A Case Study on the Pre-Career Activities and Its Effects on the Career Success of College Graduates

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Abstract

Career success is the accomplishment of desirable work-related outcomes at any point in a person's work experiences over time. This can be quantified objectively through salary, position, and promotion. The study investigated the relationship of college graduates' involvement and performance in co-curricular and extra-curricular or collectively known as pre-career activities to their career success after graduating from college. Furthermore, this study explored the personal and interactive skills acquired by students in pre-career activities that are key to advancing their careers. For data gathering, Graduates from Mapua University with a degree of Bachelor of Science in Civil Engineering and Chemical Engineering were asked to answer a questionnaire. Numerical methods such as ANOVA was used to assess whether pre-career activities have a significant effect on career success while Regression Analysis was utilized for determining the relationship between student leader development and professional career success. The results of the study showed that there is a significant difference ($p < 0.05$) between the career success of graduates with and without pre-career activities during their years of stay in the university. Also, it is more probable that students joining such activities will obtain a personal skill such as determination and interactive skills such as Teamwork and Leadership. To conclude, one must be in the leader position rather than just a member in the academic organization to maximize the benefits of pre-career activities.

Keywords
Career Success, Pre-career Activities, Personal Skill, Interactive Skills

1. Introduction

Pre-career can be defined as pre-job or occurring before employment (Merriam Webster 2019). Prior employment connotes education of a person, and this covers the activities and programs undertook by an individual during his/her time as a student. Astin (1984) labeled these activities as student involvement which means "the amount of physical and psychological energy that the student devotes to the academic experience."

In connection, co-curricular or extra-curricular involvement can be further referred to as non-academic experiences sponsored, sanctioned, or supported by the university which includes a range of participation in student organizations, intramurals, athletics, student government, leadership programs, and community programs (Evans et al. 1998). Beyond the walls of classrooms, various types of situations and learning are meant to be experienced by students and these can be encapsulated by extra-curricular activities. These activities provide the participants with repeated opportunities for feedback and learning which in turn will improve their ability to adapt and self-regulate in the pursuit of goals (Larson and Verma 1999; Hansen et al. 2003).

Generally, extra-curricular activity participation regardless of activity type such as sports, performing arts, school involvement, or academic clubs, provides a high association across a number of positive outcomes (Eccles et al., 2003; Barber et al., 2001). Keenan (2010) emphasized that extra-curricular participation is linked to career success through four channels: firstly, positive academic outcomes; secondly, accumulation of skills; thirdly, results in desirable psychological outcomes; and finally, participation allows individuals to accumulate social capital or social ties. In addition, the results of the study of Astin (1993) suggest that university association involvement together with its activities and experiences have a significant impact and positive in the leadership development of students.

Denotatively, career success is the accomplishment of desirable work-related outcomes at any point in a person's work experiences over time (Arthur et al., 2005). On the objective aspect of career success, it is mainly concerned with tangible and evident attainments such as pay and promotion (Seibert et al. 2001). In contrast, subjective career success can be defined as the judgement or evaluation of the individual of his or her career on the basis of perceptions of personal career attainments (Gunz and Heslin, 2005).

Researchers reported that majority of employees define their career success with subjective indicators rather than in terms of objective indicators like salary and frequency of promotions (Eith et al. 2011). Therefore, there is a need to measure career success objectively and quantitatively to determine whether pre-career activities are a significant factor of career success.

According to Howard (1986), there is ample evidence that college experiences are relevant to performance as a manager and that college degree, extracurricular activities, and grades played were noteworthy factors; however, the study suggested that there is a need to relate what particular college experiences are significant to the specific criteria emphasized in different jobs. Although participation in pre-career activities is linked with career success, it is yet unclear to what extent does it affect Civil and Chemical Engineering graduates of Mapua University. Furthermore, there is also a need to determine what specific skills acquired in the pre-career activities of Mapua University can be considered an indicator for career success.

2. Methodology

2.1 Conceptual Framework

The study investigates if there is a significant effect of pre-career activities or programs such as grades and extra-curricular participation on the career success of student leaders. The conceptual framework of this study as seen in Figure 2.1.1 exhibits academic equivalence and student leadership development as variables and determine whether they have a significant impact in the professional career success of a student. In connection, academic equivalence encompasses the grades and the academic achievements while student leadership development covers the co- and extra-curricular membership and participation of the student. Since majority of the studies employ subjective indicators for professional career success such as self-referent and other-referent comparisons (Eith et al. 2011), the study will utilize objective indicators such as salary, position, and length of promotion to gauge career success.

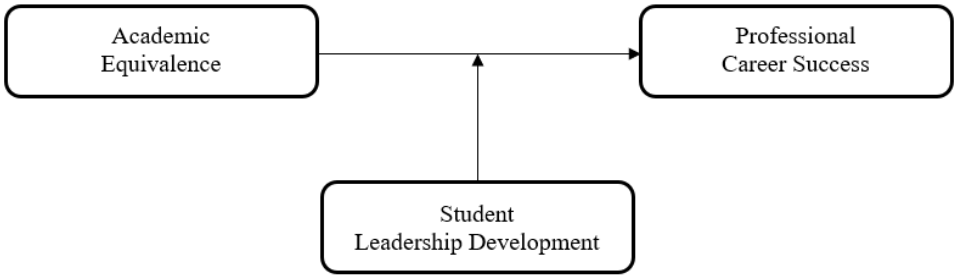

Figure 2.1.1. Conceptual Framework for pre-career activities and professional career success

In order to determine if pre-career activities have a significant effect with career success, statistical tools were used to measure quantitively the responses of the study volunteers and made conclusions whether to accept or reject the hypotheses. In this study, two hypotheses were formulated to encompass the entirety of the research and these are:

H1: There is a statistically significant relationship between academic excellence and professional career success.
H2: There is a statistically significant relationship between student leadership development and professional career success.

In order to determine the pre-career activity factors that contribute and have relevance in the career success of students, the academic and student leadership indicators must be fully specified and identified. The academic performance of a student leader can be evaluated explicitly using their GWA (General Weighted Average), academic awards, and residing years in the university while student leadership development indicators are associated with the type of extra-curricular activity, position in the school organization, and years of membership. These variables constitute the independent variables that will be utilized to determine the relationship of pre-career activities and career success. On the other hand, professional career success was measured objectively using indicators such as monthly salary range, position in the workplace, and length of promotion in which they are considered as dependent variables in this study. Figure 2.1.2 encompasses the operational framework including the underlying variables of each block.

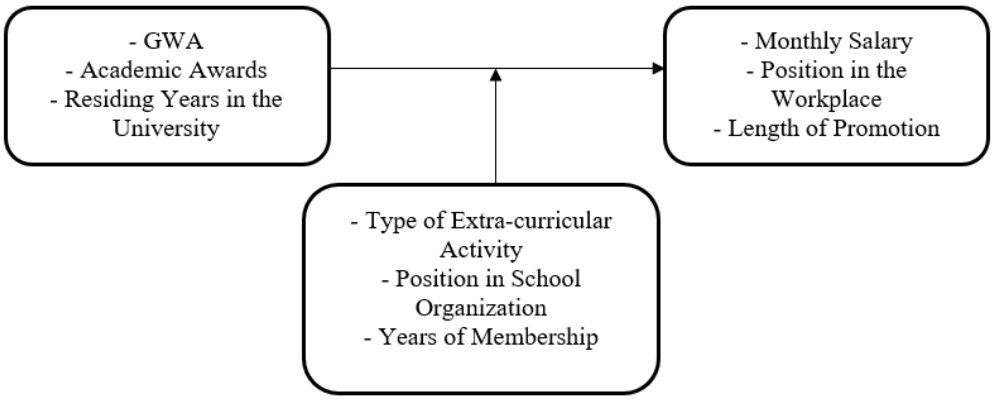

Figure 2.1.2 Operational Framework for pre-career activities and professional career success

The types of extra-curricular activity according to Gibbs, Erickson, Dufur & Miles (2014) were sports, performance, academic, and school. Under the sports category are basketball, volleyball, and track and field while under the performance category are the band, cheerleading, and dance. On the other hand, the academic category covers the honor society and the school category covers the student council. Since pre-career activity classifications have overlapping definitions in Mapua University setting, the types of pre-career activity can be limited to performance (sports, band, and cheerleading) and academic (honor society and student council).

Not only the relationship of the academic equivalence and student leadership factors to career success are investigated but also the skills acquired of the students for each of the different scenarios. The acquired skills of with and without pre-career activities are further compared and analyzed to determine the skillsets developed in joining such activities.

2.2 Study Volunteers

According to the graduation statistics of Mapua University, the average number of civil engineering graduates per year is 146 while for chemical engineering is 62 per year (Mapua University 2014). Considering the civil engineering and chemical engineering graduates from the year 1983 to 2013, a population size of 6,240 can be obtained. Based on the sampling techniques by Krejcie and Morgan (1970), the sample size is 360 given a population size of 6000.

The study volunteers of the study were bachelor's degree graduates of School of Civil, Environmental and Geological Engineering (CEGE), and School of Chemical. Biological, and Materials Engineering and Sciences (CHE-CHM) of the Mapua University. Half of the sample size or 180 volunteers are graduates who had high participation in pre-career activities and the other half are graduates who are considered inactive in pre-career activities. In addition, graduates are required to be employed in a company or self-employed such as in a business.

2.3 Data Gathering

In this study, a questionnaire is the instrument used for data gathering purposes. The questionnaire was composed of three sections: personal information, data variables, and skills acquisition. In the personal demographics section, the

study volunteer filled up his/her name, age, gender, and occupation. Under the data variables section, the independent and dependent variables were determined by the study volunteer such as GWA, residing years in the university, type of school organization, position in the school organization, years of membership in the school organization, position in the workplace, salary, and length of promotion. On the other hand, the skills acquisition section covers the skills that the student leaders have acquired during their college years in the university which are based on the study of Sleap and Reed (2006).

Since the study employs quantitative analysis of the effects of pre-career activities, a questionnaire with corresponding weights was utilized. To quantify the data, numerical metrics were assigned to qualitative descriptions such as position. The following numerical conversions were made as shown in table 2.3.1 below:

Table 2.3.1 Numerical Conversions

Highest Attained Position	Academic Organization Positions	Performance Team Positions
Level 1 – Associate: 1	Member/Staff: 1	Member: 1
Level 2 – Immediate Supervisor: 2	PRO (Public Relations Officer): 2	Co-captain/Co-lead: 3
Level 3 – Department Head: 4	Treasurer/Auditor: 3	Captain: 5
Level 4 – Vice President: 6	Secretary: 4	
Level 5 – Owner/CEO/President: 8	Vice President: 5	
	President: 6	

2.4 Numerical Methods

Since most of the studies use subjective indicators for measuring career success, there is a need to measure the career success objectively in terms of salary, position, and length of promotion. In order to determine whether pre-career activity participation has a significant effect on the career success of students, statistical measures such as ANOVA (Analysis of Variance) and regression analysis were used to test this hypothesis.

Analysis of Variance (ANOVA) was used to determine statistically if there is a significant difference in the means of the associated population in the comparison of two or more independent groups ("One-Way ANOVA", 2019). In the study, ANOVA was used to determine the if there is a significant difference in the professional career success between students participating in pre-career activities and students that have not been engaged in any pre-career activities. Objective career success indicators such as monthly net income, position in the workplace, and length of promotion of active and inactive members will be compared using ANOVA.

Regression is a statistical term used for describing models that estimate the relationships among variables. Linear regression models study the relationship between a single dependent variable Y and one or more independent variables, denoted by X (Bangdiwala, 2018). In the study, regression analysis was used for determining the relationship between student leader development and professional career success. Specifically, regression helped in the analyzation if the independent variables of student leadership such as type, position, and years in school organization has a significant effect on the dependent variables which are objective career success indicators namely monthly net income, position in the workplace, and length of promotion. Overall, both independent and dependent variables were utilized for the acceptance or rejection of the null hypothesis.

The correlation coefficient, denoted by *r*, is a measure of the strength of the straight-line or linear relationship between two variables (Ratner, 2009). Correlation was used to determine the relationship of grades to career success indicators. The values of the correlation coefficient can be interpreted as the strength of the relationship between the variables and are shown in table 2.4.1.

Table 2.4.1 Values of the Correlation Coefficient

Correlation Coefficient Values	Description
0	No Relationship

0 - 0.3	Weak Relationship
0.3 - 0.7	Moderate Relationship
0.7 - 1.0	Strong Relationship

3. Results and Discussion

3.1 Relationship between Grades and Career Success

The average value for the grades, age, highest attained position in the company, monthly salary, and length of promotion of the 360 respondents is shown in Table 3.1.1. Based on the data, the average of grades of the Mapua University graduates with bachelor's degrees in Civil and Chemical Engineering is 2.5061. It can be inferred that the grades of Mapua University graduates do not have a significant effect on professional career success since the nominal or prevailing grades is close to passing (3.0) which indicates difficulty in obtaining very high grades. Also, the average age of the respondents is 44 years old meaning the length of their career can be approximated at 20 years. The highest attained position for the average is ranging from an immediate supervisor to a department head. The average monthly salary is at 71,396 PHP and the mean length of promotion is 11 years which is approximately half of their career.

Table 3.1.1. Mean Value of Grades, Age, and Objective Career Success Metrics

	Grades	**Age**	**Highest Attained Position**	**Monthly Salary**	**Length of Promotion**
Mean	2.5061	44.7639	3.3278	71,396	11.3889

Furthermore, the values of the correlation coefficient as shown in table 3.1.2 range from 0.04 to 0.14 indicating weak relationship between grades and career success indicators. The results of the study agree with that of Cohen (1984) which showed that the correlation between grade average and defined criteria of adult achievement was small ranging from 0.09 to 0.20. The study suggests that grades are not sole predictors of career success given the context of Mapua University but the underlying skills and motivation behind achieving good grades may have an effect on the future success of a student.

Table 3.1.2. Correlation between Grades and Career Success Indicators

Grades vs.	**Correlation Coefficient**	**Relationship**
Highest Attained Position	0.142768	Weak Relationship
Monthly Salary	0.107105	Weak Relationship
Length of Promotion	0.048363	Very Weak Relationship

3.2 Career Success of With and Without Pre-Career Activities

In the study, 180 respondents are graduates with extra-curricular and the other 180 respondents are not involved with extra-curricular activities. The mean value of the highest attained position and monthly salary of graduates with pre-career activities are higher compared to ones without pre-career activities. Also, the length of promotion is shorter for gradates with pre-career activities than without one. The mean and standard deviation values for career success indicators for both cases are displayed in Table 3.2.1.

Table 3.2.1. Mean and Standard Deviation Values of the Career Success Indicators of Graduates with and without pre-career activities

	With Pre-Career Activities		**Without Pre-Career Activities**	
	Mean	**Std**	**Mean**	**Std**

Highest Attained Position	3.5333	1.8891	3.1222	1.8083
Monthly Salary	74694.4444	31522.8652	68097.2222	29861.6034
Length of Promotion	10.7833	5.1690	11.9944	6.3953

Using ANOVA, table 3.2.2 results show that the p-values for career success indicators are < 0.05. It indicates that there is a significant difference in the highest attained position in the company, monthly salary range, and length of promotion between graduates with and without student leadership. In other words, the professional career success of student leaders is statistically better compared to graduates not involved with any pre-career activities.

Table 3.2.2. ANOVA between Career Success of with and without pre-career activities

Type of Career Success	P-value	Significant (Y/N)
Highest Attained Position	0.035624	Y
Monthly Salary	0.042242	Y
Length of Promotion	0.048920	Y

3.3 Type of Pre-career activity and Career Success

The results of the regression analysis between academic pre-career activities and professional career success as seen in table 3.3.1 show that position in the student organization has the capability to influence the highest attained position in the company and the monthly salary range. Despite the academic pre-career activities have an effect on professional career success, it should be noted that the student must be in the leadership position to have more probable chances of attaining higher position and salary in his/her career. Simply being a member on the organization even for a long time will not significantly affect professional career success. The findings of Kimand Bastedo (2016) supports this claim since their study suggested that the level of participation in extracurricular activities is critical for employers to consider one's experience. Also, their study argued that 70% of the industrial corporate CEOs have held at least one leadership position in a club or organization during college based on their findings.

On the other hand, only the monthly salary was considered significant for graduates with position in the team for graduates with performance pre-career activities. The disparity can be supported by the study of Kimand Bastedo (2016) which stated that previous studies have mixed findings that membership on sports club has higher ratings while other studies suggest that recreational sports are not much influential in the hiring process. Nevertheless, Sauer et al. (2013) argued that for men student athletes, the benefits of athletic participation take effect ten years after graduation when former athletes leave their lower-paying early career jobs and progress to higher managerial positions where their mentoring skills and emotional intelligence are desirable

Table 3.3.1. Regression Results for the Type of Pre-Career Activity and Career Success Indicators

Type of Pre-career Activity	**P-value**					
	Highest Attained Position	**Significant (Y/N)**	**Monthly Salary**	**Significant (Y/N)**	**Length of Promotion**	**Significant (Y/N)**
Academic						
- Organization Position	0.001294	Y	0.00154	Y	0.383385	N
- Years of Membership	0.084985	N	0.090282	N	0.463223	N
Performance						
- Team Position	0.192318	N	0.026054	Y	0.497486	N

- Years of Participation	0.101728	N	0.615796	N	0.355076	N

3.6 Skill Acquisition

Table 3.6.1 shows the number of personal skills acquired by students with and without pre-career activities. Graduate with pre-career activities have higher percentages on 12 out 14 personal skills compared with inactive students. Furthermore, personal skills such as Determination, Problem Solving, Commitment, Flexibility, and Self-Confidence are the highest skills acquired for students with pre-career activities. The results of this study also confirm the findings of Buckley and Lee (2018) which suggests that two of the top 5 skills acquired and enhanced from pre-career activities are self-confidence and problem-solving skills. Aside from having a higher number of acquired personal skills for students with extra-curricular activities, Drive, Flexibility, and Creativity are the highest in the terms of percentage difference. It highlights that joining pre-career activities provides students with greater drive which is helpful and essential for career growth.

Table 3.6.1. Percentage of Personal Skills Acquired during College

	Self Confidence	**Determination**	**Commitment**	**Problem Solving**	**Numeracy**	**Reliability**	**Initiative**
With	75.56%	87.22%	81.11%	85.00%	52.78%	72.78%	64.44%
None	72.22%	86.67%	81.67%	77.22%	45.56%	71.11%	59.44%
	Drive	**Self-Awareness**	**Self-Presentation**	**Time-Keeping**	**Flexibility**	**Creativity**	**Risk-Taking**
With	67.22%	58.89%	53.89%	58.33%	78.89%	69.44%	72.78%
None	56.11%	60.56%	48.89%	55.00%	69.44%	59.44%	66.67%

Table 3.6.2 exhibits the interactive skills acquired by students with and without pre-career activities in their years of stay in the university. Students who participated in pre-career activities have acquired more interactive skills than students who did not participate. Furthermore, teamwork became the highest acquired interactive skill when joining interactive activities such as academic organizations and sports. Additionally, the leadership skill was the highest in point difference among the other interactive skills in light of students with and without participation having a percentage of 84.44% to 61.11% respectively. Based on the results, there is a higher chance of unlocking these interactive skills when joining extra-curricular activities. The results of the study agree as well with the study of Hayes (2014), having teamwork as the number 1 acquired skill with extracurricular activities and leadership ranks second. Also, their study also suggests that social/communication, leadership, and teamwork are skills that are most transferable between school-related extracurricular activities and other nonrelated activities, regardless of academic standing. This means that these skills acquired from pre-career activities are beneficial for the future career success of the students.

Table 3.6.2. Percentage of Interactive Skills Acquired during College

	Communication	**Interpersonal**	**Teamwork**	**Leadership**	**Logical Argument**	**Negotiation**	**None**
With	73.89%	83.89%	89.44%	84.44%	65.00%	60.56%	4.44%
None	58.33%	70.00%	68.89%	61.11%	45.00%	40.56%	21.11%

Both results of personal and interactive skills show that these skills are more likely to acquired when the student is being immersed in pre-career activities. It can be inferred that acquiring interactive skills is the biggest benefit of having pre-career activities which could lead to a better success in his career. Whereas personal skills can be developed overtime and would manifest eventually in the workplace.

4. Conclusion

The results of the study show that grades have a very little or minimal effect on objective career success such as highest attained position, monthly salary, and length of promotion. Furthermore, the study suggests that there is a significant difference in the career success of graduates with and without pre-career activities. On average, the career success of graduates with pre-career activities are higher compared to those who did not participate.

The significant pre-career activities that contribute to skills development are of academic co-curricular activities such as student councils and honor societies. It must be noted that to fully maximize the effect of pre-career activities, one must be in the leadership position rather than a member for years. The significant skills needed to advance careers are determination, problem solving skills, and commitment for personal skills while on the other hand, teamwork, leadership, and interpersonal skills for interactive skills. The greatest benefit of pre-career activities is the development of the interactive skills needed to advance one's career.

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Biographies

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