pISSN: 1906 - 3296 © 2020 AU-GSB e-Journal. eISSN: 2773 – 868x © 2021 AU-GSB e-Journal. http://www.assumptionjournal.au.edu/index.php/AU-GSB/index

Factors Influencing Graduate Students' Entrepreneurial Intentions and Behavior in Guangxi University of Science and Technology

Jun Wu*

Received: October 6, 2023. Revised: January 10, 2024. Accepted: January 29, 2024.

Abstract

Purpose: This paper investigates the factors influencing graduate students' entrepreneurial intention and behavior at Guangxi University of Science and Technology. The framework includes creativity, entrepreneurial education, personal attitude, subjective norms, perceived behavioral control, entrepreneurial intention, and entrepreneurial behavior. Research design, data, and methodology: The study surveyed graduate students at Guangxi University of Science and Technology using a quantitative research method (n=500). The non-probability sampling methods include judgmental, quota and convenience sampling. Before the data collection, the index of item-objective congruence (IOC) and pilot test (n=50) with Cronbach's Alpha are implemented. Data analysis included structural equation modeling (SEM) and confirmatory factor analysis (CFA). Model fit, reliability, and construct validity were examined. Results: The study successfully proved six hypotheses. Results showed that creativity, entrepreneurial education, personal attitude, subjective norms, and perceived behavioral control significantly influence entrepreneurial intentions and behavior, with subjective norms having the strongest effect. Conclusions: The researcher recommends that college managers provide evaluations to measure the level of influencing factors and the development of students' entrepreneurial behaviors. This paper provides an in-depth study that can help college managers promote the entrepreneurial spirit of graduate students.

Keywords: Subjective Norms, Perceived Behavioral Control, Entrepreneurial Intention, Entrepreneurial Behavior

JEL Classification Code: E44, F31, F37, G15

1. Introduction

The rapid development of science and technology in the current society and the increasingly fierce competition in the talent and employment markets is a factor that cannot be ignored in the employment difficulties of graduate students. Difficulty in employment has become a key issue of concern for society and educators, and the emergence of entrepreneurship increases employment opportunities and effectively improves the employment rate of college students. Entrepreneurship is one of the ways to promote social and economic prosperity. Entrepreneurship has an important role and significance and promotes individuals' progress and

society's development (Wright et al., 2017). Graduate students, as a highly knowledgeable group in society (Bendickson et al., 2020), have a good inherent foundation and conditions for entrepreneurship and can play a good role in leading and spearheading entrepreneurship for all. In the training and education of postgraduate students in colleges and universities, ability and knowledge are equally important, recognizing the importance of entrepreneurial awareness and entrepreneurial ability development of college students (Saadat et al., 2022). Through entrepreneurship education in universities and colleges, graduate students can exercise and present themselves and increase their abilities through learning to cope with the employment pressure from society

^{1*}Jun Wu, Guangxi University of Science and Technology, China. Email: 215763240@qq.com

[©] Copyright: The Author(s)

This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (http://Creativecommons.org/licenses/by-nc/4.0/) which permits unrestricted noncommercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

(Deprez et al., 2021).

Creativity, a comprehensive instinct unique to human beings, the cultivation of creative ability is the core of creativity, and the motivation of creativity is one of the foundations of entrepreneurial success (Gao et al., 2020). In today's competitive economic environment, creativity becomes an important factor in whether entrepreneurship can be realized. In the current university education, entrepreneurial education has been strengthened, and entrepreneurial intentions and behavior have been given guidance and encouragement to students' entrepreneurship to solve students' employment effectively (Shi et al., 2020).

Personal attitudes and subjective norms directly correlate to entrepreneurial intentions (Hoda et al., 2021). Perceived behavioral control effectively predicts behavioral intention, but the degree of influence varies (Huang et al., 2023). As for highly educated knowledge-based talents, the development of entrepreneurial intentions plays a crucial role in the success of the initial stage of entrepreneurial behavior and future career development and personal growth (Cai et al., 2023).

This paper establishes a research framework based on the TPB model that creativity (C), entrepreneurial education (EE), personal attitude (PA), subjective norms (SN), and perceived behavioral control (PBC) are the factors that have a significant influence on entrepreneurial intentions (EI), and entrepreneurial intentions (EI) is a direct influence on entrepreneurial behavior (EB). Wang et al. (2022) proved through empirical analysis that the entrepreneurial intentions of college students are an important way to influence entrepreneurial behavior, which provides an effective reference to improve students' entrepreneurship level.

Therefore, the framework of this study includes seven variables: creativity (C), entrepreneurial education (EE), personal attitude (PA), subjective norms (SN), perceived behavioral control (PBC), entrepreneurial intentions (EI), and entrepreneurial behavior (EB), to explore further the factors affecting the entrepreneurial intentions and entrepreneurial behavior of graduate students at Guangxi University of Science and Technology (GUST).

2. Literature Review

2.1 Creativity

Zhou et al. (2021) consider creativity to be the accumulation of many different types of knowledge and the ability to imitate or create in ways others would not have thought possible or imaginable. In education, Ha & Ha (2022) consider creativity as the ability to create "original and useful things." From the psychological point of view, knowledge, skills, intelligence, and environment influence the

development of creativity, which is a series of continuous, complex, and high-level mental activities (Taylor, 2023).

Through the study, Nathan (2020) found that creative people are more accomplished, motivated, and successful than non-creative people. Some researchers started to focus on entrepreneurship and pointed out that creativity plays a non-negligible role in enhancing the level of individual entrepreneurial intentions (Nisula & Olander, 2021); not only that, creativity helps entrepreneurs to have a flexible mindset to cope with the fast-changing market, provides a good foundation and long-lasting entrepreneurial intentions and execution security (Li et al., 2022). Thus, this study provides a hypothesis:

H1: Creativity has a significant impact on entrepreneurial intentions.

2.2 Entrepreneurial Education

Lackeus (2017) defines entrepreneurial education as a system of teaching and learning that fosters pioneering personalities and emphasizes students' risk-taking, entrepreneurial ability, ability to work independently, and technical, social, and managerial skills. Entrepreneurial education focuses on developing entrepreneurial spirit and psychology and integrating knowledge with economics and management. It emphasizes analyzing and teaching entrepreneurial practices and cases (Bayar et al., 2022). Colleges and universities have opened courses on entrepreneurial education, and the advocacy entrepreneurship and the practice of entrepreneurial education have played a pivotal role in the rapid development of the social economy (Cao & Zhou, 2018).

Entrepreneurial education presents typical cases of students about to face graduation in entrepreneurship, including success and failure cases. It analyzes them in detail, enabling college students to understand entrepreneurship comprehensively and avoid entrepreneurial risks (Luo et al., 2022). Entrepreneurial education should not only teach the knowledge related to entrepreneurship but also promote the learners to reflect on the entrepreneurial intentions and entrepreneurial approaches fundamentally (Yin & Wang, 2017). The environment of good entrepreneurial education and implementing more practical entrepreneurial activities can stimulate and guide entrepreneurial intentions (Gao & Qin, 2022). Hence, a hypothesis is derived:

H2: Entrepreneurial education has a significant impact on entrepreneurial intentions.

2.3 Personal Attitude

Guarino et al. (2022) consider attitude as an evaluative response to liking or disliking something or someone. Attitude is a reaction that may be expressed or unexpressed,

and an individual's attitude can reflect a personal state, either positive or negative, which can be evaluated (Boyle et al., 2022). Individual attitudes may be expressed at three levels: cognitive, affective, and behavioral (Barak et al., 2022). From an entrepreneurial perspective, a direct relationship has been demonstrated between personal attitudes and entrepreneurial intentions (Ayad et al., 2022). Rodrigues et al. (2019) found through their research that attitudes are a part of feelings that have a coordinated and coherent manifestation of intentions. Accordingly, a hypothesis is indicated:

H3: Personal attitude has a significant impact on entrepreneurial intentions.

2.4 Subjective Norms

Anything and everything artificial is both objectively existing matter and subjective spiritual consciousness (Entrialgo & Iglesias, 2016). Subjective norms can be understood as individual or small group-wide defined behavior codes to guarantee societal order (Tajeddini et al., 2021). Subjective norms can be used simultaneously in predicting the behavior of others because of the extent of the role of people or groups that influence the individual's behavioral decisions in influencing the individual's specific behavior or actions (Han et al., 2017).

Duong (2022) found subjective norms to be significantly related to entrepreneurial intentions in a study of entrepreneurial examples. From the perspective of entrepreneurship education for college students, students' subjective norms impact entrepreneurial intentions (Fu et al., 2022). If an individual suffers from entrepreneurial failure, he or she will feel skepticism and disappointment from family or friends, impacting psychological well-being and future career development (Igwe et al., 2020). Therefore, this study hypothesizes that:

H4: Subjective norms have a significant impact on entrepreneurial intentions.

2.5 Perceived Behavioral Control

Perceived behavioral control is a perception of individual positive or hindering behavioral factors as reflected in an individual's perception of the difficulty or ease of performing a particular behavior (Hou et al., 2022). From a psychological perspective, perceived behavioral control refers to an individual's perception of the perceived difficulty or mastery of a behavior (Choi & Park, 2017). Ajzen's Theory of Planned Behavior suggests that the perceived behavioral control variable addresses variations in a person's ability to control the performance of a behavior (Ma et al., 2022).

When individuals perceive the possibility of entrepreneurial failure, they enhance their sensitivity, affecting entrepreneurial intentions (Al-Jubari, 2019). Wang and Ortiz (2022), through an empirical study of student entrepreneurship, found that perceived behavioral control is a direct antecedent of entrepreneurial intentions. Jin et al. (2023) found that perceived behavioral control significantly positively influenced students' entrepreneurial intentions. Based on the previous discussions, a hypothesis is set:

H5: Perceived behavioral control has a significant impact on entrepreneurial intentions.

2.6 Entrepreneurial Intentions

Entrepreneurship is a behavior and a process; entrepreneurship requires entrepreneurial people and partners with common goals to organize, operate, manage, think, and judge to accomplish higher economic and social values (Luo et al., 2022). Intentions come from many aspects, such as values, personal needs, beliefs, habits, etc.; intentions are part of behavioral motivation (Joensuu-Salo, 2020). Entrepreneurial intentions are the subjective attitude of an entrepreneur towards the potential of entrepreneurship, which can initially determine the suitability of entrepreneurial activities (Djebali et al., 2023).

Nakara et al. (2020) argued that entrepreneurial enthusiasm comes from the entrepreneur's clear entrepreneurial intentions and determination to engage in entrepreneurship to support entrepreneurial behaviors. Through their research, Tomy and Pardede (2020) confirmed the role of entrepreneurial intentions in implementing entrepreneurial ideas and behaviors. The precision of entrepreneurial intentions can help entrepreneurs realize their desired goals and enable entrepreneurs to quickly seize opportunities and deal with problems that arise promptly (Bai et al., 2022). Hence, a hypothesis is proposed:

H6: Entrepreneurial intentions have a significant impact on entrepreneurial behavior.

2.7 Entrepreneurial Behavior

Entrepreneurship originated in France once and is a means to undertake (Prince et al., 2021). Entrepreneurship for entrepreneurs is creating more economic benefits through the adjustment of their own resources and efforts (Meng et al., 2023). Successful entrepreneurs need to have bolder and clear goal identification to build a solid foundation for entrepreneurial success (Baumol, 2016).

Student entrepreneurship can start from the basics, and in the process of entrepreneurship, continuously improve their self-growth, accumulate experience, complete the quantitative change from qualitative change, and finally achieve a career (Li, 2022). Entrepreneurs make full use of their resources and conditions, have a long-term vision, have a wealth of management knowledge, and other factors that can guarantee the success of entrepreneurship (Qian, 2017). Knowledge-based entrepreneurs' ability to learn continuously plays a key role in their growth and the development of their businesses in the middle and later stages (Lupoae et al., 2022).

3. Research Methods and Materials

3.1 Research Framework

Four theoretical models from previous research frameworks were used to develop this conceptual framework. The influence of creativity (C) on entrepreneurial intentions (EI) was derived from the model of Smith et al. (2016). Puni et al. (2018) model was used for the influence of entrepreneurial education (EE) on entrepreneurial intentions (EI). The influence of entrepreneurial intentions (EI) on entrepreneurial behavior (EB) is based on the model of Alam et al. (2019). The influences of personal attitude (PA), subjective norms (SN), and perceived behavioral control (PBC) on entrepreneurial intentions (EI) were from the Hu et al. (2016) model (see Figure 1).

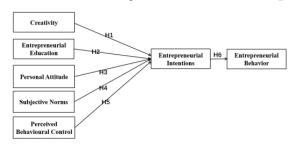


Figure 1: Conceptual Framework

H1: Creativity has a significant impact on entrepreneurial intentions.

H2: Entrepreneurial education has a significant impact on entrepreneurial intentions.

H3: Personal attitude has a significant impact on entrepreneurial intentions.

H4: Subjective norms have a significant impact on entrepreneurial intentions.

H5: Perceived behavioral control has a significant impact on entrepreneurial intentions.

H6: Entrepreneurial intentions have a significant impact on entrepreneurial behavior.

3.2 Research Methodology

The researcher sent questionnaires to graduate students at Guangxi University of Science and Technology via the Internet using a quantitative method with non-probability sampling. The purpose of the survey was to collect and analyze key factors that significantly impact the entrepreneurial intention and entrepreneurial behavior of graduate students. The survey was divided into three parts as follows. Screening questions were used in the first part to identify the characteristics of the respondents. Questions on the personal demographic characteristics of the students were included in the second part. The third part used a Likert scale to test seven proposed variables ranging from strong disagreement to strong agreement.

The index of item-objective congruence (IOC) evaluation involved the participation of three experts who individually assessed each item, all of whom assigned scores of 0.6 or greater. Following this, a preliminary test was conducted with a group of 50 participants, employing the Cronbach alpha coefficient to gauge reliability. The results revealed a strong internal consistency across all questionnaire items, with a reliability score exceeding 0.7 (Nunnally & Bernstein, 1994).

After the reliability test, the questionnaire was distributed to the target respondents. Five hundred responses were received. SPSS AMOS 26.0 was used to analyze the collected data. Then, to test the convergence and validity of the model, they used confirmatory factor analysis (CFA). To ensure the validity and reliability of the model, the fitted measures of the model were calculated by synthesizing the given data. Finally, to test the effects of the variables, the researcher used Structural Equation Modeling (SEM).

3.3 Population and Sample Size

The population of this paper are graduate students in three majors at Guangxi University of Science and Technology. Structural equation modeling suggests a sample size of at least 425 people. This study used 500 respondents.

3.4 Sampling Technique

The researcher used the non-probability sampling method to select three majors in the Guangxi University of Science and Technology who have experience in entrepreneurship education by using the judgmental sampling method, followed by the quota sampling method (See Table 1). The researcher then used Questionnaire Star, a convenience sampling tool, to distribute online questionnaires.

Table 1: Sample Units and Sample Size

Major	Population Size	Proportional Sample Size
Engineering	947	330
Business	276	95
Humanities and Social Sciences	216	75
Total	1439	500

Source: Constructed by author

4. Results and Discussion

4.1 Demographic Information

The demographics were targeted at 500 participants, and the findings are presented in Table 2. All respondents were graduate students at Guangxi University of Science and Technology (GUST), and their three undergraduate majors were Engineering, Business, and Humanities and Social Sciences. The number of students in each major was 329, 96, and 75, respectively, which accounted for a total sample of 65.8%, 19.2%, and 15.0% of the total sample (see Table 2).

Table 2: Demographic Profile

Demog	raphic and General Data (N=500)	Frequency	Percentage
	Engineering	329	65.8%
Majors	Business	96	19.2%
	Humanities and Social Sciences	75	15%

Source: Constructed by author

4.2 Confirmatory Factor Analysis (CFA)

This study used confirmatory factor analysis (CFA). All the items in each variable were significant and represented the factor loadings for the convergent validity test. The importance of factor loadings for each item was emphasized by Hair et al. (2006). The factor loading requirement was set to 0.5 with a p-value coefficient less than 0.05. Fornell and Larcker (1981) cut-off point was set at CR greater than 0.7 and AVE greater than 0.5. As shown in Table 3, the factor loading values were all above 0.5, with the CR greater than 0.7 and the AVE greater than 0.5. The results of Cronbach's Alpha revealed a strong internal consistency across all questionnaire items, with a reliability score exceeding 0.7 (Nunnally & Bernstein, 1994). The results indicated a good CFA test. The results of the data analysis are valid and reliable (see Table 3).

Table 3: Confirmatory Factor Analysis Result, Composite Reliability (CR) and Average Variance Extracted (AVE)

Variables	Source of Questionnaire (Measurement Indicator)	No. of Item	Cronbach's Alpha	Factors Loading	CR	AVE
Creativity (C)	Runco et al. (2001)	16	0.960	0.708-0.845	0.959	0.597
Entrepreneurial Education (EE)	Puni et al. (2018)	10	0.947	0.776-0.815	0.946	0.636
Personal Attitude (PA)	Liñán and Chen (2009)	5	0.894	0.585-0.968	0.874	0.594
Subjective Norms (SN)	Hu et al. (2016)	5	0.900	0.799-0.806	0.901	0.645
Perceived Behavioral Control (PBC)	Hu et al. (2016)	5	0.874	0.678-0.815	0.876	0.587
Entrepreneurial Intentions (EI)	Hu et al. (2016)	5	0.868	0.713-0.804	0.868	0.569
Entrepreneurial Behavior (EB)	Ngan (2020)	4	0.905	0.797-0.882	0.906	0.708

Additionally, researchers used CMIN/DF, GFI, AGFI, NFI, CFI, TLI, and RMSEA as model fit indices in CFA. Table 4 presents that all values pass the acceptable criteria to approve a measurement model.

Table 4: Goodness of Fit for Measurement Model

Fit Index	Acceptable Criteria	Statistical Values
CMIN/DF	≤ 5.0 (Wheaton et al., 1977)	4544.992/1169 3.888
GFI	≥ 0.85 (Sica & Ghisi, 2007)	0.752
AGFI	≥ 0.80 (Sica & Ghisi, 2007)	0.730
NFI	≥ 0.80 (Wu & Wang, 2006)	0.784
CFI	≥ 0.80 (Bentler, 1990)	0.830
TLI 🔻	≥ 0.80 (Sharma et al., 2005)	0.821
RMSEA	≤ 0.10 (Hopwood & Donnellan , 2010)	0.076
Model Summary		In harmony with empirical data

Remark: CMIN/DF = The ratio of the chi-square value to degree of freedom, GFI = Goodness-of-fit index, AGFI = Adjusted goodness-of-fit index, NFI = Normed fit index, CFI = Comparative fit index, TLI = Tucker-Lewis index and RMSEA = Root mean square error of approximation.

The square root of the AVE for each variable is greater than its correlation with the other variables, indicating good discriminant validity of the model. All the values obtained in this study are higher than the acceptable ones, confirming that the models fit well, as shown in Table 5. Furthermore, these model measurements strengthened their discriminant validity and verified the validity of subsequent structural model estimation.

Table 5: Discriminant Validity

Tuble 2. Discriminant variaty							
	C	EE	PA	SN	PBC	EI	EB
C	0.773						
EE	0.338	0.797					
PA	0.371	0.306	0.772				
SN	0.571	0.362	0.447	0.803			
PBC	0.526	0.326	0.452	0.665	0.766		
EI	0.492	0.358	0.473	0.557	0.532	0.754	

	С	EE	PA	SN	PBC	EI	EB
EB	0.208	0.459	0.447	0.214	0.235	0.195	0.841

Note: The diagonally listed value is the AVE square roots of the variables **Source:** Created by the author.

4.3 Structural Equation Model (SEM)

Structural equation modeling (SEM) can deal with multiple independent and dependent variables at the same time, which meets the needs of increasingly complex theoretical models in social science research (Wang et al., 2022). The structural equation modeling (SEM) fit indices are shown in Table 6. By using AMOS for calculating the SEM and fitting the model, the results of the fit indices show a good fit, i.e., CMIN/DF = 2.065, GFI = 0.858, AGFI = 0.811, NFI = 0.886, CFI = 0.937, TLI = 0.934 and RMSEA = 0.046, which are mentioned according to acceptable values (see Table 6).

Table 6: Goodness of Fit for Structural Model

Index	Acceptable	Statistical Values
CMIN/DF	≤ 5.0 (Wheaton et al., 1977)	2403.682/1164 2.065
GFI	≥ 0.85 (Sica & Ghisi, 2007)	0.858
AGFI	≥ 0.80 (Sica & Ghisi, 2007)	0.811
NFI	≥ 0.80 (Wu & Wang, 2006)	0.886
CFI	≥ 0.80 (Bentler, 1990)	0.937
TLI	≥ 0.80 (Sharma et al., 2005)	0.934
RMSEA	≤ 0.10 (Hopwood & Donnellan, 2010)	0.046
Model Summary		In harmony with Empirical data

Remark: CMIN/DF = The ratio of the chi-square value to degree of freedom, GFI = Goodness-of-fit index, AGFI = Adjusted goodness-of-fit index, NFI = Normed fit index, CFI = Comparative fit index, TLI = Tucker-Lewis index, and RMSEA = Root mean square error of approximation.

4.4 Research Hypothesis Testing Result

The research model determines the significance of the regression path coefficients based on their t-values and calculates the explanatory power of the independent variables on the dependent variable based on R2. Table 7 shows that at the significance level p< 0.001. All hypotheses are supported. The coefficient of influence of creativity on entrepreneurial intentions is 0.218, the coefficient of influence of entrepreneurial education on entrepreneurial intentions is 0.169, personal attitude on entrepreneurial intentions is 0.244, subjective norms on entrepreneurial intentions have an influence coefficient of 0.318, perceived behavioral control has an influence coefficient of 0.249 on entrepreneurial intentions. Finally, entrepreneurial intentions

have an influence coefficient of 0.216 on entrepreneurial behavior. Perceived behavioral control impacts entrepreneurial intentions most (see Table 7).

Table 7: Hypothesis Results of the Structural Equation Modeling

Hypothesis	(β)	t-Value	Result
H1: C→EI	0.218	4.799***	Supported
H2: EE→EI	0.169	3.704***	Supported
H3: PA→EI	0.244	5.157***	Supported
H4:SN→EI	0.318	6.526***	Supported
H5: PBC→EI	0.249	5.170***	Supported
H6: EI→EB	0.216	4.183***	Supported

Note: *** p<0.001 **Source:** Created by the author

H1 proves that creativity affects entrepreneurial intentions with a result of 0.218, creativity brings new ideas to entrepreneurs and inspires the industry to break the previous traditional model and stand out in the market (Zhang et al., 2022). The result of **H2** is 0.169, which proves that entrepreneurial education affects entrepreneurial intentions. Students systematically learn entrepreneurial knowledge through entrepreneurial education programs, which will enhance innovative thinking and entrepreneurial awareness in future entrepreneurial activities (Kent et al., 2022). The result of **H3** is 0.244, which proves that personal attitude affects entrepreneurial intentions. Influence. Entrepreneurs need to maintain an optimistic personal attitude in real time. There are difficulties and setbacks from time to time in entrepreneurial activities; entrepreneurs who maintain an optimistic and positive attitude can enhance personal self-confidence and help overcome difficulties (Hueso et al., 2020). The result of **H4** is 0.318, which proves that subjective norms have a significant effect on entrepreneurial intentions have a significant impact. Subjective norms directly affect entrepreneurial intentions in the environment where entrepreneurs are located. If there is a good entrepreneurial environment or successful entrepreneurs around to guide them, there will be a high degree of inclusion (Villanueva-Flores et al., 2021). The result of **H5** is 0.249, which indicates that perceived behavioral control affects entrepreneurial intentions. In entrepreneurial activities, individuals' perceived behavioral control is associated with emotions and awareness, enhancing the risk sensitivity of individuals' entrepreneurial activities (Zhang et al., 2019). Finally, the result of H6 is 0.216, which indicates that entrepreneurial intentions affect entrepreneurial behavior. Entrepreneurial intentions are the feelings of the entrepreneurial self, and entrepreneurial behavior is the real commitment to entrepreneurial activities that complement each other (Ataei et al., 2021).

5. Conclusion and Recommendation

5.1 Conclusion and Discussion

This study is designed to investigate the factors influencing the entrepreneurial intention and entrepreneurial behavior of Guangxi University of Science and Technology graduate students. Seven variables and six hypotheses are included in the model. They are: creativity (C) affects entrepreneurship intent (EI), entrepreneurship education (EE) affects entrepreneurship intent (EI), personal attitude (PA) affects entrepreneurship intent (EI), subjective norms (SN) affect entrepreneurship intent (EI), perceived behavior control (PBC) affects entrepreneurship intent (EI), and entrepreneurship intent (EI) affects entrepreneurship conduct (EB). A questionnaire survey was conducted to explore the factors influencing postgraduate students' entrepreneurial intentions (EI) and entrepreneurial behavior (EB) in Guangxi University of Science and Technology Confirmatory factor analysis (CFA) was used to measure the conceptual model's validity and reliability. Structural equation modeling (SEM) was used to analyze the proposed relationships among the hypotheses.

The results of the study are as follows. First, subjective norms have the greatest influence on entrepreneurial Subjective norms determine entrepreneurial intentions to a large extent, and subjective norms have entrepreneurial intentions have a significant impact. This suggests that subjective norms indirectly influence entrepreneurial behavior. Second, perceived behavioral control has a significant effect on entrepreneurial intentions. Perceived behavioral control is one of the factors affecting entrepreneurial behavior, and at the same time, control indirectly perceived behavioral affects entrepreneurial behavior, which means that an individual's confidence and certainty about whether he or she can successfully perform a certain behavior is one of the important factors in carrying out entrepreneurial activities. This means that an individual's confidence and certainty about his or her ability to perform a behavior successfully is one of the important factors in carrying out entrepreneurial activities. Thirdly, personal attitude has a significant effect on entrepreneurial intentions, which means that in entrepreneurial activities, personal attitude is an important factor in entrepreneurial intentions and indirectly affects entrepreneurial behavior. Fourth, creativity has a significant effect on entrepreneurial intentions. This shows that entrepreneurial activities require the involvement of creativity, which indirectly affects entrepreneurial behavior. Fifth, entrepreneurial intentions affect entrepreneurial behavior, and solid entrepreneurship education can be carried out to complete the students' practical entrepreneurship training. Finally, entrepreneurial intentions

significantly affect entrepreneurial behavior, which means that entrepreneurial behavior will be influenced by entrepreneurial intentions to act.

5.2 Recommendation

The researcher found that by investigating the factors influencing the entrepreneurial intention and entrepreneurial behavior of graduate students at Guangxi University of Science and Technology, it can be concluded that the key factors influencing the entrepreneurial intention and entrepreneurial behavior of graduate students are creativity, entrepreneurial education, personal attitude, subjective norms, and perceived behavioral control. Subjective norms are key factors affecting graduate students' entrepreneurial intention and entrepreneurial behavior. Therefore, it is recommended that universities pay attention to the cultivation related to subjective norms in graduate students' entrepreneurial activities. Subjective norms are a factor in the theory of planned behavior and the individuals in the process of entrepreneurship. Subjective norms directly affect the attitude of responsibility and behavior in entrepreneurial activities (Karimi, 2020). Universities need to pay attention to perceived behavioral control in entrepreneurship guidance. Perceived behavioral control reduces risk by circumventing circumstances beyond the control of the self when individuals face different environments in entrepreneurship (Onjewu et al., 2022). Personal attitude is the direct cause of entrepreneurial intentions; emphasis on entrepreneurial impact attitude can positively entrepreneurs activities influence and personality entrepreneurial awareness tendencies (Liao et al., 2022). When organizing entrepreneurship training in colleges and universities, it is important to cultivate postgraduate students' creativity, which is the core of innovation (Li et al., 2020). Entrepreneurial intentions help entrepreneurs clarify entrepreneurial thinking, and thinking influences intentions, which influences behavior (Farias et al., 2022). Finally, entrepreneurial intentions significantly affect entrepreneurial behavior, and intentions are a prerequisite for action (Yi, 2021), which is worthy of every entrepreneur's deep thought. In summary, the results of this study will help Guangxi University of Science and Technology or similar institutions to gain information and inspiration on students' entrepreneurial intentions and entrepreneurial behaviors, pinpoint the influencing factors affecting postgraduate students' entrepreneurial intentions and entrepreneurial behaviors, and promote the prosperity and development of social economy.

5.3 Limitation and Further Study

The limitations of this study are: First, all the samples are from the Guangxi University of Science and Technology (GUST). Hence, the results only represent entrepreneurial propensity of GUST students. Second, there may be some errors in the results because the psychological state and emotions of the respondents when filling out the questionnaire may affect the results. Third, due to the large amount of literature and controversial perspectives that have yet to reach a unified consensus in the academic community, the theoretical framework of this paper may have some shortcomings. Also, given the complexity of entrepreneurial intention and entrepreneurial behavior, there may be other intermediate variables that influence the results, and the limitations of this study include controlling for other uncorrelated factors. Therefore, future researchers need to validate the current findings further.

References

- Alam, M. Z., Kousar, S., & Rehman, C. (2019). Role of entrepreneurial motivation on entrepreneurial intentions and behavior: theory of planned behavior extension on engineering students in Pakistan. Journal of Global Entrepreneurship Research, 9(1), 50. https://doi.org/10.1186/s40497-019-0175-1
- Al-Jubari, I. (2019). College Students' Entrepreneurial Intention: Testing an Integrated Model of SDT and TPB. Sage Open, 9(2), 1-20. https://doi.org/10.1177/2158244019853467
- Ataei, P., Safaei, S., & Mousivand, M. (2021). The process of adopting entrepreneurial behaviour: Evidence from agriculture students in Iran. Innovations in Education and Teaching International, 58(3), 340-350. https://doi.org/10.1080/14703297.2020.1734476
- Ayad, T., Sobaith, A. E. E., & Elshaer, I. (2022). University Incubator Support and Entrepreneurial Intention among Tourism Graduates: Mediating Role of Personal Attitude. Sustainability, 14(23), 1-10. https://doi.org/10.3390/su142316045
- Bai, X. W., Cheng, D., & Chen, Y. (2022). Research on factors affecting serial entrepreneurial intention: An interpretive structure model. Frontiers in Psychology, 13, 1-20. https://doi.org/10.3389/fpsyg.2022.992141
- Barak, L. C., Kuijpers, G., & Hoeijmakers, L. (2022). Learning from the implementation of clinical empathy training: an explorative qualitative study in search of the barriers and facilitators. BMC Medical Education, 22(1), 800-806. https://doi.org/10.1186/s12909-022-03877-8
- Baumol, W. J. (2016). On the Appropriate Social Responsibilities of Successful Entrepreneurs. Business & Society, 55(1), 14-22. https://doi.org/10.1177/0007650314523087
- Bayar, Y., Sart, G., & Gavriletea, M. D. (2022). The impact of entrepreneurial education and educational attainment on entrepreneurial activity: evidence from selected high-income economies. Journal of Business Economics and Management, 23(6), 1257-1279. https://doi.org/10.3846/jbem.2022.17840

- Bendickson, J. S., Madden, L., & Matherne, C. F. (2020). Graduate students mentoring undergraduate students' business innovation pitches. International Journal of Management Education, 18(2), 100390. https://doi.org/10.1016/j.ijme.2020.100390
- Bentler, P. M. (1990). Comparative fit indexes in structural models. Psychological Bulletin, 107(2), 238.
 - https://doi.org/https://doi.org/10.1037/0033-2909.107.2.238
- Boyle, C., Costello, S., & Anderson, J. (2022). Further development of the Teacher Attitudes to Inclusion Scale: princinal components and Rasch analysis. International Journal of Inclusive Education, 716(2), 1-10. https://doi.org/10.1080/13603116.2022.2063425
- Cai, B. B., Chen, Y., & Ayub, A. (2023). Quiet the Mind, and the Soul Will Speak! Exploring the Boundary Effects of Green Mindfulness and Spiritual Intelligence on University Students' Green Entrepreneurial Intention-Behavior Link. Sustainability, 15(5), 3895. https://doi.org/10.3390/su15053895
- Cao, Z. P., & Zhou, M. (2018). Research on the Innovation and Entrepreneurship Education Mode in Colleges and Universities Based on Entrepreneurial Ecosystem Theory. Educational Sciences-Theory & Practice, 18(5), 1612-1619. https://doi.org/10.12738/estp.2018.5.060
- Choi, Y. J., & Park, J. W. (2017). The decision-making processes of duty-free shop users using a goal directed behavior model: The moderating effect of gender. Journal of Hospitality and Tourism management, 31, 152-162. https://doi.org/10.1016/j.jhtm.2016.11.001
- Deprez, J., Peeters, E. R., & Gorgievski, M. J. (2021). Developing intrapreneurial self-efficacy through internships? Investigating agency and structure factors. International Journal of Entrepreneurial Behavior & Research, 27(5), 1166-1188. https://doi.org/10.1108/ijebr-09-2020-0642
- Djebali, Z., Domenico, M. D., & Saunders, M. N. (2023). Starting up, not slowing down: Social entrepreneurial intentions in later working-life. International Small Business Journal-239-268, Researching Entrepreneurship, 41(3), 02662426221093570.
 - https://doi.org/10.1177/02662426221093570
- Duong, C. D. (2022). Exploring the link between entrepreneurship education and entrepreneurial intentions: the moderating role of educational fields. Education and Training, 64(7), 869-891. https://doi.org/10.1108/et-05-2021-0173
- Entrialgo, M., & Iglesias, V. (2016). The moderating role of entrepreneurship education on the antecedents of entrepreneurial intention. International Entrepreneurship and Management Journal, 12(4), 1209-1232. https://doi.org/10.1007/s11365-016-0389-4
- Farias, A. C. B., Marcondes de Moraes, G. H. S., & Anholon, R. (2022). The moderating effect of the university perceived support environment on entrepreneurial behavior. Innovations in Education and Teaching International, 103(3), 1-30. https://doi.org/10.1080/14703297.2022.2152361
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. marketing Research, Journal of 18(1), 39-50. https://doi.org/10.1177/002224378101800104

- Fu, X. Q., Yan, T., & Tian, Y. (2022). Exploring Factors Influencing Students' Entrepreneurial Intention in Vocational Colleges Based on Structural Equation Modeling: Evidence from China. Frontiers in Psychology, 13, 898319. https://doi.org/10.3389/fpsyg.2022.898319
- Gao, Y., & Qin, X. (2022). Entrepreneurship education and entrepreneurial intention of Chinese college students: Evidence from a moderated multi-mediation model. *Frontiers in Psychology*, 13, 1049232. https://doi.org/10.3389/fpsyg.2022.1049232
- Gao, Y., Zhang, D., & Ma, H. (2020). Exploring Creative Entrepreneurs' IEO: Extraversion, Neuroticism and Creativity. Frontiers in Psychology, 11, 2170. https://doi.org/10.3389/fpsyg.2020.02170
- Guarino, A., Malandrino, D., & Zaccagnino, R. (2022). An automatic mechanism to provide privacy awareness and control over unwittingly dissemination of online private information. *Computer Networks*, 202, 108614. https://doi.org/10.1016/j.comnet.2021.108614
- Ha, H., & Ha, M. (2022). Exploring Korean scientists' perceptions of scientific creativity and education for scientific creativity. *International Journal of Science Education*, 44(11), 1767-1791. https://doi.org/10.1080/09500693.2022.2095680
- Hair, E., Halle, T., & Terry-Humen, E. (2006). Children's school readiness in the ECLS-K: Predictions to academic, health, and social outcomes in first grade. *Early Childhood Research Quarterly*, 21(4), 431-454. https://doi.org/10.1016/j.ecresq.2006.09.005
- Han, H., Meng, B., & Kim, W. (2017). Emerging Bicycle Tourism and the Theory of Planned Behavior. *Journal of Sustainable Tourism*, 25, 292-309. https://doi.org/10.1080/09669582.2016.1202955
- Hoda, N., Ahmad, N., & Gupta, S. L. (2021). Application of Entrepreneurial Intention Model in Comparative International Entrepreneurship Research: A Cross-Cultural Study of India and Saudi Arabia. *Sustainability*, 13(23), 13369. https://doi.org/10.3390/su132313369
- Hopwood, C. J., & Donnellan, M. B. (2010). How should the internal structure of personality inventories be evaluated?. *Personality and social psychology review*, 14(3), 332-346. https://doi.org/10.1177/1088868310361240
- Hou, M. D., Lin, Y., & Shen, Y. (2022). Explaining Pre-service Teachers' Intentions to Use Technology-Enabled Learning: An Extended Model of the Theory of Planned Behavior. *Frontiers in Psychology*, 13, 900806. https://doi.org/10.3389/fpsyg.2022.900806
- Hu, M., Zhan, Z., & Fong, P. A. W. (2016). Planned behavior of tourism students' entrepreneurial intentions in China. Applied Economics, 48(13), 1240-1254. https://doi.org/10.1080/00036846.2015.1096006
- Huang, L., Bai, X., & Huang, L. (2023). How Does College Students' Entrepreneurial Learning Influence Entrepreneurial Intention: Evidence from China. Sustainability, 15(12), 9301. https://doi.org/10.3390/su15129301

- Hueso, J. A., Basuki, W., & Busaki, W. (2020). The influence of collectivistic personal values on the formation of entrepreneurial intentions. *International Small Business Journal-Researching Entrepreneurship*, 38(5), 449-473. https://doi.org/10.1177/0266242620903007
- Igwe, A., Ogbo, A., & Okwo, H. (2020). Self-Efficacy and Subjective Norms as Moderators in the Networking Competence-Social Entrepreneurial Intentions Link. Sage Open, 10(3), 2158244020934878. https://doi.org/10.1177/2158244020934878
- Jin, D. M., Liu, X., & Zhang, F. (2023). Entrepreneurial role models and college students' entrepreneurial calling: A moderated mediation model. *Frontiers in Psychology*, 14, 1129495. https://doi.org/10.3389/fpsyg.2023.1129495
- Joensuu-Salo, S. (2020). Do intentions ever die? The temporal stability of entrepreneurial intention and link to behavior. *Education and Training*, 62(3), 325-338. https://doi.org/10.1108/et-03-2019-0053
- Karimi, S. (2020). The role of entrepreneurial passion in the formation of students' entrepreneurial intentions. *Applied Economics*, 52(3), 331-344. https://doi.org/10.1080/00036846.2019.1645287
- Kent, C. D., Adigun, O. T., & Mosia, P. A. (2022). Implications of entrepreneurial education, self-efficacy, and personality traits on the entrepreneurial intentions of deaf/hard of hearing students post COVID-19 lockdown. Work-a Journal of *Prevention Assessment & Rehabilitation*, 73(2), 393-404. https://doi.org/10.3233/wor-220133
- Lackeus, M. (2017). Does entrepreneurial education trigger neoliberalism in education?. *Education and Training*, 59(6), 635-650. https://doi.org/10.1108/et-09-2016-0151
- Li, C., Murad, M., & Shahzad, F. (2020). Entrepreneurial Passion to Entrepreneurial Behavior: Role of Entrepreneurial Alertness, Entrepreneurial Self-Efficacy and Proactive Personality. *Frontiers in Psychology, 11*, 1-19. https://doi.org/10.3389/fpsyg.2020.01611
- Li, L. N., Murad, M., & Shahzad, F. (2022). The Relationship Between Personality Traits and Entrepreneurial Intention Among College Students: The Mediating Role of Creativity. *Frontiers in Psychology, 13*(11), 1-10. https://doi.org/10.3389/fpsyg.2022.822206
- Li, R. H. (2022). Internet Entrepreneurship Psychology for College Students and Internet Financial Crimes Prevention. *Frontiers in Psychology*, 13, 1-8. https://doi.org/10.3389/fpsyg.2022.892061
- Liao, Y. K., Nguyen, V. H. A., & Caputo, A. (2022). Unveiling the role of entrepreneurial knowledge and cognition as antecedents of entrepreneurial intention: a meta-analytic study. *International Entrepreneurship and Management Journal*, 18(4), 1623-1652. https://doi.org/10.1007/s11365-022-00803-8
- Liñán, F., & Chen, Y. W. (2009). Development and Cross—Cultural Application of a Specific Instrument to Measure Entrepreneurial Intentions. *Entrepreneurship Theory and Practice*, *33*(3), 593-617. https://doi.org/10.1111/j.1540-6520.2009.00318.x

- Luo, Y. F., Huang, J., & Gao, S. (2022). Relationship Between Proactive Personality and Entrepreneurial Intentions in College Students: Mediation Effects of Social Capital and Human Capital. Frontiers in Psychology, 13, 1-13. https://doi.org/10.3389/fpsyg.2022.861447
- Lupoae, O. D., Radu, R. L., & Muntean, M.-C. (2022). Capturing Entrepreneurial Opportunities in the Romanian Equine Sector: an Fs-Qca Approach. *International Entrepreneurship and Management Journal*, 18(1), 455-472. https://doi.org/10.1007/s11365-021-00776-0
- Ma, C. A., Xiao, R., & Chang, H.-Y. (2022). Founder Management and Innovation: An Empirical Analysis Based on the Theory of Planned Behavior and Fuzzy-Set Qualitative Comparative Analysis. Frontiers in Psychology, 13, 1-10. https://doi.org/10.3389/fpsyg.2022.827448
- Meng, D. N., Shang, Y., & Zhang, X. (2023). Does Entrepreneurship Policy Encourage College Graduates' Entrepreneurship Behavior: The Intermediary Role Based on Entrepreneurship Willingness. Sustainability, 15(12), 9492. https://doi.org/10.3390/su15129492
- Nakara, W. A., Adam, W., & Rahma, L. (2020). An economic view of entrepreneurial intention. *International Journal of Entrepreneurial Behavior & Research*, 26(8), 1807-1826. https://doi.org/10.1108/ijebr-12-2019-0693
- Nathan, L. F. (2020). Joyful learning at scale: Immersing students in the arts. *Phi Delta Kappan*, 101(8), 8-14. https://doi.org/10.1177/0031721720923514
- Ngan, N. D. H. B. (2020). Extending the theory of planned behavior: factors fostering millennials' intention to purchase ecosustainable products in an emerging. *Management Information Calculation*, *8*, 83-92. https://doi.org/10.6285/mic.201908/sp_02_8.0008
- Nisula, A. M., & Olander, H. (2021). The role of creativity in knowledge workers' entrepreneurial intentions: The moderating effect of general self-efficacy. *Journal of Small Business Management*, *1*(2), 1-10. https://doi.org/10.1080/00472778.2021.1989593
- Nunnally, J. C., & Bernstein, I. H. (1994). Psychometric theory (3rd ed.). McGraw-Hill.
- Onjewu, A. K. E., Haddoud, M. Y., & Tony-Okeke, U. (2022). Dissecting the effect of family business exposure on entrepreneurial implementation intention. *International Journal of Entrepreneurial Behavior & Research*, 28(6), 1438-1462. https://doi.org/10.1108/ijebr-05-2021-0350
- Prince, S., Chapman, S., & Cassey, P. (2021). The definition of entrepreneurship: is it less complex than we think? *International Journal of Entrepreneurial Behavior & Research*, 27(9), 26-47. https://doi.org/10.1108/ijebr-11-2019-0634
- Puni, A., Anlesinya, A., & Akosua Korsorku, P. D. (2018). Entrepreneurial education, self-efficacy, and intentions in Sub-Saharan Africa. African Journal of Economic and Management Studies, 9(4), 492-511.
 - https://doi.org/10.1108/AJEMS-09-2017-0211
- Qian, H. F. (2017). Knowledge base differentiation in urban systems of innovation and entrepreneurship. *Urban Studies*, 54(7), 1655-1672. https://doi.org/10.1177/0042098016629314

- Rodrigues, A. P., Jorge, F., & Pires, C. (2019). The contribution of emotional intelligence and spirituality in understanding creativity and entrepreneurial intention of higher education students. *Education and Training*, 61(4), 870-894. https://doi.org/10.1108/et-01-2018-0026
- Runco, M. A., Plucker, J., & Lim, W. (2001). Development and Psychometric Integrity of a Measure of Ideational Behavior. Creativity Research Journal, 13(3-4), 393-400. https://doi.org/10.1207/S15326934CRJ1334_16
- Saadat, S., Aliakbari, A., Alizadeh Majd, A., & Bell, R. (2022). The effect of entrepreneurship education on graduate students' entrepreneurial alertness and the mediating role of entrepreneurial mindset. *Education and Training*, 64(7), 892-909. https://doi.org/10.1108/et-06-2021-0231
- Sharma, S., Mukherjee, S., & Kumar, A. (2005). A simulation study to investigate the use of cutoff values for assessing model fit in covariance structure models. *Journal of Business Research*, 58(7), 935-943. https://doi.org/10.1016/j.jbusres.2003.10.007
- Shi, Y. C., Yuan, T., & Bell, R. (2020). Investigating the Relationship Between Creativity and Entrepreneurial Intention: The Moderating Role of Creativity in the Theory of Planned Behavior. Frontiers in Psychology, 11, 1-12. https://doi.org/10.3389/fpsyg.2020.01209
- Sica, C., & Ghisi, M. (2007). The Italian versions of the beck anxiety inventory and the beck depression inventory-II: Psychometric properties and discriminant power. In M.A. Lange (Ed.), Leading - edge psychological tests and testing research (pp. 27-50). Nova.
- Smith, R. M., Sardeshmukh, S. R., & Combs, G. M. (2016). Understanding gender, creativity, and entrepreneurial intentions. *Education + Training*, 58(3), 263-282. https://doi.org/10.1108/ET-06-2015-0044
- Tajeddini, K., Rasoolimanesh, S. M., & Gamage, T. C. (2021). Exploring the visitors' decision-making process for Airbnb and hotel accommodations using value-attitude-behavior and theory of planned behavior. *International journal of hospitality* management, 96, 102950.
 - https://doi.org/10.1016/j.ijhm.2021.102950
- Taylor, S. (2023). Creativity: Celebrations and tensions. Social and Personality Psychology Compass, 17(4), 1-10. https://doi.org/10.1111/spc3.12737
- Tomy, S., & Pardede, E. (2020). An entrepreneurial intention model focussing on higher education. *International Journal of Entrepreneurial Behavior & Research*, 26(7), 1423-1447. https://doi.org/10.1108/ijebr-06-2019-0370
- Villanueva-Flores, M., Hernández Sánchez, B., & Sánchez García, J. C. (2021). Psychological capital and entrepreneurship: gender differences. *Gender in Management*, 36(3), 410-429. https://doi.org/10.1108/gm-07-2020-0231
- Wang, Y., Mundorf, N., & Salzarulo, A. (2022). Methodological research and model development on structural equation models in China's mainland from 2001 to 2020. Advances in Psychological Science, 30(8), 1715-1733.. https://doi.org/10.3724/SP.J.1042.2022.01715
- Wang, Z. H., & Ortiz, G. G. R. (2022). Assessing the management student's entrepreneurial intentions: Role of entrepreneurship education and technology transfer. *Frontiers in Psychology*, 13, 1-15. https://doi.org/10.3389/fpsyg.2022.953324

- Wheaton, B., Muthen, B., Alwin, D. F., & Summers, G. (1977). Assessing Reliability and Stability in Panel Models. *Sociological Methodology*, 8, 84-136. http://dx.doi.org/10.2307/270754
- Wright, M., Siege, D. S., & Mustar, P. (2017). An emerging ecosystem for student start-ups. *Journal of Technology Transfer*, 42(4), 909-922. https://doi.org/10.1007/s10961-017-9558-z
- Wu, J.-H., & Wang, Y.-M. (2006). Measuring KMS success: A respecification of the DeLone and McLean's model. *Information & management*, 43(6), 728-739. https://doi.org/10.1016/j.im.2006.05.002
- Yi, G. F. (2021). From green entrepreneurial intentions to green entrepreneurial behaviors: the role of university entrepreneurial support and external institutional support. *International Entrepreneurship and Management Journal*, 17(2), 963-979. https://doi.org/10.1007/s11365-020-00649-y
- Yin, M. M., & Wang, Y. (2017). Research on the Effect of Entrepreneurship Education on College Students' Entrepreneurial Capability. Eurasia Journal of Mathematics Science and Technology Education, 13(8), 5813-5819. https://doi.org/10.12973/eurasia.2017.01031a
- Zhang, F., Wei, L., & Sun, H. (2019). How entrepreneurial learning impacts one's intention towards entrepreneurship A planned behavior approach. *Chinese Management Studies*, *13*(1), 146-170. https://doi.org/10.1108/cms-06-2018-0556
- Zhang, L. B., Li, Q., & Zhou, T. (2022). Social Creativity and Entrepreneurial Intentions of College Students: Mediated by Career Adaptability and Moderated by Parental Entrepreneurial Background. Frontiers in Psychology, 13, 1-12. https://doi.org/10.3389/fpsyg.2022.893351
- Zhou, Y. L., Wang, C., & Murad, M. (2021). The Influence Mechanism of Knowledge-Based Professionals' Core Value Identity on Creativity from the Perspective of the Knowledge Economy. Frontiers in Psychology, 12, 1-11. https://doi.org/10.3389/fpsyg.2021.724463