

THE PENNSYLVANIA STATE UNIVERSITY
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DEPARTMENT OF PSYCHOLOGICAL AND SOCIAL SCIENCE

PATTERNS AND IMPLICATIONS OF FULL TIME AND WORKING STUDENTS

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ABSTRACT

With increased rates of tuition, increased rates of depression and anxiety, academics, part-time jobs and commuting, college students have a lot demands on their time and energy. A study was created to see the effect of these characteristic in a college student's life on happiness and stress levels. An online survey was distributed to 82 (41 female) college students to ask them various questions about their daily schedule and how it affects them. After running regression analysis on the responses, it was found that individual's perspective on how certain activities will benefit them in the future had more of an effect on stress and happiness than how much actual time was spent on school, commuting and part-time jobs amongst college students.

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Chapter 1

Introduction

College tuition is a significant financial burden for many people. In 2017, the average student debt was \$37,172 and in total there is \$1.4 trillion in student debt (Fay, 2019). These harsh numbers are causing college students to commute and work more in hopes of lowering their final debt. College professors recommend students to only work 10-15 hours of an on-campus job per week, but 45% of students report working full time while in classes (Perna, 2010). An estimated 48% of college students live at home and commute to campus (Williams, 2015).

Simultaneously, college students have seen an increase in depression and anxiety and in the absence of increased school performance. Some 25.8% of 18-25 year olds have a mental illness; that is higher than any other age group (Merikangas, He, Burstein, Swanson, Avenevoli, Cui, Benjet, Georgiades, Swendsen, 2010). Depression rates have doubled and suicide rates have tripled (Jed Foundation, 2019). Anxiety is also one of the most common mental health problems among college students (Anxiety and Depression Association of America [ADAA], 2015). I am interested in seeing if there is a correlation to college students rise in depression and anxiety and their increase in commuting, schooling, and working.

Commuting

While there are several studies about commuting and stress, there is a relative lack of studies on college students who commute. With my sample being taken from a commuter

campus, it is important to understand how commuting affects college student's stress and the literature on commuting stress in working adults provides some initial information.

It has been found in several studies that commuting can cause increased stress levels. For example, one study with 56 participants asked commuters Likert-type scale questions about the predictability of their commute and also tested for participants elevation in salivary cortisol (Evans, Wener & Phillips, 2002). It was found that commuters who have a more unpredictable commute have higher self-report stress levels and elevated cortisol levels (Evans, Wener & Phillips, 2002). Most college students have various classes on different days and a part time work schedule to fit with their school schedule that varies semester-by-semester. Such daily and seasonal variation could cause a very inconsistent schedule as compared to adult professionals who would usually have a consistent 8-5 workday. It could be predicted that students' inconsistent schedules would cause more unpredictable commute, which in turn relates to increased stress levels.

Another study by Wener, Evans and Boatley (2005) found that commuting stress can have spillover effects in which something negative in one aspect of your life will affect you in another unrelated part of your life. This study asked 150 participants a standardized index that combines workload demands and control at work to determine how much strain the participant has from work. The participants spouse was also asked to complete a Daily Marital Behavior scale. This study found that participants riding a new direct train line to New York City experienced significantly less commuting strain, and with an easier and faster commute, job stress was also reduced (Wener, Evans and Boatley, 2005). This study shows that spillover due to commuting may have an effect on the commuter students' overall stress, including reported stress in other areas of their life.

A study in Sweden had a similar finding. This study asked 713 adult commuters about specific logistical factors of their commute and several 7-point scale questions about the quality and satisfaction of their commute (Olsson, Garling, Ettema, Friman & Fuji, 2012). This study found that the more positive attitude commuters had towards commuting, the more positive spillover effect they would experience. This study also found that the longer the commute is, the more negative a commuter's attitude would become and that negative attitude would also have a spillover effect (Olsson and et al. 2012). Potentially, if college students saw benefits from their commute, they could have a more positive attitude towards it and that positive attitude could help reduce overall stress.

Part-time Job

Due to the increase in college tuition, many students feel the need to have at least a part-time job to help supplement the costs of college. A part-time job in addition to students already busy schedule could add to their daily stress levels and previous research supports that trend.

For example, Kane, Healy, and Henson (1992) asked 1,400 west-coast college students several questions to see how well their part-time jobs matched up with their future career goals. It was found that only 16.6% of participants felt that their jobs offered career advancement and 20.6% of participants felt that they could apply their education to their job. However, the majority of students in this study reported that flexible scheduling with students' needs and good coworkers and supervisors are important characteristics for a satisfying job (Kane, Healy, Henson, 1992). These findings suggest that students want jobs with flexible hours and good coworkers more than jobs that helped with their career.

Similar research used 5,223 past student records to test how work has an effect on overall student satisfaction and GPA (Tessema, Ready, Astani, 2014). This study organized the respondents in 5 groups, depending on how many hours they worked. It was found that students who worked 1-10 hours a week had a higher overall student satisfaction and had a higher GPA when compared to students working more than 10 hours (Tessema, Ready, Astani, 2014).

Life Satisfaction

There are several factors that affect student's life satisfaction. In this study we will be focusing on work, academics and commuting. Different studies will focus on different factors and variables in student's overall life satisfaction.

One study asked 536 undergrad students questions about their demographic information, a satisfaction with life scale, the Beck Anxiety Inventory, questions about cell phone and texting use, and cumulative GPA (Lepp, Barkley, Karpinski, 2014). The study found that phone use was negatively related to GPA and positively related to anxiety. Additionally, GPA was positively related with satisfaction with life but anxiety was negatively related with satisfaction with life (Lepp, Barkley, Karpinski, 2014).

Similarly, Weinstein and Laverghetta (2009) asked 142 undergrad students a 5 item satisfaction with life scale and an 11 item college student stress scale to determine the relationship between college student stress and life satisfaction. Satisfaction with life scores were significantly negatively correlated with the self-reported stress scores. Females were also found to have higher stress levels than males. This means that this study found that as life satisfaction decreases, stress levels increase amongst college students (Weinstein, Laverghetta, 2009).

Another study about college student's life satisfaction focused heavily on their depression and anxiety rates. This study randomly selected 1,700 full time undergrad students from the registrar's office to answer this survey and received responses from 508 of those randomly selected students (Mahmoud, Staten, Hall and Lennie, 2012). This study asked students on a Likert scale questions about their depression, anxiety, stress, coping strategies and life satisfaction, and found that students belonging to social groups, such as religious groups or fraternities, were more satisfied with life. It was also found that students in a transitional academic year (freshman and seniors) had increased levels of stress and anxiety. Another important finding of this study was that students with more maladaptive coping strategies was a main predictor in depression, anxiety and stress levels (Mahmoud, et al. 2012). It is important to recognize that students with harmful coping strategies have a higher chance of increased levels of stress, depression and anxiety.

Current Study

As illustrated above, there are several factors that contribute into student's life satisfaction and success in school. For this project, we decided to focus on student's time spent on school, work and commuting and their effect on student's life satisfaction because they consume a lot of time but there is little research combining and analyzing these factors. Our hypothesis for this study is that the more time spent on school, work and commuting the higher self-reported stress levels will be and the lower life satisfaction will be. It is also hypothesized that when students perceive benefits in school, work and commuting, it will have the opposite effect of stress, and have lower self-reported stress levels and higher life satisfaction.

Chapter 2

Methods

Participants

The participants for this study are undergraduate students enrolled at Penn State Abington. The study had 82 participants with 40 being male, 41 being female and 1 identifying as non-binary. Out of the sample, 96% are the participants are 18-23 years old. About 92% of the participants are enrolled as full-time college students (taking 12 or more credits). See Table 1.

Table 1

Participant demographics by sex and total sample

		Average (Std. Deviation)	Range
Age	Men (N=40)	19.75 (1.32)	18-24
	Women (N=41)	20.10 (2.92)	18-32
	Total (N=82) ¹	19.91 (2.25)	18-32
Credits	Men (N=40)	14.40 (2.63)	7-21
	Women (N=41)	14.73 (3.30)	4-21
	Total (N=82) ¹	14.57 (2.96)	4-21
GPA	Men (N=40)	2.84 (0.63)	1.59-4.00
	Women (N=40)	2.99 (0.72)	.20-4.00
	Total (N=81) ¹	2.93 (0.65)	0.20-4.00

¹1 participant identified as gender non-binary and was included in overall analyses but could not be included in demographic breakdowns because of confidentiality.

Materials and Measures

For this study separate questionnaires were constructed based on previous research to measure both objective and subjective aspects of the respondent's school, work, commuting and leisure activities. Each questionnaire contained items about time spent on various activities as well as perception-based questions primarily focused on that use of time or stressors associated with that activity.

The school activities questionnaire contained 12 questions (7 objective and 5 perception questions). Objective questions included how many credits they are taking this semester, how many hours they spend on school work a week on average, how many hours they spent on school work last week, overall GPA, how many days a week they are on campus and how many hybrid/online credits they are taking. The participants answered 5 subjective questions about school and how much it interferes with other activities. Participants were asked to answer these questions using a 7-point scale ranging from "strongly disagree" to "strongly agree." Responses were aggregated for 4 of the 5 items to create a composite interference score ($\alpha=.70$). The excluded item ("Managing school work helps me with time management") did not correlate well with the other items even after reverse coding so is treated separately.

Student's job questionnaire contained 11 questions (6 objective and 5 perception questions). Objective questions included the average of hours they work, how many hours they are working this week, how many days they work, how long their commute to work is and their mode of transportation to work. Participants were then asked 5 perception questions about how they feel about work; how flexible work is with their school schedule and how work helps them with their future. Participants were asked to answer these questions from a 7-point scale ranging

from “strongly disagree” to “strongly agree.” Responses were aggregated for 3 of the 5 items to create a composite interference score ($\alpha=.76$). The excluded items (“My job is flexible when I have a busy school week” and “my development at work helps me with school”) did not correlate well with the other items even after reverse coding so are treated separately.

The leisure activities questionnaire focused on what students do with their families, significant others and by themselves. This questionnaire included 25 questions (5 questions about how much time they spend on specific leisure activities and 18 perception questions). Participants were asked to answer these perception questions using a 7-point scale ranging from “strongly disagree” to “strongly agree.” Questions 1-6 in this section about participants wishing they had more time for leisure activities were aggregated for a composite interference score ($\alpha=.84$). Questions that focused on school taking away from leisure activities were aggregated for a composite interference score ($\alpha=.88$). Questions that focused on work taking away from leisure activities were aggregated for a composite interference score ($\alpha=.91$). Questions that focused on commuting taking away from leisure activities were aggregated for a composite interference score ($\alpha=.92$).

The questionnaire focused on commuting included 11 questions about commuting (2 objective and 9 perceptive). The two objective questions were how long their average commute to campus is and what mode of transportation is used. Participants were asked to answer these questions from a 7-point scale ranging from strongly disagree to strongly agree. Three of the 9 perception questions were about benefits from commuting and they were aggregated for a composite interference score ($\alpha=.67$). The negative perception questions were aggregated for a composite interference score ($\alpha=.76$).

Participants then answered a questionnaire that included 10 perception questions about stress and asked how many hours a night they sleep. Participants were asked to answer these questions from a 7-point scale ranging from strongly disagree to strongly agree. These questions were not aggregated for a composite interference score.

The finance questionnaire included 11 questions (3 objective and 8 perception). The 3 objective questions included who the participant lived with and what their monthly costs are. The perception questions were focused on who the participant receive financial and emotional support from.

Participants ended the survey by answering 21 perception questions about whether school, work and other leisure activities adds to or reduces they depression and anxiety. Participants were asked to answer these questions from a 7-point scale ranging from strongly disagree to strongly agree. Four of the questions relating to benefits of leisure activities were aggregated for a composite interference score ($\alpha=.79$). The perception questions relating to the negative mental health effect of school were aggregated for a composite interference score ($\alpha=.68$). The perception questions relating to the negative mental health effect of work were aggregated for a composite interference score ($\alpha=.62$). The perception questions that related to the benefits of social relationships were aggregated for a composite interference score ($\alpha=.80$).

Procedure

Participants were recruited from an introduction to psychology participant pool. Students were given an online description of studies and then chose which study they would like to participate in. Participants then took an online survey distributed through Qualtrics.

Questions were grouped in several blocks and every participant received the questions in the same set order.

After prescreen questions to ensure the responses would only be from college students and a consent form, basic demographic questions were asked. These questions included age, gender, if the participant is a full-time student and how many credits they are taking. The demographic questions were kept simple because my analysis was not primarily focused on demographics. Next, participants were asked to share a single tip for incoming freshman. The response was received in an open-ended format to see if there were any themes that seemed more prominent. That analysis is not included in this manuscript.

Participants were then asked questions about their school work and how school interferes with their life and happiness. Participants were then asked about questions about commuting and how it interferes with their life and happiness. A similar set of questions were also asked about working. Then, participants were asked about other aspects of their life including time spent with family, hobbies, and finances. The survey ended by asking how school, work and commuting has an effect on the participants' depression, anxiety and life goals.

After completion of the survey participants were directed a debriefing page that explained the purpose of the study. Participants were also given the contact information of the researchers in case they had any questions or concerns. Participants time were compensated by receiving a half of credit towards their 3-credit requirement for the psych class they are participating in.

Chapter 3

Results

Descriptive Statistics

Prior to running inferential tests on our survey data, we cleaned and analyzed all responses to ensure normality and appropriateness for statistical testing. Those descriptive analyses, representing the primary independent and dependent variables and scale scores, are found in table 2.

Table 2

Descriptive analysis on key variables

		Mean (St. Dev.)	Range	Skewness	Kurtosis
School Variables	School Interferes with Leisure (4 items, $\alpha = .88$)	18.61 (5.65)	4-28	-.346	.271
	School helps achieve goals (2 items, $r = .48$)	10.24 (2.43)	2-14	-.857	1.331
	School negatively affects mental health (2 items, $r = .68$)	8.53 (3.49)	2-14	-.285	-.762
Work Variables	Work interferes with Leisure (4 items, $\alpha = .91$)	17.66 (5.62)	4-28	-.313	-.160
	Work helps achieve goals (2 items, $r = .70$)	8.94 (2.64)	2-14	-.334	.568
	Work negatively affects mental health (2 items, $r =$.62)	7.40 (3.14)	2-14	.126	-.125
Commuting Variables	Commuting interferes Leisure (4 items, $\alpha = .92$)	16.47 (6.11)	4-28	-.392	-.419
	Benefits from Commuting (3 items, $\alpha = .67$)	11.82 (3.88)	3-21	.101	.291
	Commuting interferes on a daily basis (4 items, $\alpha = .76$)	15.09 (5.23)	4-26	-.271	-.279

Overall Well-being	Benefits from Leisure Activities	19.55 (5.23)	8-28	.019	-.062
	(4 items, $\alpha = .79$)				
	Benefits from Self-care	19.97 (4.56)	7-28	-.370	.194
	(4 items, $\alpha = .80$)				
	Benefits from social relationships	20.94 (4.23)	7-28	-.463	.726
	(4 items, $\alpha = .80$)				
	Overall Time Stress	9.66 (2.78)	2-14	-.480	-.228
	(2 items, $r = .54$)				

Inferential Statistics

Hours and Days Worked on Key Indicators

It was hypothesized that people who work more hours, or who work more days of the week, would also experience greater stress and dissatisfaction with other variables in the study, including work/life balance. To test this relationship, we initially ran set of bivariate correlations between hours or days worked per week and time stress, life satisfaction, and overall feelings toward work. As shown in Table 3, the number of hours worked was positively correlated with number of days worked in a week ($r = .76$, $p < .001$), but not significantly related to any of the tested variables (all Pearson r 's $< .18$). However, number of days worked per week was significantly positively correlated with feelings that work interferes with leisure activities such as hobbies ($r = .31$, $p = .005$).

Table 3

Correlations between hours and days worked per week and key indicators

	Time-related stress	Work achieves my goals	Negative mental health	Work interferes with Leisure	Life satisfaction
Hours worked per week	-0.05	0.03	-0.02	0.18	-0.01
(p-value)	(0.667)	(0.779)	(0.839)	(0.119)	(0.917)
Days worked per week	0.08	0.05	0.08	.312**	0.09
(p-value)	(0.469)	(0.688)	(0.502)	(0.005)	(0.437)

**indicates $p < .01$ *Credits and Days of School on Key Indicators*

It was hypothesized that students who take more credits or spend more days a week on campus would also have higher levels of stress and take a bigger toll on mental health. To test this relationship, we ran set of bivariate correlations credits take per week or days spent on campus per week and time stress, life satisfaction, and overall feelings toward school (see Table 4). School hours per week and days spent at school per week were not significantly correlated with any of the outcomes. However, the number of credits taken per week was positively correlated with how much it is perceived that school interferes with leisure activities ($r=.277$, $p<.013$).

Table 4

Correlations between credits taken, days at school or hours on school per week and key indicators

	Time-related stress	School achieves my goals	Negative mental health	School interferes with Leisure	Life satisfaction
Credits taken per week	-0.04	-0.05	0.10	0.277**	0.07
(p-value)	(0.716)	(0.679)	(0.390)	(0.013)	(0.552)
Days at school per week	0.12	-0.05	0.09	.077	0.03
(p-value)	(0.274)	(0.692)	(0.425)	(0.498)	(0.819)
Hours on school per week	0.09	0.01	0.14	.022	-0.21
(p-value)	(0.427)	(0.955)	(0.226)	(0.846)	(0.073)

**indicates $p < .01$ *Time Commuting to school and work on Key Indicators*

It was hypothesized that students who take more commuting to school and work would also have higher levels of stress and take a bigger toll on mental health. To test this relationship, we ran set of bivariate correlations minutes a week spent on commuting to school or work and time stress, life satisfaction, and how much commuting interferes with life. The minutes commuting to school per week was positively correlated with how much commuting interferes on a daily basis ($r=.334$, $p<.003$) but not for any of the other variables (see Table 5).

Table 5

Correlations minutes commuting to work or school and key indicators

	Time-related stress	Benefits from commuting	Commuting interferes daily basis	Commuting interferes with Leisure	Life satisfaction
Minutes commuting to work per week	-0.12	-0.09	0.18	0.18	0.07
(p-value)	(0.297)	(0.439)	(0.122)	(0.122)	(0.528)
Minutes commuting to school per week	-0.22	-0.07	0.334**	.19	0.04
(p-value)	(0.056)	(0.575)	(0.003)	(0.112)	(0.736)

**indicates $p < .01$

Regression Models for Work, School, and Commuting Variables and Key Indicators

Several different regression models were tested to examine the potential relationship between our key indicators and our work, school, and commuting variables while controlling for and including additional predictors. Each of those models are reported separately in this section.

In order to test combined effect of our work, school, and commuting variables on some of our key indicators, we ran multiple regressions with all three interference outcomes as predictors of our key indicator of time-related stress. The results found that the overall model was a significant predictor of time related stress (adjusted $R^2=.134$), $F(3, 76)=4.90$, $p=.004$. Specifically, in that model, scores related to both work and commuting interfering with leisure were non-significant predictors ($\beta=.061$ and $.071$, respectively). However, school interference scores were a significant contributor to overall feelings of time-related stress ($\beta=.061$, $p=.022$).

To test how participants happiness is affected by our key variables we ran multiple regressions with how work, commuting and school interferes with leisure activities. The results for that overall model was not a significant predictor of work, commuting and school interfering with leisure activities and participants reported happiness levels (adjusted $R^2 = -.022$), $F(3, 74) = .48$, $p = .697$.

The third model we ran tested how participants reported happiness were affected by benefits of work, school and commuting. The results found that the overall model was a significant predictor of time related stress (adjusted $R^2 = .349$, $F(3, 74) = 14.25$, $p < .001$). In this model, scores related to participants happiness and benefits from commuting were non-significant predictors ($\beta = .027$). However, the benefits of school and work were a significant contributor to participants reported happiness ($\beta = .217$ and $.209$, respectively).

The final model we decided to run tested how participants overall daily time stress were affected by believing there are benefits from commuting, school and work. The results found that the overall model was a somewhat significant predictor of time related stress (adjusted $R^2 = .153$, $F(3, 74) = 4.29$, $p = .008$). In this model, scores related to participants daily time stress and benefits from school were non-significant predictors ($\beta = .118$). However, the benefits of commuting and work were a significant contributor to daily time stress ($\beta = .204$ and $-.334$, respectively).

Chapter 4

Discussion

In this study we asked participants about many different variables and aspects of life to see how that would affect their satisfaction with life. My findings did not support our first hypothesis. We thought that with more time spent on school and work the less satisfaction there would be with life, but there was no significant data found to support that. However, my second hypothesis was more supported by our findings. There was some support for students' perspective having a greater effect on overall stress and satisfaction with life. It was found that students who believe their job and education is helping them in their life goals tend to have lower overall stress levels and higher life satisfaction.

With the increased levels of anxiety and depression in college students it is important to know what can be done to reduce those factors. Stress is a key contributor and knowing that a change in perspective may reduce a students' stress levels could be a helpful tip for advisors to give students. The same thing can be said about student's life satisfaction levels, with a different perspective, students life satisfaction levels could potentially rise. Such perspective shifting could be done through first year engagement courses or other messaging to students or workers that more closely connects their efforts with longer term goals.

While what was found is important, there are some limitations to our data. Only 82 students from one suburban commuter college campus was asked. More participants from different universities could affect the data. Also, there could have been more questions focusing on students' depression, anxiety, stress and satisfaction with life. We asked more general questions to rate students' depression, anxiety, stress and satisfaction with life. Using more

expansive, previously used questionnaires to measure these variables would have given us more psychologically validated and reliable data to analyze.

In the future, we can improve our questionnaires to get more accurate representation of our variables. We would also focus more on students' perspectives and how that influences them. There was not much supporting data about how students' perspectives differentiate their experiences. When collecting future data, we would add more questions on students' perspective to see just how much different perspective could change different variable outcomes.

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ACADEMIC VITA

Arianna Carlson

Education

August 2016- December 2019
Psychology and Social Science B.A., Pennsylvania State University, Abington Campus
Schreyer's Honors College

Research

Internship with Proctor and Gamble

June 2019 – Present

- Proposed and designed survey based on consumer psychology (Regulatory Focus Theory).
- Conducted research and developed surveys to assess consumer behavior using Qualtrics software.
- Organized, cleansed and analyze data.
- Shared insights and quantitative data with Proctor and Gamble marketing liaison to inform product decisions.

SONA Labs

January 2019 – May 2019

- Run labs for undergrad SONA participants
- Had to learn how multiple studies worked and be comfortable enough to run participants through them
- Update and record responses on online platform

Research Assistant

November 2018 – January 2019

- Enhanced Opioid epidemic data collection and reporting by transferring coroner results to a universal electronic database.
- Electronic database was soon adopted by other counties to have a more holistic view of the characteristics of the crisis
- Quickly became subject matter expert, mentoring others on how to use the software.