데이터 EDA_카드결제 데이터

In [1]:
```
import numpy as np
import pandas as pd

import matplotlib as mpl
import matplotlib.pyplot as plt
import seaborn as sns

# font 설정
from matplotlib import font_manager, rc
font_name = font_manager.FontProperties(fname="c:/Windows/Fonts/malgun.ttf").get_name
rc('font', family=font_name)

import warnings
warnings.filterwarnings(action='ignore')
```

In [2]:
```
# 카드결제 데이터 불러오기
card_df = pd.read_csv('04_음식관련 카드소비_CARD_SPENDING.csv',encoding='cp949',parse
card_df.info()
card_df.head()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 544805 entries, 0 to 544804
Data columns (total 8 columns):
 #   Column      Non-Null Count   Dtype
---  ------      --------------   -----
 0   base_date   544805 non-null  datetime64[ns]
 1   city        544805 non-null  object
 2   emd_cd      544805 non-null  object
 3   emd_nm      544805 non-null  object
 4   mct_cat_cd  544805 non-null  object
 5   mct_cat_nm  544805 non-null  object
 6   use_cnt     544805 non-null  int64
 7   use_amt     544805 non-null  int64
dtypes: datetime64[ns](1), int64(2), object(5)
memory usage: 33.3+ MB
```

Out[2]:

	base_date	city	emd_cd	emd_nm	mct_cat_cd	mct_cat_nm	use_cnt	use_amt
0	2018-01-06	제주시	50110650	연동	C00100	한식	3643	127777300
1	2018-01-09	제주시	50110650	연동	C00500	패스트푸드	432	6711675
2	2018-01-15	제주시	50110650	연동	C01200	농축수산물	236	16089579
3	2018-01-15	제주시	50110650	연동	A00200	마트/슈퍼마켓	4031	121979867
4	2018-01-20	제주시	50110650	연동	C01000	식품	633	30410674

In [3]:
```
card_df.loc[card_df['emd_nm']=='알수없음','city'] = '알수없음'
card_df.rename(columns={"emd_nm" : "location"}, inplace=True) # city -> location으로
card_df = card_df.drop({'city','emd_cd','mct_cat_cd','use_cnt'},axis=1)
```

In [4]:
```
# base_date 0000_00 형태로 변환
card_df = card_df.set_index('base_date')
card_df['month']=card_df.index.month
card_df['year']=card_df.index.year
```

```
card_df['month'] =card_df['month'].apply(lambda x: "{:0>2d}".format(x))
card_df['year']=card_df['year'].astype('str')
card_df['month']=card_df['month'].astype('str')
card_df['base_date'] = card_df['year']+'_'+card_df['month']
card_df.head()
```

Out[4]:

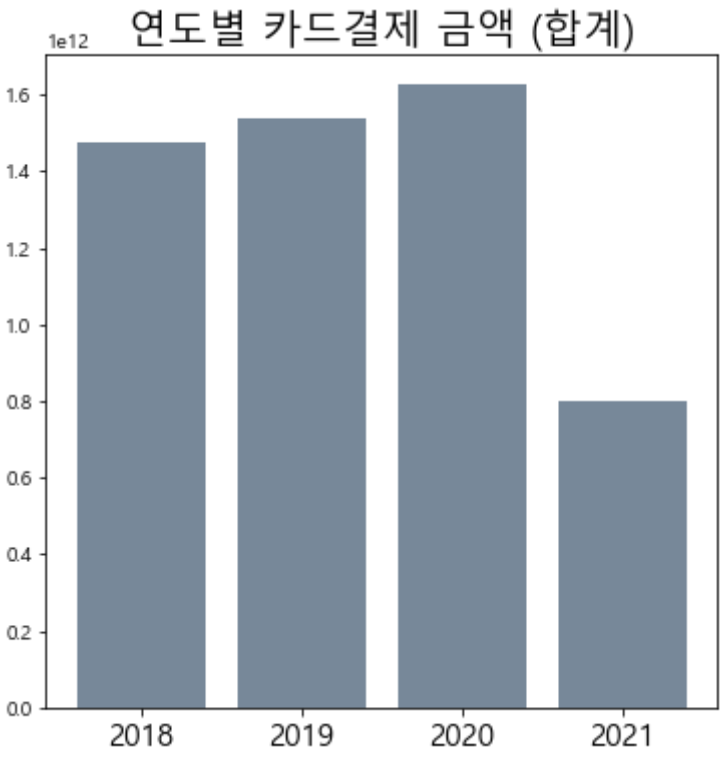
base_date	location	mct_cat_nm	use_amt	month	year	base_date
2018-01-06	연동	한식	127777300	01	2018	2018_01
2018-01-09	연동	패스트푸드	6711675	01	2018	2018_01
2018-01-15	연동	농축수산물	16089579	01	2018	2018_01
2018-01-15	연동	마트/슈퍼마켓	121979867	01	2018	2018_01
2018-01-20	연동	식품	30410674	01	2018	2018_01

In [5]:
```
card_df = card_df.reset_index(drop=True) # index의 base_date 제거
```

In [6]:
```
# 연도별, 월별 배출량 그룹화
card_df_y = card_df.groupby(['year']).sum().reset_index()
card_df_m = card_df.groupby(['base_date']).sum().reset_index()
```

In [7]:
```
plt.figure(figsize=(6,6))
plt.rc('xtick',labelsize=15)
plt.title("연도별 카드결제 금액 (합계)",fontsize=20)
plt.bar(card_df_y.year, card_df_y.use_amt,color='lightslategrey')
# plt.savefig('y_card.png')
```

Out[7]:
```
<BarContainer object of 4 artists>
```

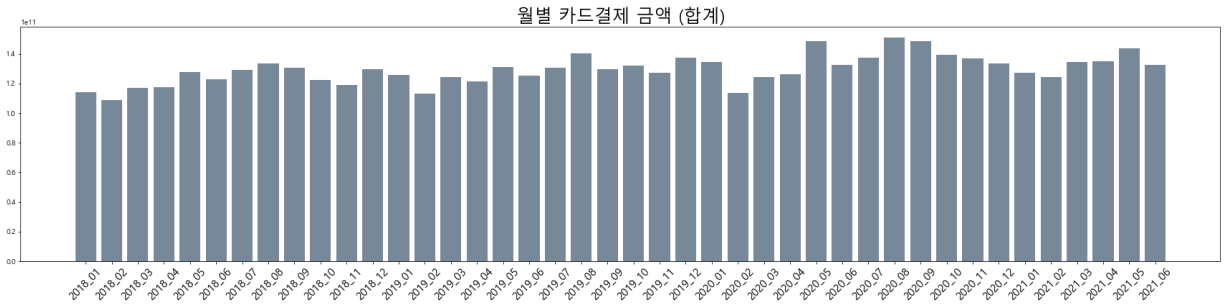


In [8]:
```
plt.figure(figsize=(30,6))
plt.rc('xtick',labelsize=15)
```

```
plt.xticks(rotation=45)
plt.title("월별 카드결제 금액 (합계)",fontsize=25)
plt.bar(card_df_m.base_date, card_df_m.use_amt,color='lightslategrey')
# plt.savefig('m_card.png')
```

Out[8]:

```
<BarContainer object of 42 artists>
```



In [9]:

```
# 지역별 그룹화
card_df_l = card_df.groupby(['base_date','location']).sum().reset_index()
card_df_l
```

Out[9]:

	base_date	location	use_amt
0	2018_01	건입동	2024688672
1	2018_01	구좌읍	1437171016
2	2018_01	남원읍	1878298705
3	2018_01	노형동	12301257150
4	2018_01	대륜동	2414501385
...	...	...	...
1843	2021_06	표선면	1480487884
1844	2021_06	한경면	1096266339
1845	2021_06	한림읍	3090858420
1846	2021_06	화북동	4982321182
1847	2021_06	효돈동	864786389

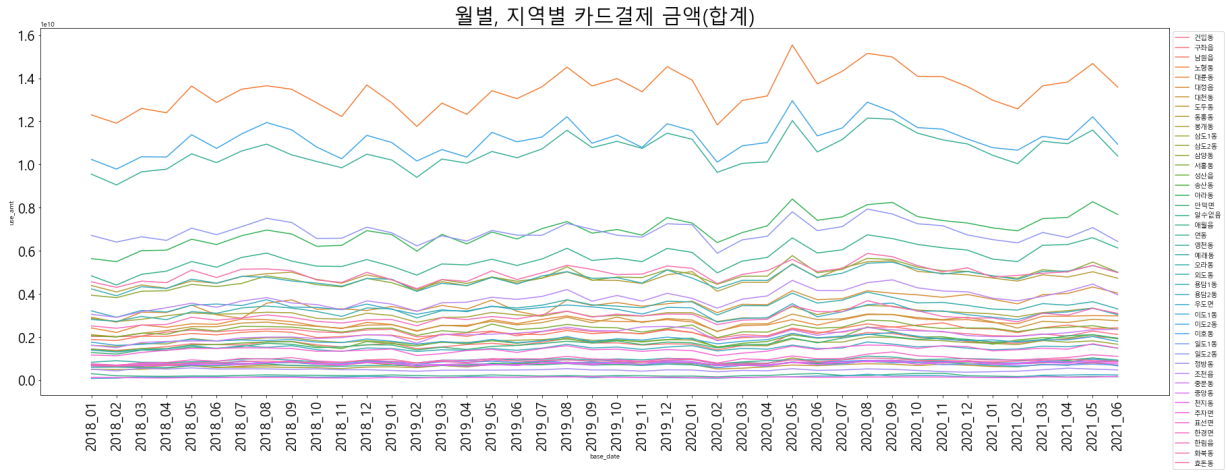
1848 rows × 3 columns

In [10]:

```
# 지역별, 월별 배출량 그래프

g = sns.lineplot(x="base_date", y="use_amt", hue="location",data = card_df_l)

g.figure.set_figwidth(30)
g.figure.set_figheight(10)

plt.xticks(rotation = 90, fontsize = 20)  # x축 눈금
plt.yticks(fontsize = 20)  # y축 눈금

g.set_title("월별, 지역별 카드결제 금액(합계)", fontsize = 30)

plt.legend(bbox_to_anchor = (1,1))  # 범례 위치
# plt.savefig('l_card.png')
```

Out[10]:

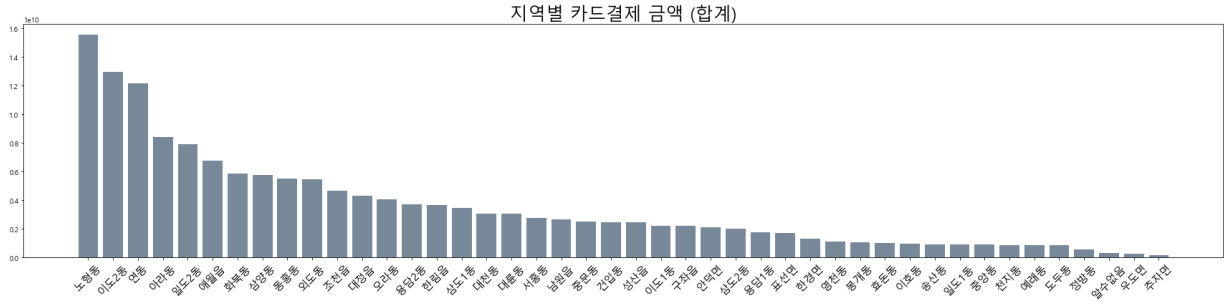
```
<matplotlib.legend.Legend at 0x1fc608ecac0>
```



In [11]:
```
# 오름차순 정렬
card_df_l = card_df_l.sort_values(by=['use_amt'], axis=0,ascending=False)
```

In [12]:
```
plt.figure(figsize=(30,6))
plt.rc('xtick',labelsize=15)
plt.xticks(rotation=45)
plt.title("지역별 카드결제 금액 (합계)",fontsize=25)
plt.bar(card_df_l.location, card_df_l.use_amt,color='lightslategrey')
# plt.savefig('ll_card.png')
```

Out[12]:
```
<BarContainer object of 1848 artists>
```



In [13]:
```
# 업종별 그룹화
card_df_c = card_df.groupby(['base_date','mct_cat_nm']).sum().reset_index()
card_df_c
```

Out[13]:

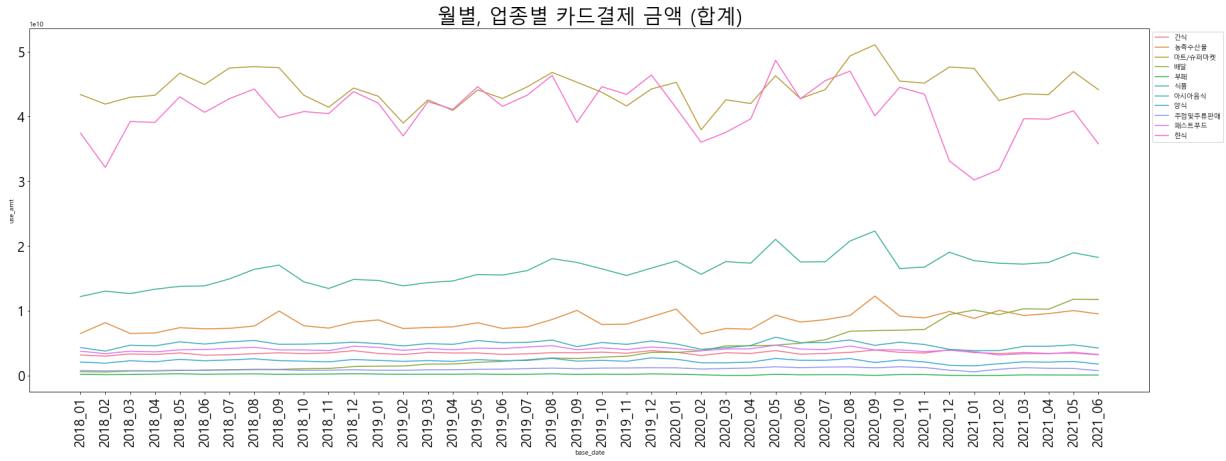
	base_date	mct_cat_nm	use_amt
0	2018_01	간식	3168683747
1	2018_01	농축수산물	6486446458
2	2018_01	마트/슈퍼마켓	43372633639
3	2018_01	배달	586618998
4	2018_01	부페	172514668
...	...	...	...
457	2021_06	아시아음식	4246061912
458	2021_06	양식	1756326724
459	2021_06	주점및주류판매	739915956
460	2021_06	패스트푸드	3233713856

	base_date	mct_cat_nm	use_amt
461	2021_06	한식	35778901024

462 rows × 3 columns

In [14]:
```
# 지역별, 월별 배출량 그래프

g = sns.lineplot(x="base_date", y="use_amt", hue="mct_cat_nm",data = card_df_c)

g.figure.set_figwidth(30)
g.figure.set_figheight(10)

plt.xticks(rotation = 90, fontsize = 20)  # x축 눈금
plt.yticks(fontsize = 20)  # y축 눈금

g.set_title("월별, 업종별 카드결제 금액 (합계)", fontsize = 30)

plt.legend(bbox_to_anchor = (1,1))  # 범례 위치
# plt.savefig('c_card.png')
```

Out[14]:
```
<matplotlib.legend.Legend at 0x1fc60677f10>
```



In [15]:
```
# 업종별 그룹화
card_df_cat = card_df.groupby(['mct_cat_nm']).sum().reset_index()
card_df_cat = card_df_cat.sort_values(by=['use_amt'], axis=0,ascending=False)
card_df_cat
```

Out[15]:

	mct_cat_nm	use_amt
2	마트/슈퍼마켓	1860801386448
10	한식	1712186420486
5	식품	685085950757
1	농축수산물	351475488512
6	아시아음식	201226534261
3	배달	170647358144
9	패스트푸드	166987679445
0	간식	144865710255
7	양식	93182213106

	mct_cat_nm	use_amt
8	주점및주류판매	41543590921
4	부페	6324510830

In [16]:

```
plt.figure(figsize=(20,6))
plt.rc('xtick',labelsize=15)
plt.title("업종별 카드결제 금액 (합계)",fontsize=25)
plt.bar(card_df_cat.mct_cat_nm, card_df_cat.use_amt,color='lightslategrey')
# plt.savefig('cat_card.png')
```

Out[16]: <BarContainer object of 11 artists>