BEFD Project

Food Demand Forecasting

The business problem:

A meal delivery company operates in multiple cities. They have various fulfillment centers in these cities for dispatching meal orders to their customers. We need to provide these centers the demand forecasting for upcoming weeks so that these centers will plan the stock of raw materials accordingly.

Task:

Predict the demand for the next 10 weeks!

Data sources

Datasets

- Fulfilment center data
- Meal info data
- Sales historical data

Fulfilment centers data features

Variables:

- **center_id**: Fulfilment identifier
- **city_code**: City id in which the center is located on
- **region_code**: Region id in which the center is located on
- **center_type**: Type of the center
- **op_area**: Size of the operational area

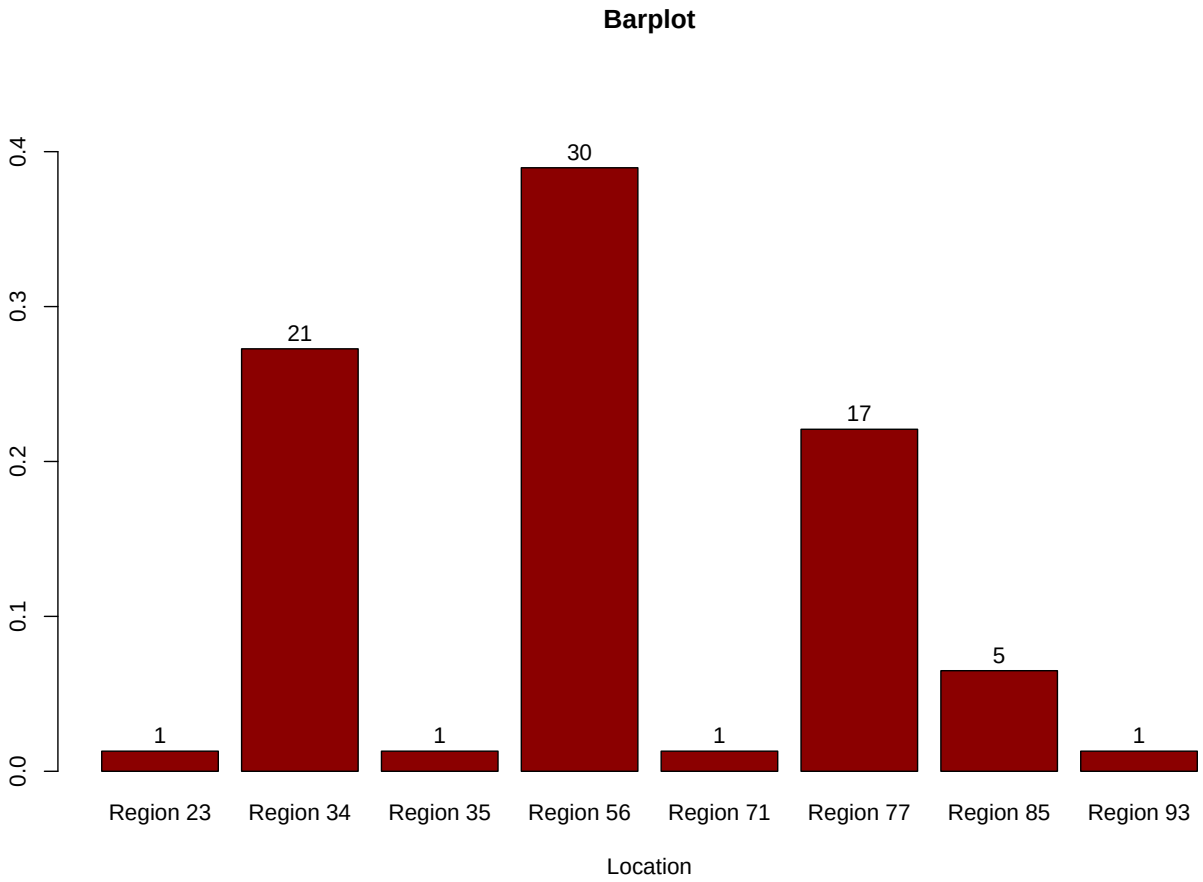
Fulfilment centers data features summary

Variables:

- **center_id**: We have 77 different centers
- **city_code**: The company acts on 51 different cities

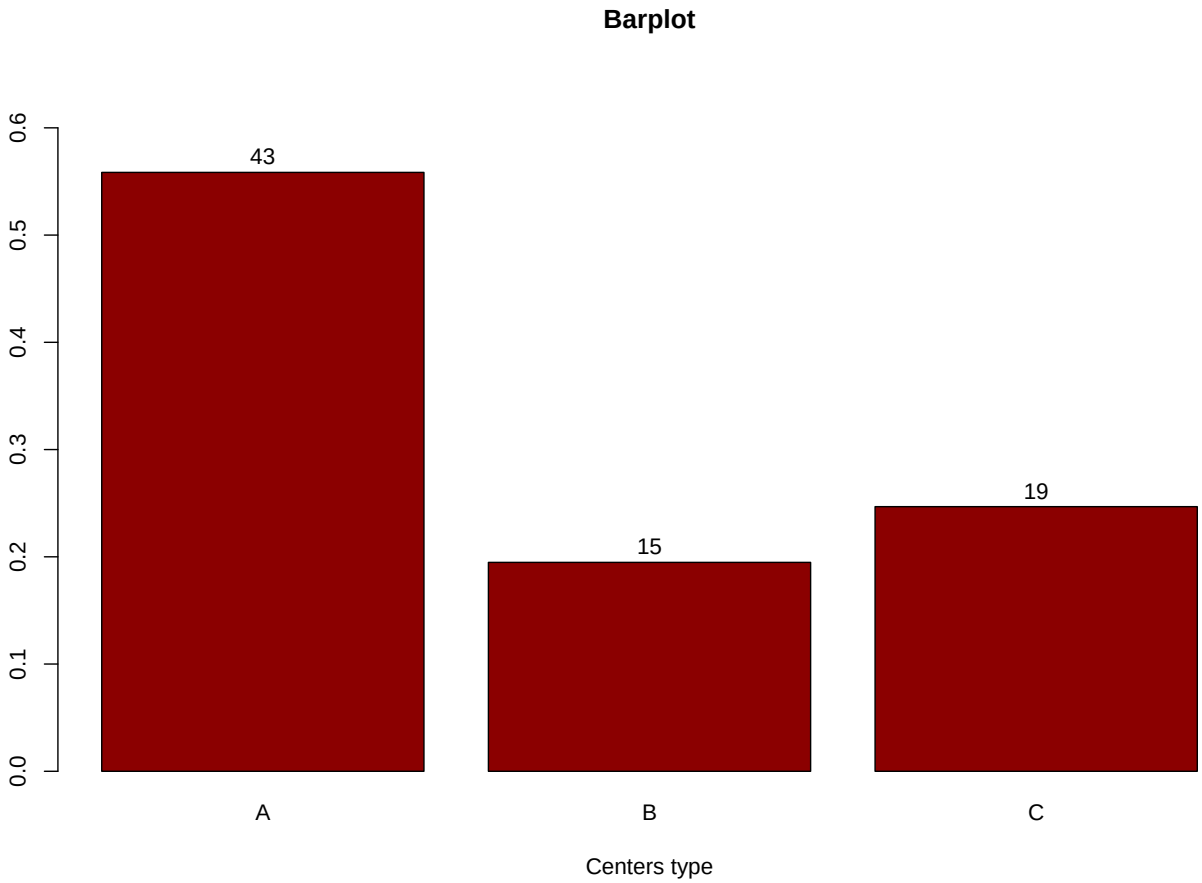
Fulfilment centers data features summary

region_code: These cities are located on 8 different regions



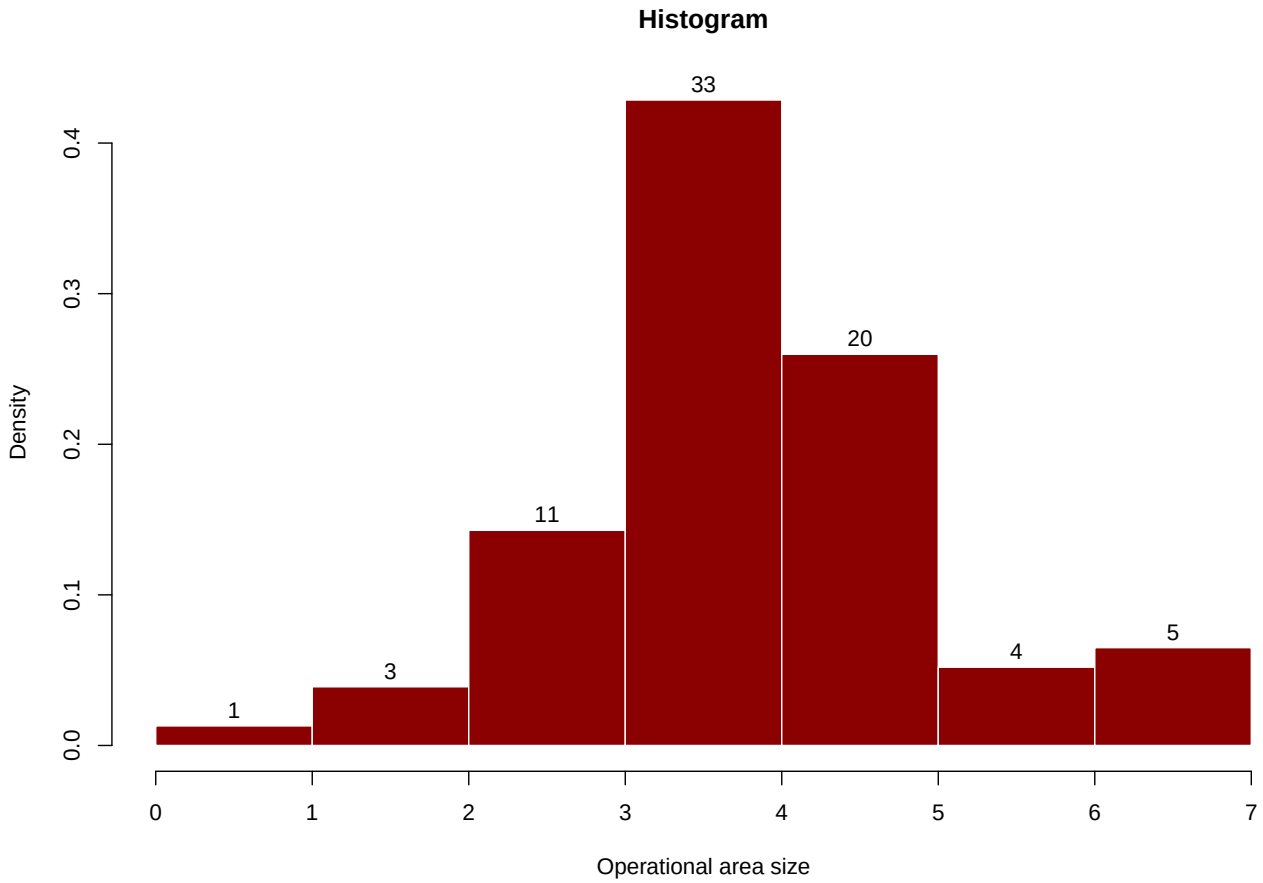
Fulfilment centers data features summary

center_type: There are 3 centers types: A, B and C



Fulfilment centers data features summary

- **op_area**:



Fulfilment centers data rows

center_id	city_code	region_code	center_type	op_area
11	679	56	TYPE_A	3.7
13	590	56	TYPE_B	6.7
124	590	56	TYPE_C	4.0
66	648	34	TYPE_A	4.1
94	632	34	TYPE_C	3.6
64	553	77	TYPE_A	4.4

Meal info

meal_id	category	cuisine
1885	Beverages	Thai
1993	Beverages	Thai
2539	Beverages	Thai
1248	Beverages	Indian
2631	Beverages	Indian
1311	Extras	Thai

Sales data

id	week	center_id	meal_id	checkout_price
1379560	1	55	1885	136.83
1466964	1	55	1993	136.83
1346989	1	55	2539	134.86
1338232	1	55	2139	339.50
1448490	1	55	2631	243.50
1270037	1	55	1248	251.23

Sales data

id	base_price	num_orders
1379560	152.29	177
1466964	135.83	270
1346989	135.86	189
1338232	437.53	54
1448490	242.50	40
1270037	252.23	28

Correlations