**	0.19**	0.18**	0.14*	0.04
Prior entrepreneurial experience	0.16**	0.12*	0.12*	0.20**	0.17**	0.13*	0.08
Education level	−0.05	−0.08	−0.06	−0.08	−0.10	−0.08	−0.04
Field of study	0.00	−0.01	0.01	0.03	−0.03	−0.03	−0.00
Team leader	0.12*	0.13*	0.13*	0.11*	0.11*	0.07	0.01
Winning awards	0.06	−0.08	−0.07	0.01	−0.10	−0.07	−0.10
Performance accomplishment		0.35**	0.32**		0.27**	0.16**	−0.01
Locus of control			−0.02				
Performance accomplishment × Locus of control			0.13*				
Entrepreneurial outcome expectation						0.30**	0.15**
Entrepreneurial self-efficacy							0.54**
R^2	0.12**	0.21**	0.23*	0.18**	0.24**	0.31**	0.47**

Note. $N = 276$. Table entries represent standardized parameter estimates with standard errors. *, $p < 0.05$; **, $p < 0.01$.

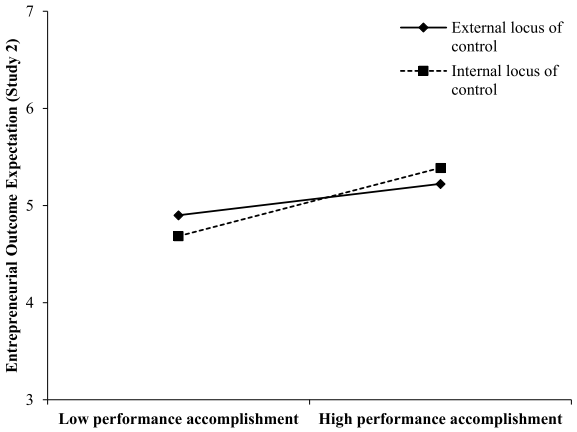

Fig. 3. Moderating effects of locus of control on performance accomplishment and entrepreneurial outcome expectation (Study 2).

and entrepreneurial intention, as well as the moderating effect of locus of control. Firstly, we confirmed that high performance accomplishment leads to high entrepreneurial outcome expectation and intention. Secondly, we found that entrepreneurial outcome expectation mediates the relationship between performance accomplishment and entrepreneurial intention. Thirdly, we observed that the positive impact of performance accomplishment on entrepreneurial outcome expectation is more significant for individuals with internal locus of control. We also discovered that locus of control positively moderates the indirect effect of performance accomplishment on entrepreneurial intention through entrepreneurial outcome expectation.

We also found inconsistent impacts of the low accomplishments on the internals' entrepreneurial outcome expectations in Study 1 and Study 2. Results in Study 2 showed that the internals are sensitive to low accomplishment experience, yet there is absent evidence in Study 1. The inconsistent findings may be explained by the fact that, in Study 1, the experimental participation in the practical activity was short (2 h). Therefore, if the performance accomplishment in practice was poor, participants in Study 1 could easily find other reasons for self-preservation, such as "I didn't sleep well last night." In contrast, participants in Study 2 had been involved in a long-term entrepreneurial practice, i.e., six months from enrollment in the competitions to the business plan presentation. A prior study found that individuals who tend to internalize attributions will be more susceptible to the impact of performance results, even revising their goals (Tolli & Schmidt, 2008). Zellweger et al. (2011) noticed that internal students with family business backgrounds were more likely to be employed because they were pessimistic about controlling their entrepreneurial careers. Recent evidence suggests that internal locus of control allows individuals striving for perfectionism to self-protect through goal disengagement in the hypothetical failure (Kahn et al., 2023). Given all this, we indicate that poor accomplishments can not incentivize the internals, even keeping them away from entrepreneurial career choices.

4.1. Theoretical implications

We showed that accomplishment experiences positively affect entrepreneurial intention, expanding the understanding of how practicing develops entrepreneurial motivations. The inconsistent findings about the function of entrepreneurial practice on

entrepreneurial intention (Pérez-Pérez et al., 2021; Walter & Dohse, 2012; Wegner et al., 2020) compel scholars to focus not only on the existence of practice. Bohlayer and Gielnik (2023) have shown that experiencing problems in action-oriented entrepreneurial training dampens an individual's entrepreneurial self-efficacy and intentions, similar to our results that low performance accomplishment reduces one's venturing intention. We also showed that personal accomplishment in entrepreneurial practice nourishes the growth of entrepreneurial willingness. Thus, it is necessary to be concerned with positive experiences (e.g., enhancing performance accomplishment) and dispose of negative ones (e.g., helping to solve the problems experienced) in entrepreneurial practice and action-oriented training to incentivize entrepreneurship effectively.

We complement existing research on how positive experience in practice acts on entrepreneurial motivation by identifying entrepreneurial outcome expectation as a cognitive mechanism. Prior research has talked about the role of entrepreneurial self-efficacy as a cognitive conduit for changing entrepreneurial motivation in entrepreneurial experiential learning, including direct learning (Sánchez, 2013; Zhao et al., 2005) and indirect learning (Austin & Nauta, 2016; Bloemen-Bekx et al., 2019). Its central argument is that learning experiences in experiential activities help reinforce individuals' beliefs about playing an entrepreneur role, enhancing their willingness to start a business. We demonstrate that performance accomplishment as direct experience in entrepreneurial practice leads to high entrepreneurial intention by enhancing the wonderful vision of entrepreneurship. Therefore, although learning experience in entrepreneurial practice improves people's entrepreneurial self-efficacy, we should not ignore the impact of such direct experience on evaluating entrepreneurial prospects, which could also motivate individuals to choose entrepreneurship as their career choice.

By integrating locus of control into the practicing experience model, we found that individuals with internal locus of control are susceptible to being influenced by personal accomplishment. Existing literature is unanimous that internal locus of control is closely related to the intention to start an entrepreneurial career (Asante & Affum-Osei, 2019; Uysal et al., 2022). It enables students to foster high entrepreneurial self-efficacy after taking entrepreneurial courses to develop high intent to start a business (Borchers & Park, 2010). We further showed that locus of control varies their entrepreneurial intentions in response to performance accomplishment in action-related training. Our study highlights that the motivational function of mastery experience in entrepreneurial practice is quite effective in raising entrepreneurial vision and willingness for individuals with internal locus of control. It can be inferred that education and training for entrepreneurship, both learning-oriented and action-oriented, are more conducive to developing the entrepreneurial mindsets of those who believe they can control their own destiny. The finding contributes to more gestation of successful start-ups because entrepreneurs with internal locus of control have better business performance (Watson et al., 2020).

Moreover, our study suggests that performance accomplishment is an essential experimental source influencing entrepreneurial intentions. Previous entrepreneurial research based on SCCT has shown that the function of other learning experiences, such as exposure to entrepreneurial role models (BarNir et al., 2011; Austin & Nauta, 2016) and social persuasion from parents (Bloemen-Bekx et al., 2019) strengthen people's entrepreneurial intentions. We add that besides indirect experiences, direct experiences contribute to entrepreneurial career goals. Moreover, although personal traits such as need for achievement (Pérez-Fernández et al., 2022; Uysal et al., 2022) are suggested as key drivers of venture creation intentions, learning experience in practice can prompt individuals to develop the beliefs and intentions for building business ventures. These results illustrate the vital role of the learning experience, especially the accomplishment experience, based on SCCT in explaining early entrepreneurial career development (Adebusuyi et al., 2022; Liguori et al., 2018).

4.2. Practical implications

Our findings highlight that individuals change their expectations of entrepreneurial outcomes while engaging in practical activities, leading to variation in their entrepreneurial intentions. Individuals are susceptible to the direct experience of successfully completing practical entrepreneurial activities. To encourage and motivate individuals to explore the entrepreneurial path, we suggest that entrepreneurial training organizations must take action to recognize or acknowledge individuals' accomplished success in practical entrepreneurial activities. Additionally, entrepreneurial mentors must appropriately guide people who experience failure or lows in practical activities to expect excellent entrepreneurial outcomes to prevent their entrepreneurial intentions from declining.

We also offer valuable insights for designing and delivering entrepreneurial education programs. Grounded in the Scholarship of Teaching and Learning research within entrepreneurship, our research underscores the importance of direct experiential learning in fostering a positive attitude towards entrepreneurial endeavors. Specifically, we provide empirical evidence that direct, hands-on experience in the entrepreneurial setting can not only affect one's ability-related belief in creating ventures but also significantly enhance one's perception of entrepreneurship as a viable career path, thereby boosting one's intrinsic motivation to pursue entrepreneurial activity. We recommend that program developers shift to more action-based learning approaches, which include structured experiential learning modules (such as business planning) carefully designed to provide students with positive, constructive, and reflective feedback.

We remind entrepreneurial educators of individuals' diverse responses to direct practical experiences. Our study draws attention to the fact that individuals with internal locus of control may exhibit varying degrees of receptivity to such experiences. These who often attribute their success or failure to personal efforts and abilities, will have a heightened sense of achievement when practical ventures yield positive outcomes. Conversely, low accomplishments during hands-on entrepreneurial activities may disproportionately discourage them, as they internalize these setbacks more deeply. The insight provides practical guidance for designing entrepreneurial education curricula and activities, as well as efficient, action-based training programs aimed at cultivating entrepreneurial motivations of individuals with internal locus of control. Meanwhile, entrepreneurial mentors may encourage and affirm individuals with internal locus of control to have high personal mastery to stimulate solid entrepreneurial intentions. It is also necessary to prevent these

internal ones from the negative impact of low accomplishments and to help them analyze and cope with the problems and challenges they encounter in practice in a timely manner.

4.3. Limitations and future directions

Even though we have conducted this study carefully, it still has some limitations that may provide an avenue for future research. Firstly, there are concerns about CMV since our variables were self-reported in the two studies. We took precautions to minimize CMV, such as assuring participants of anonymity in completing the questionnaire and data confidentiality after the survey. Meanwhile, our post-tests confirmed no serious CMV in the studies. Moreover, the two studies were conducted using a cross-sectional approach to examine the short-term effect. Future research could further address this concern through a longitudinal study design, which could provide insights into the long-term impact of performance accomplishment on entrepreneurial intention.

Furthermore, we recognize that the issue of gender distribution (female is 67%) could potentially affect the generalizability of the results in Study 2. To address this issue, we have included gender as a control variable in the regression models. The regression results were similar to those in Study 1, which had balanced male and female respondents. Thus, we inferred that our findings were robust and independent of gender. However, we also suggest that future research should strive for a more balanced gender representation to confirm the reliability of the findings.

Secondly, generalizing our results to other settings is limited due to students not having enough experience and resources to correctly predict whether they will successfully play an entrepreneurial role in the venture (McGee et al., 2009). While the student population is suitable for exploring how action-oriented training impacts entrepreneurial attitudes, future research could focus on how nascent entrepreneurs' experiences affect their subsequent intentions and actions. In addition, the two studies were rooted in the samples from China with a convenient sampling approach, limiting the generalization of our results to the entire population or different cultural contexts. The Chinese government has introduced a series of policies to promote entrepreneurship, establishing positive entrepreneurial environments. However, culture is essential in developing entrepreneurial intentions (Liñán & Chen, 2009; Porfírio et al., 2023). Therefore, future studies could explore and compare the influence of direct entrepreneurial experience in different countries or regions. Moreover, other sampling approaches should be used to understand the results better.

Thirdly, while our study explored the motivational effects triggered by accomplishment experience, we have neglected the potential negative outcomes of adverse experiences, such as the emergence of negative emotions. Accordingly, we call for future research to focus on other mediators, such as frustration, which stems from blocks that limit one from pursuing a desired goal (Fox & Spector, 1999). This emotional state can lead to the withdrawal from the venture (Souitaris et al., 2020). A sense of frustration in negative experience may keep individuals away from the venture.

Fourthly, we suggest that future research explore other possible moderators, such as emotional intelligence, resilience, and mentoring, lighting how individuals can remain unaffected by negative experiences during the entrepreneurial process. Emotional intelligence is the ability to monitor and manage one's own emotions (Mayer & Salovey, 1997) while guiding the selection of coping strategies and processes (Pathak & Goltz, 2021), which could be beneficial for entrepreneurs in regulating their mindsets in negative experiences (Schmodde & Wehner, 2024). Resilience represents the capacity to rebound from adversity and continue to pursue their goals (Bullough et al., 2014), which could benefit entrepreneurs in adapting to failure and setbacks in ventures (Hartmann et al., 2022). Entrepreneurial mentoring involves experienced entrepreneurs (as mentors) sharing knowledge, skills, experiences, and thoughts to help newcomers (as mentees) develop opportunities and avoid detours (St-Jean & Tremblay, 2020), as a powerful external force for them to handle negative experiences (Burnell et al., 2023). It may not only encourage those who experienced performance accomplishments to continue their growth and alert them to critical details they may have overlooked but also provide emotional support to those who encounter negative experiences and shift their focus to problem-oriented reflection and summarization.

5. Conclusions

In summary, by applying social cognitive career theory to entrepreneurial practice, this research investigated the impact of performance accomplishment in practice on entrepreneurial intention. Drawn on data from a field experiment and a correlational survey, we found that high performance accomplishments inspired individuals' entrepreneurial outcome expectations, which, in turn, enhanced their entrepreneurial intentions. Furthermore, individuals with internal locus of control tended to have higher outcome expectations and entrepreneurial intentions after experiencing high performance accomplishments than those with external locus of control. These findings underscore the importance of direct experience rather than practice itself, contributing to enlightening the effectiveness of action-oriented entrepreneurship education and training. Future studies are suggested and encouraged to substantially investigate the role of direct personal experience to contribute to a more nuanced understanding of entrepreneurship practice.

CRediT authorship contribution statement

Qingxiong Weng: Writing – review & editing, Writing – original draft, Supervision, Resources, Methodology, Investigation, Funding acquisition, Conceptualization. **Hui Jiang:** Writing – review & editing, Writing – original draft, Resources, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Haiyuan Zhao:** Writing – review & editing, Writing – original draft, Investigation, Conceptualization. **Anastasiia Popelnukha:** Writing – review & editing, Writing – original draft, Formal analysis, Conceptualization. **Tingting Niu:** Writing – review & editing, Writing – original draft, Data curation. **Lixin Chen:** Writing – review & editing, Writing – original draft, Formal analysis.

Informed consent

Informed consent was obtained from all individual participants included in the study.

Ethics approval

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

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Declarations of competing interests

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APPENDIX A

After finding a lot of inconvenience in campus life, many college students seize the business opportunity, ride the wind, and open a variety of entrepreneurial projects: a private cinema, which provides a private place to watch movies; a snacks and drinks shop, which meets the desire of students; a travel company, which helps students to play around the local holy land; an online campus service platform, which recommends the most distinctive local food; purchasing agent, which provides students with the most preferential beauty products; a photography studio, which shoots cost-effective photo set. Many cases show that there are huge business opportunities for entrepreneurship on campus.

Campus entrepreneurship not only brings a variety of well-being to others but also takes the opportunity to realize your own entrepreneurial dream. So what do you want to do to solve some potential problems on campus? Use your imagination, plan your own campus entrepreneurial project and answer the following questions about your college campus entrepreneurial project (including but not limited to the example projects above).

1. What product or service do you offer, what problem will it solve, and how will it solve this problem?
2. Who are your target customers or potential customers, and what value can you bring them?
3. Which channels will you sell through?
4. What key activities will be involved in your entrepreneurial project, and what kind of team will you set up for this? (Please briefly describe the team's size, structure, division, and cooperation.)
5. What are the main costs of your entrepreneurial project, and how will it generate profits?
6. What do you think are the core competitive advantages of your entrepreneurial project?

APPENDIX B

Manipulation of performance accomplishment: The performance information in the left box is sent to participants in the high performance accomplishment group, and the performance information in the right box is sent to participants in the low performance accomplishment group.

Entrepreneurial Potential Evaluation Activity × × ×: 【The comprehensive grade of your entrepreneurial performance: "A"】 Comprehensive comment: The target customers and product positioning are relatively clear in the campus entrepreneurial project you submitted. The pain points of customers are effectively grasped, and effective solutions are put forward. At the same time, it can grasp and establish the core advantages of its own products, and its business model and profit mode are highly desirable. We initially consider this entrepreneurial product has a high prospect. In addition, the start-up's key operational activities are really captured, so the team planning is clear and specific. Therefore, according to our preliminary evaluation, we believe that your business plan is highly feasible. Note: The right of interpretation of the above evaluation belongs to the expert review team in Entrepreneurial Potential Evaluation Program.	Entrepreneurial Potential Evaluation Activity × × ×: 【The comprehensive grade of your entrepreneurial performance: "E"】 Comprehensive comment: The target customers and product positioning are relatively vague in the campus entrepreneurial project you submitted. The pain points of customers are not effectively grasped, and the proposed solutions need to be strengthened. At the same time, it can't grasp and establish the core advantages of the product. Its business model and profit mode are lowly desirable. We initially consider this entrepreneurial product has a low prospect. In addition, the start-up's key operational activities are not captured, so the team planning is not specific enough. Therefore, according to our preliminary evaluation, we believe that your business plan is lowly feasible. Note: The right of interpretation of the above evaluation belongs to the expert review team in Entrepreneurial Potential Evaluation Program.

Note. The performance information is translated from Chinese.

Data availability

Data will be made available on request.

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