

Analysis of Transport Bus Initiative Usage*

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This paper presents an analysis of the transport bus initiative usage, with a specific focus on three key variables: clients, clients transported, and clients stationary. The dataset, consisting of daily records, is explored using various statistical distributions to understand the behavior of these variables and assess the performance of the bus initiative.

1 Introduction

Public transportation plays a critical role in urban mobility, connecting individuals to essential services and opportunities while promoting sustainable development. Among the various modes of public transport, bus initiatives are particularly vital, offering affordable and accessible options for diverse populations. In recent years, many cities have implemented transport bus initiatives to enhance public transit services and improve accessibility for underserved communities. However, understanding how these initiatives impact client behavior—specifically the number of clients, those transported, and those who remain stationary—is crucial for evaluating their effectiveness.

This paper focuses on analyzing the usage patterns of a specific transport bus initiative, leveraging data on clients, clients transported, and clients stationary. By examining these metrics, we aim to identify trends and correlations that inform service improvement and highlight the initiative’s role in community mobility. We also explore the underlying factors influencing client engagement, including temporal aspects, service reliability, and socio-economic considerations.

The gap in existing literature on the effectiveness of transport bus initiatives necessitates a detailed analysis of client interactions. Understanding who uses the service and why is vital for transportation planners and policymakers aiming to create inclusive transit systems. Our analysis provides insights into the effectiveness of the bus initiative and its ability to meet the mobility needs of the community.

*Code and data are available at: [LINK](#).

In the subsequent sections, we will detail the methodology used to collect and analyze the data, present key findings, and discuss the implications for public transportation strategies. By focusing on clients, clients transported, and clients stationary, this study contributes valuable knowledge that can guide future enhancements to transport bus initiatives and improve overall public transit experiences. # Data {#sec-data} The histogram visualizes the distribution of Clients Stationary within the dataset, providing insights into how frequently different counts of stationary clients occur. The x-axis represents the number of clients stationary, while the y-axis shows frequency of those counts.



Figure 1: Relationship between wing length and width

This scatterplot illustrates the relationship between date and the number of clients in the dataset, providing a visual representation of client engagement over time. The x-axis represents the date, showing the timeline of observation, while the y-axis indicates the number of clients.

```
simulated_data <- read_csv(here::here("/Users/nguyenviet/Documents/STA304 - paper 1/data/raw
```

```
Rows: 100 Columns: 3
```

```
-- Column specification -----
```

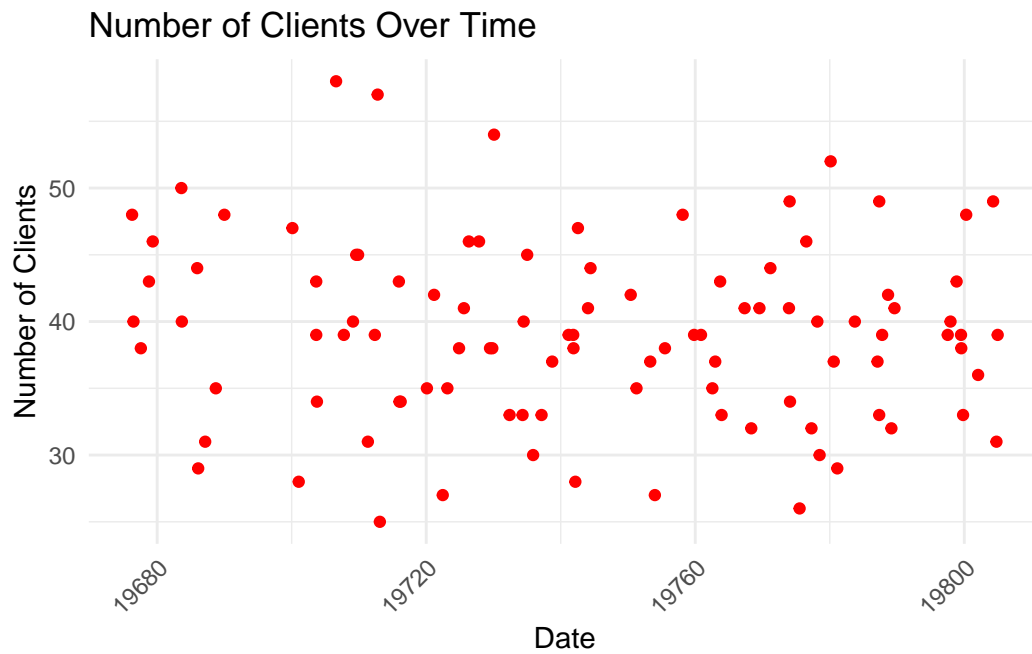
```
Delimiter: ","
```

```
dbl (3): dates, clients, clients_stationary
```

```
i Use `spec()` to retrieve the full column specification for this data.
```

```
i Specify the column types or set `show_col_types = FALSE` to quiet this message.
```

```
ggplot(simulated_data, aes(x = dates, y = clients)) +
  geom_point(color = "red") +
  labs(title = "Number of Clients Over Time",
       x = "Date",
       y = "Number of Clients") +
  theme_minimal() + # Clean theme for better visualization
  theme(axis.text.x = element_text(angle = 45, hjust = 1))
```



2 Results

3 Discussion

3.1 First discussion point

3.2 Second discussion point

3.3 Third discussion point

3.4 Weaknesses and next steps

A References