

Academic Success and Persistence in Higher Education: A Motivational Orientation Approach

A case study at SUNY Geneseo;

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Summary

Educational degrees, especially a college degree, yield very substantial individual and economic returns. Moreover, communities are also benefited by educational spill-over effects. Yet, even though these assumptions are well established within society, federal college success and persistence statistics for the United States display dramatic figures. Local figures at SUNY Geneseo, the location for this research, show slightly less negative results. In spite of that, educational losses are still significant and a better understanding of the underlying determinants for academic outcomes would be desirable. This research will identify several of these determinants in the form of socio-economic, demographic and geographic variables and academic outcomes will be measured by academic performance and student persistence. To connect these variables, a construct of self-determination theory will be used. The main research question is as follows:

Does self-determination theory in combination with student background characteristics form a feasible framework for understanding college students' academic outcomes at the SUNY Geneseo campus in the United States?

This research conducted a survey among students in order to gather the necessary data. Further, a statistical analysis in the form of a Pearson Chi-squared test was run to generalize the results. In contrast with the reviewed literature, the results do not display a connection between socio-economic, demographic and geographic and the motivational orientation of students at SUNY Geneseo. Likewise, no connection was found between motivational orientation and academic performance or graduate school attendance. With hindsight, several issues with the research method and measurements might partially explain these contradicting results. Nonetheless, when taking these findings and the reviewed literature into account, this research cannot possibly conclude that self-determination theory forms or does not form a feasible framework for understanding the connection between socio-economic, demographic and geographic on the one hand, and academic variables on the other hand among SUNY Geneseo students.

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Chapter 1: Introduction

1.1 Background

Social sciences research has found similar patterns in many societies with regards to the benefits of education. At this point, it is perceived to be common knowledge that education has a positive effect on both the individual and society. People who pursue and achieve relatively more education have a higher average income, live healthier lives, commit less crimes, enjoy more stable families and are more actively engaged in their communities than less educated people (e.g. *Ross & Mirowsky, 1999; Pallas, 2000; Kingston et al., 2003; Fisher & Hout, 2006; Attawell & Levin, 2007; Autor et al., 2006; Stevens et al., 2008*). Furthermore, research has shown that the benefits of education also impact the surroundings of more educated people in the form of spillover effects. Many examples of these effects exist within the scientific literature (e.g. *Topel, 1999; Moretti, 2004, 2012; Brady et al., 2005; Lange & Topel, 2006*). Also, the societal shift towards a knowledge based economy emphasizes the importance of education. The rise of intellectual capital intensive industries resulted in an increased demand for educated workers (e.g. *Burton-Jones, 1999; Stewart & Ruckdeschel, 2007; Olssen & Peters, 2007; Brown et al., 2013*). Therefore, it is argued that obtaining an education degree is more important than ever before (*Abel & Deitz, 2014*).

Although it is indisputable that all education degrees are influential, a college degree appears to yield one of the highest substantial returns (*Pascarella & Terenzini, 2005; Autor et al., 2006*). Research has found that college attainment is more strongly related to economic and extra-economic well-being than its high school counterpart (*Torche, 2011*). Moreover, parental college attainment often results in better chances of their children going to college due to increased economic and extra-economic well-being (*Ellwood & Kane, 2000; Haveman & Smeeding, 2006*). It is even argued that a college degree functions as a great equalizer of societal standing (*Hout, 1988*).

Regardless of all the benefits of such a degree, federal college success and persistence statistics for the United States display dramatic figures. It is estimated that only slightly more than half of the initially enrolled college students ever graduate (*U.S. Department of Education, 2017*). Further, it is estimated that barely 30% of all college graduates continue their education after graduation (*Ryan & Bauman, 2016*). Local statistics from SUNY Geneseo, the location for this study, show slightly more positive results. Approximately 78% percent of all students graduate at SUNY Geneseo within six years, and the percentage of students that pursue further education after graduation is with 40% somewhat higher than the federal percentage (*Collegefactual, 2014*). Nevertheless, when taking the enormous beneficial effects of education and the economic necessity of a college education degree into account, it is obvious that the US is suffering from huge educational losses. Not to mention the subsequent social and economic losses. And even though local figures from SUNY Geneseo show substantially better percentages, losses, specifically for future academic enrollment, are still considerable.

1.2 Research problem

The inability of individuals, policy makers and educational institutes to solve these problems might partially be attributed to a lack of knowledge of underlying determinants for academic outcomes (i.e. college success and student persistence). Therefore, a better understanding of the underlying determinants for academic outcomes would be desirable for policy makers, individuals and educational institutes. The goal of this research is to examine if underlying

determinants in the form of socio-economic, demographic and geographic variables affect these academic outcomes, thus creating a better understanding of underlying determinants for academic outcomes.

This research aims to do so by using a self-determination theory framework. In the context of this research, such a theory is used to explain academic outcomes by comparing it with the motivational orientation of students. In other words, the underlying personal reasons for being enrolled in education (=motivation orientation) are being compared with these academic outcomes. Normally, people are considered to have a motivational orientation that is more oriented towards either one of two categories. The general concept of this theory proposes a connection between a certain motivational orientation and these academic outcomes (*Deci & Ryan, 1991; Guiffrida, 2006, 2009; Guiffrida et al. 2013*). Chapter 2 will provide a more detailed description of these terms and theories. Considering that this research will use this theory to achieve its goal, the main research question is formulated as follows:

Does self-determination theory in combination with student background characteristics form a feasible framework for understanding college students' academic outcomes at the SUNY Geneseo Campus in the United States?

In order to answer the main research question, it is important to answer the following research subquestions:

- 1. Do socio-economic, demographic and geographic factors affect the motivational orientation of students at SUNY Geneseo?*
- 2. What is the effect of a certain motivational orientation on the academic performance and plans for further academic enrollment of SUNY Geneseo students?*

1.3 Structure

First, this research will discuss the relevant theoretical framework and establish initial hypotheses. Further, in *chapter 3*, it will present the research design, ethical considerations, the data collection instrument and its specific applicability, followed by the way of participant recruitment, to end the chapter with an explanation of the data analysis. *Chapter 4, 5 and 6* discuss and compare the results in order to provide the reader with an answer to the research subquestions. To end, this research will briefly reflect and conclude on the research.

Chapter 2: Theoretical framework

2.1 Educational motivation

Research has shown that educational motivation is a good determinant for student persistence and college success (*Guiffrida, 2006*). Moreover, *Guiffrida (2006, 2009)* stated that a construct of Self-Determination Theory (SDT), as described by *Deci & Ryan (1991)*, provides a useful theoretical framework for understanding a student's educational motivation. It is important to notice the use of the term educational orientation instead of motivational orientation. While motivational orientation has a broader application in science, within the context of education, both terms can be used interchangeably. Furthermore, numerous studies have successfully applied SDT concepts, resulting in it becoming one of the most empirically validated theories for understanding educational motivation (*Reeve et al., 2004*). The theory proposes a dualistic continuum between intrinsic and extrinsic motivation (*see appendix B*); *Ryan & Lynch, 2003*). The term intrinsic motivation is used when satisfaction for an activity is inherent to the activity itself, while extrinsic motivation focusses on subsequent rewards or punishment. In order to clarify the two concepts *Grouzet et al. (2005)* identified several known measures of motivational orientation. The general hypothesis is that an intrinsic educational motivation is more beneficial for academics than an extrinsic educational motivation (*Guiffrida et al., 2013*).

2.2 Importance of motivational orientation

Previous research has found that an intrinsic educational motivation has a positive effect on academic outcomes. In other words, an intrinsically motivated student is less likely to drop-out of college, has a higher chance of getting good grades and will subsequently more often enroll in further education (*Guiffrida et al., 2013*). Therefore, it is obvious that in general an increase in intrinsically motivated students would be desirable. However, a recent study by *Twenge & Donnelly (2016)* found a general increase in extrinsic motivation among college students. Considering the fact that an extrinsic educational motivation could possibly have a negative effect on academic outcomes, it is important to have a more extensive understanding of underlying determinants for a student's motivational orientation (*Twenge & Donnelly, 2016*).

2.3 Determinants of motivational orientation

Many examples in the scientific literature exist that find a correlation between certain student background variables (socio-economic, demographic and geographic) and academic outcomes (*e.g. Betts & Morrell, 1999; Walpole, 2003; DeBerard et al., 2004; Pascarella & Terenzini, 2005; Mortenson, 2005; Nora et al., 2005*). Whereas, socio-economic and demographic factors are well established within social sciences, an included geographic variable might seem unfamiliar. Yet, research suggests that even when accounting for socio-economic and demographic variables, significant differences in academic achievement exist between students that originated from an urban, suburban or rural environment (*U.S. Department of Education, 1996, 2000*).

To continue, various explanations are provided by the previously presented studies on how these specific background factors affect student behavior and subsequently academic outcomes. However, a general framework for understanding the effect of these background variables on the motivational orientation of students is missing. To my knowledge, no previous research solely used an SDT framework to explain if certain socio-economic, demographic and

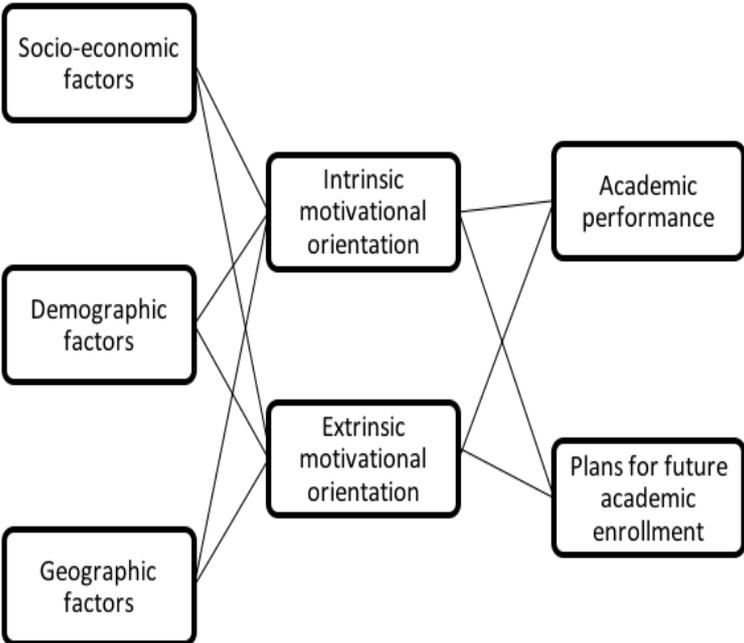
geographic factors affect motivational orientation and subsequently academic outcomes. Additionally, an earlier study found a moderating effect of student background variables on a student’s motivational orientation (Guiffrida et al., 2013). Also, when comparing the motivational orientation of multiple generations of students, the results displayed correlating trends with co-occurring societal changes, for example varying income inequality and the motivational orientation of students (Twenge & Donnelly, 2016). Both these findings further strengthen the idea of an existing connection between student background variables and a student’s motivational orientation.

All in all, it seems that by combining socio-economic, demographic and geographic student background characteristics with a construct of SDT, it would be possible to better understand academic outcomes (Deci & Ryan, 1991).

2.4 Conceptual model

The conceptual model for understanding the steps of this research is fairly simple. This paper will examine if socio-economic, demographic and/or geographic student background characteristics relate to a specific motivational orientation. To determine the motivational orientation of students, a known measure for motivational orientation by Grouzet et al. (2005) will be used. The outcome, either an intrinsic moderate or extrinsic motivational orientation, will then be compared to different components of academic outcomes, namely, academic performance (grades) and plans for further educational enrollment. A simple visual representation of the model is shown in figure 1.

Figure 1: Conceptual model



2.5 Hypotheses

To address the first research subquestion, considering the extensive literature present, it can be expected that socio-economic, demographic and geographic background characteristics also affect the motivational orientation of SUNY Geneseo students (*e.g. Betts & Morrell, 1999; Walpole, 2003; DeBerard et al., 2004; Pascarella & Terenzini, 2005; Mortenson, 2005; Nora et al., 2005*).

With regards to the second research sub question, once again taking the the amount of research done on SDT into account, this paper predicts a significant connection between motivational orientation and academic outcomes for SUNY Geneseo students. To be specific, it can be expected that SUNY Geneseo students with an extrinsic motivational orientation have worse academic performance and have relatively less plans to enroll in future education, while students with an intrinsic motivational orientation show better academic performance and have relatively more plans to enroll in further education (*Guiffrida, 2006, 2009; Guiffrida et al., 2013*).

Chapter 3: Methodology

3.1 Research design

In order to show the reader if an SDT construct is an effective tool for understanding the suggested connections, this paper needs to provide a statistically proven and generalizable connection between student background variables and motivational orientation, and subsequently academic outcome. Therefore, it is necessary to have a quantitative research design. Likewise, it is common practice in the scientific literature to adopt a quantitative analysis for human spatial behavior and decision making. In this case, the researcher is dependent of observations of an uncontrollable environment. Hence, this paper will apply a non experimental research method. The most prevalent data sources for non experimental quantitative data collection are either databases or surveys (*Clifford et al., 2010*). Taking into account that the research requires otherwise unavailable data, this research deemed an extensive quantitative research design in the form of a survey the most effective way for data collection (*Clifford et al., 2010*). A couple reasons underlie this decision. First, in order to collect unbiased and comparable information, it is necessary to provide all respondents with a similar data collection instrument. Secondly, a representative sample for the entire SUNY Geneseo student population is necessary for the data analysis. This requires a reasonable sized sample, of at least 50 respondents, preferably more. Due to the extend of the research it would be unpractical to apply a different data collection instrument. Also, a survey will be practical to conduct on campus. Taking into account that I will be collecting all the data on my own, it is necessary, in order to reach the minimum amount of respondents, to reach as many people in one sitting as possible. In the campus setting, it is possible to quickly conduct the survey in for example classrooms. When considering the mandatory nature of classes at SUNY Geneseo, it can be expected that a representative sample of students will be attending classes. Therefore, randomly picked classrooms are a good place to conduct the survey.

3.2 Ethical considerations

When considering to collect primary data, it is important to think of ethical considerations beforehand. Firstly, the aim is to keep all data anonymous. This will be done by keeping all filled in surveys anonymous. Also, the survey questions are designed in such a way that it is still impossible to identify a specific individual by combining certain answers. Secondly, the database was carefully and safely stored. The completed surveys and the subsequent database was only available to people who are absolutely necessary for the research. Copies of the database are numbered and available in limited amounts. Furthermore, this paper guarantees that the data will only be used for this specific research. Under no circumstances will the data be shared or sold to third parties. Thirdly, participating was completely on voluntary basis. It was also made clear to the participants that the survey is anonymous, any question can be left unanswered and that they can retract their survey from the research at any time.

Besides practical ethical consideration it is also important to look at power relations and possible social implications of the research. Taking into account, the fact that this research will be conducted by a student and that the respondents will be students as well, no harmful power relations or positionality are expected (*Clifford et al., 2010*). However, because of the nature of some of the student background characteristics, certain social stereotypes can be strengthened. In order to prevent negative social implications, the results will not be publically published and will only be shared to a minimal amount of people.

3.3 Survey design

The survey consists of five different sections ordered by content (*see appendix A*). The first section focusses on general student attributes, followed by a short section including academic variables, to continue in section 3 with a variety of questions about student background characteristics, succeeded by a line of questioning in section 4 to determine motivation orientation, to end with two brief review questions. By combining sections 1 and 3 a wide variety of student background characteristics can be identified. Section 4 will establish the required motivational orientation outcome and section 2 provides the needed academic variables.

3.4 Applicability of data collection instrument

The inspiration for the included socio-economic and demographic variables was the article of *Guiffrida et al. (2013)*. This research made a selection based on applicability and practical considerations. Furthermore, the variables were transformed to fit the strict privacy regulations at SUNY Geneseo. Also, *Guiffrida et al. (2013)* included measures to assess student persistence and future academic enrollment. Instead of using the rather extensive measures used in this article, this research, considering its scope, deemed a single question regarding plans for future academic enrollment sufficient.

Secondly, *Pascarella & Terenzini (2005)* found that academic performance was a good indicator for college success, thus forming the motivation for this variable. However, contrasting with the original measure (GPA), a relative scale had to be adopted due to previously discussed privacy regulations.

The included geographic variables find their origin in articles from the *U.S. Department of Education (1996; 2000)*. Although distance is not literally mentioned in the context of academic performance, it showed to have a moderating effect on college degree attainment. Hence, to see if motivational orientation can help understand this phenomenon, it does make sense to include distance as a variable.

To continue, to establish a student's motivational orientation a known measure by *Grouzet et al. (2005)* is used more or less directly. In total, a selection of eight established measures was included. Moderate values like 'Sprituality' and 'Hedonism' were not included because they do not count towards a specific (intrinsic/extrinsic) motivational orientation (*see appendix B*). According to *Grouzet et al. (2005)*, it is possible to determine a person's motivational orientation by combining these measures. Hence, it makes sense to include these in the survey.

To end this paragraph, it is important to notice the presence of perceived value answers in many of the questions. This research has two reasons for adopting such a design. Firstly, specific campus ethics regulations do not allow for specific personal questions and secondly, perceived values might be able to better account for human behavior than factual data (*Goodman et al., 2007*).

3.5 Participant recruitment

The general population for this study is fairly straight forward. Every student who is currently attending SUNY Geneseo could potentially be a participant in this research. However, due to the limited scale of this research, it is simply impossible to collect data from all the students. Therefore, this research is forced to draw a sample from the total population. An accessibility sample technique will be used to collect the data (*Clifford et al., 2010*). All surveys will be

provided by the researcher in person, on paper, to students in by convenience selected classes on the SUNY Geneseo campus, for the duration of one week.

In the case of this study, considering that the field of study of the researcher is geography, convenient classes will probably be selected by contacting teachers within relatively close-by academic disciplines, for example sociology and anthropology. Secondly, communication classes will also be easily accessible due to the fact that the researcher himself is enrolled in these classes. Although this technique will not per se result in a schoolbook example of a representative sample, it will allow for the collection of a larger dataset ($N > 50$). Nevertheless, this research does not expect a random sample to be necessary for a representative sample. This is due to the fact that the effects of student background characteristics on motivational orientation and subsequently academic performance and future academic enrollment, if existing, arose long before college and have been affecting all students at all times.

3.6 Data quality

In contrast with the representativeness of the sample, this research is concerned with the possibility that biases could occur when student groups with similar socio-economic, demographic and geographic background characteristics are only or predominantly present in for the researcher inconvenient or inaccessible classes. To illustrate, *Leppel et al. (2001)* suggest that parental occupation and parental socio-economic status have a significant effect on their children's choice of college major. However, due to the scale of this research, it is impossible to account for this tendency.

3.7 Data analysis

All questions in the survey are fixed response answers. This resulted in categorical/ordinal data output. A variety of single answer questions and 7-point Likert scales answers has been adopted. These questions range from 1 to 7 between two opposite, and carefully selected terms. This research used Microsoft excel to store the data and SPSS was used to analyze the data statically. In order to show a possible connection between two categorical variables, cross tabulation in combination with a Pearson Chi-square analysis was used. This method allows for testing the independence of two variables. In the case of this study, it was used to show a connection between a single socio-economic, demographic and geographic student background characteristic variable and motivational orientation. Subsequently, the same analysis was used to find a connection between motivational orientation and a specific academic variable.

A foreseeable problem was not having enough cases to comply with the basic assumptions of the Pearson Chi-squared test. Further transformations into less categories proved to be necessary. The motivational orientation variable was transformed into three categories (extrinsic, moderate or intrinsic), several demographic variables were merged based on content and all other variables were divided into two more or less equal groups. Of all variables, motivational orientation demonstrated to be the most difficult variable to transform. In order to establish an unambiguously motivational outcome, all motivation orientation questions needed to be combined into one. Considering the categorical nature of the data, simply calculating a mean is not possible. Therefore, this research will determine further categorization based on the eventual distribution of the variables (*see chapter 4, 5, 6*).

Chapter 4: Understanding motivational orientation

4.1 General introduction of the survey results

The survey was completed by a total of 81 respondents. However, only 72 cases (N=72) could be included into the analysis. To be complete, six cases were removed from the dataset due to missing values and three respondents did not actively consent to include their information in this research. The following chapters will provide a logical presentation of the results, starting with a clarification of the motivational orientation variable in chapter 4, followed by the findings concerning the first research subquestion in chapter 5 and, lastly, the second research subquestion will be discussed in chapter 6. In the last two chapters, each variable group (socio-economic, demographic, geographic, academic performance and graduate school attendance) will be discussed and analyzed separately, starting with a discussion regarding the responses, followed by a brief description of further required transformations, to end with analysis results.

4.2 Motivational Orientation responses

Before the survey results can be discussed, it is important to notice that the meaning of the 7-point Likert scale is not consistent for all motivational orientation questions. In order to provide the respondent with linguistically convenient questions, this research did not include double negative statements. As a consequence, low values do not always translate to an extrinsic motivation and high values do not necessarily translate to an intrinsic motivation. The variables 'Affiliation', 'Community feeling', 'Physical health', 'Safety' and 'Self-acceptance' are intrinsic values, thus higher values correspond with an intrinsic motivational orientation. But, on the other hand, 'Financial success', 'Image' and 'Popularity' are extrinsic values and as a consequence high values correspond with an extrinsic motivational orientation (*see appendix C1*).

To continue, as predicted by *Grouzet et al. (2005)*, the respondents displayed a general tendency to rate all questions relatively high. As can be seen in *figure 2*, higher value responses ($x > 4$) account for a noticeably larger share of total responses than lower value responses ($x < 4$). Therefore, correcting for relative centrality will be necessary in further categorization. However, the magnitude of this tendency is not the same for every variable.

Figure 3 shows the frequency distribution of all responses per question. Students appear to have valued 'Affiliation', 'Community feeling' and 'Physical health' the highest of all variables ($\bar{x}=6$). In contrast, the respondents seemed to value 'Popularity' and 'Safety' the least ($\bar{x}=4$). All the remaining variables have a mean of five ($\bar{x}=5$) and were valued somewhere in-between the other variables. Special notice has to be given to 'Image'. Even though it falls within this 'middle' group, it is noticeably leaning towards the lesser valued category (*see appendix C1; C2*).

At this stage, not much can be said about the implications of these responses. However, whereas the moderate responses to 'Safety' are consistent with the literature, 'Popularity' shows unexpected values. When taking a second look at the figure in *appendix B*, 'Safety' is displayed as a reasonably moderate intrinsic value. Hence, it can logically be expected to receive less radical, or more moderate responses. The opposite can be expected for popularity as it is considered to be a strong extrinsic value (*Grouzet et al., 2005*). Accordingly, SUNY Geneseo students do not appear to value 'Popularity' as much as initially expected.

Figure 2: Distribution of all responses

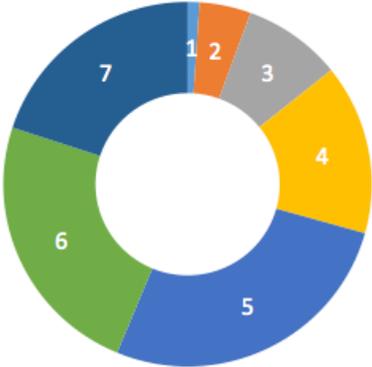
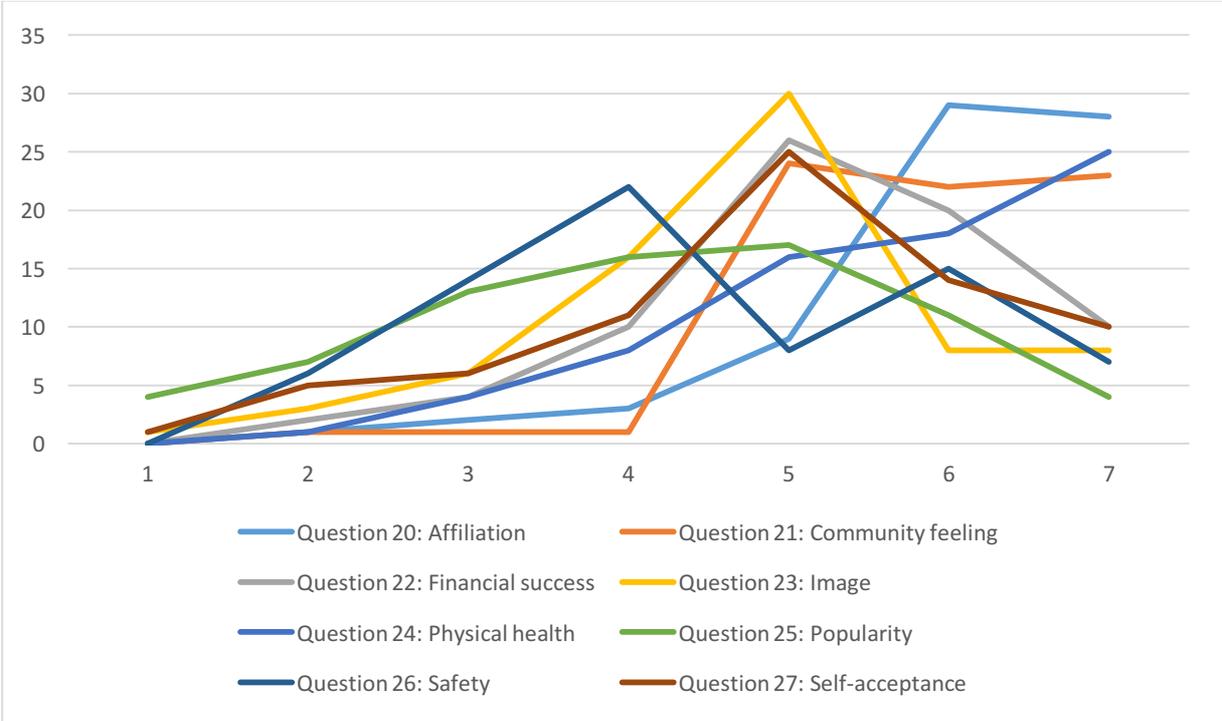


Figure 3: Distribution per variable



4.3 Transformations and coding

Before this research can try to find a connection between a student’s motivational orientation and other variables, the motivational orientation, either intrinsic, moderate or extrinsic, needs to be established for each respondent separately. As described in chapter 3.7, categorization would be determined based on the eventual distribution. Considering that all variables display a propensity towards higher responses, the decision to use the median for further categorization makes sense for several reasons. Firstly, research requires relative values for testing between students. Secondly, use of the median will somewhat correct for relative centrality. And last, without such a correction the total number of intrinsic responses would be low, probably resulting in violations of basic Pearson Chi-squared analysis assumptions.

Due to necessary further categorization, the responses for each question need to be divided in two categories (intrinsic/extrinsic). As stated above, the median will determine the border value, meaning that all values up to and including the median will be merged to form the first category. The remaining values merge to form the second category. As a result, a respondent has answered a question either with an extrinsically or intrinsically orientated response and will be given a label accordingly. Extrinsic responses are given the value 0 and intrinsic responses the value 1. Subsequently, these new values can be added up to form a new final distribution in which 0 represents the maximum extrinsic motivational orientation and 8 the maximum intrinsic motivational orientation (*see appendix C3*). To finalize the transformation of this variable, three categories, an intrinsic, moderate or extrinsic motivational orientation, are derived from this final distribution. Taking into mind that this sort of coding scheme will be repeated in an almost identical fashion for the socio-economic and geographic variables, an example is displayed below (*see appendix C for the complete coding schemes for all variables*).

Table 1: Coding example

	1	2	3	4	5	6	7
Question 20: Affiliation	0	1	2	3	9	29	28
Median							
Question 20: Affiliation	6						
Coding							
Question 20: Affiliation	Values 1-6 = Extrinsic = 0 / Value 7 = Intrinsic = 1						

4.4 The new motivational orientation variable

At first glance, the combined responses display a very moderate result (*see table 2*). The absence of extreme values, both on the extrinsic and intrinsic side of the distribution, and the high concentration around the central value show this moderation. Hence, the data suggest that SUNY Geneseo students in the sample do not have an apparent motivational orientation. When following the line of reasoning presented in the literature, a moderate motivational orientation will most likely not translate into a clear connection with the other variables.

Nonetheless, this research aims to examine the relative values of students. Therefore, the data needs to be further transformed into three roughly equally numerous categories. All responses for the values 0-3 were merged into the extrinsic category, value four is with 25

responses the moderate category, and 5-8 are combined to form the intrinsic category (see table 2). In total, this resulted in 31 students with a relatively extrinsic motivation orientation, 25 students with a relatively moderate motivational orientation and 16 students with a relatively intrinsic motivational orientation (see table 3). This research sees no reason to dismiss this coding scheme and the subsequent new distribution in the light of the presented literature. The slight bias towards an extrinsic motivational orientation could possibly be an expression of the universal rise of extrinsic values (Twenge & Donnelly, 2016).

Table 2: Combined motivational orientation distribution

	0	1	2	3	4	5	6	7	8
Total	0	2	11	18	25	9	4	3	0

Table 3: New distribution of motivational orientation variable

	Extrinsic	Moderate	Intrinsic
Total	31	25	16

Chapter 5: The effect of underlying determinants

5.1. Socio-economic-variable responses

The first variable to be discussed is 'Part of a Minority'. The largest category (1; not at all) has 43 responses and the second biggest category (8; yes, very much) showed to have 8 responses. These findings suggest that most SUNY Geneseo students in the sample generally perceive to either be very much part of a minority or not at all. These findings appear to be similar to the results presented by *Guiffrida et al. (2013)*. In both cases, the multiethnic group, or in the case of this research the center value responses, only accounts for a small share of total responses.

Further, respondents tended to rate 'Religiousness', 'Parental unemployment' and 'Number of rehousing's' less than other SUNY Geneseo students. On the other hand, 'Family stability' was rated to be high for a large portion of the respondent.

Nevertheless, not all variables show as skewed results as these first two. 'Number of siblings', 'Parental education', 'Prestige of parental occupation' and 'Parental income' are relatively centralized, meaning that most respondents valued this variable with values close to, or with the middle value 4. This implies that most SUNY Geneseo students in this research do not perceive to have deviant characteristics from other students for these variables. The perceived amount of siblings, parental education prestige of parental occupation, parental income is therefore more or less equal in this sample (*see appendix D1; D2*)

To take a small sidestep and briefly put these responses in a wider context, it has to be noticed that these results are clearly interlinked with regards to content. All respondents are already enrolled in an education program at SUNY Geneseo and have therefore met all preexisting requirements. A logical ancillary is that most people who attended college here share socio-economic characteristics. This could partially attribute to some of the high concentration in for example 'Part of a Minority', and also, for the more or less equal distribution in 'Parental income'.

5.1.1. Transformation and coding

The coding scheme that is adopted for the socio-economic variables is similar to the one used for motivational orientation and can be found fully in *appendix D3*. The major difference is that all variables are only transformed once. In short, all responses in the categories up to and including the median are merged and labelled 'low', while the remaining responses are merged and labelled 'high'. This coding scheme will identically be adopted for all the upcoming variables, except for the demographic variables. So, it will not be repeated for every variable. Full coding schemes for all variables can be found in the appendix.

5.1.2. Analysis

To get straight to the point, no significant ($p < 0,05$) connection was found for any of the socio-economic variables when compared with motivational orientation for SUNY Geneseo students (*see appendix D5*). Therefore, the initial null hypothesis has to be accepted, thus the variables are considered to be independent from each other. To be concrete, and simultaneously answer the first part of the first research subquestion, socio-economic factors do not seem to affect the motivational orientation of SUNY Geneseo students. Intriguingly, these findings contradict with both the initial hypotheses presented in chapter 2.5 and the academic literature.

5.2 Demographic variables

The responses for the demographic variables are fairly self-explanatory (*see appendix E1*). Nevertheless, results show an overwhelming concentration of respondents in the 'Way of arrival' and 'Permanent residence' variable. Hence, the results uncover that a large portions of the respondents entered SUNY Geneseo as a freshman and live in the State of New York.

5.2.1. Transformation and coding

In order to meet the assumptions of the analysis, transformation into less categories is required. All variables, except 'Major', were categorized, with the assumptions of the analysis in mind, to create a more balanced distribution of the responses. The variable 'Major' was categorized based on content. The majors were divided into two groups based on the proximity of each discipline. The full coding scheme can be found in *appendix E2*.

5.2.2. Analysis

First, it has to be noticed that the attempt to create fewer categories did not result in sufficient cases per cell for every variable (*see appendix E4*). As a consequence, the basic assumptions of the Pearson Chi-squared analysis were violated for the variables 'Way of arrival', 'Permanent residence' and 'Major'. Thus, regardless of the outcome, these results cannot be used for this research.

Furthermore, the other included variables did not result in significant values, and, similar to the socio-economic variables, appear to be independent from motivational orientation (*see appendix E4*). In other words, demographic variables also do not seem to affect motivational orientation in this research.

5.3 Geographic variables

The initial distribution of 'Distance to campus' is widely spread (*see appendix F1; F2*). Students showed to travel a wide variety of distances to reach the SUNY Geneseo campus. Secondly, 'Urbanization level' is slightly more centralized, meaning that many of the included students perceive the urbanization level of their parental home, either more rural or urban, to be very similar to other SUNY Geneseo students.

5.3.1. Analysis

The results do not count towards the idea of a moderating effect of geographic variables on motivational orientation and subsequently academic outcomes (*U.S. Department of Education, 1996, 2000*). Both variables displayed insignificant values in the analysis, thus, once again, accepting the null hypotheses (*see appendix F5*). As a consequence, this research has to conclude that according to this data, there is no connection between geographic variables and motivational orientation.

Chapter 6: Motivational orientation and academic outcomes

6.1 Academic performance

The responses of this variable showed a tendency of students to value their academic performance to be average or better than other students (*see appendix G1*). The lion share of the respondents answered this question with a 5, 6 or 7 on a 7-point Likert scale. Sadly, this variable could not be meaningfully compared to the motivational orientation due to an unlucky distribution of the respondents over the cells. The assumptions of the analysis were violated. For this reason, no statements can be made regarding the possible effect of motivational orientation on academic performance, consequently leaving this part of the second research subquestion unanswered.

6.2 Graduate school

In contrast with the statistics presented in chapter 1, a large of portion of students expressed an above average likelihood of continuing their education in future education when compared to other SUNY Geneseo students (*Ryan & Bauman, 2016; Colledgefactual, 2014; see appendix G1*). In total 83% of all respondents stated that they would likely continue their education, however, statistics show that only 40% eventually does (*Colledgefactual, 2014*). The data does not provide any further explanation for this gap.

6.2.1 Analysis

Whereas, due to the inconvenience with the previous variable, the second subquestion had to remain unanswered, 'Graduate school attendance' does meet the assumptions for the analysis. Thereupon, resulting in interpretable results. Even so, the Pearson Chi-squared analysis did not come up with a significant result (*see appendix G5*). The null hypotheses is rejected and the motivational orientation of students and graduate school attendance seems to be independent from each other. To return to the initial hypotheses and second research sub question, it can be stated that according to this data there is no effect of a student's motivational orientation on graduate school attendance and that the initially formulated hypothesis is wrong.

Chapter 7: Conclusion

At this point, it is evident that a pattern has arisen from the results of this research. While the literature is quite clear-cut with regards to the proposed connections between a student's motivational orientation and the other variables, the results of this research fail to account for these connections. Not a single socio-economic, demographic or geographic variable could statically be connected to motivational orientation, and, additionally, motivational orientation could not be linked with academic performance and graduate school attendance. It is obvious that these findings appear to be directly contradictive to a fairly large amount of empirically validated theories. This contrast can be explained in two ways. First, it is possible, but rather unlikely, that all of the discussed concepts and theories are not applicable to SUNY Geneseo students, or secondly, the more realistic option, that the research design is flawed in some way.

When carefully reflecting on the research, several possible problems come to mind. Firstly, it might be possible that all responses have been distorted by the perceived value answers. By comparing to other SUNY Geneseo students for most of the questions, information might have been altered. Secondly, biases have occurred due to the consistent use of the median. Every time the median was used to recode a variable, one of two categories was benefited with extra responses. As a consequence, the data lost some of its explanatory power, which might have partially attributed to the contradicting results. To continue among this line of reasoning, it is possible that the entire research design, scope and selected measures might not be capable of accounting for such abstract terms as for example motivational orientation. It is evident that many of the other studies used significantly larger databases in combination with vastly more complex analysis.

To conclude, considering the extensive inconsistency of the findings with the academic literature and the possibility of distorting flaws in the research method, it is not possible to come up with an unambiguous conclusion. Even though the data appears to be self-explanatory, this research does not deem it 'compelling evidence'. Further research into more appropriate methods for measuring motivational orientation is necessary. Also, more elaborate research needs to be done with regards to bridging the gap between, or measuring the effects of socio-economic, demographic and geographic on motivational orientation.

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Appendix

Appendix A

Survey

Number: _____

The effect of socio-economic, demographic and geographic factors on academic outcomes at SUNY Geneseo: A self-determination approach;

My name is Philip and I am a senior exchange student from the Netherlands. Currently, I am writing my bachelors thesis (dissertation) here at SUNY Geneseo. My project requires me to collect and analyze primary data from SUNY Geneseo students. In short, I will be looking into the effect of student background characteristics on motivational orientation and subsequently academic outcomes for SUNY Geneseo students. I hope you are willing to fill in this survey in order to help me complete my project. I want to thank you in advance for taking the time to fill in this survey and I am enormously grateful for your effort and input.

Privacy disclaimer:

- *All data will be anonymously collected and stored;*
- *The survey is designed in such a way that it remains impossible to identify an individual by combining answers;*
- *The data and results will only be available and shared in limited quantity to the required people for the completion and grading of this project;*
- *The data will only be used for this research. Under no circumstance will the data be shared with or sold to third parties;*
- *Participation is completely on voluntary basis;*
- *The participant is in not required to complete all the questions;*
- *The participant can withdraw his or her input/data from this research at any time;*
- *The participant may always ask for more information about this research, comment on the research or ask further questions. Also, a copy of the participant's answers can be provided to the participant on request;*
- *Contact information: pp14@geneseo.edu;*

The survey consists of 29 multiple-choice questions and will approximately take 5 minutes to complete.

Part 1: The Student

Please check the one single box that applies the most to your situation. Example: Other;

1. Gender:

- Male;
- Female;
- Other;

2. Are you a student at SUNY Geneseo?

- Yes;
- No;

3. How did you enter SUNY Geneseo?

- Freshman
- Transfer student
- Exchange student

4. What is the location of your permanent residence?

- New York State;
- Elsewhere in the U.S.
- Outside the U.S.

5. What year are you in?

- Freshman;
- Sophomore;
- Junior;
- Senior;

6. Please check the area of study that is, is closest to, or includes your major.

- Natural Sciences or Math
- Social Sciences
- Education
- School of Business
- Arts and Humanities
- Communication
- Psychology
- Undeclared
- Other

Part 2: Academics

Please circle one single number that applies the most to your situation.

(Example: 1 2 3 **4** 5 6 7).

7. How would you rate your academic performance at SUNY Geneseo so far compared to other SUNY Geneseo students?

Well below average 1 2 3 4 5 6 7 **Well above average**

8. How would you rate the likelihood of you attending graduate school compared to other SUNY Geneseo students?

Much Lower 1 2 3 4 5 6 7 **Much Higher**

Part 3: Background characteristics

Please circle one single number that applies the most to your situation.

(Example: 1 2 3 **4** 5 6 7).

9. Would you consider yourself to be part of an ethnic, racial or cultural minority group?

Not at all 1 2 3 4 5 6 7 **Yes, very much**

10. Would you consider yourself to be a religious person compared to other SUNY Geneseo students?

Less religious 1 2 3 4 5 6 7 **More religious**

11. Do you think you have more or fewer siblings compared to other SUNY Geneseo Students?

Fewer 1 2 3 4 5 6 7 **More**

12. How would you describe the place you grew up in?

Very rural 1 2 3 4 5 6 7 **Very urban**

13. How would you rate the distance from your home to SUNY Geneseo compared to other SUNY Geneseo students?

Not far 1 2 3 4 5 6 7 **Very far**

14. Do you think you have changed your home address more or less often than other SUNY Geneseo students have?

Much less often 1 2 3 4 5 6 7 **Much more often**

15. How would you estimate your parents' educational background compared to the parents of other SUNY Geneseo students?

Probably limited 1 2 3 4 5 6 7 **Probably stronger**

16. How would you rate the occupation of your parents compared to the parents of other SUNY Geneseo students?

Less prestigious 1 2 3 4 5 6 7 **More prestigious**

17. How would you rate the income of your parents compared to the parents of other SUNY Geneseo students?

Probably lower 1 2 3 4 5 6 7 **Probably higher**

18. Was parental unemployment ever a key circumstance during your youth?

Never a circumstance 1 2 3 4 5 6 7 **A key circumstance**

19. How would you rate your (parental) family situation with regards to stability compared to other SUNY Geneseo students?

Less stable 1 2 3 4 5 6 7 **More stable**

Part 4: Motivational Orientation

Please, by circling a single number, indicate the level of agreement with the following statement.

(Example: 1 2 3 **4** 5 6 7).

20. I value a committed, intimate relationship).

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

21. I assist people who need help, asking nothing in return.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

22. Financial success is very important to me.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

23. I care a lot about my physical appearance and dress.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

24. My physical health is very important to me.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

25. It matters a lot to me to be well-known and admired.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

26. I prefer to avoid physically risky behavior.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

27. I always have good reasons to do the things I do.

Strongly disagree 1 2 3 4 5 6 7 **Strongly agree**

Part 5: Reflection and agreement

28. I agree to my survey responses being used in this research project.

Yes;

No;

29. Were you satisfied with the manner in which this research was conducted?

Yes;

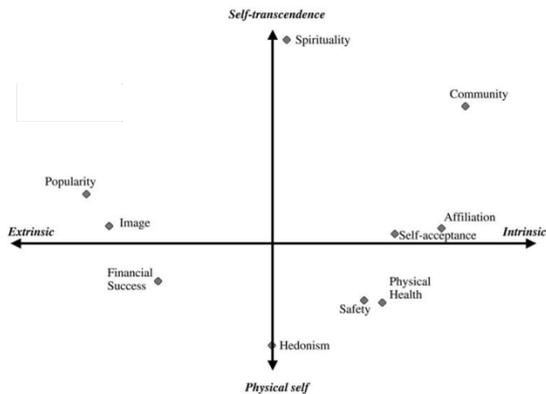
No;

For any further remarks, questions or requests, I would like to refer to the privacy statement on page 1.

Thank you for completing the survey!

Appendix B

The dualistic continuum of motivational orientation;



Source: Grouzet et al. (2005);

Appendix C1

	1	2	3	4	5	6	7
Question 20: Affiliation	0	1	2	3	9	29	28
Question 21: Community feeling	0	1	1	1	24	22	23
Question 22: Financial success	0	2	4	10	26	20	10
Question 23: Image	1	3	6	16	30	8	8
Question 24: Physical health	0	1	4	8	16	18	25
Question 25: Popularity	4	7	13	16	17	11	4
Question 26: Safety	0	6	14	22	8	15	7
Question 27: Self-acceptance	1	5	6	11	25	14	10

Appendix C2

	Median
Question 20: Affiliation	6
Question 21: Community feeling	6
Question 22: Financial success	5
Question 23: Image	5
Question 24: Physical health	6
Question 25: Popularity	4
Question 26: Safety	4
Question 27: Self-acceptance	5

Appendix C3

Coding

Question 20: Affiliation	Values 1-6 = Extrinsic = 0 / Value 7 = Intrinsic = 1
Question 21: Community feeling	Values 1-6 = Extrinsic = 0 / Value 7 = Intrinsic = 1
Question 22: Financial success	Values 1-5 = Intrinsic = 1 / Values 6-7 = Extrinsic = 0
Question 23: Image	Values 1-5 = Intrinsic = 1 / Values 6-7 = Extrinsic = 0
Question 24: Physical health	Values 1-6 = Extrinsic = 0 / Value 7 = Intrinsic = 1
Question 25: Popularity	Values 1-4 = Intrinsic = 1 / Values 5-7 = Extrinsic = 0
Question 26: Safety	Values 1-4 = Extrinsic = 0 / Values 5-7 = Intrinsic = 1
Question 27: Self-acceptance	Values 1-5 = Extrinsic = 0 / Values 6-7 = Intrinsic = 1

Appendix C4

	Extrinsic	Intrinsic
Question 20: Affiliation	44	28
Question 21: Community feeling	49	23
Question 22: Financial success	30	42
Question 23: Image	16	56
Question 24: Physical health	47	25
Question 25: Popularity	40	32
Question 26: Safety	30	42
Question 27: Self-acceptance	24	48

Appendix C5

	0	1	2	3	4	5	6	7	8
Total	0	2	11	18	25	9	4	3	0

Appendix C6

Coding

Extrinsic	Values 0-3 = Extrinsic
Middle	Values 4 = Middle
Intrinsic	Values 5-8 = Intrinsic

Appendix C7

	Extrinsic	Medium	Intrinsic
Total	31	25	16

Appendix D1

		1	2	3	4	5	6	7
Socio-economic variables	Part of a minority	43	10	4	3	2	2	8
	Religiousness	30	12	10	8	8	1	3
	Number of siblings	9	8	16	22	12	5	1
	Parental education	3	12	15	12	18	9	3
	Prestige of parental occupation	4	7	15	19	10	15	2
	Parental income	5	9	12	16	3	14	3
	Parental unemployment	35	9	6	4	6	3	9
	Family stability	5	5	8	12	7	22	13
	Number of Rehosings	27	13	11	4	7	6	4

Appendix D2

		Median
Socio-economic variables	Part of a minority	1
	Religiousness	2
	Number of siblings	4
	Parental education	4
	Prestige of parental occupation	4
	Parental income	4
	Parental unemployment	2
	Family stability	5
	Number of Rehosings	2

Appendix D3

		Coding
Socio-economic variables	Part of a minority	Value 1 = Low / Values 2-7 = High
	Religiousness	Values 1-2 = Low / Values 3-7 = High
	Number of siblings	Values 1-4 = Low / Values 5-7 = High
	Parental education	Values 1-4 = Low / Values 5-7 = High
	Prestige of parental occupation	Values 1-4 = Low / Values 5-7 = High
	Parental income	Values 1-4 = Low / Values 5-7 = High
	Parental unemployment	Values 1-2 = Low / Values 3-7 = High
	Family stability	Values 1-5 = Low / Values 6-7 = High
	Number of Rehosings	Values 1-2 = Low / Values 3-7 = High

Appendix D4

		Low	High
Socio-economic variables	Part of a minority	43	29
	Religiousness	42	30
	Number of siblings	54	18
	Parental education	40	32
	Prestige of parental occupation	45	27
	Parental income	42	30
	Parental unemployment	44	28
	Family stability	37	35
	Number of Rehosings	40	32

Appendix D5

		Value	df	Sig. (2-sided)
Socio-economic variables	Part of a minority	1,602	2	,449
	Religiousness	1,916	2	,384
	Number of siblings	4,86 ^a	2	,088
	Parental education	0,597	2	,742
	Prestige of parental occupation	0,043	2	,979
	Parental income	1,021	2	,600
	Parental unemployment	0,026	2	,987
	Family stability	2,002	2	,367
	Number of Rehosings	2,363	2	,307

^a 1 cells (16,7%) have expected count less than 5. The minimum expected count is 4,00.

Appendix E1

			Frequency
Demographic variables	Gender	Male	33
		Female	39
	Way of arrival	Freshman	58
		Transfer	12
		Exchange	2
	Permanent residence	New York State	66
		Elsewhere in the U.S.	2
		Outside the U.S.	4
	Year	Freshman	2
		Sophomore	26
		Junior	13
		Senior	31
	Major	Arts and Humanities	2
		Communication	5
		Double major	5
		Education	7
		Natural sciences or math	25
		Social sciences	24
		Psychology	4
		School of Business	6
Other		3	
Undeclared	1		

Appendix E2

			Coding
Demographic variables	Gender	n/a	
	Way of arrival	Other = Transfer + Exchange	
	Permanent residence	Other = Elsewhere in the U.S. + Outside the U.S.	
	Year	Other students = Freshman + Sophomore + Junior	
	Major	Social sciences = Arts and Humanities + Communication + Education + Social sciences + Psychology + School of Business	
		Natural sciences = Natural sciences and math	
		Other = Other + Undeclared + Double major	

Appendix E3

			Frequency
Demographic variables	Gender	Male	33
		Female	39
	Way of arrival	Freshman	58
		Other	14
	Permanent residence	New York State	66
		Elsewhere	6
	Year	Other students	41
		Senior	31
	Major	Social sciences	48
		Natural sciences	15
		Other	9

Appendix E4

		Value	df	Sig. (2-sided)
Demographic variables	Gender	3,581	2	,167
	Way of arrival	2,275 ^a	2	,321
	Permanent residence	1,051 ^b	2	,591
	Year	0,491	2	,782
	Major	2,614 ^c	4	,624

^a 2 cells (33,3%) have expected count less than 5. The minimum expected count is 3,11.

^b 3 cells (50,0%) have expected count less than 5. The minimum expected count is 1,33.

^c 4 cells (44,4%) have expected count less than 5. The minimum expected count is 2,00.

Appendix F1

		1	2	3	4	5	6	7
Geographic variables	Distance to campus	3	16	10	8	10	14	11
	Urbanization level	8	8	14	19	9	7	7

Appendix F2

		Median
Geographic variables	Distance to campus	4
	Urbanization level	4

Appendix F3

		Coding
Geographic variables	Distance to campus	Values 1-4 = Low / Values 5-7 = High
	Urbanization level	Values 1-4 = Low / Values 5-7 = High

Appendix F4

		Low	High
Geographic variables	Distance to campus	37	35
	Urbanization level	49	23

Appendix F5

		Value	df	Sig. (2-sided)
Geographic variables	Distance to campus	1,017	2	,601
	Urbanization level	0,534	2	,766

Appendix G1

		1	2	3	4	5	6	7
Academic variables	Academic performance	0	2	7	20	23	17	3
	Graduate school attendance	5	5	2	8	22	23	7

Appendix G2

		Median
Academic variables	Academic performance	5
	Graduate school attendance	5

Appendix G3

		Coding
Academic variables	Academic performance	Values 1-5 = Low / Values 6-7 = High
	Graduate school attendance	Values 1-5 = Low / Values 6-7 = High

Appendix G4

		Low	High
Academic variables	Academic performance	52	20
	Graduate school attendance	42	30

Appendix G5

		Value	df	Sig. (2-sided)
Academic variables	Academic performance	1,321 ^a	2	,516
	Graduate school attendance	1,999	2	,368

^a 1 cells (16,7%) have expected count less than 5. The minimum expected count is 4,44.