

Retraction

Retracted: Research on the Optimization Strategy of Innovation Behavior and Entrepreneurship Intention in Entrepreneurship Teaching

Scientific Programming

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This article has been retracted by Hindawi following an investigation undertaken by the publisher [1]. This investigation has uncovered evidence of one or more of the following indicators of systematic manipulation of the publication process:

- (1) Discrepancies in scope
- (2) Discrepancies in the description of the research reported
- (3) Discrepancies between the availability of data and the research described
- (4) Inappropriate citations
- (5) Incoherent, meaningless and/or irrelevant content included in the article
- (6) Peer-review manipulation

The presence of these indicators undermines our confidence in the integrity of the article's content and we cannot, therefore, vouch for its reliability. Please note that this notice is intended solely to alert readers that the content of this article is unreliable. We have not investigated whether authors were aware of or involved in the systematic manipulation of the publication process.

Wiley and Hindawi regrets that the usual quality checks did not identify these issues before publication and have since put additional measures in place to safeguard research integrity.

We wish to credit our own Research Integrity and Research Publishing teams and anonymous and named external researchers and research integrity experts for contributing to this investigation.

The corresponding author, as the representative of all authors, has been given the opportunity to register their

agreement or disagreement to this retraction. We have kept a record of any response received.

References

- [1] J. Huang, J. Wu, B. Deng, and S. Bao, "Research on the Optimization Strategy of Innovation Behavior and Entrepreneurship Intention in Entrepreneurship Teaching," *Scientific Programming*, vol. 2021, Article ID 4872108, 6 pages, 2021.

Research Article

Research on the Optimization Strategy of Innovation Behavior and Entrepreneurship Intention in Entrepreneurship Teaching

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Entrepreneurial intention is a necessary prerequisite for prospective entrepreneurs to start a new business, and today's college students are the potential entrepreneurs of the future. How to improve students' willingness to start a business is an important topic that a large number of scholars continue to pay attention to. The purpose of this work is to disentangle how college students' previous innovative behavior affects their entrepreneurial intention from the view of social psychology. Survey data from a vocational college in China indicate that college students' previous innovative behavior facilitates flow, which in turn affects their entrepreneurial intention. Our empirical findings flourish the research on antecedents of college students' entrepreneurial intention, make contributions to the research on flow in entrepreneurship, and provide useful recommendations and suggestions in entrepreneurship teaching.

1. Introduction

One of the most significant factors of economic growth is the creation of new enterprises [1]. A considerable consensus exists about the significance of accelerating entrepreneurship to technological innovation and employment generation [2, 3]. It is not surprising that entrepreneurship has received more attention in emerging economies. To be specific, in China, with the advent of the new era of “mass entrepreneurship, mass innovation,” entrepreneurship among college students is actively encouraged and supported by the state and local governments at all levels because today's students are tomorrow's aspiring entrepreneurs. According to the 2019 College Student Entrepreneurship Report survey, more than 75% of the surveyed college students have entrepreneurial intention, and more than 25% of them have a strong entrepreneurial intention.

How to improve students' commitment to start a business is an important topic that a large number of scholars continue to pay attention to. There has been a lot of

research done on entrepreneurial intention. Existing studies on the antecedents of college students' entrepreneurial intention focus on individual traits, demographic characteristics, and environmental factors [4–6]. According to our observation in practical teaching over the past few years, students' entrepreneurial intention could be influenced by their previous innovation behavior to some extent. However, there is little research being done on it. Besides, previous studies mostly used cross-sectional data to verify the relationship between antecedents and entrepreneurial intention, while longitudinal studies are still lacking.

To address the limitations mentioned above, the present research adopts longitudinal research to investigate the relationship between college students' previous innovative behavior and entrepreneurial intention and introduces the flow as a mediator from the social psychology perspective to disclose the “black box” of how students' innovative behavior affects their entrepreneurial intention (see Figure 1). Combined, we offer two main and novel contributions to the existing literature. First, we enrich the research on the antecedents of college students'

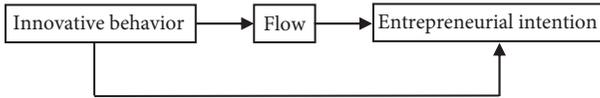


FIGURE 1: Research framework.

entrepreneurial intention. Second, we expand our knowledge of the role that flow shaping plays in affecting entrepreneurial intention.

2. Experimental Details

2.1. Literature Review

2.1.1. Entrepreneurial Intention. Entrepreneurial intention is “a self-acknowledged conviction by a person that they intend to set up a new business venture and consciously plan to do so at some point in the future.” [7]. This has been viewed as the first step of entrepreneurship since new venture creation stems from this variable [8]. It is also the most appropriate predictor of entrepreneurial behavior [9, 10]. Existing studies on the antecedents of college students’ entrepreneurial intention pay more attention to individual traits, demographic characteristics, and environmental factors. Rasli et al. [11] demonstrate that gender, work experience, conviction, education environment, and general attitude are positively related to college students’ entrepreneurial intention. Furthermore, Gelard and Saleh [12] reported that structural, educational support, and formal and informal networks affect university students’ entrepreneurial intentions. However, there is little research on the relationship between college students’ previous innovative behavior and their entrepreneurial intention.

2.1.2. Innovative Behavior. According to Scott and Bruce, innovative behavior is a process of value creation supported by the generation of new thoughts, solutions, and applications [13]. Konermann also defined innovative behavior as a process that incorporates the following components: generation, development, application, execution, and modification of novel ideas to improve the performance of an organization [14]. In other words, innovation behavior is a complex process that includes the generation, promotion, and practice of thoughts.

Based on social cognitive theory, college students’ previous innovative behavior helps to improve their analytical ability and identification ability. That is, innovative behavior would have a positive impact on opportunity identification. Low and MacMillan [15] concluded that the ability to identify opportunities is one of the main psychological characteristics that influence entrepreneurial intention. It can be seen that college students’ innovative behavior has a critical influence on their entrepreneurial intentions with the improvement of their own ability in recognizing opportunity. Hence, we propose the first hypothesis:

Hypothesis 1: innovative behavior is positively related to entrepreneurial intention

2.1.3. Flow. Csikszentmihalyi, an American psychologist, found that when an individual is engaged in his favorite work, he is completely immersed in it, even forgetting to eat and sleep. This unique psychological experience produced by an individual is defined as flow [16]. On this basis, Bakker [17] developed the concept of work-related flow, referring to an individual’s flow experience while working, which mainly includes three elements: absorption, work enjoyment, and intrinsic work motivation. The flow has been studied in a variety of fields, but entrepreneurship has received less attention.

Flow, as a positive emotion, can motivate individuals to pursue more challenging goals to constantly improve their abilities and ultimately achieve substantial personal growth. Different from traditional extrinsic motivation, flow is an internal self-motivation mechanism that enables individuals to immerse themselves in tasks over and over again and maximize their talents and abilities. A number of studies have shown that intrinsic motivation contributes to more creativity, greater cognitive resilience, and improved well-being as compared to extrinsic motivation [18]. The complexity and challenge of innovation bring them a unique mental experience, known as flow. A continuous flow state resulted from innovation behavior makes individuals want to be more innovative in many regards, which consolidates an individual’s positive attitude towards entrepreneurship and thus improves the level of entrepreneurial intention. That is, an individual has entrepreneurial enthusiasm and vitality [19]. Therefore, we believe that the key mediator in accounting for the relationship between college students’ innovative behavior and their entrepreneurial intention is flow. Hence, we put forward the second hypothesis:

Hypothesis 2: the positive relationship between innovative behavior and entrepreneurial intention is mediated by flow

2.2. Sample and Data Collection. To test the proposed hypotheses, we carried out a questionnaire survey of 226 students at a vocational university in China. We designed the questionnaire based on the previous measurements which have been proved to have high reliability and validity [9, 13, 17]. In order to ensure the representativeness of the sample, we selected research teams with different academic backgrounds. The questionnaire was filled out separately by the respondents in three rounds (before, during, and after class) to avoid the influence of common method variance. Firstly, each interviewee filled in and described his or her previous innovation experience and entrepreneurial intentions. Secondly, teachers were asked to evaluate the entrepreneurial intention and flow state of team members one by one, and then, the relevant researchers collected the information directly on the spot. Thirdly, according to the questionnaires filled by the research members, we asked the corresponding team members to evaluate their entrepreneurial intention and mental state, i.e., flow, and these finished questionnaires were also collected by the researchers. Finally, these paired questionnaires were sorted out and counted. We established dynamic panel data. Table 1 shows the characteristics of research sample.

TABLE 1: Characteristics of research sample ($N = 226$).

		Frequency	Percentage
Gender	Male	104	46.0
	Female	122	54.0
Class	Architectural engineering	36	15.9
	Finance	28	12.4
	Municipal administration	80	35.4
	Investment	82	36.3
Weeks	1 week	75	33.2
	6 weeks	68	30.1
	12 weeks	83	36.7

2.3. Measurements. We used back-translation to render them in Chinese because the items were originally written in English and applied a 5-point Likert scale for the measures (1 = strongly disagree; 5 = strongly agree). We adopted the entrepreneurial intention scale developed by Krueger et al. [9] ($\alpha = 0.901$, $CR = 0.903$, and $AVE = 0.699$). For innovation behavior, we followed the six items measurement from Scott and Bruce [13] ($\alpha = 0.943$, $CR = 0.944$, and $AVE = 0.736$). We assessed flow from three dimensions including absorption ($\alpha = 0.884$, $CR = 0.891$, and $AVE = 0.673$), work enjoyment ($\alpha = 0.961$, $CR = 0.962$, and $AVE = 0.964$), and intrinsic work motivation ($\alpha = 0.914$, $CR = 0.916$, and $AVE = 0.687$) with a scale developed by Bakker [17].

We controlled for gender, class, and weeks because of their potential effects on entrepreneurial intention. Table 2 shows the constructs and measurements in this study.

3. Results

3.1. Reliability and Validity. We used SPSS 26.0 and Mplus 7 to check construct reliability and validity. All of the constructs' Cronbach's α surpassed the recommended minimum of 0.70, suggesting adequate reliability [20–22]. As shown in Table 2, our scale also has good construct reliability and sufficient convergent validity because the composite reliability and average variance extracted were, respectively, greater than 0.60 and 0.50 [23]. Meanwhile, all factor loadings were greater than 0.70 [24]. Each construct's "square root" of AVE was higher than the correlations among the constructs, indicating that the three constructs had strong discriminant validity [24]. Table 3 shows the descriptive statistics and correlations of all key variables.

3.2. Hypothesis Testing. To verify our hypotheses, we used hierarchical regression analysis. Before the regression analysis, we made several relevant checks. When VIFs exceed 10.0 or even 5.0, the model may have a multicollinearity problem [25]. So we calculated the average VIF, and it was 1.12. Besides, the maximum of VIFs was lower than 2.0, indicating that multicollinearity was not evident in our research. We looked for violations of normality assumptions and outliers as well, and no distinct violation was found, so the data could be used for regression analysis. Table 4 presents our regression results.

H1 proposed that college students' innovative behavior is positively related to entrepreneurial intention. As shown in

Model 4, the coefficient is positively significant ($\beta = 0.786$, $p < 0.01$). Thus, H1 is strongly supported. To test the flow as a mediator between innovative behavior and entrepreneurial intention, we conducted Baron and Kenny's [26] three-stage multiple regression analysis. In the first stage (model 5), innovative behavior is positively related to entrepreneurial intention ($\beta = 0.786$, $p < 0.01$), while in the second stage (model 2 and model 6), innovative behavior is positively related to flow ($\beta = 0.772$, $p < 0.01$) and flow is positively related to entrepreneurial intention ($\beta = 0.736$, $p < 0.01$). In the last stage (model 7), innovative behavior is significantly related to entrepreneurial intention ($\beta = 0.641$, $p < 0.01$). Our results suggest that flow plays a partial mediator between innovative behavior and entrepreneurial intention. Therefore, H2 is supported.

4. Discussion

This study examined the relationship between college students' innovative behavior and entrepreneurial intention. Most studies on the antecedents of college students' entrepreneurial intention focus on individual traits, demographic characteristics, and environmental factors [4–6]. According to our observation in practical teaching over the past few years, students' entrepreneurial intentions could be influenced by their previous innovation behavior. However, there is little research on it.

We propose that college students' innovative behavior is positively related to their entrepreneurial intention. In detail, this study adopted longitudinal research and tested the mediating mechanism of flow from the view of social psychology. The empirical findings from 226 college students support our hypotheses, which suggest that innovative behavior does not directly lead to entrepreneurial intention. Instead, flow acts as a partial mediator that transforms students' previous innovative behavior into entrepreneurial intention. In the state of flow, an individual's actions are integrated with their consciousness. That is, they are in a state of positive psychological and emotional experience. Based on intrinsic motivation theory, this state can continuously consolidate the individual's positive attitude towards entrepreneurship so as to keep improving their entrepreneurial intention.

The findings make a contribution to literature in two aspects. First, this study examined the relationship between college students' prior innovative behavior and their entrepreneurial intention. It enriches the existing research on

TABLE 2: Constructs' measurements, reliability, and validity.

Constructs and measurements	Cronbach's α	Loading	AVE	CR
<i>Flow</i>			0.822	0.932
<i>Absorption</i>	0.884	0.781	0.673	0.891
When I take entrepreneurship classes, I think about nothing else		0.771		
I get carried away by my entrepreneurship classes		0.716		
When I take entrepreneurship classes, I forget everything else around me		0.837		
I am totally immersed in my entrepreneurship classes		0.941		
<i>Work enjoyment</i>	0.961	0.942	0.864	0.962
My entrepreneurship classes give me a good feeling		0.874		
I take my entrepreneurship classes with a lot of enjoyment		0.941		
I feel happy during my entrepreneurship classes		0.961		
I feel cheerful when I am taking entrepreneurship classes		0.939		
<i>Intrinsic work motivation</i>	0.914	0.984	0.687	0.916
I would still take entrepreneurship classes, even if I received less pay		0.907		
I find that I also want to consider entrepreneurship classes in my free time		0.727		
I take entrepreneurship classes because I enjoy them		0.893		
When I am taking entrepreneurship class, I am doing it for myself		0.760		
I get my motivation from the entrepreneurship class itself and not from the reward for it		0.843		
<i>Innovation behavior</i>	0.943		0.736	0.944
I always search out new technologies, processes, techniques, and/or product ideas		0.826		
I always generate creative ideas		0.874		
I always promote and champion ideas to others		0.898		
I always investigate and secure funds needed to implement new ideas		0.863		
I always develop adequate plans and schedules for the implementation of new ideas		0.839		
Generally, I am a person with innovative spirit		0.846		
<i>Entrepreneurial intention</i>	0.901		0.699	0.903
I think I will start my own business in the future		0.892		
I once considered running my own company		0.822		
If I have the opportunity and I have the freedom to make a decision, I will choose to start my own business		0.852		
Considering my current real situation and various limitations (such as lack of funds), I will still choose to start my own business		0.775		

Note: AVE refers to average variance extracted; CR refers to composite reliability.

TABLE 3: Means, standard deviations, and correlations ($N = 226$).

Variables	Means	SD	1	2	3
1. Innovative behavior	3.645	0.855	0.858		
2. Flow	3.786	0.816	0.813**	0.907	
3. Entrepreneurial intention	3.434	0.963	0.629**	0.703**	0.836

Note: * $p < 0.05$; ** $p < 0.01$; $n = 226$.

TABLE 4: Regression results.

Variables	Flow			Entrepreneurial intention		
	M1	M2	M4	M5	M6	M7
<i>Control variables</i>						
Gender	0.177	0.097	0.276**	0.195**	0.146	0.177
Class	0.039	0.018	0.064	0.042	0.035	0.039
Weeks	-0.017	-0.009	-0.008	0.000	0.004	0.001
<i>Independent variable</i>						
Innovative behavior		0.772***		0.786***		0.641***
<i>Mediator</i>						
Flow					0.736***	0.187*
ΔR^2	0.014	0.006	0.014	0.009	0.011	0.011
R^2	0.016	0.665	0.022	0.505	0.404	0.514
F	1.186	109.696	1.631	56.447	37.485	46.501

Note: $N = 249$; *** $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$.

the antecedents of college students' entrepreneurial intention. Second, introducing the flow as a mediator variable not only helps further analysis of the "black box" of innovation behavior affecting entrepreneurial intention, but also serves as a supplement and breakthrough to the existing research on flow.

5. Conclusion

In conclusion, the main purpose of this research is to figure out the relationship between college students' prior innovative experience and their entrepreneurial intention from the view of social psychology. The study results show that students' innovative behavior is positively related to entrepreneurial intention and that flow mediates the positive relationship between innovative behavior and entrepreneurial intention.

This study has two potential practical implications. First, universities could set more relevant innovative and entrepreneurial courses, and companies could offer more internship opportunities to college students to inspire and promote their innovative behavior, which facilitates increasing their entrepreneurial intention. Second, our findings provide useful guidance to recognize students who are potential entrepreneurs.

However, there are two research limitations that point to prospective research directions to some extent. First, the diversity of this research sample needs to be improved. There are some differences between the characteristics of universities and enterprises [27]. This study especially chose vocational college students as our research sample to solve this problem to some extent. How to further promote the quality education of higher vocational college students? Let the students have the ability to adapt the modern production structure and the fast pace of enterprise competition, which is an important topic that a large number of colleges, experts, and scholars are exploring continuously. Thus, vocational college has a close connection with enterprises in many regards [28]. After all, the complexity of the real context in enterprises cannot be reflected by students in vocational colleges. Future research should continue to collect enterprise samples to verify the effectiveness of this model and increase the diversity of samples to increase the external validity of research conclusions.

Second, our empirical findings suggest that there is a partial mediating impact between students' innovative behavior and entrepreneurial intention. However, innovative behavior may have different influences on entrepreneurial intention for different individual traits, which indicates that there may be other possible mechanisms at work. Future studies could investigate other mediating mechanisms from different perspectives to further explain the relationship between students' innovative behavior and their entrepreneurial intention.

Data Availability

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Conflicts of Interest

The authors declare no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Acknowledgments

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