

# Investigating Japanese Government Actions During the Pandemic and the Implications of The Nudge Theory

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**ABSTRACT:** As the COVID-19 pandemic has impacted the world, face masks and vaccinations are almost necessary daily. More specifically, the country of Japan has maintained a remarkably high rate throughout the pandemic. Furthermore, the Japanese government was able to implement very effective policies. We review papers that collect data on circumstances Japan faced during the pandemic, compile statistics on mask usage and vaccination rates from other countries and take a quantitative approach to this question. We then conclude whether Japan had used the nudge theory to mitigate the effects of the COVID-19 pandemic and provide some suggestions for future policies. Although we cannot fully assert that the Japanese government had intentionally used the nudge theory, due to the remarkable success they had, we concluded that the nudge theory did in fact play a major role in mitigating the effects of the pandemic in Japan. Viewing the COVID-19 situation based on the nudge theory, which is an extent from behavioral economics, is something that not many papers have investigated. Behavioral economics is crucial when it comes to our day-to-day lives. Incorporating this into recent catastrophes, such as the earthquake that hit Japan at the start of 2024, or the recession caused by lockdowns and restrictions from the pandemic, enables us to view them in different ways. For example, we can focus on how people react and behave to these phenomena and analyze them to understand human nature better. We can further prepare for upcoming pandemics by effectively implementing them in policies.

**KEYWORDS:** Behavioral Economics; Vaccination; Face Masks; Decision-Making; Policy Implementation.

## ■ Introduction

The sudden increase in the utilization of face masks and vaccinations due to the recent pandemic has significantly impacted on our daily lives and the entire world. In this paper, we will be focusing on the country of Japan since Japanese people were very active regarding vaccinations and mask usage without compulsive restrictions from the government. We first focus on whether the Japanese government had used the nudge theory to increase the rates of mask usage and vaccination to mitigate the effects of the pandemic. Furthermore, Japanese government responses to the pandemic based on nudge theory will be reviewed, thus providing a comprehensive understanding of human behavior, policy suggestions, and future implementations. The nudge theory has become one of the most discussed contemporary ideas in policymaking, and some governments have already implemented these behaviorally informed policies, by focusing on 'nudging'. As this is becoming a highly popular style of policymaking, we will identify whether the government of Japan had effectively and intentionally utilized this theory during the pandemic.

Nudge theory, in simple terms, looks into people's behaviors. The concept puts a label on efficacious influences that preserve freedom of choice without engaging the influences' deliberative capacities.<sup>1</sup> In other words, it focuses on the impact an individual receives while not being controlled by it. Nudge theory states that people can be "nudged" in particular directions and that small or subtle solutions (nudges) can lead to cost-effective, positive, and beneficial outcomes. Thaler and Sunstein, in their influential book *Nudge: Improving Decisions About Health, Wealth and Happiness*, define nudges as 'any aspect of

the choice architecture that alters people's behavior predictably without forbidding any options or significantly changing their economic incentives'. We can apply this concept to people's behavior during times of crisis, especially the recent COVID-19 pandemic.

Data regarding vaccination and mask usage rates from countries or groups like the EU, the US, India, and France are being compared to Japan. We will investigate which countries had the highest and lowest rates and analyze the main differences between those countries. For some reference, we will briefly review some statistics that will be further investigated in the following sections of this paper. With the rate of COVID-19 vaccine doses administered worldwide as of March 20, 2023, by country or region (per 100 people), Japan has 308.94, while India has around half of that with 155.7. Furthermore, France had a 227.64, the United States 202.84, and the EU 208.49.<sup>2</sup> This indicates the possibility of the Japanese government implementing special policies to mitigate the spread of the COVID-19 virus. Furthermore, mask usage rates are similar to vaccination rates, with Japan maintaining a near 100% usage rate, whereas India or France, had around 80% at the highest point. Focusing on countries with similar population densities, especially in cities, enables us to compare with Japan better. With these data, we can identify some policies, or implementations if there were any, by the Japanese government and directly link them to the nudge theory.

This paper will be structured as follows: In the first section, we will review Japan's state during the pandemic, as this country is the main focus of this paper. As we look at specific numbers of COVID-19 cases and deaths, we will also review policies

that the government implemented during that time. The main point would be how their approach was never strict and mandatory for the citizens. The following section mainly focuses on compiling data on vaccines and mask-usage rates of other countries and comparing them with those of Japan. These two types of data are especially important since they play a big role in minimizing the effects caused by the pandemic. The third section is mainly about the results from Japan during the pandemic using the nudge theory as well as some examples of policies implemented by the Japanese government that were very soft, gentle, and easy-going, while also being incredibly effective. The fourth section will focus on the inevitable limitations the nudge theory faces, and the cultural significance of Japan that may have contributed to the effectiveness of policies applied during the pandemic. We then plan to investigate whether the Japanese government had intentionally employed nudge theory principles in its pandemic response. The conclusion will consist of the paper's findings, with some policy suggestions for the future.

## ■ Literature Review

Identifying what caused people to behave in certain ways, especially in an economic crisis, enables us to understand human nature better and prepare for future incidents. As the nudge theory was utilized in India during the COVID-19 pandemic, understanding its positive effects on the Indian economy would enlighten the positive effects of the nudge theory. We take India as an example since it is one of few countries that utilized the nudge theory in their policies intentionally. However, due to the unorganized and unstable Indian working sector, the government's utilization of nudges could only go so far.<sup>3</sup> Even if Indian governments attempted to nudge citizens, the volatile and inefficient working sector would inevitably halt the effectiveness of nudges. However, this is not the case in Japan. Suppose we can analyze what caused Japanese people to take vaccines and wear masks (most likely the nudge theory). In that case we can implement a nudge as a future option to enhance the economy's stability.

The paper's main focus by IDRiM was to investigate public perceptions and acceptability of nudges for disastrous situations in Japan. A survey was conducted on 800 people in Japan, resulting in not more than 60% of all respondents finding the usage of the nudge theory completely acceptable. As for the other 40% with neutral or unacceptable responses, nudges appealed to them as 'fear' or 'sad'. This paper concludes that nudges can still be used as intentional methods by governing bodies or organizations in times of crisis to help people ensure their safety because nudges often occur naturally and will not be accepted by people in similar ways.<sup>4</sup> Agreeing with this, nudging often succeeds without people realizing they have been nudged. Since there are no indications that a nudge is used during disastrous times, many people cannot judge how effectively it might influence their behavior. This applies not only during crises but also to people's daily lives. However, although using the concept of nudge may be useful at times, public opinion should also be a priority. Especially in advanced democratic countries like Japan, citizens' opinions should always be considered. The survey mentioned above shows that

40% of people don't completely agree with nudges being used on themselves; some may think the nudge theory may not be best suited for disastrous occasions.

## ***Section 1: The State of Japan During The Pandemic:***

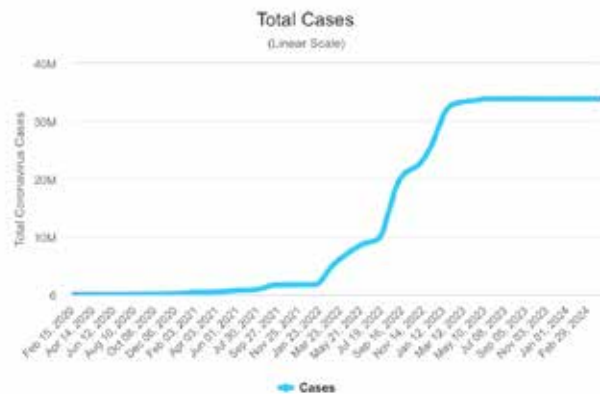
Since the first case of the COVID-19 virus was first confirmed in Japan in January 2020, the economy has never been the same. As of January 19, 2024, COVID-19 cases have reached 33,803,572, and deaths amounting to 74,694.<sup>5</sup> However, according to the graph presented in Worldometer (graph 1), the total cases have increased tenfold from late February 2022. Meanwhile, the number of deaths has also tripled since February 2022. Additionally, if we look at graph 2, also presented by Worldometer, the number of daily new cases and deaths has shot up from around January to February 2022. This indicates that some form of policy or measure had been lifted around that time, which we will discuss later.

COVID-19 vaccines were mainly supplied by Pfizer, Moderna and AstraZeneca. Pfizer's vaccine received the most approval as usage rates increased around February 2021. They were followed by Moderna and AstraZeneca which increased around May 2021. As for mask usage, Japanese people always wore masks daily, so implementing policies regarding the maximization of mask usage rates was never too difficult. PHCs (Public Health Centers) were responsible for conducting PCR (Polymerase Chain Reaction) testing under the surveillance of local governments. Their main role was effectively treating positive patients, while identifying people in close contact with COVID-19-positive patients through an epidemiological study of each case.<sup>6</sup>

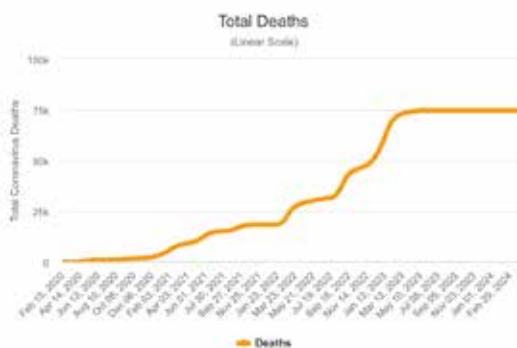
It has been found that the last policy made regarding the mitigation of COVID-19 by the Japanese government — Measures to Prevent Spread — had ended on March 21, 2022.<sup>7</sup> This increased the number of infected individuals at an alarming rate shortly after the measures were completed in all prefectures. In other words, as soon as policies from the Japanese government that intended to mitigate the pandemic were no longer functioning, the spread of the virus shot up uncontrollably. This shows a clear understanding that their approach was, in one way or another, effective. Considering the massive difference in total deaths or cases before and after this measure, one may estimate that policies made by the Japanese government were rigorous with countless precautions since it was successful and highly effective. However, every policy associated with COVID-19 was never mandatory for the people even though the government had every right to do so. The government also took special action such as a nationwide campaign— Avoid the "3Cs" (Closed spaces, Crowded spaces, and Close-contact settings)—which was also never compulsory.<sup>6</sup> These policies highly indicate the possibility of "nudge" being used to alleviate the pandemic's effects further.

Furthermore, we will look into the state of Japan during times of natural crisis. The huge earthquake that hit Ishikawa Noto Island at the start of 2024 was also a catastrophic phenomenon in Japan. One approach the local government took was to present an option to junior high school students to evacuate to a shelter. They did this so the students could focus on their studies for the entrance exam held in February. How

ever, some students did not take this opportunity and stayed in their houses to prepare for this test. As we can tell, this approach taken by this local government establishes a clear example of some parts of the nudge theory used in times of crisis.



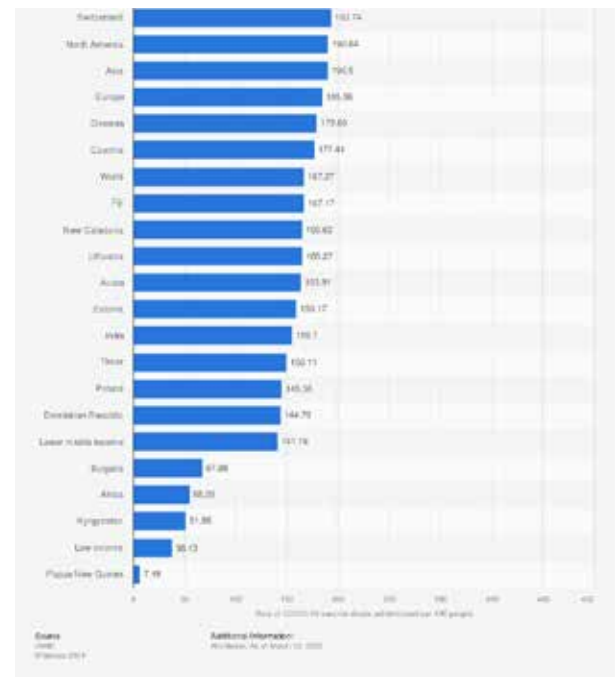
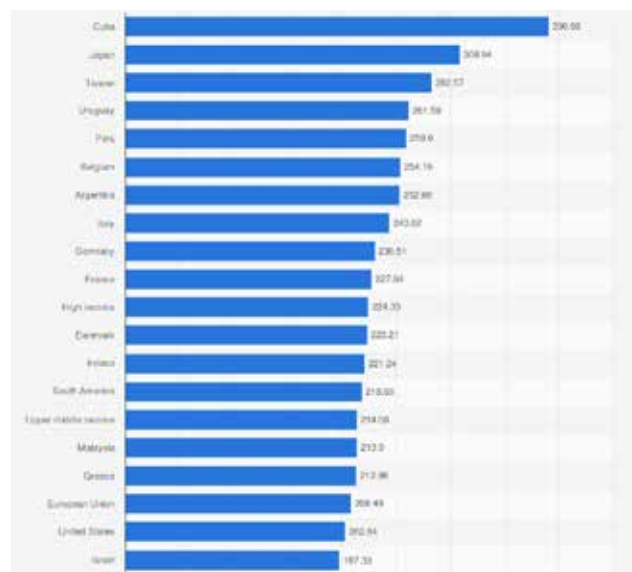
**Graphic 1:** Total Coronavirus Cases in Japan



**Graphic 2:** Daily New Cases in Japan

## Section 2: Data on Vaccines and Mask Usage Policies: Comparing with Other Countries:

In this section, we will be reviewing data on vaccinations and mask usage rates from all around the globe and will be reviewing quantitative data. These rates would likely indicate how successful each country was in minimizing the effects of the pandemic.



As was already explained in the introduction, we can tell that out of all the developed countries on this list, Japan has the highest percentage. They are an indication that each individual has been vaccinated around three times. Comparing this to countries like the United States and France, or regions like the EU, Japan has far surpassed all of them. Furthermore,

**Table 1:** Intention to vaccinate against COVID-19: Literature Summary

| Public, place, time                          | Intention to vaccinate against COVID-19 (%)<br>(When a vaccine for the SARS-CoV2 becomes available, will you get vaccinated?) |                  |      | References |
|----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|------------------|------|------------|
|                                              | Yes                                                                                                                           | Neutral/Not Sure | No   |            |
| Australian adults (n=1143) March 18-24, 2020 | 80.5                                                                                                                          | 13.7             | 5.8  | 15         |
| Australian adults (n=4362) April 17-21, 2020 | 85                                                                                                                            | 9.4              | 4.9  | 16         |
| Australian parents (n=2018) June 15-23, 2020 | 75.8                                                                                                                          | 16.7             | 7.5  | 17         |
| French adults (n=1012) March 27-29, 2020     | -                                                                                                                             | -                | 26   | 18         |
| French adults, (n=5018) April 2020           | 76                                                                                                                            | 16.1             | 7.9  | 11         |
| French working-age adults (n=1942) July 2020 | 71.2                                                                                                                          | -                | 28.8 | 19         |
| Italian adults (n=1004) 2020                 | 59                                                                                                                            | 41               |      | 20         |
| Italian university students (n=735) 2020     | 86.1                                                                                                                          | 13.9             |      | 21         |
| US adults (n=991) April 16-20, 2020          | 57.6                                                                                                                          | 31.6             | 10.8 | 22         |
| Canadian adults (n=1902) May 6-19, 2020      | -                                                                                                                             | -                | 20   | 23         |
| American adults (n=1772) May 6-19, 2020      | -                                                                                                                             | -                | 25   |            |
| Brazilian adults (n=717) June 2020           | 85.4                                                                                                                          | 7.9              | 6.6  | 24         |
| Canadian adults (n=707) June 2020            | 68.7                                                                                                                          | 15.0             | 16.3 |            |
| Chinese adults (n=712) June 2020             | 88.6                                                                                                                          | 10.7             | 9.7  |            |
| Ecuadorian adults (n=741) June 2020          | 71.9                                                                                                                          | 12.7             | 15.4 |            |
| French adults (n=669) June 2020              | 58.9                                                                                                                          | 22.7             | 18.4 |            |
| German adults (n=722) June 2020              | 68.4                                                                                                                          | 15.4             | 16.2 |            |
| Indian adult (n=742) June 2020               | 74.5                                                                                                                          | 14.2             | 11.4 |            |
| Italian adults (n=736) June 2020             | 70.8                                                                                                                          | 14.8             | 14.4 |            |
| Mexican adults (n=699) June 2020             | 76.2                                                                                                                          | 11.9             | 11.8 |            |
| Nigerian adults (n=679) June 2020            | 65.3                                                                                                                          | 14.0             | 20.7 |            |
| Polish adults (n=666) June 2020              | 56.3                                                                                                                          | 16.4             | 27.3 |            |
| Russian adults (n=680) June 2020             | 54.8                                                                                                                          | 18.8             | 25.3 |            |
| Singapore adults (n=655) June 2020           | 67.9                                                                                                                          | 11.1             | 20.9 |            |

the world average is 167.27, and high income sits just behind France at 224.35. This also implies that although financial earnings contribute to the vaccination rate to some extent, it is still far behind Japan's significantly high number of 308.94.<sup>2</sup>

## ■ Methods

### *Study Design and Participants:*

Additionally, we will look further into whether people from different countries have the intention or desire to get vaccinated. As the chart above focuses mainly on adults and university students, with many sources for reference, we can again summarize that countries like America, France, and the UK have very low numbers as of 2020.

Now, we take a look at Japan. According to research by the Department of Public Health and Kawasaki Medical School, out of the 1100 participants surveyed, only 65.7% had the intention of taking the COVID-19 vaccine.<sup>8</sup> Although this is not as accurate since it only has data from a handful of people, this percentage is lower than most foreign countries that

from nearly a 0% usage rate before the pandemic to around 75-80%.<sup>10</sup>

Furthermore, according to research done by the Nissei research industry, they have ranked countries by analyzing the total damage the COVID-19 pandemic inflicted on their respective economies in 2020. The fewer cases, deaths, and loss of GDP will lead to higher points. Results show that Japan placed number 5 in the world with a 108.0. On the contrary, countries like India, the United States, France, and the UK have scored 54.0, 46.0, 23.8, and 17.0 respectively.<sup>11</sup> The countries listed after Japan had in common, that governments implemented mandatory policies for citizens such as city lockdowns, school closures, mask use, vaccinations, or corporation operating restrictions.

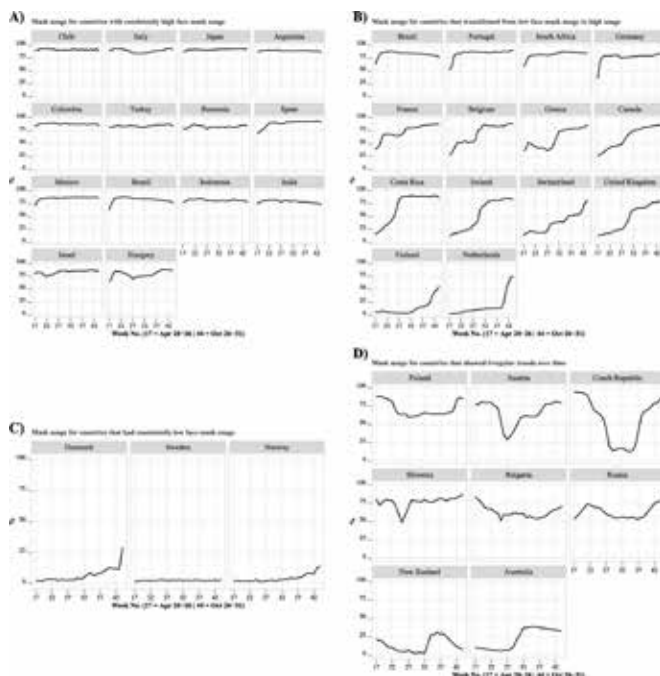
Specifically, we will take the United States as an example, as it has performed relatively well in the comparisons given in this paper. The policies mentioned above were implemented by the intervention of the American government, with most being forced and rigorous. Although it was effective at the time, according to Coronaboard, the United States still has the most infected individuals in the world with a startling number of 108,105,276 as of January 2024.<sup>12</sup>

### *Section 3: Japan's Approach to the Pandemic Mitigation from the Lens of the Nudge Theory:*

All the data mentioned before implies that countries outside of Japan such as the United States, the UK, or France, had poor results regarding the mitigation of COVID-19 escalation and the damage it did to their economies. However, they had implemented severe and stringent policies. On the other hand, Japan had maintained exceptional results. Although vaccination and mask usage rates were high compared to other countries, the government had taken very flexible and tolerant policies that were easier for citizens to follow. Why is this the case? The highly effective policies the Japanese government has put out were successful in efficaciously "nudging" the people of Japan.

We will have a quick overview of the nudge theory once more. The nudge theory, explained in different terms, is that due to human beings' cognitive biases (based on psychology research), we can deliberately design how information/choices are presented to individuals.<sup>13</sup> That is, people can be nudged to achieve desired results. Now, when we put this concept from the view of policymakers, they can change people's behavior just by presenting choices or information differently.<sup>14</sup>

Nudging has gained a lot of high-profile advocates. When the former president of the United States, Barack Obama, was going for re-elected president in 2012, he effectively used the nudge theory to win that election eventually. He was also intrigued enough to have hired Sunstein (the co-writer of the famous book "Nudge") before the election even began. The idea was adopted in 2014 when he launched the White House's Social and Behavioral Science Team (SBST), a cross-agency effort to bring behavioral economics into policymaking.<sup>14</sup> He and his team had focused on was how they could influence voters in their favor. The plan was to maximize votes known as a "floating vote", which are votes of a person who has not yet decided which way to vote, or someone who does not consiste



**Figure 1:** From: Global trends and predictors of face mask usage during the COVID-19 pandemic.

are being compared. To summarize, although Japanese people have less intention to get vaccinated, they still have one of the highest vaccination rates in the entire world. This may also be a result of the Japanese government using the nudge theory.

Now, we take a look at mask usage rates around the world. Similar to the vaccination rates, Japan has progressively maintained a near 100% usage rate during the pandemic. As mentioned before, many Japanese people already have the habit of wearing face masks regularly. It is likely that due to this unusual culture in Japan, people were able to wear the masks without any hesitation. Now, we look at Figure B. These countries transitioned from a low mask usage to a high usage rate. Countries like the UK and France fall into this category, ultimately having around 80%.<sup>9</sup> The United States is also the country that is the best fit for Figure B, as it had increased

ntly vote for the same political party. They just asked three simple questions to the voters; At what time are you going to vote (time), from where you plan to get to the voting station (place), and what plans do you have on voting day (plans beforehand)? This may seem underwhelming, but it enables the voter to imagine their day on voting day. Ambiguous people with superstitions will naturally start to vote, which eventually leads them to their victory. By gently “nudging” these “floating votes”, they could influence people without it being brute force. The lenient approaches and their effectiveness on their respective target audiences are very similar to those of policies implemented by the Japanese government.

Some other policies in Japan that mitigated the effects of the pandemic, where the nudge theory was most likely used, were television commercials that suggested vaccinations with the utilization of well-known Japanese celebrities. Concerning this, the government and almost every prefecture in Japan has aired it on TV or some social media platform to encourage people to get vaccinated. However, they had always considered vaccination up to everyone’s own will and decision-making. Another example is the “Abenomasuku”, mainly organized by the Abe administration and the Ministry of Health, Labor, and Welfare. They had spent nearly 180 million dollars or 26 billion yen to give out 2 non-woven fabric face masks to every single citizen living in Japan for their sole purpose. The citizens would unconsciously imagine wearing face masks, which was just enough for the government to effectively influence the people of Japan. This is very similar to Obama’s plans in the election. As a result, 130 million face masks were given, further increasing mask utilization. We can tell that policies implemented in Japan were effective, while never being something that was forced. This system the Japanese government took during the pandemic seems very likely that the nudge theory was — either intentionally or unintentionally — used in their policies.

#### **Section 4: The inevitable limitations regarding the usage of the nudge theory in Japan:**

From this paper, we may conclude that the Japanese government produced significant results using the nudge theory. However, we can raise quite obvious complications. There is a lack of evidence to conclude that the implementing tolerant policies while simultaneously utilizing the nudge theory was planned out beforehand. We are still not too sure that the Japanese government had intentionally and deliberately applied the nudge theory to their policies to mitigate the effects of the COVID-19 pandemic. As this pandemic had an unprecedented impact on the economy, many governments struggled to react swiftly. And Japan was no exception.

When it comes to policymaking during times of crisis, governments mainly prioritize the well-being of their citizens. As the Japanese government also took approaches to give the people a helping hand, its effects on the economy may have significantly differed if it was applied elsewhere. This paper primarily focuses on the nudge theory, yet there is still a high possibility of other factors contributing to the effective implementation of policies in Japan. Some examples we may be able to list are the reliance and trust in the government or Japan’s

cultural significance. To elaborate, the effectiveness of policies implemented by the government was not because of ‘nudging’, but because the people already had trust in the government which led to many citizens doing what the government had suggested. Additionally, as for cultural significance, Japanese people are said to be very easily influenced and therefore show more signs of collectivism than people from other countries.<sup>15</sup> For example, if one’s favorite celebrity were to wear a face mask or get vaccinated, they would very likely copy what the celebrity is doing. Therefore, this may have also contributed to Japan’s high vaccination and mask usage rates. Furthermore, as mentioned before, Japanese people already had a culture of wearing face masks before the pandemic.

As shown, we can give many cases where the nudge theory was not fully intentional or associated with some of the effects it had. However, there still may be exceptions in regions in Japan such as big cities including Tokyo, where people are more aware and cautious towards the government, and lack their cultural significance, which led to the successful implementation of the nudge theory. Ultimately, we still lack relevant data to fully conclude that the lenient and effective policies the Japanese government had implemented were solely due to the nudge theory and its being completely intentional.

### **■ Conclusion**

To the best of our knowledge, this is the first paper to use a GWith the differences in culture and the inevitable limitations of the nudge theory, we are still able to understand that governments implementing flexible and lenient policies are more effective for their countries than taking forceful and mandatory approaches. Utilizing the nudge theory was crucial when mitigating the effects of the pandemic and restoring the economy to its full form. As we looked through some statistics of other countries and compared them with Japan, it was shown that Japan had one of the highest numbers. Not only were they able to obtain some of the high mask usage and vaccination rates, but they were also able to maintain that rate consistently throughout the COVID-19 pandemic. The key factor was the tolerant and easy-going policy strategy the Japanese government had implemented. We also investigated the reasoning behind this success and concluded that the nudge theory played a huge role. Although there were some limitations, the type of policy the government of Japan had undertaken, is something that many other governments could very much emulate and implement in some of their future policies. One of Aesop’s Fables; The North Wind and the Sun would best apply for concisely summarizing the conclusion. The moral teaches about the superiority of gentle persuasion and generous response over brute force, as this fits perfectly with governments’ implementation of policies.

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## ■ Author

Eisuke, a Japanese high school student, who lived in Texas for 3 years keeps his passion on flag football, American football, and now plays as a national team member. He plans on pursuing a career in the sports and decision-making side of business at the university of Stanford.