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Claremont McKenna College

Impact of College Extracurricular Involvement on
Entrepreneurial Outcomes

Submitted to

Professor Janet Smith

By

Emily Malech

For

Senior Thesis

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Abstract

Despite extensive inquiry, relatively little is understood about the factors which shape entrepreneurs as young adults. This paper examines the impact of college extracurricular involvement on the entrepreneurial outcomes of alumni; it considers which extracurricular activities are most strongly associated with entrepreneurship. Additionally, it explores whether the number of extracurricular activities participated in by students impacts their proclivity for entrepreneurship. It observes 219 alumni of Claremont McKenna College and uses data from the institution's public records as well as alumni's LinkedIn profiles. This data contains information on entrepreneurship, indicated by job titles, and five extracurricular activities. Using a probit model that controls for academic major, I find that college extracurricular involvement is positively associated with the entrepreneurial outcomes of alumni. Club leadership has the strongest marginal impact on entrepreneurship, followed by research institute participation. Additionally, the results show that the number of extracurricular activities participated in by students is positively associated with their entrepreneurial outcomes. This paper concludes that further research should be conducted on a larger dataset that is more comprehensive and diverse.

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I. Introduction

In recent decades, entrepreneurship has gained significant popularity as a career choice (Klapper & Delgado, 2007). In contrast to the 20th century economy, which was defined by the rise of large corporations, the 21st century economy presents ample opportunity for the working population to take ownership of their career trajectories and pursue rapidly growing ventures (Moffatt, 2020). Moreover, entrepreneurs are novel leaders that have reimagined what it means to build and grow a business. As more individuals aspire to Silicon Valley's success stories, identifying factors which shape entrepreneurs has presented itself as a particularly interesting area of academic research.

A study conducted by Levine and Rubinstein (2013) contributed to the exploration of entrepreneurial characteristics by unveiling some of the distinguishing traits that entrepreneurs possessed. Specifically, the authors found that entrepreneurs tended to have individual-level characteristics that predisposed them to the field (Levine & Rubinstein, 2013). Ultimately, Levine and Rubinstein (2013) posit that “It is a particular mixture of pre-labor market traits that is most powerfully associated with entrepreneurship” (Levine & Rubinstein, 2013, p. 3). Further research has begun investigating the impacts of undergraduate programs—including curricular, cocurricular, and extracurricular programs—on entrepreneurship, since college is one of the most pivotal pre-labor market experiences (Kam et al., 2014). To build upon the existing literature, this paper will investigate the relationship between students' extracurricular involvement in college and their entrepreneurial outcomes.

My research will be one of the first research studies that quantitatively examines the impact of college extracurricular activities on the entrepreneurship of alumni. In the

past, research on this topic has often been limited to qualitative survey results, relying on groups of college students to self-report their entrepreneurial outcomes. For example, Oosterbeek and Praag (2009) measure the impact of a popular extracurricular program by analyzing students' self-assessed entrepreneurial skills before and after participating in the program. One limitation of this research design is that students may not have given responses that were entirely unbiased and accurate because they sought to make a good impression (Oosterbeek & Praag, 2009). Additionally, the authors do not include information on which students ultimately became entrepreneurs; instead, they are limited to the results of students' self-assessments immediately after they had participated in the program (Oosterbeek & Praag, 2009). By contrast, my dataset uses LinkedIn to directly observe the entrepreneurial outcomes of college students. It measures entrepreneurship based on job titles; that is, alumni that have reported at least one job position containing one of the keywords in *Table 1* are defined as having pursued entrepreneurship.

Through this paper, I will use econometric techniques to analyze how much extracurricular involvement in college impacts the entrepreneurial outcomes of alumni. Furthermore, I will examine which extracurricular variables are associated with entrepreneurship and whether the number of extracurricular activities participated in impacts students' entrepreneurial outcomes. First, I provide a review of the literature surrounding this topic and develop my hypotheses. Second, I present my data and empirical results to show that extracurricular involvement in college has positive impacts on the entrepreneurial outcomes of alumni. Finally, I end with a discussion of the results and limitations, as well as suggest opportunities for future research on the topic.

II. Literature Review

While there is a noteworthy amount of existing literature on university programs and entrepreneurial outcomes, both the empirical strategies and findings vary widely. Previous studies are heterogeneous in terms of their methodological approaches, as well as their selected independent and dependent variables. For example, a study conducted by Oosterbeek and Praag (2009) relied on self-assessments to evaluate the effectiveness of Junior Achievement (JA)—the largest non-profit education organization—by surveying students' who participated in one university's JA Young Enterprise Student Mini-Company (SMC) program, which educates students on the principles of entrepreneurship. The authors found that the SMC program did not have the intended effects; in fact, they found that the program's effect on students' self-assessed entrepreneurial skills was insignificant, and its effect on students' intentions to become entrepreneurs was significantly negative (Oosterbeek & Pragg, 2009). In contrast to Oosterbeek and Praag's study, Walter et al. (2012) conducted a cross-level analysis of 25 university departments to determine which organizational-level factors impact student entrepreneurship. The authors found that entrepreneurship education programs as well as departments' industry ties increased the entrepreneurial intentions of students in the sample (Walter et al., 2012).

Given the key distinctions between the empirical methods used in the Oosterbeek and Praag (2009) and Walter et al. (2012) studies, it is unsurprising that the authors' findings on university programs and entrepreneurial outcomes contradicted one another. Furthermore, these conflicting findings have far-reaching implications for policymakers and university administrators that may be considering whether to invest or reduce

investments in these types of programs (Kam et al., 2014). Similarly, these findings pose a challenge for college students and aspiring entrepreneurs that may be determining whether to participate in programs that are offered by their respective universities (Kam et al., 2014). My research will contribute to the existing literature by providing additional insight on the impacts of various extracurricular activities on college graduates' entrepreneurial outcomes.

Another limitation of the existing literature is that it primarily examines classroom-based entrepreneurship programs. In other words, the extensive extracurricular programming offered by colleges and universities has yet to be fully analyzed in terms of its effect on students' entrepreneurial outcomes. While a study conducted by Wong et al. (2014) initially found that extracurricular involvement was unrelated to college students' entrepreneurial behaviors, the authors strongly believe this was due to the fact that the analysis aggregated all relevant extracurricular activities into a single variable. This evidently presented a challenge for adequate statistical analysis on each activity's relative impact on entrepreneurial behaviors. My study will be one of the first to assess the marginal impacts of various extracurricular activities on entrepreneurship. Additionally, a study conducted by Weber et al. (2009) found that the strength and consistency of students' engagement in college had a positive effect on their entrepreneurial outcomes. Furthermore, I will also analyze the impact of students' level of extracurricular involvement, measured by the number of activities participated in during college.

To conduct this research, I collect data on 219 graduates of Claremont McKenna College (CMC), a private liberal arts college in Southern California, to observe their extracurricular involvement in college and their careers as alumni. In the empirical

analysis, I analyze the effects of students' participation in athletics, research institutes, scholar communities, and club leadership roles.¹

¹ Note: See *Table 2* for detailed descriptions of extracurricular variables under observation

III. Hypotheses

Hypothesis 1: *There will be a positive correlation between all of the extracurricular variables and entrepreneurship controlling for major-related effects.*

Based on the research findings of Walter et al. (2009), I posit that extracurricular involvement in college will have positive impacts on the entrepreneurship of alumni. Levine and Rubinstein (2013) reveal that entrepreneurs are likely to have greater self-esteem and have engaged in aggressive and risky behaviors. Therefore, I hypothesize that club leadership will have the strongest marginal impact on entrepreneurship given that leadership positions require high levels of self-esteem and a willingness to take risks (Frost et al., 1983).

Hypothesis 2: *There will be a positive correlation between the number of extracurricular activities that a student has participated in and entrepreneurship controlling for major-related effects.*

Weber et al. (2009) find that the strength and consistency of students' engagement in college impact their proclivity for entrepreneurship. While the authors examined the effects of academic programs, I posit that similar results will be seen for extracurriculars. Specifically, I hypothesize the level of college extracurricular involvement—measured by the number of extracurricular activities a student has participated in—will have positive impacts on the entrepreneurship of alumni.

IV. Data and Empirical Strategy

Sample Group

I collected data on 219 randomly selected Claremont McKenna College alumni from the classes including and between 2010 and 2018. Claremont McKenna College is a small, private liberal arts college in Southern California with an emphasis on economics, government, and public affairs (U.S. News & World Report, 2021). According to U.S. News & World Report (2021), it is considered an elite undergraduate institution with an admittance rate of approximately ten percent. The college has a wide variety of extracurricular offerings including varsity athletics, merit scholar communities, and club leadership opportunities. Additionally, the college is known for its distinguishing research institutes and centers, which enable students to work on graduate-level research alongside faculty members.

I intentionally use the graduating classes of 2010 to 2018 for two reasons. First, alumni from these years have sufficient experience in the workforce to be of interest for this analysis. Graduates beyond 2018 will have had limited time and opportunities for job mobility or dramatic career shifts. Secondly, older alumni seem less likely to report every position they have held since graduation, especially as their number of individual positions grows. If this were to be true, the data would be incomplete and inadequate for statistical analysis. Furthermore, alumni from these classes properly balance these two criteria of having sufficient work experience and more comprehensive profiles.

Measurement of Entrepreneurship

Previous research includes varying definitions of entrepreneurship. Furthermore, I defined entrepreneurship in terms of the data that is publicly available on Claremont

McKenna College alumni's work experience. The data was sourced from alumni's LinkedIn profiles, which were scraped and subsequently cleaned for consistency. The data includes information each of the alumni's job positions and respective firms, as well as their tenure for each position. Additionally, the data includes information on firms such as size, industry, and location.

I define entrepreneurship based on job titles; that is, alumni that have reported at least one job position containing one of the keywords in *Table 1* are defined as having pursued entrepreneurship.

Table 1. Job Titles that Indicate Entrepreneurship

<i>Founder</i>
<i>Co-Founder</i>
<i>Founding Member</i>
<i>Owner</i>

Furthermore, the dependent variable, $Y = Entrepreneurship$, is an indicator variable equal to one if an alum has held at least one of the four entrepreneurial job titles in *Table 1* at some point in his or her career, and zero if otherwise.

Measurement of College Extracurricular Involvement

The data on extracurricular involvement was sourced from alumni's LinkedIn profiles as well as a variety of publicly available documents published by Claremont McKenna College (e.g., commencement programs, athletic rosters, resident assistant lists). I define each extracurricular activity as an indicator variable in which $X_i = 1$ if the alum participated in the respective extracurricular activity, and zero if otherwise. *Table 2* describes the extracurricular activities that are independent variables in this research study.

Table 2. Extracurricular Descriptions

Extracurricular Variable	Description
<i>Athlete</i>	Participated on a NCAA Division III athletic team
<i>Scholar</i>	Participated in a Scholar Community ² , defined as an “experiential learning program created to support students with shared interests and backgrounds in a variety of disciplines and fields” (Scholar Community Students, n.d.)
<i>RA</i>	Participated as a resident assistant
<i>Lead</i>	Held a club leadership position, including, but not limited to, Founder, CEO, President, and Vice President
<i>Research</i>	Participated in one of 11 undergraduate research institutes ³ , which serve to enrich the curriculum and provide timely research opportunities for students working closely with faculty scholars (Research Institutes and Centers, n.d.)

Tables 3-4 reveal that a lower percentage of entrepreneurs participated as athletes and resident assistants than non-entrepreneurs. *Tables 5-7* reveal that a higher percentage of entrepreneurs participated in scholar communities, research institutes, and club leadership than non-entrepreneurs. The statistical significance of these findings is the focus of the remainder of this analysis.

Additionally, I included a variable to count the number of extracurricular activities each alum participated in based on the notion that the strength and consistency

² Note: Includes Dreier Roundtable Scholars, Interdisciplinary Science Scholars, Kravis Scholars, McKenna Scholars, Podlich Scholars, Robert Day Scholars, Seaver Scholars, St. Dennis Scholars, and Wagener Family Global Scholars.

³ Note: Includes the Berger Institute for Individual and Social Development, the Financial Economics Institute, the Gould Center for Humanistic Studies, the Keck Center for International and Strategic Studies, the Kravis Leadership Institute, the Lowe Institute of Political Economy, the Mgrublian Center for Human Rights, the Randall Lewis Center for Innovation and Entrepreneurship, the Roberts Environmental Center, the Rose Institute of State and Local Government, and the Salvatori Center for Individual Freedom.

of students' signals impact their proclivity for entrepreneurship (Weber et al., 2009).

Using a two-sample t-test difference of means, Table 8 shows that the mean number of extracurricular activities for all alumni is 1.986. Among non-entrepreneurs it is 1.894, while among entrepreneurs it is 2.237; the mean difference between entrepreneurs and non-entrepreneurs is estimated as .344 and is statistically significant at the 5% level.

Additional Control Variables

I include categories of academic majors as control variables because certain areas of study are shown to be associated with entrepreneurship (Dao et al., 2020). Without major controls, the model would overestimate the impact of extracurricular involvement. I segment the majors into six categories that encompass all majors offered by the institution. Given Claremont McKenna's unique curricular emphasis, I include the Economics and Government majors as distinct controls. *Table 9* describes the major categories that are control variables in the model. *Table 10* does not show any noteworthy discrepancies between the distribution of majors among entrepreneurs and non-entrepreneurs.

Empirical Strategy

To determine the impact of college extracurricular activities on entrepreneurial outcomes of alumni, I first estimate a probit model⁴ of the following form:

$$Y = \alpha + \beta_1 Athlete + \beta_2 Scholar + \beta_3 RA + \beta_4 Lead + \beta_5 Research + B_6 Activity + \varepsilon$$

⁴ Note: Since the dependent variable (*Entrepreneurship*) is a binary response variable, I chose to use a probit model for my empirical analysis given that the errors from the linear probability model would violate the homoskedasticity and normality of errors assumptions of OLS regression, which would result in invalid standard errors and hypothesis tests.

(1)

where Y is an indicator variable equal to one if an alum has an entrepreneurial role (see *Table 1*) at some point in his or her career, and zero if otherwise. *Athlete*, *Scholar*, *RA*, *Lead*, and *Research* are indicator variables that equal one if the alum participated in the respective extracurricular activity, *Activity* is the number of extracurricular activities participated in by the alum, and ε is an error term with the usual properties.

The second model adds controls for academic majors. Specifically, I estimate a model of the following form:

$$Y = \alpha + \beta_1 Athlete + \beta_2 Scholar + \beta_3 RA + \beta_4 Lead + \beta_5 Research + B_6 Activity + B_7 Econ + B_8 Gov + B_9 STEM + B_{10} Humanities + B_{11} SocialSci + B_{13} PPE + \varepsilon$$

(2)

The controls are indicator variables that equal to one if the alum graduated with an academic major in the assigned major category (see *Table 9*)⁵.

⁵ Note: All academic majors offered by Claremont McKenna College are included in one of the six major categories; hence, no majors are omitted from the empirical model.

V. Results

Table 11 and *Table 12* present the results for Equations (1) and (2), respectively, for the full sample of 219 alumni.

The purpose of the probit regression in *Table 11* is to see the statistical significance of each extracurricular activity on entrepreneurship, as well as the statistical significance of the number of extracurricular activities participated in. The likelihood ratio chi-square of 35.862 with a p-value of 0.000 indicates the overall model is statistically significant; that is, it fits significantly better than a model with no predictors.

Table 11 shows that the probability of entrepreneurship for students who held a club leadership position is 29.7 percentage points higher than for students who did not ($p < .01$). Additionally, the probability of entrepreneurship for students who participated in a research institute is 12.9 percentage points higher than for students who did not ($p < .1$). Finally, *Table 11* shows that each additional extracurricular activity a student participated in increases their probability of entrepreneurship by 5.9 percentage points ($p < .05$).⁶

One limitation of the data in *Table 11* is that it does not control for academic majors. The purpose of *Table 12* is to see if the statistical significance of the extracurricular variables changes when controlling for major-related effects. The results show changes in statistical significance for the Research and Activity variables. Specifically, the statistical significance of Research increased to the 5% level, and the statistical significance of Activity decreased to the 10% level. After controlling for academic majors, Lead is still significant at the 1% level.

Table 12 shows that the probability of entrepreneurship for students who held a

⁶ Note: *Table 11* shows that *Athlete*, *Scholar*, and *RA* are statistically insignificant.

club leadership position is 28.8 percentage points higher than for students who did not ($p < .01$). Additionally, the probability of entrepreneurship for students who participated in a research institute is 16 percentage points higher than for students who did not ($p < .05$). *Table 12* also shows that each additional extracurricular activity a student participated in increases their probability of entrepreneurship by 5 percentage points ($p < .1$). Finally, *Table 12* reveals that none of the control variables are statistically significant, indicating that choice of academic major is not associated with entrepreneurial outcomes, while choice of extracurricular involvement is associated with entrepreneurial outcomes..

The results of the probit regression models ultimately show that extracurricular involvement in college has positive impacts on the entrepreneurship of alumni, controlling for academic majors. The results also show that extracurricular activities have varying impacts on entrepreneurship. Club leadership has the highest level of statistical significance ($p < .01$) and the strongest marginal impact on entrepreneurship (.288). The other indicator variable with statistical significance is Research ($p < .05$), which has the second highest marginal impact on entrepreneurship (.16). Additionally, the results show that the number of extracurricular activities participated in has positive impacts on the entrepreneurship of alumni. This finding is consistent with research by Weber et al. (2009), which finds that the strength and consistency of students' engagement in college impact their proclivity for entrepreneurship. However, Activity has a lower significance level ($p < .1$) and a weaker marginal impact on entrepreneurship (.049). Overall, the results are consistent with H1 and H2.

VI. Limitations

There are material limitations to the observed data that may impact the results and conclusions of this study. The most notable limitations stem from the Family Educational Rights and Privacy Act (FERPA), a federal law that mandates the confidentiality of student education records. As a result of FERPA, this study is unable to make use of any alumni data that is not publicly available information. Furthermore, key variables such as GPA, racial identity, socioeconomic status, and gender identity are omitted from the data set, despite their potential influence on alumni outcomes. This limitation is unlikely to significantly alter the results of the study, however, given the alumni's key commonality of attending Claremont McKenna College.

When defining entrepreneurship, Levine & Rubinstein (2013) find that it is valuable to distinguish entrepreneurs from individuals who are self-employed, as well as startups from small business. However, the available data on alumni work experiences does not include information that would help classify each position and firm into these categories. I define entrepreneurship based on job titles; that is, alumni that have reported at least one job position containing one of the keywords in *Table 1* are defined as having pursued entrepreneurship. Furthermore, alumni who are self-employed and/or work for small businesses are likely to be synonymous with entrepreneurs in this study. Given the relative infrequency of self-employment, as well as conflicting opinions as to what constitutes "entrepreneurship," (Diandra & Azmy, 2020) this will not heavily disrupt the results or conclusions of this study.

Self-Report Bias

Given the nature of the data on alumni work experiences, the analysis may suffer from self-reporting bias. Alumni are not obligated to list every position they have held on LinkedIn; hence, the observations may not be comprehensive representations of alumni's career trajectories. Furthermore, there may be alumni that engaged in entrepreneurship yet chose to exclude the respective positions from their LinkedIn profiles, or that self-reported job title that did not contain one of the selected keywords. To mitigate self-report bias, this study observes alumni that graduated in the last ten years; I posit that recent alumni are more likely than older alumni to accurately report each job position held since graduation.

Sampling Bias

Sampling bias could pose another limitation to the results. According to Walter et al. (2012), the university setting can directly affect student outcomes; that is, universities that display traits conducive to entrepreneurship are more likely to influence students to pursue entrepreneurship (Walter et al., 2012). As a result, my sample group is unlikely to be representative of the population given the unique institutional qualities of Claremont McKenna College (e.g., selectivity, curricular emphasis, size). Additionally, I was only able to observe 219 alumni, which is not a robust sample size. As a result, the empirical results have reduced statistical power.

Omitted Variable Bias

Finally, as a result of the limitations posed by FERPA, the empirical analysis may contain omitted variable bias. Specifically, extracurricular involvement may be influenced by demographic variables excluded from the model such as racial identity,

socioeconomic status, and gender identity (Kam et al., 2014). While the model controlled for academic majors, it was not able to control for GPA given that the data is confidential. Given potential endogeneity, it will therefore be difficult to infer causal claims about the relationship between extracurricular involvement and entrepreneurial outcomes of Claremont McKenna College alumni. The results are nevertheless valuable for identifying a positive association between extracurricular involvement and entrepreneurship.

VII. Conclusions

The purpose of this paper is to contribute to the existing literature attempting to identify the factors which shape entrepreneurs as young adults. While previous research has examined the impact of university programs on entrepreneurial outcomes, the estimation approaches and empirical findings vary widely. My research is one of the first research studies that quantitatively examines the impact of college extracurricular activities on entrepreneurial outcomes. Using a probit model that controls for academic majors, I find that two extracurricular variables are associated with increases in the probability of entrepreneurship. Overall, the probability of entrepreneurship for a student who held a club leadership position or participated in a research institute is higher than for a student who did not. Additionally, I find that increasing the number of extracurricular activities participated in correlates with an increase in the probability of entrepreneurship.

My results have a few key implications for policymakers, universities, and aspiring entrepreneurs. To promote entrepreneurship, policymakers and university administrators could use this data to justify investments in certain extracurricular programs and allocate resources more efficiently (Kam et al., 2014). Additionally, college students that are interested in entrepreneurship could use this research to make more informed decisions about how they would like to become involved in extracurricular programs (Kam et al., 2014). Given the evidence, colleges should prioritize both leadership and research opportunities for students that are interested in aspects of entrepreneurship. Similarly, students that are aspiring entrepreneurs should not

strictly focus on academics; they should also become involved in club leadership and research opportunities outside of the classroom.

Future research in this field should analyze a dataset with a larger and more diverse sample group, as well as more extracurricular variables. This would be more representative of the population and account for institutional nuances. Additionally, previous literature suggests that future research should observe individual-level factors that may predispose students toward entrepreneurship prior to their participation in entrepreneurship programs (Kam et al., 2014). These factors include, but are not limited to, gender, race, and socioeconomic status. Lastly, future research should explore ways of measuring entrepreneurial outcomes that mitigate self-report bias. Overall, this study is one of the first to examine the impact of college extracurricular involvement on entrepreneurial outcomes, and it suggests that additional research should be conducted to examine the topic further and address the limitations.

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IX. Appendix

Table 3. Athletic Participation: Entrepreneurs vs. Non-Entrepreneurs

Non-Entrepreneurs			
	Freq.	Percent	Cum.
No Athletic Participation	104	65.00	65.00
Athletic Participation	56	35.00	100.00
Total	160	100.00	

Entrepreneurs			
	Freq.	Percent	Cum.
No Athletic Participation	46	77.97	77.97
Athletic Participation	13	22.03	100.00
Total	59	100.00	

Table 4. Scholar Communities: Entrepreneurs vs. Non-Entrepreneurs

Non-Entrepreneurs			
	Freq.	Percent	Cum.
Non-Scholar	136	85.00	85.00
Scholar	24	15.00	100.00
Total	160	100.00	

Entrepreneurs			
	Freq.	Percent	Cum.
Non-Scholar	48	81.36	81.36
Scholar	11	18.64	100.00
Total	59	100.00	

Table 5. Resident Assistants: Entrepreneurs vs. Non-Entrepreneurs

Non-Entrepreneurs			
	Freq.	Percent	Cum.
Non-RA	144	90.00	90.00
Resident Assistant	16	10.00	100.00
Total	160	100.00	

Entrepreneurs			
	Freq.	Percent	Cum.
Non-RA	54	91.53	91.53
Resident Assistant	5	8.47	100.00
Total	59	100.00	

Table 6. Club Leadership Occupancy: Entrepreneurs vs. Non-Entrepreneurs

Non-Entrepreneurs			
	Freq.	Percent	Cum.
No Club Leadership	136	85.00	85.00
Club Leader	24	15.00	100.00
Total	160	100.00	

Entrepreneurs			
	Freq.	Percent	Cum.
No Club Leadership	30	50.85	50.85
Club Leader	29	49.15	100.00
Total	59	100.00	

Table 7. Research Institute Participation: Entrepreneurs vs. Non-Entrepreneurs

Non-Entrepreneurs			
	Freq.	Percent	Cum.
No Research Institute Participation	120	75.00	75.00
Research Institute Participation	40	25.00	100.00
Total	160	100.00	

Entrepreneurs			
	Freq.	Percent	Cum.
No Research Institute Participation	38	64.41	64.41
Research Institute Participation	21	35.59	100.00
Total	59	100.00	

Table 8. Two-sample t-test for Difference in Means Between Entrepreneurs and Non-Entrepreneurs

	Obs	Mean	Std. Err.
Non-Entrepreneurs	160	1.89	.07
Entrepreneurs	59	2.24	.14
Combined	219	1.99	.07
diff		-.345	.145

diff = mean(0) – mean(1)

H₀: diff = 0

t = -2.36

Degrees of freedom = 217

Ha: diff < 0

Pr(T<t) = .0095

Ha: diff != 0

Pr(|T|>|t|) = .02

Ha: diff > 0

Pr(T>t) = .9905

Table 9. Major Category Definitions

Major Category	Majors Included
<i>Economics</i>	Economics, Economics-Accounting
<i>Government</i>	Government, International Relations
<i>STEM</i>	Biochemistry, Biology, Biophysics, Chemistry, Environmental Analysis, Mathematical Sciences, Molecular Biology, Neuroscience, Organismal Biology, Physics
<i>Humanities</i>	Asian Studies, Classical Studies, Film Studies, French, Literature, Middle East Studies, Philosophy, Religious Studies, Spanish
<i>Social Science</i>	American Studies, History, Psychology
<i>Philosophy, Politics and Economics (PPE)</i>	Philosophy, Politics and Economics (PPE) ⁷

⁷ Definition: “The Tutorial Program in Philosophy, Politics, and Economics (PPE) at Claremont McKenna College is a specially designed, enrollment-limited, interdisciplinary major. It is adapted from a similar program at Oxford University and makes use of small seminars and tutorials to encourage students to develop their expository skills. Students apply for acceptance in the program in the fall of their sophomore year and usually start the program in the spring semester of the sophomore year.” (Philosophy, Politics and Economics at Claremont McKenna College, n.d.)

Table 10. Summary of Majors: Entrepreneurs vs. Non-Entrepreneurs

Non-Entrepreneurs

Major Category	Freq.	Percent
Economics	86	53.75
Government	32	20.00
STEM	34	21.25
Humanities	16	10.00
Social Sciences	16	10.00
Philosophy, Politics and Economics	16	10.00

Entrepreneurs

Major Category	Freq.	Percent
Economics	27	45.76
Government	8	13.56
STEM	6	10.17
Humanities	6	10.17
Social Sciences	2	3.39
Philosophy, Politics and Economics	10	16.95

Table 11. Regression Results for Entrepreneurship Based on Extracurricular Variables

Entrepreneurship	Coef.	Std. Err.	p-value	Sig
Athlete	-.271	.223	.224	
Scholar	.03	.281	.914	
RA	-.134	.368	.716	
Lead	1.053	.217	0	***
Research	.458	.24	.057	*
Activity	.209	.101	.04	**
Constant	-1.393	.263	0	***

Mean dependent var	0.269	SD dependent var	0.445
Pseudo r-squared	0.141	Number of obs	219
Chi-square	35.862	Prob > chi2	0.000
Akaike crit. (AIC)	233.347	Bayesian crit. (BIC)	257.070

*** $p < .01$, ** $p < .05$, * $p < .1$

Average marginal effects

Number of obs = 219

	Marg. Prob.	St. Err.	z	P>z
Athlete	-0.076	0.062	-1.220	0.221
Scholar	0.009	0.079	0.110	0.914
RA	-0.038	0.103	-0.360	0.715
Lead	0.297	0.051	5.770	0.000
Research	0.129	0.066	1.940	0.052
Activity	0.059	0.028	2.110	0.035

Table 12. Impact of Extracurricular Variables on Entrepreneurship Controlling for Academic Majors

	Coef.	Std. Err.	p-value	Sig
Entrepreneurship				
Athlete	-.177	.237	.456	
Scholar	-.148	.301	.624	
RA	-.297	.416	.475	
Lead	1.082	.229	0	***
Research	.6	.26	.021	**
Activity	.186	.105	.076	*
Econ	-1.079	51.758	.983	
Gov	-1.024	51.758	.984	
STEM	-1.242	51.758	.981	
Humanities	-.256	51.759	.996	
SocialSci	-1.27	51.759	.98	
PPE	-.299	51.758	.995	
Constant	-.397	51.758	.994	

Mean dependent var	0.269	SD dependent var	0.445
Pseudo r-squared	0.186	Number of obs	219
Chi-square	47.443	Prob > chi2	0.000
Akaike crit. (AIC)	233.765	Bayesian crit. (BIC)	277.823

*** $p < .01$, ** $p < .05$, * $p < .1$

Average marginal effects

Number of obs = 219

	Marg. Prob.	Std. Err.	z	P>z
Athlete	-0.047	0.063	-0.750	0.455
Scholar	-0.039	0.080	-0.490	0.623
RA	-0.079	0.110	-0.720	0.473
Lead	0.288	0.051	5.600	0.000
Research	0.160	0.067	2.390	0.017
Activity	0.050	0.027	1.810	0.071
Econ	-0.287	13.777	-0.020	0.983
Gov	-0.272	13.777	-0.020	0.984
STEM	-0.331	13.777	-0.020	0.981
Humanities	-0.068	13.777	0.000	0.996
SocialSci	-0.338	13.777	-0.020	0.980
PPE	-0.080	13.777	-0.010	0.995