

CHANGES IN BEHAVIOR OF UNIVERSITY STUDENTS AFTER COVID-19 SELF-RESTRAINT PERIOD

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Abstract

The purpose of this study is to examine how the lifestyle and consumer behavior of university students changed during and after the period of self-restraint caused by COVID-19. In recent years, university students' lifestyles have changed considerably due to the outbreak of COVID-19. However, self-restraint restrictions have been easing, and this study investigates how students' lifestyles and consumer behaviors have evolved under these circumstances. The results show that, excluding time spent on online classes, students' lives have not changed drastically since the self-restraint period. Although the COVID-19 outbreak led to significant lifestyle adjustments, students have not fully reverted to their pre-self-restraint habits. Two possible explanations for this lack of change are (1) the discovery of online conveniences during the self-restraint period and (2) students becoming accustomed to a routine established during that time.

Keywords: Behavior of University Students, COVID-19, Self-Restraint Period, Post-Self-Restraint Period

JEL Classification: D10

1. Introduction

The purpose of this study is to determine the changes in lifestyle and consumer behavior among college students during and after the relaxation of self-restraint due to the novel coronavirus (hereafter, "COVID-19").

In recent years, college students' lifestyles have changed significantly as a result of COVID-19. In FY2020, when a state of emergency was declared in Japan, almost all university

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lectures were moved from in-person to online. Subsequently, according to the Ministry of Education, Culture, Sports, Science and Technology (MEXT, 2022) [1], 87.8% of lectures in the first semester of FY2022 at 1,165 national, public, and private universities and colleges of technology nationwide returned to a fully or almost fully in-person format.

Following the outbreak of COVID-19, Japanese society as a whole also increased its use of online platforms for purchasing and other activities. According to the Statistics Bureau of the Ministry of Internal Affairs and Communications (2022) [2], online purchases have risen every year since March 2020, when the first state of emergency was declared.

It is important to analyze the specific changes in the lives and consumer behaviors of college students—who have experienced major lifestyle changes, including returning to in-person classes—so that we may consider the future of student life. Therefore, this paper explores how university students' lives changed during and after the relaxation of COVID-19 self-restraint.

After reviewing previous studies in Section 2, Section 3 provides an overview of the research, Section 4 presents the results of the quantitative analysis, and Section 5 discusses the qualitative analysis. Section 6 provides a broader discussion, and Section 7 concludes.

2. Review of Previous Studies

Research on how COVID-19 changed college students' lives and related attitudes has been addressed in several studies. Ariki and Isaka (2021) [3] examined changes in the lives of Japanese university and junior college students about one year after the first state of emergency was declared, and the stress associated with these changes. Their results showed that over 90% of students reported having fewer opportunities to interact with others and going out less often, indicating that most students experienced lifestyle changes due to COVID-19. Furthermore, more than 80% of the students found these two restrictions to be “painful,” suggesting a psychological impact as well. Interestingly, participants who reported low stress levels regarding COVID-19 frequently used the phrase “got used to it,” implying that their perception of the pandemic was different from those reporting high stress.

Suzuki et al. (2022) [4] conducted a survey of Aichi Prefecture residents aged 15 and older as of October 2021 to understand their attitudes and behaviors in the wake of the corona disaster. Their results showed that outings for shopping, hobbies, entertainment, walking, and dining out had decreased compared to pre-pandemic levels. This decline in outings was linked to both motivation for living and stress. These findings are consistent with Ariki and Isaka (2021) [3], who observed that more than 80% of students reporting fewer outings felt distressed by that limitation.

Regarding consumer behavior, Takeda et al. (2020) [5] analyzed changes in in-store shopping before and after the first state of emergency. Their results indicated that, while the percentage of shoppers had decreased during many time periods under the state of emergency, it had largely returned to pre-pandemic levels by July 30 of the same year. However, a new tendency emerged: consumers avoided crowded times. This shift suggests that purchasing behavior was indeed altered by the pandemic. In terms of online shopping, Ohata and Ujihara (2022) [6] examined usage changes before and after the pandemic among residents in both the Tokyo metropolitan area and Okayama Prefecture. They found that those in their 20s were the most frequent adopters of online shopping in both regions.

Kanai (2020) [7] compared online classes and face-to-face classes among university students. The study noted that students' preferences for one format over the other could not be fully explained by attributes such as academic year or department, stressing the diversity of each student's situation and preferences. As a result, it is difficult to satisfy all parties—students, faculty, and staff—regarding the classroom format.

Thus, various studies have been conducted on college students and young adults that experienced the COVID-19 pandemic, and college students and young adults experienced major life changes from its onset through the self-restraint period. In FY2022, self-restraint measures were eased as many classes returned to in-person formats, suggesting life was trending back toward pre-pandemic norms. However, research on how university students' lives changed after self-restraint measures were eased appears limited. Hence, this study focuses on the lives of college students after self-restraint was relaxed.

3. Research Outline

This study was based on the research of Shigeta et al. (2024). Shigeta et al. (2024) investigated changes in college students' consumer behavior from before the pandemic to November 2020, during the COVID-19 self-restraint period. Their findings revealed an increase in online purchases and a decrease in visits to brick-and-mortar stores after COVID-19 first spread. Accordingly, the present study investigates college students at the same university to examine changes in their lives and behavior after the relaxation of self-restraint.

Period covered by this study

Our analysis covers the period from March 2020 to November 2022. Within this interval, March 2020 to March 2022 is defined as the self-restraint period, and April 2022 to November 2022 is defined as the period of relaxed self-restraint. The first declaration of a state of emergency occurred in March 2020, and, as noted by MEXT (2022) [1], most Japanese universities returned to an in-person format in April 2022. We designate this switch to in-person classes as the point distinguishing the self-restraint from the relaxed period.

Data

This study was conducted from July to November 2022 using both questionnaires and interviews. The questionnaire was sent to 114 university students residing in Niigata Prefecture, and 26 valid responses were received. The interview survey was conducted with 8 university students in online or face-to-face format.

4. Quantitative Research

This chapter asks questions based on the research question of what changes have occurred in the lives of college students during the period of self-restraint due to COVID-19 and during the period of relaxation of self-restraint and describes the results of the data obtained from the questionnaire.

4.1 Questionnaire

We adopted seven questionnaire items from Shigeta et al. (2024). The questions consisted of seven items: number of outings per week, number of times going out to physical stores per week, weekly average of free time per day, weekly average of time spent on the Internet per day, time spent on online shopping using a PC per week, time spent on mobile devices using online shopping per week, time spent online through online classes per week. Shigeta et al. (2024) set the time period for each questionnaire item to one month, while we set the time period in this study to one week.

Questionnaire survey results

	Question	During the period of self-restraint	After relaxation of self-restraint	(after relaxation)- (during self-restraint)
1	How many times do you go out per week?	4.52	5.27	0.75
2	How many times per week do you go to actual stores?	3.42	4.53	1.11
3	How many hours of free time do you have per day on average per week (not including commuting to	6.85	6.85	0.00

	school, sleeping, classes, part-time jobs, etc.)			
4	How many hours per week on average do you spend on the Internet per day?	8.02	7.69	-0.33
5	How many hours per week do you spend online shopping with a PC	0.74	0.52	-0.22
6	How many hours per week do you spend online shopping with a mobile device?	0.70	0.83	0.13
7	How many hours per week do you spend online through online classes?	11.73	3.44	-8.29

Table 1: Comparison of means from the results of the questionnaire.

	during self-restraint		after relaxation		t-value
	Mean <i>M</i>	Standard deviation <i>SD</i>	Mean <i>M</i>	Standard deviation <i>SD</i>	
Number of times out	4.52	2.96	5.27	2.57	2.28*
Number of times I went to the actual store	3.42	4.45	4.53	5.03	3.15**
Free time	6.85	2.67	6.85	3.18	0.00
Total time spent on the Internet	8.02	4.30	7.69	4.15	-0.99
Time spent on PC for online purchases	0.74	1.05	0.52	0.53	-1.71

Time spent on mobile devices for online purchases	0.70	1.39	0.83	1.60	0.94
Online class time	11.73	8.56	3.44	5.47	-4.85**

* p<.05 ** p<.01

Table 2: Changes in Consumer Behavior (Two-tailed t-test)

Table 1 shows the average results of the questions and responses regarding the changes in daily life, and a comparison of the differences between the averages of the two periods shows that the number of outings, trips to actual stores, and time spent using mobile devices for online purchases each increased after the easing of the self-restraint. However, the average changes, with the exception of visits to physical stores (about 1), were less than 1. The total time spent on the Internet, which has been decreasing since self-restraint was lifted, and the time spent using PCs for online purchasing was also less than 1. On the other hand, the time spent in online classes dropped substantially by about 8 hours after self-restraint measures eased, presumably because universities returned to face-to-face classes. A two-tailed t-test (Table 2) confirms that differences were statistically significant for the number of outings, visits to physical stores, and time spent in online classes.

5. Qualitative Research

This chapter describes the questions and results of the interviews with eight college students.

5.1 Question Content

The interview survey questions were conducted as shown in Table 3.

	Questions (17 questions in total)
1	How many times a week on average do you go out?
2	How many times a week, on average, do you go out other than to go to school?
3	What is the purpose of going out other than commuting to school?
4	How many times a week, on average, do you go out mainly for shopping?
5	Do you spend more time shopping on weekdays or holidays?

6	How many hours of free time per day do you have on average per week?
7	Has the amount of time spent on shopping “increased” between the beginning of self-restraint period and after it was relaxed?
8	Has your time spent on shopping “decreased” from the beginning of self-restraint period to the time it was relaxed?
9	Has there been any change in the amount of time spent in physical stores between the beginning of self-restraint period and after it was relaxed?
10	Has there been any change in time spent on online shopping between the beginning of self-restraint period and after it was relaxed?
11	What do you buy in physical stores but not online?
12	What do you buy online but not in physical stores?
13	What criteria do you use to separate your shopping in physical stores and online?
14	What devices do they use for online shopping?
15	What are the reasons for question 14?
16	If you use a PC for question 14, when did you start using a PC to buy products?
17	If you have a PC, when did you start owning a PC?

Table 3: Interview Survey Questions

5.2 Interview Survey Results

Table 4 summarizes the interviews with Students A through H. Those that asked about two periods, one during the self-restraint and the other during the relaxation of the self-restraint, were described as “during the self-restraint/after the relaxation of the self-restraint” using the “/” symbol.

	A	B	C	D	E	F	G	H
1	5.5/6.5 times	7/8 times	5/7 times	2/6 times	6/6 times	1.5/3 times	1.5/3.5 times	5/5 times
2	4.5/4 times	4/5 times	3/4 times	1/1 times	1/1 times	1.5/1.5 times	1.5/3.5 times	2/2 times

3	Shopping, going out for fun	Part-time job, shopping	Shopping, hospital visits, hobbies	Shopping, eating out	Shopping	Club activities, going out for fun, shopping	Shopping, Eating out	Shopping, change of pace
4	1.5/1.5 times	1/1 times	1/3 times	1/1 times	1/1 times	1/1 times	1.5/1.5 times	2/2 times
5	Week day → Week day	Week day → Week day	Week day → Week day	Weekday(daytime) → Weekday(nighttime)	Holiday → Holiday	Week day → Week day	approximately the same	Holiday → Holiday
6	3.5h/3h	9h/9h	7h/5h	10h/6h	7h/7h	2.5h/2.5h	6h/6h	5.5h/5.5h
7	Time spent commuting to school and in the lab	Commuting time to school	Commuting time to school, time away from home	Commuting time, preparation for going out	Time for games	Play time	Time to go out	No change
8	time at home	Online preparation, house work	Home time	Home time, self-catering	No change	Online classes	Home time, independent study	No change
9	No change	No change	Increase	No change	No change	No change	Increase	Increase

10	No change	No change	Decrease	No change	Increase	Decrease	Decrease	No change
11	Food, Clothing, Appliances	Food, Clothing	Food, Clothing	Food, Clothing, Appliances	Medicine	Food, Household goods	None	Food, Cartoon
12	Books, contact lenses	Bulk purchase items, non-genuine products	Home appliances	Luxury products, products not available in physical stores	None	None	Products not available in physical stores	Clothing, not available in physical stores
13	Basically physical stores to see the actual products, and online for items that cannot be purchased in the actual stores.	Clothing and other items purchased in physical stores after online failure; items with many alternatives purchased	Items that I want to see in person are purchased at physical stores, while consumer electronics are purchased online.	Buy luxury items online because I don't want to carry cash	Buy items that are difficult to judge by the layman's eye in a physical store; buy heavy items and items that spoil in temperature online.	Buy consumable items in physical stores, buy long-lasting items online	If it is sold in a physical store, buy it in a physical store; if not, buy it online.	Buy items you want right away, such as on the day they go on sale, at a physical store.

		online						
14	smart phone	smart phone	smart phone	smart phone	PC	PC	PC	smart phone
15	Because I'm used to buying	Because it is easy to change	Because it is easy to operate	Because I can buy from anywhere	To compare products on PC	Because I can look things up quickly	Because I use a PC all day long	Because it is easy to operate
16		High school students	High school students		University students	University students	High school students	
17	University students	High school students	High school students	University students	High school students	University students	University students	University students

Table 4: List of Interview Survey Results

Six of the eight students reported increased outings after self-restraint was eased, while two reported no change and none reported a decrease. Three students (B, C, and G) increased their frequency of going out for purposes other than commuting to school when self-restraint was relaxed, while four respondents (D, E, F, and H) did not change their frequency of going out, and one respondent (A) decreased. In addition, the number of times they went out for the main purpose of shopping at actual stores remained unchanged except for C. Even for C, the respondents had few opportunities to go out shopping because they had gone home during the period of self-restraint. In addition, C also said that she had fewer opportunities to go out for shopping because she had gone back home during the self-restraint period. This is consistent with the findings during the quantitative study.

Regarding daily free time, which refers to time spent outside commuting to school, sleeping, classes, and part-time jobs, three of the eight students (A, C, D) reported a decrease, while the others saw no change and none reported an increase. In addition, five of the eight respondents had an increase in time spent commuting to school and going out, and a decrease in time spent at home. Due to this decrease in time spent at home, some respondents were unable to do household chores in their spare time between classes, and some said that they had more opportunities to eat out. Conversely, Student H did not change how they spent their time between the two periods, indicating minimal lifestyle change.

Shifts in consumer behavior were also observed. Regarding the time spent in physical stores, C, F, and H increased, while the other five respondents showed no change and none decreased. With regard to shopping in physical stores, several students were unconcerned about whether they shopped quickly or took their time. On the other hand, regarding time spent on online purchases, three respondents (C, F, and G) decreased, four respondents (A, B, D, and H) showed no change, and one respondent (E) showed an increase. The reasons given by those who decreased were that they had more opportunities to go out and that they had started to use actual stores again. As for E, whose time of use increased, they indicated that they learned about the convenience of online purchasing as a result of their self-restraint, and that their time of use is still increasing. The above results suggest that one of the reasons for the decrease in time spent on online purchasing may be the number of times the respondents go out.

We also conducted a survey to determine the criteria by which they use both physical stores and online, and what they purchase. The results showed that the common reasons for visiting physical stores included wanting to see products in person or being able to buy items locally. Some respondents indicated that they would purchase products that they could not judge in layman's terms or that they wanted right now at a physical store. On the other hand, the criteria for using online varied from person to person. As examples, some cited psychological reasons, such as buying luxury items online because they did not want to carry large amounts of cash, and others cited high physical costs, such as buying items online that are perishable in temperature or heavy because they do not have a car.

Finally, we asked about preferred devices for online shopping. The results show that two respondents use only a smartphone, five use both a PC and a smartphone, and one uses only a PC. The most common reasons for using a smartphone were ease of operation and the ability to make purchases from any location.

On the other hand, reasons for using PCs include convenience, such as easy comparison and research of products, and personal reasons, such as using a PC all day long. In sum, among the eight people surveyed, a large percentage used smartphones, and their reasons were largely in terms of operability.

6. Discussion

The results of the quantitative analysis in this study were significant with respect to the number of outings, the number of visits to actual stores, and time spent in online classes, based on the two-tailed t-test in Table 2. However, since the difference between the meanings of the two periods was generally less than 1, this indicates that little change in lifestyle occurred between the self-restraint period and after the relaxation of self-restraint, apart from the time spent in online classes. Considering the findings by Ariki and Isaka (2021), who showed that university students' lives changed from before the outbreak of the new coronavirus epidemic to the self-restraint period, it can be concluded that students'

lives changed only during the self-restraint period and had not changed much since then, as of November 2022. There are two possible reasons for this lack of change.

The first reason is that self-restraint due to COVID-19 may have prompted people to learn about convenience. Ohata and Ujihara (2022) found that the frequency of online shopping use increased most among those in their 20s before and after the pandemic. Comparing these results with those of the present study, online shopping use rose during the self-restraint period compared to before the pandemic, while it did not change much between the self-restraint period and after the relaxation of self-restraint. In this regard, the qualitative findings suggest that “convenience” may explain why lifestyles remained the same, as individuals who increased their time spent on online shopping after restrictions eased appear to have learned about its convenience and continued to use it.

The second possibility is that people become accustomed to a self-restraint lifestyle, and it becomes routine. In the qualitative part of this research, only 3 out of 8 respondents increased the number of times they went out for purposes other than commuting to school. Compared to the results from Ariki and Isaka (2021), in which more than 80% of students who went out less from April to July 2021 felt it was painful, it is possible that fewer people felt the same way once the self-restraint was relaxed. Furthermore, the fact that those who experienced low stress in Ariki and Isaka’s (2021) study used the phrase “got used to it” suggests they may have adapted to a self-restraint lifestyle over time, resulting in little change and a routine that persisted after restrictions were eased.

7. Conclusion

In this study, the research question was how college students, who were forced to make major lifestyle changes as a result of self-restraint caused by the new coronavirus (COVID-19), would subsequently alter their lifestyles and consumer behaviors once self-restraint measures were eased.

The analysis showed that, unlike the pre-pandemic period and the self-restraint period—when students' lives changed significantly, there were no notable changes in students' lives from the self-restraint period to after the relaxation of self-restraint, apart from a reduction in online class hours. This is the principal finding of this study.

There are two possible reasons for the lack of further change. The first is that the self-restraint caused by COVID-19 may have prompted students to discover the convenience of online activities. The second is that university students might have become accustomed to living under self-restraint, such that this lifestyle became routine. However, these two factors remain only possibilities.

Although this study discussed changes in college students' lives following the relaxation of self-restraint and explored the factors influencing these changes, the small sample size in both the quantitative and qualitative analyses poses limitations for validity and

generalizability. Additionally, the impact of eased self-restraint measures needs ongoing observation, indicating that more research is required.

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