



Data Analysis Report

Analysis of the Total Population Against the Number of MSMEs
in West Java



Member



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19622160

Panji Sri Kuncara Wisma

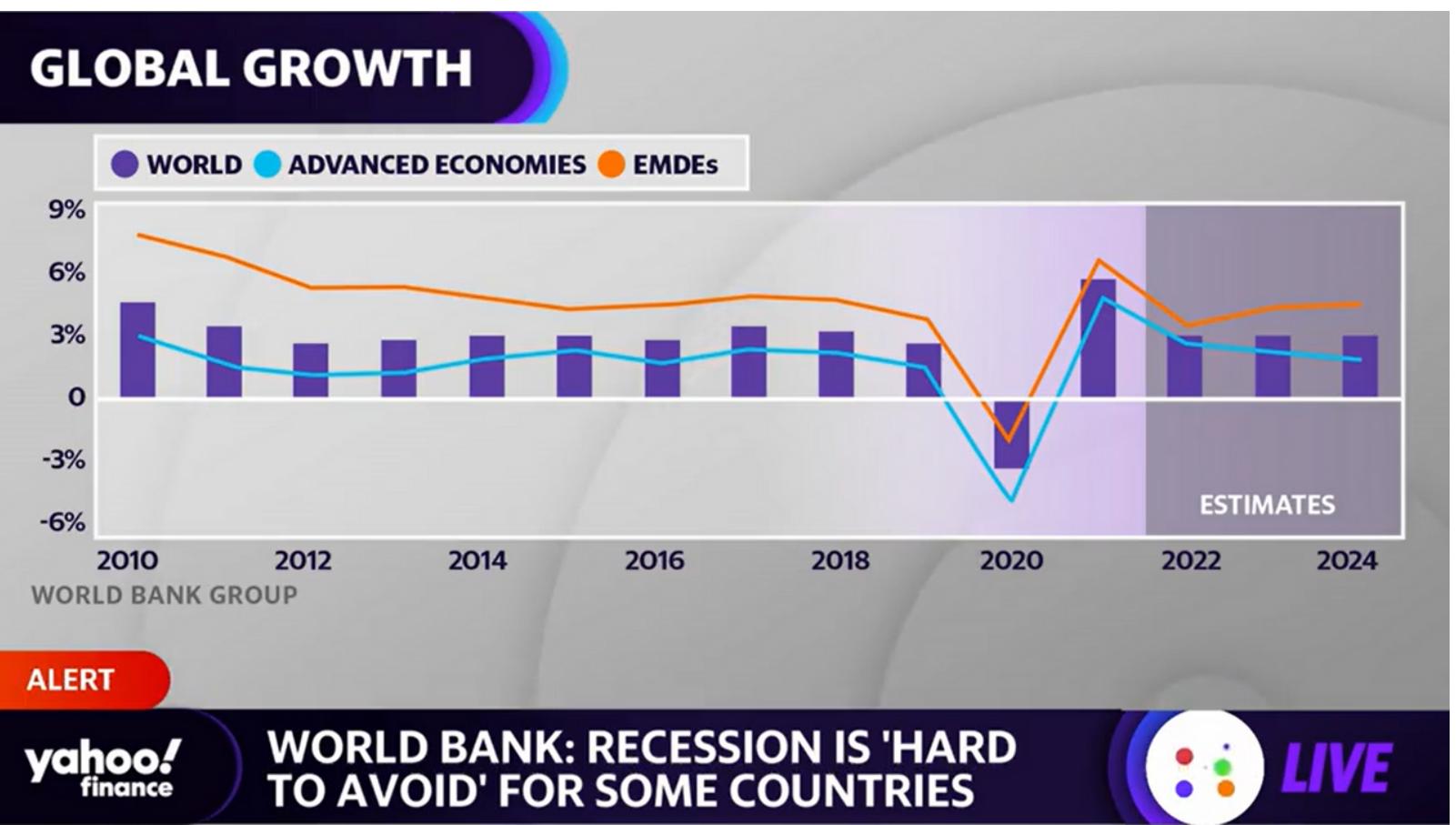
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Syaugi Adhia Feriyaldi

16522070

Tiffany Angel Darmadi

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TEMPO.CO, Jakarta - Finance Minister Sri Mulyani Indrawati highlighted that the threat of a recession lurking in the global economy in 2023 could occur due to various factors, ranging from climate change to rising geopolitical tensions.

en.tempo.co/read/1650553/

Background



Coordinating Minister for Economic Affairs, Airlangga Hartarto, delivers a speech at the launch of the 'Inclusive Partnership Movement for MSMEs' (micro, small, and medium enterprises) at SMESCO Building, Jakarta, on Monday (October 3, 2022).
 (ANTARA/HO-Setpres/Muchlis Jr/am)

Jakarta (ANTARA) - Micro, small, and medium enterprises (MSMEs) are supporting economic resilience, with their contribution to the gross domestic product (GDP) reaching 61.07 percent or Rp8,574 trillion in 2021, Coordinating Minister for Economic Affairs, Airlangga Hartarto, has said.

"MSMEs had a number of business sectors in 2021, which reached 64.19 million, and contributed up to 61.07 percent or Rp 8,574 trillion to the GDP," he noted in Jakarta on Monday.

en.antaranews.com/news/252977/



Data Sources

Topik ▾ Dataset Organisasi Portal Data Kab/Kota Visualisasi Infografik Artikel Bantuan ?



Tools



Goals



Trends in data about
the growth of the
population and the
number of MSMEs



The MSME categories
that have the greatest
number



Relationship between
the population and
the number of MSMEs

Data Cleansing



	nama_kabupaten_kota	jenis_kelamin	jumlah_penduduk	tahun
0	KABUPATEN BOGOR	LAKI-LAKI	1930902	2013
1	KABUPATEN BOGOR	PEREMPUAN	1826962	2013
2	KABUPATEN SUKABUMI	LAKI-LAKI	1258939	2013
3	KABUPATEN SUKABUMI	PEREMPUAN	1171101	2013
4	KABUPATEN CIANJUR	LAKI-LAKI	1154944	2013
...
481	KOTA CIMAHI	PEREMPUAN	278989	2021
482	KOTA TASIKMALAYA	LAKI-LAKI	371511	2021
483	KOTA TASIKMALAYA	PEREMPUAN	360095	2021
484	KOTA BANJAR	LAKI-LAKI	103374	2021
485	KOTA BANJAR	PEREMPUAN	102358	2021

```
df_pdk = pd.pivot_table(df_pdk, values = 'jumlah',
index=['kabupaten/kota','tahun'], columns = 'jenis_kelamin')
```

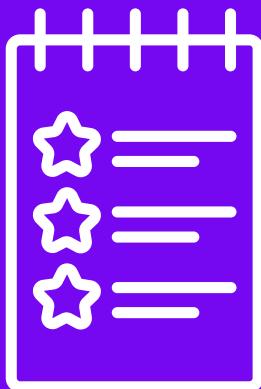
	regency/city	year	male	female	total
0	Regency Of Bandung	2017	1804745	1720404	3525149
1	Regency Of Bandung	2018	1803113	1732879	3535992
2	Regency Of Bandung	2019	1817407	1744272	3561679
3	Regency Of Bandung	2020	1824524	1758532	3583056
4	Regency Of Bandung	2021	1849361	1784076	3633437
...
130	City Of Tasikmalaya	2017	354084	340526	694610
131	City Of Tasikmalaya	2018	362388	351157	713545
132	City Of Tasikmalaya	2019	365766	354116	719882
133	City Of Tasikmalaya	2020	368850	356711	725561
134	City Of Tasikmalaya	2021	371511	360095	731606

	nama_kabupaten_kota	kategori_usaha	jumlah_umkm	tahun
0	KABUPATEN BOGOR	AKSESORIS	927	2017
1	KABUPATEN BOGOR	BATIK	927	2017
2	KABUPATEN BOGOR	BORDIR	132	2017
3	KABUPATEN BOGOR	CRAFT	33111	2017
4	KABUPATEN BOGOR	FASHION	32316	2017
...
1345	KOTA BANJAR	KONVEKSI	1732	2021
1346	KOTA BANJAR	KULINER	12510	2021
1347	KOTA BANJAR	MAKANAN	9150	2021
1348	KOTA BANJAR	MINUMAN	1698	2021
1349	KOTA BANJAR	JASA/LAINNYA	3953	2021

```
df_pdk = pd.pivot_table(df_pdk, values = 'jumlah',
index=['kabupaten/kota','tahun'], columns = 'jenis_kelamin'))
```

	regency/city	year	accessories	batik	embroidery	craft	fashion	services/other	convection	culinary	food	beverage	total
0	Regency of Bandung	2017	873	873	125	31188	30440	42416	18588	134235	98181	18214	375133
1	Regency of Bandung	2018	927	927	132	33118	32323	45041	19738	142541	104256	19341	398344
2	Regency of Bandung	2019	985	985	141	35167	34323	47828	20960	151360	110707	20538	422994
3	Regency of Bandung	2020	1046	1046	149	37343	36447	50787	22257	160725	117556	21808	449164
4	Regency of Bandung	2021	1110	1110	159	39654	38702	53929	23634	170669	124830	23158	476955
...
130	City of Tasikmalaya	2017	225	225	32	8044	7851	10940	4794	34620	25322	4698	96751
131	City of Tasikmalaya	2018	239	239	34	8541	8336	11616	5091	36762	26888	4988	102734
132	City of Tasikmalaya	2019	254	254	36	9070	8852	12335	5406	39037	28552	5297	109093
133	City of Tasikmalaya	2020	270	270	39	9631	9400	13098	5740	41452	30319	5625	115844
134	City of Tasikmalaya	2021	286	286	41	10227	9982	13909	6095	44017	32195	5973	123011

Description



	regency/city	year	male	female	total
0	Regency Of Bandung	2017	1804745	1720404	3525149
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Statistic



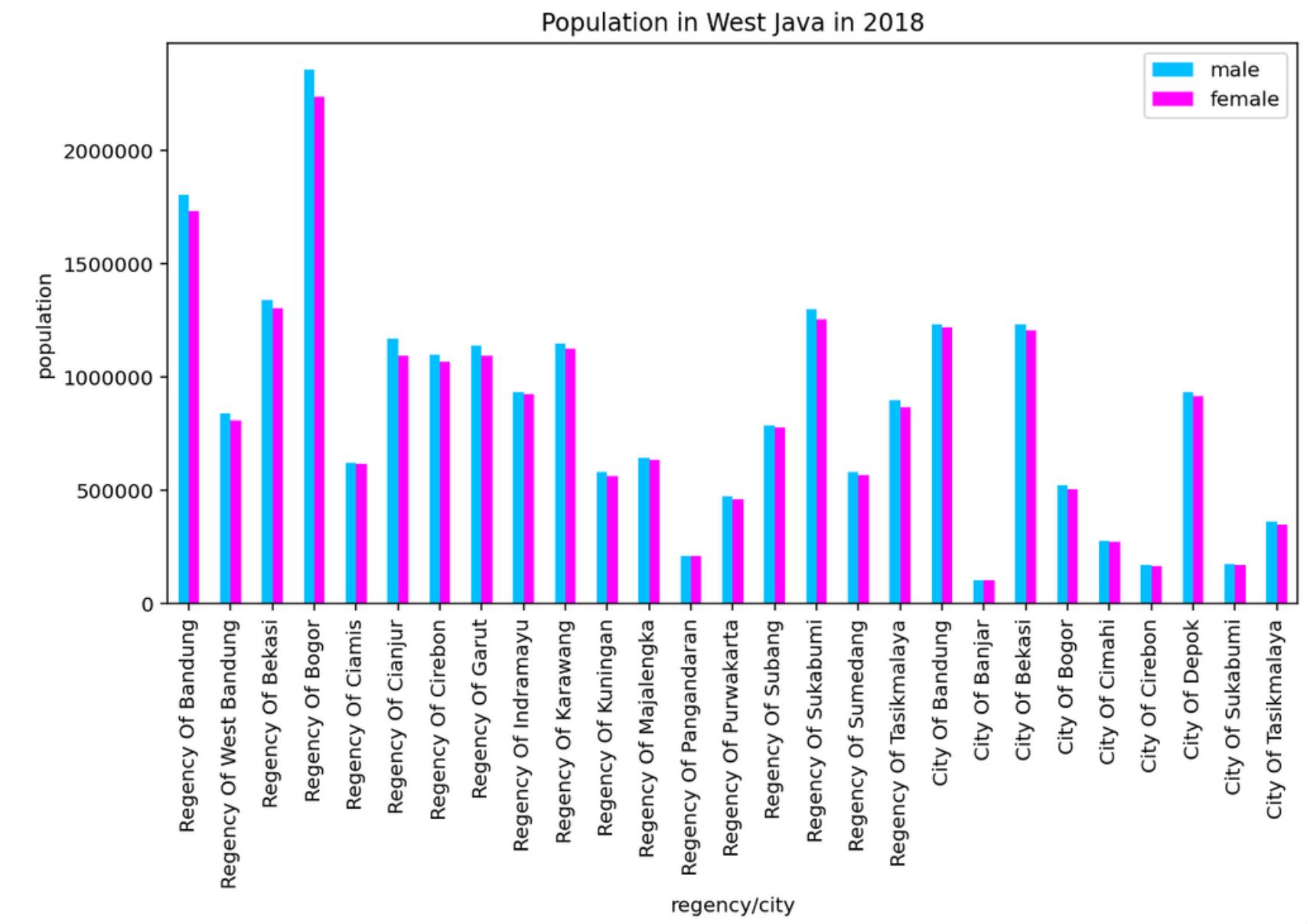
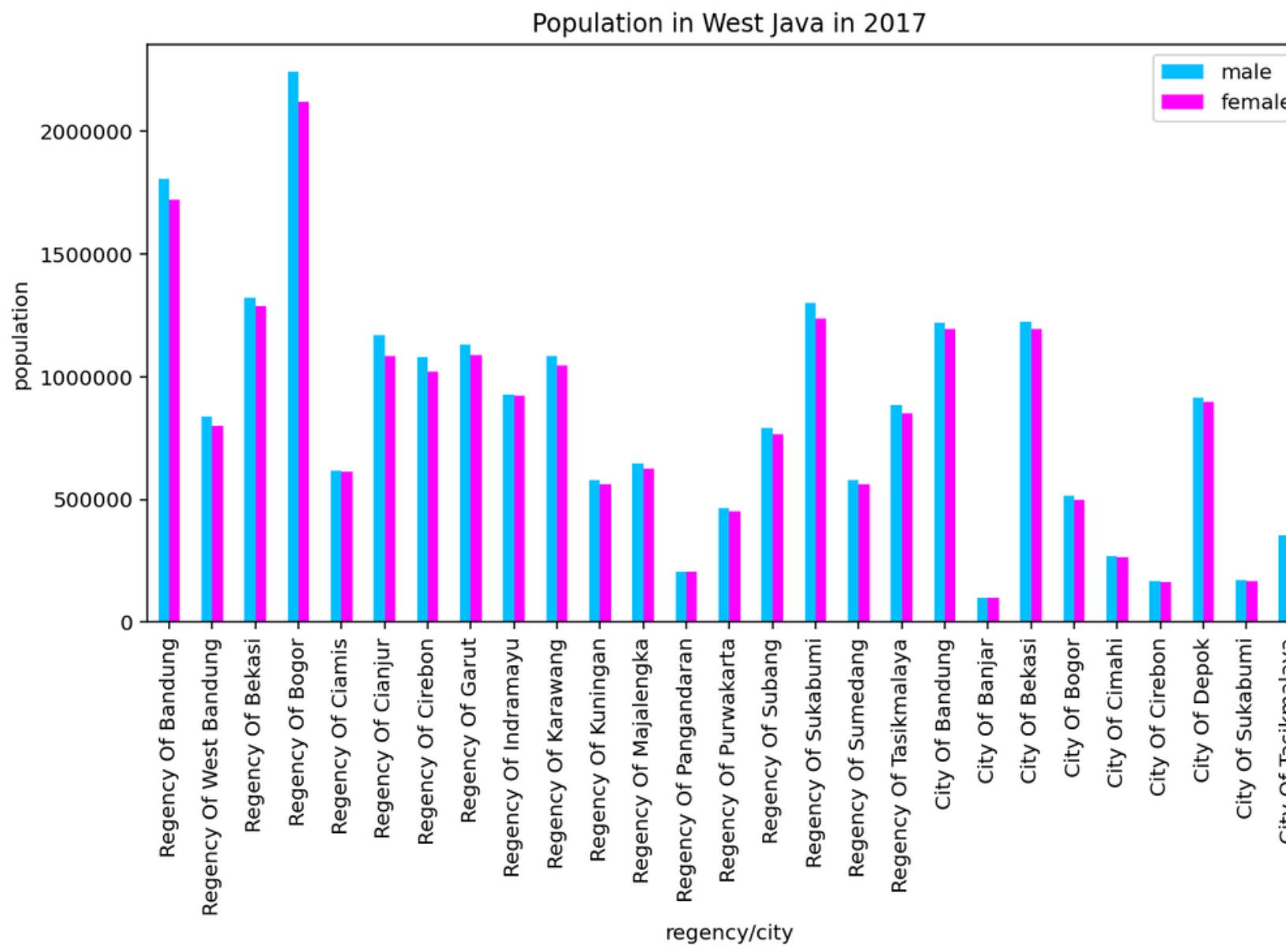
df_pdk.loc[:, "male":"total"].describe()

	male	female	total
count	135.00000	135.00000	135.00000
mean	867019.68889	841615.70370	1708635.39259
std	539894.22208	516136.01289	1055928.47163
min	101018.00000	100330.00000	201348.00000
25%	499840.50000	487980.50000	987821.00000
50%	851045.00000	816679.00000	1667724.00000
75%	1215706.00000	1177757.00000	2387754.00000
max	2726214.00000	2600917.00000	5327131.00000

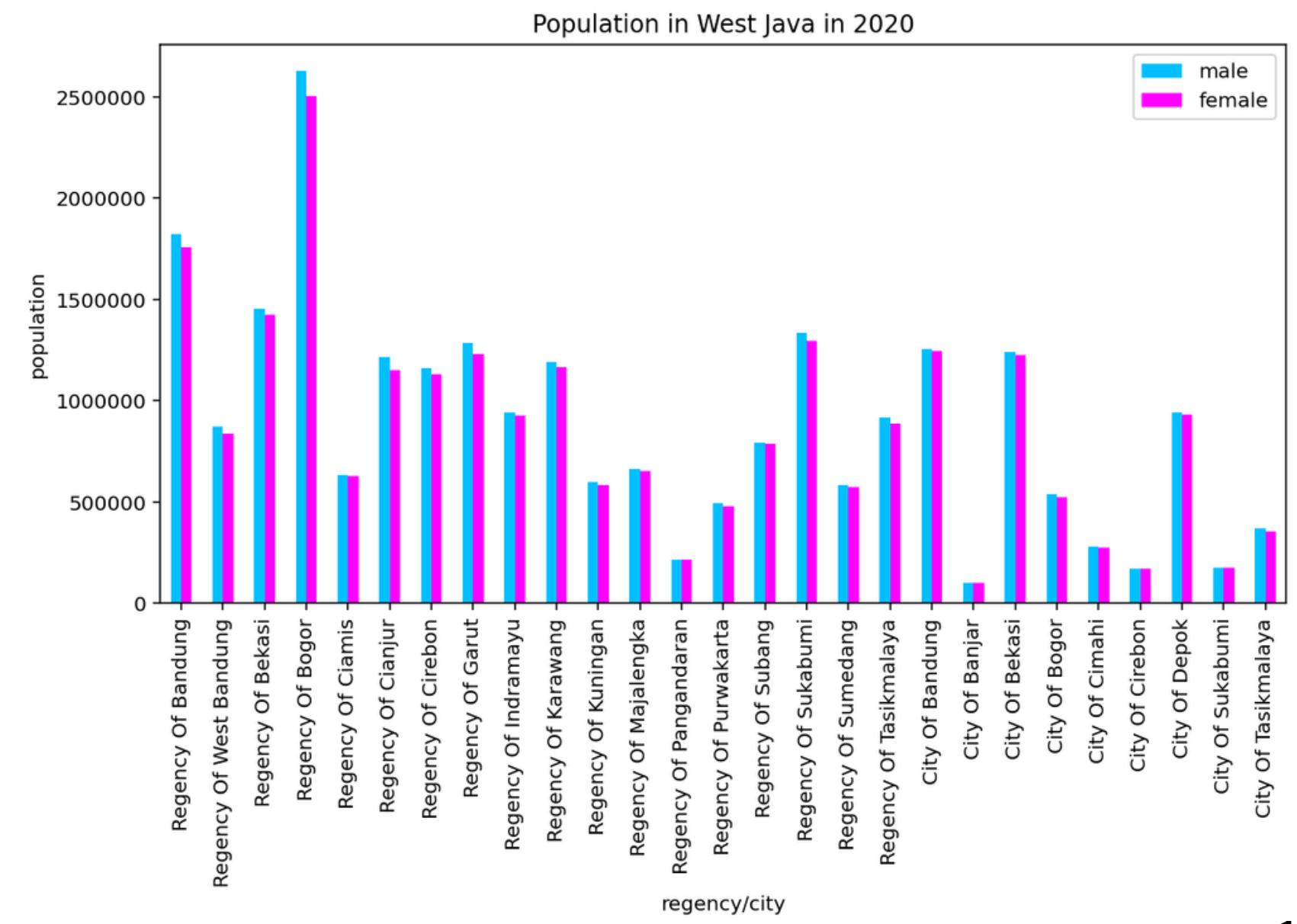
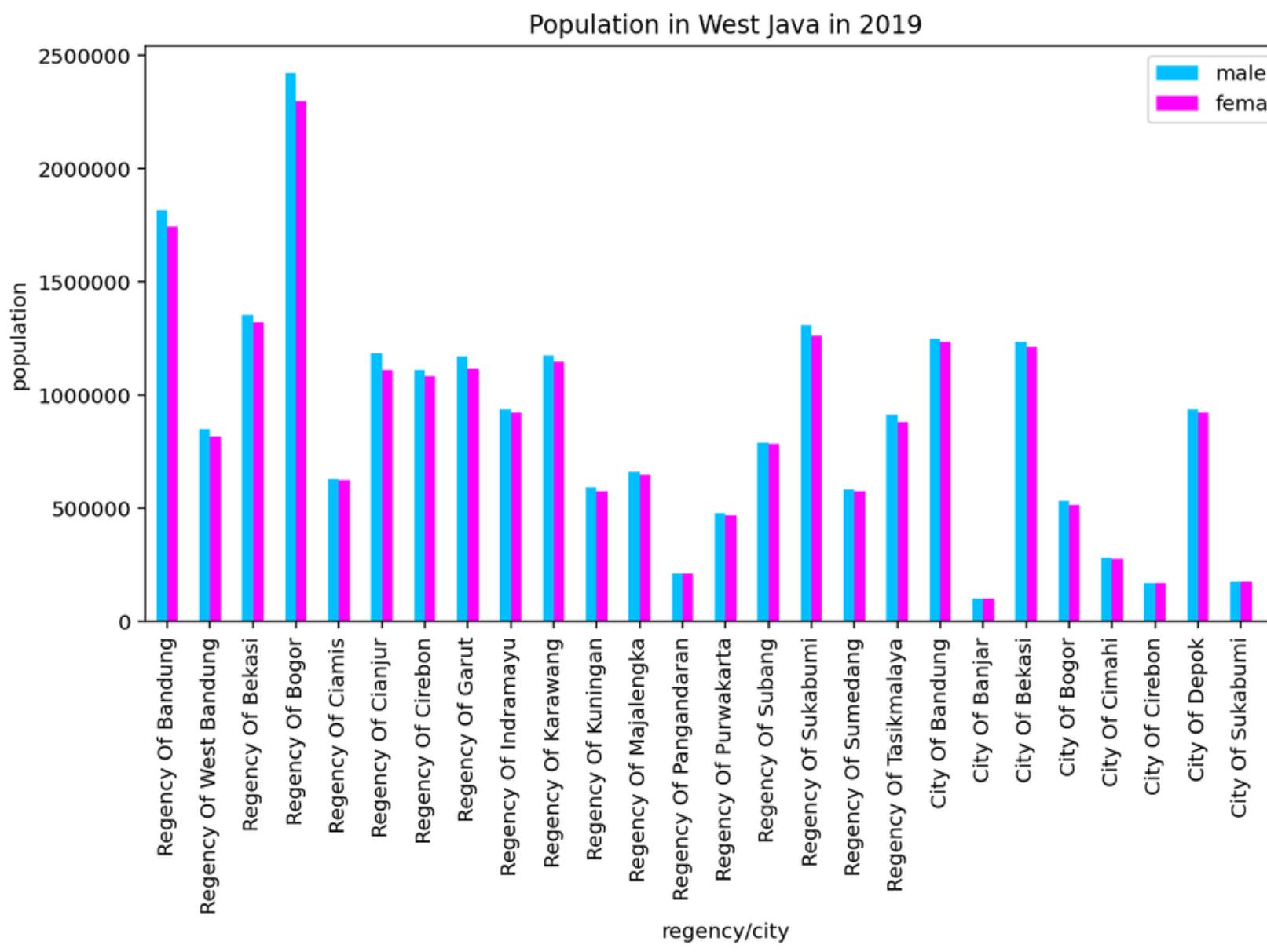
	accessories	batik	embroidery	craft	fashion	services/other	convection	culinary	food	beverage	total
count	135.00000	135.00000	135.00000	135.00000	135.00000	135.00000	135.00000	135.00000	135.00000	135.00000	135.00000
mean	480.13333	480.13333	68.62963	17149.65185	16738.05185	23323.51111	10221.17037	73812.08889	53987.10370	10015.40741	206275.88148
std	277.30125	277.30125	39.60754	9904.09015	9666.34197	13469.52728	5902.90301	42627.24252	31178.12010	5784.01231	119126.44595
min	64.00000	64.00000	9.00000	2286.00000	2231.00000	3109.00000	1363.00000	9840.00000	7197.00000	1335.00000	27498.00000
25%	246.00000	246.00000	35.50000	8790.00000	8579.50000	11954.50000	5238.50000	37832.00000	27671.00000	5133.50000	105726.50000
50%	464.00000	464.00000	66.00000	16579.00000	16181.00000	22547.00000	9881.00000	71356.00000	52190.00000	9682.00000	199410.00000
75%	664.00000	664.00000	95.00000	23714.50000	23145.00000	32252.00000	14134.00000	102067.00000	74653.00000	13849.00000	285237.50000
max	1179.00000	1179.00000	168.00000	42097.00000	41087.00000	57252.00000	25090.00000	181187.00000	132523.00000	24585.00000	506347.00000

df_umkm.loc[:, "accessories":"total"].describe()

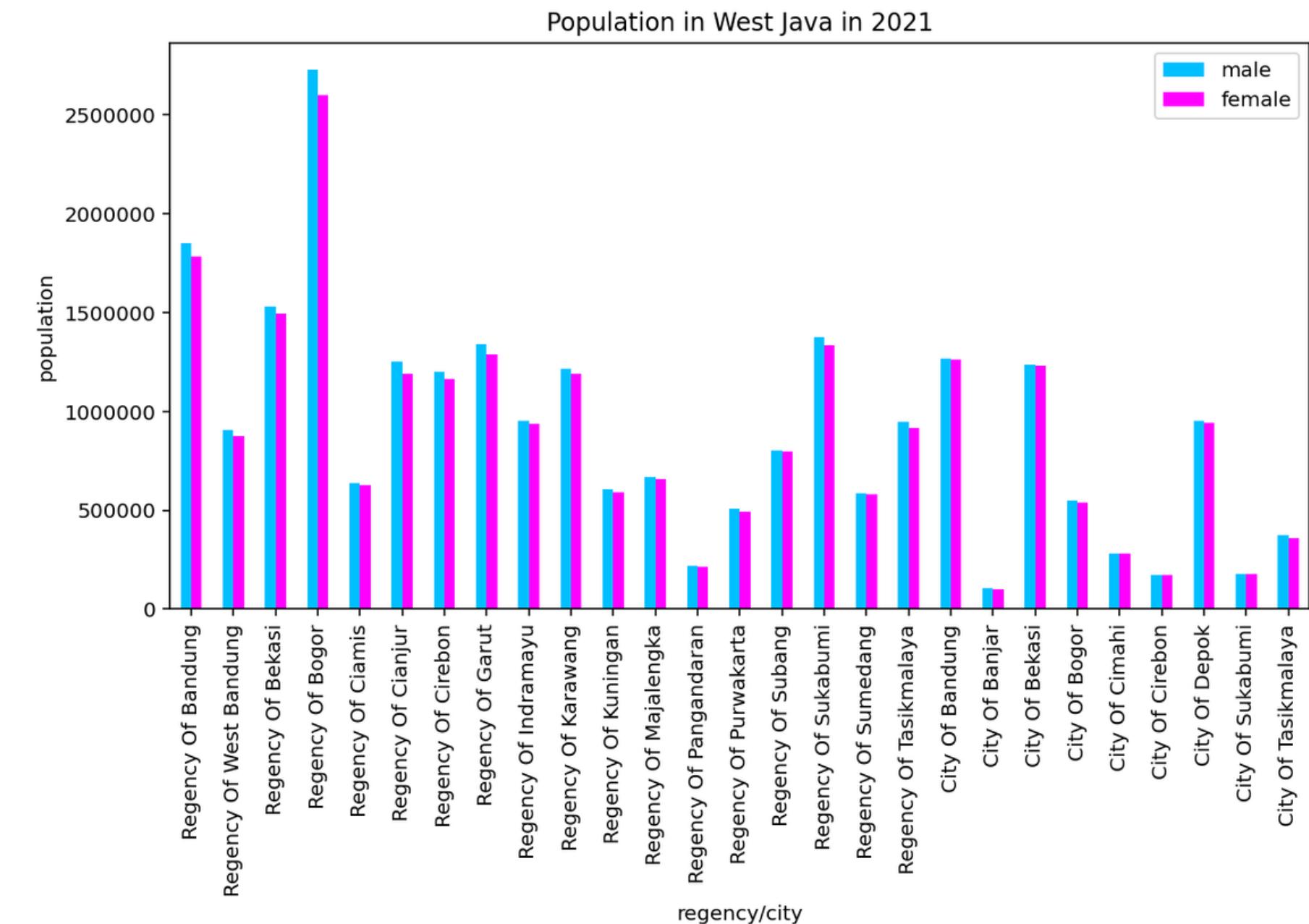
Comparing Categories



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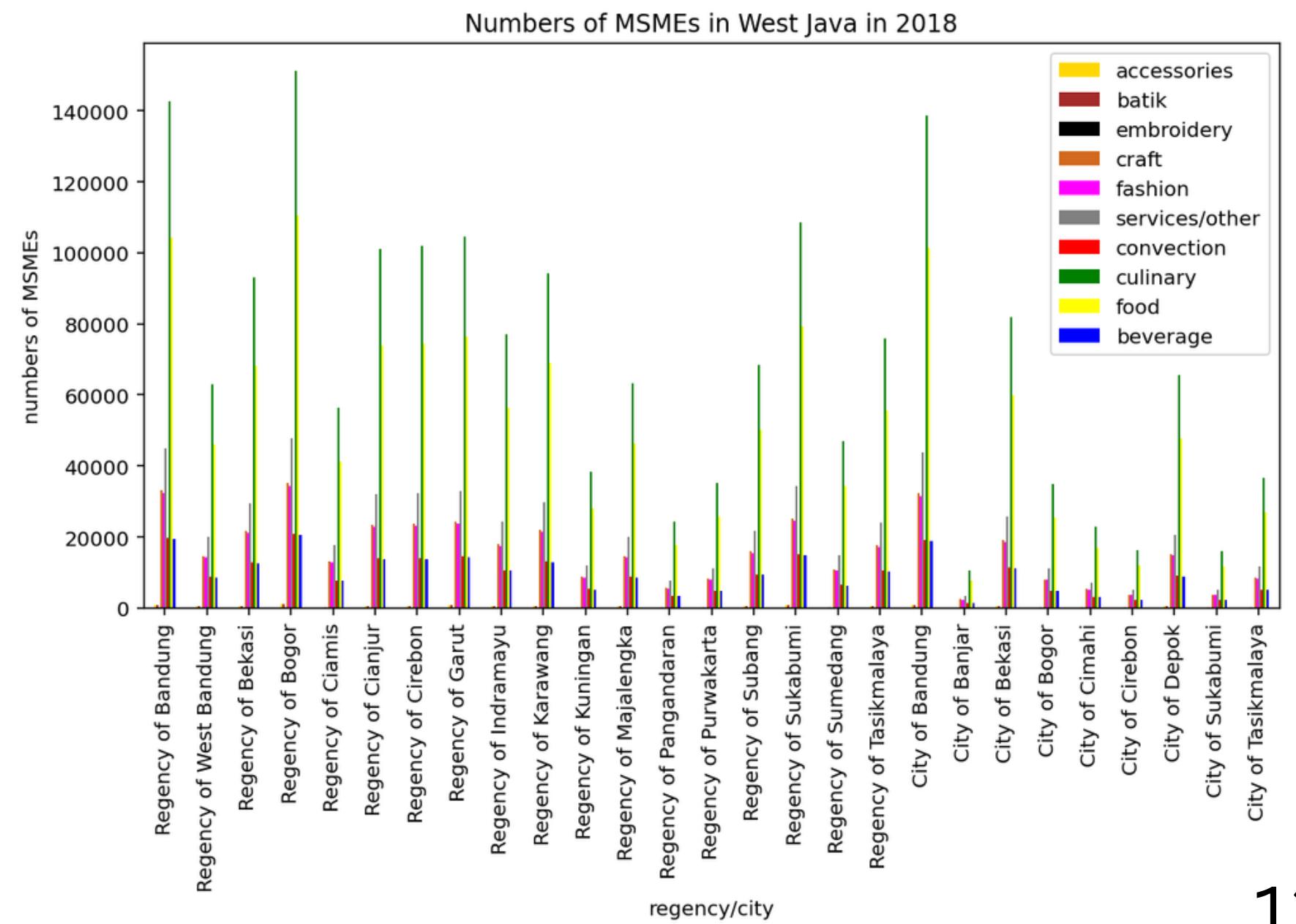
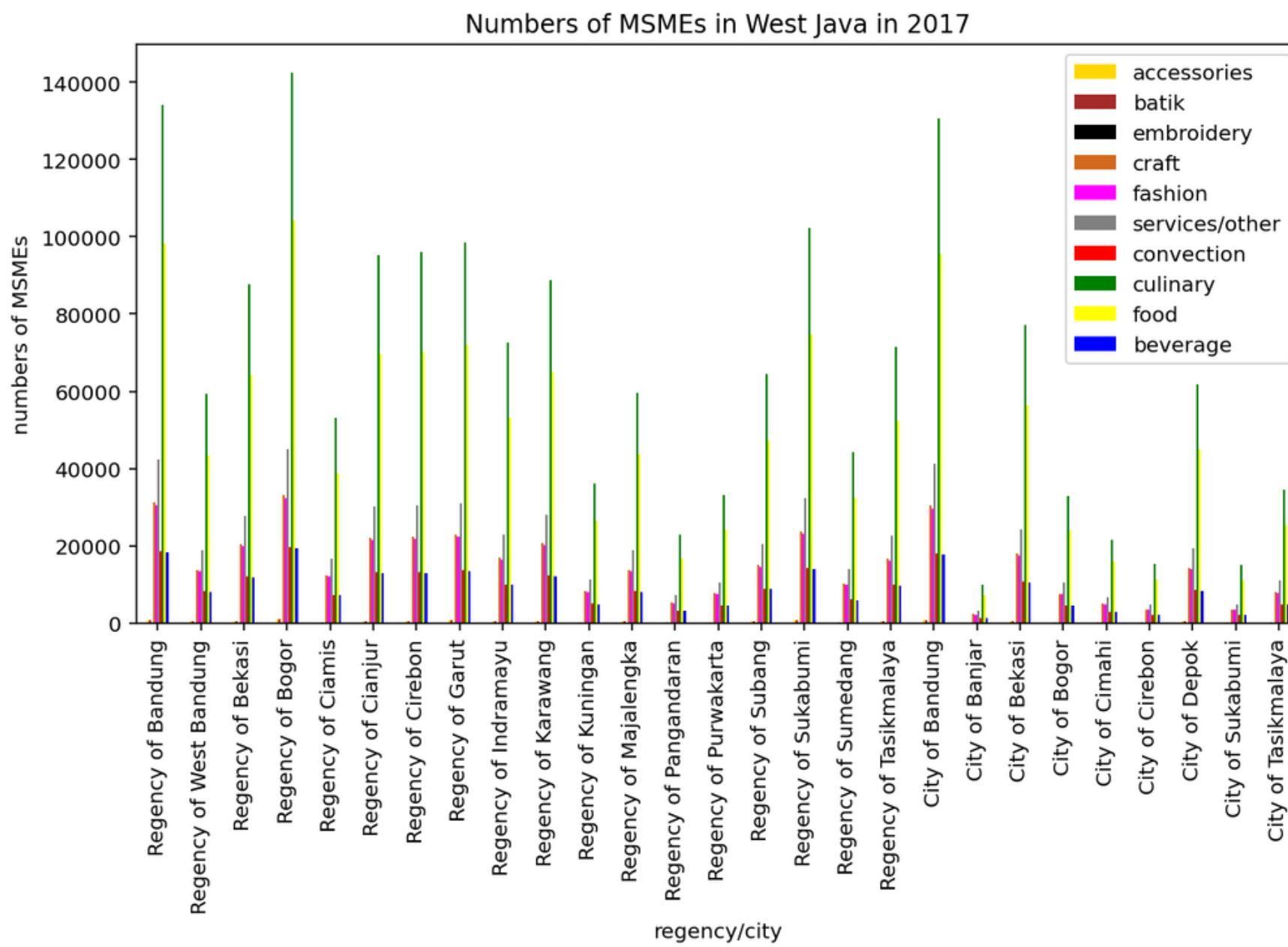


Comparing Categories

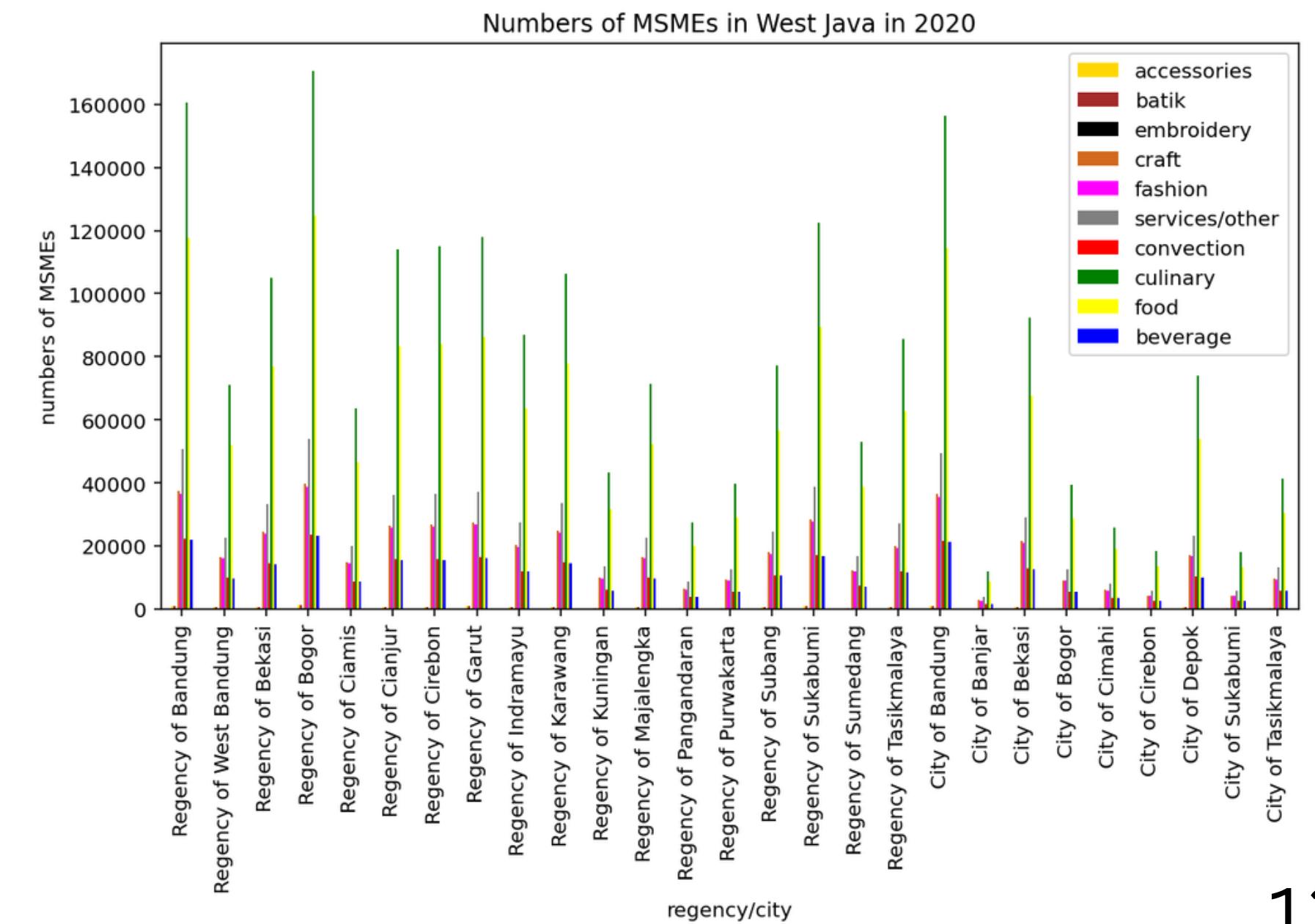
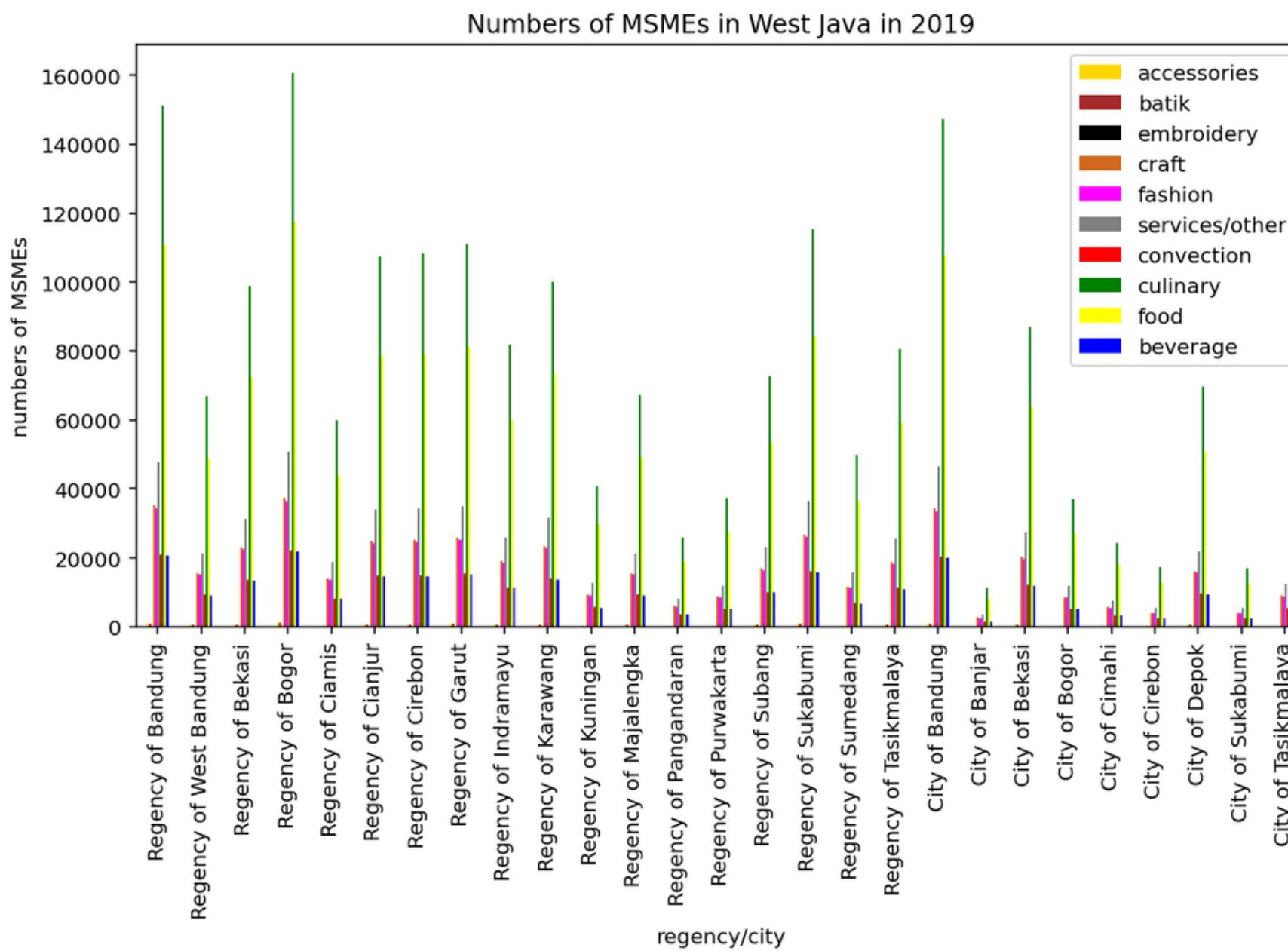


```
df_pdk.loc[df_pdk["year"] == 2021].plot(kind="bar",x="regency/city",y=["male", "female"], title="Population in West Java in 2017", ylabel="population", color=["deepskyblue", "magenta"]).ticklabel_format(style='plain', axis='y')
```

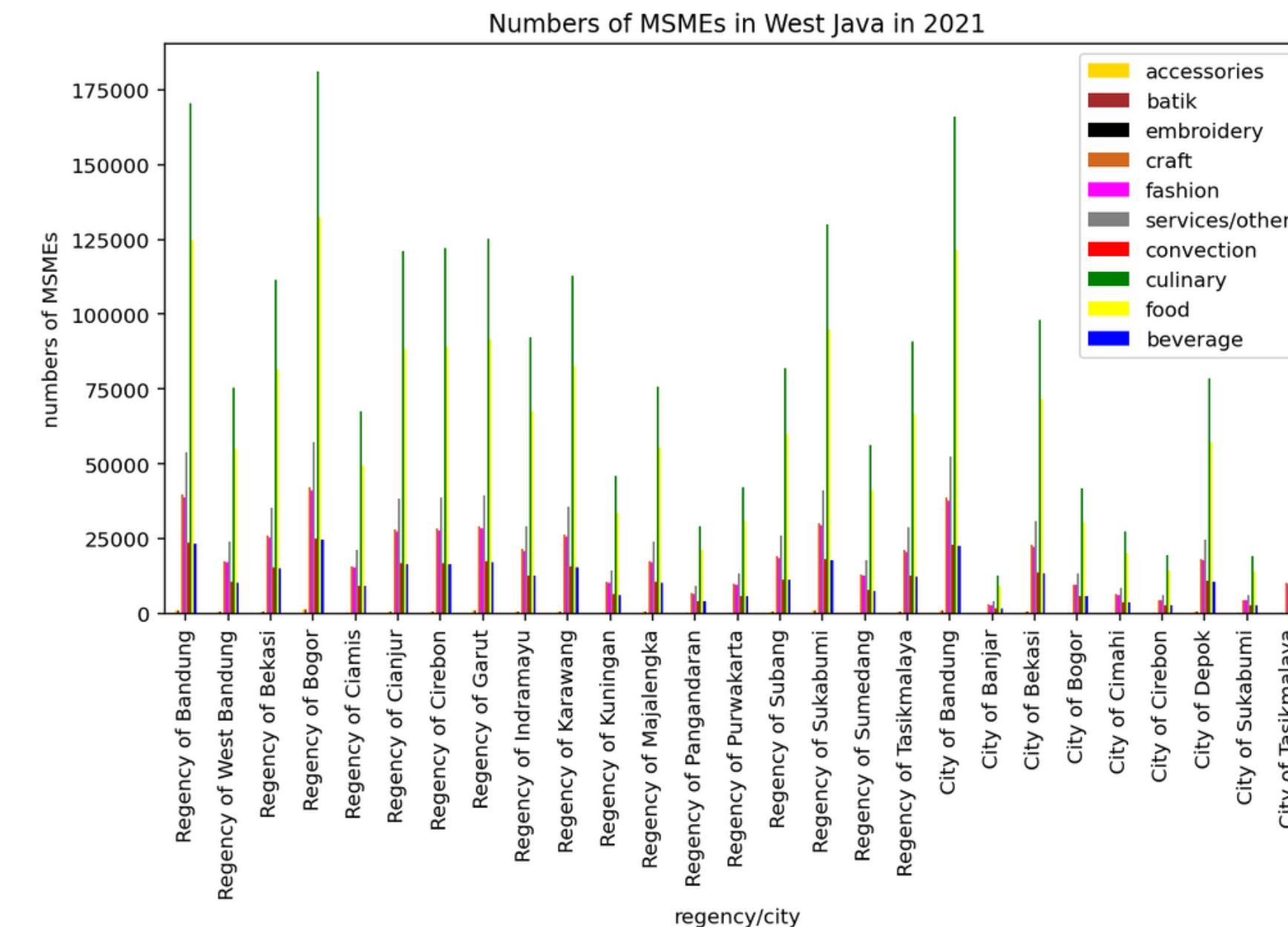
Comparing Categories



Comparing Categories

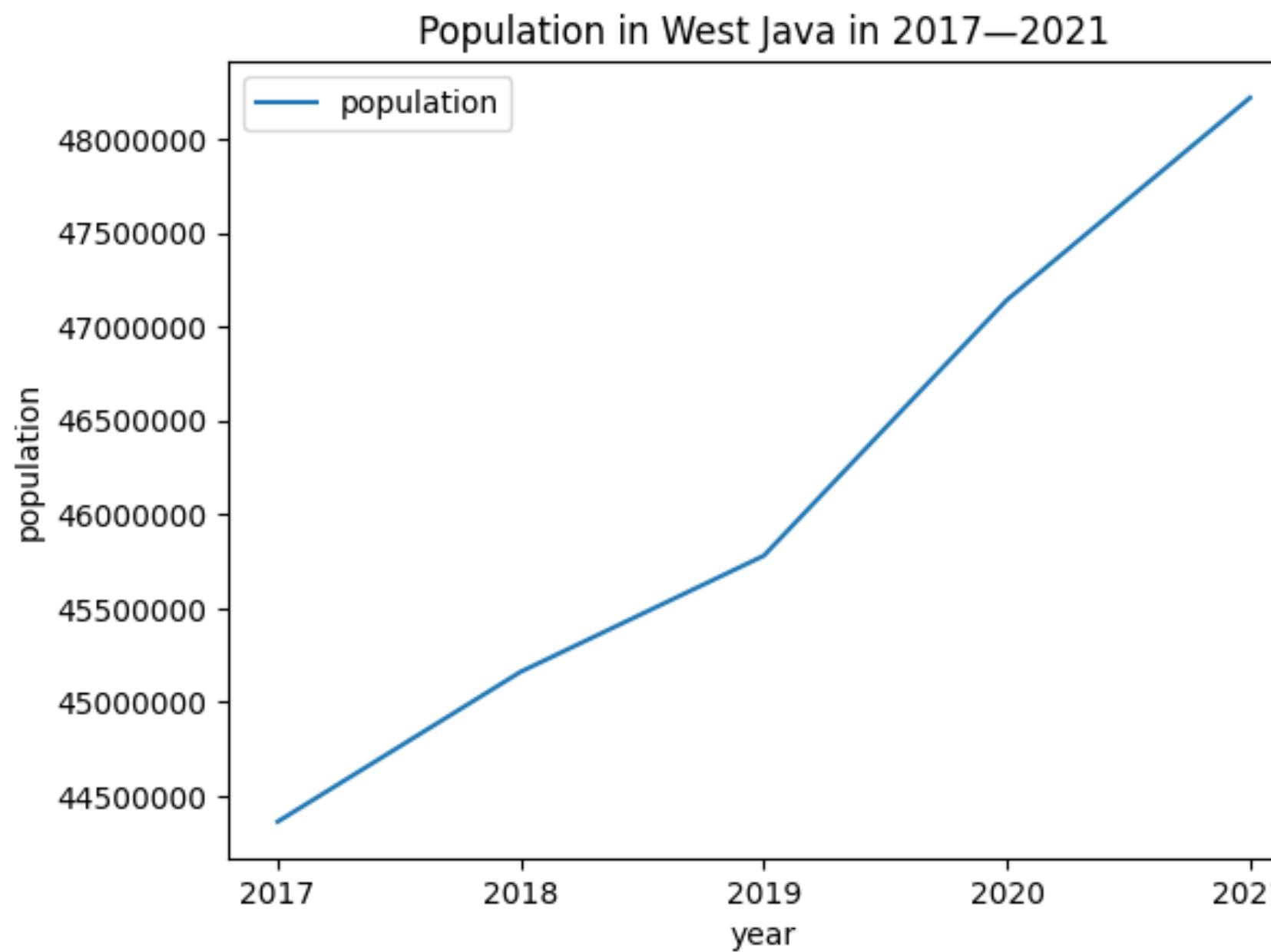


Comparing Categories

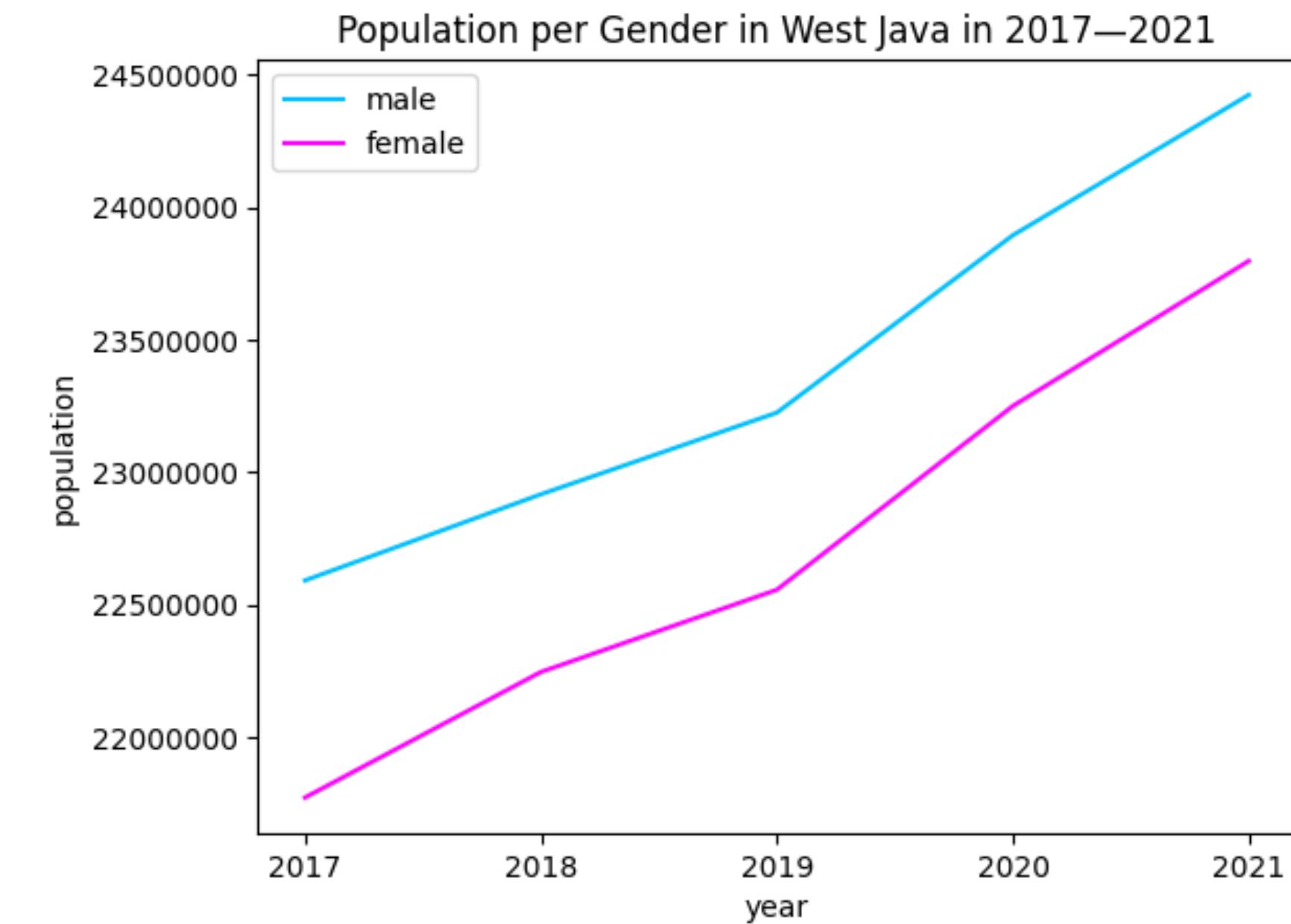


```
df_umkm.loc[df_umkm["year"] == 2021].plot(kind="bar",x="regency/city",y=['accessories', 'batik', 'embroidery', 'craft', 'fashion', 'services/other', 'convection', 'culinary', 'food', 'beverage'], title="Numbers of MSMEs in West Java in 2021", color=['gold', 'brown', 'black', 'chocolate', 'magenta', 'gray', 'red', 'green', 'yellow', 'blue'], ylabel="numbers of MSMEs").legend(loc=1, prop={'size': 10})
```

Showing Over Times

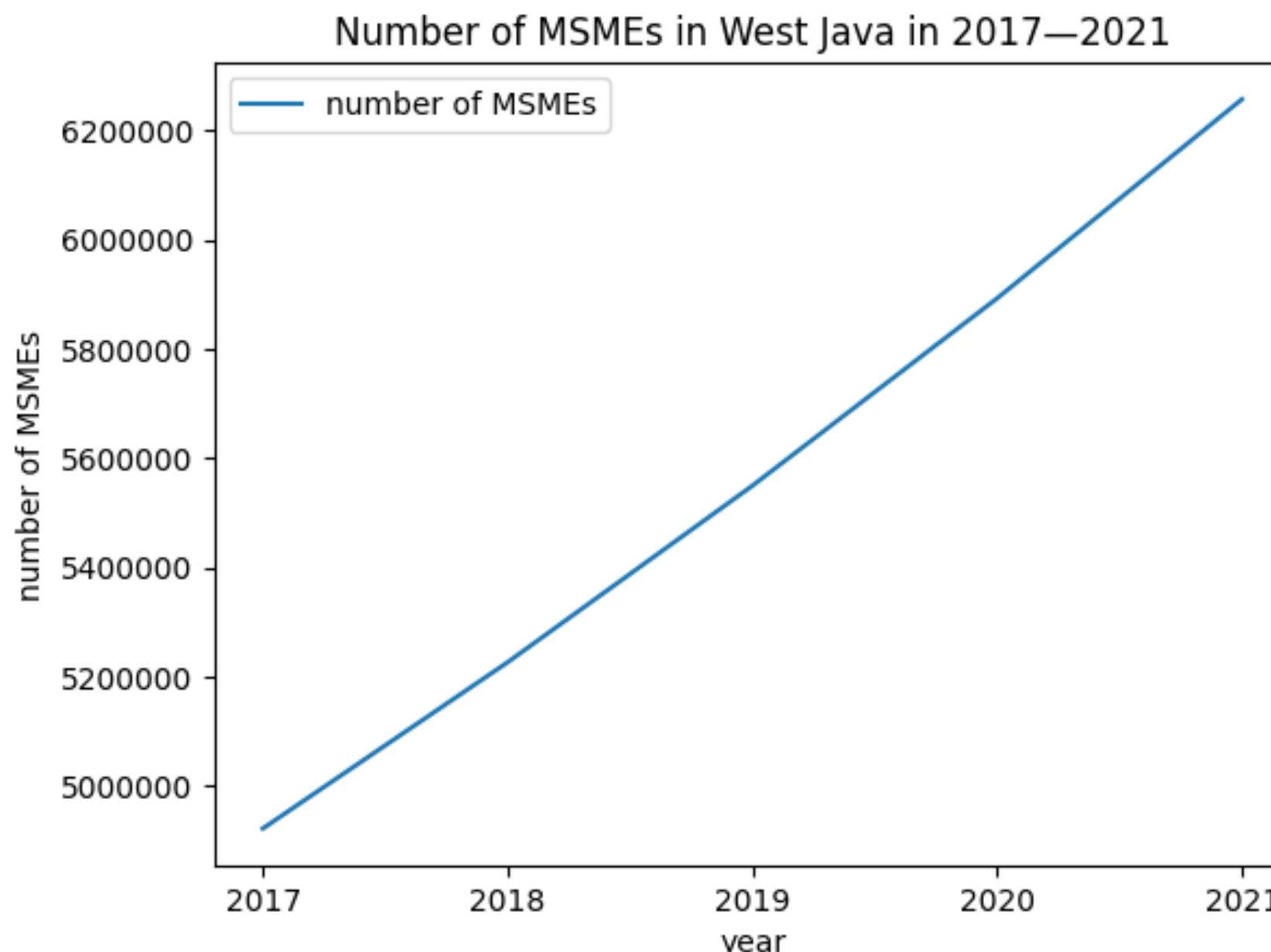


```
df_pdk_tahun.plot(kind="line",x="year",y="population",xticks=[2017, 2018, 2019, 2020, 2021], title="Population in West Java in 2017–2021", ylabel="population").ticklabel_format(style='plain', axis='y')
```

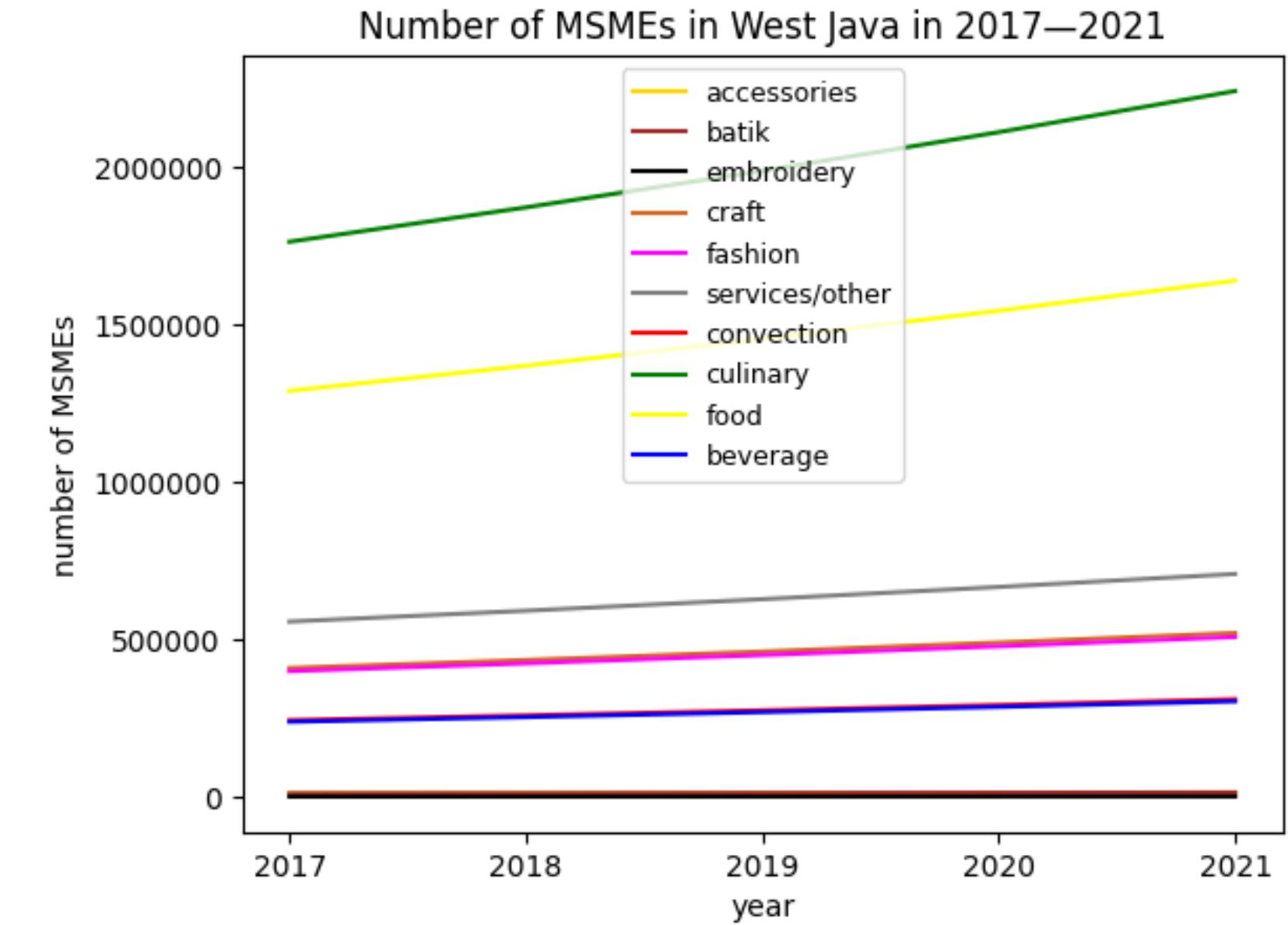


```
df_jenis_kelamin_tahun.plot(kind="line", x="year", y=["male", "female"], xticks=[2017, 2018, 2019, 2020, 2021], title="Population per Gender in West Java in 2017–2021", ylabel="population", color=["deepskyblue", "magenta"]).ticklabel_format(style='plain', axis='y')
```

Showing Over Times



```
df_umkm_tahun.plot(kind="line",x="year",y="number of MSMEs",xticks=[2017, 2018, 2019, 2020, 2021], title="Number of MSMEs in West Java in 2017–2021", ylabel="number of MSMEs").ticklabel_format(style='plain', axis='y')
```

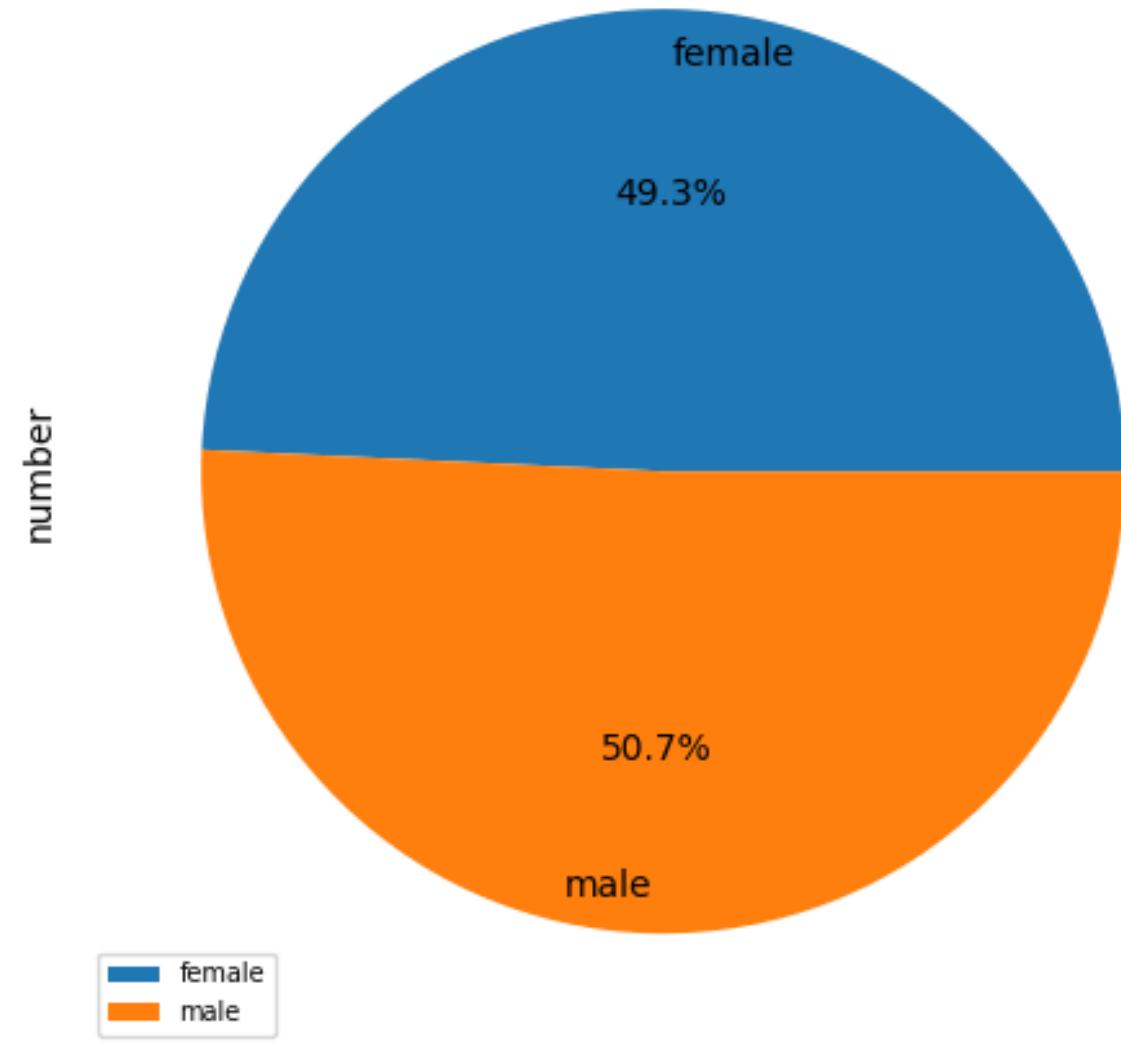


```
df_kategori_tahun.plot(kind="line", x="year", y=['accessories', 'batik', 'embroidery', 'craft', 'fashion', 'services/other', 'convection', 'culinary', 'food', 'beverage'], xticks=[2017, 2018, 2019, 2020, 2021], title="Number of MSMEs in West Java in 2017–2021", color=['gold', 'brown', 'black', 'chocolate', 'magenta', 'gray', 'red', 'green', 'yellow', 'blue'], ylabel="number of MSMEs")
```

Whole-part relationship

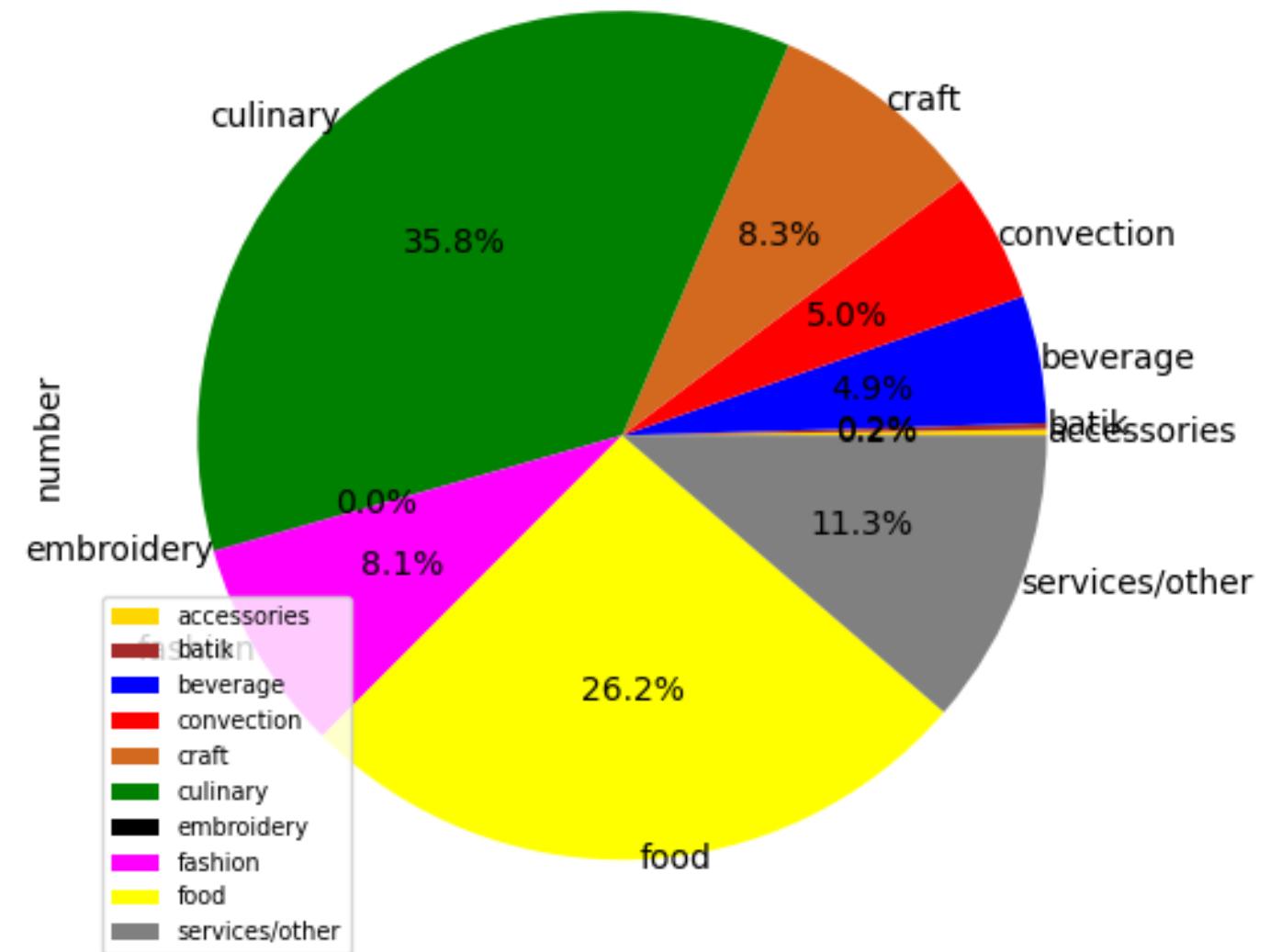


Population in West Java in 2017-2021



```
df_pdk_jk.plot(kind="pie", autopct='%1.1f%%', labeldistance=0.9,  
title="Population in West Java in 2017-2021").legend(loc=3, prop={'size': 7})
```

Number of MSMEs in West Java in 2017-2021

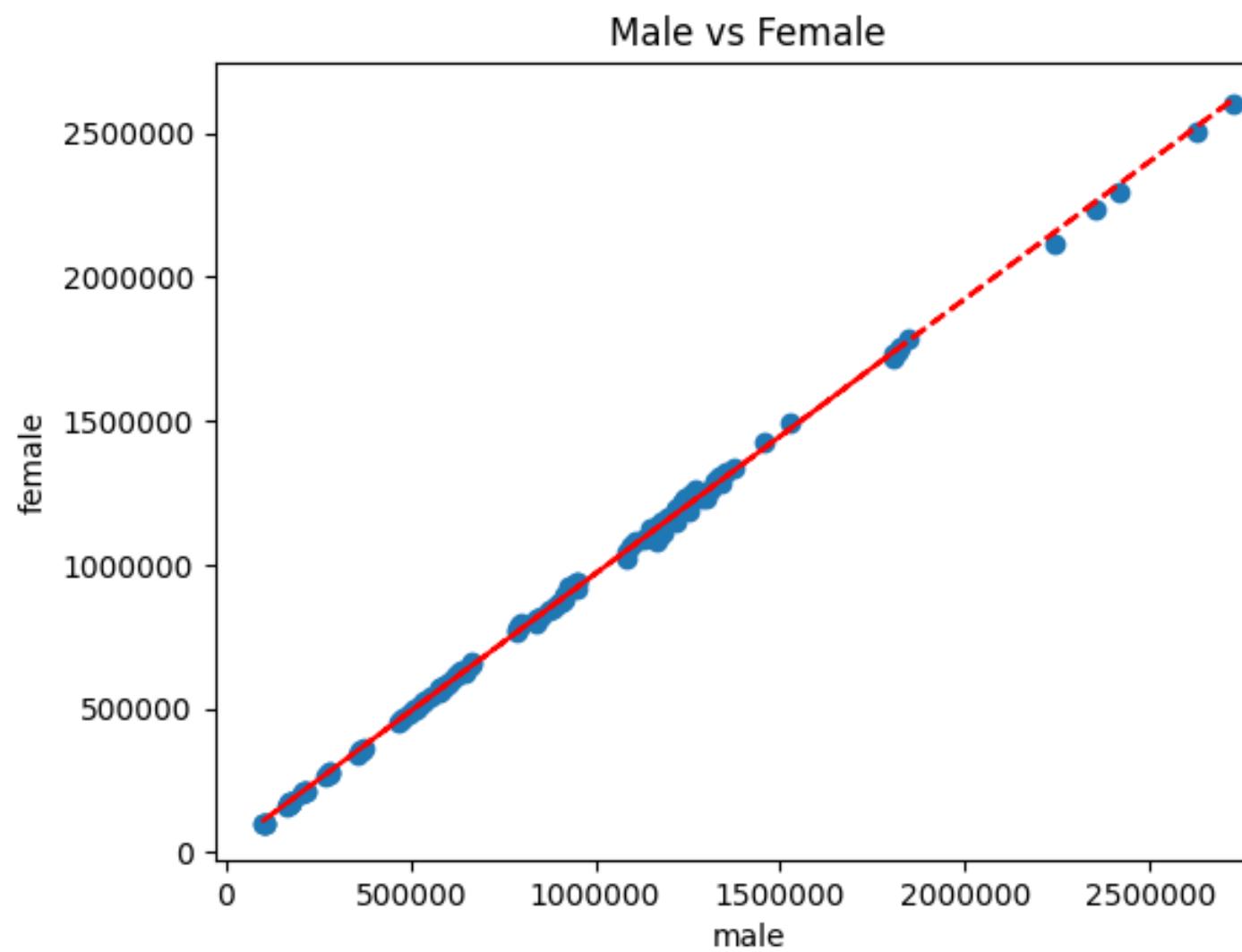


```
df_umkm_kategori.plot(kind="pie", autopct='%1.1f%%', labeldistance=1, title="Number  
of MSMEs in West Java in 2017-2021", colors=['gold', 'brown', 'blue', 'red', 'chocolate',  
'green', 'black', 'magenta', 'yellow', 'gray']).legend(loc=3, prop={'size': 7})
```

Correlation



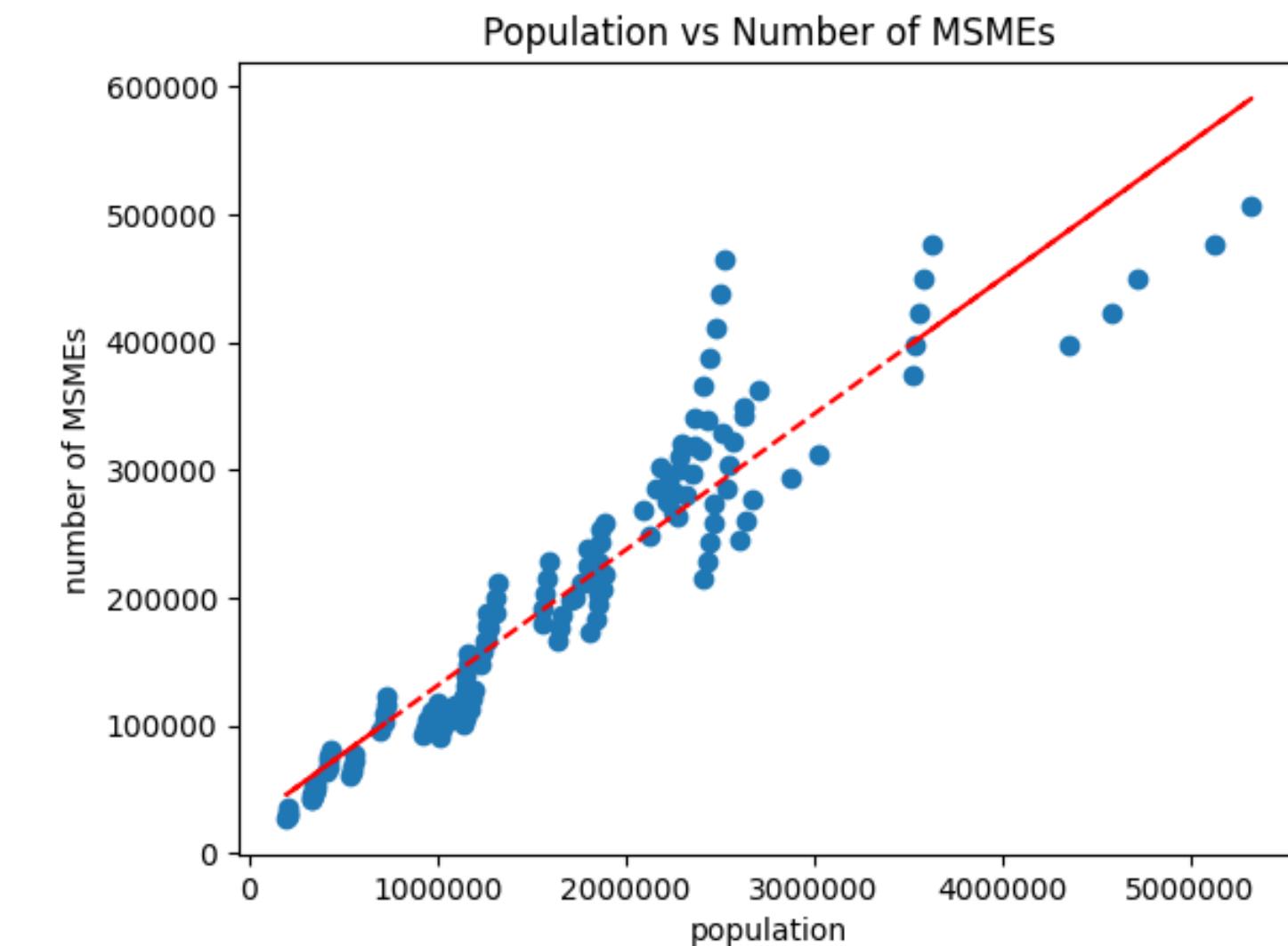
$$\text{female} = 0.95562603 \times \text{male} + 13069.1174$$



```
Y_pred = linear_regressor.predict(X) # make predictions
```

```
plt.scatter(X, Y)  
plt.plot(X, Y_pred, 'r--')
```

$$\text{MSMEs} = 0.10625895 \times \text{population} + 24718.0759$$



```
Y_pred = linear_regressor.predict(X) # make predictions
```

```
plt.scatter(X, Y)  
plt.plot(X, Y_pred, 'r--')
```

Knowledge



The population increases over time. The growth of the population and the number of MSMEs in West Java is linearly uptrend over time. If the male population increases, the female population also increases so the population increases, and as a result the number of MSMEs also increases

Conclusion



The growth of the population and the number of MSMEs in West Java is linearly uptrend over time.



MSMEs engaged in the culinary sector have the greatest number



The population and number of MSMEs are strongly correlated

Thank You

