

Consumer Habits Before and During the Pandemic

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Abstract

The purpose of this study is to observe the spending habits and tendencies of consumers before and during the pandemic. The study will include a list of behaviors to rate the likelihood of spending money on several behaviors before and during the pandemic, Eysenck's I-7: Impulsivity and Venturesomeness Questionnaire and a series of questions related to spending. It will also include questions related to student's perceptions and opinions of the virus, and how they relate to the COVID rules and regulations, such as social distancing and mask wearing. Due to lockdown restrictions and social distancing, many parts of our economy saw a sharp shift in spending. Based on financial data, we can see that side effects of the pandemic drastically changed consumer behaviors. According to data published by the U.S. Census Bureau, consumers spend \$211.5 billion during the second fiscal quarter on e-commerce, which was up 31.8% quarter over quarter. The goal of this study is to see where college students were spending their money during the heights of the pandemic, while taking a specialized look at how students with impulsive and venturesome personality traits spend their money.

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Consumer trends are constantly evolving. Every year, new trends rise to grab consumer attention and cause shifts in spending behaviors. The effects of the COVID-19 pandemic are no exception to this. Some key changes from the pandemic can be temporary, while others seem poised to stay. As economies reopen, 73% of consumers are still hesitant to resume regular activities outside the home (Charm et al., 2020). This includes going to the gym, eating out at restaurants, getting haircuts as well as using shared indoor spaces such as public transportation and large events. While these behavior changes may only last for the short-term, others such as digital shopping will probably be here to stay. A few months into the COVID-19, pandemic consumer shopping online had increased significantly across many categories. More interestingly, these habits seem like they're going to stick as US consumers report an intent to shop online even after the COVID-19 crisis (Charm et. al., 2020). The pandemic has presented an unprecedented shift in our lives. Perhaps one of the most greatly affected aspects is our shopping and spending. This study investigates how spending behaviors changed in college students, and if personality traits had any influence on those behavioral shifts.

When mandated social distancing started to help slow the spread of the virus, spending habits changed (Mendez-Carbajo, 2021). From February to March 2020, just as social distancing guidelines were put in place, food services and drinking places such as restaurants and bars saw a decrease in retail of about 30%. Meanwhile, food and beverage stores such as supermarkets and liquor distributors saw an increase in retail of around 27% (U.S. Census Bureau via FRED). While COVID-19 related mandates certainly influenced how people spent their money, there were also other internal and psychological factors at play. According to some researchers,

motivation and perception are the most important. According to Ranya and Mohamed Ali (2016) motivation acts as a driving force that impels an individual to take action to satisfy his/her needs. They specify two types of motivational needs into biogenic and psychogenic. Biogenic needs arise from physiological states of tension such as thirst and hunger. While psychogenic needs arise from psychological states of tension such as needs for recognition and esteem. When we apply this concept of needs to the data of consumer spending during the pandemic, we can see that spending towards both needs shifted greatly.

According to a Bank of America study, roughly two-thirds, 64%, of Americans say their spending habits have changed since the start of the pandemic. It is important to recognize that college students are not representative of the entire population. Many types of behaviors are particular to a certain age. For example, investing for retirement. Many habits, such as eating out at restaurants and traveling, were bound to decrease during a global pandemic. However, some habits such as spending towards a pet, increased. “We have definitely seen an increase in pet ownership,” said finance expert and founder of Financial Gym, Shannon McLay. She went on to state that because people were spending more time at home, many turned to buying a new pet or even increased spending on extras like toys and treats. In June 2020, the American Pet Products Association (APPA) released the “APPA COVID-19 Pulse Study of Pet Ownership during the Pandemic.” The report found that 64% of pet owners have spent the same amount of money as they did before the pandemic, and 21% have spent more. Only 15% have spent either a little less or a lot less since the beginning of the pandemic.

Part of the survey consists of two sets of questions asking about spending. Subjects rated their likelihood of spending separately for before and during the pandemic. I chose to ask about likelihood to control for differences in available income. Some of the habits in question asked

how likely students were to spend money on behaviors such as eating out at a restaurant, health and fitness, online shopping, and several other ways to spend money.

Spending records can be used to infer personality traits. How you spend your money can signal an aspect of your personality (Gladstone et al., 2019). Due to the uncertain nature of the pandemic and lockdown, I wanted to test subjects that may tend to act more recklessly. With lockdown restrictions, people were often spending more time alone than usual. Researchers at University of Iowa released findings that show a connection between loneliness and a person's exhibition of impulsive behaviors like spontaneous spending or eating (Wang et al. 2011). I utilized Eysenck's I-7: Impulsiveness and Venturesomeness Questionnaire. The I-7 (Eysenck, Pearson, Easting & Allsopp, 1985) is a 54-item true false response inventory designed to measure impulsiveness, venturesomeness, and empathy. I chose this specific questionnaire because the impulsivity and venturesomeness scales achieved .87 reliability scores (Whiteside & Lynam, 2001). I only wanted to see the effects of impulsiveness and venturesomeness, I did not include the empathy subscale in the survey. This made the scale consist of 34 questions as opposed to the original 54. The survey was pulled from the website of Science of Behavior Change (SOBC). SOBC is a program that operates under the National Institutes of Health (NIH) that uses systematic approach to discovering the underlying mechanisms behind behavior change.

The survey also contains a block of questions regarding college students' perceptions and experiences during the COVID pandemic. These questions range from asking how well students followed COVID guidelines, to their level of fear of spreading the virus to friends or family. I will be searching for any relationships between students' personality traits, such as impulsiveness, and their perception of and ability to uphold COVID restrictions.

I hypothesized that the likelihood of spending on ordering take out, online shopping, investments, health & fitness, personal entertainment, and education would increase during the pandemic compared to before the pandemic. On the other hand, I hypothesized that the likelihood of spending on eating out at a restaurant, travel, personal care, gifts and donations, luxury/leisure goods, and auto and transport would decrease during the pandemic compared to before. For impulsivity, I hypothesized that scores would be positively correlated with an increase in spending of ordering takeout, purchasing something online, travel, and luxury/leisure goods. Impulsivity will also be correlated with subjects' belief that they will change their spending habits once restrictions are lifted, and that they spent more money than saved money over the course of the last year compared to previous years, and low levels of fear of spreading the virus. I also hypothesized that scores of impulsiveness will be negatively correlated with the difference in likelihood of spending from before the pandemic compared to after the pandemic. I also hypothesized that high scores of venturesomeness will be positively correlated with an increase in spending of investments, travel, health & fitness, and personal entertainment.

Method

Participants

Participants were 106 students (80 female, 20 male, 6 non-binary). Participants received extra credit in one of their psychology classes in exchange for their participation. The students ranged from first year students to students in their last semester of college. Students who started but did not complete our survey were removed from the data.

Materials

The study was conducted as a survey through Qualtrics. Questions were asked in the survey consisted of four sections. The sections consisted of demographics, a section asking about

their spending habits, Eysenck's I-7: Impulsiveness and Venturesomeness Questionnaire (Eysenck, Pearson, Easting & Allsopp, 1985), and a section asking about their experiences during the COVID pandemic. The spending habits section consisted of 13 different behaviors. Some are related to everyday habits such as personal care, while some are more typically done only once or twice a week, such as going out to dinner. The habits were chosen to gauge an accurate representation of what subjects were spending their money on.

Procedure

The participants received an email inviting them to participate in the survey with a link attached to direct them to the online survey. A week was provided for the students to complete the survey and submit it on Qualtrics. Once all surveys were in and completed an Excel document was made to organize all information.

Results

All analyses were done using the Statistical Analysis System (SAS).

Subjects rated how likely they were to spend money on a variety of habits both before and during the pandemic. Using a 7-point scale (*1 = Not likely at all, 7 = Very likely*), subjects rated the likelihood of spending money on each habit. Using the likelihood scores from before and during the pandemic, I created difference scores, which represented a change in the likelihood of the respective behavior. A positive difference indicates an increase in the likelihood of the habit, while a negative difference indicates a decrease in the likelihood of the habit on a 7-point scale. I hypothesized that the habits of ordering take out, online shopping, investments, purchasing a pet or pet related goods, health & fitness, personal entertainment, and education would increase during the pandemic compared to before. Only two of these habits increased significantly, ordering take-out $t(80) = 5.39, p < .0001$, and online shopping $t(80) = 6.97, p <$

.0001. Investments showed a marginally significant increase, $t(82) = 2.00, p = .0516$, while health & fitness, $t(83) = .56, p = .4079$, and personal entertainment, $t(83) = .33, p = .7417$, increased. Meanwhile purchases to pets/pet related goods decreased, $t(80) = -1.49, p = .01419$, and spending on education decreased, $t(80) = -2.87, p < .0051$. I hypothesized that the likelihood of spending money on eating out at a restaurant, travel, personal care, gifts and donations, luxury/leisure goods, and auto and transport would all decrease. The results showed that the likelihood of eating out at a restaurant, $t(83) = -11.38, p < .0001$, travel $t(80) = 7.30, p < .0001$, auto and transport, $t(80) = -5.44, p < .0001$, and luxury/leisure goods, $t(80) = -2.79, p = .0066$, and gifts and donations, $t(83) = -2.06, p = .0422$, decreased significantly. Spending on personal care, $t(82) = -0.26, p = .7955$, did not change. See Table 1 for difference scores.

Separate scores were computed for Impulsiveness and Venturesomeness with some items reverse scored so that a higher total score equals a higher score of impulsivity or venturesomeness. I hypothesized impulsivity would be positively correlated with a high likelihood of spending for ordering takeout, purchasing something online, traveling, and luxury/leisure goods, both before and during the pandemic. Before the pandemic, impulsivity was negatively correlated with purchasing something through online shopping and luxury/leisure goods. There was no significant correlation with ordering takeout or traveling. See Table 2 for full results.

For likelihood spending during the pandemic, impulsivity was significantly correlated with travel. However, spending for ordering takeout, online purchases, and luxury/leisure goods were not significant.

I hypothesized that venturesomeness would be positively correlated with an increase in the likelihood of spending towards investments, travel, health & fitness, and personal

entertainment. There were no significant relationships between venturesomeness and investments, travel, health & fitness, or personal entertainment.

I hypothesized that impulsivity would be correlated with subjects' belief that their spending habits would change a great deal once restrictions are lifted, and with subjects' belief that they spent more money over the course of last year compared to previous years. Impulsivity was correlated with the belief that spending habits would change a great deal once restriction are lifted. But there was no correlation between impulsivity and the belief that they spent more money over the course of last year compared to previous years or with fear of spreading the virus to friends or family.

I hypothesized that impulsivity scores would be negatively correlated with following the COVID guidelines and with fear of spreading the virus. There was no significant relationship. The data on this question could be unreliable, as subjects may not have been willing to admit to breaking COVID protocols.

I tested for differences in the likelihood of spending on different behaviors. This was a repeated measures ANOVA with before and during COVID scores as the repeated factor. An ANOVA showed an interaction between the repeated factor and gender. Before the pandemic, females were more likely ($M = 5.46$) than males ($M = 4.33$) to spend money eating out at a restaurant, but during the pandemic females ($M = 3.11$) and males ($M = 3.40$) scored a similar likelihood, $F(1, 80) = 8.73, p = .0041$. There was also a significant gender effect on spending towards personal care. Before, females were much more likely ($M = 4.83$) than males ($M = 3.95$). But during, females dropped slightly ($M = 4.67$) while males increased in likelihood ($M = 4.60$), $F(1, 95) = 4.36, p = .0394$. Finally, there was a gender effect found for gifts & donations. Before, females were more likely ($M = 3.91$) than males ($M = 3.38$) to spend on a gift or donation. But

during, males ($M = 3.69$) were more likely than females ($M = 3.52$) to spend on a gift or donation.

Discussion

Consumer trends and habits are constantly evolving. If companies and product suppliers want to stay ahead to maximize profitability, they will need to conduct accurate and representative market research to gauge what potential customers are looking to purchase, and what their preferences are. This study looked at what college-aged consumers were likely to spend money on before and during the pandemic, and how some personality traits can affect the likelihood of spending money on certain behaviors. My results generated mixed support for the hypotheses and has delivered some unexpected results.

I hypothesized that certain behaviors would increase or decrease from before compare to during the pandemic. Several reached a significant level and are easy to explain due to the lockdown restrictions. Eating out at restaurants decreased significantly because many restaurants simply shut down indoor dining and it was not possible for people to dine in. The likelihood of spending on travel and auto/transport both decreased significantly. They can also be explained by lockdown restrictions as airline traffic became stagnant, and people were not leaving their homes as often as they were before the pandemic. Auto and transport relates to spending on things like train tickets and gasoline for cars, which also decreased because many workplaces and entertainment venues halted in-person activity to comply with COVID prevention guidelines. Meanwhile ordering take-out/delivery and online purchases both increased significantly. These activities forgo any need for a face-to-face interaction, and the likelihood of these behaviors increased because they followed social distancing protocols.

Several hypotheses also approached near significance, but just missed the mark. Spending on investments increased over the pandemic but was not at a level of significant change. More than 10 million new brokerage accounts were opened in 2020 as individuals piled in to bet on stocks (McCabe, 2020). With the rise of retail investor interest, popular brokerage apps like Robinhood and TD Ameritrade soared in downloads over the pandemic. One possible explanation that this behavior did not reach significance was due to the relatively small male sample size. The sample consisted of 80 females and 20 males. Studies have shown that males are more likely than females to be investors. This is due to reasons such as women being less confident about investing (Schneider, 2017) and men being more comfortable with risk (Shell, 2018). If the sample size consisted of a more equal number of females and males, I think that this figure would have reached a significant level. However, an analysis of variance did not find a significant effect for gender on this behavior. While investments approached near significance for an increase in likelihood, spending on education decreased in likelihood at a near significant level. I hypothesized that spending on education would increase because I figured that people that were spending more time in isolation may want to take the opportunity to learn more through an online certification course or perhaps an online masterclass. A survey of 2,002 UK adults taken during the lockdown found that 24% had taken on additional learning opportunities to “boost their employability and protect the value of their skills” (Sadun et al., 2020). There were several factors that might influence this likelihood of spending. One being that many college aged students are still under the financial dependability of their parents. So even if they were to enroll into an educational course, their parents could be footing the bill. Another possible influence is that college aged students are just that, students. Many may take the limited summer breaks as a break from studying, and not be interested in taking on an additional course load.

The personality traits impulsivity and venturesomeness were both predominantly negatively correlated with the 13 different behaviors. One possible explanation for this unexpected result is that because the scale only measured the likelihood of spending, subjects may answer the questions differently than may be true. An alternative study could be done to assess quantitative financial spending records from either a debit or credit card and look for correlations with personality traits. Future studies looking at consumer habits and personality traits may find more significant correlations with actual financial data.

Another point to consider is if the study is presented again in a year once restrictions lighten up and things return to “back to normal”. This could yield more significant results and show how consumer spending habits were changed long-term from the COVID pandemic.

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Table 1

Measures of Spending Habits Before and During COVID Pandemic

	Before	During	Difference
Eating out at a restaurant	5.096	3.141	-2.106***
Ordering take-out	4.262	5.216	0.970***
Online shopping	4.346	5.4	1.058***
Investments	2.00	2.537	0.435
Purchase pet or pet related good	2.987	2.936	-0.321
Travel	4.269	2.458	-1.797***
Personal Care	4.592	4.564	-0.040
Gifts and Donations	3.630	3.506	-0.279*
Health and Fitness	3.911	4.163	0.148
Personal Entertainment	4.235	4.378	0.063
Luxury/Leisure Goods	3.611	3.275	-0.408**
Education	4.745	4.297	-0.466**
Auto and Transport	4.043	3.263	-0.935***

* $p < .05$ ** $p < .01$ *** $p < .001$

Table 2

*Correlation of Personality Traits and Spending Habits **Before** COVID*

	Impulsiveness	Venturesomeness
Eating out at a restaurant	-0.166	-0.062
Ordering take-out	-0.122	-0.025
Online shopping	-0.264**	-0.071
Investments	-0.083	-0.047
Purchase pet or pet related good	-0.267*	-0.026
Travel	-0.169	-0.003
Personal Care	-0.241*	0.275**
Gifts and Donations	-0.073	-0.072
Health and Fitness	-0.251*	-0.134
Personal Entertainment	-0.326**	-0.142
Luxury/Leisure Goods	-0.355***	-0.053
Education	0.014	0.071
Auto and Transport	-0.235*	-0.115

* $p < .05$ ** $p < .01$ *** $p < .001$

Table 3

*Correlation of Personality Traits and Spending Habits **During** COVID*

	Impulsiveness	Venturesomeness
Eating out at a restaurant	-0.236*	-0.201
Ordering take-out	-0.129	0.012
Online shopping	-0.069	-0.051
Investments	-0.350**	-0.047
Purchase pet or pet related good	-0.099	-0.026
Travel	-0.362**	-0.263*
Personal Care	-0.142	0.085
Gifts and Donations	-0.197	0.083
Health and Fitness	-0.180	-0.083
Personal Entertainment	-0.208*	-0.092
Luxury/Leisure Goods	-0.199	-0.182
Education	0.093	0.075
Auto and Transport	-0.194	0.007

* $p < .05$ ** $p < .01$ *** $p < .001$