In [7]:
```
import pandas as pd
import numpy as np
from sklearn.preprocessing import MinMaxScaler
from sklearn.cluster import KMeans
from sklearn.metrics import silhouette_samples, silhouette_score
import matplotlib.pyplot as plt
import seaborn as sns
import matplotlib.cm as cm
import math
from sklearn.preprocessing import StandardScaler
from sklearn.preprocessing import RobustScaler
from sklearn.mixture import GaussianMixture
from sklearn.cluster import DBSCAN
from sklearn.cluster import AgglomerativeClustering

import matplotlib as mpl
# 한글깨짐 방지
from matplotlib import font_manager, rc
font_name =
font_manager.FontProperties(fname="C:/Windows/Fonts/malgun.ttf").get_name(

rc('font',family=font_name)
# 마이너스 수식깨짐 방지
import matplotlib
matplotlib.rcParams['axes.unicode_minus'] = False

matplotlib.rc('xtick', labelsize=20)
matplotlib.rc('ytick', labelsize=20)
font= {'family' : font_name,
       'size' : 20}
matplotlib.rc('font', **font)
paramter = {'font.size': 20}

import warnings
warnings.filterwarnings(action = 'ignore')
%matplotlib inline
```

In [8]:
```
df = pd.read_csv('E:W/dataset3.csv', encoding = 'cp949', parse_dates =
['날짜'])
```

In [9]:
```
df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 610 entries, 0 to 609
Data columns (total 20 columns):
날짜                  610 non-null datetime64[ns]
방역수칙                596 non-null object
확진자수                570 non-null float64
확진자수증감률             610 non-null float64
전일 대비 확진자수증감률       570 non-null float64
감염지수                560 non-null float64
폐업수                 549 non-null float64
폐업증감률               610 non-null float64
카드매출액               518 non-null float64
전일 대비 매출증감률         610 non-null object
매출증감률               610 non-null object
18시 전 카드매출액         518 non-null float64
18시 후 카드매출액         518 non-null float64
18시 후 카드매출액증감률      610 non-null float64
카드매출건수              518 non-null float64
카드매출건수증감률           610 non-null float64
유동인구                518 non-null float64
유동인구증감률             610 non-null float64
이동거리                518 non-null float64
백신도입전후              362 non-null float64
dtypes: datetime64[ns](1), float64(16), object(3)
memory usage: 95.4+ KB
```

In [10]:
```
df_new = pd.read_csv('E:₩cd.csv', parse_dates = ['날짜'], encoding =
'cp949')
```

In [11]:
```
df_new.head()
```

Out[11]:

	날짜	전체변수	파생변수만	파생변수없이	감염지표	소상공인	인구이동
0	2020-03-01	6	0	2	6	3	1
1	2020-03-02	0	0	4	6	0	5
2	2020-03-03	1	1	4	6	0	2
3	2020-03-04	1	0	4	6	0	5
4	2020-03-05	1	1	4	6	0	2

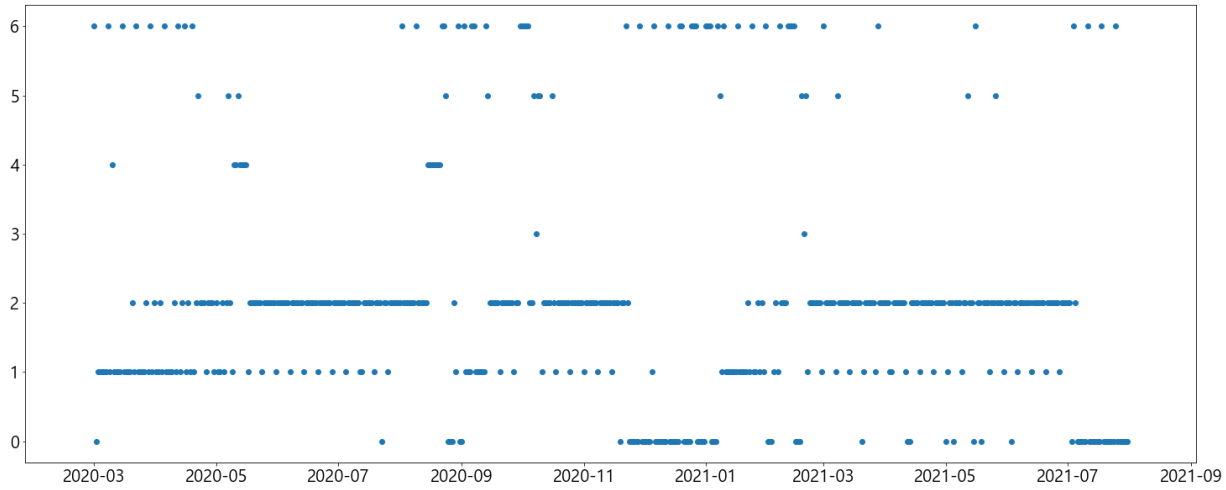
In [12]:
```
import copy
```

In [13]:
```
df_agg = df[:518].merge(df_new, how = 'inner', on = df_new.index)
```

전체변수 군집분포

In [14]:
```
plt.figure(figsize =(25, 10))


plt.scatter(df_new['날짜'], df_new['전체변수'])
```

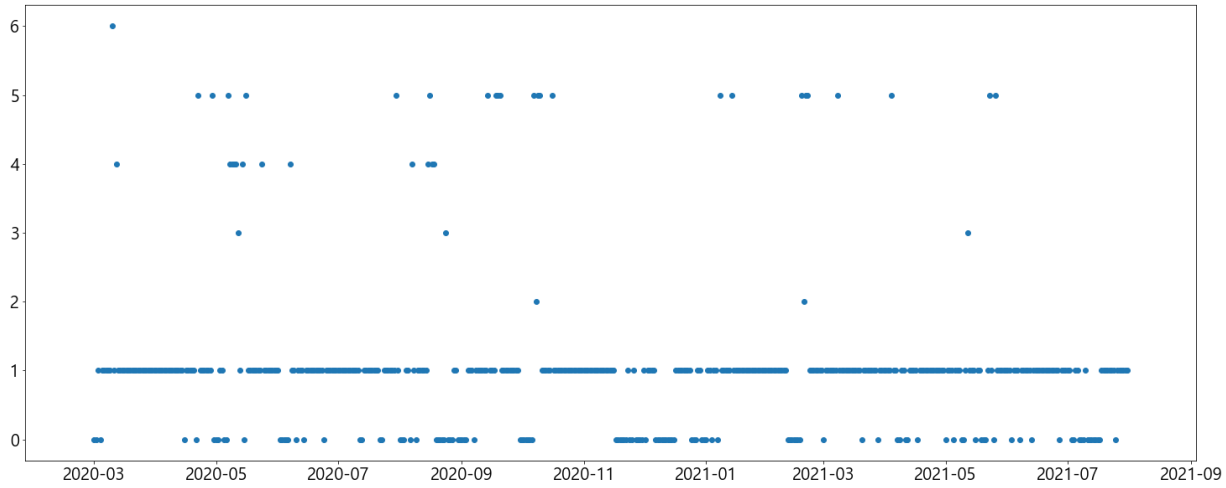
Out[14]:
```
<matplotlib.collections.PathCollection at 0xcb4b97fe48>
```



파생변수only 군집분포

In [15]:
```
plt.figure(figsize =(25, 10))

plt.scatter(df_new['날짜'], df_new['파생변수만'])
```

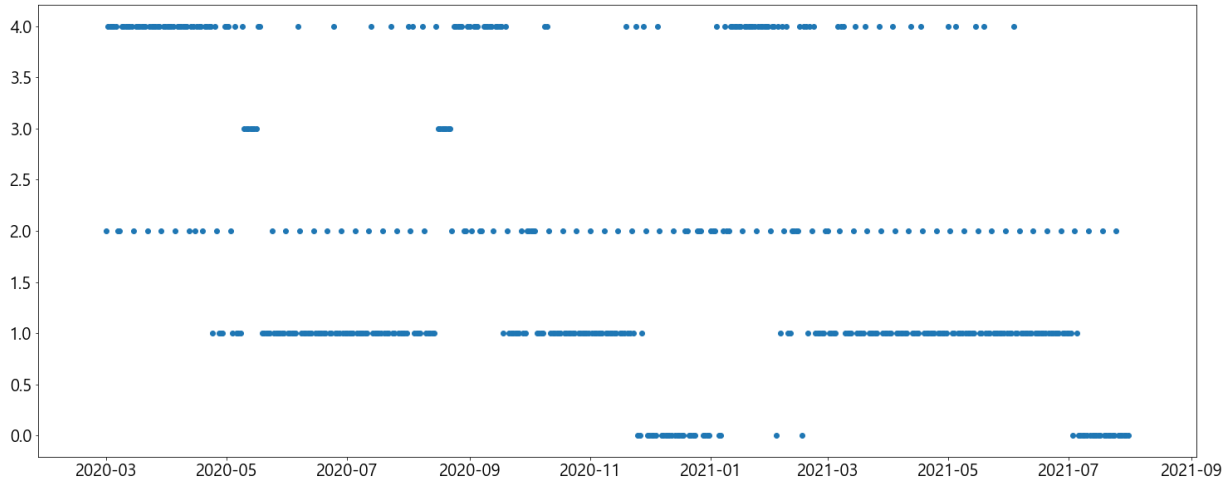
Out[15]: <matplotlib.collections.PathCollection at 0xcb51b31dd8>



파생변수 없이 군집분포

In [16]:
```
plt.figure(figsize =(25, 10))

plt.scatter(df_new['날짜'], df_new['파생변수없이'])
```

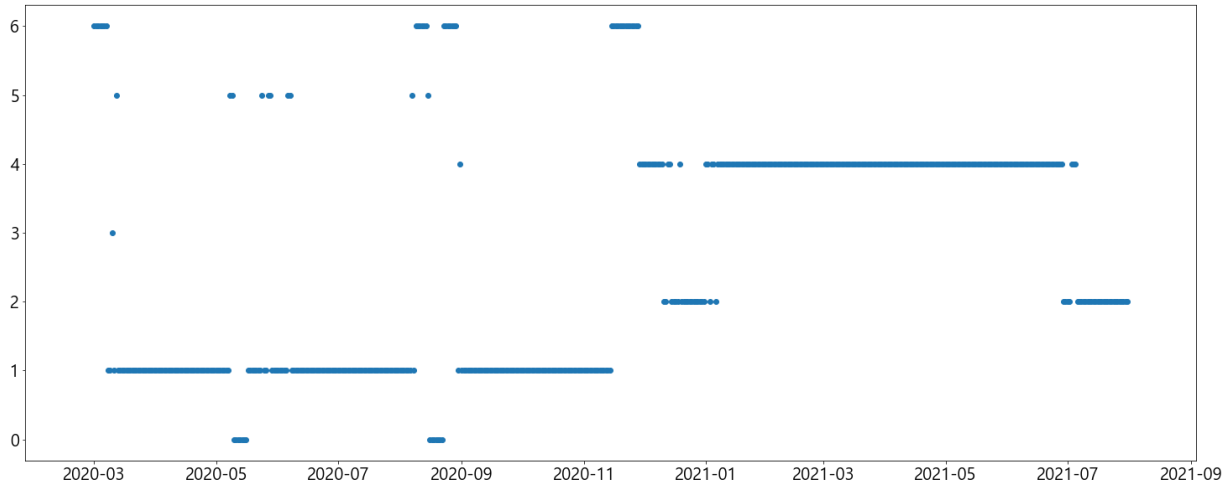
Out[16]: <matplotlib.collections.PathCollection at 0xcb4ba634e0>



감염지표 군집분포

In [17]:
```
plt.figure(figsize =(25, 10))

plt.scatter(df_new['날짜'], df_new['감염지표'])
```

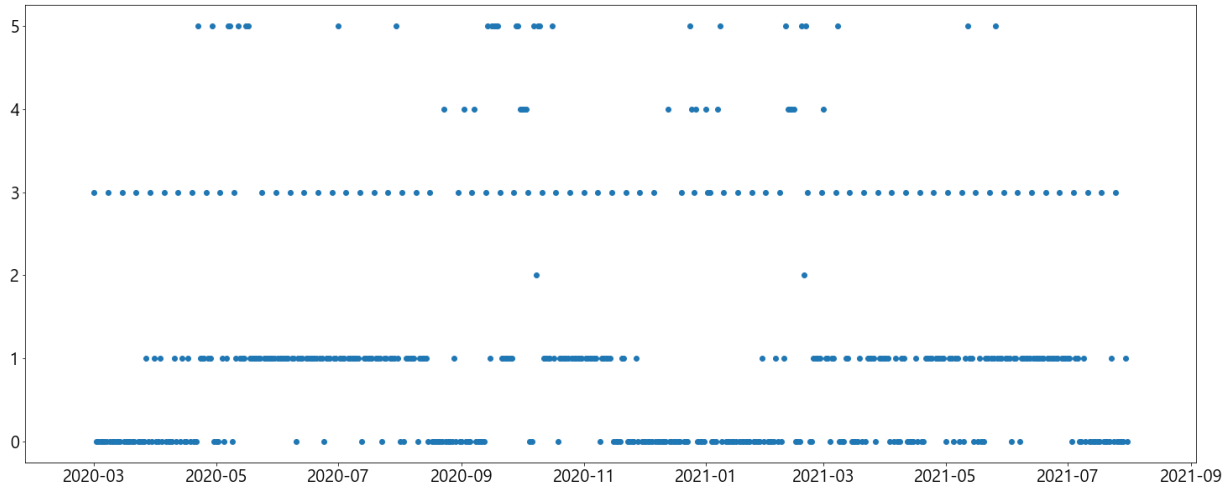
Out[17]: <matplotlib.collections.PathCollection at 0xcb4ba85780>



소상공인 + 군집분포

In [18]:
```
plt.figure(figsize =(25, 10))

plt.scatter(df_new['날짜'], df_new['소상공인'])
```

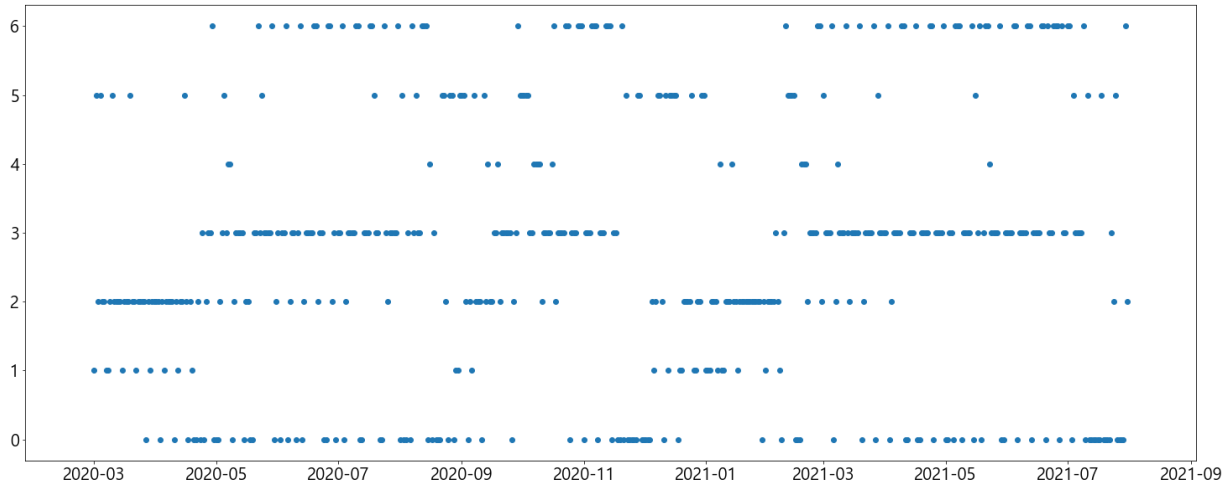
Out[18]: <matplotlib.collections.PathCollection at 0xcb4baeaa20>



유동인구량 군집분포

In [19]:
```
plt.figure(figsize =(25, 10))

plt.scatter(df_new['날짜'], df_new['인구이동'])
```

Out[19]: <matplotlib.collections.PathCollection at 0xcb52d73080>



In [20]:
```
df_agg.groupby('인구이동').mean()[['확진자수', '폐업수', '카드매출액',
'18시 후 카드매출액', '카드매출건수', '유동인구']]
```

Out[20]:

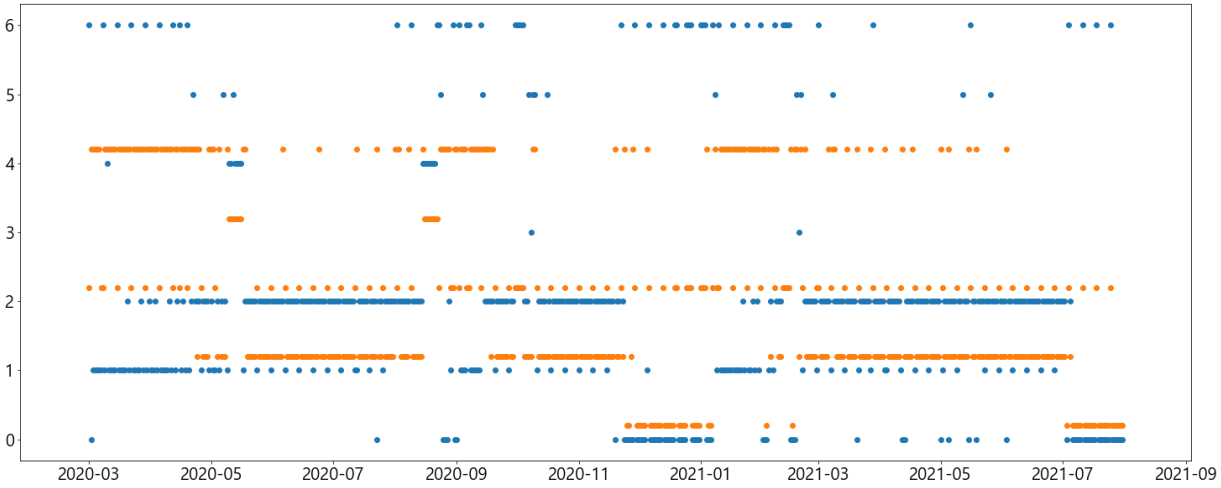
인구이동	확진자수	폐업수	카드매출액	18시 후 카드매출액	카드매출건수	유동인구
0	163.466019	56.825243	2.594951e+11	7.839397e+10	8.851409e+06	1.294451e+07
1	137.666667	4.074074	1.654074e+11	4.987609e+10	6.117860e+06	8.009284e+06
2	96.180000	58.610000	2.364000e+11	7.050614e+10	8.298727e+06	1.184754e+07
3	108.421053	95.223684	2.895921e+11	8.910681e+10	9.856737e+06	1.524356e+07
4	72.647059	54.176471	2.677059e+11	8.435619e+10	9.055180e+06	1.345825e+07
5	160.500000	42.083333	1.987034e+11	5.898833e+10	7.123642e+06	1.012773e+07
6	128.802817	70.985915	3.124507e+11	1.005610e+11	1.024550e+07	1.528791e+07

종합

In [21]:
```
df_new2 = df_new

df_new2['파생변수없이'] = df_new2['파생변수없이']+0.2
df_new2['감염지표'] = df_new2['감염지표'] + 0.4
df_new2['소상공인'] = df_new2['소상공인'] + 0.6
df_new2['인구이동'] = df_new2['인구이동'] + 0.8
```

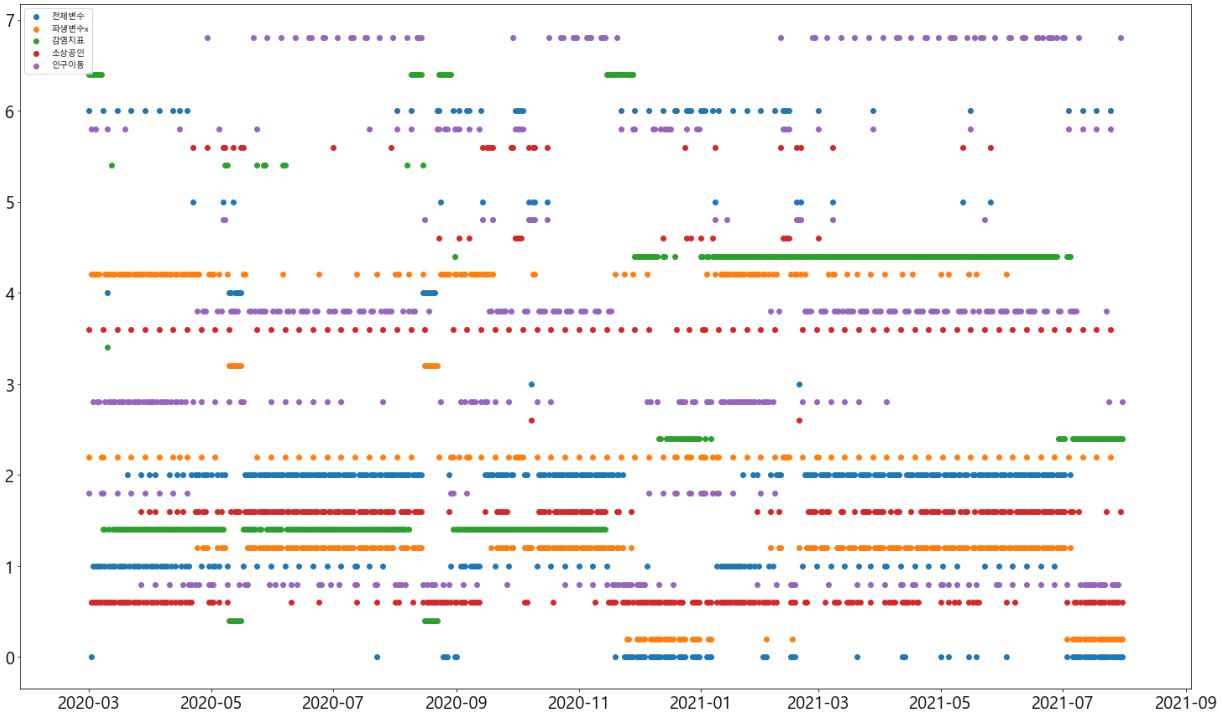
In [22]:
```
plt.figure(figsize =(25, 10))
plt.scatter(df_new['날짜'], df_new['전체변수'])
plt.scatter(df_new['날짜'], df_new['파생변수없이'])
```

Out[22]: <matplotlib.collections.PathCollection at 0xcb52299a58>



In [23]:
```
plt.figure(figsize =(25, 15))
plt.scatter(df_new['날짜'], df_new['전체변수'], label = '전체변수')
plt.scatter(df_new['날짜'], df_new['파생변수없이'], label = '파생변수x')
plt.scatter(df_new['날짜'], df_new['감염지표'], label = '감염지표')
plt.scatter(df_new['날짜'], df_new['소상공인'], label = '소상공인')
plt.scatter(df_new['날짜'], df_new['인구이동'], label = '인구이동')
plt.legend()
```

Out[23]: <matplotlib.legend.Legend at 0xcb5221a7f0>



In [24]:
```
df_new[df_new['파생변수없이'] == 2.2][['파생변수없이']].index
```

Out[24]:
```
Int64Index([  0,   6,   7,  14,  21,  28,  35,  42,  45,  49,  56,  63,  84,
             91,  98, 105, 112, 119, 126, 133, 140, 147, 154, 161, 175, 181,
            182, 185, 189, 190, 196, 203, 210, 213, 214, 215, 216, 217, 224,
            231, 238, 245, 252, 259, 266, 273, 280, 287, 293, 294, 299, 300,
            301, 306, 307, 308, 312, 314, 315, 322, 329, 336, 343, 347, 348,
            349, 350, 357, 364, 365, 371, 378, 385, 392, 399, 406, 413, 420,
            427, 434, 441, 448, 455, 462, 469, 476, 483, 490, 497, 504, 511],
           dtype='int64')
```

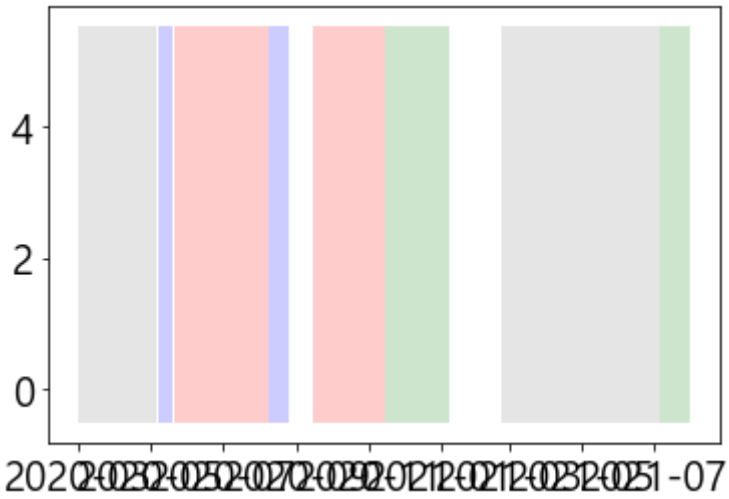
In [25]:
```
for i in df_new[df_new['파생변수없이'] == 2.2][['파생변수없이']].index:
    df_new['파생변수없이'][i] = -1

for i in df_new[df_new['소상공인'] == 3.6][['소상공인']].index:
    df_new['소상공인'][i] = -1

df_new[df_new['파생변수없이'] == 2.2]['파생변수없이'] = -1
df_new[df_new['소상공인'] == 3.6]['소상공인'] = -1

for i in df_new[df_new['전체변수'] == 3][['전체변수']].index:
    df_new['전체변수'][i] = -1

for i in df_new[df_new['소상공인'] == 2.6][['소상공인']].index:
    df_new['소상공인'][i] = -1

for i in df_new[df_new['소상공인'] == 5.6][['소상공인']].index:
    df_new['소상공인'][i] = -1

for i in df_new[df_new['소상공인'] == 4.6][['소상공인']].index:
    df_new['소상공인'][i] = -1
```

```
for i in df_new[df_new['감염지표'] == 5.4][['감염지표']].index:
    df_new['감염지표'][i] = -1

for i in df_new[df_new['인구이동'] == 4.8][['인구이동']].index:
    df_new['인구이동'][i] = -1

for i in df_new[df_new['인구이동'] == 6.8][['인구이동']].index:
    df_new['인구이동'][i] = 3.8

for i in df_new[df_new['인구이동'] == 5.8][['인구이동']].index:
    df_new['인구이동'][i] = 2.8

for i in df_new[df_new['전체변수'] == 5][['전체변수']].index:
    df_new['전체변수'][i] = 6

for i in df_new[df_new['전체변수'] == 6][['전체변수']].index:
    df_new['전체변수'][i] = 5

for i in df_new[df_new['감염지표'] == 6.4][['감염지표']].index:
    df_new['감염지표'][i] = 3.4
```

In [26]:

```
plt.fill_between(df_new['날짜'][67:80], y1 = -0.5, y2 = 5.5, facecolor =
'blue', alpha = 0.2)
plt.fill_between(df_new['날짜'][160:179], y1 = -0.5, y2 = 5.5, facecolor
= 'blue', alpha = 0.2)
plt.fill_between(df_new['날짜'][198:260], y1 = -0.5, y2 = 5.5, facecolor
= 'red', alpha = 0.2)
plt.fill_between(df_new['날짜'][80:161], y1 = -0.5, y2 = 5.5, facecolor
= 'red', alpha = 0.2)
plt.fill_between(df_new['날짜'][259:315], y1 = -0.5, y2 = 5.5, facecolor
= 'green', alpha = 0.2)
plt.fill_between(df_new['날짜'][492:], y1 = -0.5, y2 = 5.5, facecolor =
'green', alpha = 0.2)
plt.fill_between(df_new['날짜'][:67], y1 = -0.5, y2 = 5.5, facecolor =
'gray', alpha = 0.2)
plt.fill_between(df_new['날짜'][358:492], y1 = -0.5, y2 = 5.5, facecolor
= 'gray', alpha = 0.2)
```

Out[26]: <matplotlib.collections.PolyCollection at 0xcb4c8016d8>



In [27]:
```
for i in df_new[df_new['전체변수'] == 2][['전체변수']].index:
    df_new['전체변수'][i] = 3

for i in df_new[df_new['전체변수'] == 1][['전체변수']].index:
    df_new['전체변수'][i] = 2

for i in df_new[df_new['전체변수'] == 0][['전체변수']].index:
    df_new['전체변수'][i] = 1
```

In [28]:
```
for i in df_new[df_new['파생변수없이'] == 4.2][['파생변수없이']].index:
    df_new['파생변수없이'][i] = 1.6

for i in df_new[df_new['파생변수없이'] == 1.2][['파생변수없이']].index:
    df_new['파생변수없이'][i] = 2.6
```

In [29]:
```
for i in df_new[df_new['감염지표'] == 3.4][['감염지표']].index:
    df_new['감염지표'][i] = 4.8

for i in df_new[df_new['감염지표'] == 4.4][['감염지표']].index:
    df_new['감염지표'][i] = 2.8

for i in df_new[df_new['감염지표'] == 1.4][['감염지표']].index:
    df_new['감염지표'][i] = 1.8

for i in df_new[df_new['감염지표'] == 0.4][['감염지표']].index:
    df_new['감염지표'][i] = 3.8

for i in df_new[df_new['감염지표'] == 2.4][['감염지표']].index:
    df_new['감염지표'][i] = 0.8
```

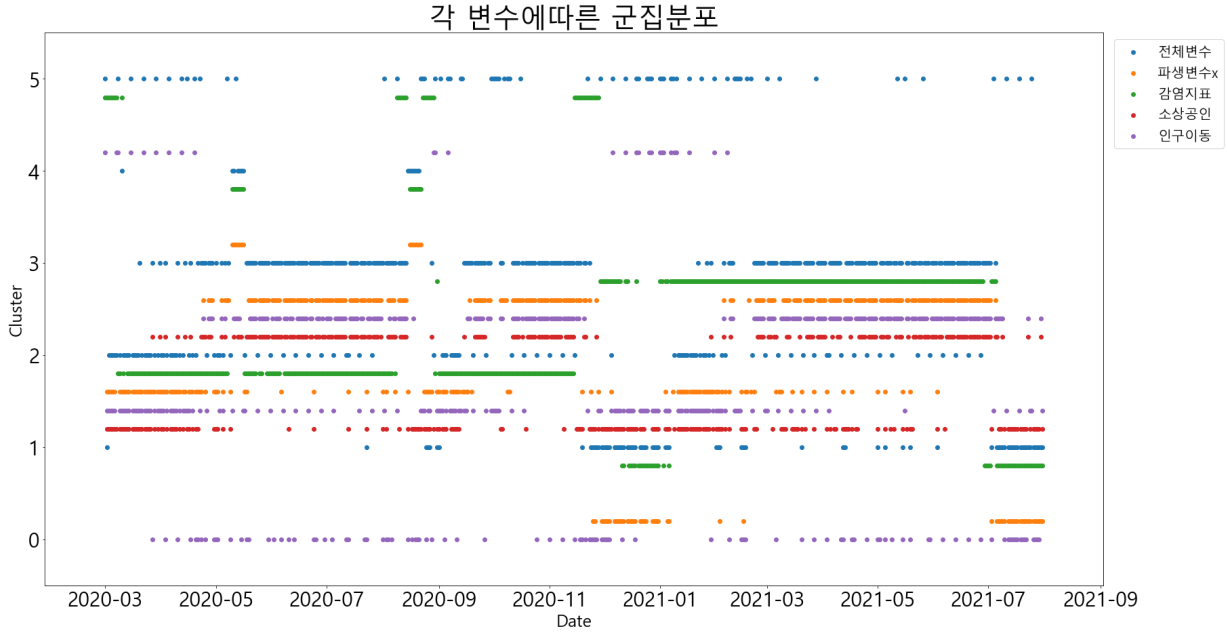
In [30]:
```
for i in df_new[df_new['인구이동'] == 1.8][['인구이동']].index:
    df_new['인구이동'][i] = 4.2

for i in df_new[df_new['인구이동'] == 2.8][['인구이동']].index:
    df_new['인구이동'][i] = 1.4

for i in df_new[df_new['인구이동'] == 3.8][['인구이동']].index:
    df_new['인구이동'][i] = 2.4

for i in df_new[df_new['인구이동'] == 0.8][['인구이동']].index:
    df_new['인구이동'][i] = 0
```

In [31]:
```
for i in df_new[df_new['소상공인'] == 1.6][['소상공인']].index:
    df_new['소상공인'][i] = 2.2
```

In [32]:
```
for i in df_new[df_new['소상공인'] == 0.6][['소상공인']].index:
    df_new['소상공인'][i] = 1.2
```

In [33]:
```
plt.figure(figsize =(28, 15))
plt.scatter(df_new['날짜'], df_new['전체변수'], label = '전체변수')
plt.scatter(df_new['날짜'], df_new['파생변수없이'], label = '파생변수x')
plt.scatter(df_new['날짜'], df_new['감염지표'], label = '감염지표')
plt.scatter(df_new['날짜'], df_new['소상공인'], label = '소상공인')
plt.scatter(df_new['날짜'], df_new['인구이동'], label = '인구이동')



plt.ylim([-0.5,5.5])
plt.xticks(fontsize = 30)
plt.yticks(fontsize = 30)
plt.title('각 변수에따른 군집분포', fontsize = 40)
plt.ylabel('Cluster', fontsize = 25)
plt.xlabel('Date', fontsize = 25)
plt.legend(fontsize = 20, bbox_to_anchor = (1.12, 1))
```

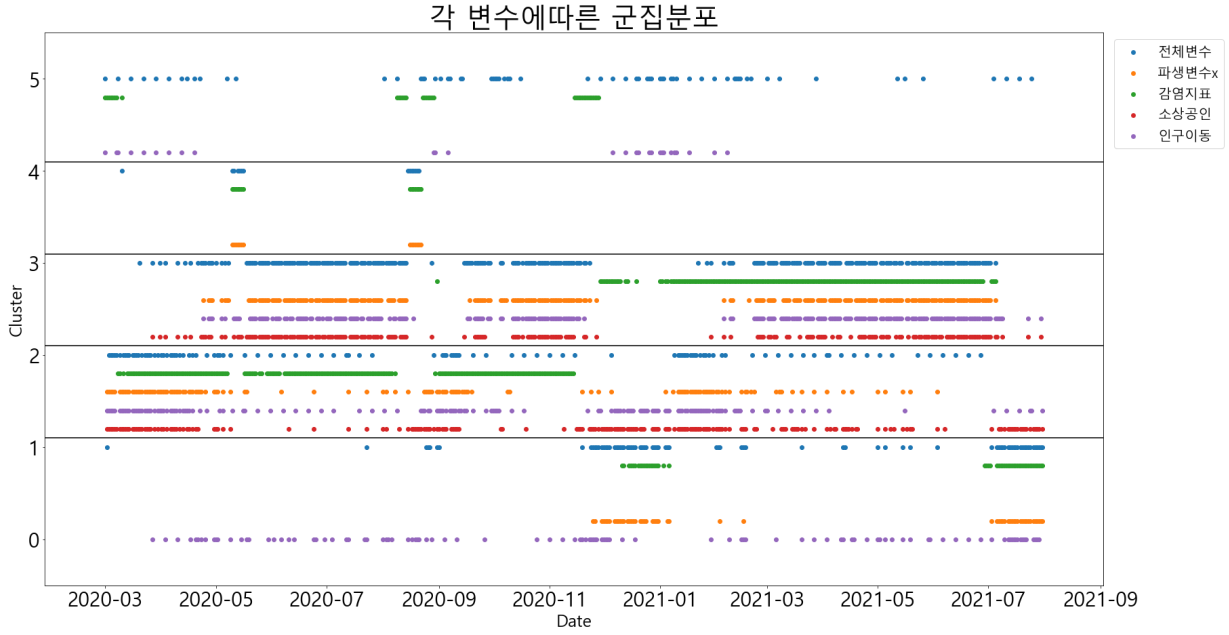
Out[33]: <matplotlib.legend.Legend at 0xcb4c87dd30>



In [34]:

```
plt.figure(figsize =(28, 15))
plt.scatter(df_new['날짜'], df_new['전체변수'], label = '전체변수')
plt.scatter(df_new['날짜'], df_new['파생변수없이'], label = '파생변수x')
plt.scatter(df_new['날짜'], df_new['감염지표'], label = '감염지표')
plt.scatter(df_new['날짜'], df_new['소상공인'], label = '소상공인')
plt.scatter(df_new['날짜'], df_new['인구이동'], label = '인구이동')

plt.axhline(y = 4.1, c = 'black')
plt.axhline(y = 3.1, c = 'black')
plt.axhline(y = 2.1, c = 'black')
plt.axhline(y = 1.1, c = 'black')



plt.ylim([-0.5,5.5])
plt.xticks(fontsize = 30)
plt.yticks(fontsize = 30)
plt.title('각 변수에따른 군집분포', fontsize = 40)
plt.ylabel('Cluster', fontsize = 25)
plt.xlabel('Date', fontsize = 25)
plt.legend(fontsize = 20, bbox_to_anchor = (1.12, 1))
```

Out[34]: <matplotlib.legend.Legend at 0xcb4c8e9c18>



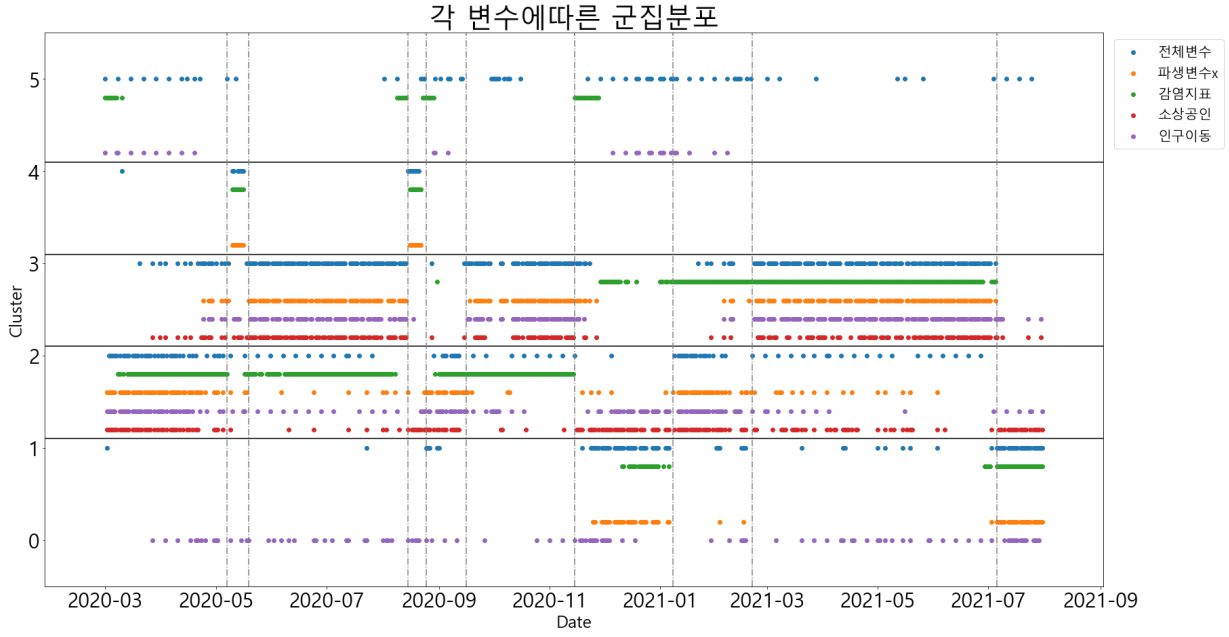
In [42]:
```
df_new['날짜'][67:80]
```

Out[42]:
```
67    2020-05-07
68    2020-05-08
69    2020-05-09
70    2020-05-10
71    2020-05-11
72    2020-05-12
73    2020-05-13
74    2020-05-14
75    2020-05-15
76    2020-05-16
77    2020-05-17
78    2020-05-18
79    2020-05-19
Name: 날짜, dtype: datetime64[ns]
```

In [55]:
```
plt.figure(figsize =(28, 15))
plt.scatter(df_new['날짜'], df_new['전체변수'], label = '전체변수')
plt.scatter(df_new['날짜'], df_new['파생변수없이'], label = '파생변수x')
plt.scatter(df_new['날짜'], df_new['감염지표'], label = '감염지표')
plt.scatter(df_new['날짜'], df_new['소상공인'], label = '소상공인')
plt.scatter(df_new['날짜'], df_new['인구이동'], label = '인구이동')

plt.axhline(y = 4.1, c = 'black')
plt.axhline(y = 3.1, c = 'black')
plt.axhline(y = 2.1, c = 'black')
plt.axhline(y = 1.1, c = 'black')

plt.axvline(x = '2020-05-07', c = 'gray', ls = '-.')
plt.axvline(x = '2020-05-19', c = 'gray', ls = '-.')
plt.axvline(x = '2020-08-15', c = 'gray', ls = '-.')
plt.axvline(x = '2020-08-25', c = 'gray', ls = '-.')
plt.axvline(x = '2020-09-16', c = 'gray', ls = '-.')
plt.axvline(x = '2020-11-15', c = 'gray', ls = '-.')
```

```
plt.axvline(x = '2021-01-08', c = 'gray', ls = '-.')
plt.axvline(x = '2021-02-21', c = 'gray', ls = '-.')
plt.axvline(x = '2021-07-06', c = 'gray', ls = '-.')

plt.ylim([-0.5,5.5])
plt.xticks(fontsize = 30)
plt.yticks(fontsize = 30)
plt.title('각 변수에따른 군집분포', fontsize = 40)
plt.ylabel('Cluster', fontsize = 25)
plt.xlabel('Date', fontsize = 25)
plt.legend(fontsize = 20, bbox_to_anchor = (1.12, 1))
```

Out[55]: <matplotlib.legend.Legend at 0xcb556ad128>



In [56]:
```
df_ind = pd.read_csv('E:₩전체지표1.csv', encoding = 'cp949', parse_dates = ['날짜'])
```

In [57]:
```
df_ind
```

Out[57]:

	날짜	유동인구	이동거리	폐업수	카드매출액	카드매출건수	확진자수	감염지수	감염지표	ᄎ
0	2020-03-01	-2.723383	-3.201881	-1.278597	-2.393347	-2.325570	-0.894051	1.582144	0.344047	-0
1	2020-03-02	-0.691159	-1.476383	3.088007	-0.681780	-0.356203	-0.886599	1.582144	0.347773	-1
2	2020-03-03	-0.674272	-1.563565	0.479637	-0.641508	-0.404988	-0.931311	1.582144	0.325416	-0

	날짜	유동인구	이동거리	폐업수	카드매출액	카드매출건수	확진자수	감염지수	감염지표	ㅅ
3	2020-03-04	-0.839437	-1.588589	0.151176	-0.842868	-0.585614	-0.879147	1.582144	0.351499	-0
4	2020-03-05	-0.695795	-1.416220	0.209140	-0.722052	-0.457359	-0.923859	1.582144	0.329142	-0
5	2020-03-06	-0.459137	-0.774068	-0.157964	-0.218650	0.053735	-0.879147	1.582144	0.351499	0
6	2020-03-07	-1.411448	-1.827342	-1.278597	-0.581099	-0.661062	-0.879147	1.582144	0.351499	0
7	2020-03-08	-2.268955	-2.517430	-1.259276	-2.453755	-2.088770	-0.856790	-0.834149	-0.845469	-0
8	2020-03-09	-0.426327	-1.100277	0.267103	-0.742188	-0.092212	-0.737557	-0.834149	-0.785853	-0
9	2020-03-10	-1.002048	-1.597335	0.131855	-0.842868	-0.678034	-0.588515	-0.834149	-0.711332	-0
10	2020-03-11	-0.515285	-1.166553	0.015927	-0.621372	-0.117607	-0.804626	-0.834149	-0.819387	-0
11	2020-03-12	-0.552757	-1.114059	0.189818	-0.762324	-0.155004	-0.841886	-0.834149	-0.838017	-0
12	2020-03-13	-0.464928	-0.544988	-0.235249	-0.178378	0.210436	-0.864243	-0.834149	-0.849196	0
13	2020-03-14	-1.328184	-1.476672	-1.278597	-0.440147	-0.334658	-0.871695	-0.834149	-0.852922	0
14	2020-03-15	-2.422617	-2.507333	-1.278597	-2.252394	-2.102586	-0.886599	-1.187299	-1.036949	-0
15	2020-03-16	-0.511394	-1.105887	0.576243	-0.802596	-0.257586	-0.849338	-1.187299	-1.018319	-0
16	2020-03-17	-0.549703	-1.236393	0.518280	-0.621372	-0.258313	-0.886599	-1.187299	-1.036949	-0
17	2020-03-18	-0.284221	-1.024655	0.440995	-0.560963	-0.012481	-0.849338	-1.187299	-1.018319	-0
18	2020-03-19	-0.842587	-1.302102	0.344388	-0.782460	-0.433510	-0.804626	-1.187299	-0.995962	-0
19	2020-03-20	-0.141432	-0.258468	0.943347	-0.017289	0.396293	-0.804626	-1.187299	-0.995962	-0
20	2020-03-21	-1.037741	-1.203264	-1.278597	-0.359603	-0.173421	-0.871695	-1.187299	-1.029497	0
21	2020-03-22	-2.028874	-2.007976	-1.278597	-2.312802	-1.866517	-0.886599	-0.611106	-0.748852	-0
22	2020-03-23	-0.295957	-0.892122	0.576243	-0.560963	0.005866	-0.886599	-0.611106	-0.748852	-0
23	2020-03-24	-0.239927	-0.973246	0.344388	-0.500555	0.019772	-0.834434	-0.611106	-0.722770	-0

	날짜	유동인구	이동거리	폐업수	카드매출액	카드매출건수	확진자수	감염지수	감염지표	ㅅ
24	2020-03-25	-0.155260	-0.871539	0.189818	-0.339466	0.201507	-0.834434	-0.611106	-0.722770	-0
25	2020-03-26	-0.392231	-1.005775	0.383031	-0.379739	-0.021854	-0.826982	-0.611106	-0.719044	-0
26	2020-03-27	-0.180903	-0.300708	0.093212	0.365296	0.510555	-0.819530	-0.611106	-0.715318	0
27	2020-03-28	-1.011720	-1.127548	-1.278597	-0.279058	-0.162045	-0.767365	-0.611106	-0.689236	0
28	2020-03-29	-1.880289	-1.939445	-1.259276	-2.051033	-1.674367	-0.767365	-0.443824	-0.605595	-0
29	2020-03-30	-0.207890	-0.830485	0.672850	-0.158242	0.091133	-0.789722	-0.443824	-0.616773	-0
...	...	...	...	...	...	...	...	...	...	
488	2021-07-02	1.565404	1.891970	0.924026	1.331828	1.407020	1.743994	0.206716	0.975355	0
489	2021-07-03	-0.189327	0.688269	-1.220634	0.244480	-0.266779	1.222346	0.206716	0.714531	0
490	2021-07-04	-1.333490	-0.530197	-1.239955	-1.567767	-1.599027	1.356484	0.281064	0.818774	-0
491	2021-07-05	1.321163	0.775094	0.402352	0.747882	0.759547	1.453362	0.281064	0.867213	0
492	2021-07-06	1.376369	0.627708	0.498958	0.667337	0.828605	3.405813	0.281064	1.843438	0
493	2021-07-07	1.121108	0.425805	0.170497	0.405568	0.504112	3.167345	0.281064	1.724204	0
494	2021-07-08	0.909343	0.369486	0.479637	0.284752	0.457851	2.817096	0.281064	1.549080	-0
495	2021-07-09	1.048622	1.194453	0.035248	0.647201	0.832856	2.861809	0.281064	1.571436	0
496	2021-07-10	-0.330011	0.125644	-1.220634	0.103527	-0.031817	2.861809	0.281064	1.571436	0
497	2021-07-11	-1.508500	-0.793160	-1.220634	-2.091305	-1.889170	2.071886	0.429759	1.250822	-0
498	2021-07-12	0.374470	0.000278	0.440995	-0.218650	0.183669	2.176216	0.429759	1.302987	-0
499	2021-07-13	0.347679	-0.191092	-0.100001	-0.097834	0.191197	3.815678	0.429759	2.122718	0
500	2021-07-14	0.203236	-0.167967	0.035248	-0.097834	0.200777	2.936330	0.429759	1.683044	0
501	2021-07-15	0.092271	-0.136517	-0.042037	-0.138106	0.026893	3.308935	0.429759	1.869347	-0

	날짜	유동인구	이동거리	폐업수	카드매출액	카드매출건수	확진자수	감염지수	감염지표	ㅅ
502	2021-07-16	0.263252	0.643496	-0.196607	0.445841	0.440825	3.234414	0.429759	1.832086	C
503	2021-07-17	-0.739233	-0.355175	-1.239955	-0.198514	-0.222625	2.958686	0.429759	1.694222	C
504	2021-07-18	-1.812349	-1.044457	-1.278597	-1.910081	-1.692195	2.191120	0.002261	1.096690	-C
505	2021-07-19	0.172608	-0.072505	0.189818	-0.117970	-0.040306	2.004817	0.002261	1.003539	-C
506	2021-07-20	0.333431	-0.136599	-0.022716	0.264616	0.237987	3.569759	0.002261	1.786010	C
507	2021-07-21	0.259261	-0.094832	-0.409141	0.244480	0.303183	2.787288	0.002261	1.394774	C
508	2021-07-22	0.153115	-0.016845	-0.003394	0.143799	0.201664	2.936330	0.002261	1.469295	C
509	2021-07-23	0.317857	0.743321	0.286425	0.788154	0.650824	2.533916	0.002261	1.268089	C
510	2021-07-24	-0.814211	-0.298980	-1.259276	-0.138106	-0.188402	2.712767	0.002261	1.357514	C
511	2021-07-25	-2.002721	-1.076431	-1.220634	-2.191986	-1.903596	1.609856	-0.090674	0.759591	-C
512	2021-07-26	0.073591	-0.093127	0.073891	0.163936	0.345525	1.684377	-0.090674	0.796851	C
513	2021-07-27	-0.005923	-0.374328	3.493753	0.586793	0.286545	3.338744	-0.090674	1.624035	-1
514	2021-07-28	0.176837	0.075075	-0.235249	0.365296	0.228376	2.899070	-0.090674	1.404198	C
515	2021-07-29	0.156095	0.231357	0.325067	0.465977	0.248219	2.705315	-0.090674	1.307321	C
516	2021-07-30	0.260614	1.025854	0.189818	1.090195	0.605825	2.608438	-0.090674	1.258882	C
517	2021-07-31	-1.004317	-0.363758	-0.872851	-0.178378	-0.347440	2.593533	-0.090674	1.251430	C

518 rows × 20 columns

In [58]:
```
col = ['확진자수', '감염지수', '감염지표', '폐업수', '카드매출액', '카드매출건수', '소상공인지표', '유동인구', '이동거리', '인구이동량지표', '전체지표', '최종클러스터']
df_ind = df_ind[col]
```

In [59]:
```
coll =  ['확진자수', '감염지수', '감염지표', '폐업수', '카드매출액', '카
```

```
드매출건수', '소상공인지표', '유동인구', '이동거리', '인구이동량지표',
'전체지표']
```

In [60]:
```
a = df_ind.groupby('최종클러스터').mean()
```

In [61]:
```
a
```

Out[61]:

최종클러스터	확진자수	감염지수	감염지표	폐업수	카드매출액	카드매출건수	소상공인지표	유동인구	이동거리
1	-0.678392	-0.195999	-0.437195	-0.105855	-0.476148	-0.226583	-0.122755	-0.592292	-0.810026
2	-0.765875	2.662971	0.948548	-0.181150	0.262602	0.483923	0.277206	0.075860	0.298527
3	-0.777301	-0.145380	-0.461341	-0.030526	0.316094	0.529391	0.226634	0.333047	0.480019
4	1.595517	0.190717	0.893117	0.127208	-0.334369	-0.640476	-0.307315	-0.607234	-0.655800
5	0.447382	-0.126481	0.160451	0.126598	0.299410	0.194681	0.060224	0.636006	0.655687
6	0.120648	-0.260981	-0.070167	-0.206043	-0.395054	-0.878372	-0.215335	-0.659659	-0.716882

In [ ]:
```

```