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Analysis of Alumni Giving
Based On Student Activity Involvement:
Multivariate Logistic Regression Modeling

Michael Speight

A dissertation submitted to the Graduate Faculty of

JAMES MADISON UNIVERSITY

In

Partial Fulfillment of the Requirements

for the degree of

Doctor of Philosophy

School of Strategic Leadership

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FACULTY COMMITTEE

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Margaret Sloan

William Ritchie

Dedication

This dissertation is dedicated to my family and friends who, without their support, encouragement, and grace, none of this would be possible. There are many things I am proud of achieving with this research and throughout my degree work. All of these accomplishments, though, stand secondary to the greatest accomplishment of my life -- marrying my wife. A special dedication to her, Marilyn, who is my rock and who has given me the constant support and time needed to accomplish this goal.

To my twin daughters, Cameron and Elisabeth, you are my greatest joy. I hope this work inspires you to always continue learning and I am so happy to say, “no daddy does not have to do school work today.” To my mother, Senta, thank you for always believing in me and supporting my educational pursuits. To my late father, Tom, thanks for watching over me.

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A big thank you to my committee chair and advisor, Dr. Ben Selznick. His general demeanor and positive outlook were such points of consistency that I gravitated to throughout this dissertation and coursework. Thank you Dr. Margaret Sloan, for serving on this committee, and providing general fundraising knowledge on this project and encouraging me to participate in classes that could enhance my understanding of non-profit fundraising outside of post-secondary sector. Thank you Dr. William Ritchie, for serving on this committee, and offering your insight on organization commitment that helps explain the findings of this analysis relative to the unique world of post-secondary philanthropy.

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Abstract

Little research has uncovered clear results on why post-secondary alumni give or which alumni might be more inclined to give. The most significant predictor of future giving for alumni to their alma mater is past giving (Okunade and Justice, 1991). This creates an unfortunate situation for today's post-secondary leader, where they need to be more reliant on fundraising results to overcome budget shortfalls while knowing their fundraising staffs only have the ability to determine the likelihood of an alumni to give through meeting with them. This problem is only more exacerbated for public post-secondary leader, who has dealt with dwindling state support for years (Mitchell et al., 2018). The goal of this analysis was to see if we could identify alumni more likely to donate based on involvement in certain student activity types. From there, those involved in fundraising and leading post-secondary institutions could then have segmented group of alumni more likely to donate that they can focus solicitations on. In this analysis multiple logistic regressions are conducted to show the impact of participating in at least one of eight student activity types on making at least one gift six to nine years removed from graduation. The findings show that involvement in any of the eight student activity types measured will increase the likelihood of alumni giving, with those participating in varsity sport, greek, or campus leadership activities being over 2 times more likely to give.

Chapter 1: Introduction

Since the late 1980s, the cost of attending a post-secondary institution in the United States (US) has been increasing at annual rate of 2.6% for a four-year university (Maldonado, 2018). These rising costs have thrust the financing of post-secondary education into the national spotlight, where discussions of free college and student-debt forgiveness became a major policy initiatives for the United States 2020 presidential election (Custodio, 2020). At the state level, legislators all across the country have been putting forward bills aimed at curbing or halting tuition increases for the public institutions they control. In Virginia, over twenty bills were filed during the 2019 legislative session aimed at stopping or halting tuition increases in the Commonwealth (Teran-Tapia, 2019). While no bills passed, the actions of the Virginia General Assembly 2019 session did create a larger spotlight on why tuition costs are rising so rapidly. In December 2019 prior to the 2020 legislative session, Governor of Virginia Ralph Northam passed the G3 program to help many Virginians who are opting out of higher education due to the cost. With the G3 program, low- and middle-income students who pursue high-demand degree programs at community colleges in Virginia will not have to pay tuition and can receive additional grants to help underwrite expenses associated with attending a post-secondary institution (Virginia Governor, 2019). Although this efforts shows a commitment to making a post-secondary education more affordable for Virginians, it also suggests that it is more feasible for Virginia to create this type of program than reduce tuition at four-year post-secondary institutions in the state.

State funding for public post-secondary education has reduced significantly over the last twenty years. In 1990 state per-student funding was almost 140% more than that of the federal government, but since 2010 state backing has been reduced to a point where it is on par with

federal government per student funding (“Two Decades of Change in Federal and State Higher Education Funding”, 2019). The first sign of decreased state support started during the dot-com bubble of the 2000s and accelerated during the Great Recession of 2008. As a result, “nearly every state has shifted cost to students over the last 25 years, with the most drastic shift occurring since the onset of the Great Recession” (Mitchell et al., 2018). With a reduction in funding from states throughout the US, many if not all public institutions were left with a budget shortfall that could only be fixed through raising tuition. To keep tuition down in 2019, Virginia’s General Assembly incentivized all the state’s universities to not raise tuition rates for in-state students in exchange for \$52.5 million in additional funding for the upcoming school year (Korth, 2019). With most state institutions in Virginia accepting this proposal, schools have turned even more to fundraising as a revenue source.

At the same time state funding was declining, institutions across the post-secondary landscape were rightly acknowledging that the cost of delivering education was rising. Between 2000 and 2012, public and private post-secondary institutions expanded their payrolls more than 50 percent faster than the previous decade (Schoen, 2016). Much of this staff increase coincided with enrollment increases and more student services offerings. Relative to other countries, data from Organization for Economic Cooperation and Development shows the US spends a startling amount of money on nonteaching staff (Ripley, 2018).

While the early 2000s enrollment spike were an explanation of rising tuitions, today increases in the cost of delivering education according to post-secondary leaders is actually enrollment declines. For the 2018-2019 academic year, college enrollment in the US decreased 1.7%, marking the eighth consecutive year the US has seen declined enrollments (Fain, 2019). Furthermore, when looking at population projections, the eligible pool of traditional college age

students is expected to decrease for the next 10 to 20 years (Archibald & Feldman, 2011). With tuition now more important than ever in budget development, institutions made efforts to increase their attraction among a smaller pool of students through increased spending on non-teaching services and amenities.

Added costs to attracting students left all post-secondary institutions, but especially public institutions with dwindling state support, scrambling to look for alternative sources of revenue. Naturally, the one lever institutions controlled as a source of revenue, tuition, was an easy one to pull. However, as seen in a state like Virginia, public institutions are often policy constrained on how much they can raise tuition (Selingo, 2017). Douglas Weber, a Temple University economics professor and researcher on the effect of state budget decline on tuition highlights the difficulty public institutions have in using tuition to make up for a cut in state funding. “I find that for every \$1,000 reduction in state and local funding, the typical student pays an additional \$257 in tuition and fees, with some variation in this estimate across institutional type” (Webber, 2017, p. 4). Using Webber’s estimates, an assumption can be made that institutions can only make up approximately $\frac{1}{4}$ of their budget from tuition due to decreases state funding.

In having limited control on how much they could raise tuition, institutions began looking toward other revenue sources as a way to make up for a potential budget shortfall. While there was hope that state cutbacks would make colleges more efficient, they actually made colleges more aggressive in how they go after revenue to make up for lost state support (Ripley, 2018). For public institutions, one prominent idea was to recruit more out-of-state or international students who pay a substantially higher tuition cost than their in-state counterparts. Sometimes the cost of out-of-state tuition can be more than double the cost of in-state tuition as seen with

some of the schools in the University of California system (Archibald & Feldman, 2011). These institutions are limited though by the state legislators that control them on how many out-of-state students they can enroll. In the University of North Carolina system, schools must not exceed a legislative cap on out-of-state enrollment at 18% (Simonton, 2019). Although the amount state institutions can register out-of-state students varies, they all have a threshold they cannot exceed when it comes to their enrollment. Unfortunately, regardless of how aggressive institutions have become, there is not an easy solution to make up for a shortfall in state funding.

Public institutions do have no limits on how much they can receive in philanthropy, aside from what their constituents are willing to give them. As seen with private institutions since their inception, philanthropy can help meet the needs of the institutions when government funding is not available (Thelin & Trollinger, 2014). To that end, there is a prominent belief shared by many public post-secondary institution leaders that fundraising can make up for reductions in funding and act as a governor on tuition costs. Philanthropy as a source of income for four-year public universities is now an expected part budgets across the nation (Rau, 2014).

While fundraising can incorporate giving from multiple constituents of an institution, fundraising is primarily centered on alumni contributions. In 2017, of the \$43.6 billion that went to support post-secondary institutions, as reported by the Council for Aid to Education, 26.1% of support came from alumni (Seltzer, 2018). With the rise in donor advised funds and giving through family foundations for wealthy donors, it is likely the amount of support for alumni could be even higher.

Given the budgetary pressures felt at many institutions and with alumni being a logical donor to their alma mater, scholarship on fundraising for post-secondary institutions has focused on how institutions can raise more funds from alumni. Collective research findings suggest that

alumni engagement is related to alumni giving, where higher levels of alumni engagement lead to higher likelihoods of giving (Drezner, 2011). Further findings indicate participation in student activities as an undergraduate to influence alumni involvement in the form of giving (Monks, 2003; Oglesby, 1991; Steeper, 2009).

Study Rationale

The importance of this study is profound when considering the reliance many public post-secondary institutions now have on alumni fundraising to balance their financial budgets, which is expected to be even more pronounced in the coming years due to the COVID-19 pandemic that has affected revenues from the spring 2020 semester and beyond. An analysis of past research has shown relationships between undergraduate involvement in student activities and alumni giving (Drezner, 2011). Foundational work on alumni giving has showed that the more activities students are involved in as undergraduates, the more likely they are to contribute financially to their alma mater as alumni (Miller & Casebeer, 1990). While much research has built on the general idea that involvement in student activities positively affects alumni giving, little research has shown how involvement in different types of student activities impact alumni giving. In Gaier's (2005) seminal work on alumni involvement, he even suggested a need for scholarship to delve into the different effect between certain student activities on alumni giving.

“Further research is needed to explore factors associated with the undergraduate experience and their impact on alumni involvement. Subsequent research should focus on the interaction of these factors. Research needs to explore the specific factors associated with undergraduate experience and their impact on alumni involvement” (p. 288).

There is a clear benefit to understanding how participation in different types of student activities might affect alumni giving clear by providing those involved in fundraising a group of

alumni more likely to donate. Additionally, there is also a significant leadership rationale for this and two main reasons this research can help post-secondary leaders. First, with limited fundraising budgets, there is a need for development offices to be more strategic in how they utilize their fundraising budgets. By finding subsets of the alumni population that might be more inclined to give based on involvement in certain student activities, university leaders can allocate fundraising resources to those alumni segments (Rau, 2014). Second, with budget pressures expected to remain if not grow, university leaders can use this research to help mold current students into future alumni supporters. Should specific student activities be found to increase the likelihood of giving as alumni, university leaders can try to extrapolate what in those student experiences led to an increased propensity to give (Gaier, 2005). Then, leadership can provide similar student engagement opportunities to a larger segment of the student body and create a larger pool of alumni that might support.

Purpose

The purpose of this study is to determine if engagement in certain student activities alone lead to a higher likelihood of giving as alumni six to nine years from graduation. To best isolate the effect of participation in student activities on alumni giving, it is important for this research to remove giving timeframes that involve an instances where peer pressure, increased outreach by fundraisers, or individual circumstances related to income could be reasons alumni support their alma mater.

Recently, giving campaigns directed at graduating seniors have become common at many post-secondary institutions based on fundraising best practices showing that the earlier alumni donate the more likely they are to continue donating in the future. While the benefit of getting alumni to give right after graduation has be proven by Meer (2013) and many others, it also

sheds light on the lack of philanthropic decision making in senior year class giving scenario. At Dartmouth, when the graduating class of 2010 had a giving rate of 99.9%, students acknowledged they felt pressured to give and were made to feel their gifts were more of a tax (Ensign, 2010). Furthermore, with increased contact to alumni around reunion giving at 5-year points from graduation from the institution this dataset came from, gifts from those within five years of graduation will not be included.

Many studies on giving to post-secondary institutions have also focused on older alumni, where alumni are more than likely in their highest income earning years. This notion is commonly referred to as the life-cycle hypothesis, which states the donations are viewed as goods and services, and can increase as income does relative to age (Okunade et al., 1994). An analysis of alumni giving at post-secondary institutions found studies using the life-cycle hypothesis as a basis for analyzing giving fifteen to twenty years from graduation (Naccarato, 2019). There is a gap in scholarship to analyze alumni at this point since past research has frequently either looked at alumni giving right after graduation or years removed when wealth is assumed to be the highest.

In most cases, young alumni giving is considered by post-secondary institutions as alumni who are within 10 years of graduation (Council for the Advancement and Support of Education). Best practices have shown institutions to pay closer attention to attracting more recent graduates who fit into their young alumni giving criteria. At the University of Notre Dame, a special club called Williams Corby Society was created for graduates within the past 10 years, where to join it costs a \$250 donation for graduates within the past year and a \$500 donation for graduates within the past 10 years (Council for the Advancement and Support of Education, 2012). All members of the club receive equal benefits, which means the University

of Notre Dame is mostly likely paying more per average offering amenities to those who have graduated within a year and those who have graduated within 10 years. Similar to the logic behind senior year giving, this practice of discounting benefits to younger alumni shows the efforts post-secondary institutions take to have a better chance at creating a lifetime alumni donor.

While enticing the next alumni donor may involve spending more resources on them right after graduation instead of a few years removed from graduation, it also involves identifying commonalities among alumni that resonate with all. This has become more difficult with their being less and less of a ‘typical’ college student in terms of age. Enrollment at colleges by those 25 or older has been steadily increasing for decades, and increased by 11 percent between 2006 and 2016 (Bauer-Wolf, 2019). Despite this increase in enrollment for those 25 and above, the majority of students pursuing a bachelorette degree at four-year public and private post-secondary institutions remain under 25 years old. According to the National Center for Education Statistics (NCES), percentage of full-time undergraduate students at public and private 4-year institutions who were under age 25 was 90 percent and 87 percent respectively (2020). Such statistics provide some sense of confidence that the majority of graduates at the post-secondary institution being studied in this analysis become alumni at around their early to mid-twenties. To that end, this analysis captures alumni at a point when they might have more resources to give, as research has found the growth rate of donations coinciding with the age-income profile of donors (Olsen et al., 1989; Naccarato, 2019).

Research Questions

This study focuses on alumni who graduated during the period 2000-2009, with the categorical dependent variable being whether or not alumni made at least one gift over a four-

year period six to nine years after graduation. For example, alumni who graduated in 2000 would be coded with a 1 if they made a gift and a 0 if they did not make a gift between the university fiscal year of 2007 to 2009.

RQ1: Does the likelihood of donating to one's undergraduate institution six to nine years after graduation increase with greater involvement in student activities?

RQ2: To what extent does participation in specific student activities influence donative behavior to one's undergraduate institution six to nine years after graduation?

Student activities will be grouped based on data provided by mid-Atlantic university advancement office and existing scholarly works related to alumni giving that categorized student activities. In one study on alumni giving, student activities were grouped into seven categories: social group, affinity group, academic club, arts group, campus leadership group, fundraising groups, and varsity sport groups or intramural activity groups (Holmes, 2009). Another study found correlations toward greater levels of alumni giving when students actively participated in; student government, intercollegiate athletics, performing arts/ music, fraternities or sororities, religious groups, and residence hall life (Monks, 2003). Further research specific to large public post-secondary institutions also points to classification of fraternity and sorority involvement as an independent student activity to be analyzed, and that members of Greek organizations give less than those involved in other types of student activities or those who graduated with honors (Okunade et al., 1994).

For this analysis, student activities will be grouped into the following subsets; varsity, service, intramural, interest, greek, campus leadership, arts, and academic. To ensure we are analyzing how participation in certain student activities effects alumni giving, we will also be controlling for a variety of factors found to affect alumni giving. Previous research found alumni

demographics such as; graduation year, college graduated from, sex, location, and wealth impact alumni giving (Drezner, 2011). These controls will be included in our analysis as predictor variables for our model.

Chapter Summary

To sustain budgetary operations, the current reality is that all post-secondary institutions need to fundraise from their alumni at the same or improved rate. It is important to isolate factors that help institutions be more efficient in cultivating and ultimately soliciting alumni who are more inclined to support. Drawing connections between certain student activities and alumni giving is an essential step in helping institutions learn about what happens through participation in a student activity that leads an alumnus to give, and apply that knowledge to future fundraising campaigns. In tough budgetary times such findings could help institutional leadership decide on what student activities they should financially support, knowing there is a chance spending on that type of activity may lead to future alumni giving.

Chapter 2: Literature Review

Introduction

Based on the increased need for philanthropic support to drive financial budgets at most post-secondary institutions, researchers are paying more attention to understanding the reasons why people give and incorporating those findings into their fundraising efforts. To accurately study fundraising in the post-secondary sector, it is important to uncover the history of fundraising in the United States and how that history impacted fundraising for post-secondary institutions. In this chapter, I will begin with what history credits as the formulation of the US philanthropic culture. From there, I will move into a review of how early philanthropy in the US impacted post-secondary education and the eventual transition to a focus on alumni giving as the main philanthropic driver for institutions. While alumni giving is clearly the center point for post-secondary giving today, it was not always the case as institutions had only a small number of enrollees and subsequent graduates.

With the foundation of post-secondary philanthropy established, this chapter will move to a review of overall effects on philanthropy associated with student engagement. In doing this, I will provide validation to the effects of engagement in student activities on other student and alumni outcomes that could then be applied to alumni giving. Next, I will discuss peer-reviewed scholarship looking at the impact of student engagement on alumni giving to help endorse the selection of variables used for this study. Then, I will examine existing theoretical frameworks used to analyze alumni giving and provide an explanation of the framework to be used in this research. Lastly, I will touch on the implications this research can have for post-secondary leaders as they navigate challenging financial times.

History of Philanthropy in the United States

The role of philanthropy varies throughout the world, with the need for philanthropy relative to the role of a country's governing body. In the United States, philanthropy is unique compared to all developed countries and exists to serve citizens in a capacity typically assigned to governments or administrations in other societies (Tempel & Mortimer, 2001). The early views of philanthropy in America were developed by early colonists and the English laws that influenced them. The Statute of Charitable Uses and The Elizabethan Poor Law were key in the formation of initial views on philanthropy (1601). For early Americans, the charge was to help those who were deemed to live in poverty by giving to the government, although giving was only encouraged socially and not formalized, often happening at an individual's discretion. The obligation to help the poor was most strongly thrust upon the rich, as they had the most excess to give (Mather, 2003).

Despite the enthusiasm for philanthropy, organization around giving did not begin until the 1800s, when a shift from unsystematic individual charity to structured and goal-oriented fundraising started to occur. At that point in American history, individual giving alone had not worked to aid the impoverished because individuals did not have the required knowledge to make a difference from solely donating money. Andrew Carnegie, a popular 19th century Scottish-American industrialist and philanthropist, was a strong advocate against individual giving. "But the amount which can be wisely given by the individual for individuals is necessarily limited by his lack of knowledge of the circumstances connected with each" (Carnegie, 1889, p. 663). However, by the 1900s, foundations became popular among the wealthy with John D. Rockefeller establishing the Rockefeller Foundation in 1913 (Thelin, 2017).

Even with the rise of personal and family foundations over the past hundred years, individual giving still makes up a large portion of the charitable giving done in the United States, but not as high as it once was. Giving by individuals was less than seventy percent of total giving for only the second time ever, while giving by foundations has grown in nine of the last 10 years (Giving USA, 2020). Recent changes to tax law and the subsequent financial benefits for individuals to create foundations for charitable giving has helped contribute to a rise in giving from foundations. Regardless of whether people give personally or through a foundation, it is hard to estimate the role US laws have on individual giving by allowing charitable contributions to offset tax expenses. “I think if it were not for the savings in taxes—the notion that the government really is participating in a gift—I think there would be an awful lot less giving” (Odendahl, 1987, p. 1). Research has proven this, where an estimated increase in marginal tax rate from 40 to 30 percent results in roughly 15 percent increase in the cost of giving and would therefore reduce giving by some 18.6 percent (Weisbrod, 1988). Should the current or future administration put through large policy shifts that affect tax rates and/or charitable deductions, we should expect a change in trends related to US philanthropy as we have seen from other legal changes.

With the popularity of philanthropic giving in the US, more attention has been given to uncovering shared characteristics between donors. Many surveys have looked to provide simple averages on national giving trends by various demographics such as gender, age, marital status, income, ethnicity, and education, to name a few. It can be very dangerous to apply these statistics to all donor populations though, as donors to an individual philanthropic organization may vary tremendously compared to national data (Wilhelm, 2007). Additionally, it is hard to measure one characteristic of a donor relative to how all their other characteristics together might

impact giving. Research has prominently shown Whites to give more than any other racial group, however the effect of race and ethnicity on giving disappears when taking into consideration other variables such as income or age (Yen, 2002). One factor of a donor is not the sole reason they give, rather a part of a multitude of factors on why they give. Another difficulty in applying these giving statistic stems from the fact that the data is static. Giving does not occur in a vacuum and rather is impacted by changes to a donor's circumstances since the time of their last gift (Sargeant & Shang, 2010).

Although individual factors associated with a donor affect their propensity and ability to support a philanthropic organization, research has uncovered theoretical models to explain how individuals come to determine their thoughts on giving. The expectancy-value model says that a donor's attitude toward giving is calculated by the value associated with what they are supporting and how donating may lead to the desired outcome (Ajzen, 1991). In other words, when a donor perceives the value of what a philanthropic organization provides to be high like curing cancer and they believe their donation will help the organization cure cancer, we would expect them to support that philanthropic organization. Next, the appraisal-based model suggest that the actions of a donor are a result of expected consequences from giving (Davis, Bagozzi, & Warshaw, 1992). These consequences could be favorable or unfavorable in getting a donor to give, and these perceived outcomes from donating are the prominent factors in how individuals make a decision to donate. Both of these models help understand the actions of individuals in regards to giving, they also underscore the importance of individuals being solicited. Donors first must be solicited by a charity, and then their existing knowledge frames potential outcomes and consequences of support (Sargeant & Shang, 2010). Without being asked, no philanthropic organization, not even those like post-secondary institutions with a pre-inclined subset of

individuals like alumni can expect much fundraising success. The success of this research will be in its' ability to provide development offices with a group of alumni more likely to increase the amount or frequency of their giving if solicited.

Philanthropy in Post-Secondary Education

Due to the limited means of the colonies from an individual and state perspective, donor support from the few with wealth was a hallmark of the first post-secondary institutions founded in the United States. “Whether in 1816 or 2016, philanthropy was viewed by trustees as a means of survival” (Thelin, p. 227, 2017). Due to the uncertain nature of state support all institutions looked toward the benefits of private philanthropy (Curti & Nash, 1965). For the earliest founded institutions, state provided financial support was only a major factor in the beginning of William and Mary (Thelin, 2017). The early American economy could not support its own charitable activities let alone the founding and supporting of colleges (Rudolph, 1990). Much of the needed support came from donors in Britain and lead to the establishment of private non-state supported institutions. A great example of this can be seen with two of the more prominent and oldest colleges in the United States, Harvard and Yale. While not the founders, Englishmen John Harvard and Elihu Yale were the first substantial private benefactors of collegiate education in New England, hence the schools bearing their name (1990).

Support from the Old World left the colonies after the American Revolution, which lead to more formalized state support of higher education. By the 19th century, efforts were underway in the form of state founded institutions in a host of states. Prior to the Civil War, records show discussions about public institutions were happening in Georgia, Ohio, Tennessee, North Carolina, Maryland, South Carolina, and Kentucky (Lucas, 1994). Early donations to colleges from colonists were often small due to the economic hardships of the times sometimes coming in

the form of goods like candles, blankets, and books instead of money. Although these gifts were small in size, they have been shown to be extremely significant due to the foundation of philanthropic support around post-secondary education they created (Curti & Nash, 1965). Even with limited resources for higher education up until the nineteenth century, the most successful institutions were those who were accomplished in fundraising by having created a culture of giving (Drezner, 2011).

Much like overall giving in the US, giving to post-secondary institutions was initially unorganized, becoming much more formalized around the 1900s. Harvard began the formalization of fundraising when they hired the firm of John Price Jones in 1919 to handle the institution's \$15 million endowment campaign (Cultip, 1965). Soon after, public institutions moved toward in-house fundraising options as well. In 1940, Ohio State University is credited with starting the first alumni fundraising operation for a state-supported institution when they created The Ohio State University Development Fund Association (Meuth, 1993). At most post-secondary institutions, organized fundraising is now such a focal point of budgeting and financial operations that many development leaders are given titles of assistant vice president or even more elevated titles.

It was only after World War II and when institutional fundraising was more formalized that solicitation of alumni for support of their alma mater became commonplace (Drezner, 2011). As the supporters of institutions shifted from local colonists to alumni, donor proclivities on what to support changed as well. Alumni seemed most interested in supporting the growth of a campus in the form of buildings, later moving toward endowed funds directed at faculty members who they revered (2011). However, the movement toward faculty support created a battle of wills between the donor and administration that still exists today, where presidents often

are frustrated with donor giving restrictions that remove the right of an institution to be autonomous (Thelin, 2017). The need for institutions to adhere to donor stipulations regarding philanthropic support is heavily influenced by the competition institutions face from all non-profits along with other post-secondary institutions in attracting donations. Today, there are approximately 2,000 private and more than 1,500 public institutions that compete with each other for private support (Drezner, 2011). As a result, colleges are most likely going to continue to receive less unrestricted gifts from all types of donors including alumni donors than they did in previous year (Thelin, 2017).

With increased reliance on fundraising to balance budgets and increased competition for support among a growing list of philanthropic organizations including other post-secondary institutions, there is significant pressure to attract philanthropic gifts from those who institutions deem one of their own like alumni. Existing scholarship has shown effects from involvement in student activities on a variety of outcomes including giving as alumni (Hoyt, 2004, Monks, 2003). I hypothesize that involvement in student activities will have a positive effect on likelihood of alumni making a gift. Research has also suggested that not all types of student activity produce the same outcome, which leads me to hypothesize that not all student activities produce the same type of outcome related to alumni giving. At the conclusion of this research, I hope to provide fundraisers and those leading post-secondary institutions with alumni groups who are more likely to give than other alumni.

Student Engagement Research

Most scholarship around student engagement, which can be also described as student involvement, is built around a relationship existing between student engagement and various student outcomes, where change occurs from the time a student is first enrolled until they

graduate. The idea of studying student outcomes from college was popularized by Alexander Astin, who linked student satisfaction with the institution enrolled in as an outcome of student involvement (1984). The development of Astin's involvement theory rests on five core assumptions, with the third being most imperative to conducting research on student involvement. "The extent of a student's involvement in academic work, for instance, can be measured quantitatively (how many hours the student spends studying) and qualitatively (whether the student reviews and comprehends reading assignments or simply states at the textbook and day-dreams)." (1984, p. 298). Although the defining and quantifying of all types of student involvement is not always possible, Astin created the path for future research by showing that certain types of student involvement can be defined and quantified.

Student engagement theory postulates that actions of the student alone are not the only factors that influence engagement. An institution itself through its policies, practices, and culture, affects levels of engagement for its students (Kuh et al., 1991). With the relationship between engagement and student outcomes proven, Astin (1985) argued that all policies of an institution should be looked at in some capacity for their effectiveness on increasing student involvement. Not surprisingly, the most popular survey on student engagement the National Survey of Student Engagement (NSSE) looks to build on Astin's thought. Due to the effect an institution can have on student engagement and subsequent student outcomes, many surveys have been designed to evaluate institutional policies and practices comparable to the NSSE (Kuh et al., 1997).

Later research by Astin (1993) further showed the effect of student-student interaction on the undergraduate experience. As the found of the Cooperative Institutional Research Project (CIRP), this longitudinal study from Astin incorporated data from approximately 200 four-year

colleges and approximately 25,000 looking at student change over time from 1985 to 1989. With over 150 student input measures, and nearly 200 different environmental measures, student-student interaction was measured in a multitude of ways, but did specifically look at activities such as; intramural sports participation, being a member of a social fraternity or sorority, being in an elected student leadership position, and student club participation (Astin, 1993). In four measures of student satisfaction with their alma mater, student-student interaction has positive correlations with all satisfaction outcomes except facilities (1993). Foundational work showing that student engagement can have an effect on student experiences has led to a large amount of research trying to prove the magnitude or exact type of impact student engagement has on students.

Student engagement outcomes measured. Many studies have looked into the effect overall involvement in extracurricular activities has on a variety of student outcomes. In one study, the outcome of leadership development has been shown to be attributable to involvement in a number of co-curricular and extracurricular activities (Mayhew et al., 2016). An often-cited study regarding seminal scholarship on student outcome research demonstrated that students who were more invested in college activities, which included student club participation, became more committed to social activism over time (Sax, 2008). Further examining the effect of involvement in student activities, research has looked into parsing out student outcomes related to involvement in specific extracurricular activities.

One of the more popular research topics looking at student outcomes has been participation in Greek life. In multiple studies on quantitative learning gains, research has shown greater self-reported gains in cognitive ability for students affiliated with a fraternity or sorority than students not affiliated with a fraternity or sorority (Pike, 2003; Kinzie et al., 2007). This

goes against the common assumption that participation in fraternities and/or sororities may be detrimental to student learning. Another study by Routon and Walker (2014), found there was no difference between students participating in Greek life and those not participating on GRE, LSAT, GMAT, and MCAT. The effect of Greek participation on volunteerism has also been looked into by a small body of scholarship. Although causality has not been proven, research has shown students belonging to a fraternity or sorority to volunteer more than students who do not (Astin et al., 2011, Cruce and Moore, 2012).

Involvement in extracurricular activities that center on physical activity like intramural or varsity sports has been frequently studied as well. When looking at the effects of physical activity on student outcomes, research has found participating in intercollegiate athletics to support psychological wellness (Aries et al., 2004). Even without participation in varsity sports, simply playing sports and exercising were shown to have positive effects on mental wellness measured by increased socialization for those who exercised against those who did not exercise (VanKim and Nelson, 2013). Despite the generally positive effects on emotional wellbeing that have been seen from engaging in athletic activities, other measured outcomes have shown to be unaffected by engagement in athletics. According to Byun (et al., 2012), engagement in intramural sports does not significantly predict bachelor's degree completion. Moreover, studies looking at leadership development through participation in varsity sports or intramurals have shown mixed results, with studies pointing to marginal effects along with impact being affected by different factors associated with individual experiences (Mayhew, 2016, p. 211).

Research on the effect of participation in student organization focused around a particular interest like religion, ethnicity, etc. have shown mixed results on student outcomes. No effect was found in a study where participation in student organizations was one of the ways

spiritual/religious engagement was characterized. “Our findings also suggest that simply increasing spiritual/religious engagement does not in itself generate outcomes” (Rennick et al., 2013, p. 314). In a survey of 2,000 students from one institution, researchers found that ethnic organization membership was a significant predictor of ethnic identity and activism among minority students in the senior year of college (Sidanius, et al., 2004). On the other hand, later research pointed to engagement in campus activities regardless of being ethnically centered to facilitate the search for meaning among one’s own ethnic group (Tsai & Fulingi, 2012). Another study searched for differences in the effects from type of community service engagement on academic self-concept. Results showed participation in community service related to religion to be negatively associated with academic ability and achievement orientation (Berger & Milem, 2002).

Student outcome scholarship has also focused on the effects of an individual’s college major. Civic values defined as influencing political structure, influencing social values, and helping others who are in difficulty, were found to detract over their college experience for students majoring in science (Rhee & Kim, 2011). Other research pointed to majoring in social sciences as being associated with positive gains in civic values (Lott, 2013). The research on effects of academic major on civic attitudes seems to be mixed and without one definite result. In another study, graduating with a degree in the field of education was associated with increased volunteering (Cruce & Moore, 2012).

With scholarship proving that students are affected in multiple ways through involvement in extracurricular activities or even major, scholars looking into alumni giving have support for looking into the effect of these types of student experiences on the potential for alumni to donate after graduation. That being said, when thinking about the impact of student engagement, it is

important to acknowledge that there may be indirect effects of college that go unnoticed. “While major levers of institutional influence (e.g., residence halls) may not have substantial effects on student change in various areas, they do have important indirect effects, influencing other variables which, in turn, have a substantial impact on students” (Terenzini and Pascarella, 1991, p. 88). For example, graduating from a certain school or college within a post-secondary institution may not directly affect whether alumni give. There could be an effect on graduating from a certain school college in relation to earnings though, and thus there could be an indirect effect on whether alumni give related to the amount of capacity available which research has shown.

Effect of Student Involvement on Alumni Engagement

Building on research looking at various student outcomes from involvement in extracurricular student activities and the importance of alumni philanthropy for institutions, scholarship has studied the effects of involvement in student activities on alumni involvement. “The student experience is associated with the thoughts and feelings that alumni have towards the institution” (Rau, 2014, p. 14). While not clear on the degree of effect, a good student experience could lead to alumni having good thoughts about their alma maters and thus a stronger proclivity to give back. In 1990, research showed that strong relationships between alumni and their undergraduate alma mater impacted contributions (Duronio & Loessin, 1990). Mount (1996) published research on data collected in 1987 from surveys on donor and non-donor alumni of a Canadian post-secondary institution. The study attempted to explain how donors are different from non-donors and why they might give. Due to potential overlapping between the variables, a factor analysis was performed, leading to factors of joy, public recognition, commemoration, tax incentive, nostalgia, and help for the needy. The study found

joy to be the strongest predictor accounting for over twenty-six percent of the variance explained (1996).

Specific research on alumni giving points to an encouraging benefit from involvement in student activities. Active participation in university-sponsored activities that produces positive emotional attachment to an institution leads to a higher probability of alumni contributions (Hoyt, 2004). Early research on this topic studied the cumulative effect of participating or not participating in extracurricular student activities on alumni giving. Donors at the University of Georgia were found on average to participate in more club type with donors being involved in .574 clubs and non-donors .333 clubs, and those who participated in other termed extracurricular activities donors were found on average to participate in .322 activities and non-donors .172 (Miracle, 1977). In this study, club activities were defined as participation in Greek life, student government, varsity sports, and professional fraternity. Another study of 800 alumni from Southwest Baptist University (400 donor and 400 non-donor), surveyed graduates on 35 variables that literature suggested could discriminate between donor statuses. “This study found that donors had participated in 2.41 extracurricular activities while non-donors averaged 1.87 activities” (Oglesby, 1991, p. 229). Additionally, the type of extracurricular activity and its effect on donor status was studied. Alumni involved in student government had the most impact on whether alumni donated, which was explained by level of involvement for those in student government being higher than those in other extracurricular activities (1991).

To better describe the relationship between total numbers of activities participated in as a student and alumni giving, alumni of the University of Virginia who graduated between 1940 and 2002 were surveyed on overall time spent and quality of involvement in extracurricular activities. Whether alumni give or do not give was not found to be impacted by any of the

measures of student involvement used in this study, not even overall number of extracurricular activities participated (Steeper, 2009). These findings contradicted much of the previous research that found student involvement in extracurricular activities impacted alumni giving positively. However, other findings did show student involvement leading to positive alumni attitudes, which supported research discussed above. “Specifically, positive correlations between the quantity and quality measures of undergraduate student involvement as used within this study suggests that the creation of positive attitudes towards one's alma mater can be influenced during the undergraduate years and by both the quantity of student involvement and effort of engagement in those activities” (Steeper, 2009, p. 97). The significant effect of student involvement on positive alumni attitudes suggests a possible indirect relationship between student involvement and alumni giving, where those students who were more involved have a more positive attitude toward their alma mater as alumni and subsequently makes them more likely to donate.

Another study looked at that effect of numerous campus activities on young alumni giving across 28 selective institutions. Monks (2003) found that participation in student organizations like student government, varsity athletics, performance music or art, Greek life, and resident hall life were all correlated with higher levels of alumni giving, while those who participated in political student activities made smaller donations than those who did not participate in extracurricular student activities. In a longitudinal study on college students' beliefs and values, Astin and colleagues (2011) found that participating in student government and student organizations overall made moderate to strong impressions on charitable behaviors of college students.

Although the scholarship has some mixed findings on the impact of student activity involvement, there are some student activities that scholarship has consistently agreed on in how they impact alumni giving. Our campus leadership activity type includes student government, and it is expected that this research will show those being involved in campus leadership type activities to be more likely to donate than those involved in other student activity types. Also, this study anticipates those involved in fraternities or sororities and varsity athletics to be some of the student activity types to improve likelihood of alumni giving most compared to other student activity types. Our reviewed literature also suggests that student activity types categorized as service and interest are going to increase likelihood of giving less than the other student activity types in this analysis.

Prominent Factors that Influence Alumni Giving

With the amount of scholarship on alumni giving increasing over the past years, a few characteristics of charitable have been analyzed time and time again to see if they have a significant effect on likelihood of giving. Some of those common demographic variables and student characteristics analyzed and included in this study are discussed below.

Graduation year. Many of the early studies published on alumni giving chose to include graduation year in their analysis. Often, graduation year has been utilized as a variable to help determine the average number of years from graduation before alumni make their first gift (Steeper, 2009). More specifically, graduation year has been included in studies to prove the life-cycle hypothesis in relation to alumni giving. This theory asserts that as alumni age there is a natural giving curve that rises with age, levels off, and then declines as people reach retirement age (Naccarato, 2019). Studies analyzing whether or not alumni donate or not, graduation year was found to be significant in predicting donor status (Connolly and Blanchette, 1986; Oglesby,

1991; Okunade et al., 1994; Steeper, 2009). Despite the common perception associated with the life-cycle hypothesis and proof of its validity, scholarship has also found graduation year to also be a non-significant factor of giving.

In a review of past scholarship on the effect of graduation year, (Mosser, 1993) found research showing graduation year to demonstrate no statistical significant in predicting whether alumni donate. Moreover, one of the studies cited above that found graduation year to be statistically significant, called this finding into question based on a negative correlation found between year of graduation and alumni age (Oglesby, 1991). Other studies have contradicted a life-cycle perception that alumni are more likely to donate the farther removed from graduation even more. Beeler (1982) found that the passage of time alone does not increase the propensity of alumni to give to their alma mater.

The inconclusive findings for graduation year relative to alumni giving gives credence to the idea that some individual factors associated with graduation year aside from age affects alumni giving. For instance, perhaps a recession was occurring when one set of alumni graduated and not for the other leading to lower initial salaries for graduates in their first job thus giving propensity is affected. In a study modeling alumni giving (Bruggink and Siddiqui, 1995), the main economic variable used was unemployment rate, which found unemployment rates and gift giving to be inversely related. “This study suggests that college donations are not immune to the state of the economy” (p. 58). Based on the mixed findings and prevalence of the graduation year as variable studied in regards to donor giving and availability in the dataset, the inclusion of graduation year in this study is imperative.

School graduated from. Another common variable included in any analysis on alumni giving is college or school graduated from. In some research this variable has morphed into

academic major, which has been used interchangeably with college graduated. Recent analysis on alumni giving scholarship by Naccarato (2019), found inclusion of a version of the variable college graduated / academic major in over 50 studies, with 35 studies showing it to be significant. In terms of whether alumni gave or not, college graduated from specifically was found to be significant in a handful of prominently cited studies on alumni giving (Miracle, 1977; Monks, 2003; Okunade et al., 1994). Another study on a similar post-secondary institution being analyzed in this study revealed school graduated from to have a significant positive correlation on donor status (Steeper, 2009). It is important to note the study referenced above was conducted on a broader set of alumni that graduated over a forty-year period than this study and analysis was performed on data from alumni who voluntarily completed a survey.

While not significant in all studies, leading work on donor giving highlights the difference between certain colleges at a post-secondary institution that might influence donor giving. “It should be mentioned that students studying education and alumni from such programs are unique, and alumni from late-1960s and early-1970s liberal arts programs, for example, possess a unique body of characteristics which may make them worthy of individual segmentation” (Miller & Casebeer, 1990, pg. 10). That is to say, each college at an institution attracts a certain type of student based on individual preferences of that enrollee that although unknown, may be shared with other students in that college and make them more prone to donating as alumni than graduates of a different college.

Furthermore, there is a potential interaction between the school one graduated from at an institution and income, which can influence alumni giving. “Many researchers posit that alumni pursuing degrees and careers in well paying fields are more likely to give because of the larger salaries associated with those industries” (Field, 2011, pg. 20). With the results found in

previous research on the effect school or college graduated from has on alumni giving and being present in this dataset, it behooves us to include school graduated from as predictor variable for this analysis.

Gender. Throughout scholarship on philanthropy, there has been a long-held belief that women are more prone to being philanthropic. To some, this notion stems from innate gender differences where women have shown to offer more empathy-orientated reasons to put others first compared to men (Mills et al., 1989). In a situation where both men and women give, there is a thought that each person gives because of different reasons. Seemingly, men most commonly give to maintain or enhance their own standing in a community or peer group, while women give due to a belief in a specific cause or to help those less fortunate (Hall, 2004). Further research has shown being a single female to be most associated with an increase in probability of giving in comparison to being married or a single male. “Given that single women and married couples appear to be more philanthropy, one could argue that women socialize men with regard to philanthropic giving” (Mesch et al., 2006, pg. 581)

In the post-secondary setting, gender has been often included to validate common thoughts discussed above overall philanthropy in regard to alumni giving. In many of these studies, men were found to be more likely to donate and at higher levels than their female counterparts (Blumenfeld and Sartain, 1974; Dietz, 1985; Oglesby, 1991). Scholarship has characterized that the discrepancy in male support could be related to historical gaps in male versus female earnings due to degree attainment and enrollment trends (Okunade et al., 1994). However, recent trends showing females to have equal if not greater enrollment than males has forced researchers to re-evaluate alumni giving studies with gender in mind.

In 2019, 56 percent of U.S. college students were women, where fifty years ago 58 percent of U.S. college students were men (Marcus, 2019). With this shift in enrollments, some scholarship has begun to show gender differences seen in overall philanthropic analyses. One study on alumni giving from the UK found females to have a higher probability of giving, but less likely to possibility relative to income discussed above (Belfield and Beney, 2000). Another study with a relatively small sample size from a private liberal arts institution found males to be seven percent less likely to donate than females and found males to donate 22 percent less than females in terms of amount given (Holmes, 2009). The different findings related to the effects of gender on alumni giving and the recent shifts in enrollment makes gender an important variable to include in this analysis.

Location. When analyzing alumni giving another common variable often looked at is alumni location. Collective theory is that the closer alumni live to their alma mater, the more opportunities they have to interact with their alma mater and stay engaged (Mosser, 1993). Additional research has shown that an institution offers collaborative and exploitative relationships with those who are in the same geographical area, which can be seen through an organized arrangement where knowledge and experiences are shared (Petrizzelli, 2008). Due to close proximity, an institution offers more opportunities to interact with people who are closer to them than they do for people who are farther away.

Research has supported this theory, where alumni living in close proximity of their alma mater are more likely to make a contribution (Bruggink and Siddiqui, 1995; Mosser, 1993). Explanation of these results have suggested that those closer to an institution are more likely to give because they more readily see the need for support and the potential impact their support could make on an institution (McDearmon and Shirley, 2009). However, other studies have

shown mixed results on the impact location has on alumni giving. In one study of specific interest based on the location of the institution analyzed, Pearson (1996) found graduates of the College of Education at a large public institution in Virginia to more than likely be donors when living outside of the state of Virginia. When comparing the location of donors to non-donors, research found that donors live comparatively farther away from campus than those who do not donate (Beeler, 1982). Another study found alumni living within 50 miles of their alma mater significant in terms of making larger gifts than those living beyond 50 miles, this was found to not be significant when removing outliers of big donations from a few individuals (Ebersole, 2011).

Location is also used as a variable to analyze alumni giving relative to salaries in a certain location. One study that found proximity to campus to be significant showed alumni who lived farther away from campus to give more. They stipulated that highest paying jobs were farther away from this institution, which lead to alumni who were farther away having more disposable income to give (Lara and Johnson, 2008). This notion is further supported by the findings of Okunade and Ade (1993), where a logistic regression using data from two classes of business school alumni found that there was an overwhelming influence on giving based on donor's wealth and income. The prevalence of location as a variable incorporated in alumni giving research for the variety of reasons discussed above gives confidence in incorporating alumni location in this analysis.

Social identity. With research commonly showing that the more students are involved as undergraduates the more likely they are to become alumni donors, studies have looked into different ways to explain this finding. "The research that does exist largely explores student involvement without consideration for students' social identities" (Garvey and Drezner, 2019, p.

364). Some recent works have found there to a need for alumni solicitations to resonate with the social identities of those being targeted. Mirroring is described as the action of featuring a person representative of those being targeted for support. In the case of marginalized identities mirroring of marginalized population lead those who shared the marginalized to have a great propensity to support efforts around their identity along with other marginalized identities (Drezner, 2018).

Theoretical Framework

Resource dependency. The application of resource dependency theory (RDT) can be helpful in understanding the importance of alumni giving to post-secondary institutions. Generally, RDT looks at organizations being in a constant state of change relative to environmental factors that are either internal or external (Sheppard, 1995). Rising costs in post-secondary education has affected all institution to the point where all presidents and chancellors have had to put an increased amount of focus on external funding. The increased costs have been caused by a variety of factors like competition for students, faculty needs, and adaptation of technology (Thelin, 2016). Moreover, in the case of public post-secondary education, external funding has become even more needed due to dwindling state support.

By using the resource dependency lens, we can begin to understand how post-secondary leaders react to their environment in terms of fundraising. The work of Jeffrey Pfeffer and Gerald Salanick (1978) is most commonly cited as correctly applying the RDT framework to understand post-secondary institutions (Chan, 2016). Due to the complex environment they operate in, post-secondary institutions are highly dependent on their members of their environment to survive (Pfeffer & Salanick, 1978). This helps explain the efforts of post-secondary leaders to secure financial resources from a host of external partners such as; alumni, community members,

corporate partners, and government leaders. Further application of RDT suggests that the building and maintaining of external relationships which help secure financial resources involves all members of an institution not just its leaders (Chan, 2016). While those whose role is more dedicated toward fundraising are most likely to be held responsible for securing resources, this application of RTD underscores how the ability of professional fundraisers to raise funds is impacted by internal and external environment.

Given the collegial leadership of post-secondary institutions, the internal factor that those fundraising must be work within starts with an institution's president or chancellor. Each leader has unique experiences and knowledge that they bring to their position, which forces fundraisers to align their efforts and strategies around the vision of their institution's president in order to successfully attract philanthropic resources (Cook & Lasher, 1996). It is the role of those at an institution to act under the ideals set forth by a president and embody that message to those in the external environment. "Any decision the president makes within the academic structures of higher education may affect fundraisers' ability to attract resources and networks to the institution (2016, p. 10). While the direct effect faculty and other institutional members have on alumni giving may not be evident, the application of the RTD model to post-secondary institutions shows the indirect effect all at an institution have on alumni giving. In the case of this study, by exploring the effect of different extracurricular student activities on alumni giving, any findings that are found can be further studied to unlock what about those extracurricular activities leads to alumni giving and apply those practices throughout an institution to potentially create a larger pool of alumni with a propensity to give.

College impact model. With the RTD as an overarching theory to understand the important role alumni giving has on post-secondary institution leadership, this research will also

rely on two other common theories to better understand the relationship between alumni giving and student participation in specific extracurricular activities. First is the impact model, which describes how inputs and environment influence student outcomes (Astin, 1970). Students come to an institution with a certain set of inputs based on their individual demographic characteristics and past experiences, and are then impacted by the environment of the institution enrolled in. It is the combination of those inputs plus the environment together that lead to changes or outcomes that are different for students when they leave the institution as opposed to when they entered (1970). Although not applied in this initial research by Astin, later scholarship showed that change during the college experience can positively or negatively influence sentiment to a graduate's alma mater (Mosser, 1993).

Impact models are helpful for institutions in having a clear way to see how certain types of student involvement could impact alumni giving. Using the impact model, Gaier proposed the following equation regarding student and alumni involvement;

$$\text{Alumni Education} + \text{Student Involvement} = \text{Alumni Involvement (where voluntary financial contribution is a function of Alumni Involvement)}$$

With using this model, post-secondary institutions must acknowledge how they can affect student involvement. "Thus, through decision making, policies, and shaping the environment, universities can markedly impact the college experience" (Gaier, 2005, p. 280). Furthermore, should a relationship be found between specific student club participation institutions have knowledge to create future alumni donors. In knowing that undergraduate students participating in student activities affiliated with the institutions will donate, universities can focus on depicting certain aspects of that student experiences within the great undergraduate experience (Hoyt, 2004)

Theoretical model of alumni giving. The second theoretical perspective used in this study is often cited in other scholarship on alumni giving to help understand capacity and motivation of alumni to give. Originally created by Volkwein and Parmley (1999), to help institutions find correlation and causation between alumni activities and giving, this theoretical model of alumni giving serves to understand how college experiences affect alumni giving propensity. “The attitudes and values that produce motivation, and the economic attainment and achievements that produce capacity, are themselves the products of the backgrounds and collegiate experiences of alumni” (Volkwein, 2010, p. 132). The theory states that although capacity and motivation are key drivers in alumni giving, they are directly or indirectly impacted by various factors of the collegiate experience of which student involvement is one of them.

The foundation of this model is microeconomic theory which had previously been applied to alumni giving by Paton (1986). According to Paton’s research, individual willingness of alumni to contribute without persuasion (motivation) and the ability of alumni to give relative to their wealth (capacity) are two main factors in the decision process for alumni to give. As a result, we expect alumni with high donor motivations of giving to be easily persuaded to give even with the most minimal of efforts from a post-secondary institution. “More often, but not always, *a priori* motivation accounts for a relatively large return of gift revenues (at low costs) for new or modest fund-raising efforts” (Paton, 1986, p. 20). Not surprisingly then, the same relationship with donor expenditures to donor motivations would apply to donor capacity. At a post-secondary institution where the alumni population has higher average wealth, we can expect that institution to have a higher ability of receiving more gifts from alumni in terms of gifts made and total dollars raised.

Unfortunately, measuring donor motivations and capacity are difficult to accurately capture aside from self-assessment of alumni. Connolly and Blanchette (1986) looked to build on Paton's work and better define variables that could better predict motivation and capacity. They analyzed donor motivation and capacity relative to four demographic variables; class year, sex, geographic region, and career occupation. Findings pointed to career occupation being a good measure for alumni giving capacity, while the other three demographic variables seemingly only represent indirect measures of both motivation and capacity (1986). These findings from using this model of alumni giving provides validity to the use of the demographic variables selected for this study.

The theoretical model of alumni giving also teases elements of organizational commitment relative to fundraising that have been discussed by Chan and Drezner. "Organizational identification, a part of social identity theory, occurs when an individual defined himself or herself by an organization" (Drezner, 2011, pg. 54). The way a graduate characterizes themselves as an alumna or takes pride in being a graduate, are good examples of alumni organizational commitment to a post-secondary institution long after being enrolled. To better conceptualize how post-secondary institutions operate as philanthropic organizations, thorough understanding of organizational theories can help explain why some alumni remain committed to the mission of their alma mater after graduation (Chan, 2016).

Considerations for Leaders and Leadership

With the costs associated in delivering a post-secondary education increasing and pushback from the public against rising tuition, most post-secondary leaders have had make many tough decisions in regards to budgetary spending (Schoen, 2016). Budget constraints are even more evident at public post-secondary institutions where state support has been decreasing

for over twenty years (Mitchell et al., 2018; Webber, 2017). While those involved in fundraising have had their budgets largely unaffected due to their ability to bring in revenue for an institution, the financial turmoil from the recent COVID-19 pandemic has put leaders in an even more precarious position where budget reductions are on the table for every part of an institution. In April, leadership at Louisiana State University determined they had no option other than laying off most of the 140 employees in their fundraising department due to budgetary issues (Ballard, 2020). The financial constraints of post-secondary institutions are putting leaders in a position where they are asking faculty and staff to do more with less and those involved in fundraising are no exception.

This research was conducted to help those involved in fundraising at post-secondary institutions a way to identify alumni groups more likely to give than the general alumni population. For the leaders of an institution, potential findings from this analysis will allow leaders to direct fundraisers and their subsequent shrinking budgets toward a group of alumni who are more likely to give (Rau, 2014). Furthermore, in understanding of which types of student activities positively affect alumni giving the most, this research can begin to uncover the factors in that type of student activity that make alumni more likely to donate. The prudent institutional leader should look to incorporate practices from student activities that increase likelihood of giving to the undergraduate experience for all students (Gaier, 2005). Increasing the percentages of alumni in future years who will have a positive connection with their alma mater and be more likely to give.

Chapter Summary

From the attachment alumni have to their alma mater, a logical group to depend on for philanthropic support are those who graduated from the institution. The experience a student has

when they were enrolled at an institution influences alumni positively or negatively in how they feel toward their alma mater (Rau, 2014). Additionally, research has found positive alumni attitudes of alma mater to be associated with involvement in student activities during their undergraduate enrollment. It would make sense then that those involved in student activities will have a probability of giving as alumni, which research has found. Participation in student activities and organizations are influential for alumni who donate in comparison to those who do not donate (Conley, 1999; Duronio & Loessin, 1990).

The reviewed literature above explains that not all involvement in student activities produce the same outcomes. Moreover, outcomes from involvement in extracurricular student activities can vary for a host of reasons (Kuh et al., 1991). That being said, by holding constant certain demographic variables that have been shown to effect giving, we can better isolate the individual factors that affect giving like participation in certain types of student activities (Terenzini & Pascarella, 1991). From this research, there is an opportunity to better understand the different outcomes from involvement in certain types of student activities and how that might affect alumni giving.

Chapter 3: Methodology

The purpose of this study is to understand whether involvement in certain types of extracurricular student activities leads to a greater likelihood of giving in comparison to other types of extracurricular student activities. Unique to this research is the time frame since graduation (six to nine years) alumni are analyzed on whether they donated to their alma mater. In coordination with previous findings that alumni are more likely to become lifetime donors the closer they start giving from graduation, past research has focused on young alumni giving within the first five years of graduation. “The large magnitude of the effect of being a frequent giver when young suggests that nonprofit organizations in general and universities in particular should give serious consideration to devoting additional resources to raising participation rates among young potential donors” (Meer, p. 2012, 2013). Using the life-cycle hypothesis, other research has looked at alumni giving fifteen to twenty years from graduation during the time when alumni reach their highest earning years (Ebersole, 2011; Naccarato, 2019). In terms of charitable contributions, the life-cycle model views donations as nondurable goods and services, which are expected to increase with income as a donor ages (Okunade et al., 1994). With research showing income plays a large role in the decision-making process for donors and the impact early giving can have on creating a culture of giving for an individual, there is a void in scholarship on analyzing giving between the highest income years of alumni and the year’s right after alumni graduate.

To isolate the effect of giving from involvement in certain types of student activities further, we chose to remove giving around five-year reunion points where research has shown those distinguishing points to effect giving. Special efforts are made by those involved in fundraising at institutions around the “five-year reunion” including more outreach and

solicitations, resulting in higher giving percentages than other years (Bristol, 1990; Bruggink and Siddiqui, 1995). The following research looks to fill that gap by analyzing alumni giving between the points of six to nine years removed from graduation. Based on past research showing the positive effect greater student involvement has on alumni giving, our first research question will look to analyze whether being involved in more types of student involvement leads to a higher likelihood of giving. Our second research question, and the focal point of this research, will then look to individually understand the impact that involvement in certain types of student activities has on giving.

RQ1: Does the likelihood of donating to one's undergraduate institution post- graduation increase in association with greater involvement in student activities?

RQ2: To what extent does participation in specific student activities influence donative behavior to one's undergraduate institution six to nine years after graduation?

Study Sample and Design

The study used university data from a public Tier I post-secondary institution located in the mid-Atlantic. Data included student activity participation for alumni who had graduated with an undergraduate degree during a 10-year span during 2000-2009, in combination with alumni data on: giving, graduation year, college graduated from, current alumni location at time of study, and gender. In total, over 33,356 alumni graduated from this institution during that ten - year time period.

Data was provided by the university advancement office of the institution alumni in this analysis graduated from. These records were accessed from a database called Advance, a common alumni database system created by Ellucian. Information from the database was provided to the researcher by the head of database management for university advancement and

with approval from leadership of the institutions university advancement office. Before data was given to the researcher, personal information such as names were scrubbed from and replaced with a ten digit number ID number to track alumni variables to the same alumni.

Dependent Variable

The dependent variable in this study was whether or not an alumnus made a financial gift to their alma mater. Looking at whether or not alumni gave or not is a very common way researchers have looked to analyze the effect and impact of involvement in student activity on alumni giving (Miracle, 1978; Monks, 2003, Okunade et al., 1994). Other research has looked at giving level and consistency of giving to analyze the effect of student activity involvement (Belfield and Beney, 2000; Day, 2018; Ebersole, 2011; Meer, 2013; Steeper, 2009). However, with this study looking to isolate the effect from type of student activity involved in as an undergraduate on alumni giving during a specific timeframe from graduation, frequency or amount given are not as purposeful as whether or not a gift was made.

The desired outcome of this research is to identify potential differences between alumni giving behaviors based on involvement in one of seven type of extracurricular student activities. In a world of narrow fundraising budgets and large alumni populations, we are hoping to provide development offices with an alumni group more receptive to giving than the general alumni population. Should we find a group more likely to make at least one gift six to nine years from graduation, it is the work of fundraising professionals at post-secondary institutions to increase the frequency of gifts and the total amount given from that group. The dependent variable was measured categorically, where alumni were given a 1 if they gave made at least one gift between six to nine years from graduation and given a 0 if they did not make any gift between six to nine years from graduation.

Control Variables

Graduation year. The year alumni graduated serves to control for the effects of what happened to a graduating class of a specific year that could affect giving. Perhaps in certain years there was a large economic downturn that affected the ability for alumni to get jobs, delaying their ability to acquire increased salaries compared to graduates from another year. This is important as in one study, alumni giving was found to decrease as unemployment rate increased (Bruggink & Siddiqui, 1995). The use of graduation year as an independent variable also allows the study to compare other variables against graduation year. The variable was dummy coded against those who graduated in 2009 as a reference year, which was selected because student participation was tracked with greater consistency the more recent the graduation year according to the development professional who provided the dataset.

School graduated from. College graduated from is another demographic variable that was included in this study based on past research showing it to have an effect on whether alumni give (Miracle, 1978; Monks, 2003; Okunade et al., 1994; Steeper, 2009). College graduated from can also act as a predictor of income, with national statistics showing large discrepancies in earnings based on what type of college or school a student graduates from (could be Field, 2011). During 2000-2009, students could have graduated with an undergraduate degree from one of seven colleges at the institution where this dataset came from. The variable was measured as categorical and dummy coded, with the undergraduate business school at this institution as reference. There were six binary variables, and alumni received a value of 1 in the variable measuring those who graduated from one of the six other schools at that institution.

Gender. Another control variable was included due to past scholarship looking into the impact gender has on philanthropic motivation and action. While research has found gender to

be both significant and non-significant to alumni giving as discussed in the literature review above, inclusion of gender is important to this study for two reasons. First, should gender differences exist in alumni giving relative to the kind of student activity a student is involved in, this would be helpful to institution leaders and development professionals in fundraising with female enrollment in higher education outpacing male enrollment the past 30 years (Rop, 2014). Second, gender can also be used as a measure of income with national statistics showing men to have higher salaries than women (Okunade et al., 1994). This variable was measured as dichotomous (0=male, 1=female).

Location. This variable was included to see if the location of alumni had any correlation to giving between six to nine years from graduation. In some research, the variable location was used as a categorical variable on whether alumni lived in the same state as their alma mater or not (Steeper, 2009). In other research, the variable location was analyzed using proximity from campus relative to zip code. In one study by Ebersole (2011) alumni giving was compared between those within 50 miles and those beyond 50 miles, and in another study by Holmes (2009) alumni giving was compared between those within 250 miles and those beyond 250 miles. Seeing that 44.07% of alumni live in the state where the institution is located, the variable location was constructed as dichotomous with alumni receiving a 1 if they live in state where this institution is located and a 0 if they live outside the state this institution resides in or doesn't have an existing address.

Wealth. Efforts were made to include a variable assuming wealth for this analysis. There is an overwhelming amount of research that looked at and found wealth to be a significant predictor of alumni giving (Field, 2011; Lara and Johnson, 2008; Okunade and Ade, 1993). Most common, researchers used a surveying mechanism to capture wealth by asking respondents

to disclose their salary (Steeper, 2009; Mosser, 1993). However, many of these same authors discussed limitations and lack of certainty survey responses provided an accurate depiction of salary let alone wealth, so another option for measuring wealth was considered. The development office who supplied this dataset had access to a feature in their Advance database that filtered by ‘wealthy neighborhood’. This filter provides data on only those who have an address in the census tract with a median home value greater than \$1M according to the 2010 census, as the most recent 2020 census was not available for this analysis. With understanding median home value is not a perfect interpretation for income, should alumni have their primary residence in one of the 1,163 zip codes in the United States deemed a Wealthy Neighborhood we will assume them to have greater wealth. The variable wealth was constructed as dichotomous, with alumni receiving a 1 if they live in a wealthy zip code and alumni receiving a 0 if they do not live in a wealthy zip code.

Descriptive Statistics for Controls. Before conducting our analysis, descriptive statistics were run for our control variables used in the logistic regression. Table 3.1 shows the variables that were used in this analysis as controls. A high percentage of graduates (over 60%) attended one of the seven colleges coded in this analysis as Arts. This high percentage is relative to the large number of majors that are attributed to that school relative to any of the other seven colleges. Additionally, we can see the number of graduating students increasing over time, which can be explained by increased enrollment at the institution studied in this analysis.

Table 3.1

Frequency Distribution for Categorical Variables

Variable	N	%
Virginia Resident		
Yes	14699	45.20%
No	17820	54.80%

Wealthy Zip Code		
Yes	13208	40.62%
No	19311	59.38%
Gender		
Male	14699	45.20%
Female	17820	54.80%
Graduation Year		
2000	3003	9.23%
2001	3138	9.65%
2002	3102	9.54%
2003	3209	9.87%
2004	3107	9.55%
2005	3277	10.08%
2006	3294	10.13%
2007	3280	10.09%
2008	3626	11.15%
2009	3483	10.71%
College Graduated From		
Arts	22631	69.59%
Architecture	889	2.73%
Business	3159	9.71%
Continue	244	0.75%
Education	432	1.33%
Engineering	4165	12.81%
Nursing	999	3.07%

Independent Variables

The independent variable to be analyzed in this study is student activity type. Past research on alumni giving has given us some semblance of how student activity type can be grouped. A study on alumni giving of Middlebury College graduates grouped undergraduate student activities into seven categories based on the recommendation of their development office (Holmes, 2009). In the case of the data used in this analysis, the development office of this institution was also able to provide a field that categorized each undergraduate student activity as into a certain type of student activity. Including varsity sports participation, 818 student

activities were grouped into 26 different student activity types, with 182 student activities not being categorized into one of those 26 types. As seen in Table 3.2, many of these 26 categories were sub groupings of a larger activity types like academic, arts, interest group, or greek. For analysis, the activity groups with the same main title were then grouped into the same categories; academic, arts, interest, greek. Those without groupings provided by the development office were grouped into one of the categories used for this analysis by the researcher.

This analysis wanted to include student activities with the label governing body as a separate grouping called campus leadership based on past research. Participation in leadership student activities has isolated and analyzed in many studies looking into student outcomes (Astin, 1993). There were two other student activity types that we felt justified in grouping with campus leadership as well. Given the role class attendee as a position with responsibility, students involved in an activity with the description faculty / class attendee were also grouped as being involved in a campus leadership student activity in this study. The competitive process for receiving internships suggests those students who were awarded internship be seen as leaders at their institutions. Student activities with a description of internship were also then grouped with campus leadership. For the grouping interest, student activities with the description of language was included. Typically, most interest or affinity groups are formed based on minority status at an institution (Holmes, 2009). With language groups representing only a small subset of the student population at this institution, there is justification in grouping it with the category interest for the independent variable student activity type in this study.

Two other types of student activity types we will use for this study involve physical activity: intramural and varsity sport participation. When studying student outcome while enrolled in post-secondary institution exercise, regardless of the type, exercise has been shown to

have an positive effect on a variety of student outcomes (VanKim and Nelson, 2013). Our data set contains a student activity type called non-varsity sports and hobbies, which includes intramural sports participation along with other club participation like archery club. For this study we will use the student activities with the description non-varsity sports and hobbies as our intramural category of our independent variable student activity type. Much research on alumni giving and student involvement has studied participation in varsity sports, which has led to mixed findings (Holmes, 2009; Miracle, 1977; Monks, 2003). Nevertheless, the popularity of varsity sport as a measure of student involvement and scholarship mostly showing positive correlations with alumni giving, participation in varsity sport needs to be included in this study.

The last grouping we will do for this study involves student activities that can be characterized as altruistic. Our dataset includes this type of student activity as service. Additionally, we will group those student activities categorized as a faith-based organization in our dataset as a ‘service’ student activity type. This is based on past research where community service related to religion was looked at for its effect on academic ability and achievement orientation (Berger & Milem, 2002). Those involved in student activities with the description politics will be grouped with service as well. Table 3.2 and 3.3. shows the initial grouping of student activity type provided by the institution and number of alumni who participated in each activity type respectively.

Table 3.2

Initial Student Activity Grouping

Student Activity Group	Student Activity Group
Academic – General	Academic
Academic – Law	Academic
Academic - Science/Engineering/Medicine	Academic
Arts – Fine	Arts
Arts - Literature/Publications	Arts

Arts – Performing	Arts
Interest Group - African American	Interest
Interest Group – Asian	Interest
Interest Group - Hispanic/Latino	Interest
Interest Group – LGBT	Interest
Interest Group - Other Cultural	Interest
Interest Group – Women	Interest
Languages	Interest
Greek - InterFraternity Council	Greek
Greek - InterSorority Council	Greek
Greek - Multicultural Greek Council	Greek
Greek - National Pan-Hellenic Council	Greek
Faculty / Class Attendee	Campus Leadership
Governing Body	Campus Leadership
Internship	Campus Leadership
Faith Based Organizations	Service
Politics	Service
Service Organizations	Service
NonVarsity Sports and Hobbies	Intramural
Varsity Sport	Varsity Sport

Table 3.3

Number of Alumni Participants in Student Activity Type

Variable	Participated	
	No	Yes
Varsity Participated	30622	1897
Service Participated	18553	13966
Intramural Participated	28220	4299
Interest Participated	29103	3416
Greek Participated	24095	8424
Campus Leadership Participated	27076	5443
Arts Participated	28261	4258
Academic Participated	30443	2076

Only one variable to answer this research question was measured as continuous, number of activity types alumni participated in as a student measured as continuous between zero and eight. For our first research question the independent variable is continuous, with the graduate

receiving a number between 0 through 7 dependent on how many of each student activity type they participated in. None of the alumni in our dataset participated in eight student activity types. For each of the seven models in our second research question, the independent variable was measured as dichotomous (1 = participation; 0 = no participation) for the specific student activity type being studied. Table 3.4 below shows the frequency distribution regarding number of student activities type's alumni participated in.

Table 3.4

Number of Student Activity Type's Alumni Participated In

Variable	N	%
Activities Participated In		
0	8164	25.11%
1	11543	35.50%
2	7915	24.34%
3	3500	10.76%
4	1122	3.45%
5	238	0.73%
6	31	0.10%
7	6	0.02%
Total	32519	100.00%

Data Analysis

Based on the goal of this study to perform quantitative analyses to answer both research questions, data was entered into a statistical program, Statistical Package for Social Sciences (SPSS). The analysis involved the using of descriptive statistics, and logistic regression based on the dependent variable being categorical. Before the logistic regression was conducted an analysis of correlation (Spearman correlation) was performed to ensure none of our independent variables were measuring the same construct.

Research question one is asking a commonly proved result in research on student involvement and alumni giving, where the more alumni were involved as students in extracurricular activities the more likely they are to donate as alumni. Our model contains all our independent variables discussed above in addition an independent called titled total activities involved. This variable is calculated by adding how many of the seven student activity types individual alumni where involved in as an undergraduate. The variable is continuous between zero and seven, with zero meaning alumni were involved in no student activities and seven meaning alumni were involved in each of the seven student activity types. The dependent variable is whether or not alumni made at least one gift six to nine years from graduation.

The following logistic regression equation was used to answer research question one.

$$\text{Ln}(\text{Gift Given}) = \beta_0 + \beta_1(\text{Graduation Year}) + \beta_2(\text{School}) + \beta_3(\text{Gender}) + \beta_4(\text{State of Residence}) + \beta_5(\text{Wealth}) + \beta_{14}(\text{Total Activities Involved})$$

Research question two, and the focus of this analysis, is looking to show which, if any, of the eight categories of student activity are more likely to predict making at least one gift six to nine years removed from graduation. To model this the following seven equations were used. Should interactions between student activity type be discovered, interactions will be incorporated into the model to uncover the best predictor of giving

$$\text{Ln}(\text{Gift Given}) = \beta_0 + \beta_1(\text{Graduation Year}) + \beta_2(\text{School}) + \beta_3(\text{Gender}) + \beta_4(\text{State of Residence}) + \beta_5(\text{Wealth})$$

$$\text{Ln}(\text{Gift Given}) = \beta_0 + \beta_1(\text{Graduation Year}) + \beta_2(\text{School}) + \beta_3(\text{Gender}) + \beta_4(\text{State of Residence}) + \beta_5(\text{Wealth}) + \beta_6(\text{Arts})$$

$$\text{Ln}(\text{Gift Given}) = \beta_0 + \beta_1(\text{Graduation Year}) + \beta_2(\text{School}) + \beta_3(\text{Gender}) + \beta_4(\text{State of Residence}) + \beta_5(\text{Wealth}) + \beta_7(\text{Campus Leadership})$$

$$\text{Ln}(\text{Gift Given}) = \beta_0 + \beta_1(\text{Graduation Year}) + \beta_2(\text{School}) + \beta_3(\text{Gender}) + \beta_4(\text{State of Residence}) + \beta_5(\text{Wealth}) + \beta_8(\text{Varsity Sport})$$

$$\text{Ln}(\text{Gift Given}) = \beta_0 + \beta_1(\text{Graduation Year}) + \beta_2(\text{School}) + \beta_3(\text{Gender}) + \beta_4(\text{State of Residence}) + \beta_5(\text{Wealth}) + \beta_9(\text{Intramural})$$

$$\text{Ln}(\text{Gift Given}) = \beta_0 + \beta_1(\text{Graduation Year}) + \beta_2(\text{School}) + \beta_3(\text{Gender}) + \beta_4(\text{State of Residence}) + \beta_5(\text{Wealth}) + \beta_{10}(\text{Service})$$

$$\text{Ln}(\text{Gift Given}) = \beta_0 + \beta_1(\text{Graduation Year}) + \beta_2(\text{School}) + \beta_3(\text{Gender}) + \beta_4(\text{State of Residence}) + \beta_5(\text{Wealth}) + \beta_{11}(\text{Greek})$$

$$\text{Ln}(\text{Gift Given}) = \beta_0 + \beta_1(\text{Graduation Year}) + \beta_2(\text{School}) + \beta_3(\text{Gender}) + \beta_4(\text{State of Residence}) + \beta_5(\text{Wealth}) + \beta_{12}(\text{Interest})$$

$$\text{Ln}(\text{Gift Given}) = \beta_0 + \beta_1(\text{Graduation Year}) + \beta_2(\text{School}) + \beta_3(\text{Gender}) + \beta_4(\text{State of Residence}) + \beta_5(\text{Wealth}) + \beta_{13}(\text{Academic})$$

In having a large number of predictor variables for this model, our analysis must not overlook the potential for multicollinearity. Multicollinearity occurs when two or more predictor variables are highly correlated, which can be interpreted as two or more of these predictor variables being similar measurements of a variable (Tabachnick et al., 2014). To test for multicollinearity, we will run another logistic regression including all our predictor variables and independent variables. Should any of our correlations between variables be over .6, we will account for multicollinearity and adjust the models accordingly. A post-hoc analysis will look to incorporate some analysis involving number of gifts or amount given to further differentiate the impact of involvement in a certain type of extracurricular student activity on alumni giving.

Data Limitations

One of the main limitations with this study pertains to the process of how involvement in student activities for undergraduates were tracked in this dataset. According to those who provided the data, there was no formal processes to track student participation in extracurricular activities for alumni who graduation from 2000-2009. Most likely, it involved a combination of self-identification from individual students, identification from student leaders of a student activity, or identification from faculty associated with student activities. Additionally, at time of graduation for those analyzed in this study there was no set standard from a university perspective on what was considered an undergraduate student activity that needed to be tracked. There could be student activities that should or could be easily grouped into one of our eight student activity categories, but they were never entered into the database as a student activity which undergraduates participated.

Chapter Summary

The quantitative methods used in this analysis were carefully selected to best isolate the effect of participation in student activity types on alumni giving. A strong number of predictor variables also adds to the ability of our analysis to identify the effect of participation in one of eight student activity types on giving six to nine years from graduation. The post-hoc analysis will provide further understanding on how participation in certain activity types affects other measures of alumni giving.

Chapter 4: Results

The goal of this study was to analyze if alumni giving for those who graduated from a Tier 1 public post-secondary institution during 2000-2009 are influenced by participation as a student in one of eight extracurricular student activity types. Prior to the main analysis, we want to make sure our dataset is consistent with scholarship referenced earlier that found the more involved a student is the more likely they are to donate as alumni. A logistic regression was performed to see if the likelihood of giving increased relative to the number of activity types a student participated in. Next, eight different logistic regression models were run relative to each one of the eight student activity types. For all our logistic regressions, alumni giving was measured as whether or not alumni made at least one gift six to nine years removed from graduation.

Description of Sample

Our dataset consisted of graduation records from alumni who graduated during a ten year span from 2000-2009. With context from those who helped obtain this data, it was noted that records of student participation became more accurate the more recent the alumni graduated. Using 2000 as the reference year, graduation year was then dummy coded into nine variables for students who graduated 2001-2009, which accounted for improved tracking in student activities over the years. For example, if a student graduated in 2000 they would receive a zero for all each of the nine graduation year variables representing those who graduated from 2001-2009. Table provides the frequencies for our graduation variables and other control variables.

With scholarship stating that alumni who graduated with business degrees are more likely to donate, college graduated from was also dummy coded by the five other colleges alumni could have graduated from, allowing the business school to serve as the reference college students

graduated from. Three other variables (gender, wealthy zip code, and resident) were coded binary as well. 837 alumni records did not have an available address and were excluded from our initial data set of 33,356 alumni records.

Data Analysis Research Question 1

A binary logistic regression was performed on whether a gift was made six to nine years from graduation and nineteen predictor variables, our main variable of interest being how many activity types each student participated in. Table 4.1 shows the regression coefficients, standard error, Wald statistics, significance, odds ratio, and 95% confidence intervals for odds ratios for each of the predictors. Our variable TotalPart, which measures the number of activity types a student participated was found to be a significant predictor of giving six to nine years from graduation, $X^2(1, N = 32519) = 1250.98, p < .001$. Pseudo R^2 s ranged from .07 to .1 for Cox & Snell and Nagelkerke respectively. Holding all our other variables constant, the odds that alumni will donate are 1.53 times higher for each one unit increase in the number of activity types a student participated in.

Table 4.1

Logistic Regression with Predictor Variables and Number of Activities Participated

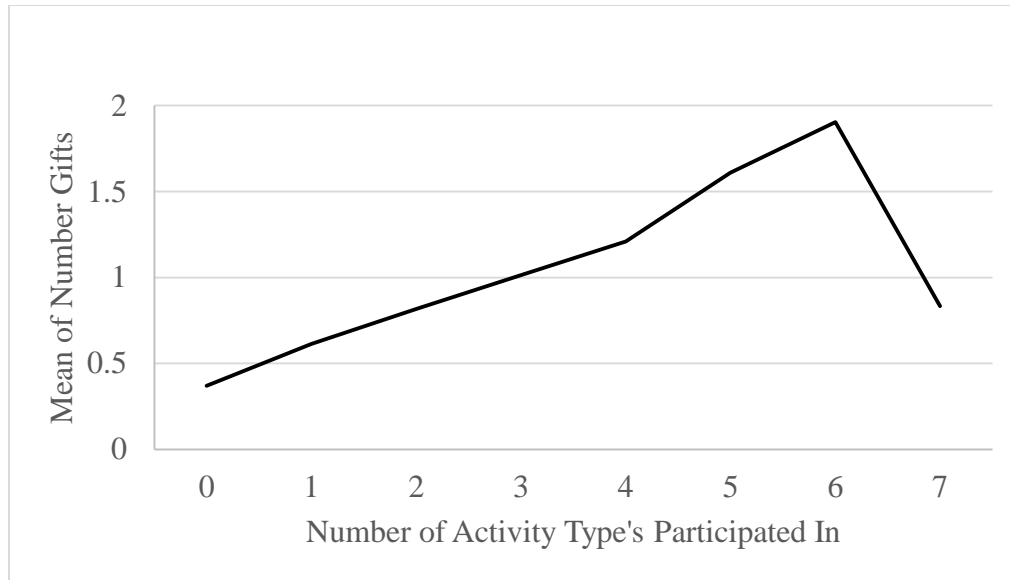
Variable	B	S.E.	Wald	Sig.	Exp(B)	95% C.I. for EXP(B)	
						Lower	Upper
Resident	-0.26	0.03	86.20	0.00	0.77	0.73	0.81
Wealthy	0.42	0.03	225.67	0.00	1.52	1.44	1.60
Gender	0.23	0.03	63.88	0.00	1.25	1.19	1.32
Grad2001	-0.17	0.06	7.24	0.01	0.85	0.75	0.96
Grad2002	-0.11	0.06	3.47	0.06	0.89	0.79	1.01
Grad2003	-0.05	0.06	0.75	0.39	0.95	0.84	1.07
Grad2004	-0.08	0.06	1.83	0.18	0.92	0.82	1.04
Grad2004	-0.09	0.06	2.01	0.16	0.92	0.82	1.03
Grad2006	-0.16	0.06	6.82	0.01	0.85	0.76	0.96
Grad2007	-0.23	0.06	13.82	0.00	0.80	0.71	0.90
Grad2008	-0.45	0.06	54.64	0.00	0.64	0.56	0.72

Grad2009	-0.48	0.06	59.69	0.00	0.62	0.55	0.70
Architecture	-0.39	0.09	20.93	0.00	0.68	0.57	0.80
Education	-0.67	0.13	26.73	0.00	0.51	0.40	0.66
Continue	-0.46	0.20	5.38	0.02	0.63	0.43	0.93
Nursing	-0.40	0.09	20.58	0.00	0.67	0.56	0.80
ArtSci	-0.64	0.03	412.97	0.00	0.53	0.50	0.56
TotalPart	0.43	0.01	1250.98	0.00	1.53	1.49	1.57
Constant	-1.32	0.06	542.53	0.00	0.27		

ANOVA Post-Hoc test. With our research question looking to see how the number of activity types a student participates affects alumni giving six to nine years from graduation, two different analysis of variance (ANOVA) were conducted in regards to this research question. Our first ANOVA was performed on number of gifts by alumni six to nine years from graduation and number of activity types participated in as a student. The independent variable, total participation ranged from seven being the most number of activity types participated in by a student and zero being the least number of activity type participated in by a student. Figure 4.1 shows the mean number of gifts rising the greater number of activity type's students participated in, with mean number of gifts rising per number of activity types involved in until alumni were involved in seven activity types.

Figure 4.1

Average Number of Gifts per Number of Activity Types Participated In



The ANOVA was significant, $(7, 32511) = 82.46, p < .05$ from Table 4.2 below. As a result, we would reject the null hypothesis and conclude at least two group means of number of gifts differ among the number of activity types a student participated in. Bonferroni post-hoc comparisons revealed that there was a statistical significant difference in number of gift made for 16 of the 28 comparison made.

Table 4.2

ANOVA Average Number of Gifts per Number of Activity Types

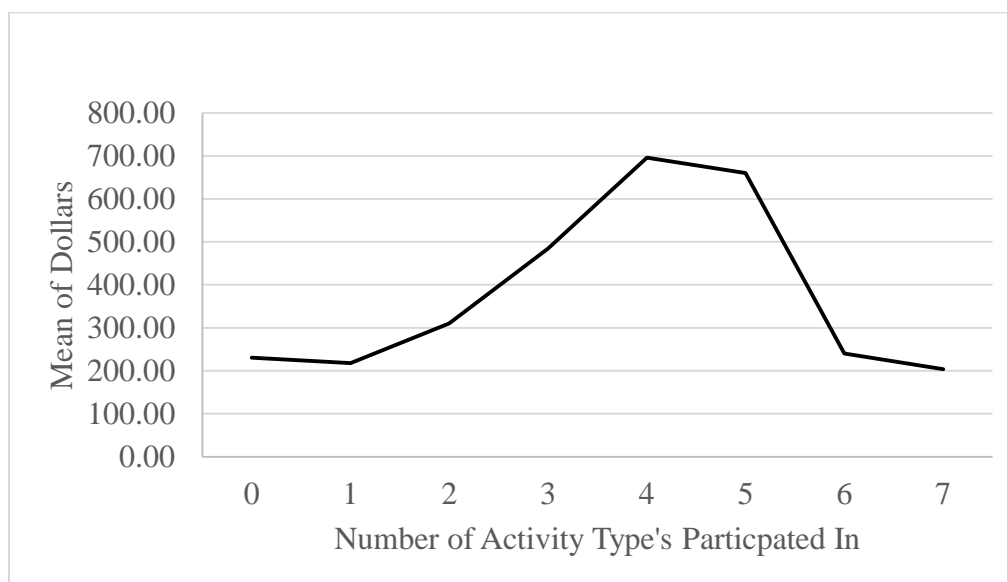
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	441620516.05	7.00	63088645.15	2.66	0.01
Within Groups	770632889117.06	32511.00	23703758.39		
Total	771074509633.11	32518.00			

Our second ANOVA was performed on the total amount of dollars given by alumni six to nine years from graduation, as well as our same independent variable, number of activity types participated in as a student. Similar to our results above, the mean number of dollars given rises the more student activity types they are involved in until it falls once students become involved in six or more types of student activities. Figure 4.2 shows average amount given six to nine

years from graduation to decrease once students become involved in more than five extracurricular activity types as a student.

Figure 4.2

Average Dollars Given per Number of Activity Types Participated In



The ANOVA was significant, $(7, 32511) = 2.663$, $p < .05$. As a result, we would reject the null hypothesis and conclude at least two group means of total dollars given are different among the number of activity types a student participated in. Table 4.3 shows the result of this ANOVA. Post-hoc comparisons using Bonferroni revealed that there was a statistical significant difference in dollars given between only those who participated in one activity type and four activity types ($p = .04$).

Table 4.3

ANOVA Average Dollars Given per Number of Activity Types Participated In

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	441620516.05	7.00	63088645.15	2.66	0.01
Within Groups	770632889117.06	32511.00	23703758.39		
Total	771074509633.11	32518.00			

Data Analysis Research Question 2

Our second research question is looking at the individual effect each of the eight activity types a student could have been involved in on making at least one gift six to nine years removed from graduation. This analysis is done by conducting eight separate binary logistic regression with our eighteen predictor variables from Table and one of the student activity types not already used in a prior logistic regression.

Varsity Participated. A binary logistic regression was run for our eighteen control variables and the variable varsity. For the variable varsity, alumni received a one if our dataset has them participating in a sport where participants are able to receive scholarships based on athletic ability and a zero if they did not participate. Table 4.4 shows the regression coefficients, standard error, Wald statistics, significance, odds ratio, and 95% confidence intervals for odds ratios for each of the predictors. Our variable indicating participation in a varsity sport as a student was found to be a significant predictor of alumni giving six to nine years from graduation, $X^2(1, N = 32519) = 188.6, p < .001$. The model had pseudo R^2 s ranging from .04 to .06 for Cox & Snell and Nagelkerke respectively. Holding all our other variables constant, the odds that alumni will donate are 2.01 times higher if the student participated in a varsity sport at least one time. Moreover, we can be 95% confident that the odds alumni will donate are between 1.82 and 2.22 if they participated in a varsity sport.

Table 4.4

Logistic Regression with Predictor Variables and Varsity Participation

Variable	B	S.E.	Wald	Sig.	Exp(B)	95% C.I. for EXP(B)	
						Lower	Upper
Resident	-0.36	0.03	169.51	0.00	0.70	0.66	0.74
Wealthy Zip	0.47	0.03	305.00	0.00	1.61	1.52	1.69
Gender	0.11	0.03	16.81	0.00	1.12	1.06	1.18
Grad2001	-0.13	0.06	4.36	0.04	0.88	0.78	0.99

Grad2002	-0.05	0.06	0.63	0.43	0.95	0.85	1.07
Grad2003	0.03	0.06	0.34	0.56	1.04	0.92	1.16
Grad2004	0.01	0.06	0.04	0.85	1.01	0.90	1.14
Grad2005	0.00	0.06	0.01	0.93	1.00	0.90	1.13
Grad2006	-0.12	0.06	4.12	0.04	0.89	0.79	1.00
Grad2007	-0.16	0.06	7.22	0.01	0.85	0.76	0.96
Grad2008	-0.30	0.06	25.32	0.00	0.74	0.66	0.83
Grad2009	-0.26	0.06	18.63	0.00	0.77	0.68	0.87
Architecture	-0.47	0.08	32.20	0.00	0.62	0.53	0.73
Education	-0.76	0.13	34.71	0.00	0.47	0.36	0.60
Continue	-0.96	0.20	23.90	0.00	0.38	0.26	0.56
Nursing	-0.59	0.09	46.33	0.00	0.55	0.47	0.66
ArtSci	-0.62	0.03	403.12	0.00	0.54	0.51	0.57
Varsity	0.70	0.05	188.60	0.00	2.01	1.82	2.22
Constant	-0.76	0.05	205.69	0.00	0.47		

Service Participated. A binary logistic regression was run for our eighteen control variables and the variable service. For the variable service, alumni received a one if our dataset has them participating in at least one service classified student activity and a zero if they did not participate. Table 4.5 shows the regression coefficients, standard error, Wald statistics, significance, odds ratio, and 95% confidence intervals for odds ratios for each of the predictors. Participation in service type activity as a student was found to be a significant predictor of alumni giving six to nine years from graduation, $X^2 (1, N = 32519) = 197.70, p < .001$ and pseudo R^2 s ranging from .04 to .06 for Cox & Snell and Nagelkerke respectively. Holding all our other variables constant, the odds that alumni will donate are 1.48 times higher if the student participated in a student activity classified as service, and 95% confident that the odds alumni will donate are between 1.40 and 1.56.

Table 4.5

Logistic Regression with Predictor Variables and Service Participation

Variable	B	S.E.	Wald	Sig.	Exp(B)	95% C.I. for EXP(B)
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						Lower	Upper
Resident	-0.37	0.03	179.63	0.00	0.69	0.65	0.73
Wealthy Zip	0.46	0.03	287.16	0.00	1.58	1.50	1.67
Gender	0.19	0.03	47.59	0.00	1.21	1.15	1.28
Grad2001	-0.15	0.06	6.39	0.01	0.86	0.76	0.97
Grad2002	-0.08	0.06	1.90	0.17	0.92	0.82	1.04
Grad2003	-0.01	0.06	0.02	0.88	0.99	0.88	1.11
Grad2004	-0.03	0.06	0.30	0.58	0.97	0.86	1.09
Grad2005	-0.05	0.06	0.69	0.41	0.95	0.85	1.07
Grad2006	-0.18	0.06	9.29	0.00	0.83	0.74	0.94
Grad2007	-0.26	0.06	18.15	0.00	0.77	0.69	0.87
Grad2008	-0.40	0.06	44.59	0.00	0.67	0.59	0.75
Grad2009	-0.37	0.06	37.08	0.00	0.69	0.61	0.78
Architecture	-0.45	0.08	29.60	0.00	0.63	0.54	0.75
Education	-0.64	0.13	25.55	0.00	0.52	0.41	0.67
Continue	-0.81	0.20	17.19	0.00	0.44	0.30	0.65
Nursing	-0.54	0.09	38.21	0.00	0.58	0.49	0.69
ArtSci	-0.63	0.03	412.70	0.00	0.53	0.50	0.57
Service	0.39	0.03	194.70	0.00	1.48	1.40	1.56
Constant	-0.85	0.05	251.99	0.00	0.43		

Intramural Participated. For this binary logistic regression a variable measuring participation in intramurals was included with the other eighteen control variables. Alumni were given a one for the variable intramural if they participated in at least one student activity classified as intramural and a zero if they did not. Table 4.6 shows the regression coefficients, standard error, Wald statistics, significance, odds ratio, and 95% confidence intervals for odds ratios for each of the predictors. Intramural participation was found to be a significant predictor of alumni giving six to nine years from graduation, $X^2(1, N = 32519) = 179.72, p < .001$. Pseudo R^2 s ranged from .04 to .05 for Cox & Snell and Nagelkerke respectively. Other variables constant, the odds alumni will donate six to nine years after graduation are 1.68 time higher if they participated in student activities classified as intramural, and 95% confident the odds alumni will donate are between 1.55 and 1.81.

Table 4.6

Logistic Regression with Predictor Variables and Intramural Participation

Variable	B	S.E.	Wald	Sig.	Exp(B)	95% C.I. for EXP(B)	
						Lower	Upper
Resident	-0.38	0.03	188.28	0.00	0.68	0.65	0.72
Wealthy Zip	0.47	0.03	301.75	0.00	1.60	1.52	1.69
Gender	0.11	0.03	15.46	0.00	1.11	1.06	1.18
Grad2001	-0.13	0.06	4.69	0.03	0.88	0.78	0.99
Grad2002	-0.06	0.06	0.94	0.33	0.94	0.84	1.06
Grad2003	0.03	0.06	0.21	0.65	1.03	0.92	1.15
Grad2004	-0.02	0.06	0.10	0.75	0.98	0.87	1.10
Grad2005	-0.02	0.06	0.17	0.68	0.98	0.87	1.10
Grad2006	-0.13	0.06	4.46	0.03	0.88	0.78	0.99
Grad2007	-0.24	0.06	16.20	0.00	0.78	0.70	0.88
Grad2008	-0.41	0.06	46.48	0.00	0.66	0.59	0.74
Grad2009	-0.43	0.06	48.63	0.00	0.65	0.58	0.73
Architecture	-0.46	0.08	29.72	0.00	0.63	0.54	0.75
Education	-0.63	0.13	24.67	0.00	0.53	0.41	0.68
Continue	-0.87	0.20	19.92	0.00	0.42	0.28	0.61
Nursing	-0.55	0.09	40.48	0.00	0.57	0.48	0.68
ArtSci	-0.58	0.03	352.09	0.00	0.56	0.53	0.60
Intramural	0.52	0.04	179.72	0.00	1.68	1.55	1.81
Constant	-0.76	0.05	207.20	0.00	0.47		

Interest Participated. Another binary logistic regression was run with the same control variables and a dichotomous variable measuring participation in student activities associated with specific interests. Alumni were given a one for the variable interest if they participated in at least one student activity classified as interest and a zero if they did not. Table 4.7 shows the regression coefficients, standard error, Wald statistics, significance, odds ratio, and 95% confidence intervals for odds ratios for each of the predictors. Participation in an interest based student activities was found to be a significant predictor of alumni giving six to nine years from graduation, $X^2(1, N = 32519) = 29.09, p < .001$. Pseudo R^2 s ranged from .03 to .05 for Cox &

Snell and Nagelkerke respectively. Other variables constant, the odds alumni will donate six to nine years after graduation are 1.25 time higher if they participated in student activities classified as service, and 95% confident the odds alumni will donate are between 1.15 and 1.36.

Table 4.7

Logistic Regression with Predictor Variables and Interest Participation

Variable	B	S.E.	Wald	Sig.	Exp(B)	95% C.I. for EXP(B)	
						Lower	Upper
Resident	-0.38	0.03	186.06	0.00	0.69	0.65	0.72
Wealthy Zip	0.47	0.03	298.43	0.00	1.60	1.51	1.68
Gender	0.14	0.03	25.10	0.00	1.15	1.09	1.21
Grad2001	-0.13	0.06	4.34	0.04	0.88	0.78	0.99
Grad2002	-0.05	0.06	0.72	0.39	0.95	0.84	1.07
Grad2003	0.04	0.06	0.42	0.52	1.04	0.93	1.17
Grad2004	0.00	0.06	0.00	0.97	1.00	0.89	1.13
Grad2005	0.00	0.06	0.00	0.97	1.00	0.89	1.12
Grad2006	-0.13	0.06	4.45	0.03	0.88	0.78	0.99
Grad2007	-0.16	0.06	7.24	0.01	0.85	0.76	0.96
Grad2008	-0.31	0.06	26.86	0.00	0.73	0.65	0.82
Grad2009	-0.27	0.06	19.83	0.00	0.76	0.68	0.86
Architecture	-0.46	0.08	30.56	0.00	0.63	0.54	0.74
Education	-0.61	0.13	22.85	0.00	0.54	0.42	0.70
Continue	-0.95	0.20	23.38	0.00	0.39	0.26	0.57
Nursing	-0.57	0.09	42.45	0.00	0.57	0.48	0.67
ArtSci	-0.59	0.03	367.10	0.00	0.56	0.52	0.59
Interest	0.22	0.04	29.09	0.00	1.25	1.15	1.36
Constant	-0.76	0.05	204.65	0.00	0.47		

Greek Participated. Next, a binary logistic regression was run with the same control variables as earlier, but this time with a dichotomous variable measuring participation in student activities associated with fraternities and sororities. Alumni were given a one for the variable greek if they ever were a member of a fraternity or sorority, and a zero if they did not. Table 4.8 shows the regression coefficients, standard error, Wald statistics, significance, odds ratio, and

95% confidence intervals for odds ratios for each of the predictors. Participation in greek student activities was found to be a significant predictor of alumni giving six to nine years from graduation, $X^2(1, N = 32519) = 718.41, p < .001$. Pseudo R^2 s ranged from .05 to .08 for Cox & Snell and Nagelkerke respectively. Other variables constant, the odds alumni will donate six to nine years after graduation are 2.16 times higher if they participated in student activities classified as greek, and 95% confident the odds alumni will donate are between 2.04 and 2.29.

Table 4.8

Logistic Regression with Predictor Variables and Greek Participation

Variable	B	S.E.	Wald	Sig.	Exp(B)	95% C.I. for EXP(B)	
						Lower	Upper
Resident	-0.31	0.03	121.49	0.00	0.73	0.70	0.78
Wealthy Zip	0.41	0.03	221.01	0.00	1.50	1.43	1.59
Gender	0.12	0.03	19.09	0.00	1.13	1.07	1.19
Grad2001	-0.13	0.06	4.28	0.04	0.88	0.78	0.99
Grad2002	-0.05	0.06	0.61	0.44	0.95	0.85	1.07
Grad2003	0.03	0.06	0.33	0.56	1.04	0.92	1.16
Grad2004	0.00	0.06	0.00	0.95	1.00	0.89	1.13
Grad2005	0.02	0.06	0.16	0.69	1.02	0.91	1.15
Grad2006	-0.11	0.06	3.18	0.07	0.90	0.80	1.01
Grad2007	-0.04	0.06	0.43	0.51	0.96	0.85	1.08
Grad2008	-0.30	0.06	24.12	0.00	0.74	0.66	0.84
Grad2009	-0.27	0.06	20.20	0.00	0.76	0.67	0.86
Architecture	-0.47	0.08	30.65	0.00	0.63	0.53	0.74
Education	-0.63	0.13	23.92	0.00	0.53	0.41	0.69
Continue	-0.78	0.20	16.00	0.00	0.46	0.31	0.67
Nursing	-0.53	0.09	36.03	0.00	0.59	0.50	0.70
ArtSci	-0.60	0.03	367.56	0.00	0.55	0.52	0.59
Greek	0.77	0.03	718.41	0.00	2.16	2.04	2.29
Constant	-0.97	0.05	322.72	0.00	0.38		

Campus Leadership Participated. A binary logistic regression was then run with dichotomous variable measuring participation in student activities that can be classified as

campus leadership roles. Examples of these type of student activities include student government, teacher's assistant, etc. Alumni were given a one for the variable leadership if they ever participated in a student activity, and a zero if they did not. Table 4.9 shows the regression coefficients, standard error, Wald statistics, significance, odds ratio, and 95% confidence intervals for odds ratios for each of the predictors. Participation in an campus leadership student activities was found to be a significant predictor of alumni giving six to nine years from graduation, $X^2(1, N = 32519) = 718.41, p < .001$. Pseudo R^2 s ranged from .05 to .07 for Cox & Snell and Nagelkerke respectively. Other variables constant, the odds alumni will donate six to nine years after graduation are 2.13 times higher if they participated in student activities classified as service, and 95% confident the odds alumni will donate are between 2.00 and 2.27.

Table 4.9

Logistic Regression with Predictor Variables and Leadership Participation

Variable	B	S.E.	Wald	Sig.	Exp(B)	95% C.I. for EXP(B)	
						Lower	Upper
Resident	-0.34	0.03	146.80	0.00	0.71	0.68	0.75
Wealthy Zip	0.45	0.03	276.63	0.00	1.57	1.49	1.66
Gender	0.14	0.03	23.77	0.00	1.14	1.08	1.21
Grad2001	-0.14	0.06	5.69	0.02	0.87	0.77	0.97
Grad2002	-0.08	0.06	1.66	0.20	0.92	0.82	1.04
Grad2003	-0.01	0.06	0.02	0.90	0.99	0.88	1.12
Grad2004	-0.03	0.06	0.17	0.68	0.98	0.87	1.10
Grad2005	-0.02	0.06	0.17	0.68	0.98	0.87	1.10
Grad2006	-0.13	0.06	4.75	0.03	0.88	0.78	0.99
Grad2007	-0.17	0.06	7.59	0.01	0.85	0.75	0.95
Grad2008	-0.33	0.06	29.08	0.00	0.72	0.64	0.81
Grad2009	-0.27	0.06	20.43	0.00	0.76	0.67	0.86
Architecture	-0.47	0.08	31.29	0.00	0.62	0.53	0.74
Education	-0.60	0.13	22.29	0.00	0.55	0.43	0.70
Continue	-0.91	0.20	21.76	0.00	0.40	0.27	0.59
Nursing	-0.60	0.09	46.64	0.00	0.55	0.46	0.65
ArtSci	-0.61	0.03	388.64	0.00	0.54	0.51	0.58
Campus Lead	0.75	0.03	536.79	0.00	2.13	2.00	2.27

Constant	-0.86	0.05	256.22	0.00	0.42
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Arts. Next, a binary logistic regression was run measuring participation in student activities that are focused around the arts. Examples of these type of student activities include student activities related to language, music, literature, etc. Alumni were given a one for the variable arts if they ever participated in a student activity that is categorized as an arts activity, and a zero if they did not. Table 4.10 shows the regression coefficients, standard error, Wald statistics, significance, odds ratio, and 95% confidence intervals for odds ratios for each of the predictors. Participation in an arts student activities was found to be a significant predictor of alumni giving six to nine years from graduation, $X^2(1, N = 32519) = 53.62, p < .001$. Pseudo R^2 s ranged from .03 to .05 for Cox & Snell and Nagelkerke respectively. Other variables constant, the odds alumni will donate six to nine years after graduation are 1.32 times higher if they participated in student activities classified as service, and 95% confident the odds alumni will donate are between 1.23 and 1.42.

Table 4.10

Logistic Regression with Predictor Variables and Arts Participation

Variable	B	S.E.	Wald	Sig.	Exp(B)	95% C.I. for EXP(B)	
						Lower	Upper
Resident	-0.38	0.03	186.38	0.00	0.69	0.65	0.72
Wealthy Zip	0.47	0.03	297.11	0.00	1.60	1.51	1.68
Gender	0.13	0.03	22.35	0.00	1.14	1.08	1.20
Grad2001	-0.13	0.06	4.38	0.04	0.88	0.78	0.99
Grad2002	-0.05	0.06	0.66	0.42	0.95	0.85	1.07
Grad2003	0.04	0.06	0.45	0.50	1.04	0.93	1.17
Grad2004	0.01	0.06	0.04	0.85	1.01	0.90	1.14
Grad2005	0.01	0.06	0.01	0.91	1.01	0.90	1.13
Grad2006	-0.11	0.06	3.41	0.06	0.90	0.80	1.01
Grad2007	-0.14	0.06	5.67	0.02	0.87	0.77	0.97
Grad2008	-0.29	0.06	23.42	0.00	0.75	0.67	0.84

Grad2009	-0.25	0.06	17.15	0.00	0.78	0.69	0.88
Architecture	-0.47	0.08	32.07	0.00	0.62	0.53	0.73
Education	-0.61	0.13	23.32	0.00	0.54	0.42	0.69
Continue	-0.96	0.20	23.89	0.00	0.38	0.26	0.56
Nursing	-0.58	0.09	43.68	0.00	0.56	0.47	0.67
ArtSci	-0.61	0.03	388.51	0.00	0.54	0.51	0.58
Arts	0.28	0.04	53.62	0.00	1.32	1.23	1.42
Constant	-0.76	0.05	207.92	0.00	0.47		

Academic. Next, a binary logistic regression was run measuring participation in student activities that are academically oriented. Alumni were given a one for the variable academic if they ever participated in a student activity that is categorized as an academic activity, and a zero if they did not. Table 4.11 below shows the regression coefficients, standard error, Wald statistics, significance, odds ratio, and 95% confidence intervals for odds ratios for each of the predictors. Participation in an academic student activities was found to be a significant predictor of alumni giving six to nine years from graduation, $X^2(1, N = 32519) = 53.62, p < .001$. Pseudo R^2 s ranged from .03 to .05 for Cox & Snell and Nagelkerke respectively. Other variables constant, the odds alumni will donate six to nine years after graduation are 1.23 times higher if they participated in student activities classified as service, and 95% confident the odds alumni will donate are between 1.12 and 1.36.

Table 4.11

Logistic Regression with Predictor Variables and Academic Participation

Variable	B	S.E.	Wald	Sig.	Exp(B)	95% C.I. for EXP(B)	
						Lower	Upper
Resident	-0.38	0.03	187.40	0.00	0.69	0.65	0.72
Wealthy Zip	0.47	0.03	302.20	0.00	1.60	1.52	1.69
Gender	0.13	0.03	20.83	0.00	1.13	1.07	1.20
Grad2001	-0.12	0.06	4.07	0.04	0.89	0.79	1.00
Grad2002	-0.04	0.06	0.40	0.53	0.96	0.86	1.08
Grad2003	0.05	0.06	0.74	0.39	1.05	0.94	1.18

Grad2004	0.01	0.06	0.05	0.82	1.01	0.90	1.14
Grad2005	0.01	0.06	0.03	0.87	1.01	0.90	1.13
Grad2006	-0.11	0.06	3.38	0.07	0.90	0.80	1.01
Grad2007	-0.15	0.06	6.03	0.01	0.86	0.77	0.97
Grad2008	-0.30	0.06	24.58	0.00	0.74	0.66	0.84
Grad2009	-0.26	0.06	17.94	0.00	0.77	0.69	0.87
Architecture	-0.46	0.08	30.80	0.00	0.63	0.53	0.74
Education	-0.59	0.13	21.68	0.00	0.55	0.43	0.71
Continue	-0.94	0.20	23.23	0.00	0.39	0.27	0.57
Nursing	-0.58	0.09	43.91	0.00	0.56	0.47	0.67
ArtSci	-0.57	0.03	333.43	0.00	0.57	0.53	0.60
Academic	0.21	0.05	17.09	0.00	1.23	1.12	1.36
Constant	-0.77	0.05	204.75	0.00	0.46		

ANOVA Post-hoc test. With the interest in looking to see which student activity type affects alumni giving six to nine years from graduation, two different post-hoc testes were also conducted to answer our second research question further. One ANOVA was performed on number of gifts made by alumni six to nine years from graduation and the different activity type's students could have participated in. The highest average number of gifts made was for those alumni who participated in multiple activity types as a student ($M = .92$, $SD = 2.09$). Figure 4.3 shows the average number of gifts for those in each of the ten categories for our independent variable. Table 4.12 shows the ANOVA was significant, $(9, 32509) = 59.96$, $p < .05$. As a result, we would reject the null hypothesis and conclude at least two group means of number of gifts differ among the number of activity types a student participated in. Bonferroni revealed a significant mean difference between 14 of the 45 comparison.

Figure 4.3

Average Number of Gifts per Type of Student Activity Participated In

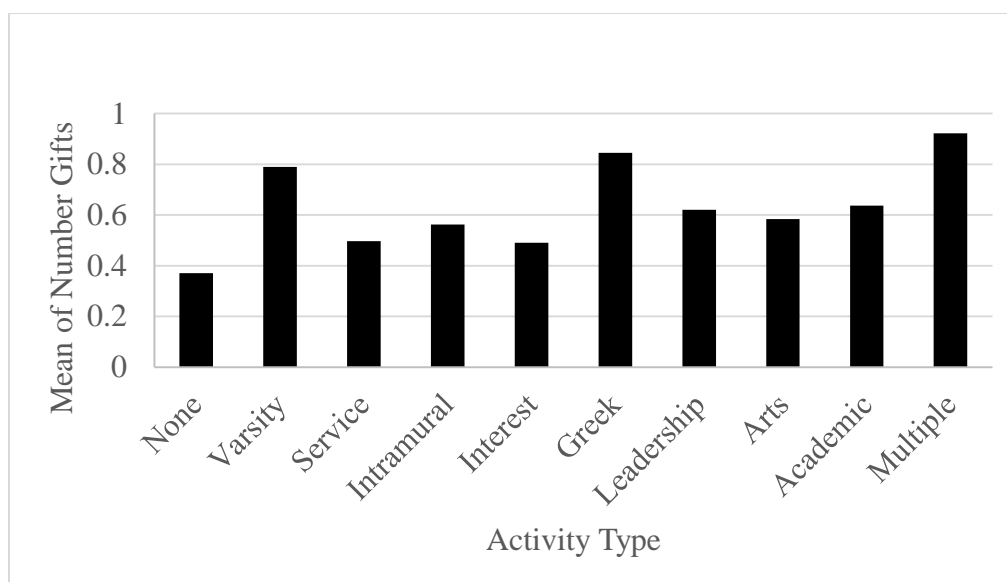


Table 4.12

ANOVA Average Number of Gifts per Type of Student Activity Participated In

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1812.15	9.00	201.35	59.96	0.00
Within Groups	109171.06	32509.00	3.36		
Total	110983.21	32518.00			

A second ANOVA was performed on the total amount of dollars given by alumni six to nine years from graduation, and our same independent variable, the student activity types a student participated in. Figure 4.4 shows the two average means for those alumni who only participated in a student activity coded as a varsity sport ($M = 556.33$, $S.D. = 225.47$) and those alumni who only participated in a student activity coded as academic ($M = 476.14$, $S.D. = 7418.89$), were higher than average mean for those alumni who participated in multiple student activity types ($M = 397.75$, $S.D. = 5225.76$).

Figure 4.4

Average Dollars Given per Type of Student Activity Participated In

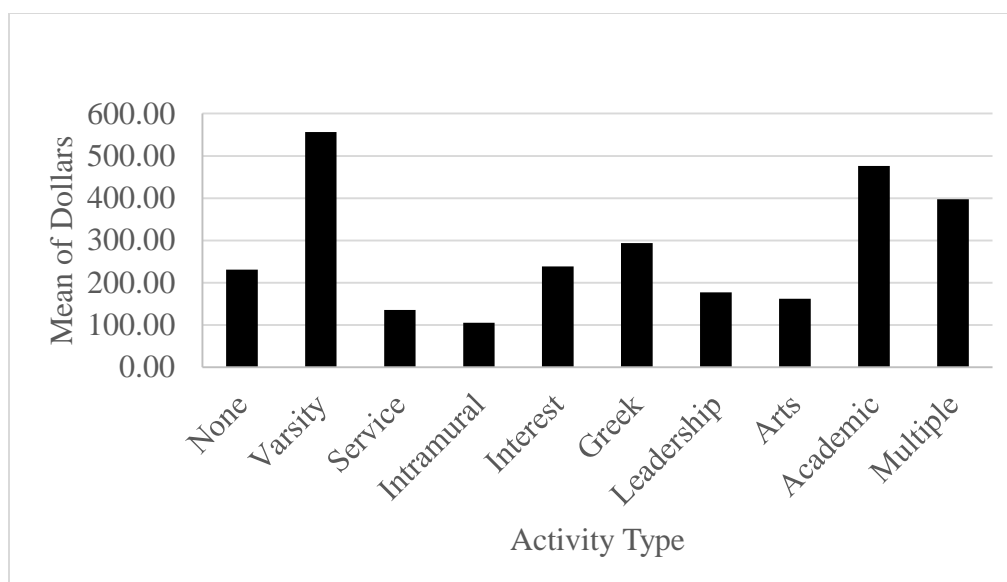


Table 4.13 below shows the ANOVA was significant, $(9, 32509) = 1.98, p < .05$. As a result, we would reject the null hypothesis and conclude at least two group means of total dollars given are different among the student activity type a student participated in. Bonferroni test revealed that there was a statistical significant difference in dollars given between only those who participated in only the activity type coded as service and multiple activity types as a student ($p = .049$).

Table 4.13

ANOVA Average Dollars Given per Type of Student Activity Participated In

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	423395108.43	9.00	47043900.94	1.98	0.04
Within Groups	770651114524.68	32509.00	23705777.31		
Total	771074509633.11	32518.00			

Control Coefficients Summary

Each of our nine logistic regression models also provided some context on how our control variables impacted alumni giving. In lieu of discussing the odds ratio for each control variable in every, we will summarize those coefficients as they did not change much throughout

each model. The odds ratios were less than 1 for living in the same state where the institution studied in this analysis is located, which indicates alumni who reside in this state are less likely to donate than those alumni who do not reside in the state. The odds ratio was greater than 1 for living in a zip code with median home values over 1M, so those in a wealthy zip code were more likely to donate than those not living in a wealthy zip code. The odds ratio was slightly greater than 1 for being a female alumni, so you are more likely to donate being a female alumni than a male alumni.

As a reminder, this analysis used graduation year 2000 as a reference for graduation year and the business college at this institution as a reference for college graduated from. There were nine variables representing graduation year for alumni graduating during 2001-2009. Compared to those graduating in 2000, those who graduated in 2003-2005 consistently had an odds ratio over 1 and in 2006 graduates began a trend of odds ratios below 1 for the next four years. Our model also found those who graduated from 2001-2002 to have odds ratios less than 1. For the six variables representing the other college alumni could have graduated from other than the business school, none of colleges had a odds ratio greater than 1 in any of our models.

Chapter Summary

In this chapter quantitative analyses are presented to answer the two research questions proposed in this study. The analysis confirms that the odds of making at least one gift as alumni six to nine years from graduation increases 1.53 times per every activity type a student participated in. The analysis also confirms that participation in any one of the eight activity types as student increases likelihood of making at least one gift six to nine years from graduation. Those activity types research suggested would increase likelihood of giving most

(varsity, greek, leadership), all found alumni to be over 2 times more likely to give if they participated in one of those activity types as a student.

Chapter 5: Discussion and Implications

The purpose of this study was to help identify a subset of alumni that might be more likely to give than the general alumni population relative to their participation in certain extracurricular activity types as a student. Different models were discussed in Chapter 2 predicting alumni engagement relative to student engagement in extracurricular activities. This analysis is unique in that it focuses on the influence of nearly 1000 extracurricular activities students could have participated in, which were grouped into eight different student activity types for analysis. Additionally, there is greater importance to this study given our construct for measuring alumni giving, making a gift six to nine years from graduation, is not a common time frame analyzed. The planting of philanthropic seeds as young alumni will help advancement professional harvest a legacy of giving (Fleming et al., 2006).

Interpretations

The hypothesized positive relationship between the number of activity types a student participated in and alumni giving was proven correct in our analysis. Alumni were 1.53 times more likely to make a donation six to nine years removed from graduation for each additional activity type participated in as a student. This is not surprising as scholarship had previously shown the more involved alumni were as students the more likely they are to give as alumni (Miller & Casebeer, 1990; Miracle, 1977; Oglesby, 1991; Sax, 2008).

Student Activity Type. When looking at the analysis of each eight activity types on whether alumni made a gift six to nine years from graduation, our predicted activity types that would most positively affect alumni giving were found along with a few surprises. Alumni who participated in a student activity designated as a varsity sport, greek, or campus leadership had the three largest odds ratios on impacting whether or not alumni made a gift six to nine years

from graduation. Past scholarship had shown all three student activity types that had to be correlated with higher levels of alumni giving (Miracle, 1997; Monks, 2003).

Our expected effect of campus leadership is mostly based on positive results found from involvement in student government on alumni giving (Astin, 2011; Oglesby, 1991). While our construct of campus leadership included participation in organizations other than student government, student government participation was a large part of our campus leadership construct and influenced our expectation of it having one of the largest effect on alumni giving. Based on majority of scholarship referenced in Chapter 2, participation in greek activities as a student was expected to positively impact alumni giving, but not all scholarship supported this idea. In one study by Okunade (1994), those involved in greek organizations as a student were found to give less than alumni who were involved in other student activity types. With lack of clarity about how participation in fraternities or sororities impacts giving, it is unexpected to see participation in greek activities have largest odds ratio compared to all other student activity types, where alumni who participated in greek activities were 2.16 times more likely to have made at least one donation six to nine years removed graduation.

Most research had shown participation in a varsity sport to be positively correlated with alumni giving, but not all research supported that conclusion. Oglesby (1991) found no statistically significant difference in alumni who make financial donations relative to their participation in varsity athletics. Nevertheless, the majority of other scholarship discussed during this analysis found varsity participation to positively impact alumni giving, leading to the expectation that participation in varsity sport would be an activity that increased likelihood to give compared to other student activities.

The remaining five student activity types were also significant in their individual models, and, as expected, but smaller odds ratios than the three discussed above. Participation in intramural activities had the greatest odds ratio compared to service, arts, interest, and academic. With scholarship looking at the effect of involvement in intramurals as a student on alumni giving limited, our expectations on a positive effect of participating in intramural came from this activity type being considered exercise. Research has shown that participating in sports and exercise has positive effects on mental well-being as a student (VanKim and Nelson, 2013). Given the scholarship discussed in Chapter 2 that shows a positive student experience to influence positive alumni perceptions (Mosser, 1993; Rau, 2014), we expected intramural participation to positively impact likelihood of making a gift more than other student activity types.

There was also not much scholarship specifically looking into the effect of participation in academic, arts, interest, or service activities on alumni giving. In one study that did look into involvement in these type of student activities, Monks (2003) found those involved in political student activities to make smaller donations than those who did not participate in extracurricular student activities. This finding is contradictory to other scholarship and earlier analysis, which shows increase student participation of any type to positively affect alumni giving. With political student activities a segment of the student activities types categorized in this analysis as service, service was expected to have one of the smaller effects on our measure of alumni giving. However, service had the highest odds ratio compared to academic, arts and interest.

In a study on 22,641 alumni from Middlebury College, Holmes (2009) found students participating in activity groups classified as arts and academic only being between 5% more likely to donate than those who did not participate in those types of student activities. Students

participating in student activities categorized as affinity activities, which is very similar to the construct in this study labeled service, were found to be 6% less likely to donate than those who did not participate in affinity type student activities (2009). These findings along with the limited scholarship looking into these specific student activity types effect on alumni giving, we expected all these three student activity types to have the smallest odds ratio of our models.

The ANOVAs looking at the effect of being associated with either none, one, or multiple student activity types, also provided mostly expected results. As predicted, students who participated in multiple student activity types had the highest mean number of gifts made compared to those who participated in only one student activity type or none. Our ANOVA looking at total amount given showed students participating in varsity sports and academic activity types as having a higher amount of mean dollars given than students participating in multiple student activities. Scholarship on student involvement would suggest the more activity types a student involved in the more they give. Based on these results, it is important to note that the measure of giving that looks at total dollars might be more effected by wealth and income (Paton, 1986). Aside from those two activity types, students involved in multiple activities as student had the next highest mean number of dollars given.

Implications

Post-secondary fundraising is unique to other types of philanthropy in that each year students graduate and become another group of potential donors. Not many other charities also have the ability that post-secondary institutions have to interact with their potential donors in such a meaningful way. At their core, post-secondary institutions exist to help the student through interactions in a multitude of settings and timespans over an undergraduate career. While not it's primary purpose when interacting with a student, an institution does have the

ability to influence the charitable actions of new graduates toward the institution through interactions with the student. Alumni perceptions of their alma mater are associated with the student experience of that individual (Rau, 2014). To that end, should every institution have the goal to graduate alumni who had a positive student experience, then theoretically when institutions accomplish their goal with an individual student they would graduate someone who has positive perceptions of their alma mater.

In our analysis, other identity-based student activities were classified as interest or service type activities. From the expectancy-value model, we can predict a donor's attitude to be a combination of the value they place on support to that cause and how their individual donation may influence a desired outcome (Ajzen, 1991). For those student activity types that did not greatly improve the odds of someone making at least one donation six to nine year from graduation, we can theorize there is a disconnect for student involved in the that type of activity to not rank philanthropic support of their alma mater a priority and or the think their donation will make a difference. This might explain the findings in this study for those involved in interest or service type activities, which includes student activities that center around race, sex, religion, etc.

Research has found a need to improve efforts around solicitation of minority alumni groups. When talking about LGBTQ alumni specifically, scholarship has suggested these groups need more strategic solicitations that represent their student experience and support actions they deem important (Garvey & Drezner, 2019). Theory would suggest and now research is showing that a more targeted fundraising approach is needed for those alumni who participated in student activities with a focus around a minority group or interest. There is both an opportunity to make

students participating in these type of student activities feel a better connection to their school when enrolled and better cultivated as alumni to feel their support makes a difference.

Overall, the goal of this analysis was to see if we could identify alumni more likely to donate based on involvement in certain student activity types, with the hope that those involved in fundraising and leading post-secondary institutions could then have segmented group of alumni more likely to donate based on their involvement in a certain student activity type. Related to this goal, there are two main practical implications from this research. First, a broad construct of campus leadership activities outside of just student government was shown to impact likelihood of giving. Second and rather surprising, this research found there to be a point where involvement in too many student activity types doesn't result in more money given or gifts made.

Leadership. Campus leadership, greek, and varsity sport were the three student activity types that had the highest impact on whether alumni made at least one gift six to nine years after graduation. In this analysis, our constructs for greek and varsity sport are very similar to other constructs researchers have used to analyze the impact of student activity participation on alumni giving. Where alumni were marked as being involved in greek student activities if they were part of a fraternity or sorority, and where alumni were marked as being involved in varsity sports if they were a member of NCAA participating sport at that institution. Unfortunately, there seems to be no uniform construct for measuring student leadership activities. Many studies have just looked at leadership activities as participation in student government (Astin, 2011; Oglesby, 1991).

Using data available in this research and the categorization of student activities by the institution being studied, campus leadership activities went beyond student government and

included activities like, faculty / class attendee and internship. With such a robust construct for leadership in this study, our findings that student participation in these types of activities leads alumni to be more likely to give at such a high odds ratio is an important discovery. If student activities based around leadership of your peers increases your likelihood of giving, it might be that incorporating leadership elements to other student activity types could also increase the likelihood of those students participating in other types of activities to give as alumni.

Scholarship has already shown that leadership development is related to participation in extracurricular activities (Mayhew et. al, 2016). Should we better be able to encourage leadership development across all student activity types, we might then see a larger group of alumni who are more likely to donate just from participating in any student activity type.

The findings about the effect leadership development activities can have on alumni giving also ties in with our theoretical framework. Applying Astin (1970), we can say that students enter an institution with a certain amount of leadership development experience, and the institution or environment, effects the amount of leadership development growth they had while enrolled. While institutions have an intrinsic goal to help facilitate leadership development for all students, theory suggests an auxiliary benefit in making alumni more likely to donate. This is best illustrated from further application of the impact model on alumni giving (Gaier, 2005).

Alumni Education + Student Involvement = Alumni Involvement (where voluntary financial contribution is a function of Alumni Involvement)

Using the equation above, exposing all students to student involvement that promotes leadership development theoretically would signal increased alumni involvement keeping alumni education constant.

Over-involvement. The second key finding from this research is that more involvement in extracurricular activities is not always good in terms of alumni giving. Surprisingly, our analysis found that participating in an increased number extracurricular activity types as a student does not lead to an increase in dollars given and number of gifts given. There was a point of diminishing returns for dollars given when alumni had participated in more than five student activity types and for number of gifts made when alumni had participated in more than six student activity types.

This negative effect on measures of alumni giving once alumni were involved in five or more student activity types might be explained by earlier scholarship. Active participation in university-sponsored activities that produces positive emotional attachment to an institution leads to a higher probability of alumni contributions (Hoyt, 2004). It could be that being involved in more than five student activity types, does not allow a student become engaged enough where we see their participation in extracurricular activities affect their giving.

Limitations

A major limitation of this study pertains to the data only coming from one institution. While the dataset was large encompassing over 30,000 alumni records spanning ten years of graduates, some of the findings may be more generalizable to this alumni population or similar institutions rather than all post-secondary institutions. A future analysis could look to incorporate this dataset from data of another institutions or replicate this study at the new institution, both of which would add more confidence that our findings can be applicable to all post-secondary institutions.

Another limitation of the study is how the involvement in student activities were recorded. As we disclosed in Chapter 3, student activity participation was better recorded the

more recent alumni graduated. Also, all student activity participation is not tracked in the same ways. More popular student activities like varsity sport are tracked with great specificity based on records kept by this institutions athletic department. For the majority of our other student activities, their participation would have to be submitted to the university by a representative of the group or organization. There is a high probability that this dataset does not reflect for all alumni the student activities they participated in.

This analysis was also limited in that our dataset could not account for level of involvement in a student activity. Research has found that both the quantity of student involvement and effort of engagement in those activities can have an impact on the formation positive attitudes towards one's alma mater as alumni that could impact propensity to give (Steeper, 2009). This research only accounts for participation by a student once during their undergraduate career in any type of student activity within one of seven defined student activity categories. There is no distinction made for participation in multiple student activities that are grouped in the same category, or the amount of time and years spent involved with a specific student activity. Should our research prove that mere involvement in a certain student activity type lead to a higher propensity of giving, future research could look to better understand how giving is impacted by levels of involvement in certain types of student activities.

The last limitation of this study that should be addressed deals with the maturation of alumni. With the literature reviewed citing the life cycle hypothesis and that only increases in income can lead to an increased likelihood for people to donate, there is some concern our studied alumni may not be in the workforce long enough to garner a salary commensurate with being able to give (Naccarato, 2019; Okunade and Ade, 1993). This could explain some of the findings in our ANOVA looking the effect of participation in one or multiple student activity

types, where campus leadership was found to have a lower than expected mean dollars given. Perhaps those students who participated in campus leadership activities alone are not yet at an income level where they can give large amount. To account for this concern, our dependent variable for our main analysis was whether alumni made at least one gift six to nine years from graduation, rather than amount or number of gifts given.

Recommendations

This study confirmed that participation in extracurricular activities as a student increases the likelihood that alumni will make a gift. Participation in three student activity types were found to more than double the odds of alumni making a gift six to nine years from graduation. Future research needs to deduce out what about these student activity types makes a student who participates more likely to a donate. In the case of case of campus leadership, this could be accomplished by further quantitative analysis that looks into the effects of the participation in specific activities categorized as campus leadership.

Surveying or interviewing alumni who participated in certain student activity types might add deeper understanding to what about those activities makes alumni more likely to donate. Qualitative analysis can, “add insight into the quantitative results and what overall is learned in response to the study’s purpose” (Plano and Clark, 2011, p. 83). There are many different types of qualitative analysis, but given the results of this study qualitative analysis in form of narrative inquiry is suggested. In this analysis, alumni could be presented with the quantitative results and asked to explain why they believe participation in certain student activity types makes alumni more likely to donate. Incorporating those involved in fundraising at post-secondary institutions would strengthen that qualitative analysis of this study further. In looking to have a real world application from these results, fundraising professionals through individual discussion with

alumni may be aware of what about certain student activities makes those involved more likely to donate.

Post-secondary Fundraisers. This analysis found that participation in leadership activities as a student to have the largest impact on likelihood of giving as alumni compared to seven other types of student activities. This finding would then support the actions of alumni fundraising professionals who look to incorporate leadership development into student and alumni activities to make alumni more likely to support their alma mater.

One example of using this type of academic research to support practical actions of fundraisers can be seen even twenty years ago at Duke University and University of California Los Angeles (UCLA). In the early 2000s both intuitions used young alumni leadership boards and leadership programing to keep graduates engaged in the university, where issues of importance for to young alumni were heard and then acted on by alumni professionals (Scully, 2007). At the time of this publication, the article cites many institution including both Duke and UCLA attracting young alumni involvement through target networking events, internship opportunities, and career coaching. Our research would support the use of these findings to develop leadership type activities to engage students and alumni on the difference their philanthropic support can have on the mission of the institution once they graduate.

Post-secondary Leaders. Prior to the COVID-19 pandemic, post-secondary leaders across the country and especially those at public institutions were already facing tough budgetary situations. With the effects of this pandemic on institutions not being fully known for many years, in the short term expectations are toward less money given by alumni due to the financial hardships individuals faced from the pandemic. Like many schools, Emory University decided to cancel their most lucrative fundraising day ‘giving day’ during the pandemic and expected

their annual fundraising totals to drop compared to previous years (Haynes, 2020). In having potentially less resources to spend on fundraising efforts and a greater need to raise funds, the efficient post-secondary leader would look to invest resources on alumni most likely to give. That would mean reaching out to current alumni who as student, were involved in campus leadership, varsity sport, or greek activities. An institutional leader should then look to help expose current students to elements of student activity types that help create a more likely alumni donor when they graduate. For instance, are there elements of participation in greek activities that could be emulated in a first-year dorm situation? Unfortunately, this research does not explain what about these student activities leads alumni to donate, but it does explain which student activities to look into.

The forward-thinking leader should understand that this research offers a group of alumni more likely to donate, but that the greatest value from this research is the possibility to encourage a more likely group of alumni donors from current and future students. Leaders should also use this analysis to reinforce the need of data management practices that make an analysis like this possible. If knowing types of extracurricular activities students are involved can affect alumni giving likelihood, policies need to be in place that assure this information is tracked accurately and in a way that is most helpful.

Chapter Summary

This analysis supports other scholarship that points to involvement in varsity sport, greek, or campus leadership activities to impact alumni giving more than other extracurricular activities. That being said, involvement in any one of our eight student activity types increased the likelihood of making at least one gift six to nine years removed from graduation, where others had found involvement in certain student activity types to negatively impact likelihood of

giving. There is a significant opportunity for post-secondary leaders to take these findings and apply them to both an alumni fundraising and student engagement strategy. Further dissecting of these results qualitatively could garner even more about what from involvement in these activities makes alumni more likely to donate.

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