A STUDY TO FIND OUT THE IMPACT OF EXTRACURRICULAR ACTIVITIES ON THE PERSONAL AND PROFESSIONAL DEVELOPMENT OF COLLEGE-LEVEL ENGINEERS: A STUDY OF CHINESE PRIVATE COLLEGE ENGINEERING STUDENTS

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ABSTRACT

Using the translated and culturally adapted Chinese version of the Postsecondary Student Engagement Survey (PosSES 2.1), this study aimed to investigate the primary characteristics of engineering college students' involvement in out-of-class activities (OA) at one private college in China. Results from a poll of 283 senior engineering students on their emotional investment in the project and their assessments of its good and negative results are presented in this article. Positive outcomes may be significantly impacted by engagement at all levels, according to the data. Affective engagement among engineering students varies significantly by active participation type, degree, and hours. Negative consequences are significantly influenced by the number of OA in which students were participated, although emotional involvement was unaffected. In addition, there was a robust association between emotional investment and beneficial consequences. Colleges and universities, educators and legislators, and engineering students should pay attention to the quality of OA engagement rather than the number, according to these results, which underlined the value of participation in OA. In addition, the research offers descriptive statistics based on the information participants provided on the factors that encourage and discourage participation outside of class. Learning outcomes and student involvement have been the primary foci of the extant Chinese literature. Nonetheless, this research establishes emotional engagement as a substantial component of student engagement metrics in engineering education, and it also gives proof that OA participation is a realistic route to the growth of engineering college students in China.

Keywords: Private Colleges in China, Engineering Students, Talent Development, Academic Achievement.

INTRODUCTION

Because of increased emphasis on the monetary value of a degree and growing enrollment, universities are under pressure to improve students' employability.

Teachers are expected to provide their students with future-oriented skills that can keep up with the rapid changes brought about by digitalization and globalization. In addition, there is ongoing interest in enhancing students' employability. The growth of employability-oriented programs is evident, and the employability of graduates has a substantial impact on higher education policy and practice. The strategic focus on employability, which encompasses the achievement of short-term employment goals, the enhancement of professional preparation, and the promotion of lifelong learning, might influence the shape and type of executed activities. The currently accepted view of graduate employability places an emphasis on the importance of extracurricular activities (ECA) in helping students develop the qualities, abilities, and knowledge necessary to get and keep a good job after college. Graduates' employability was boosted by the social relationships or groups they formed within the university via student club participation (Aoyagi et al., 2020). On the other side, ECA is a great way for students to practice skills that will help them in the job market. No universally accepted definition of ECA existed before 2012. In addition, students are not required to participate in ECA and their participation is entirely optional. With the abundance of extracurricular activities available on campus, college life creates an ideal setting where students may try their hand at social innovation and entrepreneurship without worrying about the consequences of their mistakes. Additionally, some institutions do provide ECA opportunities on occasion; but, owing to a lack of consistent dedication and sincerity, these endeavors are often insincere. So many of these activities revolve on the instructor, leaving the kids with little to no say in the planning or execution of the event. Encouraging students in the foundation program is an important aspect of the ECA's purpose since the program offers a unique framework for success via its organized approach, student engagement, and constant focus on independent, thorough learning. Many students see their participation in extracurricular activities to get help in many areas, and it's easy to see why. When it comes to the social position of graduates in the employment market, universities are major players. Many recent college grads have narrow and unified ideas about their ideal jobs and the occupations they want to pursue. There is a current agreement that institutions, professional groups, and students are all necessary components of an efficient social entrepreneurship education program (Buckley & Paul, 2021).

BACKGROUND OF THE STUDY

College students' involvement in extracurricular activities has been more acknowledged as a factor in their professional and personal growth in recent years. This is particularly true in academically rigorous disciplines like engineering. While students' performance in the classroom is obviously important, studies show that students' participation in extracurricular activities has a far bigger impact on their personal growth. These events provide engineering students with unique chances to hone soft skills like leadership, communication, collaboration, problem-solving, and time management—all of which are essential for a successful career. Volunteering, internships, athletics, cultural events, and professional groups are just a few

examples of the many extracurricular pursuits that students participate in outside of class. Participating in these events allows students to put their classroom learning into practice, network with professors and experts in the field, and apply what they've learned in the classroom. Despite the obvious advantages, there is a dearth of studies that examine how these events affect engineering students' growth as individuals and as professionals, especially within the setting of private universities in China.

As private colleges in China continue to expand at a fast pace, it is crucial to comprehend the impact of extracurricular activities on students' personal and academic growth at these schools. Less resources, higher competition, and the need to stand out in a crowded job market are some of the particular problems that engineering students at private institutions may have in comparison to their public university counterparts. In such a setting, participating in extracurricular activities may provide students with opportunities to hone their abilities, get real-world experience, and differentiate themselves to potential employers. Exploring the impact of extracurricular activities on the personal and professional progress of engineering students at private institutions in China is the primary objective of this research (Bridgstock & Jackson, 2019). The purpose of this research is to shed light on engineering students' educational experiences as a whole by investigating the most popular extracurricular activities, the skills they foster, and the ways in which these activities impact students' career readiness and personal growth. The results have the potential to impact institutional policies and student engagement initiatives in private universities in China by demonstrating the importance of extracurricular activities as an integral part of engineering education. While it's common known that participating in extracurricular activities may help one improve personally and professionally, studies focusing on engineering students at private Chinese universities have been few and far between. Due to the youth of many Chinese private schools, there is a lack of evidence on the long-term effects of extracurricular activities on academic performance. It is critical to study the impact of extracurricular activities on students' overall development in order to enhance academic programs and student support services at these private universities, which aim to provide accessible, career-oriented education. Many students in China attend private colleges because they lack the financial means to attend more prestigious state institutions. The engineering students at these schools need every advantage they can get in today's competitive job market, and extracurricular activities are a great way to meet people, get experience, and develop personally. This is of utmost importance since, in light of China's ongoing technological advancements and globalization, a workforce that is adept in technology but also flexible, communicative, and collaborative is required. Additionally, kids' social and emotional health may be improved by participation in extracurricular activities through increasing feelings of belonging, decreasing stress, and developing resilience. As a result of participating in these events, students are more likely to challenge themselves academically, which helps them build soft skills that will be useful in the workplace. Internships, volunteer work, clubs, and organizations

provide students hands-on experience and teach them how to work together in varied teams. Students' cultural understanding and empathy, which are highly prized in increasingly globalized society, may be enhanced by this exposure to many viewpoints and experiences (Bennett, 2019).

PURPOSE OF THE RESEARCH

The study's overarching goal is to learn how engineering students' participation in extracurricular activities at private universities in China influences their future careers and personal growth. Technical and soft skills are essential for success in engineering and the industry in general. This research seeks to understand how students' involvement in extracurricular activities affects their ability to acquire these abilities. The purpose of this study is to identify the unique ways in which students' participation in extracurricular activities (such as sports, clubs, internships, and professional groups) impacts their personal and professional growth. Aspects of personal development such as leadership, collaboration, communication, time management, and problem-solving skills are also set to be assessed by the study. Furthermore, the research will evaluate the relationship between students' participation in extracurricular activities and their preparation to join the labor market, career readiness, and employability. The research will look at how students may distinguish themselves and build a wide skill set via extracurricular activities that complement their engineering education. This is important since the global job market is becoming more competitive and there is a growing need for well-rounded individuals. Also, by examining an understudied topic—engineering students at private universities in China—this study hopes to close a knowledge gap in the current literature. This study aims to shed light on the unique opportunities and threats that engineering students confront in order to inform institutional policies, improve student engagement tactics, and better incorporate extracurricular activities into engineering students' academic experiences. This study aims to contribute to the holistic education of future engineers in China by highlighting the value of extracurricular activities in supporting personal and professional growth.

LITERATURE REVIEW

There has been a lot of study on the impact of extracurriculars on students' academic and professional growth in general, but not nearly as much on engineering students, especially in the setting of private universities in China. Key issues such as leadership development, skill improvement, job preparedness, and the overall influence on students' academic and professional prospects are highlighted in this literature review that synthesizes current research on the impacts of extracurricular activities on student development. The importance of extracurricular activities to students' growth as individuals has been the subject of a great deal of research. Participating in these events gives kids the chance to work on important life skills including leadership, interpersonal communication, and emotional intelligence. Astin (1999)

found that students who are actively involved in extracurricular activities tend to have better mental health, self-esteem, and confidence. While engineering students place a premium on academic success, they recognize the importance of extracurricular activities as a setting to hone soft skills like teamwork, resilience, and stress management. Students' time-management abilities are enhanced by participation in extracurricular activities, which compels them to juggle academic responsibilities with other obligations. The kids' social well-being is improved since these activities not only help them relax, but they also make them feel like they belong somewhere. In the midst of intense competition, these features may be especially helpful for Chinese private college students by offering emotional support and lowering feelings of loneliness. Internships, student-run engineering projects, and membership in professional engineering societies are great ways for students at private Chinese colleges to build a resume that will stand out to potential employers, especially in a job market where students may not have as many professional connections or access to resources as at public universities. Participating in extracurricular activities helps students develop skills like problem-solving, flexibility, and empathy for the difficulties encountered by others working in their chosen fields. For engineering students at private Chinese colleges, the leadership experience they get outside of the classroom may help them stand out in a highly competitive employment market. Candidates with excellent leadership abilities as well as technical competence are highly sought after by engineering firms. So, students may get the abilities employers look for in candidates by participating in extracurricular activities that allow them to take the lead, such student organizations or community service projects. Especially in the field of engineering, the current body of research highlights the importance of extracurricular activities in helping students grow as individuals and as future professionals. Participating in extracurricular activities allows students to gain experience in areas such as leadership and collaboration, as well as important non-technical skills that are necessary for success in the workforce. More study is required, however, to pinpoint how these events affected engineering students at private universities in China. This research seeks to address this knowledge gap by investigating the ways in which these students' participation in extracurricular activities aids in their overall development, therefore making them more equipped to meet the challenges of today's employment (Bodolica et al., 2021).

RESEARCH QUESTIONS

What is the impact of social interaction on the personal and professional growth of college-level engineers?

METHODS

Quantitative research refers to studies that examine numerical readings of variables using one or more statistical models. The social environment may be better understood via quantitative research. Quantitative approaches are often used by academics to study problems that impact individuals. Objective data presented in a graphical format is a byproduct of quantitative research. Numbers are crucial to quantitative research and must be collected and analyzed in a systematic way. Averages, predictions, correlations, and extrapolating findings to larger groups are all possible with their help.

RESEARCH DESIGN

In order to analyse quantitative data, SPSS version 25 was used. When analysing the statistical association, the odds ratio and 95% confidence interval were used to determine its direction and size. A statistically significant threshold was suggested by the researchers at $p < 0.05$. The primary features of the data were identified by a descriptive analysis. Mathematical, numerical, or statistical evaluations using quantitative methodologies are often used for data gathered from surveys, polls, and questionnaires, or by modifying existing statistical data using computing tools.

SAMPLING

Research participants filled out questionnaires to provide information for the research. Using the Rao-soft program, researchers determined that there were 1574 people in the research population, so researchers sent out 1650 questionnaires. The researchers got 1628 back, and researcher excluded 16 due to incompleteness, so researchers ended up with a sample size of 1612.

DATA AND MEASUREMENT

A questionnaire survey functioned as the primary data collection instrument for the investigation. The survey had two sections: (A) General demographic information and (B) Responses on online and non-online channel factors on a 5-point Likert scale. Secondary data was obtained from many sources, mostly on internet databases.

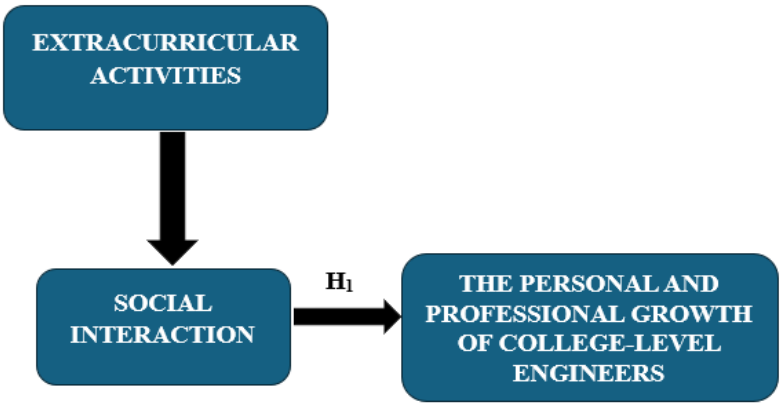
STATISTICAL SOFTWARE

The statistical analysis was conducted using SPSS 25 and MS-Excel.

STATISTICAL TOOLS

To grasp the fundamental character of the data, descriptive analysis was used. The researcher is required to analyse the data using ANOVA.

CONCEPTUAL FRAMEWORK



RESULTS

FACTOR ANALYSIS

One typical use of Factor Analysis (FA) is to verify the existence of latent components in observable data. When there are not easily observable visual or diagnostic markers, it is common practice to utilize regression coefficients to produce ratings. In FA, models are essential for success. Finding mistakes, intrusions, and obvious connections are the aims of modelling. One way to assess datasets produced by multiple regression studies is with the use of the Kaiser-Meyer-Olkin (KMO) Test. They verify that the model and sample variables are representative. According to the numbers, there is data duplication. When the proportions are less, the data is easier to understand. For KMO, the output is a number between zero and one. If the KMO value is between 0.8 and 1, then the sample size should be enough. These are the permissible boundaries, according to Kaiser: The following are the acceptance criteria set by Kaiser:

A dismal 0.050 to 0.059, subpar 0.60 to 0.69

Middle grades often range from 0.70 to 0.79.

Exhibiting a quality point score between 0.80 and 0.89.

They are astonished by the range of 0.90 to 1.00.

Table 1. KMO and Bartlett's Test for Sampling Adequacy Kaiser-Meyer-Olkin measurement: .960

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.960
Bartlett's Test of Sphericity	Approx. Chi-Square	3252.968
	df	190
	Sig.	.000

The overall importance of the correlation matrices was also validated by Bartlett's Test of Sphericity. The Kaiser-Meyer-Olkin sampling adequacy is 0.960. Utilizing Bartlett's sphericity test, researchers obtained a p-value of 0.00. A notable result from Bartlett's sphericity test indicated that the correlation matrix is not valid.

INDEPENDENT VARIABLE

Extracurricular Activities: Students' involvement in extracurricular activities occurs outside of school hours and has no effect on their grades or other academic outcomes. In addition to enhancing their professional, social, and personal growth, attendees will have the chance to meet interesting new people, hone their existing abilities, and expand their knowledge in interesting new areas. Examples of such pursuits include leadership programs, clubs, athletics, the performing arts, debate, and the arts, music, and theater. A well-rounded education must include participation in extracurricular activities so that students may develop important life skills like creativity, collaboration, and time management (Garcia-Morales et al., 2020).

FACTOR

Social Interaction: Several elements impact people's social interactions, which in turn affect their communication and connection styles. Interaction success depends on the ability to communicate effectively, using both verbal and nonverbal signs. An individual's level of emotional intelligence and other personality attributes, such extroversion and introversion, greatly influence their social interactions and responses. Various cultural norms and values impact communication patterns, which in turn impacts social behavior. The exchange's character could differ depending on the location, whether it's a business meeting or a more relaxed get-together. Individuals' interactions inside groups are influenced by group dynamics, which include power dynamics and social status, while shared interests and objectives

facilitate deeper ties. The rise of social media and other forms of online communication has revolutionized human interaction, opening up new possibilities for both online and in-person meetings. When it comes to social confidence and comfort, psychological elements like self-esteem and life experiences play a role. In order to form connections and carry out societal functions, all of these factors come together to form intricate social interactions (Ghazzawi et al., 2020).

DEPENDENT VARIABLE

The Personal and Professional Growth of College-Level Engineers: From introspective self-discovery to practical career preparation, "Personal and Professional Growth of College-Level Engineers" covers it all for engineering majors. The ability to think critically, communicate effectively, work in a team, take the lead, and adapt are all parts of the self-improvement toolbox. You can't succeed as an individual or as a team without developing qualities like self-awareness, emotional intelligence, and a solid work ethic. The three pillars of a successful career are technical competence, industrial knowledge, and hands-on experience. This highlights the significance of studying engineering basics, doing applicable research during an internship, and keeping up with technology developments. Among the many forms of professional development are the following: getting to know the company and its inner workings; making a career plan tailored to your job duties; and expanding your professional network. Undergraduate engineers who put effort into their studies and professional development have a great opportunity of becoming industry pioneers who make a positive impact on society and the environment (Ginosyan et al., 2020).

Relationship between Social Interaction and The Personal and Professional Growth of College-Level Engineers: Engineering students at the university level benefit greatly from social engagement for both their career and personal development. For the development of both hard and soft skills, it is vital to engage in collaborative learning with other students, faculty, and experts in the field. Students of engineering benefit personally from social contacts since they assist them develop leadership, collaboration, and communication abilities. They hone their skills in effective communication, teamwork, and tolerance of other points of view via participation in extracurricular activities, networking events, and group projects. Personal growth and professional success depend on emotional intelligence, self-confidence, and strong interpersonal connections, all of which are bolstered by these experiences. From a professional standpoint, engaging in social interactions may open doors to mentoring, networking, and staying abreast of business developments. Students may learn more about potential employment routes, practical uses of technical expertise, and instructors' and alumni's insights into the business via contact with these groups. Conferences, seminars, and career fairs are great places for students to network with professionals and hone the business and social skills that will be useful in their future jobs (Hui et al., 2021).

Based on the above discussion, the researcher formulated the following hypothesis, which was to analyse the relationship between Social Interaction and The Personal and Professional Growth of College-Level Engineers .

H01: “There is no significant relationship between Social Interaction and The Personal and Professional Growth of College-Level Engineers”

H1: “There is a significant relationship between Social Interaction and The Personal and Professional Growth of College-Level Engineers”

Table 2: H_1 ANOVA Test

ANOVA					
Sum					
	Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
Between Groups	39588.620	600	5655.517	563.695	.000
Within Groups	492.770	1011	5.356		
Total	40081.390	1611			

The outcome of this research is noteworthy. A p-value of.000 (below the alpha threshold) indicates that the value of F, which is 563.695, is statistically significant. This means the “There is a significant relationship between Social Interaction and The Personal and Professional Growth of College-Level Engineers” is accepted and the null hypothesis is rejected.

CONCLUSION

According to studies that analyzed the effects of extracurricular activities on the personal and professional development of engineering students enrolled in private Chinese universities, such engagement may have far-reaching consequences. Students' technical competence, self-confidence, and participation in extracurricular activities are all significantly enhanced by these activities, according to the data. Participation in organizations, projects, and competitions helps engineering students learn crucial skills for their future jobs, such as leadership, problem solving, critical thinking, and hands-on experience. Collaborative engineering environments place a premium on interpersonal skills like effective communication and teamwork, which students may hone via these activities. Important life skills for academic and occupational success include self-awareness, time management, and resilience, all of which children may hone via involvement in extracurricular activities. But there are a number of cultural and institutional challenges that the research highlights as specific to China's private institutions. Examples of this include the comparatively low priority placed on extracurricular activities in university courses and the pervasive academic pressure on students. By

tackling these obstacles via awareness campaigns, personalized programs, and institutional support, the benefits of extracurricular activity may be fully realized. Since extracurricular activities help engineering students develop into well-rounded persons and bridge the gap between classroom theory and practical experience, they are an essential complement to academic studies. If schools are serious about helping their students reach their full potential, they must prioritize creating an environment that encourages and supports their participation in extracurricular activities (Isopahkala-Bouret et al., 2023).

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