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Effects of Social Capital on Student Academic Performance

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ABSTRACT

This study seeks to examine the relationship between networks of social relationships (social capital), and academic achievement (grade point average). It provides an introduction of the topic, relevant definitions and a brief literature review of supporting studies. The survey research presented in this study was taken from a convenience sample of the University of New Hampshire students (N=471). The study found that there were statistically significant results at the 0.01 alpha level supporting the existence of this relationship. Overall, there was a positive relationship between students that took more classes with friends as well as students that were involved in extracurricular activities/organizations and their GPAs. This study concludes by summarizing the research findings, presenting clear limitations, and highlighting key areas of implications for future research. Overall, this research supports the idea that higher levels of social capital are beneficial to a student's academic performance.

INTRODUCTION

The university setting is a unique learning environment in comparison to other periods in a student's life. A unique characteristic of this setting is the varied network of social relationships a student develops in academic and non-academic areas. This network of social relationships has the potential to set a pendulum swing for a student's academic success. In this setting, a student's academic achievement opens doors for their future employment and life goals. This study examined the overlap in those two areas: a network of social relationships (social capital), and academic achievement (grade point average).

In this study, social capital (SC) refers to an individual's network of social relationships and participation in social structures that fosters a sense of belonging. SC is directly linked with an individual's participation in social groups and is interrelated with almost all scientific disciplines (Magson, Craven and Bodkin Andrews 2014). This definition is critical because it highlights the importance of individual participation in social groups. It is important to note that although this was the chosen definition for this study, there is no universally accepted definition of SC (Magson et al. 2014). Using this framework of SC as a guide, the research question this study explored was *what is the effect of social capital on student academic success?*

It is important to note that this research did not focus on a network of relationships solely in the academic setting. In the literature review, research methods and results, this study also examined the relationship in extracurricular involvement. This choice was intentional and important because the university setting is not just about academic achievement. If a relationship between these variables exists, this research has the potential to change the learning framework at the university level. This could change the framework for university professors and emphasize the importance of building social networks within the classroom. Professors could utilize more group-based learning and discussions to support connections between students. Outside the classroom, this sets a precedent for students that they can and should focus on building a network of relationships as an avenue to improve their academics. In summary, the objective of this research was to gain a better understanding of how social connections mediate academic success at the university level. This research seeks to support the belief that students' social lives as individuals are important to their academic success and the success of others.

LITERATURE REVIEW

In this brief literature review, four separate studies are presented that support the existence of the relationship between a network of social relationships and academic achievement. Each study was conducted within the past ten years highlighting the currency and relevance of this relationship. Each study brings unique insight into this relationship from public to private institutions as well as two universities on an international scale.

Gašević and colleagues (2013), conducted a study examining the relationship of social ties that students create between classes and their overall academic performance. In this study, they hypothesized that as social connections between classes increase, so will academic achievement (GPA). Their research was conducted using 10 years of enrollment and registration records of undergraduate and graduate students at public institutions in the United States (US). They examined patterns of students who took the same classes together and placed those individuals into categories. These categories ranked their level of social capital based on the number of classes they took with the same students throughout their time at the university. The authors found that as social capital went up a student's GPA also went up, supporting their hypothesis. This research was a simple way of supporting the existence of this relationship. However, it falls short because it examined the relationship between individuals without collecting social data like surveys or interviews. In addition, it falls short because the number of classes an individual takes with other students does not guarantee a network of social relationships. Students can be in the same classes as other students yet have no individual connection with them.

Unlike the previous study, Martin (2009) researched university students at a private institution in the US examining social capital and student academic achievement using

longitudinal survey data of students. The author hypothesized that a network of social relations would have a positive relationship on academic success. Social capital was measured by surveying a sample of students about their numerous types of social networks across campus. The survey inquired about the number of friendships in student dorms, extracurricular memberships, and academic life. This study randomly surveyed students in a given year and then surveyed the same students from the original study the spring of their first, second and fourth years at the university. The author found that social networks had little impact on early academic achievement but a great impact on the level of academic achievement at graduation. Students with more social connections were far more likely to graduate with honors and obtain higher GPAs supporting the author's hypothesis. This study supported the existence of this relationship using direct survey data to university student populations. However, this study has low external validity because the sample was from university students of a private institution. Students who enrol in private universities, as highlighted by the author, are already more socially motivated to have higher levels of academic achievement regardless of social relationships. There is little way to determine if this relationship was truly based on social relationships. Regardless, this study supports a statistically significant relationship using direct survey data.

Hasan and Bagde (2013) conducted similar research that additionally supports the relationship between these two variables. They examined if there was a relationship between the degree of social connections (roommate, study partner, friendship) and academic achievement in an Indian college. They hypothesized, the more socially connected in each area you were, the higher the level of academic success you were likely to have. The authors conducted self-report survey data of students collected over four semesters to test this relationship. They found that higher degrees of connections between roommates and friendships both supported their

hypothesis but not study partners. This research was unique because it supports the idea that this relationship exists on an international scale.

Lastly, Celant (2013) conducted research at a university in Rome, Italy examining the network of social ties in and outside the classroom that influence academic performance. The author took a unique approach to measure social networks by focusing on three stages of participation within social groups; those who were in groups, out of groups, and those who were in a group but were since excluded. It was hypothesized that students within groups would have higher levels of academic performance. The author developed a model for measuring the strength of social ties and used that as a base for questionnaires. The author found a statistically significant relationship between the social ties of those within groups and higher academic performance. Those out of groups or who had been excluded from groups had a significantly lower academic performance. It is important to note that the author did not explicitly use the term SC in their research. However, examining this research through our chosen definition of SC that focused on a network of social relationships, this study was extremely relevant to our research question. Furthermore, the academic performance in this study did not measure an overall GPA, but rather a student's performance on final examinations at the end of a semester. However, students with higher social ties were shown to perform better on final examinations than those not in groups. This study also supports the existence of this relationship on an international scale supporting the idea that this relationship is applicable to any student anywhere in the world.

RESEARCH METHODS

SAMPLE

Data for this study came from a survey (N=471), fielded to a convenience sample of University of New Hampshire (UNH) students during the Fall 2019 academic year. By surveying a convenience sample, it allowed for this research to be conducted in a short amount of time with little to no cost. However, a downside to this sampling method was that convenience samples can be known to produce results that are unlike the population and can sometimes be unrepresentative. There was no sampling criteria/quota in this study for specific populations of UNH students. This aided in producing an ample sample size. Surveys were administered anonymously through Qualtrics, an online surveying program. When taking the survey, students consented to a form outlining that the survey did not collect any personal data of any kind and there was no compensation for participation. Furthermore, this form outlined that participation through opinion-based data allowed students to benefit the overall UNH community by providing critical information about student life. Lastly, data were analyzed using quantitative methods through the Qualtrics program.

Table 1 depicts a frequency distribution of the gender of survey respondents. Of the 471 survey participants, 348 respondents answered the question, *"What is your gender?"* Of these respondents, well over half, 67.24% (234) answered *Woman*, 32.18% (112) answered *Man*, and 0.57% (2) answered *Non-binary*. There were no respondents who chose the category *Non-Gendered*.

Table 1: Gender of Respondents

Q: WHAT IS YOUR GENDER?			
#	Answer	%	Count
1	Woman	67.24%	234
2	Man	32.18%	112
3	Non-binary	0.57%	2
4	Non-gendered	0.00%	0
	Total	100%	348

Table 2 depicts a frequency distribution of the class standing of respondents. Of the 471 survey participants, 437 respondents answered the question, *"How many years have you attended UNH?"* Of these respondents, 12.59% (55) answered *First-Year*, 21.51% (94) answered *Second-Year*, 36.38% (159) answered *Third-Year*, 27.92% (122) answered *Fourth-Year*, 1.37% (6) answered *Fifth-Year*, no respondents answered *Sixth-Year*, and 0.23% (1) answered *Seventh-Year*. Third-Year students are typically regarded as Juniors.

Table 2: Class Standing of Respondents

Q: HOW MANY YEARS HAVE YOU ATTENDED UNH?			
#	Answer	%	Count
1	First Year	12.59%	55
2	Second Year	21.51%	94
3	Third Year	36.38%	159
4	Fourth Year	27.92%	122
5	Fifth Year	1.37%	6
6	Sixth Year	0.00%	0
7	Seventh Year	0.23%	1
	Total	100%	437

METHODS

The survey administered to students included two questions measuring for the independent variable of this study (SC) and one question measuring the dependent variable (GPA). Additionally, there were questions included in the survey by other student researchers that did not pertain to the research question explored in this study. SC was operationalized with two questions on the survey seeking to explore the connection in and outside of academic areas. The first stating: *"How often are you in classes with your friends?"* with answer choices *"Always, Sometimes, Rarely, Never."* The second stating: *"How many extracurricular*

activities/organizations are you involved in at UNH?" with answer choices *"None, 1, 2 to 3, 4 to 5, 6 or more."* The dependent variable was operationalized with a question about student GPA. This question was stated as: *"What is your GPA?"* with answer choices *"less than 2.0, 2.01-2.49, 2.5-3.0, 3.01-3.49, 3.5-4.0."* For this study, the alternative hypothesis was that there was a positive relationship between SC and GPA. Meaning that students with more SC would have a higher overall GPA. The null hypothesis for this study was that there was no relationship between SC and a student's overall GPA. The chosen alpha level for this study was 0.01. If our p-value was below 0.01 this would allow us to say with 99% confidence that our results were due to statistical significance and not random sampling.

RESULTS

In Table 3, 430 respondents answered the independent variable question *"How often are you in Class with your Friends?"* Of these respondents, 23.72% (102) answered *Always*, 51.63% (222) answered *Sometimes*, 21.86% (94) answered *Rarely*, and 2.79% (12) answered *Never*. Of those who answered either *Always* or *Sometimes* that accounted for three quarters (75.35%) of respondents who were regularly in classes with their friends.

Table 3: Independent Variable responses "How Often Are You in Classes with Your Friends?"

Q: HOW OFTEN ARE YOU IN CLASSES WITH YOUR FRIENDS?			
#	Answer	%	Count
1	Always	23.72%	102
2	Sometimes	51.63%	222
3	Rarely	21.86%	94
4	Never	2.79%	12
	Total	100%	430

In Table 4, 430 respondents answered the independent variable question *"How many Extracurricular Activities/ Organizations are you Involved in at UNH?"* Of these respondents, 12.56% (54) answered *None*, 25.81% (111) answered *1*, 51.63% (222) answered *2 to 3*, 8.60% (37) answered *4 to 5*, and 1.40% (6) answered *6 or more*. Of those that answered *1* or *2 to 3*, it accounted for a little over three-quarters of respondents (77.44%) who were in at least *1-3* extracurricular activities/organizations.

Table 4: Independent Variable responses "How many Extracurricular Activities/Organization are you Involved in at UNH?"

Q: HOW MANY EXTRACURRICULAR ACTIVITIES/ORGANIZATIONS ARE YOU INVOLVED IN AT UNH?			
#	Answer	%	Count
1	None	12.56%	54
2	1	25.81%	111
3	2 to 3	51.63%	222
4	4 to 5	8.60%	37
5	6 or more	1.40%	6
	Total	100%	430

In Table 5, 409 respondents answered the dependent variable question "*What is your GPA?*" Of these respondents no students (0.00%) answered *less than 2.0*, 5.87% (24) answered *2.01-2.49*, 16.38% (67) answered *2.5-3.0*, 36.92% (151) answered *3.01-3.49*, and 40.83% (167) answered *3.5-4.0*. Those that answered *3.01-3.49* or *3.5-4.0* accounted for over three-quarters of respondents (77.75%) who had above a 3.01 GPA.

Table 5: Dependent Variable responses "What is your GPA?"

Q: WHAT IS YOUR GPA?			
#	Answer	%	Count
1	less than 2.0	0.00%	0
2	2.01 - 2.49	5.87%	24
3	2.5 - 3.0	16.38%	67
4	3.01 - 3.49	36.92%	151
5	3.5 - 4.0	40.83%	167
	Total	100%	409

Table 6 depicts a cross-tabulation between the first independent variable *"How often are you in classes with your friends?"* and the dependent variable "*What is your GPA?" The* alternative hypothesis was that students with more SC will have a higher overall GPA. Based on this hypothesis, the expected results would be that students with higher GPAs were in classes with friends more often. The null hypothesis for this study was that there was no relationship between SC and a student's overall GPA. Based on the overall statistical test percentage from the chi-square analysis test, our associated p-value was 0.004. This was statistically significant at the 0.01 alpha level; therefore, the null hypothesis was rejected stating that there was no relationship between these variables. It is important to note that when calculating the cross-tabulation in table 6, the category *2.0 or lower* was removed from the dependent variable category since there were no respondents. When looking at the table, 43.3% of respondents who answered *Sometimes* and 39.6% who answered *Always* have a 3.5 GPA or higher. However, a combined 58.3% of respondents who answered *Never* had a *2.5 or lower* GPA whereas a combined 41.7% of respondents who answered *Never* had a *3.01* GPA or higher. Overall, there was a higher

percentage of students with higher GPAs who were in class more often with friends. This supports the idea that students who were in more classes with friends obtained higher GPA levels.

Table 6: Cross-Tabulation results of first Independent variable and Dependent variable

CROSS TABULATION - Q: WHAT IS YOUR GPA? (rows) Q: HOW OFTEN ARE YOU IN CLASS WITH YOUR FRIENDS? (columns)					
	Total	Always	Never	Rarely	Sometimes
Total Count	409	96	12	91	210
2.01 - 2.49	24	5	1	12	6
2.5 - 3.0	67	16	6	14	31
3.01 - 3.49	151	37	2	30	82
3.5 - 4.0	167	38	3	35	91
2.01 - 2.49	5.9%	5.2%	8.3%	13.2%	2.9%
2.5 - 3.0	16.4%	16.7%	50.0%	15.4%	14.8%
3.01 - 3.49	36.9%	38.5%	16.7%	33.0%	39.0%
3.5 - 4.0	40.8%	39.6%	25.0%	38.5%	43.3%
Total %	100.0%	100.0%	100.0%	100.0%	100.0%
Overall Stat Test of Percentages: 0.00483					

Table 7 depicts a cross-tabulation between the second independent variable *"How many extracurricular activities/ organizations are you involved in at UNH?"* and the dependent variable *"What is your GPA?"* Based on the hypothesis that students with more SC will have higher overall GPAs it was expected that students who were involved in more extracurricular activities/ organizations would have higher GPAs. Based on the overall statistical test percentage from the chi-square analysis test, our associated p-value was 0.001. This is statistically significant at the 0.01 alpha level. Therefore, the null hypothesis was again rejected stating that

there was no relationship between these variables. It is important to note that when calculating the cross-tabulation in table 7, the category in the independent variable *1*, was merged with the category *2-3*, combining similar categories of involvement to make the *1-3* category. When looking at the table, 40.1% of respondents who answered *1-3* and 65.7% of those who answered *4-5* had *3.5 or higher* GPAs. Likewise, 38.9% of those who answered *1-3* had a *3.01-3.49* GPA. However, a combined 42.9% of respondents who were not involved in extracurricular activities/organizations had a *3.0 or lower* GPA. Overall, there was a larger percentage of students with higher GPAs who were involved in at least 1 or more extracurricular activities/organizations. This supports the idea that students who were involved in more extracurricular activities/organizations obtained higher GPA levels.

Table 7: Cross-Tabulation results of second Independent variable and Dependent variable

CROSS TABULATION - Q: WHAT IS YOUR GPA? (rows) Q: HOW MANY EXTRACURRICUAR ACTIVITIES/ ORGANIZATIONS ARE YOU INVOLVED IN AT UNH? (columns)					
	Total	None	1-3	4-5	6 or more
Total Count	409	49	319	35	6
2.01 - 2.49	24	7	17	0	0
2.5 - 3.0	67	14	50	3	0
3.01 - 3.49	151	16	124	9	2
3.5 - 4.0	167	12	128	23	4
2.01 - 2.49	5.9%	14.3%	5.3%	0.0%	0.0%
2.5 - 3.0	16.4%	28.6%	15.7%	8.6%	0.0%
3.01 - 3.49	36.9%	32.7%	38.9%	25.7%	33.3%
3.5 - 4.0	40.8%	24.5%	40.1%	65.7%	66.7%
Total %	100%	100%	100%	100%	100%
Overall Stat Test of Percentages: 0.00161					

CONCLUSION

This study introduced the relationship between SC and GPA and provided a brief overview of various studies that supported the existence of this relationship. Furthermore, the survey research presented in this study of UNH students (N=471) was statistically significant at the 0.01 alpha level. This led to the rejection of the null hypothesis supporting the significance of a relationship between SC and GPA. In the cross-tabulations students that took more classes with friends overall had higher GPAs. Likewise, students that were involved in extracurricular activities/organizations overall had higher GPAs. The research question was: *what is the effect of social capital on student academic success?* Overall, this study supported a positive relationship between SC and student academic success.

Despite consistencies across various studies and support of the relationship within the research, this study is not without its limitations. The survey research conducted in this study highlights the significance of this relationship but measuring the frequency of classes with friends and the number of extracurricular activities/organizations does not give an accurate measure of the *strengths* of these social networks. Furthermore, there was no guarantee that involvement in extracurricular activities/organizations was the direct cause of higher GPA levels. Furthermore, this study was potentially geographically and racially limiting by only surveying students at UNH, a public university which is a predominantly white institution. It should also be highlighted that this paper was written from a sociological perspective. Articles chosen to support this topic were largely sociological and did not include research from other fields. Likewise, the topic was approached from a perspective that focused on connections of social networks and not tangible resources of individuals.

However, this study has implications for related future research in fields such as mental health. In sociology, there is a recognized link between social isolation and lower mental health in individuals that dates to founding sociological studies (Kawachi and Berkman 2001). Involvement in organizations and taking classes with friends creates stronger social ties and could be beneficial to an individual's mental health. This research could be critical to help create programs that benefit overall student wellness.

Lastly, this research supports the belief that students' social lives as individuals in the university setting are important to their academic success and the success of others. This sets a precedent that creating bonds in and outside of academic areas is a crucial part of academic success. This has the potential to restructure how educational learning is framed at the university level. Instead of focusing on individual accomplishments and efforts, more intentional learning based on strengthening bonds between peers could greatly impact student success. Focusing on the investment in social capital during undergraduate years could set a positive pendulum swing for future careers and higher education learning.

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