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The Effect of Extracurricular Activities on Student Innovation Performance in Yichun University in China: The Mediating Impact of Students Motivation

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Abstract

Introduction: *This research delves into the intricate relationships among students' extracurricular activities, motivation, and innovation outcomes within the context of China's Yichun University.*

Methodology: *The demographic diversity of the student body was reflected in the random selection of the 507 undergraduates that made up the sample. A well-structured questionnaire derived from a comprehensive review of the pertinent literature serves as the principal instrument for data collection. Data analysis in this study makes use of Structural Equation Modelling (SEM), and more specifically, Partial Least Squares (PLS), because both methods excel at handling complex link analyses and predictive modelling with small sample sizes.*

Results and discussion: *This study's findings shed light on the role of intrinsic motivation in explaining the correlation between students' involvement in extracurricular activities and their capacity for scholastic innovation. This research is critical because innovation is becoming more important in the knowledge-based economy.*

Conclusion: *By offering helpful insights on how extracurricular activities may be enhanced to boost students' innovation ability, it satisfies a knowledge gap in the Chinese higher education context.*

Keywords: *Extracurricular activities, Motivation, Innovation performance, Structural Equation Modeling (SEM), Higher education*

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1. Introduction

How students' participation in extracurricular activities affects their development as learners and people has been the focus of prior studies in the field of education. While numerous research has found positive connections between extracurricular involvement and academic and non-academic outcomes, the precise relationship between these two variables has been little investigated, particularly within the setting of China's Yichun University. The beneficial impacts of extracurricular activities on students' cumulative academic achievement have been investigated by numerous researchers (Abizada et al., 2020). One example is the meta-analysis of research on the topic of extracurricular activities on academic performance that Marsh and Kleitman carried out. Participating students had superior cognitive abilities and higher-grade point averages compared to their non-participating classmates.

Important life skills like leadership, collaboration, communication, and time management can flourish when students actively engage in extracurricular activities. Being able to demonstrate these skills is considered as essential in today's highly competitive work market. The positive effects of extracurricular activities have been well documented, especially in the context of Chinese higher education. However, there is a lack of research specifically looking at how these activities affect students' innovation abilities (Jiang et al., 2021). Since innovation is a basic driver of economic growth and competitiveness, its significance in workforce development and higher education is being recognized by many. Colleges and universities that are serious about preparing their students for the opportunities and threats posed by the global economy in the twenty-first century need to know how extracurricular activities relate to creative achievement.

This study contributes to the existing literature by delving into the specific setting of Yichun University in China to investigate the intricate relationship between students' motivation, innovation performance, and extracurricular activities (Li et al., 2022). Although previous research has examined the impact of extracurriculars on students' academic performance and other measures of skill development, our goal was to determine whether they had any bearing on students' capacity for creative thinking. Furthermore, we delve into the ways in which intrinsic motivation mediates this connection, shedding light on the processes that underlie the link between extracurricular activity and creativity.

This study addresses a gap in the literature by offering concrete proof of how students' involvement in extracurricular activities at Chinese universities affects their ability to innovate. Though previous research has shown that extracurricular activities have a positive effect on academic performance and skill development, very little is known about how these activities foster creative capacities (Aliu & Aigbavboa, 2023). This study aims to address that gap by providing an in-depth analysis of the connection between intrinsic drive, extracurricular involvement, and creative production. The purpose of this research is to determine if students' motivation moderates the association between extracurricular activity participation and innovation, and if so, to what extent.

An improved understanding of the relationship between Yichun University students' involvement in extracurricular activities and their innovative performance is the main contribution of this paper. By dissecting the function of students' intrinsic drive as a mediator between extracurricular activities and innovation outcomes, we intend to build a more complex and comprehensive model for this relationship. The findings can be used by school officials, legislators, and administrators to back funding after-school programs that increase children' passion and creativity (Yan et al., 2023). Insights from our research should help shape policies and programs that prepare students for success in the global economy of the future.

The primary objectives of this study are to (1) identify the nature of the relationship between students' involvement in extracurricular activities and their innovation performance at Yichun University in China and (2) ascertain the mediating function of students' motivation in this relationship. Additional goals of the research include determining what kinds of extracurricular activities are available to students and what variables impact their participation in these activities (Agasisti et al., 2021). The ultimate goal of this research is to provide teachers with tools they may use to make their classrooms more conducive to innovation.

The introduction serves as the entry point into the research body of the article. Following the introduction comes the literature review, which will be thoroughly examined in the following part. In this research review, we look at the many connections between motivation, creativity, and extracurricular activities. Theoretically, it helps readers understand the complex subject matter (Sharon & Baram-Tsabari, 2020) by outlining the research's foundations. The research approach, data gathering processes, and statistical analysis that comprise the study's

methodology are all thoroughly explained in the publication. In the findings section, you will find the paper's empirical meat. Following the presentation of the results, the discussion section becomes the show-stopper. It entails situating the study findings within a more generalized context. The paper's second-to-last section provides a summary of the study's key findings.

2. Literature Review

2.1 Theory

Deci and Ryan's theory of self-determination is a popular psychological theory of human motivation and behavior. According to SDT, people have hardwired desires for independence, mastery, and social connection. It classifies motivation as either extrinsic (driven by external incentives or demands) or intrinsic (driven by one's own interest and delight).

Insights into why students participate in extracurricular activities and how their motivation can affect innovation outcomes are provided by SDT, making it important in the context of extracurricular activities and innovation performance. Intrinsically motivated pupils, such as those who take part in extracurricular activities due to real enthusiasm, are more likely to demonstrate high levels of creativity (Alexopoulos et al., 2021). Students who are driven only by extrinsic motivations, such peer approval or academic success, may not be as eager to try new things.

This study makes use of Self-Determination Theory to investigate the links between students' motivation for participation in extracurricular activities and their ability to innovate in the classroom (Sun et al., 2019). Using this theoretical framework as a filter, we may better understand the dynamics at play in the classroom as a result of this investigation.

2.2 Student Innovation Performance

The significance of innovation to economic growth and competitiveness has been widely recognized, leading to an uptick in student innovation performance studies. According to González-Pérez and Ramírez-Montoya (2022), there is an increasing amount of research that examines the ways in which educational opportunities might foster the development of students' innovative abilities. In the context of Chinese higher education, however, research on the effects of students' involvement in extracurricular activities on their inventive

capacities is lacking.

There have been a lot of research examining the various personal and environmental factors that influence pupils' ability to innovate. Personal attributes such as intelligence, creativity, problem-solving aptitude, and motivation all play a part. Context encompasses a wide range of factors, including educational environments, pedagogical methods, and, most importantly, extracurricular activities (Sak, 2019).

Participation in extracurricular activities is associated with improved innovation outcomes for students, according to the existing literature. Students hone abilities like creativity, problem-solving, and teamwork via extracurricular activities. One study that found a correlation between students' ability for invention and their involvement in extracurricular innovation competitions was Song, Zhang, and Zhang's (2020) (Constante López, 2021).
Studies have also demonstrated that inspiration mediates the relationship between creative production and extracurricular activities. Students' intrinsic motivation greatly influences their engagement with these kinds of activities, which have the potential to enhance their skills and results in relation to innovation (Asad et al., 2021). As mentioned earlier, one theoretical lens that can be utilized to analyze the impact of intrinsic vs extrinsic motivation on creative production is Self-Determination Theory.

Previous research has mostly focused on Western teaching contexts, though, so keep that in mind. This study aims to contribute to the current literature by examining the impact of cultural and institutional factors on the interaction among students' extracurricular activities, motivation, and creativity at China's Yichun University. While the existing literature does provide some helpful insights, additional research is required to fully understand these linkages in the unique setting of Chinese higher education (Wang et al., 2020).

2.3 Extracurricular Activities

Research has proven their value in helping pupils learn about new topics and gain a well-rounded education outside of the classroom. Students who are actively involved in their school community are more likely to be enthusiastic about their studies and have faith in their own talents, according to research by Vallerand et al. Participating students have a better chance of benefiting from these opportunities (Wang et al., 2020). Positive outcomes, including improved academic performance and individual development, can be fostered by participation in extracurricular activities, according to Fredricks et al.

According to Durlak and Weissberg, students will put more effort into and get more out of extracurricular programmes if they are both accessible and have defined ways to measure their success. The Self-Determination Theory posits that students' interest in and enjoyment of these pursuits serve as a powerful source of intrinsic motivation, which in turn affects their innovative behavior and performance. Few studies have examined the precise effect of extracurricular activities on innovation performance, despite the fact that they have a positive effect on many other outcomes, including leadership and teamwork (Fakhretdinova et al., 2021).

Since students spend most of their waking hours in class when they are not learning new content, it stands to reason that the classroom environment greatly influences their views on extracurricular activities (Díaz-Iso et al., 2019). Students who felt positive about their school were more inclined to participate in both mandatory and elective extracurriculars, according to Martinez et al. Students' likelihood of regularly attending class increases when they experience a sense of belonging there. How a school is structured physically affects the accessibility of various learning and recreational resources, such as labs, libraries, and computers, for students. Children are more inclined to participate in extracurricular activities when they feel safe and supported at school. A term used to define the connection amongst students, instructors, and fellow classmates is a "interpersonal relationship" (Parvez et al., 2019).

When students hear positive feedback about their ECA activities from both instructors and classmates, it can boost their self-esteem and confidence (Martinez et al., 2019). The quality of a student's relationship with their parents may have an effect on how actively they participate in extracurricular activities. The chances of youngsters really benefiting from what they learn are higher when their families encourage them to participate in extracurricular activities. The level of cooperation and information exchange among students is proportional to the quality of their contacts with one another in class (Ghavifekr, 2020). Offering students opportunities to participate in extracurricular activities may help them develop a more positive perception of them.

It was also derived from the results that the participation of students in extracurricular activities and their perception towards extracurricular activities mainly comes from their own will and interest (intrinsic motivation), rather than any external factor which influences their participation. This was the case regardless of the demographics of the students (extrinsic

motivation).

According to Jackson and Bridgstock (2021), students aspire to get prepared for their career and work-life during their academic life, and they want to apply the theoretical knowledge they gain in the classroom in their work life. This aspiration is supported by the fact that students desire to prepare for their career and work-life during their academic life. According to research conducted by Hordósy and Clark (2018), extracurricular activities add significant value to students' employability.

2.4 Hypothesis Development

It has been demonstrated that when students take part in extracurricular activities, their critical thinking and creative abilities improve. Education helps students develop higher-order thinking capabilities, including creative problem-solving and other creative problem-solving and thinking abilities. Students need to broaden their understanding of a variety of topics and subjects in order to develop the critical thinking skills necessary to effectively recognize and address academic challenges. This will allow students to develop the critical thinking skills necessary to effectively recognize and address academic challenges (Jaenudin et al., 2020). Students who participate in extracurricular activities like the ones listed above develop an understanding for the value of intelligence and the ability to think critically.

The students are dedicated to displaying all of their abilities to their maximum potential. Every child has the desire to develop in a way that makes them well-equipped to handle whatever difficulties they may encounter in the years to come. The idea of participating in activities outside of the classroom has always been innovative. The students' teachers did not prioritize participation in extracurricular activities and did not encourage students to do so. By participating in these activities, the purpose of these groups was to deepen the connections between the students and the classroom. Additionally, a significant quantity of money is required for extracurricular activities. As a result, the vast majority of organizations' primary focus was intellectual advancement. It has become abundantly evident that participation in extracurricular activities is becoming increasingly crucial to children as time passes. This has been of tremendous use to them in every aspect of their growth.

Based on this, hypotheses of the study come upon:

H1: There is a significant correlation between extracurricular activities and student innovation performance.

H2: There is a significant correlation between students' engagement with extracurricular activities and student innovation performance.

H3: There is a significant correlation between accessibility and assessment of extracurricular activities and student innovation performance.

H4: There is a significant correlation between students' motivation with extracurricular activities and student innovation performance.

H5: There is a significant correlation between impact of extracurricular activities and accessibility and assessment of extracurricular activities.

H6: There is a significant correlation between impact of extracurricular activities and accessibility and students' motivation with extracurricular activities.

H7: There is a significant correlation between students' engagement with extracurricular activities and assessment of extracurricular activities.

H8: There is a significant correlation between students' engagement with extracurricular activities and students' motivation with extracurricular activities.

H9: Assessment of extracurricular activities mediates relationship between the impact of extracurricular activities and student innovation performance.

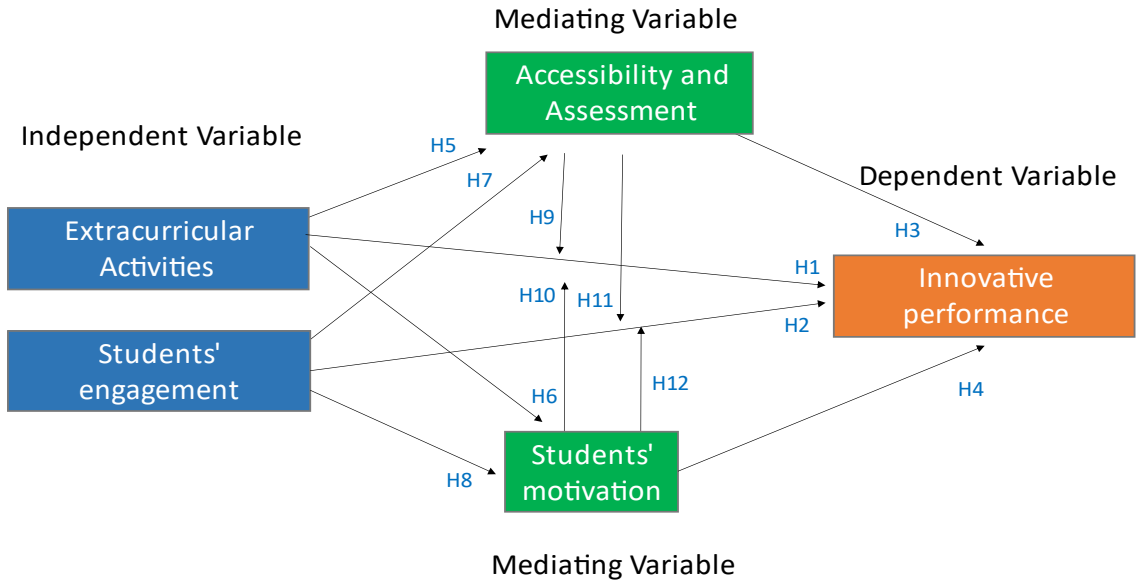
H10: Students motivation with extracurricular activities mediates relationship between extracurricular activities and student innovation performance.

H11: Assessment of extracurricular activities mediates relationship between students' engagement with extracurricular activities and student innovation performance.

H12: Students motivation with extracurricular activities mediates relationship between engagement with extracurricular activities and student innovation performance.

2.5 Theoretical Framework

Figure 1: Theoretical Framework

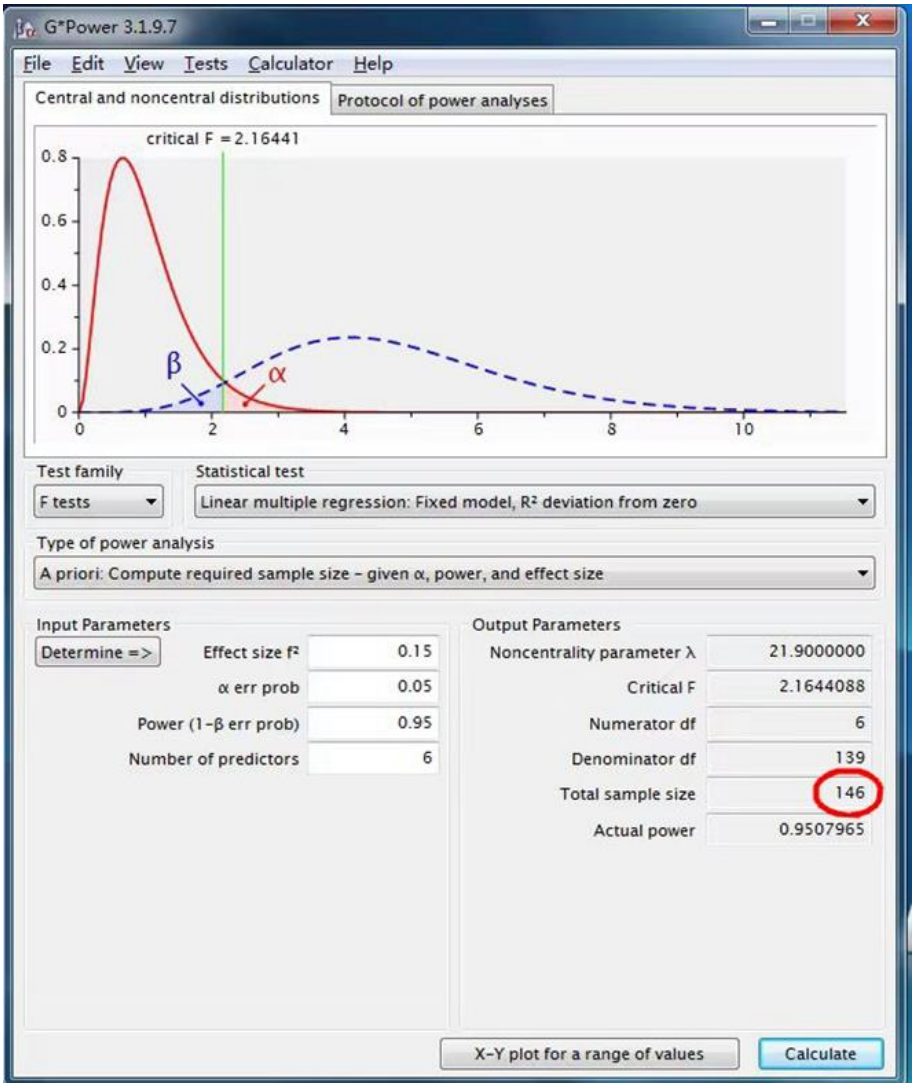


Developed for this research (paper)

3.Methodology

The study's overarching goal is to learn how Yichun University students' involvement in extracurricular activities affects their intrinsic motivation and the quality of their innovative outputs. Statistical approach, analytical unit, target population, sample size, and questionnaire origin were all carefully considered in the methodology that was employed to achieve this goal. Yichun University first-year students in China are the focus of this study. Studies examining the connections between intrinsic drive, participation in extracurricular activities, and innovative scholastic achievement have focused on these students.

Figure 2: Minimum Sample Size By using G-power software



Developed for this research (paper)

Minimum sample size 146 (calculated using G-power software). Targeting to meet the minimum sampling requirements to conduct this study, the sample for this study consisted of 507 college students. The research's association analysis may be statistically trusted because of the sample size. Using a random sample procedure, we were able to select kids from the population without favoritisms or favoritisms bias. This method enhances the study's capacity to generalize findings to the entire Yichun University student population. The focus of this study is on the college student as an individual. Students' extracurricular activities, intrinsic motivation, and creative output will be studied using the survey data.

The primary tool for gathering information in this research is a questionnaire with already-written questions and their corresponding responses. After reviewing previous studies and the

study's aims, the questionnaire was created. The purpose of the questions is to assess the kids' motivation, creativity, and passion for extracurricular activities. It was translated into Chinese to make sure the people who were supposed to understand it could.

Structural Equation Modelling (SEM) with the Partial Least Squares (PLS) technique was employed by the researchers here to analyze the data. When there are numerous interconnected aspects to take into account, as there are here, PLS-SEM performs admirably. It opens the door to exploring a plethora of interconnected elements. With its scalability, PLS-SEM is well-suited to investigations with a small sample size, such as this one with 507 individuals. We used PLS-SEM as our predictive modelling method since we want to find out what makes students successful innovators. Motives are the focus of this investigation into the link between extracurricular activities and innovation performance, and PLS-SEM is a powerful tool for mediation analysis. Because of PLS-flexibility SEM's and generalizability, it can be utilized to study relationships within the Chinese higher education system at Yichun University.

4. Future Research

This study has made significant additions to our understanding of the connection between extracurricular activities, creativity, and innovative performance among college students. These contributions have been made possible by the findings of the study. This work has opened the door to a number of fascinating new lines of inquiry that could be pursued in the future. As a consequence of this study, we now have a better understanding of the topic. These points of departure have the ability to help us learn more about this topic, go further into the complexity of it, and resolve some of the limitations that the research imposes on us.
It is a reliable research approach to adopt longitudinal studies in order to monitor the kids' extracurricular activity, creative skills, and innovative capacities all throughout the course of time. If researchers continue to monitor students after they graduate from college, they will have a greater chance to grasp the impact that students' extracurricular activities have on their ability to be creative and innovative. If one wants to get a knowledge of how the development of abilities is influenced by the participation in a variety of activities and whether or not the effects remain beyond college, it is vital to carry out longitudinal study. In addition, it can help you have a better understanding of the periods of time as well as the durations of time for which involvement in extracurricular activities is most beneficial.

In prospective research, there should be some consideration given to the possibility of conducting comparison studies across a wide range of schools, each of which has a diverse student body, in order to increase the internal and external validity of the results. It is likely that various schools and colleges will each have their own system for academic advising as well as a unique selection of extracurricular activities to pick from. By comparing the data acquired from a variety of educational institutions, we will be able to determine whether or not the impacts of extracurricular activities on students' ability to think creatively and come up with original ideas are the same or vary from one institution to the next. This line of research could also study whether there are any variations in the link between extracurricular activities and outcomes based on the culture or geography of the participants in the study. For example, this line of inquiry could investigate whether or not there are any differences.

5. Conclusion

In conclusion, the findings of this study contribute new information to the existing body of knowledge regarding the ways in which college students' extracurricular activities influence the levels of student innovation performance, creativity and originality displayed by those students. This information contributes to the body of knowledge regarding the ways in which extracurricular activities influence the levels of creativity and originality displayed by college students. In this rapidly developing subject field, the selected future study routes provide a road map for further investigation and improvement of existing methods. This will make it possible to have a better understanding of how engagement in extracurricular activities affects the creative and innovative capacities of young professionals just starting out in their careers.

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