# MPV
"MINIMUM VIABLE PRODUCT"

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By expolring the data of customers in an airline company who have already flown with them. Data consists of total 129880 observations (train data:103904, test data:25976) and columns with 25 features. According to satisfaction category about 73452 were neutral or dissatisfied about the services provided and 56428 were satisfied.
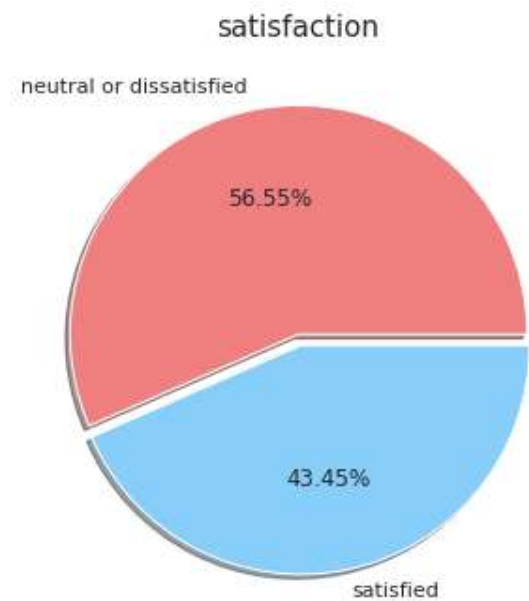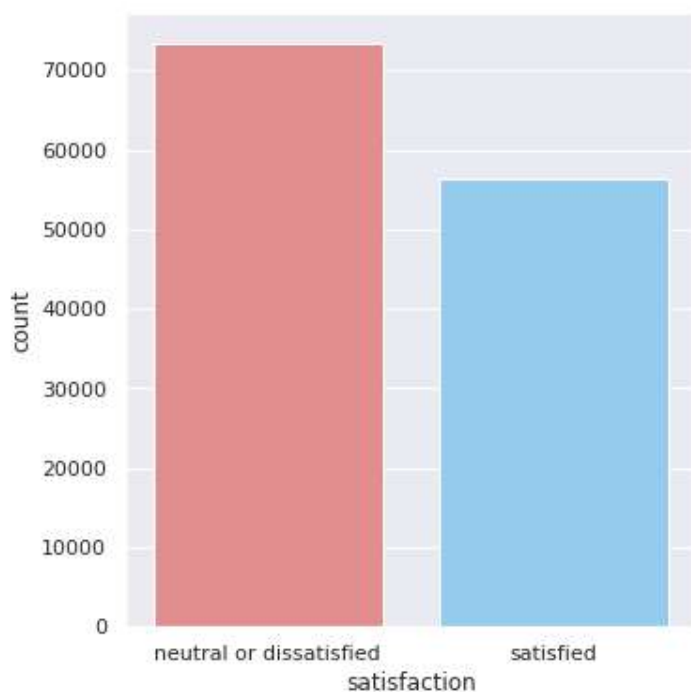
Moreover, by Looking at the data types, and descriptive statistics of features we finds There are both numeric and object type features in data as shown below:

	count	mean	std	min	25%	50%	75%	max
Unnamed: 0	129880.0	44158.700000	31207.377062	0.0	16234.75	38963.5	71433.25	103903.0
id	129880.0	64940.500000	37493.270818	1.0	32470.75	64940.5	97410.25	129880.0
Age	129880.0	39.427957	15.119360	7.0	27.00	40.0	51.00	85.0
Flight Distance	129880.0	1190.316392	997.452477	31.0	414.00	844.0	1744.00	4983.0
Inflight wifi service	129880.0	2.728696	1.329340	0.0	2.00	3.0	4.00	5.0
Departure/Arrival time convenient	129880.0	3.057599	1.526741	0.0	2.00	3.0	4.00	5.0
Ease of Online booking	129880.0	2.756876	1.401740	0.0	2.00	3.0	4.00	5.0
Gate location	129880.0	2.976925	1.278520	0.0	2.00	3.0	4.00	5.0
Food and drink	129880.0	3.204774	1.329933	0.0	2.00	3.0	4.00	5.0
Online boarding	129880.0	3.252633	1.350719	0.0	2.00	3.0	4.00	5.0
Seat comfort	129880.0	3.441361	1.319289	0.0	2.00	4.0	5.00	5.0
Inflight entertainment	129880.0	3.358077	1.334049	0.0	2.00	4.0	4.00	5.0
On-board service	129880.0	3.383023	1.287099	0.0	2.00	4.0	4.00	5.0
Leg room service	129880.0	3.350878	1.316252	0.0	2.00	4.0	4.00	5.0
Baggage handling	129880.0	3.632114	1.180025	1.0	3.00	4.0	5.00	5.0
Checkin service	129880.0	3.306267	1.266185	0.0	3.00	3.0	4.00	5.0
Inflight service	129880.0	3.642193	1.176669	0.0	3.00	4.0	5.00	5.0
Cleanliness	129880.0	3.286326	1.313682	0.0	2.00	3.0	4.00	5.0
Departure Delay in Minutes	129880.0	14.713713	38.071126	0.0	0.00	0.0	12.00	1592.0
Arrival Delay in Minutes	129487.0	15.091129	38.465650	0.0	0.00	0.0	13.00	1584.0

#	Column	Non-Null Count	Dtype
0	Unnamed: 0	129880 non-null	int64
1	id	129880 non-null	int64
2	Gender	129880 non-null	object
3	Customer Type	129880 non-null	object
4	Age	129880 non-null	int64
5	Type of Travel	129880 non-null	object
6	Class	129880 non-null	object
7	Flight Distance	129880 non-null	int64
8	Inflight wifi service	129880 non-null	int64
9	Departure/Arrival time convenient	129880 non-null	int64
10	Ease of Online booking	129880 non-null	int64
11	Gate location	129880 non-null	int64
12	Food and drink	129880 non-null	int64
13	Online boarding	129880 non-null	int64
14	Seat comfort	129880 non-null	int64
15	Inflight entertainment	129880 non-null	int64
16	On-board service	129880 non-null	int64
17	Leg room service	129880 non-null	int64
18	Baggage handling	129880 non-null	int64
19	Checkin service	129880 non-null	int64
20	Inflight service	129880 non-null	int64
21	Cleanliness	129880 non-null	int64
22	Departure Delay in Minutes	129880 non-null	int64
23	Arrival Delay in Minutes	129487 non-null	float64
24	satisfaction	129880 non-null	object

The features with the highest average satisfaction rate are" Inflight service" and "Baggage handling" with average 3.6. The feature with the lowest satisfaction rate is "Inflight_wifi_service" with average 2.7.

Average satisfaction ratings of services