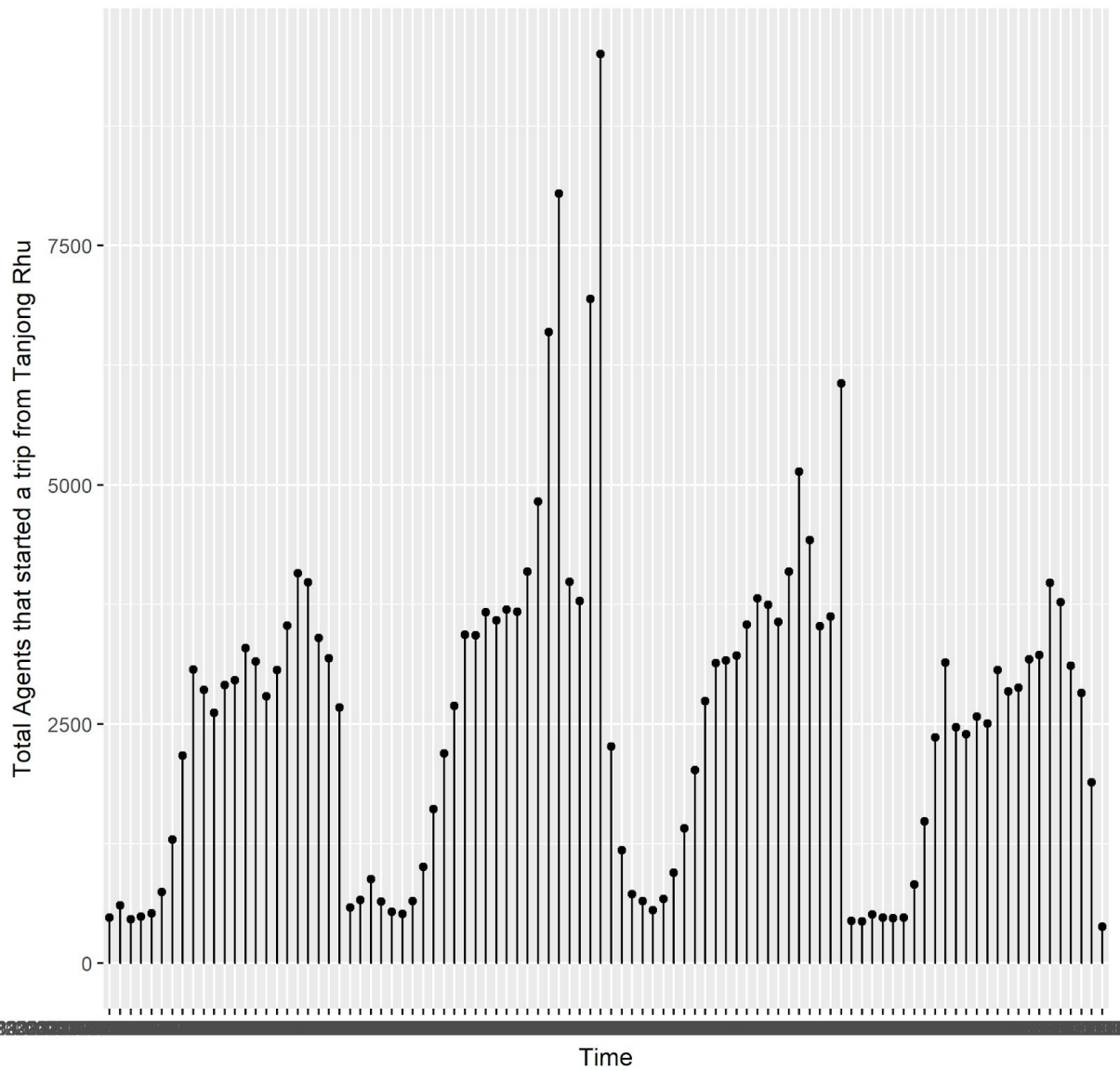
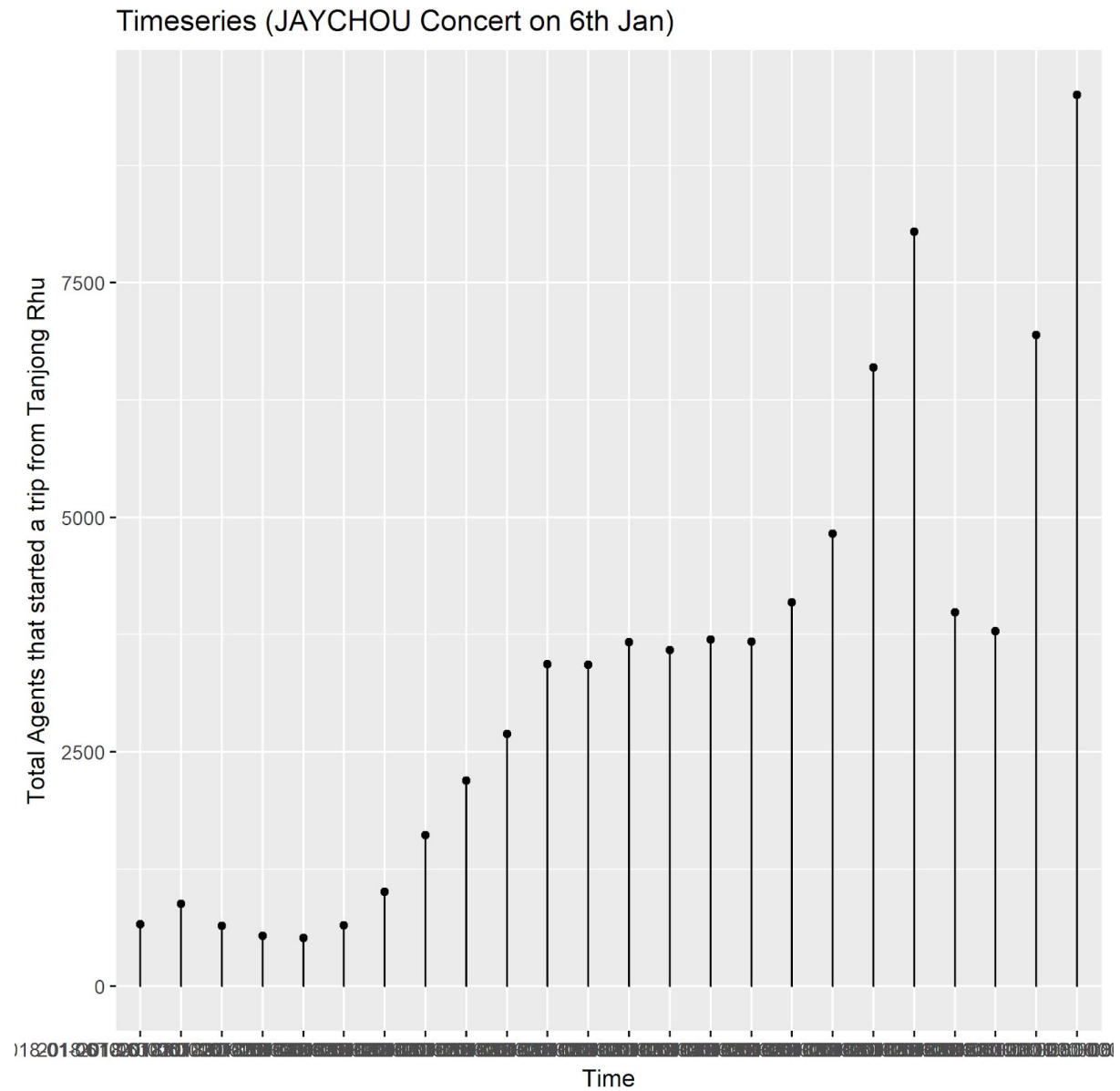


Timeseries (5th-8th Jan) (JAYCHOU Concert on 6th Jan)



The above shows the time series plot of agents who started a trip from Tanjong Rhu from 5th to 8th Jan. A visible spike is observed on the 5th of Jan evening when there was a Jay Concert.

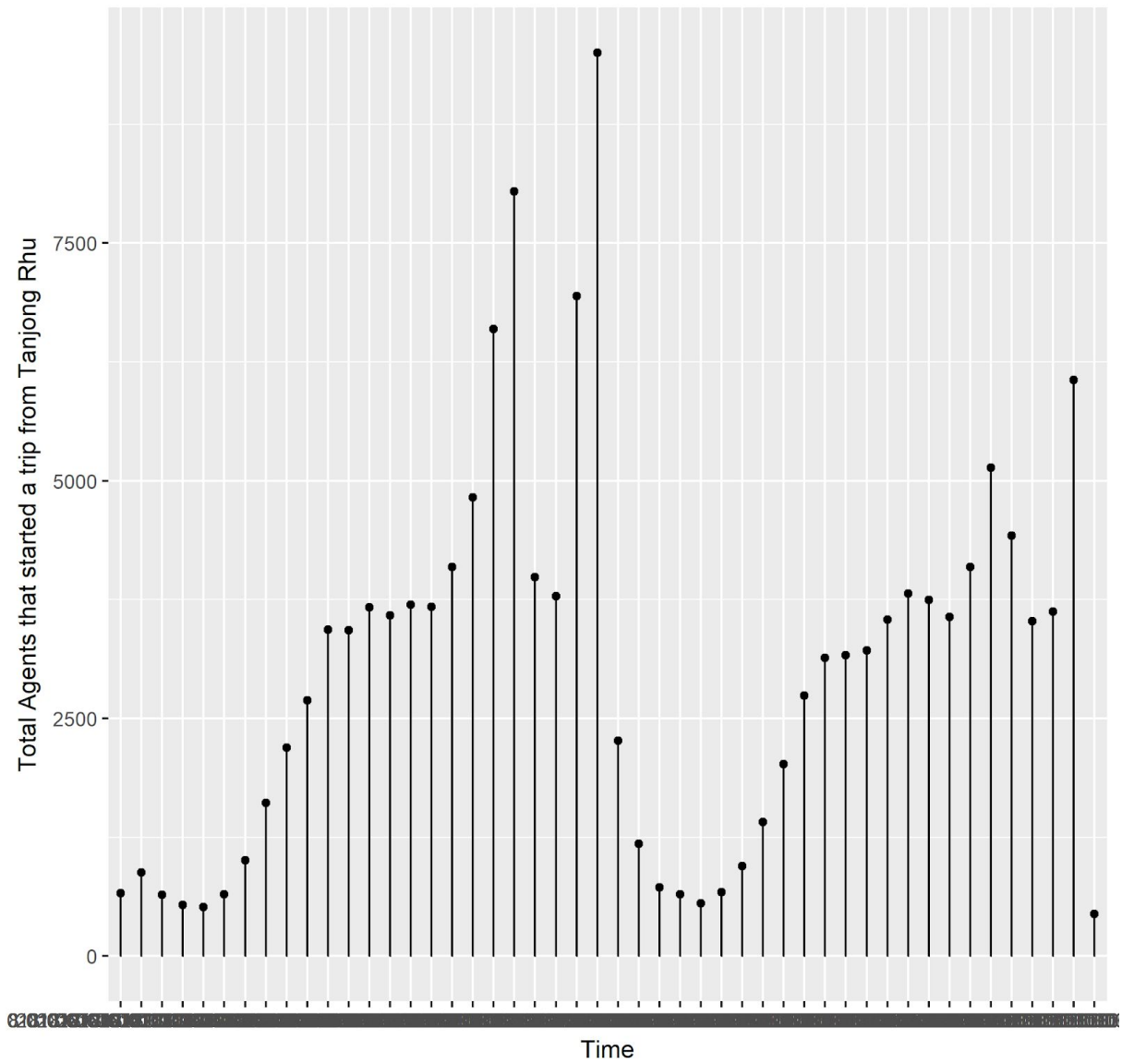
Jay Chou Concert Analysis



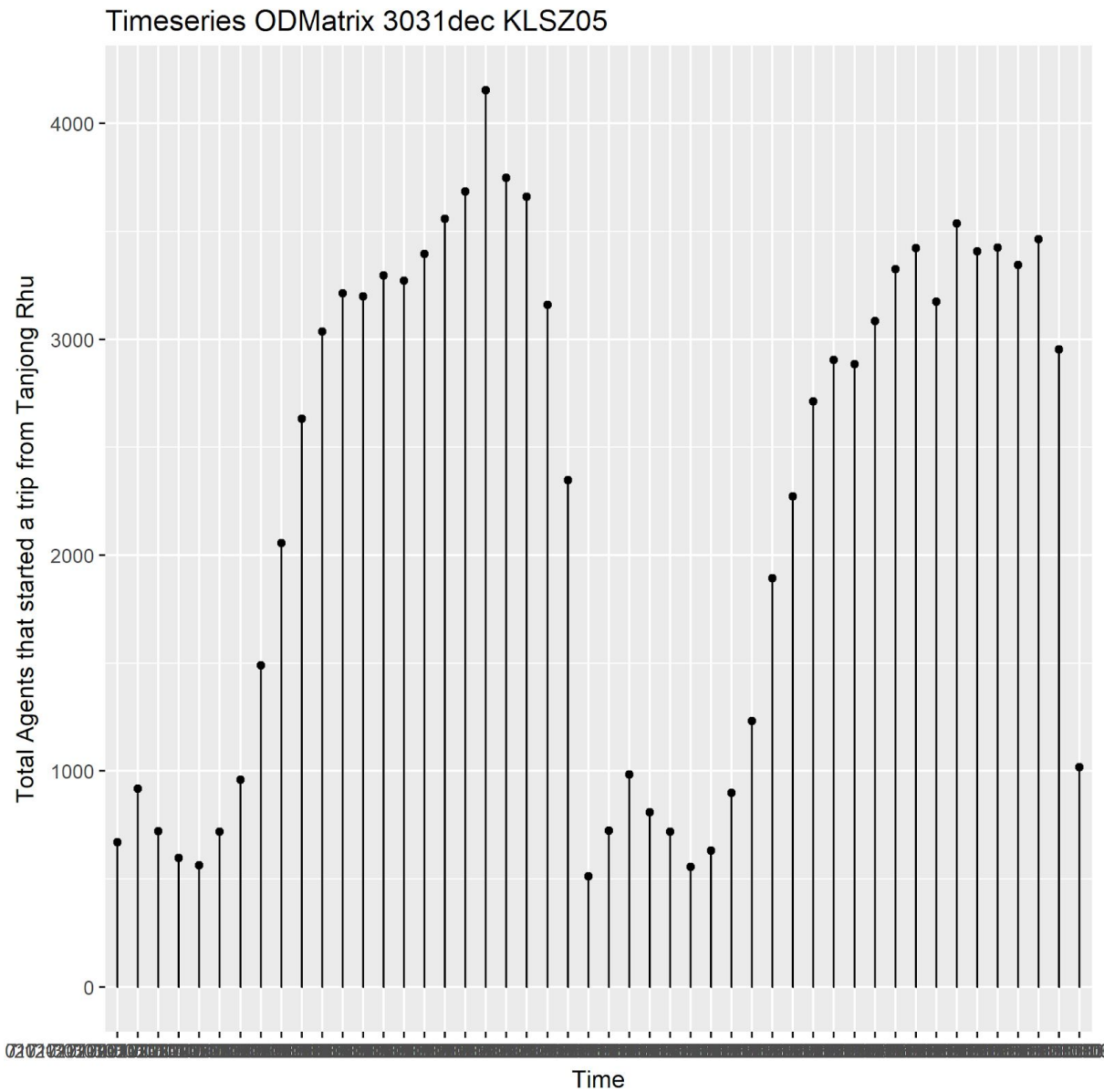
Significant spike can be seen around 2200hr to 2300hr. This can be inferred to be the end of the concert when agents are making their way back.

Jay Chou Concert Analysis

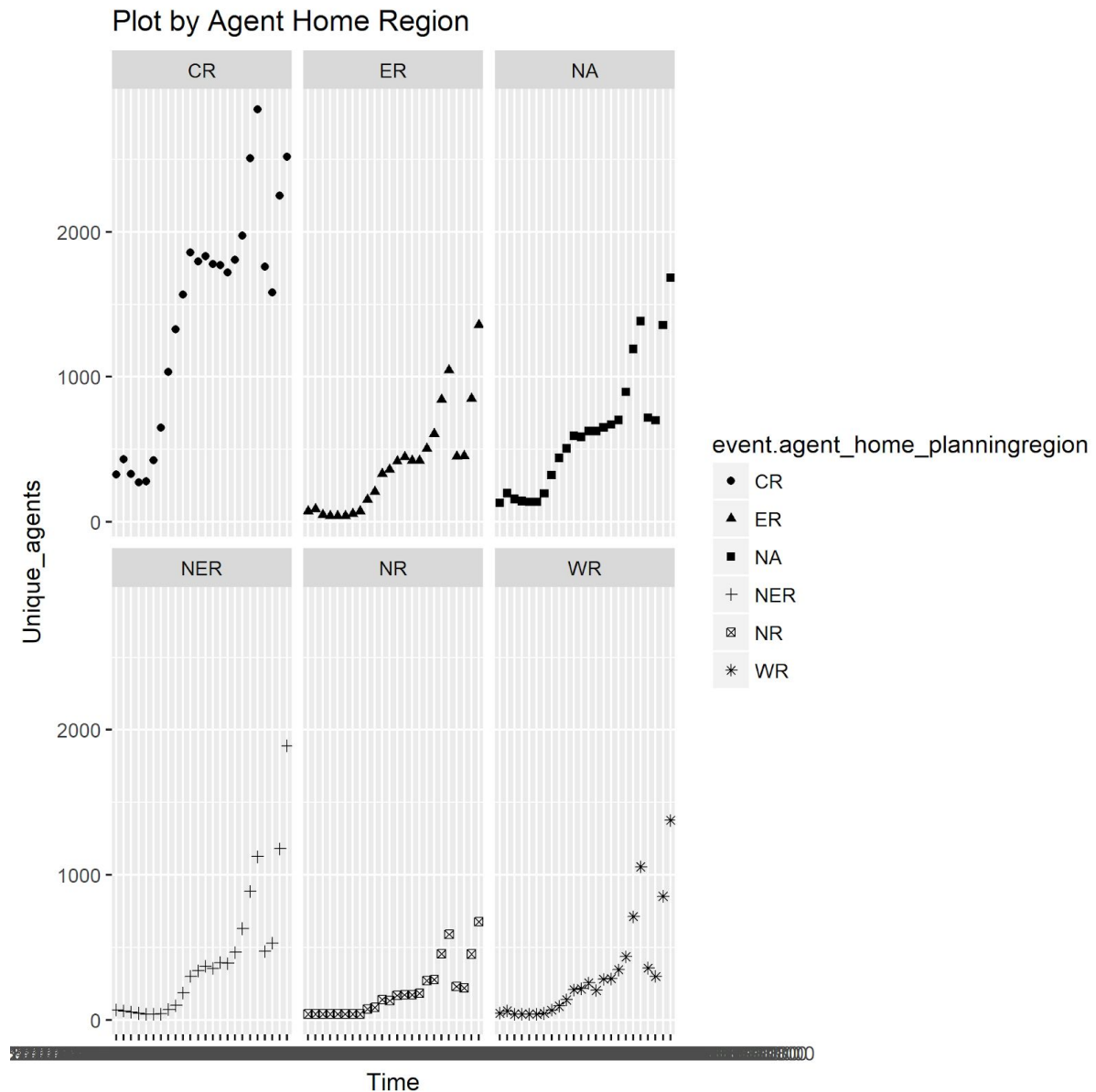
Timeseries 6th-7th Jan (JAYCHOU Concert on 6th Jan)



Jay Chou Concert Analysis

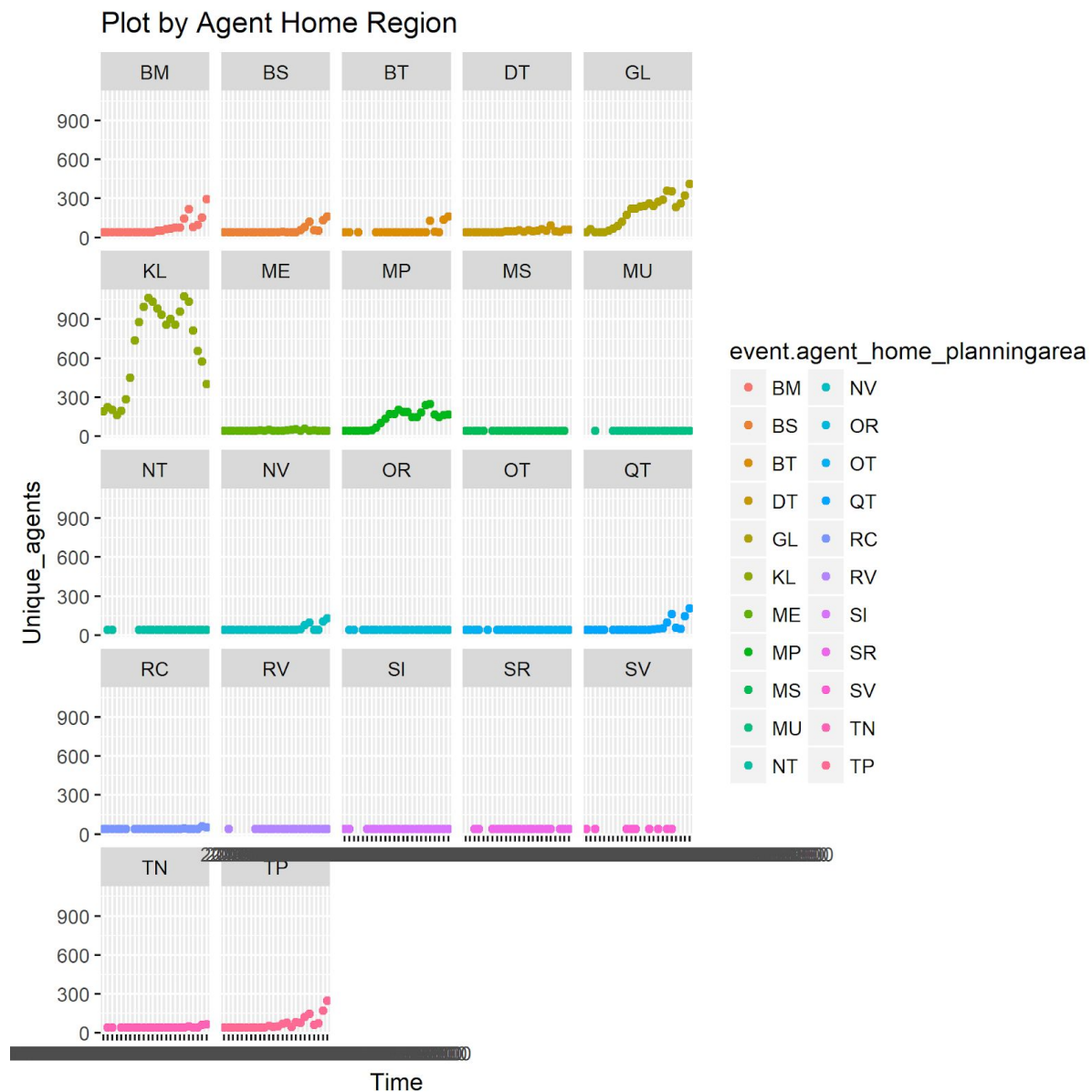


Jay Chou Concert Analysis



From the plot above we can plan out the proportion of buses to cater to the concert goers. More buses should be catered for the central region followed by NorthEast, West, East followed by North.

Jay Chou Concert Analysis



Taking a closer look at people with home destination in the central region, the following are the top 5 locations for the concert goers.

GL(GEYLANG), KL(KALLANG), BM(BUKIT MERAH), TP(TOA PAYOH), QT(QUEENSTOWN)

```
#####
##### VISUALISATION SCRIPT #####
#####COMBINED CALLS FOR OVERALL VISUALISTION #####
library(httr)
library(dplyr)
library(jsonlite)

#parameters
datastreamx.key = "AUdFjYGZd4vwOTzxfPPqA17kzPvYaKFI"
```

Jay Chou Concert Analysis

```
#query API
query.body <- list(
  date = "2018-01-06",
  timeSeriesReference = "origin",
  location = list(locationType = "locationHierarchyLevel", levelType = "origin_subzone", id =
"KLSZ05"),
  queryGranularity = list(type = "period", period = "PT1H"),
  aggregations = list(list(metric = "unique_agents", type = "hyperUnique"), list(metric =
"total_records", type = "longSum"))
)

# token variable contains a valid access token; see Getting Started.
query.response <- POST("http://api.datastreamx.com/1925/605/v1/odmatrix/v3/query",
  add_headers('DataStreamX-Data-Key' = datastreamx.key),
  encode = "json",
  body = query.body,
  verbose())

stop_for_status(query.response)
cat(content(query.response, as = "text"), "\n")

#convert query response to JSON

data <- fromJSON(rawToChar(query.response$content))
data.df <- do.call(what = "cbind", args = lapply(data, as.data.frame))
names(data.df)[1] = names(data[1])

#query API
query.body2 <- list(
  date = "2018-01-07",
  timeSeriesReference = "origin",
  location = list(locationType = "locationHierarchyLevel", levelType = "origin_subzone", id =
"KLSZ05"),
  queryGranularity = list(type = "period", period = "PT1H"),
  aggregations = list(list(metric = "unique_agents", type = "hyperUnique"), list(metric =
"total_records", type = "longSum"))
)

# token variable contains a valid access token; see Getting Started.
query.response2 <- POST("http://api.datastreamx.com/1925/605/v1/odmatrix/v3/query",
  add_headers('DataStreamX-Data-Key' = datastreamx.key),
  encode = "json",
  body = query.body2,
  verbose())
```

Jay Chou Concert Analysis

```
stop_for_status(query.response2)
cat(content(query.response2, as = "text"), "\n")
```

```
#convert query response to JSON
```

```
data2 <- fromJSON(rawToChar(query.response2$content))
data2.df <- do.call(what = "cbind", args = lapply(data2, as.data.frame))
names(data2.df)[1] = names(data2[1])
```

```
TWOdaytimeseries <- rbind(data.df, data2.df)
```

```
#write csv to working directory
```

```
write.csv(TWOdaytimeseries, file = "ODMatrix-JayChou-6thTO7th.csv")
```

```
p <- ggplot(TWOdaytimeseries, aes(x=TWOdaytimeseries$timestamp,
y=TWOdaytimeseries$event.longSum_total_records)) +
  geom_point() +
  geom_density(alpha=.3) +
  ggtitle("Timeseries 6th-7th Jan (JAYCHOU Concert on 6th Jan)") +
  xlab("Time") + ylab("Total Agents that started a trip from Tanjong Rhu")
```

```
ggsave("0601-0701-2018 JayChou.png")
```

```
#####
#####
#####CENTRAL HOME STAYER#####
#####TOP 5 LOCATIONS#####
```

```
library(httr)
library(dplyr)
library(jsonlite)
```

```
#parameters
```

```
datastreamx.key = "AUdFjYGZd4vwOTzxfPPqA17kzPVYaKFI"
```

```
#query API
```

```
query.body <- list(
  date = "2018-01-06",
  timeSeriesReference = "origin",
```


Jay Chou Concert Analysis

```
location = list(locationType = "locationHierarchyLevel", levelType = "origin_subzone", id =
"KLSZ05"),
queryGranularity = list(type = "period", period = "PT1H"),
filter = list( type = "selector", dimension = "agent_home_planningregion", value="CR"),
dimensionFacets = list("agent_home_planningarea"),
aggregations = list(list(metric = "unique_agents", type = "hyperUnique"), list(metric =
"total_records", type = "longSum"))
)
```

token variable contains a valid access token; see Getting Started.

```
query.response <- POST("http://api.datastreamx.com/1925/605/v1/odmatrix/v3/query",
  add_headers('DataStreamX-Data-Key' = datastreamx.key),
  encode = "json",
  body = query.body,
  verbose())
```

```
stop_for_status(query.response)
cat(content(query.response, as = "text"), "\n")
```

#convert query response to JSON

```
data <- fromJSON(rawToChar(query.response$content))
data.df <- do.call(what = "cbind", args = lapply(data, as.data.frame))
names(data.df)[1] = names(data[1])
```

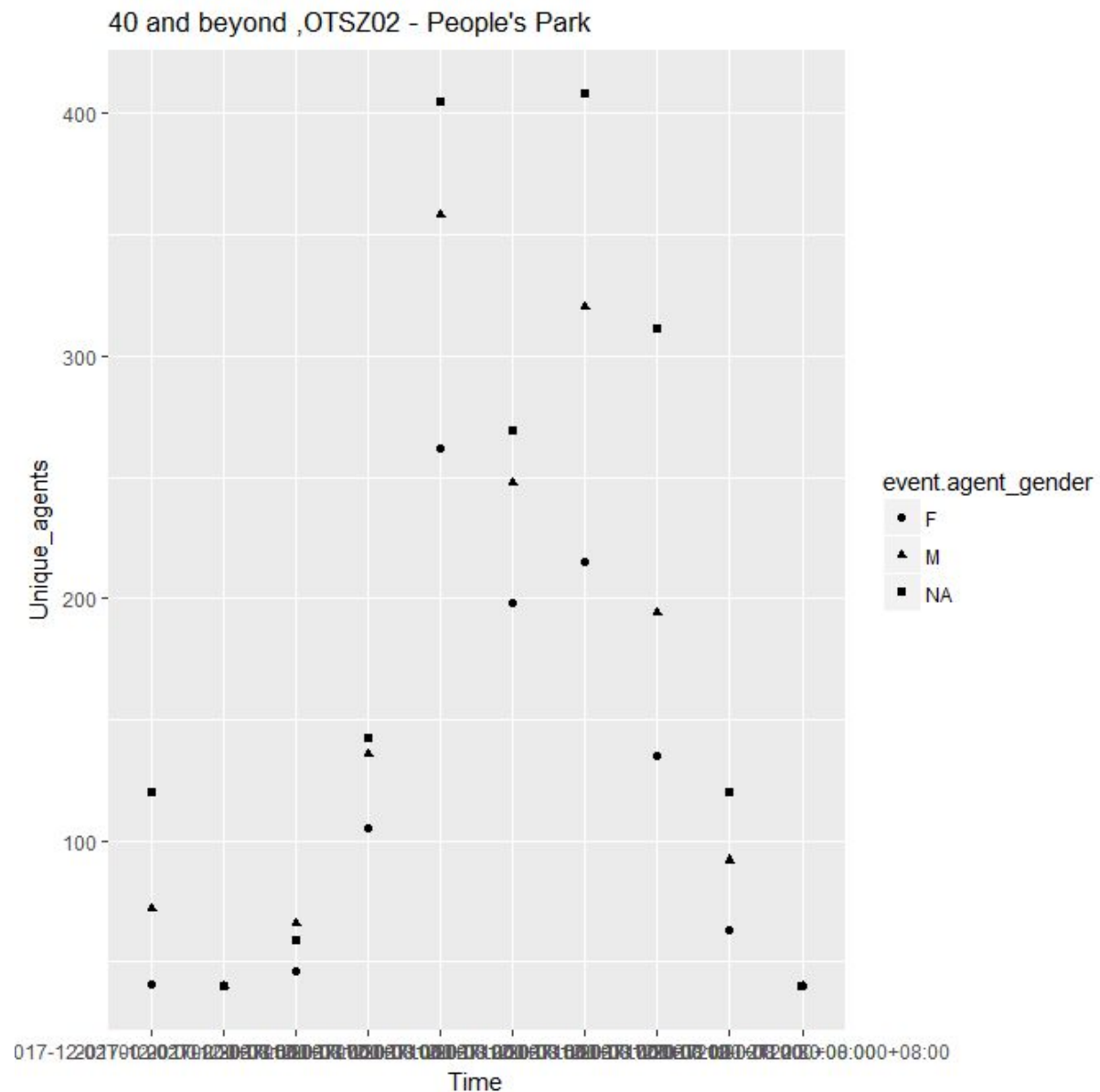
```
write.csv(data.df, file = "ODMatrix AGENT HOME CENTRAL jaychou.csv")
```

```
ggplot(data.df, aes(x = timestamp, y = event.longSum_total_records, color
=event.agent_home_planningarea)) +
  geom_point() +
  labs(title="Plot by Agent Home Region",
    x="Time", y = "Unique_agents") +
  facet_wrap( ~ event.agent_home_planningarea)
```

```
ggsave("Agent Home Region (CENTRAL) JayChou Concert.png")
```

```
#####
#####
```

Jay Chou Concert Analysis



People aged 40 and above in People's Park complex

```
library(httr)
library(dplyr)
library(jsonlite)
```

```
#parameters
datastreamx.key = "AUdFjYGZd4vwOTzxfPPqA17kzPVYaKFI"
```

```
#query API
query.body <- list(
  date = "2017-12-02",
  location = list(locationType = "locationHierarchyLevel",
    levelType = "staypoint_subzone",
    id = "OTSZ02"
```

Jay Chou Concert Analysis

```
),  
  queryGranularity = list(type = "period",  
    period = "PT2H30M"),  
  filter = list( type = "bound", dimension = "agent_year_of_birth", lower = "1930", upper  
    = "1978"),  
  dimensionFacets = list("agent_gender"),  
  aggregations = list(list(metric = "unique_agents", type = "hyperUnique"))  
)
```

token variable contains a valid access token; see Getting Started.

```
query.response <- POST("http://api.datastreamx.com/1925/605/v1/staypoint/v2/query",  
  add_headers('DataStreamX-Data-Key' = datastreamx.key),  
  encode = "json",  
  body = query.body,  
  verbose())
```

```
stop_for_status(query.response)  
cat(content(query.response, as = "text"), "\n")
```

#convert query response to JSON

```
data <- fromJSON(rawToChar(query.response$content))  
data.df <- do.call(what = "cbind", args = lapply(data, as.data.frame))  
names(data.df)[1] = names(data[1])
```

#write csv to working directory

```
write.csv(data.df, file = "Staypoint-API_genderfacet-output.csv")
```

```
ggplot(data.df, aes(x = timestamp, y = event.hyperUnique_unique_agents, shape =  
  event.agent_gender)) +  
  geom_point() +  
  labs(title="40 and beyond ,OTSZ02 - People's Park",  
    x = "Time", y = "Unique_agents")
```

Jay Chou Concert Analysis



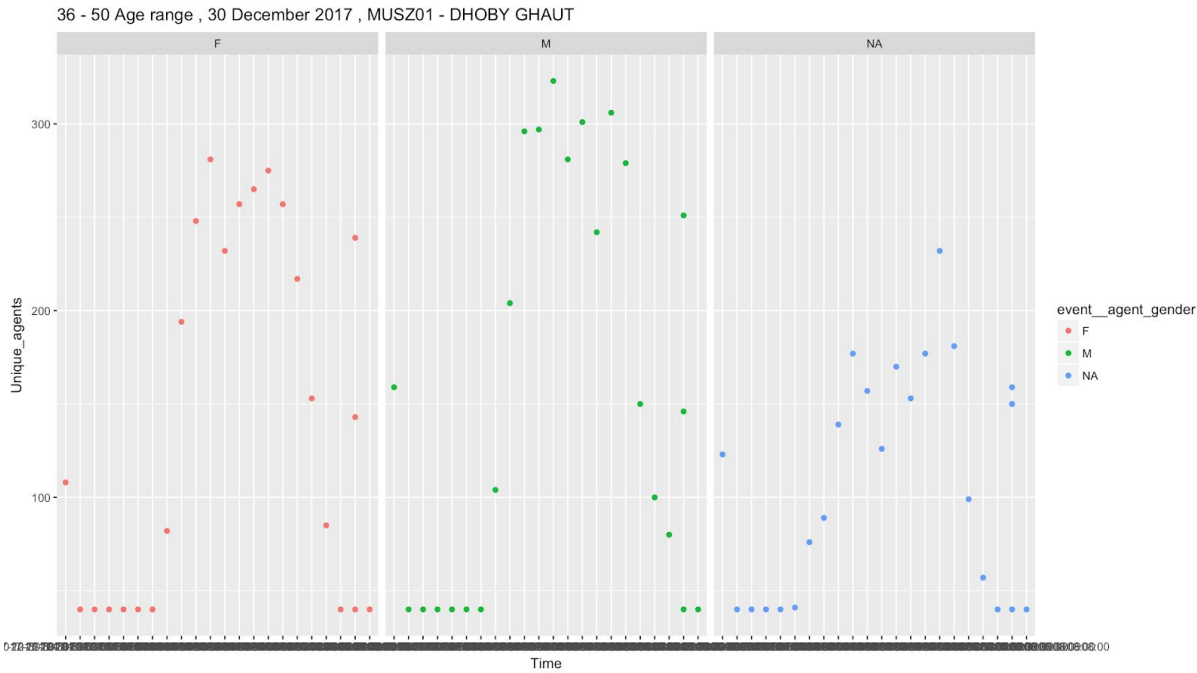
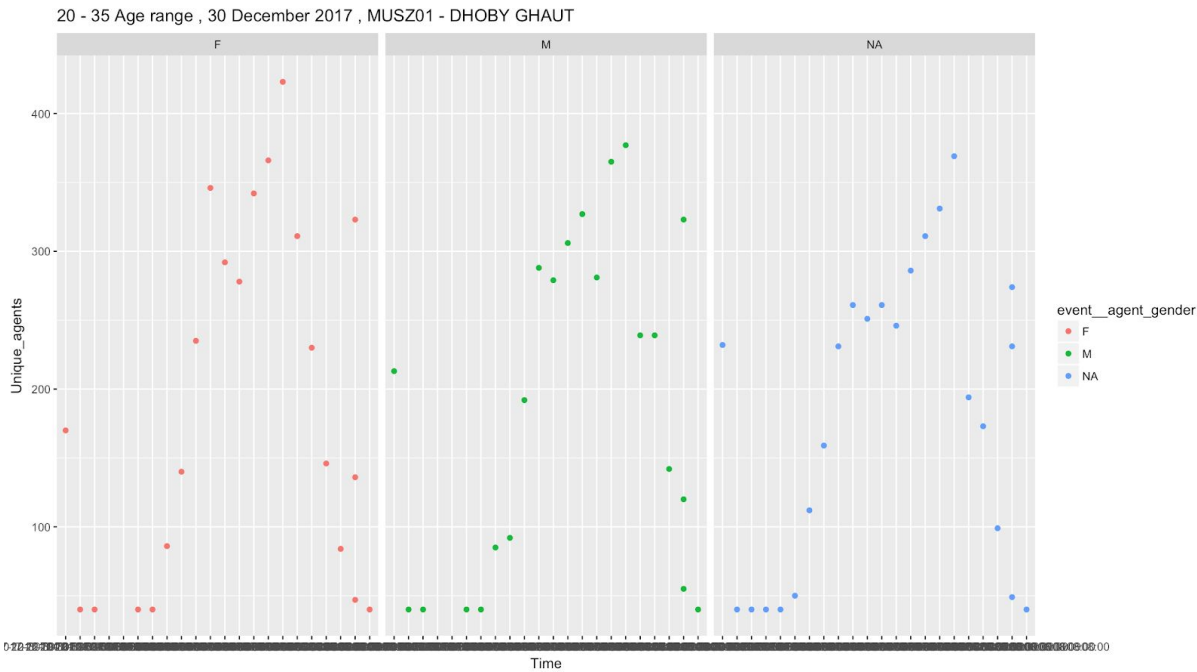
Wordcloud to visualise agent inferred workplace

STAYPOINT API

As expected of a location such as Dhoby Ghaut, it tends to be more popular among the younger generations. The maximum unique visitors is over 400 for the age range of 20-35 as compared to just over 200 for the age range of 50 and beyond.

With such information we can advise that businesses that want to target the younger generation should seek to position themselves in such location to increase brand awareness and strengthen customer base of the younger age group.

Jay Chou Concert Analysis



Jay Chou Concert Analysis

