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Public Transportation Issues and Challenges During the Pandemic

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Abstract

During the pandemic, no one was allowed to go outside except those front liners because of lockdown to avoid Covid-19 transmission. Many people become unemployed, particularly public transportation drivers. All public transit in Bulacan has been suspended. Drivers and commuters also were affected. As a result, the researchers wanted to know how the pandemic impacts commuters and drivers, particularly in the province of Bulacan. The purpose of this study is to integrate the experiences of public transportation prevention and control techniques with the prevention and regulation of public transportation travel in Bulacan, which is one of the most important variables in the economic and cultural recovery of Bulacan and globally.

Keywords: Pandemic, Transportation, Covid-19, Lockdown, Bulacan, Philippines

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1. Introduction

The coronavirus infection, often known as (Covid-19), has lately spread rapidly over the world. For many people, public transportation is their primary method of transportation, and in other cases, their only mode of transportation. Because of the pandemic's global spread, effective long-term preventative and control measures for at-risk populations during the Pandemic should be established, as well as a cure. Covid-19 has affected approximately 200 countries and locations, according to the World Health Organization (2020), with more than 19.46 million confirmed cases as of August 9th, 2020.

Public transportation is a type of locally offered travel that allows individuals to travel together along specific routes. Individuals can travel together along particular routes using public transportation, which is a sort of locally supplied travel. Buses, jeepneys, tricycles, and taxis are examples of public transportation in Bulacan. According to Schwartz (2020), public transportation has a number of characteristics that are linked to a higher Covid-19 score. Transmission risk, which includes the possibility of overcrowding on buses, jeepneys, and other forms of transit.

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Because of Covid-19, many people are affected by this kind of situation. During the pandemic, no one was allowed to go outside except those frontliners because of lockdown to avoid Covid-19 transmission. Many people are jobless, especially those drivers of public transport. All public transportation in Bulacan has stopped its operation. Commuters and drivers are affected. According to Ugay (2020), in the labor force, most Filipinos are commuters.

As a reason, the researchers sought to determine how the pandemic affects commuters and drivers particularly in the Province of Bulacan. The goal of this research is to combine the experience of public transportation prevention and control methods with the prevention and regulation of public transportation travel in Bulacan, which is one of the most significant factors in the economic and cultural recovery of Bulacan and also globally. During a pandemic, like as the Covid-19, public transportation is one of the most impacted because the government establishes the protocol that we must follow for our own security. The closure of all companies and institutions, as well as lockdowns and other health precautions, resulted in a decrease in public transit.

2. Methodology

To evaluate the issues and challenges of public transportation amid the pandemic, this study utilized both qualitative and quantitative methods. Random sample procedures were used to collect data in order to address and explain the study questions under investigation. Tricycle drivers, Jeepney drivers, and passengers in the municipality of Hagonoy Bulacan made up the study's respondents.

The researchers created and validated a self-constructed questionnaire that consisted of three (3) parts: Part I includes the demographic profiles of the respondents: (a) age, (b) gender, (c) civil status, and (d) years of service as a public transportation driver. Part II discusses how the public transportation business changed during the pandemic in terms of (a) passenger numbers, (b) routes, (c) fare prices, (d) availability, and (e) new governmental rules.

Part III discusses the issues and challenges that the public transportation industry faced during the pandemic.

The collected data was organized using a hybrid technique and represented through survey forms/questionnaires and interviews. The relevant responses from surveys and interviews were entered into a data matrix with appropriate codes, and computerization was used. The mean, frequency, and percentage were used to determine the potential issues and challenges that commuters and drivers who drive public vehicles/public transportation may encounter following the pandemic.

3. Results

Table 1 reveals that 20 or 40% of responders are passengers, 15 or 30% are tricycle drivers, and 15 or 30% are jeepney drivers, for a total of 50 or 100%. Random sampling was used to choose the respondents.

Table 1: Frequency and Percentage Distribution of Respondents According to Drivers and Passengers			
Drivers and Passengers	Frequency	Percentage	
Passengers	20	40%	
Tricycle Drivers	15	30%	
Jeepney Drivers	15	30%	
Total	50	100%	

Table 2 illustrates the age of passengers: 3 or 15% are under the age of 20, 12 or 60% are between the ages of 21 and 35, 3 or 15% are between the ages of 36 and 50, and 2 or 10% are 52 and over. The data shows that the majority of the travelers are between the ages of 21 and 35. They are employees who were allowed to leave the house during the pandemic because they were exempted from lockdown.

Table 3 indicates the genders of passengers, with 6 males accounting for 30% of the total and 14 females accounting for 70%. The table shows that the majority of the passengers are female. Despite the fact that it is pandemic, females are more likely to commute or use public transportation than males. Despite the fact that women are represented as house mainstays, Shirkant (2019) claims that women have typically traveled more than men.

Table 2: Age of Passengers			
Age	Frequency	Percentage	
Below 20	3	15%	
21-35	12	60%	
36-50	3	15%	
51yrs and above	2	10%	
Total	20	100%	

Table 3: Gender of Passengers			
Gender	Frequency	Percentage	
Male	6	30%	
Female	14	70%	
Total	20	100%	

Table 4 illustrates the civil status of passengers, with 14 (70%) of them being single and 6 (30%) of them being married. The data shows that the majority of the travelers are single. Single individuals travel more frequently than married people. The researchers discover that the majority of single passengers are employed and rely on public transportation to get to work.

Table 4: Civil Status of Passengers			
Civil Status	Frequency	Percentage	
Single	14	70%	
Married	6	30%	
Separated	0	0%	
Others	0	0%	
Total	20	100%	

The Table 5 illustrates the number of years' passengers have been commuting: 1 or 5% have been commuting for less than one year, 2 or 10% have been commuting for one to five years, 4 or 20% have been traveling for six to ten years, and 13 or 65% have been commuting for 11 years or more. The data shows that the majority of passengers have been utilizing public transit for many years. So, even though it's a pandemic, they're taking public transportation to their preferred location. Staying at home is the safest approach to protect yourself and others against Covid-19. However, some people must leave their homes to go to work, food shop, or perform important errands.

Table 6 indicates how many passengers were permitted during the pandemic. 8 or 40% of them are below 2, 5 or 25% are 2-3 passengers, 1 or 5% of them are 4-5 and 6 or 30% of them are 6-10.

The data shows that the majority of them have restricted capacity or less than two people on public transit in order to avoid the transmission of Covid-19 and maintain social distance from one another. All kinds of public transportation should adhere to the one-meter physical distance rules.

Table 5: Number of Years in Commuting			
Numbers of Years in Commuting	Frequency	Percentage	
Below 1 year	1	5%	
1-5 years	2	10%	
6-10 years	4	20%	
11 years and above	13	65%	
Total	20	100%	

Table 6: Number of Passengers per Vehicle During the Pandemic			
How Many Were Allowed Passengers During the Pandemic Frequency Passenger			
Below 2	8	40%	
2-3	5	25%	
4-5	1	5 %	
6-10	6	30%	
Total	20	100%	

Table 7 indicates how many passengers responded yes or no to the question of whether the normal route changed during the pandemic, with yes accounting for 14% and no accounting for just 6%. The data shows that during the pandemic, the majority of travelers deviate from their usual route.

Table 7: Route During the Pandemic			
Did the Normal Route Change During the Pandemic?	Frequency	Percentage	
Yes	14	70%	
No	6	30%	
Total	20	100%	

The Table 8 shows the how much is fare before pandemic. Passengers who replied below 10 Php were 3 or 15%, 11-20 Php is 12 or 60%, 21-30 Php is 3 or 15%, and 31 Php and above is just 2 or 10%. According to the data, before to the Pandemic, the majority of travelers paid a standard rate of 11-20 PHP.

Table 8: Fare Before Pandemic			
How Much is Fare Before Pandemic?	Frequency	Percentage	
Below 10 Php	3	15%	
11-20 Php	12	60%	
21-30 Php	3	15%	
31 Php and above	2	10%	
Total	20	100%	

Table 9 indicates how much fare is charged during a pandemic. The passengers who responded that 11-20 Php is 6 or 30%, 21-30 Php is 9 or 45%, and 31 Php and higher is only 5 or 25%. The table shows that during the pandemic, there was a significant increase in the fare.

Table 9: Fare During the Pandemic			
How Much is the Fare During the Pandemic?	Frequency	Percentage	
Below 10 Php	0	0%	
11-20 Php	6	30%	
21-30 Php	9	45%	
31 Php and above	5	25%	
Total	20	100%	

Table 10 depicts if there was enough public transportation available throughout the pandemic. The number of passengers who replied yes is just 4 (20%), whereas the number of passengers who said no is 16 (80%). It is shown that the public transportation during the pandemic is not enough due to government restrictions and policies on lockdowns and health protocols.

Table 10: Availability of Transportation During Pandemic			
Is There Enough Public Transportation During the Pandemic	Frequency	Percentage	
Yes	4	20%	
No	16	80%	
Total	20	100%	

Table 11demonstrates what government policies during the pandemic change your normal trip. The number of passengers who answered lockdown is 9 or 45%, social distancing is 10 or 50% and others is only 1 or 5%. It was discovered that the policy of social distancing had a significant impact on the normal trip during the epidemic.

Table 11: Government Policies that has Affected the Normal Trip During Pandemic			
What Government Policies During the Pandemic Change Your Normal Trip? Frequency Percentage			
Lockdown	9	45%	
Social Distancing	10	50%	
Curfew	0	0%	
Other	1	5%	
Total	20	100%	

Table 12 demonstrates that just one tricycle driver, or 6.67%, is under the age of 20 and another, or 6.67%, is between the ages of 21 and 35. There were 6 people between the ages of 36 and 50, or 40%, and 7 people between the ages of 51 and 100, or 46.67%. The table shows that drivers aged 51 and up account for the biggest percentage of the total number of drivers. Because riding a tricycle is their sole source of income, and it is also their major occupation even until they reach old age.

Table 12: Age of Tricycle Drivers			
Age	Frequency	Percentage	
Below 20 years old	1	6.67%	
21-35 years old	1	6.67%	
36-50 years old	6	40%	
51 years old and above	7	46.67%	
Total	15	100%	

The gender of tricycle drivers is seen in Table 13, with 15 or 100% of the respondents being male. All of the tricycle drivers are male, as seen in the table, because in this area, men are the ones who work while their wives stay at home.

Table 13: Gender of Tricycle Drivers		
Gender	Frequency	Percentage
Male	15	100%
Female	0	0%
Total	15	100%

Table 14 reveals that 1 respondent (6.67%) is single, 12 respondents (80%) are married, and 2 respondents (13.33%) is separated. The table shows that the majority of the people is married and need to work every day to support their families.

Table 14: Civil Status of Tricycle Drivers			
Civil Status	Frequency	Percentage	
Single	1	6.67%	
Married	12	80%	
Separated	2	13.33%	
Others	0	0%	
Total	15	100%	

Table 15 displays the number of years they have worked as a public transportation driver. 4 or 26.67% of tricycle public transportation drivers have been in service for 1 to 5 years, 1 or 6.67% have been in service for 6 to 10 years, and

Table 15: Years in Service			
Years in Service as Public Transport Driver	Frequency	Percentage	
Below 1 year	0	0%	
1-5 years	4	26.67%	
6-10 years	1	6.67%	
11 years and above	10	66.67%	
Total	15	100%	

10 or 66.67% have been in service for 11 years or more. The data shows that the majority of tricycle drivers have been doing so for a long period. Their profession as a tricycle driver allows them to support their families.

Table 16 illustrates the number of people who were permitted to ride in the tricycle during the epidemic. Out of 15 respondents, 11 (73.33%) said that the maximum number of passengers allowed on a tricycle is less than two, while only 4 (26.67%) said that two to three passengers are allowed. According to the table, most tricycles are authorized to operate in the region if they have just two or less passengers as they must adhere to government protocol, which is social distancing.

Table 16: Number of Passengers per Tricycle During the Pandemic			
How Many Were The Allowed Passengers During The Pandemic	Frequency	Percentage	
Below 2	11	73.33%	
2-3	4	26.67%	
4-5	0	0%	
6-10	0	0%	
Total	15	100%	

This is seen in Table 17. When asked if their path during the epidemic had altered, 9% replied yes and 6% said no. Because to lockdowns in certain locations and impassable roads due to checkpoints, the typical itinerary was altered during the pandemic.

Table 17: Tricycle Route during the Pandemic		
Did the Normal Route Change During The Pandemic Frequency Percentage		
Yes	9	60%
No	6	40%
Total	15	100%

Table 18 reveals that, of the 15 respondents, 6 or 40% said the fare before the pandemic was less than 10 php, 8 or 53.33% said it was 11-20 php, and 1 or 6.67% said it was 21-30 php. Prior to the pandemic, the typical tricycle fare was between 11 and 20 Php.

Table 18: Fare Before Pandemic			
How Much is the Fare Before the Pandemic	Frequency	Percentage	
Below 10	6	40%	
11-20	8	53.33%	
21-30	1	6.67%	
31 and above	0	0%	
Total	15	100%	

According to Table 19, out of 15 respondents, 2 or 13.33% indicated the fare is less than 20 php, 2 or 13.33% answered 11-20 php, 1 or 6.67% said 21-30 php, and 10 or 66.67% said 31 php and beyond. The data shows that the tricycle fare has increased significantly.

Table 19: Fare During the Pandemic			
How Much was the Fare During Pandemic?	Frequency	Percentage	
Below 10 php	2	13.33%	
11-20 php	2	13.33%	
21-30 php	1	6.67%	
31 php and above	10	66.67%	
Total	15	100%	

According to Table 20, 4 or 26.67% of respondents said that all members of their association are permitted to travel, whereas 11 or 73.33% said no. According to the data, the majority of tricycle drivers are unable to go for public transit due to pandemic restrictions.

Table 20: Restrictions on Travel		
Are All Your Members Allowed to Travel for Public Transportation Purposes During the Pandemic?	Frequency	Percentage
Yes	4	26.67%
No	11	73.33%
Total	15	100%

According to Table 20, 4 or 26.67% of respondents answered that all members of their association are allowed to travel, whereas 11 or 73.33% responded no. According to the research, due to pandemic restrictions, the majority of tricycle drivers are unable to go out for trip.

Table 21: Government Policies that has Affected the Normal Trip during Pandemic		
What governmental policies during the pandemic changed your normal trip? Frequency Percentage		
Lockdown	10	66.67%
Social Distancing	3	20%
Curfew	2	13.33%
Others	0	0
Total	15	100%

Table 21 presents the government policies that has affected the normal trip during pandemic. It shows that 66.67% answered lockdown to be the government policy that affected the normal trip during pandemic, 20% answered social distancing, and 13.23% answered curfew.

Table 22 displays the average age of jeepney drivers. 2 or 13.33% are between the ages of 21 and 35, 7 or 46.67% are between the ages of 36 and 50, and 6 or 40% are 51 and older. The table shows that the majority of responders are between the ages of 36 and 50.

The gender of jeepney drivers is seen in Table 23. Males account for around 15% of the population. It is clear that all of the answers are from males. This illustrates that men outnumber women as drivers. Female drivers are quite rare.

Table 24 indicates the respondents' civil status. 2 (or 13.33%) of the 15 respondents are single, while 13 (or 86.67%) are married. According to the data, the majority of responders are married and have families to support.

Table 22: Age of Jeepney Drivers			
Age	Frequency	Percentage	
Below 20	0	0	
21-35 years	2	13.33%	
36-50 years	7	46.67%	
50 years & above	6	40%	
Total	15	100%	

Table 23: Gender of Jeepney Drivers		
Gender	Frequency	Percentage
Male	15	100%
Female	0	0
Total	15	100%

Table 24: Civil Status of Jeepney Drivers			
Civil Status	Frequency	Percentage	
Single	2	13.33%	
Married	13	86.67%	
Separated	0	0	
Others	0	0	
Total	15	100%	

Table 25 indicates the number of years of experience as a public transportation driver. 0 or none of the respondents stated that they have less than one year of service, 2 or 13.33% have 1 to 5 years of service, 6 or 40% have 6 to 10 years of service, and 7 or 46.67% have 11 years of service. The data shows that the majority of the drivers have above 11 years of experience, since many of them choose to work as a driver at a young age.

Table 25: Years in Service			
Years in service as Public Transport driver's	Frequency	Percentage	
Below 1 year	0	0%	
1-5 years	2	13.33%	
6-10 years	6	40%	
11 years above	7	46.67%	
Total	15	100%	

Table 26 indicates how many travelers were permitted throughout the pandemic. 0 or none of the respondents claimed that less than 2, 2-3, and 4-5 people are enough to fill a single jeepney, while 15 or 100% of the respondents said that 6-10 passengers are sufficient to allow inside the jeepney before they travel.

Table 26: Number of Passengers per Jeepney during the Pandemic			
How many were allowed passengers during the pandemic?	Frequency	Percentage	
Below 2	0	0%	
2-3	0	0%	
4-5	0	0%	
6-10	15	100%	
Total	15	100%	

Table 27 demonstrates whether the normal route changed during the pandemic. 60% (40%) of those surveyed replied yes, while sixty percent (60%) said no. According to the data, the majority of respondents said no if their usual route changed during a pandemic. During the pandemic, the jeepney drivers' association did not change their normal route. As a result of the lockdowns, they have been completely shut down for several months.

Table 27: Jeepney Route during the Pandemic			
Did normal route change during the pandemic?	Frequency	Percentage	
Yes	6	40%	
No	9	60%	
Total	15	100%	

Table 28 illustrates how much the fare is before the pandemic. 0 or none of the respondents said the fare is less than 10 pesos, 10 or 66.67% said the fare is 11-20 pesos, 5 or 33.33% said the fare is 21-30 pesos, and 0 or none of the respondents said the fare is 31 pesos or more. According to the data, the majority of drivers claimed that the fare per passenger is 11-20 pesos. The drivers and passengers are aware that the minimum fare in a jeepney is 11-20 pesos.

Table 28: Fare before the Pandemic		
How much is the fare before pandemic?	Frequency	Percentage
Below 10	0	0%
11-20	10	66.67%
21-30	5	33.33%
31 and above	0	0%
Total	15	100%

Table 29 illustrates how much the fare was during the pandemic. 0 or none of the respondents stated the fare was less than 10 pesos, 2 or 13.33% said the fare was 11-20 pesos, 12 or 80% said the fare was 21-30 pesos per person, and 1 or 6.67% said the fare was 31 pesos or more. According to the statistics, there has been an increase in the fare during the pandemic since the capacity of the jeepney has been reduced, requiring them to charge double in order to cover their expenses such as fuel, boundary, and even maintenance.

Table 29: Fare During the Pandemic			
How much was the fare during pandemic?	Frequency	Percentage	
Below 10	0	0%	
11-20	2	13.33%	
21-30	12	80%	
31 and above	1	6.67%	
Total	15	100%	

According to the data, most drivers were not permitted to travel for public transit purposes during the pandemic due to governmental measures implemented during lockdowns.

Table 30: Restrictions on Travel			
Are all your members allowed to travel for Public Transportation purposes during the pandemic?	Frequency	Percentage	
Yes	5	33.33%	
No	10	66.67%	
Total	15	100%	

Table 31 indicates how government measures during the pandemic affected normal jeepney movement, and 5 or 33.33% of respondents answered lockdown, 9 or 60% said social distancing, 1 or 6.67% said curfew, and 0 or none mentioned others.

Table 31: Government Policies that has Affected the Normal Trip during the Pandemic			
What governmental policies during the pandemic changed your normal trip?	Frequency	Percentage	
Lockdown	5	33.33%	
Social Distancing	9	60%	
Curfew	1	6.67%	
Others	0	0%	
Total	15	100%	

4. Discussion

Based on the data gathered, the researchers found that the majority of persons who used public transit are between the ages of 21 and 35, which is the most suitable age for going outdoors during lockdowns.

The recommended distance to ensure public safety is a heavily debated subject, with various governments and health groups offering a variety of distancing recommendations. Most nations and the World Health Organization suggest a 1.5- to 2-meter social separation. As a result, the fare during the pandemic has increased. Because of government regulations, the passenger capacity of public transportation has been restricted.

Due to checkpoints and the closure of various barangays, the route has modified.

The majority of jeepney and tricycle drivers had changed employment, and some had temporarily quit since their wages were insufficient to meet their demands.

5. Conclusion

The intensive changes in public transportation, as well as the overview of efforts aimed at preventing viral transmission, provide extraordinary challenges to the public transportation industry. Furthermore, these variations require an excessive pause, and the shifting characteristics of the pandemic do not always follow a consistent recovery route. To deal with these quick and dramatic changes, public transportation companies had to rely on limited information. Following a thorough study of the data, it is recommended that public transportation scheduling be addressed at the strategic level. It relates to the design of a public transportation link, which includes identifying public transportation terminals and expanding public transportation routes. To alleviate the strain on public transportation drivers, a franchise tax exemption be adopted within the jurisdiction of Hagonoy Bulacan.

In addition, for terminals with a high volume of public transit, reducing service frequencies is strongly advised. Changes in vehicle schedules and a reduction in the overall time of daily operations should also be considered.

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