EXPECTED INCOME AND CONSUMPTION HABITS OF UNDERGRADUATE STUDENTS

A Report of a Senior Study

by

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Abstract

This study tests the consumption theories as suggested by economists such as Franco Modigliani and Milton Friedman which indicate that current consumption will be affected by future income expectations. Due to recent shifts in the economy caused by effects of the great recession, questions regarding the consumption habits of young people are particularly relevant at this time. The study uses surveys collected from 171 students at Maryville College, a small liberal arts college in Tennessee. The data were analyzed to predict a student’s current consumption based on various characteristics, including future income expectation. The study finds that students with higher future income expectation and higher GPA’s are more likely to consume in a higher bracket compared to their counterparts. In addition, the survey finds males are more likely to have higher future income expectations and consume in a higher bracket, consistent with the current wage gap found in the United States. This study shows strength in the theories of Modigliani and Friedman but also calls for further research in order to strengthen the findings in this demographic.
TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Introduction</td>
<td>1</td>
</tr>
<tr>
<td>II</td>
<td>Literature Review</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>II.A. Related Research</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>II.B. Consumption Habits</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>II.C. Income Expectations</td>
<td>11</td>
</tr>
<tr>
<td>III</td>
<td>Data and Methodology</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>III.A. Survey</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>III.A.1. Survey Methodology</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>III.A.2. Survey Implementation</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>III.A.3. Survey Target Group</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>III.B. Descriptive Statistics</td>
<td>21</td>
</tr>
<tr>
<td>IV</td>
<td>Empirical Analysis</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td>IV.A. Data Analysis Method</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td>IV.B. Results Obtained from Main Model</td>
<td>30</td>
</tr>
</tbody>
</table>
# LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Frequency Tables of Main Variables</td>
</tr>
<tr>
<td>2</td>
<td>Regression Results</td>
</tr>
<tr>
<td>3</td>
<td>Test Statistics</td>
</tr>
</tbody>
</table>
CHAPTER I

INTRODUCTION

This thesis explores consumption habits of college students. This is only one aspect of the many socioeconomic stories we hear about the Millennials: will they live shorter lives than their parents, do they spend more and save less, do they expect too much money for their education? Because of the effects of the Great Recession, many economists, businesses, and reporters are asking questions regarding consumption habits and economic behaviors of this generation of consumers. What held true to their parents’ generation may no longer be applicable for their consumption preferences, and this is information which many institutions and businesses are interested in. This study explores the Fisherian, Modigliani, and Freidman theories of consumption at the undergraduate level. In addition, some popular patterns in consumption decisions are included in the study, such as ethical consumption and brand loyalty.

The study uses the trends in consumption listed above to explore the consumption habits of students at Maryville College, a private, liberal arts school, using a survey dataset collected on the following independent variables: students’ current as well as expected future income, physical wealth, parental income, year of graduation, and specific consumption habits. Specifically, the study focuses on the consumption habits of undergraduate students based on their expected future income. The changes in
consumption will be isolated to those caused only by the variables above, with expected future income being the main variable of interest. The dependent variable is the personal consumption. The survey includes estimated monthly consumption, both essential and non-essential items, as well as some specific questions about how students make choices when purchasing a good. The choices they make reflect their attitudes regarding the price, quality, brand, environmental safety, and worker safety of the goods they consume. The first three attitudes stem from older habits of consumption and the latter looking at new trends in ethical consumption.

The relationship between expected income and consumption is one that has been explored by many economists, and basic macroeconomics textbooks will include some description of this concept. When an individual expects an income increase in the future, the individual may make one of several choices. The individual can keep consumption and saving at their current levels, increase consumption and decrease saving in the present, or slowly increase consumption and decrease saving. Often people choose one of the latter options, spending money out of their future income before they have received this income. Overtime, this will smooth a person’s consumption curve. If an individual were to increase consumption only after receiving the extra income, the consumption curve would have a jump at the time when the higher income was received. For further information on this relationship, Abel, Bernanke, and Croushore explain how increasing expected future income can increase consumption in both the present and future in their Macroeconomics textbook (110).

A major contribution of this study is the analysis of expected income and consumption of one specific group of students. The analysis of this data will be compared
with similar and connected studies. With the Gustman study as a starting point, a few changes were made. Some of these changes reflect the need to modernize the study and others are structural changes in order to help to retrieve cleaner results. Some of the major changes were in the survey’s demographic, expected income measurement methods, and parental income methods. The Gustman study used surveys of graduate students for his study, but this survey uses the undergraduate students at Maryville College. The Gustman study also used age earning profiles to estimate expected income (1252). Instead of this estimation, students were asked about their personal income expectations both 5 and 10 years from now. Finally, parents’ income and their personally recorded parental yearly income rather than another age earning profile were used.

The report of the study has been organized as follows: The literature review provides information about the studies and articles read on the topic of expected income and consumption. The research methodology describes the methods used in survey formation, implementation, and survey target group. Empirical results present the data found and results of the study. Finally, conclusions and discussions will make final comments regarding the results of the study and suggestions for further research.
CHAPTER II

LITERATURE REVIEW

While there is no extensive literature on the particular topic of undergraduate consumption related to expected income values, much literature exists regarding to related topics such as consumption, expected incomes, and similar studies which focused on different demographic groups. The literature used includes scholarly and popular media articles. Several books are also included to provide information on current trends in consumption and survey development, including the trends toward green consumption. The literature provides both the mass media’s perspective on the subject as well as the academic perspective.

II.A. Related Research

In the study “Income Expectations and the Consumption of Graduate Students” done by Alan L. Gustman and Frank P. Stafford, consumption habits of graduate students were used to determine whether the Modigliani and Brumberg theories of consumption would hold. The study was built off of the original Fisherian hypothesis which states that as expected income increase, consumption will increase (Gustman, 1246). At the time, many studies used lag values in order to quantify expected incomes. However, Gustman and Stafford did not believe that was an accurate measure of expected income as it could also be an indication of habit persistence (1247).
The resulting study was formed to distinguish which habits may have resulted due to past income from those which could be explained by future expectations. The study looks at several factors in order to examine past, present, and future income in relation to consumption. The data were collected using two different surveys which had been collected by the National Opinion Research Center of the University of Chicago and the Post Censal Survey of Professional Technical and Kindred Workers (Gustman, 1248). The latter was used in order to get the expected incomes from each field of study. Twelve independent variables were used: current family income, marital status, children, age, hours of academic study per week, net physical wealth, debt, father’s occupation, expected year of graduation, long-run employer, discounted age earning profiles, and physical wealth-profile interaction (1249). The dependent variable was the total consumption expenditures of graduate students (excluding academic expenses).

Results found that marital status and number of children are both important when determining consumption. Married students spent 29% more than their single counterparts; likewise, those with children spent about 15% more (Gustman, 1255). Hours spent studying decreased consumption but only up to a point. In extreme cases, there was not much spending that could have been cut out. Physical wealth was found to have a negative relation to consumption, meaning that students with less physical wealth consumed more (Gustman, 1255). Not surprisingly, a positive correlation between debt and consumption was found, indicating that students who consumed more had more debt, possibly implying that they financed their current consumption by borrowing from their future income (Gustman, 1256). Father’s occupation also provided expected results as students with fathers in higher paying jobs were more likely to consume more (Gustman,
This variable could be seen as part of expected wealth, but it could also be a result of habit persistence. Variables representing income expectations all acted in expected ways. Results showed that as a student gets closer to graduation, the student consumes more in expectation of a career (Gustman, 1256). However, the difference is only minor. Those planning to work for lower paying employers generally consumed less than those intending to work for high paying employees. The average income of each field was also another significant indicator of consumption habits. The study concluded that expected income was significant when predicting consumption levels even when isolated from variables of past and present income.

II.A.1. Consumption Habits

The article “How Millennials Spend Their Money” in the Huffington Post uses graphics to illustrate the findings of a survey done by SymphonyIRI. This survey looked at the spending habits, preferences, and attitudes of millennials. The survey indicated that millennials are very concerned with saving money, spending wisely, and making purchases quickly. Not only did millennials choose stores that were closer, they also considered aspects such as “how fun it is to shop at a store” (Kingkade). The survey used a ranking called the Shopper Sentiment Index. This index ranks how sensitive shoppers are to price, how loyal they are to brands, and their ability to maintain their lifestyle even with price changes. Because of the current media and public sentiment which expresses a concern about millennials’ spending, these findings seem to contrast the general attitudes about the consumption of younger generations. A score of 100 or below is considered to be more price driven, less loyal to brands, and able to maintain lifestyle with price changes (Kingkade). The survey found that millennials are more price conscious than
their parents and even more so than their grandparents (Kingkade). In fact, millennials are more likely to save money through things like at home beauty treatments, cooking meals in the home, and self-medicating rather than getting prescriptions. If similar patterns were found in this study, factors such as price should be very important to the students surveyed while brand would not be considered as much.

“How College Students Save and Spend Money” is an infographic arranged by Kingkade which used a survey from 21st Century Insurance to breakdown how and where college students are spending and saving money. The survey showed that not only do most students live off campus, they also look for semi-furnished apartments and/or get roommates in order to cut costs (Kingkade). Because most do not get groceries, a large amount of their money is spent on food off campus. Further, 73% of college students claimed to spend less than $50 on entertainment a week (Kingkade). This infographic would indicate a small amount being spent on non-essential goods, one of the variables being investigated in the study.

The article “How the Recession Changed Young People’s Attitudes about Money” found in *Time Magazine* surveyed young people, 16-18, asking them about how the recession affected their family and their current spending habits. Most of these students claimed to have been affected by the recession (Bissonnette). Most only said they had been affected a little, but a quarter of them said they had been affected greatly. As a result, most of these young people did not report spending large amounts of money, many considered saving to be priority for emergencies, and many said they were less likely to ask for things that they wanted (Bissonnette). Unfortunately, the article also points out a huge gap in the financial knowledge of these students, many of which know
nothing about balancing checkbooks, cashing checks, or credit scores and credit cards. Add this lack of knowledge to their unrealistic expectations about future income, and we may see many students spending for a lifestyle they will not achieve. This gap in financial knowledge may be indicated in this study by low savings in the surveyed students.

The book *Big Ideas Simply Explained: The Economics Book* published in 2012 touches on a variety of topics in economic thought, beginning in early BC and moving into modern economic theory (People Smooth Consumption over Their Lifespans: Saving to Spend). The chapter People Smooth Consumption over Their Life-Spans: Saving to Spend says that households will put in varying proportions of their household income into consumption. This was the theory presented by Italian economist, Franco Modigliani. Consumption began to matter because economists like Keynes realized that if demand was so important, the people who make up the demand should also be understood (People Smooth Consumption over Their Lifespans: Saving to Spend). Keynes believed that as people’s incomes grew, the proportion of income saved would also grow. This was not true in practice; instead, most people all saved the same proportion over their lifetime, meaning that an increase in income would result in an increase in consumption. Modigliani proposed that people saved based on their future, smoothing out consumption over time, preparing for retirement (People Smooth Consumption over Their Lifespans: Saving to Spend). This propensity to consume will vary because these households are keeping future expectation in mind while putting forth the money they are willing to spend today. Therefore, they spend based on their expectation of long-term income not current income. This theory is the basis for this
thesis. If Modigliani’s ideas hold true for Maryville College Students, expected income will be significant in predicting current consumption.

The book, *Radical Consumption: Shopping for Change in Contemporary Culture*, written by Jo Littler explores the culture of consumption today and some of the major trends seen in the past few years, including fair trade goods, locally made products, environmentally friendly products, and more. Littler explores what the ethical consumer will buy and how he or she feels when unable to participate in the market in a way they feel is ethical. By far, Littler says there is not a way to avoid the inequalities that the market so often makes, so how does the conscious consumer cope (Littler, 3). Littler goes on to look at consumer activism and green products. He also looks at the effects of anti-consumerism. Can it really make a difference? These factors of ethical consumption are included in the study as they are growing trends that young people hear about. Ethically produced goods are often more expensive than their cheaper, mass produced counterparts. With so many young people standing up and supporting these concepts of locally grown food, safely produced goods, and environmentally friendly products; looking at whether they are able to purchase them will be closely related to these theories of consumption being studied.

The study, “Evidence on Excess Sensitivity of Consumption to Predictable Income Growth” by Michele Limosani and Emanuele Millemaci in Elsevier tested for excess sensitivity of consumption to predictable income growth. In order to do this, they used data from the Dutch Household Survey (Limosani and Millemaci, 72). According to theories of consumption, predictable changes in income should not explain excess sensitivity of consumption. However, this theory assumes people are able to rationally
form their expectations, and the market will lend to these people against current income. Because of these faults, the study included a variable for if the subject had been denied credit or felt that they would be denied credit (Michele and Emanuele, 74). The study also included the expected inflation and a variable for family members looking for jobs (Michele and Emanuele, 73). The study found that excess sensitivity of consumption to income did not exist; instead, irrational pessimism and optimism were better explanations of consumption decisions (Michele and Emanuele, 75). Those who had very positive expectations for income will then drop consumption when real income is realized; in contrast, those who had pessimistic expectations will increase consumption once real income is realized. When liquidity was considered, the study did not see changes in the findings.

In the article “Consumption and Consumer Behavior” by Sue Bowden, consumer spending over the 20th century is explored. Bowden emphasizes the consumption of durable goods as electricity becomes common and manufacturing expands in the United Kingdom. Bowden shows that as incomes rise, the percent of household expenditures on durable goods increased (354). One of the ways that Bowden cites to explain these changes is the diffusion model. Similar to the product life cycle, the diffusion model has distinct stages: the product as a luxury good, the product as a good for middle income households, and finally the product as a mass produced good (Bowden, 359). These durable goods took form in transportation, communication, and household appliances (Bowden, 354). Bowden looks at not only the consumption of durable goods but also looks at the demographics of these goods. The marketing for these products had a new venue through women's fashion magazines, and companies used this strategy to reach
new consumers (Bowden, 362). For instance, women were the primary target for household electrical appliances, many of which were advertised in their magazines or in cinemas (Bowden, 361). On the other hand, Bowden notes that middle class men were the primary demographic for motor vehicles, and advertising would reflect their purchasing power (361). The gender distinction between goods is further discussed regarding its implications for women. While household appliances could be perceived as a way to free time, women at the time were not able to use the goods in this way. Instead of using the time saved for leisure, women during this period were urged to use this time to further clean and order the house (Bowden, 365).

The study “Parental Net Wealth and Personal Consumption” was done by Warren Hrung in 2004. This study analyzed parental net wealth and its relationship to the consumption of adult children. Other studies existed that explain the correlation of parental housing wealth and consumption, but Hrung was the first to look at the relationship with parental net wealth. Hrung uses data that has adult children estimate their parents' net wealth, meaning that their perception of parental wealth is used rather than the actual parental wealth (555). Using perceived incomes should obtain a closer correlation with consumption than the actual incomes because the perceived income is the primary form of information which children use when adjusting consumption. For this reason, this study will also use the students’ estimated parental incomes.

II.A.2. Income Expectations

The article “A Message from Your Financial Future: Thanks for Keeping it Real” was written by J.D. Roth, an author of several financial management books. In this article, the author discusses the dissonance between his plans for the future and the
realized future that he had later. Not only was he unable to predict his career path, but he was also unable to predict things like his future salary (Roth). So if we don’t know where our future will really be leading us, why spend money that we don’t have yet? He urges college students not to spend based on future expectation of income (Roth). Do have a plan, but understand that it is subject to change. The author advises not to spend on little, unnecessary items; instead, save up for the things that you really want or need. J.D. Roth would hope that most students are not following wealth-expectation but spending wisely for their current income; however, the article does imply that Roth believes many students do spend based on future income regardless of its potential consequences.

The study, “The Adjustment of Consumption to Changing Expectations about Future Income,” by Flavin in 1981 attempts to improve the work done by Hall and Sargent on the Permanent Income Hypothesis. The article critiques the work done previously and analyzes the problems with each. Because these earlier studies used a reduced model, the study developed a new model for testing this hypothesis rather than the lagged periods used by earlier studies. Flavin uses a moving average to measure change in income and uses this to predict changes in consumption in a time series (976). The incomes are detrended, and using this revised form, the study rejects the permanent income hypothesis which has large errors in prediction (1002).

The study “Great Expectations: Variations in Income Expectations among College Seniors” which was published in 1990 by Herbert Smith and Brian Powell looks at the income expectations of college seniors. The data were collected at two mid-western universities (Smith, 197). The study found a large variation in student income expectation. First, when asked to predict the incomes of high school peers who did not go
to college, students predicted that those who were in college would be making 50% more
(Smith, 200). Clearly, students perceive their education to be a major investment in the future. One major observation was the propensity of students, especially males, to predict a higher income for themselves than their other college-educated peers (Smith, 200). This finding indicates that students are not able to accurately predict their own future income as well as others. While this is not the main purpose of this study, the estimation of expected income is an important variable in the study. This variable may be affected by the estimates of students if they are inaccurate; however, this thesis does not rely on the estimates made by students being accurate, only that these estimates are affecting consumption.

“Did the US Consumer Overreact? A Test of Rational Expectations”, a study done by Jean-Paul L'Huillier in 2012 examined consumer decisions beginning in 1995 and spanning until 2008 after the 2007 market crash. Specifically, L'Huillier was interested in the rationale of these consumers. Were they making rational decisions before the housing bubble burst? L'Huillier ran two models to test whether consumers reacted rationally to changes, using one model which was more flexible in order to allow for these irrational decisions (208). The two models were found to work equally well, indicating that L'Huillier could not say that consumers were reacting irrationally (208). While the study used a small sample, L'Huillier shows that the overconfidence seen from consumers before the bust was brought on by what he refers to as “noisy information” from outside (209). Combined with the slow reaction of consumers to small, permanent changes in productivity and quick reactions to large, temporary movements, consumers can make large errors in their confidence (L'Huillier, 208). While looking at the income
expectations of students, a similar pattern may be seen. Like consumers in any market, students get a variety of signals about the incomes they can expect to make in the future. Many articles can be found about profitable majors and what careers will be needed in the future, but often reality changes before those predictions catch up. For example, the saturation of lawyers in the economy began because law was seen as a profitable career. Unfortunately, the market had absorbed many young lawyers hoping for success before the market realized that the demand was not large enough to meet the supply. L'Huillier's study points to the outside information consumers receive as the rationale for what could be seen as irrational consumer decisions, and this study may point to income expectations as the rationale for increased consumption in some undergraduate students.

The literature above shows a number of trends which may be seen in this study, including the increase of consumption as expected incomes rise. In addition to this important factor, the infographics show that this generation is very concerned about price and spends little on non-essentials. The research also points to the recession as a major contributor to the attitudes of the students. The book by Littler shows that students are interested in green consumption, but the study will look at how often students participate in this trend. In their work, Smith and Powell indicate that students often over-estimate their future income, especially males. This study is likely to see similar results. Finally, the literature suggests in L’Huillier’s work that maybe students aren’t being irrational but simply have “noisy information.” Regardless of the information or accuracy of the measurements, the existing literature brings much support for the hypothesis of this study.
CHAPTER III

DATA AND METHODOLOGY

The data used in this research were collected by a survey on the Maryville College campus which was given out in several classes as well as in the main dining hall. This survey was two pages long and had about 20 multiple choice questions. The complete questionnaire can be found in Appendix A. The survey was approved by the Maryville College Institutional Review Board (IRB) before it was handed out to the respondents. The IRB approval certificate can be found in Appendix C. Students had the choice not to participate or stop participating at any time, and they were given proper information on the nature and risks or benefits of the study before completion.

Nominal and ordinal data are prominently presented in the survey with variables such as gender and income. After examining results for each variable, a demographic profile of respondents was created using variables such as graduation year, age, and sex. Frequency tables are useful to convey some of the statistics and further the demographic profiles. For example, the percent of males focus on the quality of a good. The distribution of data was analyzed; if necessary, data were transposed using log in order to retrieve a normal distribution. In addition to frequency tables, percentiles were also used to present the data. Mean and the standard deviation were very important in looking at
variables such as income and consumption. All tests, such as multiple regressions, were run using a 95% confidence interval. Tests looked for reliable R-Squared values and logical beta coefficients for the variables. There was some search for potential interaction terms between variables as well, such as expected income and graduation date and expected income and GPA.

III.A. Survey

The survey used in the study was designed to retrieve unbiased answers in a respectful way, using several sources of information as discussed in the literature review. The survey asks sensitive questions about personal information such as personal and parental income and academic standing; therefore, great care was taken during the formation and ordering of questions. The survey is brief and concise, asking no unnecessary questions of students. The following section describes the process of survey planning.

III.A.1. Survey Methodology

The study “Is GPA affected by hours studied, classes missed and age?” was done by a group of students in 2012 at Georgia College and State University and is posted on StatCrunch.com. The study looks at three factors in terms of their relationships to a student’s GPA: hours studied, classes missed, and age. The survey was not done on a large sample; however, for my purposes, the accuracy of the study is not as important as the span of data they found for hours studied. They had only one student surpass the 30 hours per week mark, and most students studied 10 hours or less, with females studying more than males (Nable, et al). With this in mind, the study used 40 hours as the high end
to account for any outliers that could exist and chose to group the hours in 10 hour increments.

*Conducting Online Surveys* is a book published in 2007 by Valerie M. Sue and Lois A. Ritter. This book covers all aspects of conducting a survey from the type of questions that are relevant to a topic, the accuracy of measurements, and sensitivity to questions. The book was used to create the survey used for the following study. Formatting of questions and order in which they were asked were taken from the text in *Conducting Online Surveys*, specifically the personal questions which are asked at the end of the survey rather than at the beginning (Sue, 55). In addition, these sensitive questions come with another reminder of the anonymity of the participant’s answers (Sue, 55).

This thesis aimed to identify variables which would be likely to affect the consumption of undergraduate students, including expected income. After reading over the Gustman study, this thesis excludes non-traditional students in order to have a more uniform sample. In order to eliminate past income experience and current income experience, this thesis has a data sample with similar demographics in these areas. Therefore, this study does not include married students, students with children, or students out of the typical age range for undergraduate students. By having a group with similar characteristics, the study shows changes in consumption are not a result of marriage, children, or age. The survey also collected information on current income and net wealth. Based on the Gustman study, higher income would be expected to have higher consumption; in contrast, higher physical wealth is expected to have lower consumption. In addition, this survey did not collect information on debt. While the
graduate students Gustman used data on had some significant debt, most undergraduate students will not; further, the debt they have would likely be from student loans. Those loans are often related to parental wealth. Because parental wealth has already been accounted for, the survey did not collect information on student debt. However, this study did make amendments to the parental income.

The Gustman study used father’s occupation to measure parental income; however, most students come from dual-income homes today, and numbers for the individual rather than averages based on occupation may be better estimates. Unfortunately, just knowing what job their father has is not a strong indicator of income, as one job can have great variation in pay. Rather, students were asked for an estimate of combined parental yearly income.

Like with parental incomes, the data Gustman used did not ask students directly what their income expectations were but used age earning profiles from the different fields in order to measure their expectation (Gustman, 1252). This survey asked for each student’s personal income expectations in five and ten years. This personal estimate may correlate much better with a student’s current consumption as one student in a field may plan to make much higher earnings in the future than another. For example, two students going into law could be going into different sectors. The student going into the private sector will expect higher earnings than a student who plans on representing children for the state. This is one example of the inconsistency of the broad age earning profiles.

A student’s personal income is important to have in the regression because students with a larger income will often be consuming more than those will smaller incomes. In contrast, net wealth may be negatively related with consumption as Gustman
found (1256). Those with large amounts of savings may be spending less than their peers. Parental income is also an important factor to include as it may indicate a student's perceived future, expected inheritance, or lifestyle preferences. Students from high income families may choose to spend more money regardless of personal income.

The following questions on income expectation will be used to determine their effect on consumption and the expected increase overtime. All income questions have the same format with $50,000 being the middle value. Any income over $100,000 or below $10,000 will be grouped together. All questions after expected income are related to consumption habits. First, the survey asks for overall monthly consumption. Then that value is broken down into essentials and non-essentials. Then the survey asks specific questions about how purchases are made. The survey uses questions which look similar in length and format in order to avoid leading questions. The survey calculated consumption as a whole, asking students to estimate their monthly consumption and gave them brackets to mark where they fell. In addition to this total consumption, the survey had two questions which asked respondents to estimate their consumption on essentials and nonessentials using the same brackets.

By including a question about graduation date, the study was able look at how consumption changes based on academic year. Do students spend more as they get closer to graduation? Less? This study also explores the relationship between academic major and consumption. When combined with income expectation, the consumption habits of some students may be very sensitive to these variables. The survey collected information on variables regarding academic work, GPA and hours studied. Many studies, such as those by Plant, et al., show that GPA and hours studied are not directly correlated. But
both are still important factors when looking at consumption. A student who spends a significant amount of time studying or has a very high GPA may expect to be rewarded for their work in the future, specifically through their salary. This survey chose to use hours from 0-40, excluding those that reported above the 40 hour level. Studies such as the one done by students at Georgia College and State University had similar ranges. Most students were found to be in the 10-30 hours range, with few higher than 40 hours per week of study time (Nable et al).

Using the information provided in Writing Survey Questions, the survey asked all personal questions, such as those listed above, after the initial income and consumption questions. The survey also included a disclaimer before these personal questions reminding the participants of the anonymity of their answers. The questions in the survey, which can be found in Appendix A, have been designed according to the book Conducting Online Surveys. The questions are all relevant to the study and are sensitive to the participants. The participants are frequently reminded of the survey’s anonymity in addition to the consent form which can be found in Appendix B.

III.A.2. Survey Implementation

The surveys were given in paper form, and several professors were notified about this opportunity to give extra credit. Using the data collected from surveys in these classrooms and data collected during lunch, the study included 171 completed surveys for analysis. The surveys given on paper were in an environment where the participants felt that their answers would be completely anonymous, and there was no push to complete the survey in any given amount of time.
III.A.3 Survey Target Group

This thesis aimed to gather data from students attending an undergraduate institution who do not have characteristics unique to this demographic. However, undergraduate students are a varied group, with many nontraditional students. In the beginning, this study intended to exclude nontraditional students’ data from the analysis; however, due to the lack of variation in responses, answers from nontraditional students were included. Because factors such as marital status, children, and personal income were included, the study kept data from students who were nontraditional in the data which this study analyzes.

III.B. Descriptive Statistics

The group surveyed provided a demographic very similar to that which was expected, with some particular exceptions. The sample was typically employed, 55%, and single without children. The gender of participants was 56.5% female and 43.5% male which is almost exactly the national average according to Forbes in 2008, 56.4% and 43.6% respectively (The Male-Female Ratio in College). This congruent pattern shows that this ratio is less likely to be an effect of the surveyor’s gender but of the reality of gender frequency on campus. Gender was an important variable in all versions of the model that were tested and will be further discussed in results as this study introduces the model which was used to represent consumption. Employment is not included in the model and may have been a poor predictor because of the lack of variation in consumption from those who have jobs to those who do not.

Age is a common statistic to gather regardless of the topic of study; however, for this study, age was also an important measure of time to realize the benefits of future
wealth expectation as well as current consumption habits. The ages of respondents were as would be expected for college students. 62.6% of students are 19 or 20, making up the majority of the population. Age may be an important indicator of consumption, specifically when combined with other variables in an interaction term.

Another variable closely related to age is years until graduation. This is an alternative way to measure the time until realization of future wealth. Years until graduation may be a better measure than age because of the potential age differences in students going into an undergraduate program. Rather than assume those who are older are closer to graduation, years until graduation can measure the real time which that student will be waiting to attain their future income. It is important to note that age is still important when measuring current consumption because of the differences in spending habits and living situations of nontraditional students.

Major is another vital factor when looking at the income expectation of students. Certainly, we would expect a pre-med student to have a higher income expectation than the art major, meaning we would also expect their consumption to increase with it. Because much of this consumption could be contingent on personal habits, some students will spend less regardless of income expectation. For this reason, major, while it may seem like a very strong indicator of future income expectation, may not be a strong indicator of current consumption. Consumption is led by many factors other than income expectation, and income expectation is also led by many factors other than major. While major is not used in the model, the frequency of majors is important for looking at the sample of respondents which were attained.
For demographic purposes, the spread of majors in the sample will be explored. At 41.4%, the largest major represented by respondents was Social Sciences. This may be a symptom of Maryville College's healthy social science department or of the classes which were surveyed. The second highest major group was Natural Science with 24%. At this time, natural sciences are a popular major for many people hoping to move into promising fields such as medicine. Despite trends leading students toward the natural and social sciences, 19.3% of students are still majoring in an area of Humanities. The smallest majors are Arts and Math/Computer Science with 7.6% and 4.1%, respectively. Because some of the respondents are freshmen, 3.5% of students reported being undecided in their major choice.

The frequency of consumption data was less varied than would have been expected, with the data heavily skewed right. Most respondents reported monthly consumption of $499 or less, with the largest group of respondents falling in the $100 to $299 bracket. As consumption is the dependent variable, the lack of variation in data is concerning for creating an accurate model. However, the problems with variation may be related to the accuracy of the responses themselves. Personal consumption is very difficult for people to approximate, especially for students. Students may receive income from their parents as well as from a job, and with little knowledge or interest in balancing a check book, most respondents would lack a basic idea of the money they spend each month. Many of these students have jobs but also report very low levels of consumption. Alternative ways to calculate consumption will be explored later in the conclusion along with other ways to improve the data collection and analysis.
Wealth was an important measure for the Gustman study mentioned previously. This variable was a helpful indicator of personal consumption habits. Earlier high levels of wealth were discussed as being associated with low levels of consumption and vice versa. In order to look at this pattern further, our respondents were asked about their personal wealth in the form of checking and savings. In terms of wealth, most of the individuals had little personal wealth in the form of checking and saving accounts, and 49.7% have less than $1,000 while 71.3% have less than $2,500 in savings. Unlike the graduate students Gustman surveyed, many undergraduate students have not accrued significant wealth. Due to this lack of variety in wealth, the variable may not be as reliable as a predictor of current consumption.

A variable which had little variation was personal income. Because of the large amount of people who reported a personal income of less than $10,000 a year, 88.9%, this thesis made the variable a dummy variable, assigning a 1 to any respondent which reported an income of more than $10,000 a year. While the original spread of incomes gave little significant results, the new dummy variable proved to be significant in determining consumption. Personal income is also a variable which is discussed in the results with the larger description of the model chosen to represent the current consumption of respondents.

Parental income is an important variable when discussing both personal consumption and wealth expectation. For many of the undergraduate students who are not employed, 45%, parents become the main source of income. With parental supplies of money, students who would make similar incomes in the job market may be receiving much larger amounts of money than they could achieve. Parental income is also
important to understanding or predicting the income expectations of students. Most students do not expect to make more than one income bracket higher than their own parents if their parents fall in at least a middle income bracket. This does not hold for students whose parental income is on the lower end of the brackets. The highest percentages of parental income ranges represented in the same are ($50,000 –$ 69,000) and (>$$100,000) range, being 21.6% and 22.8% respectively. This distribution follows the average income for the country and reflects the high parental incomes of undergraduate students at private colleges. Parental income is discussed again in the model that is later presented.

GPA was an important variable to consider in its relationship to future wealth expectation. As stated earlier, people expect a reward for their hard work, and for many this reward is thought to be had in the form of later paychecks. For this reason, we expect that GPA will be a significant indicator of current consumption. GPA was skewed to the right, with most of the respondents, 93.6%, having GPA's in the (4-2.5) range. In fact, 41.2% of respondents had a GPA or 3.5 or higher, leaving only 6.4% with GPA's of 2.5 or lower. While the frequency of GPA's may be different than the distribution at other universities, this variable is also one which proved to be important in the model chosen in this study.

Hours spent studying weekly was another variable which was presented in the survey. Related to GPA, similar results would be expected with this variable. As hours spent studying rises, the reward expected for work would also increase. Previous studies such as the one at Georgia State and College University show that most students do not study for more than 40 hours per week. In fact, few study for more than 30. My results
were consistent with this previous study, showing that most students, 91.8%, study in the range of 0 to 20 hours. The largest group at 37.4% studies from 6 to 10 hours a week. Unfortunately, hours studied per week are not as easily measured by the respondent as GPA. Hours studied may be easily over or underestimated. Students do not often think about the hours they spend studying in an overall week unless they take the time to put together a precise schedule for studying, making this variable a potentially less significant predictor of current consumption.

5-year income expectation was one of the variables representing future income expectations, which are the main independent variable being studied. Because this variable has a closer time to realization, 5-year income expectation would be expected to be a better predictor of current consumption than 10-year income expectation. As some of the respondents may have been freshman, these income expectations would not have the same effect on their current consumption as the income expectation of a senior. Just as Gustman found, time to the realization of future wealth is important when measuring the effect of that future wealth on current consumption. With this in mind, the data had a normal distribution with most respondents' 5-year income expectation falling between $10,000 and $69,999 a year.

10-year income expectation is the other variable to measure future income expectation. As discussed above, this measure is considered to be a less reliable predictor of income expectation that 5-year due to the time until realization of that wealth. However, it is still a valuable variable for the information it provides about the change in expectation from 5 to 10 years after the survey. The respondents had higher sights for the 10 year income with only 5.3% of respondents reporting an expected income of less
$29,999. The largest group of respondents, 31.6% expected to make $50,000 to $69,999. Most of the expected incomes, 70.6% lie within the $30,000 to $89,999 range. The lower end of the brackets generally moved up two brackets from 5-year expected income, and the upper level typically moved up one bracket from the 5-year income expectations. It may also be important to note that 15.8% of respondents expect to make over $100,000 in 10 years, an increase from the 4.7% who expected such an income in 5 years. While this income is very telling of the pattern of income expectations of students, 10-year expected income will not be in the model which is later discussed.
CHAPTER IV

EMPIRICAL ANALYSIS

The model, analysis methods, results, and conclusions will be presented in the section below. The final model will be shown, and the variables within the model will be highlighted in the section. The nature of the variables surveyed will be evaluated and used to explain the data analysis method chosen. Each of the variables in the model will be described using the results of analysis, and some explanation of results will be offered. After some discussion of possible changes to further research, final implications will be presented.

IV.A. Data Analysis Method

This study expects to find expected income correlated with current consumption and will be attempting to strengthen the work of the Gustman study in a slightly different demographic, undergraduate students rather than graduate students. This thesis predicts many of the same correlations will be found but aims to produce changes in the data which will give statistical significance, showing that these methods of evaluation produced a more precise prediction.

This thesis ensured that the data had reasonably normal distribution and used log transformations if needed to normalize the data; however, log transformation was not needed. The data were tested for interaction variables which may be significant as well as
any cases of collinearity that would occur across in the variables, which is often increased when a variable is used in an interaction term. Because of a general lack of variation in my variables, data such as abnormally high current incomes or parental incomes wasn’t removed from the study. This thesis also included the data from students outside of the age range of 18-23, assuming that the changes in age, income, and parental income will be reflected in their consumption. For this reason, keeping those pieces of data will improve the variation and strengthen the sample for analysis.

Several interaction terms were created in the model including 5-year expectation*GPA, 10-year expectation*GPA, and parental income*5-year expectation. These interaction terms reflect several patterns in the consumption habits explored in the research for the study. Interaction terms between income expectation and GPA emphasize the importance of academic success on future income expectations and, further, on current consumption. The interaction between parental income and 5-year expectation also intensifies the importance of both of the variables. As both parental income and 5-year expectation increase, the product of the variables increases. If this variable is significant, the larger products will predict an increase in consumption. Interaction terms are an important part of the model as they add more depth and precision to the prediction. The interaction terms which were explored were not exhaustive but included those variables which were significant when standing alone or were logically good fits for an interaction. The interaction term 5-year expectation*GPA will be discussed further in the results as it was included in the final model.
The model used is represented below:

\[ Consumption = f (\text{Gender}, \text{GPA}, \text{Personal Income}, \text{Five Year Expected Income}, \text{Parental Income}, \text{GPA*Five Year Expected Income}) \]

The data types reflected in the model were largely nominal or ordinal. Gender was a qualitative variable which was transformed into a dummy variable, making it nominal. GPA is bracketed, making it an ordinal variable because of the changing space between each ranking. Personal income, five year income expectation, and parental income are all also ranked into ordinal variables because of their brackets. The dependent variable, consumption, is also ordinal because of the brackets used in the survey. The dependent variable will affect the kind of multiple regression that is appropriate to use for analysis of the model.

Because consumption is transformed as an ordinal variable, the method used for analysis of the data gathered was ordinal regression. This method of analysis is most appropriate due to the scaling of the variable. For the answers a, b, c, d, etc. in the survey, the data were transformed to 1, 2, 3, 4, etc. respectively. Because the distance between every a and b or 1 and 2 is not the same, this is not a nominal variable. Therefore, ordinal regression was run using SPSS software.

**IV.B. Results Obtained from Main Model**

The final model had a .000 significance and a Nagelkerke pseudo r-square of .328. All but one of the variables included in the model had significance, and the of the coefficients of the variables were as would be logically expected. Students with lower 5 year expected incomes were slightly more likely to be in a higher consumption bracket than those with the highest expected income. The results for 5 year expected income were
significant with a .000 p-value, indicating that these results would not be likely to have happened by chance. However, these results also go against the original hypothesis which would show that the students with the highest expected income consume more than those with lower expected incomes. The odd behavior of 5 year expected income may be a result of the interaction terms included in the model which use this variables. Interaction terms can create some amount of collinearity, causing one of the variables to become insignificant or change the coefficient. However, when the interaction terms are analyzed in the paragraphs that follow, 5 year expected income may behave more like would be expected.

Gender was a very significant variable in all of the models run for the study, showing that males are 245% more likely to be in a higher consumption bracket than a female with similar characteristics. Results would also correlate with data showing that males tend to expect to make more than females, perhaps correctly so. The higher income expectations of males may be reflecting the larger wage gap between males and females in the United States at this time. These results show males potentially spending more now with their higher future incomes in mind.

Current personal income was another significant factor in the final model. It was significant with a p-value of .008, and the odds ratio of .254 shows that students with an income of less than $10,000 a year are 25.5% less likely to be in a higher consumption bracket than students with an income of $10,000 a year or more. These results are consistent with what would be expected for consumption when most undergraduate students are not building debt in order to consume above their needs. For this reason, students spend what they have, making personal income an important factor in
consumption. Although personal income was significant in the model, parental income was not significant at any of the income levels. This may be due to the correlation between parental income and expected income, making parental income less significant when expected income is already in the model. However, this could also be a result of a lack of variation in the amount of money given to college students by their parents.

GPA was also significant, but not as consistently as gender. GPA was more significant as the lower levels of GPA rather than the higher. The final results show that students with a GPA of [1.9-1.5] are slightly, less than 1%, more likely to be in a higher consumption bracket than those with a GPA of [4-3.5]. This result shows that, despite what was expected, those with lower GPA’s may spend more than those with high GPA’s. One potential explanation of these results could be that students who are working more could have more money to spend and lower GPA’s. In addition, students with high GPA’s could be in majors with lower expected income, balancing the effects of their GPA on consumption. However, the percentage is quite small and makes this variable a rather weak predictor of current consumption.

GPA interacted with 5 year expected income was more significant for lower levels of the product, meaning lower GPA’s and lower expected incomes. The odds ratios for this variable showed that students with low GPA’s and low 5 year expected incomes were less likely to be in a higher income bracket than those with high GPA’s and high 5 year expected incomes. While alone GPA and 5 year expected income did not behave the way we would expect, when combined the results were consistent with the Gustman study and the current hypothesis of this thesis. Although, like the odds ratios of GPA and 5 year income expectation, the interaction term shows a very low percentage difference,
the results are as expected and have a strong p-value. The variable is highly significant and does have a measurable effect on consumption which shows that students with a high GPA and a high 5 year income expectation consume more. This would also be consistent with the explanation offered of the negative correlation between GPA and consumption as this measures which high GPA’s also have high expected incomes.

IV.C Additional Determinants of Consumption

Data were collected in the survey on both consumption habits as well as monthly consumption. The following paragraphs will describe data collected on the purchasing factors that students consider when buying a good and data on students’ attitudes about brand loyalty and price sensitivity. Data were also collected which broke down the monthly consumption into essentials and non-essentials; this data will be presented in this section as well. While this consumption data is not in the model which was used, the consumption habits of the students surveyed are relevant information which can help to understand this population and their consumption better.

Students were first asked to rank the factors price, quality, brand, safety for environment, and safety for workers on a scale from 1 to 5, with one being the most important when making a decision. Based on some of the information gathered in the infographics put out by SymphonyIRI about millennials, it would be expected that many of the students would consider price to be the most important factor, reacting quickly to price changes and being more disloyal to brands than their parents or grandparents. For the purpose of presenting the data collected, each of the factors will be evaluated based on the percentage of respondents that ranked that factor in each importance category (1-5).
Price was, by far, the most important factor for the respondents. For undergraduate students at Maryville College, price was rated 1 or 2 by 86.1% of respondents, and 54.2% considered price the most important factor. We also see this trend in the data collected on price sensitivity. When asked how sensitive they were to the price of a good, 86.5% said they were very or somewhat sensitive to the price of a good, and 39.2% claimed to be very sensitive to the price. The Time's article by Bissonnette stated that many millennials report being affected by the financial crisis in 2008 and claim the crisis affected how they now spend money. The students surveyed at Maryville College showed similar spending habits to those who were in the infographics by Huffington Post and would be likely to agree with the millennials who were surveyed by Bissonnette. For many millennials who were not in the work force during 2008, the fear of a weakened job market makes it harder to rely on a future income. While undergraduates could once go right out of school knowing they had a job, students now deal with uncertainty regarding their career after graduation, leading them to be more sensitive to price and conservative with their money.

Though price was the most important factor for respondents, quality was still rated highly by the sample. In fact, 95.1% of respondents rated quality 1, 2, or 3 of their factors. Most respondents, 41.5%, rated quality as the second most important factor when purchasing a good. Respondents seem to be looking for the cheapest good with the best quality, a trend we would expect to see from thrifty millennials. Respondents may be more likely to buy their hair dye or nail polish from the grocery store, but they do not feel like they are sacrificing quality for a good price. Perhaps this is another reason why millennials are seen to be able to maintain lifestyle more easily than their parents.
Even when respondents find a good quality brand, how important is brand in their purchasing decisions? 33.3% of students would say that brand is the third most important factor during their purchasing experience. However, most students, 34%, would say that brand is the least important factor when purchasing a good. Students seem to be split on this factor between those who favor certain brands and those who are easily swayed to purchase a new product. However, when asked how loyal to brands they are, 82.5% of respondents said that they are neutral, somewhat loyal, or very loyal. Perhaps, when asked if they are loyal to a brand, a specific good may come to mind, prompting respondents to report higher levels of loyalty than when asked about the factor in relation to price and quality. Based on the Shopped Sentiment Index, those students who exhibit less brand loyalty are able to adapt more quickly to price changes while maintaining their current lifestyle. Because of their experience of the financial crisis, students today may consider this adaptability to be an important skill to have in the future.

The final two factors explored, safety for environment and safety for workers, relate to the concept of ethical consumption which Littler explores in his book on what he calls “radical consumption.” Millennials often show that service is important to them, so it may be expected that the respondents would show a tendency to consider the ethical implications of their purchases on workers and the environment. Because of the prevalence and strength of environmental campaigns, many students have knowledge of some of the environmental issues with different companies. But recently media has brought workers’ safety to the forefront of ethical consumption with events such as the factory collapse in Bangladesh. However, results showed that students were much more aware or concerned with environmental safety rather than worker safety. 40.6% of
respondents considered environmental safety to be the fourth most important factor; whereas, 36.3% of respondents consider worker safety to be the fourth most important factor when purchasing a good. Both environmental safety and worker safety were commonly given ratings of fourth or fifth most important factors, making them the least important factors in the survey. Millennials may have the concern for these ethical issues but lack the monetary ability to purchase goods which practice ethical production.

The survey also included questions about monthly consumption on essentials and nonessentials, gathering information on the kind of consumption students partake in or the kind that they would like to be perceived as partaking in. 47.4% of students reported spending less than $100 per month on essential, and 29.8% reported spending $100 to $299 a month on essentials. Overall, students reported spending very little per month, especially on nonessentials. In fact, 59.1% of students reported spending less than $100 per month on nonessentials. Whether these approximations reflect the actual spending habits of students is very hard to evaluate; however, their responses show that students want to be perceived as spending little on nonessentials.

Overall results shows that consumption is impacted by five year income expectation, GPA, GPA*five year income expectation, gender and personal income. The results presented above showed that 5 year income expectation was a significant variable for consumption, and income expectation became a stronger predictor of consumption when combined with GPA. GPA alone was a significant variable to predict consumption, but it had a negative correlation to consumption. This negative correlation may have been due to the low income expectations of those with high GPA’s. In contrast, the interaction term showed a positive correlation with both GPA and expected income. This variable
showed that as income expectation and GPA increase, current consumption also increases. Gender and personal income were also strong predictors of consumption, showing that males consume more than females and students with more income spend more.
CHAPTER V

CONCLUSIONS AND DISCUSSIONS

This study began with exploration of past studies and surveys on the consumption habits of undergraduates, graduate students, and millennials. Through the investigation of these reports and other articles on consumption, a hypothesis was formed using theory of expected income’s positive effect on consumption as suggested by economists such as Franco Modigliani and Milton Friedman. In order to test this hypothesis, a survey was developed to gather data on the consumption habits and characteristics of Maryville College students. The survey went through revisions, as advised by several books on data collection, to improve the functionality and data collection strategies used. The final survey was given to students in several classes as well as handed out during lunches to ensure a wider variety of majors. Using the variables surveyed to determine an analysis method, ordinal regression was chosen due to the ordinal nature of the dependent variable, consumption. The regression results were analyzed to give the final results discussed in the section preceding the conclusions.

The final results show that many of the findings of Gustman hold true for the undergraduate population. In addition, the thesis was able to find evidence to suggest that expected income is a good predictor of current income. With high significance, the results were able to show that students who expect to make more in the future and have high GPA’s are consuming more in the present. This study was also able to show a strong
correlation between personal income and gender. Personal income is to be expected in a population with little debt; however, the odds ratio of gender is much stronger than any other in the results at 2.45. The results showed that males were 245% more likely to be in a higher consumption bracket, quite a good chance compared to the odds ratio of 25% for personal income. The original hypothesis was supported, and the research shows some strong trends in undergraduate consumption today. In addition, the study has many areas which could be improved for further research.

The undergraduate population is much less varied than originally expected; unfortunately, the lack of variation made analysis of data more difficult and less reliable than it would have been with more variety in responses. This lack of variation was especially seen when looking at the dependent variable, consumption. Some of the ways to improve the data would include making the survey question regarding monthly consumption in an open form. If many students report spending $100-$299 a month, there could be a big difference between the student spending $100 and the students spending $299. This difference would be important when running regression analysis on the data. Some students may spend as little as $50 a month on what they would consider as nonessential goods. Giving students the ability to evaluate their consumption to an exact value could be an important way to improve the model. Changing the survey collection of consumption from bracketed to open answered would change the nature of the variable as well. With the numerical approximations of each respondent’s consumption, ordinal regression would no longer be appropriate. Rather, multiple regression would be the analysis method used.
As stated in the descriptive statistics, the estimations of consumption seemed to be inaccurate. Other survey methods may be better suited for collecting this information. Perhaps asking about consumption in the past week or a typical week would provide more accurate data as the respondent would not forget little purchases that are made within a month. By simply taking the weekly amounts and multiplying them by four, a much more accurate value of consumption might be attained. If this were to improve the accuracy of the data, the original hypothesis could be strengthened, or the results shown here could be inaccurate.

Another problem in the research was the format of the questions regarding purchasing factors which many people did not understand. The intention of the survey was to have respondents rank the factors using each number 1-5 only once; however, many respondents used the numbers more than once to rank each factor separately. After looking at the data collected, a second survey would need to include better instructions or simply ask students to rate each variable, which seemed to be their natural inclination. The results would still be insightful for the purposes of the study and would produce more consistent data.

The data collected has implications for both marketing and financial information for students. The undergraduate population at Maryville College shows that price and quality are the most important factors when purchasing a good, so brands marketing towards this demographic need to focus on the features of their product which make it a high quality good for a reasonable price. The students also show that the environmental campaigns have been successful in raising awareness about companies which make products which are harmful to the environment; however, the students show a lack of
understanding on issues of worker safety. Organizations which are fighting to raise awareness about this issue need to access the younger generation. Both organizations for environmental safety and worker safety may need to consider this demographic an investment; due to the low current incomes they possess, most students are not capable of fully taking part in the ethical consumption movement as seen in the results.

One implication of the gender significance could be the current wage gap between men and women in the United States. Perhaps this difference in consumption is not just inherent to males but is caused by their higher income expectations which will often be realized. These results may further emphasize the need to address the wage gap between men and women both in the United States and globally. Finally, the lack of variation in consumption and potential inaccuracy of data shows a potential need for students to become more aware of the money they spend each month. While millennials are concerned about the money they spend and save, their awareness of their total consumption does not seem to be consistent with their desire to spend money wisely.
APPENDICES
Survey: Consumption Habits of Undergraduate Students

Thank you for your interest in participating in this senior thesis survey. All answers will be anonymous, and you may choose to quit at any point during the survey.

1. Personal Yearly Income (Estimate):
   a. [<10,000]
   b. [10,000-29,999]
   c. [30,000-49,999]
   d. [50,000-69,999]
   e. [70,000-89,999]
   f. [90,000-100,000]
   g. [>100,000]

2. Net Wealth (Savings and Checking):
   a. [<1000]
   b. [1,000-2,500]
   c. [2,500-5,000]
   d. [5,000-7,500]
   e. [7,500-10,000]
   f. [>10,000]

3. Expected Personal Income in 5 Years:
   a. [<10,000]
   b. [10,000-29,999]
   c. [30,000-49,999]
   d. [50,000-69,999]
   e. [70,000-89,999]
   f. [90,000-100,000]
   g. [>100,000]

4. Expected Personal Income in 10 years:
   a. [<10,000]
   b. [10,000-29,999]
   c. [30,000-49,999]
   d. [50,000-69,999]
   e. [70,000-89,999]
   f. [90,000-100,000]
   g. [>100,000]

5. Combined Parental Yearly Income (Estimate):
   a. [<10,000]
   b. [10,000-29,999]
   c. [30,000-49,999]
   d. [50,000-69,999]
   e. [70,000-89,999]
   f. [90,000-100,000]
   g. [>100,000]

6. Total Monthly Consumption:
   a. [<100]
   b. [100-299]
   c. [300-499]
   d. [500-699]
   e. [700-899]
   f. [900-999]
   g. [>1,000]

7. Total Consumption on Essentials:
   a. [<100]
   b. [100-299]
   c. [300-499]
   d. [500-699]
   e. [700-899]
   f. [900-999]
   g. [>1,000]

8. Total Consumption on Non-essentials:
   a. [<100]
   b. [100-299]
   c. [300-499]
   d. [500-699]
   e. [700-899]
   f. [900-999]
   g. [>1,000]
9. Rate the following factors you consider when purchasing a product from 1-5, with 1 being the most important factor.
   __ Price
   __ Quality
   __ Known Brand
   __ Safe for the environment
   __ Safe for workers

10. How sensitive are you to the price of a good?
    a. Very sensitive
    b. Somewhat Sensitive
    c. Neutral
    d. Somewhat Insensitive
    e. Very Insensitive

11. How loyal are you to brands?
    a. Very Loyal
    b. Somewhat Loyal
    c. Neutral
    d. Somewhat Disloyal
    e. Very Disloyal

The following questions will gather some personal information about you. Remember all your answers are confidential.

1. Gender: Male __ Female __
2. Age: ______
3. Marital Status:
   Single _ Married _ Divorced _

4. Number of Children: ______
5. Expected Graduation Year: ______
6. Major(s): ____________
7. Are you currently employed?
   Yes _ No _

8. GPA:
   a. [4-3.5]
   b. [3.4-3]
   c. [2.9-2.5]
   d. [2.4-2]
   e. [1.9-1.5]
   f. [<1.4]

9. Hours of Study last week:
   a. [<5]
   b. [6-10]
   c. [11-20]
   d. [21-30]
   e. [31-40]
   f. [>40]

Thank you for your participation! If you have any questions or concerns feel free to email brittani.edge@my.maryvillecollege.edu!
Informed Consent

**Purpose**: The purpose of the study is to examine the consumption habits of undergraduate students.

**Potential benefits**: Although the investigator cannot offer any immediate benefits, some professors will offer extra credit for writing a report for participation in a senior study.

**Procedure**: You will complete a survey which will take approximately ten minutes.

**Privacy**: The only information required for the study will be gathered at the time of the experiment. We will only ask for relevant information. This information will be available only to me and Dr. Ghimire and will be stored on a private computer. If you choose to withdraw from the study, you will incur no personal penalty and any corresponding data will be destroyed.

If you have any questions, please contact one or both of the following:
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Brittani Edge
e-mail: brittani.edge@my.maryvillecollege.edu

By signing this form I acknowledge that I have read and understood the above and consent to take part in the study; my questions have been answered satisfactorily and a copy of this form is available upon request:

________________________________________ ________________________
Participant Date

________________________________________ ________________________
Investigator’s Signature Date
APPENDIX C
Institutional Review Board Approval Certificate

Principal Researcher: Brittani Edge
Faculty Supervisor: Shankar Ghimire
Division: Social Sciences
Title: “The Consumption Habits of Undergraduate Students”
Protocol#: 29.10.13.01
Approval Status: APPROVED

November 7, 2013
Dear Brittani:

The Maryville College Institutional Review Board (IRB) has carefully considered your proposal referenced above. The proposed procedures afford reasonable protection to the human participants involved and therefore you are granted approval for the study.

Your approval is effective November 7, 2013 and will expire one year from this date. Thereafter, continued approval is contingent upon submission of a progress report that must be reviewed and approved prior to the expiration date.

Approval is contingent upon your agreement to obtain informed consent from your participants, to abide by the protocol summarized in the approved IRB application, and to keep appropriate records concerning your participants.

You are required to submit to the Maryville College IRB for review any changes in procedures involving human participants prior to the implementation of such changes.

If you have any questions concerning this approval or regulations governing human participant activities, please contact Dr. Geoff Mitchell, Chair of the Maryville College IRB, by e-mail at Geoffrey.Mitchell@maryvillecollege.edu or by phone at 865.981.8269.

Sincerely,

Dr. Geoff Mitchell
Institutional Review Board

Maryville College Institutional Review Board
ORIIRB#: IRB00007383
FWA Assurance #: FWA00015150

502 E. Lamar Alexander Parkway, Maryville, Tennessee 37804-5907
Voice 865.981.8000 | Fax 865.981.8010 | maryvillecollege.edu
Table 1: Frequency Tables of Main Variables

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### Table 2: Regression Results

**Parameter Estimates**

**Dependent Variable:** Consumption

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APPENDIX F
Table 3: Test Statistics

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Link function: Logit.

**Pseudo R-Square**

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Works Cited


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