

In [3]:

```
import numpy as np
import pandas as pd
from apyori import apriori
```

In [4]:

```
store_data = pd.read_excel('D:\Kuliah/no3.xls')
```

In [5]:

```
store_data.head()
```

Out[5]:

|   | Item1          | Item2             | Item3        | Item4             | Item5        | Item6         | Item7           | Item8             | Item         |
|---|----------------|-------------------|--------------|-------------------|--------------|---------------|-----------------|-------------------|--------------|
| 0 | burgers        | meatballs         | eggs         | low fat yogurt    | NaN          | mineral water | salmon          | low fat yogurt    | NaN          |
| 1 | chutney        | low fat yogurt    | NaN          | whole wheat pasta | french fries | mineral water | salmon          | whole wheat pasta | fren<br>frie |
| 2 | turkey         | whole wheat pasta | french fries | soup              | light cream  | shallot       | NaN             | soup              | ligh<br>crea |
| 3 | mineral water  | soup              | light cream  | frozen vegetables | spaghetti    | green tea     | NaN             | frozen vegetables | spaghet      |
| 4 | low fat yogurt | frozen vegetables | spaghetti    | french fries      | eggs         | chocolate     | frozen smoothie | french fries      | egg          |

In [7]:

```
store_data.shape
```

Out[7]:

```
(2054, 10)
```

In [8]:

```
records = []
for i in range (0, 2054):
    records.append([str(store_data.values[i,j]) for j in range (0,10)])
```

In [9]:

```
association_rules = apriori(records, min_support = 0.2, min_confidence = 0.2, min_lift = 0.2, min_lenght = 2)
association_results = list(association_rules)
```

In [15]:

```
print(len(association_results[0]))
```

In [16]:

```
results =[]
for item in association_results :
    pair = item [0]
    items = [x for x in pair]

    value0 = str(items[0])
    #value1 = str(items[1])
    value2 = str(item[1])[:9]
    value3 = str(item[2][0][2])[:9]
    value4 = str(item[2][0][3])[:9]

    rows = (value0,#value1,
             value2,value3,value4)

    results.append(rows)

label =[ 'title1','#'title2',
        'support','confidence','lift']

store_suggestion = pds.DataFrame.from_records(results,columns=label)
print(store_suggestion)
```

```
    title1      support confidence lift
0  avocado  0.3145082  0.3145082  1.0
    title1      support confidence lift
0  avocado  0.3145082  0.3145082  1.0
1  burgers   0.2429406  0.2429406  1.0
    title1      support confidence lift
0  avocado  0.3145082  0.3145082  1.0
1  burgers   0.2429406  0.2429406  1.0
2  chocolate  0.4756572  0.4756572  1.0
    title1      support confidence lift
0  avocado  0.3145082  0.3145082  1.0
1  burgers   0.2429406  0.2429406  1.0
2  chocolate  0.4756572  0.4756572  1.0
3  clothes  accessories  0.3398247  0.3398247  1.0
    title1      support confidence lift
0  avocado  0.3145082  0.3145082  1.0
1  burgers   0.2429406  0.2429406  1.0
2  chocolate  0.4756572  0.4756572  1.0
3  clothes  accessories  0.3398247  0.3398247  1.0
4  cookies   0.3588120  0.3588120  1.0
    title1      support confidence lift
0  avocado  0.3145082  0.3145082  1.0
1  burgers   0.2429406  0.2429406  1.0
2  chocolate  0.4756572  0.4756572  1.0
3  clothes  accessories  0.3398247  0.3398247  1.0
4  cookies   0.3588120  0.3588120  1.0
5  eggs      0.4099318  0.4099318  1.0
    title1      support confidence lift
0  avocado  0.3145082  0.3145082  1.0
1  burgers   0.2429406  0.2429406  1.0
2  chocolate  0.4756572  0.4756572  1.0
3  clothes  accessories  0.3398247  0.3398247  1.0
4  cookies   0.3588120  0.3588120  1.0
5  eggs      0.4099318  0.4099318  1.0
6  energy drink  0.3213242  0.3213242  1.0
    title1      support confidence lift
0  avocado  0.3145082  0.3145082  1.0
1  burgers   0.2429406  0.2429406  1.0
2  chocolate  0.4756572  0.4756572  1.0
3  clothes  accessories  0.3398247  0.3398247  1.0
4  cookies   0.3588120  0.3588120  1.0
5  eggs      0.4099318  0.4099318  1.0
6  energy drink  0.3213242  0.3213242  1.0
7  french fries  0.6548198  0.6548198  1.0
    title1      support confidence lift
0  avocado  0.3145082  0.3145082  1.0
1  burgers   0.2429406  0.2429406  1.0
2  chocolate  0.4756572  0.4756572  1.0
3  clothes  accessories  0.3398247  0.3398247  1.0
4  cookies   0.3588120  0.3588120  1.0
5  eggs      0.4099318  0.4099318  1.0
6  energy drink  0.3213242  0.3213242  1.0
7  french fries  0.6548198  0.6548198  1.0
8  herb & pepper  0.3042843  0.3042843  1.0
    title1      support confidence lift
0  avocado  0.3145082  0.3145082  1.0
1  burgers   0.2429406  0.2429406  1.0
2  chocolate  0.4756572  0.4756572  1.0
3  clothes  accessories  0.3398247  0.3398247  1.0
4  cookies   0.3588120  0.3588120  1.0
5  eggs      0.4099318  0.4099318  1.0
```

| 6  | energy drink        | 0.3213242 | 0.3213242  | 1.0  |  |
|----|---------------------|-----------|------------|------|--|
| 7  | french fries        | 0.6548198 | 0.6548198  | 1.0  |  |
| 8  | herb & pepper       | 0.3042843 | 0.3042843  | 1.0  |  |
| 9  | milk                | 0.4079844 | 0.4079844  | 1.0  |  |
| 0  | title1              | support   | confidence | lift |  |
| 1  | avocado             | 0.3145082 | 0.3145082  | 1.0  |  |
| 2  | burgers             | 0.2429406 | 0.2429406  | 1.0  |  |
| 3  | chocolate           | 0.4756572 | 0.4756572  | 1.0  |  |
| 4  | clothes accessories | 0.3398247 | 0.3398247  | 1.0  |  |
| 5  | cookies             | 0.3588120 | 0.3588120  | 1.0  |  |
| 6  | eggs                | 0.4099318 | 0.4099318  | 1.0  |  |
| 7  | energy drink        | 0.3213242 | 0.3213242  | 1.0  |  |
| 8  | french fries        | 0.6548198 | 0.6548198  | 1.0  |  |
| 9  | herb & pepper       | 0.3042843 | 0.3042843  | 1.0  |  |
| 10 | milk                | 0.4079844 | 0.4079844  | 1.0  |  |
| 11 | mineral water       | 0.4527750 | 0.4527750  | 1.0  |  |
| 12 | title1              | support   | confidence | lift |  |
| 13 | avocado             | 0.3145082 | 0.3145082  | 1.0  |  |
| 14 | burgers             | 0.2429406 | 0.2429406  | 1.0  |  |
| 15 | chocolate           | 0.4756572 | 0.4756572  | 1.0  |  |
| 16 | clothes accessories | 0.3398247 | 0.3398247  | 1.0  |  |
| 17 | cookies             | 0.3588120 | 0.3588120  | 1.0  |  |
| 18 | eggs                | 0.4099318 | 0.4099318  | 1.0  |  |
| 19 | energy drink        | 0.3213242 | 0.3213242  | 1.0  |  |
| 20 | french fries        | 0.6548198 | 0.6548198  | 1.0  |  |
| 21 | herb & pepper       | 0.3042843 | 0.3042843  | 1.0  |  |
| 22 | milk                | 0.4079844 | 0.4079844  | 1.0  |  |
| 23 | mineral water       | 0.4527750 | 0.4527750  | 1.0  |  |
| 24 | nan                 | 0.6285296 | 0.6285296  | 1.0  |  |
| 25 | title1              | support   | confidence | lift |  |
| 26 | avocado             | 0.3145082 | 0.3145082  | 1.0  |  |
| 27 | burgers             | 0.2429406 | 0.2429406  | 1.0  |  |
| 28 | chocolate           | 0.4756572 | 0.4756572  | 1.0  |  |
| 29 | clothes accessories | 0.3398247 | 0.3398247  | 1.0  |  |
| 30 | cookies             | 0.3588120 | 0.3588120  | 1.0  |  |
| 31 | eggs                | 0.4099318 | 0.4099318  | 1.0  |  |
| 32 | energy drink        | 0.3213242 | 0.3213242  | 1.0  |  |
| 33 | french fries        | 0.6548198 | 0.6548198  | 1.0  |  |
| 34 | herb & pepper       | 0.3042843 | 0.3042843  | 1.0  |  |
| 35 | milk                | 0.4079844 | 0.4079844  | 1.0  |  |
| 36 | mineral water       | 0.4527750 | 0.4527750  | 1.0  |  |
| 37 | nan                 | 0.6285296 | 0.6285296  | 1.0  |  |
| 38 | shrimp              | 0.2151898 | 0.2151898  | 1.0  |  |
| 39 | title1              | support   | confidence | lift |  |
| 40 | avocado             | 0.3145082 | 0.3145082  | 1.0  |  |
| 41 | burgers             | 0.2429406 | 0.2429406  | 1.0  |  |
| 42 | chocolate           | 0.4756572 | 0.4756572  | 1.0  |  |
| 43 | clothes accessories | 0.3398247 | 0.3398247  | 1.0  |  |
| 44 | cookies             | 0.3588120 | 0.3588120  | 1.0  |  |
| 45 | eggs                | 0.4099318 | 0.4099318  | 1.0  |  |
| 46 | energy drink        | 0.3213242 | 0.3213242  | 1.0  |  |
| 47 | french fries        | 0.6548198 | 0.6548198  | 1.0  |  |
| 48 | herb & pepper       | 0.3042843 | 0.3042843  | 1.0  |  |
| 49 | milk                | 0.4079844 | 0.4079844  | 1.0  |  |
| 50 | mineral water       | 0.4527750 | 0.4527750  | 1.0  |  |
| 51 | nan                 | 0.6285296 | 0.6285296  | 1.0  |  |
| 52 | shrimp              | 0.2151898 | 0.2151898  | 1.0  |  |
| 53 | turkey              | 0.5272638 | 0.5272638  | 1.0  |  |
| 54 | title1              | support   | confidence | lift |  |
| 55 | avocado             | 0.3145082 | 0.3145082  | 1.0  |  |
| 56 | burgers             | 0.2429406 | 0.2429406  | 1.0  |  |

| 2  | chocolate           | 0.4756572 | 0.4756572  | 1.0  |  |
|----|---------------------|-----------|------------|------|--|
| 3  | clothes accessories | 0.3398247 | 0.3398247  | 1.0  |  |
| 4  | cookies             | 0.3588120 | 0.3588120  | 1.0  |  |
| 5  | eggs                | 0.4099318 | 0.4099318  | 1.0  |  |
| 6  | energy drink        | 0.3213242 | 0.3213242  | 1.0  |  |
| 7  | french fries        | 0.6548198 | 0.6548198  | 1.0  |  |
| 8  | herb & pepper       | 0.3042843 | 0.3042843  | 1.0  |  |
| 9  | milk                | 0.4079844 | 0.4079844  | 1.0  |  |
| 10 | mineral water       | 0.4527750 | 0.4527750  | 1.0  |  |
| 11 | nan                 | 0.6285296 | 0.6285296  | 1.0  |  |
| 12 | shrimp              | 0.2151898 | 0.2151898  | 1.0  |  |
| 13 | turkey              | 0.5272638 | 0.5272638  | 1.0  |  |
| 14 | whole wheat pasta   | 0.2653359 | 0.2653359  | 1.0  |  |
|    | title1              | support   | confidence | lift |  |
| 0  | avocado             | 0.3145082 | 0.3145082  | 1.0  |  |
| 1  | burgers             | 0.2429406 | 0.2429406  | 1.0  |  |
| 2  | chocolate           | 0.4756572 | 0.4756572  | 1.0  |  |
| 3  | clothes accessories | 0.3398247 | 0.3398247  | 1.0  |  |
| 4  | cookies             | 0.3588120 | 0.3588120  | 1.0  |  |
| 5  | eggs                | 0.4099318 | 0.4099318  | 1.0  |  |
| 6  | energy drink        | 0.3213242 | 0.3213242  | 1.0  |  |
| 7  | french fries        | 0.6548198 | 0.6548198  | 1.0  |  |
| 8  | herb & pepper       | 0.3042843 | 0.3042843  | 1.0  |  |
| 9  | milk                | 0.4079844 | 0.4079844  | 1.0  |  |
| 10 | mineral water       | 0.4527750 | 0.4527750  | 1.0  |  |
| 11 | nan                 | 0.6285296 | 0.6285296  | 1.0  |  |
| 12 | shrimp              | 0.2151898 | 0.2151898  | 1.0  |  |
| 13 | turkey              | 0.5272638 | 0.5272638  | 1.0  |  |
| 14 | whole wheat pasta   | 0.2653359 | 0.2653359  | 1.0  |  |
| 15 | avocado             | 0.2030185 | 0.2030185  | 1.0  |  |
|    | title1              | support   | confidence | lift |  |
| 0  | avocado             | 0.3145082 | 0.3145082  | 1.0  |  |
| 1  | burgers             | 0.2429406 | 0.2429406  | 1.0  |  |
| 2  | chocolate           | 0.4756572 | 0.4756572  | 1.0  |  |
| 3  | clothes accessories | 0.3398247 | 0.3398247  | 1.0  |  |
| 4  | cookies             | 0.3588120 | 0.3588120  | 1.0  |  |
| 5  | eggs                | 0.4099318 | 0.4099318  | 1.0  |  |
| 6  | energy drink        | 0.3213242 | 0.3213242  | 1.0  |  |
| 7  | french fries        | 0.6548198 | 0.6548198  | 1.0  |  |
| 8  | herb & pepper       | 0.3042843 | 0.3042843  | 1.0  |  |
| 9  | milk                | 0.4079844 | 0.4079844  | 1.0  |  |
| 10 | mineral water       | 0.4527750 | 0.4527750  | 1.0  |  |
| 11 | nan                 | 0.6285296 | 0.6285296  | 1.0  |  |
| 12 | shrimp              | 0.2151898 | 0.2151898  | 1.0  |  |
| 13 | turkey              | 0.5272638 | 0.5272638  | 1.0  |  |
| 14 | whole wheat pasta   | 0.2653359 | 0.2653359  | 1.0  |  |
| 15 | avocado             | 0.2030185 | 0.2030185  | 1.0  |  |
| 16 | avocado             | 0.3037974 | 0.3037974  | 1.0  |  |
|    | title1              | support   | confidence | lift |  |
| 0  | avocado             | 0.3145082 | 0.3145082  | 1.0  |  |
| 1  | burgers             | 0.2429406 | 0.2429406  | 1.0  |  |
| 2  | chocolate           | 0.4756572 | 0.4756572  | 1.0  |  |
| 3  | clothes accessories | 0.3398247 | 0.3398247  | 1.0  |  |
| 4  | cookies             | 0.3588120 | 0.3588120  | 1.0  |  |
| 5  | eggs                | 0.4099318 | 0.4099318  | 1.0  |  |
| 6  | energy drink        | 0.3213242 | 0.3213242  | 1.0  |  |
| 7  | french fries        | 0.6548198 | 0.6548198  | 1.0  |  |
| 8  | herb & pepper       | 0.3042843 | 0.3042843  | 1.0  |  |
| 9  | milk                | 0.4079844 | 0.4079844  | 1.0  |  |
| 10 | mineral water       | 0.4527750 | 0.4527750  | 1.0  |  |
| 11 | nan                 | 0.6285296 | 0.6285296  | 1.0  |  |

|    |                     |               |           |            |      |
|----|---------------------|---------------|-----------|------------|------|
| 12 |                     | shrimp        | 0.2151898 | 0.2151898  | 1.0  |
| 13 |                     | turkey        | 0.5272638 | 0.5272638  | 1.0  |
| 14 | whole wheat pasta   |               | 0.2653359 | 0.2653359  | 1.0  |
| 15 |                     | avocado       | 0.2030185 | 0.2030185  | 1.0  |
| 16 |                     | avocado       | 0.3037974 | 0.3037974  | 1.0  |
| 17 |                     | avocado       | 0.2921129 | 0.2921129  | 1.0  |
|    |                     | title1        | support   | confidence | lift |
| 0  |                     | avocado       | 0.3145082 | 0.3145082  | 1.0  |
| 1  |                     | burgers       | 0.2429406 | 0.2429406  | 1.0  |
| 2  |                     | chocolate     | 0.4756572 | 0.4756572  | 1.0  |
| 3  | clothes accessories |               | 0.3398247 | 0.3398247  | 1.0  |
| 4  |                     | cookies       | 0.3588120 | 0.3588120  | 1.0  |
| 5  |                     | eggs          | 0.4099318 | 0.4099318  | 1.0  |
| 6  |                     | energy drink  | 0.3213242 | 0.3213242  | 1.0  |
| 7  |                     | french fries  | 0.6548198 | 0.6548198  | 1.0  |
| 8  |                     | herb & pepper | 0.3042843 | 0.3042843  | 1.0  |
| 9  |                     | milk          | 0.4079844 | 0.4079844  | 1.0  |
| 10 |                     | mineral water | 0.4527750 | 0.4527750  | 1.0  |
| 11 |                     | nan           | 0.6285296 | 0.6285296  | 1.0  |
| 12 |                     | shrimp        | 0.2151898 | 0.2151898  | 1.0  |
| 13 |                     | turkey        | 0.5272638 | 0.5272638  | 1.0  |
| 14 | whole wheat pasta   |               | 0.2653359 | 0.2653359  | 1.0  |
| 15 |                     | avocado       | 0.2030185 | 0.2030185  | 1.0  |
| 16 |                     | avocado       | 0.3037974 | 0.3037974  | 1.0  |
| 17 |                     | avocado       | 0.2921129 | 0.2921129  | 1.0  |
| 18 |                     | energy drink  | 0.2521908 | 0.2521908  | 1.0  |
|    |                     | title1        | support   | confidence | lift |
| 0  |                     | avocado       | 0.3145082 | 0.3145082  | 1.0  |
| 1  |                     | burgers       | 0.2429406 | 0.2429406  | 1.0  |
| 2  |                     | chocolate     | 0.4756572 | 0.4756572  | 1.0  |
| 3  | clothes accessories |               | 0.3398247 | 0.3398247  | 1.0  |
| 4  |                     | cookies       | 0.3588120 | 0.3588120  | 1.0  |
| 5  |                     | eggs          | 0.4099318 | 0.4099318  | 1.0  |
| 6  |                     | energy drink  | 0.3213242 | 0.3213242  | 1.0  |
| 7  |                     | french fries  | 0.6548198 | 0.6548198  | 1.0  |
| 8  |                     | herb & pepper | 0.3042843 | 0.3042843  | 1.0  |
| 9  |                     | milk          | 0.4079844 | 0.4079844  | 1.0  |
| 10 |                     | mineral water | 0.4527750 | 0.4527750  | 1.0  |
| 11 |                     | nan           | 0.6285296 | 0.6285296  | 1.0  |
| 12 |                     | shrimp        | 0.2151898 | 0.2151898  | 1.0  |
| 13 |                     | turkey        | 0.5272638 | 0.5272638  | 1.0  |
| 14 | whole wheat pasta   |               | 0.2653359 | 0.2653359  | 1.0  |
| 15 |                     | avocado       | 0.2030185 | 0.2030185  | 1.0  |
| 16 |                     | avocado       | 0.3037974 | 0.3037974  | 1.0  |
| 17 |                     | avocado       | 0.2921129 | 0.2921129  | 1.0  |
| 18 |                     | energy drink  | 0.2521908 | 0.2521908  | 1.0  |
| 19 |                     | french fries  | 0.3042843 | 0.3042843  | 1.0  |
|    |                     | title1        | support   | confidence | lift |
| 0  |                     | avocado       | 0.3145082 | 0.3145082  | 1.0  |
| 1  |                     | burgers       | 0.2429406 | 0.2429406  | 1.0  |
| 2  |                     | chocolate     | 0.4756572 | 0.4756572  | 1.0  |
| 3  | clothes accessories |               | 0.3398247 | 0.3398247  | 1.0  |
| 4  |                     | cookies       | 0.3588120 | 0.3588120  | 1.0  |
| 5  |                     | eggs          | 0.4099318 | 0.4099318  | 1.0  |
| 6  |                     | energy drink  | 0.3213242 | 0.3213242  | 1.0  |
| 7  |                     | french fries  | 0.6548198 | 0.6548198  | 1.0  |
| 8  |                     | herb & pepper | 0.3042843 | 0.3042843  | 1.0  |
| 9  |                     | milk          | 0.4079844 | 0.4079844  | 1.0  |
| 10 |                     | mineral water | 0.4527750 | 0.4527750  | 1.0  |
| 11 |                     | nan           | 0.6285296 | 0.6285296  | 1.0  |
| 12 |                     | shrimp        | 0.2151898 | 0.2151898  | 1.0  |

| 13 | turkey              | 0.5272638 | 0.5272638  | 1.0  |  |
|----|---------------------|-----------|------------|------|--|
| 14 | whole wheat pasta   | 0.2653359 | 0.2653359  | 1.0  |  |
| 15 | avocado             | 0.2030185 | 0.2030185  | 1.0  |  |
| 16 | avocado             | 0.3037974 | 0.3037974  | 1.0  |  |
| 17 | avocado             | 0.2921129 | 0.2921129  | 1.0  |  |
| 18 | energy drink        | 0.2521908 | 0.2521908  | 1.0  |  |
| 19 | french fries        | 0.3042843 | 0.3042843  | 1.0  |  |
| 20 | milk                | 0.2711781 | 0.2711781  | 1.0  |  |
|    | title1              | support   | confidence | lift |  |
| 0  | avocado             | 0.3145082 | 0.3145082  | 1.0  |  |
| 1  | burgers             | 0.2429406 | 0.2429406  | 1.0  |  |
| 2  | chocolate           | 0.4756572 | 0.4756572  | 1.0  |  |
| 3  | clothes accessories | 0.3398247 | 0.3398247  | 1.0  |  |
| 4  | cookies             | 0.3588120 | 0.3588120  | 1.0  |  |
| 5  | eggs                | 0.4099318 | 0.4099318  | 1.0  |  |
| 6  | energy drink        | 0.3213242 | 0.3213242  | 1.0  |  |
| 7  | french fries        | 0.6548198 | 0.6548198  | 1.0  |  |
| 8  | herb & pepper       | 0.3042843 | 0.3042843  | 1.0  |  |
| 9  | milk                | 0.4079844 | 0.4079844  | 1.0  |  |
| 10 | mineral water       | 0.4527750 | 0.4527750  | 1.0  |  |
| 11 | nan                 | 0.6285296 | 0.6285296  | 1.0  |  |
| 12 | shrimp              | 0.2151898 | 0.2151898  | 1.0  |  |
| 13 | turkey              | 0.5272638 | 0.5272638  | 1.0  |  |
| 14 | whole wheat pasta   | 0.2653359 | 0.2653359  | 1.0  |  |
| 15 | avocado             | 0.2030185 | 0.2030185  | 1.0  |  |
| 16 | avocado             | 0.3037974 | 0.3037974  | 1.0  |  |
| 17 | avocado             | 0.2921129 | 0.2921129  | 1.0  |  |
| 18 | energy drink        | 0.2521908 | 0.2521908  | 1.0  |  |
| 19 | french fries        | 0.3042843 | 0.3042843  | 1.0  |  |
| 20 | milk                | 0.2711781 | 0.2711781  | 1.0  |  |
| 21 | nan                 | 0.3763388 | 0.3763388  | 1.0  |  |
|    | title1              | support   | confidence | lift |  |
| 0  | avocado             | 0.3145082 | 0.3145082  | 1.0  |  |
| 1  | burgers             | 0.2429406 | 0.2429406  | 1.0  |  |
| 2  | chocolate           | 0.4756572 | 0.4756572  | 1.0  |  |
| 3  | clothes accessories | 0.3398247 | 0.3398247  | 1.0  |  |
| 4  | cookies             | 0.3588120 | 0.3588120  | 1.0  |  |
| 5  | eggs                | 0.4099318 | 0.4099318  | 1.0  |  |
| 6  | energy drink        | 0.3213242 | 0.3213242  | 1.0  |  |
| 7  | french fries        | 0.6548198 | 0.6548198  | 1.0  |  |
| 8  | herb & pepper       | 0.3042843 | 0.3042843  | 1.0  |  |
| 9  | milk                | 0.4079844 | 0.4079844  | 1.0  |  |
| 10 | mineral water       | 0.4527750 | 0.4527750  | 1.0  |  |
| 11 | nan                 | 0.6285296 | 0.6285296  | 1.0  |  |
| 12 | shrimp              | 0.2151898 | 0.2151898  | 1.0  |  |
| 13 | turkey              | 0.5272638 | 0.5272638  | 1.0  |  |
| 14 | whole wheat pasta   | 0.2653359 | 0.2653359  | 1.0  |  |
| 15 | avocado             | 0.2030185 | 0.2030185  | 1.0  |  |
| 16 | avocado             | 0.3037974 | 0.3037974  | 1.0  |  |
| 17 | avocado             | 0.2921129 | 0.2921129  | 1.0  |  |
| 18 | energy drink        | 0.2521908 | 0.2521908  | 1.0  |  |
| 19 | french fries        | 0.3042843 | 0.3042843  | 1.0  |  |
| 20 | milk                | 0.2711781 | 0.2711781  | 1.0  |  |
| 21 | nan                 | 0.3763388 | 0.3763388  | 1.0  |  |
| 22 | clothes accessories | 0.2512171 | 0.2512171  | 1.0  |  |
|    | title1              | support   | confidence | lift |  |
| 0  | avocado             | 0.3145082 | 0.3145082  | 1.0  |  |
| 1  | burgers             | 0.2429406 | 0.2429406  | 1.0  |  |
| 2  | chocolate           | 0.4756572 | 0.4756572  | 1.0  |  |
| 3  | clothes accessories | 0.3398247 | 0.3398247  | 1.0  |  |
| 4  | cookies             | 0.3588120 | 0.3588120  | 1.0  |  |

| 5  |                     | eggs          | 0.4099318 | 0.4099318  | 1.0  |
|----|---------------------|---------------|-----------|------------|------|
| 6  |                     | energy drink  | 0.3213242 | 0.3213242  | 1.0  |
| 7  |                     | french fries  | 0.6548198 | 0.6548198  | 1.0  |
| 8  |                     | herb & pepper | 0.3042843 | 0.3042843  | 1.0  |
| 9  |                     | milk          | 0.4079844 | 0.4079844  | 1.0  |
| 10 |                     | mineral water | 0.4527750 | 0.4527750  | 1.0  |
| 11 |                     | nan           | 0.6285296 | 0.6285296  | 1.0  |
| 12 |                     | shrimp        | 0.2151898 | 0.2151898  | 1.0  |
| 13 |                     | turkey        | 0.5272638 | 0.5272638  | 1.0  |
| 14 | whole wheat pasta   |               | 0.2653359 | 0.2653359  | 1.0  |
| 15 |                     | avocado       | 0.2030185 | 0.2030185  | 1.0  |
| 16 |                     | avocado       | 0.3037974 | 0.3037974  | 1.0  |
| 17 |                     | avocado       | 0.2921129 | 0.2921129  | 1.0  |
| 18 |                     | energy drink  | 0.2521908 | 0.2521908  | 1.0  |
| 19 |                     | french fries  | 0.3042843 | 0.3042843  | 1.0  |
| 20 |                     | milk          | 0.2711781 | 0.2711781  | 1.0  |
| 21 |                     | nan           | 0.3763388 | 0.3763388  | 1.0  |
| 22 | clothes accessories |               | 0.2512171 | 0.2512171  | 1.0  |
| 23 | clothes accessories |               | 0.3237585 | 0.3237585  | 1.0  |
|    |                     | title1        | support   | confidence | lift |
| 0  |                     | avocado       | 0.3145082 | 0.3145082  | 1.0  |
| 1  |                     | burgers       | 0.2429406 | 0.2429406  | 1.0  |
| 2  |                     | chocolate     | 0.4756572 | 0.4756572  | 1.0  |
| 3  | clothes accessories |               | 0.3398247 | 0.3398247  | 1.0  |
| 4  |                     | cookies       | 0.3588120 | 0.3588120  | 1.0  |
| 5  |                     | eggs          | 0.4099318 | 0.4099318  | 1.0  |
| 6  |                     | energy drink  | 0.3213242 | 0.3213242  | 1.0  |
| 7  |                     | french fries  | 0.6548198 | 0.6548198  | 1.0  |
| 8  |                     | herb & pepper | 0.3042843 | 0.3042843  | 1.0  |
| 9  |                     | milk          | 0.4079844 | 0.4079844  | 1.0  |
| 10 |                     | mineral water | 0.4527750 | 0.4527750  | 1.0  |
| 11 |                     | nan           | 0.6285296 | 0.6285296  | 1.0  |
| 12 |                     | shrimp        | 0.2151898 | 0.2151898  | 1.0  |
| 13 |                     | turkey        | 0.5272638 | 0.5272638  | 1.0  |
| 14 | whole wheat pasta   |               | 0.2653359 | 0.2653359  | 1.0  |
| 15 |                     | avocado       | 0.2030185 | 0.2030185  | 1.0  |
| 16 |                     | avocado       | 0.3037974 | 0.3037974  | 1.0  |
| 17 |                     | avocado       | 0.2921129 | 0.2921129  | 1.0  |
| 18 |                     | energy drink  | 0.2521908 | 0.2521908  | 1.0  |
| 19 |                     | french fries  | 0.3042843 | 0.3042843  | 1.0  |
| 20 |                     | milk          | 0.2711781 | 0.2711781  | 1.0  |
| 21 |                     | nan           | 0.3763388 | 0.3763388  | 1.0  |
| 22 | clothes accessories |               | 0.2512171 | 0.2512171  | 1.0  |
| 23 | clothes accessories |               | 0.3237585 | 0.3237585  | 1.0  |
| 24 | clothes accessories |               | 0.2108081 | 0.2108081  | 1.0  |
|    |                     | title1        | support   | confidence | lift |
| 0  |                     | avocado       | 0.3145082 | 0.3145082  | 1.0  |
| 1  |                     | burgers       | 0.2429406 | 0.2429406  | 1.0  |
| 2  |                     | chocolate     | 0.4756572 | 0.4756572  | 1.0  |
| 3  | clothes accessories |               | 0.3398247 | 0.3398247  | 1.0  |
| 4  |                     | cookies       | 0.3588120 | 0.3588120  | 1.0  |
| 5  |                     | eggs          | 0.4099318 | 0.4099318  | 1.0  |
| 6  |                     | energy drink  | 0.3213242 | 0.3213242  | 1.0  |
| 7  |                     | french fries  | 0.6548198 | 0.6548198  | 1.0  |
| 8  |                     | herb & pepper | 0.3042843 | 0.3042843  | 1.0  |
| 9  |                     | milk          | 0.4079844 | 0.4079844  | 1.0  |
| 10 |                     | mineral water | 0.4527750 | 0.4527750  | 1.0  |
| 11 |                     | nan           | 0.6285296 | 0.6285296  | 1.0  |
| 12 |                     | shrimp        | 0.2151898 | 0.2151898  | 1.0  |
| 13 |                     | turkey        | 0.5272638 | 0.5272638  | 1.0  |
| 14 | whole wheat pasta   |               | 0.2653359 | 0.2653359  | 1.0  |

|    |                     |               |           |            |      |
|----|---------------------|---------------|-----------|------------|------|
| 15 |                     | avocado       | 0.2030185 | 0.2030185  | 1.0  |
| 16 |                     | avocado       | 0.3037974 | 0.3037974  | 1.0  |
| 17 |                     | avocado       | 0.2921129 | 0.2921129  | 1.0  |
| 18 |                     | energy drink  | 0.2521908 | 0.2521908  | 1.0  |
| 19 |                     | french fries  | 0.3042843 | 0.3042843  | 1.0  |
| 20 |                     | milk          | 0.2711781 | 0.2711781  | 1.0  |
| 21 |                     | nan           | 0.3763388 | 0.3763388  | 1.0  |
| 22 | clothes accessories |               | 0.2512171 | 0.2512171  | 1.0  |
| 23 | clothes accessories |               | 0.3237585 | 0.3237585  | 1.0  |
| 24 | clothes accessories |               | 0.2108081 | 0.2108081  | 1.0  |
| 25 | clothes accessories |               | 0.3281402 | 0.3281402  | 1.0  |
|    |                     | title1        | support   | confidence | lift |
| 0  |                     | avocado       | 0.3145082 | 0.3145082  | 1.0  |
| 1  |                     | burgers       | 0.2429406 | 0.2429406  | 1.0  |
| 2  |                     | chocolate     | 0.4756572 | 0.4756572  | 1.0  |
| 3  | clothes accessories |               | 0.3398247 | 0.3398247  | 1.0  |
| 4  |                     | cookies       | 0.3588120 | 0.3588120  | 1.0  |
| 5  |                     | eggs          | 0.4099318 | 0.4099318  | 1.0  |
| 6  |                     | energy drink  | 0.3213242 | 0.3213242  | 1.0  |
| 7  |                     | french fries  | 0.6548198 | 0.6548198  | 1.0  |
| 8  |                     | herb & pepper | 0.3042843 | 0.3042843  | 1.0  |
| 9  |                     | milk          | 0.4079844 | 0.4079844  | 1.0  |
| 10 |                     | mineral water | 0.4527750 | 0.4527750  | 1.0  |
| 11 |                     | nan           | 0.6285296 | 0.6285296  | 1.0  |
| 12 |                     | shrimp        | 0.2151898 | 0.2151898  | 1.0  |
| 13 |                     | turkey        | 0.5272638 | 0.5272638  | 1.0  |
| 14 | whole wheat pasta   |               | 0.2653359 | 0.2653359  | 1.0  |
| 15 |                     | avocado       | 0.2030185 | 0.2030185  | 1.0  |
| 16 |                     | avocado       | 0.3037974 | 0.3037974  | 1.0  |
| 17 |                     | avocado       | 0.2921129 | 0.2921129  | 1.0  |
| 18 |                     | energy drink  | 0.2521908 | 0.2521908  | 1.0  |
| 19 |                     | french fries  | 0.3042843 | 0.3042843  | 1.0  |
| 20 |                     | milk          | 0.2711781 | 0.2711781  | 1.0  |
| 21 |                     | nan           | 0.3763388 | 0.3763388  | 1.0  |
| 22 | clothes accessories |               | 0.2512171 | 0.2512171  | 1.0  |
| 23 | clothes accessories |               | 0.3237585 | 0.3237585  | 1.0  |
| 24 | clothes accessories |               | 0.2108081 | 0.2108081  | 1.0  |
| 25 | clothes accessories |               | 0.3281402 | 0.3281402  | 1.0  |
| 26 |                     | cookies       | 0.3213242 | 0.3213242  | 1.0  |
|    |                     | title1        | support   | confidence | lift |
| 0  |                     | avocado       | 0.3145082 | 0.3145082  | 1.0  |
| 1  |                     | burgers       | 0.2429406 | 0.2429406  | 1.0  |
| 2  |                     | chocolate     | 0.4756572 | 0.4756572  | 1.0  |
| 3  | clothes accessories |               | 0.3398247 | 0.3398247  | 1.0  |
| 4  |                     | cookies       | 0.3588120 | 0.3588120  | 1.0  |
| 5  |                     | eggs          | 0.4099318 | 0.4099318  | 1.0  |
| 6  |                     | energy drink  | 0.3213242 | 0.3213242  | 1.0  |
| 7  |                     | french fries  | 0.6548198 | 0.6548198  | 1.0  |
| 8  |                     | herb & pepper | 0.3042843 | 0.3042843  | 1.0  |
| 9  |                     | milk          | 0.4079844 | 0.4079844  | 1.0  |
| 10 |                     | mineral water | 0.4527750 | 0.4527750  | 1.0  |
| 11 |                     | nan           | 0.6285296 | 0.6285296  | 1.0  |
| 12 |                     | shrimp        | 0.2151898 | 0.2151898  | 1.0  |
| 13 |                     | turkey        | 0.5272638 | 0.5272638  | 1.0  |
| 14 | whole wheat pasta   |               | 0.2653359 | 0.2653359  | 1.0  |
| 15 |                     | avocado       | 0.2030185 | 0.2030185  | 1.0  |
| 16 |                     | avocado       | 0.3037974 | 0.3037974  | 1.0  |
| 17 |                     | avocado       | 0.2921129 | 0.2921129  | 1.0  |
| 18 |                     | energy drink  | 0.2521908 | 0.2521908  | 1.0  |
| 19 |                     | french fries  | 0.3042843 | 0.3042843  | 1.0  |
| 20 |                     | milk          | 0.2711781 | 0.2711781  | 1.0  |

| 21 | nan                 | 0.3763388 | 0.3763388  | 1.0  |  |
|----|---------------------|-----------|------------|------|--|
| 22 | clothes accessories | 0.2512171 | 0.2512171  | 1.0  |  |
| 23 | clothes accessories | 0.3237585 | 0.3237585  | 1.0  |  |
| 24 | clothes accessories | 0.2108081 | 0.2108081  | 1.0  |  |
| 25 | clothes accessories | 0.3281402 | 0.3281402  | 1.0  |  |
| 26 | cookies             | 0.3213242 | 0.3213242  | 1.0  |  |
| 27 | cookies             | 0.2005842 | 0.2005842  | 1.0  |  |
|    | title1              | support   | confidence | lift |  |
| 0  | avocado             | 0.3145082 | 0.3145082  | 1.0  |  |
| 1  | burgers             | 0.2429406 | 0.2429406  | 1.0  |  |
| 2  | chocolate           | 0.4756572 | 0.4756572  | 1.0  |  |
| 3  | clothes accessories | 0.3398247 | 0.3398247  | 1.0  |  |
| 4  | cookies             | 0.3588120 | 0.3588120  | 1.0  |  |
| 5  | eggs                | 0.4099318 | 0.4099318  | 1.0  |  |
| 6  | energy drink        | 0.3213242 | 0.3213242  | 1.0  |  |
| 7  | french fries        | 0.6548198 | 0.6548198  | 1.0  |  |
| 8  | herb & pepper       | 0.3042843 | 0.3042843  | 1.0  |  |
| 9  | milk                | 0.4079844 | 0.4079844  | 1.0  |  |
| 10 | mineral water       | 0.4527750 | 0.4527750  | 1.0  |  |
| 11 | nan                 | 0.6285296 | 0.6285296  | 1.0  |  |
| 12 | shrimp              | 0.2151898 | 0.2151898  | 1.0  |  |
| 13 | turkey              | 0.5272638 | 0.5272638  | 1.0  |  |
| 14 | whole wheat pasta   | 0.2653359 | 0.2653359  | 1.0  |  |
| 15 | avocado             | 0.2030185 | 0.2030185  | 1.0  |  |
| 16 | avocado             | 0.3037974 | 0.3037974  | 1.0  |  |
| 17 | avocado             | 0.2921129 | 0.2921129  | 1.0  |  |
| 18 | energy drink        | 0.2521908 | 0.2521908  | 1.0  |  |
| 19 | french fries        | 0.3042843 | 0.3042843  | 1.0  |  |
| 20 | milk                | 0.2711781 | 0.2711781  | 1.0  |  |
| 21 | nan                 | 0.3763388 | 0.3763388  | 1.0  |  |
| 22 | clothes accessories | 0.2512171 | 0.2512171  | 1.0  |  |
| 23 | clothes accessories | 0.3237585 | 0.3237585  | 1.0  |  |
| 24 | clothes accessories | 0.2108081 | 0.2108081  | 1.0  |  |
| 25 | clothes accessories | 0.3281402 | 0.3281402  | 1.0  |  |
| 26 | cookies             | 0.3213242 | 0.3213242  | 1.0  |  |
| 27 | cookies             | 0.2005842 | 0.2005842  | 1.0  |  |
| 28 | cookies             | 0.2429406 | 0.2429406  | 1.0  |  |
|    | title1              | support   | confidence | lift |  |
| 0  | avocado             | 0.3145082 | 0.3145082  | 1.0  |  |
| 1  | burgers             | 0.2429406 | 0.2429406  | 1.0  |  |
| 2  | chocolate           | 0.4756572 | 0.4756572  | 1.0  |  |
| 3  | clothes accessories | 0.3398247 | 0.3398247  | 1.0  |  |
| 4  | cookies             | 0.3588120 | 0.3588120  | 1.0  |  |
| 5  | eggs                | 0.4099318 | 0.4099318  | 1.0  |  |
| 6  | energy drink        | 0.3213242 | 0.3213242  | 1.0  |  |
| 7  | french fries        | 0.6548198 | 0.6548198  | 1.0  |  |
| 8  | herb & pepper       | 0.3042843 | 0.3042843  | 1.0  |  |
| 9  | milk                | 0.4079844 | 0.4079844  | 1.0  |  |
| 10 | mineral water       | 0.4527750 | 0.4527750  | 1.0  |  |
| 11 | nan                 | 0.6285296 | 0.6285296  | 1.0  |  |
| 12 | shrimp              | 0.2151898 | 0.2151898  | 1.0  |  |
| 13 | turkey              | 0.5272638 | 0.5272638  | 1.0  |  |
| 14 | whole wheat pasta   | 0.2653359 | 0.2653359  | 1.0  |  |
| 15 | avocado             | 0.2030185 | 0.2030185  | 1.0  |  |
| 16 | avocado             | 0.3037974 | 0.3037974  | 1.0  |  |
| 17 | avocado             | 0.2921129 | 0.2921129  | 1.0  |  |
| 18 | energy drink        | 0.2521908 | 0.2521908  | 1.0  |  |
| 19 | french fries        | 0.3042843 | 0.3042843  | 1.0  |  |
| 20 | milk                | 0.2711781 | 0.2711781  | 1.0  |  |
| 21 | nan                 | 0.3763388 | 0.3763388  | 1.0  |  |
| 22 | clothes accessories | 0.2512171 | 0.2512171  | 1.0  |  |

| 23 | clothes accessories | 0.3237585 | 0.3237585  | 1.0  |  |
|----|---------------------|-----------|------------|------|--|
| 24 | clothes accessories | 0.2108081 | 0.2108081  | 1.0  |  |
| 25 | clothes accessories | 0.3281402 | 0.3281402  | 1.0  |  |
| 26 | cookies             | 0.3213242 | 0.3213242  | 1.0  |  |
| 27 | cookies             | 0.2005842 | 0.2005842  | 1.0  |  |
| 28 | cookies             | 0.2429406 | 0.2429406  | 1.0  |  |
| 29 | eggs                | 0.3617332 | 0.3617332  | 1.0  |  |
|    | title1              | support   | confidence | lift |  |
| 0  | avocado             | 0.3145082 | 0.3145082  | 1.0  |  |
| 1  | burgers             | 0.2429406 | 0.2429406  | 1.0  |  |
| 2  | chocolate           | 0.4756572 | 0.4756572  | 1.0  |  |
| 3  | clothes accessories | 0.3398247 | 0.3398247  | 1.0  |  |
| 4  | cookies             | 0.3588120 | 0.3588120  | 1.0  |  |
| 5  | eggs                | 0.4099318 | 0.4099318  | 1.0  |  |
| 6  | energy drink        | 0.3213242 | 0.3213242  | 1.0  |  |
| 7  | french fries        | 0.6548198 | 0.6548198  | 1.0  |  |
| 8  | herb & pepper       | 0.3042843 | 0.3042843  | 1.0  |  |
| 9  | milk                | 0.4079844 | 0.4079844  | 1.0  |  |
| 10 | mineral water       | 0.4527750 | 0.4527750  | 1.0  |  |
| 11 | nan                 | 0.6285296 | 0.6285296  | 1.0  |  |
| 12 | shrimp              | 0.2151898 | 0.2151898  | 1.0  |  |
| 13 | turkey              | 0.5272638 | 0.5272638  | 1.0  |  |
| 14 | whole wheat pasta   | 0.2653359 | 0.2653359  | 1.0  |  |
| 15 | avocado             | 0.2030185 | 0.2030185  | 1.0  |  |
| 16 | avocado             | 0.3037974 | 0.3037974  | 1.0  |  |
| 17 | avocado             | 0.2921129 | 0.2921129  | 1.0  |  |
| 18 | energy drink        | 0.2521908 | 0.2521908  | 1.0  |  |
| 19 | french fries        | 0.3042843 | 0.3042843  | 1.0  |  |
| 20 | milk                | 0.2711781 | 0.2711781  | 1.0  |  |
| 21 | nan                 | 0.3763388 | 0.3763388  | 1.0  |  |
| 22 | clothes accessories | 0.2512171 | 0.2512171  | 1.0  |  |
| 23 | clothes accessories | 0.3237585 | 0.3237585  | 1.0  |  |
| 24 | clothes accessories | 0.2108081 | 0.2108081  | 1.0  |  |
| 25 | clothes accessories | 0.3281402 | 0.3281402  | 1.0  |  |
| 26 | cookies             | 0.3213242 | 0.3213242  | 1.0  |  |
| 27 | cookies             | 0.2005842 | 0.2005842  | 1.0  |  |
| 28 | cookies             | 0.2429406 | 0.2429406  | 1.0  |  |
| 29 | eggs                | 0.3617332 | 0.3617332  | 1.0  |  |
| 30 | eggs                | 0.2059396 | 0.2059396  | 1.0  |  |
|    | title1              | support   | confidence | lift |  |
| 0  | avocado             | 0.3145082 | 0.3145082  | 1.0  |  |
| 1  | burgers             | 0.2429406 | 0.2429406  | 1.0  |  |
| 2  | chocolate           | 0.4756572 | 0.4756572  | 1.0  |  |
| 3  | clothes accessories | 0.3398247 | 0.3398247  | 1.0  |  |
| 4  | cookies             | 0.3588120 | 0.3588120  | 1.0  |  |
| 5  | eggs                | 0.4099318 | 0.4099318  | 1.0  |  |
| 6  | energy drink        | 0.3213242 | 0.3213242  | 1.0  |  |
| 7  | french fries        | 0.6548198 | 0.6548198  | 1.0  |  |
| 8  | herb & pepper       | 0.3042843 | 0.3042843  | 1.0  |  |
| 9  | milk                | 0.4079844 | 0.4079844  | 1.0  |  |
| 10 | mineral water       | 0.4527750 | 0.4527750  | 1.0  |  |
| 11 | nan                 | 0.6285296 | 0.6285296  | 1.0  |  |
| 12 | shrimp              | 0.2151898 | 0.2151898  | 1.0  |  |
| 13 | turkey              | 0.5272638 | 0.5272638  | 1.0  |  |
| 14 | whole wheat pasta   | 0.2653359 | 0.2653359  | 1.0  |  |
| 15 | avocado             | 0.2030185 | 0.2030185  | 1.0  |  |
| 16 | avocado             | 0.3037974 | 0.3037974  | 1.0  |  |
| 17 | avocado             | 0.2921129 | 0.2921129  | 1.0  |  |
| 18 | energy drink        | 0.2521908 | 0.2521908  | 1.0  |  |
| 19 | french fries        | 0.3042843 | 0.3042843  | 1.0  |  |
| 20 | milk                | 0.2711781 | 0.2711781  | 1.0  |  |

|    |                     |               |           |            |      |
|----|---------------------|---------------|-----------|------------|------|
| 21 |                     | nan           | 0.3763388 | 0.3763388  | 1.0  |
| 22 | clothes accessories |               | 0.2512171 | 0.2512171  | 1.0  |
| 23 | clothes accessories |               | 0.3237585 | 0.3237585  | 1.0  |
| 24 | clothes accessories |               | 0.2108081 | 0.2108081  | 1.0  |
| 25 | clothes accessories |               | 0.3281402 | 0.3281402  | 1.0  |
| 26 |                     | cookies       | 0.3213242 | 0.3213242  | 1.0  |
| 27 |                     | cookies       | 0.2005842 | 0.2005842  | 1.0  |
| 28 |                     | cookies       | 0.2429406 | 0.2429406  | 1.0  |
| 29 |                     | eggs          | 0.3617332 | 0.3617332  | 1.0  |
| 30 |                     | eggs          | 0.2059396 | 0.2059396  | 1.0  |
| 31 |                     | nan           | 0.2409931 | 0.2409931  | 1.0  |
|    |                     | title1        | support   | confidence | lift |
| 0  |                     | avocado       | 0.3145082 | 0.3145082  | 1.0  |
| 1  |                     | burgers       | 0.2429406 | 0.2429406  | 1.0  |
| 2  |                     | chocolate     | 0.4756572 | 0.4756572  | 1.0  |
| 3  | clothes accessories |               | 0.3398247 | 0.3398247  | 1.0  |
| 4  |                     | cookies       | 0.3588120 | 0.3588120  | 1.0  |
| 5  |                     | eggs          | 0.4099318 | 0.4099318  | 1.0  |
| 6  |                     | energy drink  | 0.3213242 | 0.3213242  | 1.0  |
| 7  |                     | french fries  | 0.6548198 | 0.6548198  | 1.0  |
| 8  |                     | herb & pepper | 0.3042843 | 0.3042843  | 1.0  |
| 9  |                     | milk          | 0.4079844 | 0.4079844  | 1.0  |
| 10 |                     | mineral water | 0.4527750 | 0.4527750  | 1.0  |
| 11 |                     | nan           | 0.6285296 | 0.6285296  | 1.0  |
| 12 |                     | shrimp        | 0.2151898 | 0.2151898  | 1.0  |
| 13 |                     | turkey        | 0.5272638 | 0.5272638  | 1.0  |
| 14 | whole wheat pasta   |               | 0.2653359 | 0.2653359  | 1.0  |
| 15 |                     | avocado       | 0.2030185 | 0.2030185  | 1.0  |
| 16 |                     | avocado       | 0.3037974 | 0.3037974  | 1.0  |
| 17 |                     | avocado       | 0.2921129 | 0.2921129  | 1.0  |
| 18 |                     | energy drink  | 0.2521908 | 0.2521908  | 1.0  |
| 19 |                     | french fries  | 0.3042843 | 0.3042843  | 1.0  |
| 20 |                     | milk          | 0.2711781 | 0.2711781  | 1.0  |
| 21 |                     | nan           | 0.3763388 | 0.3763388  | 1.0  |
| 22 | clothes accessories |               | 0.2512171 | 0.2512171  | 1.0  |
| 23 | clothes accessories |               | 0.3237585 | 0.3237585  | 1.0  |
| 24 | clothes accessories |               | 0.2108081 | 0.2108081  | 1.0  |
| 25 | clothes accessories |               | 0.3281402 | 0.3281402  | 1.0  |
| 26 |                     | cookies       | 0.3213242 | 0.3213242  | 1.0  |
| 27 |                     | cookies       | 0.2005842 | 0.2005842  | 1.0  |
| 28 |                     | cookies       | 0.2429406 | 0.2429406  | 1.0  |
| 29 |                     | eggs          | 0.3617332 | 0.3617332  | 1.0  |
| 30 |                     | eggs          | 0.2059396 | 0.2059396  | 1.0  |
| 31 |                     | nan           | 0.2409931 | 0.2409931  | 1.0  |
| 32 |                     | eggs          | 0.2848101 | 0.2848101  | 1.0  |
|    |                     | title1        | support   | confidence | lift |
| 0  |                     | avocado       | 0.3145082 | 0.3145082  | 1.0  |
| 1  |                     | burgers       | 0.2429406 | 0.2429406  | 1.0  |
| 2  |                     | chocolate     | 0.4756572 | 0.4756572  | 1.0  |
| 3  | clothes accessories |               | 0.3398247 | 0.3398247  | 1.0  |
| 4  |                     | cookies       | 0.3588120 | 0.3588120  | 1.0  |
| 5  |                     | eggs          | 0.4099318 | 0.4099318  | 1.0  |
| 6  |                     | energy drink  | 0.3213242 | 0.3213242  | 1.0  |
| 7  |                     | french fries  | 0.6548198 | 0.6548198  | 1.0  |
| 8  |                     | herb & pepper | 0.3042843 | 0.3042843  | 1.0  |
| 9  |                     | milk          | 0.4079844 | 0.4079844  | 1.0  |
| 10 |                     | mineral water | 0.4527750 | 0.4527750  | 1.0  |
| 11 |                     | nan           | 0.6285296 | 0.6285296  | 1.0  |
| 12 |                     | shrimp        | 0.2151898 | 0.2151898  | 1.0  |
| 13 |                     | turkey        | 0.5272638 | 0.5272638  | 1.0  |
| 14 | whole wheat pasta   |               | 0.2653359 | 0.2653359  | 1.0  |

| 15 | avocado             | 0.2030185 | 0.2030185  | 1.0  |  |
|----|---------------------|-----------|------------|------|--|
| 16 | avocado             | 0.3037974 | 0.3037974  | 1.0  |  |
| 17 | avocado             | 0.2921129 | 0.2921129  | 1.0  |  |
| 18 | energy drink        | 0.2521908 | 0.2521908  | 1.0  |  |
| 19 | french fries        | 0.3042843 | 0.3042843  | 1.0  |  |
| 20 | milk                | 0.2711781 | 0.2711781  | 1.0  |  |
| 21 | nan                 | 0.3763388 | 0.3763388  | 1.0  |  |
| 22 | clothes accessories | 0.2512171 | 0.2512171  | 1.0  |  |
| 23 | clothes accessories | 0.3237585 | 0.3237585  | 1.0  |  |
| 24 | clothes accessories | 0.2108081 | 0.2108081  | 1.0  |  |
| 25 | clothes accessories | 0.3281402 | 0.3281402  | 1.0  |  |
| 26 | cookies             | 0.3213242 | 0.3213242  | 1.0  |  |
| 27 | cookies             | 0.2005842 | 0.2005842  | 1.0  |  |
| 28 | cookies             | 0.2429406 | 0.2429406  | 1.0  |  |
| 29 | eggs                | 0.3617332 | 0.3617332  | 1.0  |  |
| 30 | eggs                | 0.2059396 | 0.2059396  | 1.0  |  |
| 31 | nan                 | 0.2409931 | 0.2409931  | 1.0  |  |
| 32 | eggs                | 0.2848101 | 0.2848101  | 1.0  |  |
| 33 | energy drink        | 0.3033106 | 0.3033106  | 1.0  |  |
|    | title1              | support   | confidence | lift |  |
| 0  | avocado             | 0.3145082 | 0.3145082  | 1.0  |  |
| 1  | burgers             | 0.2429406 | 0.2429406  | 1.0  |  |
| 2  | chocolate           | 0.4756572 | 0.4756572  | 1.0  |  |
| 3  | clothes accessories | 0.3398247 | 0.3398247  | 1.0  |  |
| 4  | cookies             | 0.3588120 | 0.3588120  | 1.0  |  |
| 5  | eggs                | 0.4099318 | 0.4099318  | 1.0  |  |
| 6  | energy drink        | 0.3213242 | 0.3213242  | 1.0  |  |
| 7  | french fries        | 0.6548198 | 0.6548198  | 1.0  |  |
| 8  | herb & pepper       | 0.3042843 | 0.3042843  | 1.0  |  |
| 9  | milk                | 0.4079844 | 0.4079844  | 1.0  |  |
| 10 | mineral water       | 0.4527750 | 0.4527750  | 1.0  |  |
| 11 | nan                 | 0.6285296 | 0.6285296  | 1.0  |  |
| 12 | shrimp              | 0.2151898 | 0.2151898  | 1.0  |  |
| 13 | turkey              | 0.5272638 | 0.5272638  | 1.0  |  |
| 14 | whole wheat pasta   | 0.2653359 | 0.2653359  | 1.0  |  |
| 15 | avocado             | 0.2030185 | 0.2030185  | 1.0  |  |
| 16 | avocado             | 0.3037974 | 0.3037974  | 1.0  |  |
| 17 | avocado             | 0.2921129 | 0.2921129  | 1.0  |  |
| 18 | energy drink        | 0.2521908 | 0.2521908  | 1.0  |  |
| 19 | french fries        | 0.3042843 | 0.3042843  | 1.0  |  |
| 20 | milk                | 0.2711781 | 0.2711781  | 1.0  |  |
| 21 | nan                 | 0.3763388 | 0.3763388  | 1.0  |  |
| 22 | clothes accessories | 0.2512171 | 0.2512171  | 1.0  |  |
| 23 | clothes accessories | 0.3237585 | 0.3237585  | 1.0  |  |
| 24 | clothes accessories | 0.2108081 | 0.2108081  | 1.0  |  |
| 25 | clothes accessories | 0.3281402 | 0.3281402  | 1.0  |  |
| 26 | cookies             | 0.3213242 | 0.3213242  | 1.0  |  |
| 27 | cookies             | 0.2005842 | 0.2005842  | 1.0  |  |
| 28 | cookies             | 0.2429406 | 0.2429406  | 1.0  |  |
| 29 | eggs                | 0.3617332 | 0.3617332  | 1.0  |  |
| 30 | eggs                | 0.2059396 | 0.2059396  | 1.0  |  |
| 31 | nan                 | 0.2409931 | 0.2409931  | 1.0  |  |
| 32 | eggs                | 0.2848101 | 0.2848101  | 1.0  |  |
| 33 | energy drink        | 0.3033106 | 0.3033106  | 1.0  |  |
| 34 | energy drink        | 0.3033106 | 0.3033106  | 1.0  |  |
|    | title1              | support   | confidence | lift |  |
| 0  | avocado             | 0.3145082 | 0.3145082  | 1.0  |  |
| 1  | burgers             | 0.2429406 | 0.2429406  | 1.0  |  |
| 2  | chocolate           | 0.4756572 | 0.4756572  | 1.0  |  |
| 3  | clothes accessories | 0.3398247 | 0.3398247  | 1.0  |  |
| 4  | cookies             | 0.3588120 | 0.3588120  | 1.0  |  |

|    |                     |               |           |            |      |
|----|---------------------|---------------|-----------|------------|------|
| 5  |                     | eggs          | 0.4099318 | 0.4099318  | 1.0  |
| 6  |                     | energy drink  | 0.3213242 | 0.3213242  | 1.0  |
| 7  |                     | french fries  | 0.6548198 | 0.6548198  | 1.0  |
| 8  |                     | herb & pepper | 0.3042843 | 0.3042843  | 1.0  |
| 9  |                     | milk          | 0.4079844 | 0.4079844  | 1.0  |
| 10 |                     | mineral water | 0.4527750 | 0.4527750  | 1.0  |
| 11 |                     | nan           | 0.6285296 | 0.6285296  | 1.0  |
| 12 |                     | shrimp        | 0.2151898 | 0.2151898  | 1.0  |
| 13 |                     | turkey        | 0.5272638 | 0.5272638  | 1.0  |
| 14 | whole wheat pasta   |               | 0.2653359 | 0.2653359  | 1.0  |
| 15 |                     | avocado       | 0.2030185 | 0.2030185  | 1.0  |
| 16 |                     | avocado       | 0.3037974 | 0.3037974  | 1.0  |
| 17 |                     | avocado       | 0.2921129 | 0.2921129  | 1.0  |
| 18 |                     | energy drink  | 0.2521908 | 0.2521908  | 1.0  |
| 19 |                     | french fries  | 0.3042843 | 0.3042843  | 1.0  |
| 20 |                     | milk          | 0.2711781 | 0.2711781  | 1.0  |
| 21 |                     | nan           | 0.3763388 | 0.3763388  | 1.0  |
| 22 | clothes accessories |               | 0.2512171 | 0.2512171  | 1.0  |
| 23 | clothes accessories |               | 0.3237585 | 0.3237585  | 1.0  |
| 24 | clothes accessories |               | 0.2108081 | 0.2108081  | 1.0  |
| 25 | clothes accessories |               | 0.3281402 | 0.3281402  | 1.0  |
| 26 |                     | cookies       | 0.3213242 | 0.3213242  | 1.0  |
| 27 |                     | cookies       | 0.2005842 | 0.2005842  | 1.0  |
| 28 |                     | cookies       | 0.2429406 | 0.2429406  | 1.0  |
| 29 |                     | eggs          | 0.3617332 | 0.3617332  | 1.0  |
| 30 |                     | eggs          | 0.2059396 | 0.2059396  | 1.0  |
| 31 |                     | nan           | 0.2409931 | 0.2409931  | 1.0  |
| 32 |                     | eggs          | 0.2848101 | 0.2848101  | 1.0  |
| 33 |                     | energy drink  | 0.3033106 | 0.3033106  | 1.0  |
| 34 |                     | energy drink  | 0.3033106 | 0.3033106  | 1.0  |
| 35 |                     | milk          | 0.2804284 | 0.2804284  | 1.0  |
|    |                     | title1        | support   | confidence | lift |
| 0  |                     | avocado       | 0.3145082 | 0.3145082  | 1.0  |
| 1  |                     | burgers       | 0.2429406 | 0.2429406  | 1.0  |
| 2  |                     | chocolate     | 0.4756572 | 0.4756572  | 1.0  |
| 3  | clothes accessories |               | 0.3398247 | 0.3398247  | 1.0  |
| 4  |                     | cookies       | 0.3588120 | 0.3588120  | 1.0  |
| 5  |                     | eggs          | 0.4099318 | 0.4099318  | 1.0  |
| 6  |                     | energy drink  | 0.3213242 | 0.3213242  | 1.0  |
| 7  |                     | french fries  | 0.6548198 | 0.6548198  | 1.0  |
| 8  |                     | herb & pepper | 0.3042843 | 0.3042843  | 1.0  |
| 9  |                     | milk          | 0.4079844 | 0.4079844  | 1.0  |
| 10 |                     | mineral water | 0.4527750 | 0.4527750  | 1.0  |
| 11 |                     | nan           | 0.6285296 | 0.6285296  | 1.0  |
| 12 |                     | shrimp        | 0.2151898 | 0.2151898  | 1.0  |
| 13 |                     | turkey        | 0.5272638 | 0.5272638  | 1.0  |
| 14 | whole wheat pasta   |               | 0.2653359 | 0.2653359  | 1.0  |
| 15 |                     | avocado       | 0.2030185 | 0.2030185  | 1.0  |
| 16 |                     | avocado       | 0.3037974 | 0.3037974  | 1.0  |
| 17 |                     | avocado       | 0.2921129 | 0.2921129  | 1.0  |
| 18 |                     | energy drink  | 0.2521908 | 0.2521908  | 1.0  |
| 19 |                     | french fries  | 0.3042843 | 0.3042843  | 1.0  |
| 20 |                     | milk          | 0.2711781 | 0.2711781  | 1.0  |
| 21 |                     | nan           | 0.3763388 | 0.3763388  | 1.0  |
| 22 | clothes accessories |               | 0.2512171 | 0.2512171  | 1.0  |
| 23 | clothes accessories |               | 0.3237585 | 0.3237585  | 1.0  |
| 24 | clothes accessories |               | 0.2108081 | 0.2108081  | 1.0  |
| 25 | clothes accessories |               | 0.3281402 | 0.3281402  | 1.0  |
| 26 |                     | cookies       | 0.3213242 | 0.3213242  | 1.0  |
| 27 |                     | cookies       | 0.2005842 | 0.2005842  | 1.0  |
| 28 |                     | cookies       | 0.2429406 | 0.2429406  | 1.0  |

| 29 | eggs                | 0.3617332 | 0.3617332  | 1.0  |  |
|----|---------------------|-----------|------------|------|--|
| 30 | eggs                | 0.2059396 | 0.2059396  | 1.0  |  |
| 31 | nan                 | 0.2409931 | 0.2409931  | 1.0  |  |
| 32 | eggs                | 0.2848101 | 0.2848101  | 1.0  |  |
| 33 | energy drink        | 0.3033106 | 0.3033106  | 1.0  |  |
| 34 | energy drink        | 0.3033106 | 0.3033106  | 1.0  |  |
| 35 | milk                | 0.2804284 | 0.2804284  | 1.0  |  |
| 36 | mineral water       | 0.2702044 | 0.2702044  | 1.0  |  |
|    | title1              | support   | confidence | lift |  |
| 0  | avocado             | 0.3145082 | 0.3145082  | 1.0  |  |
| 1  | burgers             | 0.2429406 | 0.2429406  | 1.0  |  |
| 2  | chocolate           | 0.4756572 | 0.4756572  | 1.0  |  |
| 3  | clothes accessories | 0.3398247 | 0.3398247  | 1.0  |  |
| 4  | cookies             | 0.3588120 | 0.3588120  | 1.0  |  |
| 5  | eggs                | 0.4099318 | 0.4099318  | 1.0  |  |
| 6  | energy drink        | 0.3213242 | 0.3213242  | 1.0  |  |
| 7  | french fries        | 0.6548198 | 0.6548198  | 1.0  |  |
| 8  | herb & pepper       | 0.3042843 | 0.3042843  | 1.0  |  |
| 9  | milk                | 0.4079844 | 0.4079844  | 1.0  |  |
| 10 | mineral water       | 0.4527750 | 0.4527750  | 1.0  |  |
| 11 | nan                 | 0.6285296 | 0.6285296  | 1.0  |  |
| 12 | shrimp              | 0.2151898 | 0.2151898  | 1.0  |  |
| 13 | turkey              | 0.5272638 | 0.5272638  | 1.0  |  |
| 14 | whole wheat pasta   | 0.2653359 | 0.2653359  | 1.0  |  |
| 15 | avocado             | 0.2030185 | 0.2030185  | 1.0  |  |
| 16 | avocado             | 0.3037974 | 0.3037974  | 1.0  |  |
| 17 | avocado             | 0.2921129 | 0.2921129  | 1.0  |  |
| 18 | energy drink        | 0.2521908 | 0.2521908  | 1.0  |  |
| 19 | french fries        | 0.3042843 | 0.3042843  | 1.0  |  |
| 20 | milk                | 0.2711781 | 0.2711781  | 1.0  |  |
| 21 | nan                 | 0.3763388 | 0.3763388  | 1.0  |  |
| 22 | clothes accessories | 0.2512171 | 0.2512171  | 1.0  |  |
| 23 | clothes accessories | 0.3237585 | 0.3237585  | 1.0  |  |
| 24 | clothes accessories | 0.2108081 | 0.2108081  | 1.0  |  |
| 25 | clothes accessories | 0.3281402 | 0.3281402  | 1.0  |  |
| 26 | cookies             | 0.3213242 | 0.3213242  | 1.0  |  |
| 27 | cookies             | 0.2005842 | 0.2005842  | 1.0  |  |
| 28 | cookies             | 0.2429406 | 0.2429406  | 1.0  |  |
| 29 | eggs                | 0.3617332 | 0.3617332  | 1.0  |  |
| 30 | eggs                | 0.2059396 | 0.2059396  | 1.0  |  |
| 31 | nan                 | 0.2409931 | 0.2409931  | 1.0  |  |
| 32 | eggs                | 0.2848101 | 0.2848101  | 1.0  |  |
| 33 | energy drink        | 0.3033106 | 0.3033106  | 1.0  |  |
| 34 | energy drink        | 0.3033106 | 0.3033106  | 1.0  |  |
| 35 | milk                | 0.2804284 | 0.2804284  | 1.0  |  |
| 36 | mineral water       | 0.2702044 | 0.2702044  | 1.0  |  |
| 37 | nan                 | 0.4819863 | 0.4819863  | 1.0  |  |
|    | title1              | support   | confidence | lift |  |
| 0  | avocado             | 0.3145082 | 0.3145082  | 1.0  |  |
| 1  | burgers             | 0.2429406 | 0.2429406  | 1.0  |  |
| 2  | chocolate           | 0.4756572 | 0.4756572  | 1.0  |  |
| 3  | clothes accessories | 0.3398247 | 0.3398247  | 1.0  |  |
| 4  | cookies             | 0.3588120 | 0.3588120  | 1.0  |  |
| 5  | eggs                | 0.4099318 | 0.4099318  | 1.0  |  |
| 6  | energy drink        | 0.3213242 | 0.3213242  | 1.0  |  |
| 7  | french fries        | 0.6548198 | 0.6548198  | 1.0  |  |
| 8  | herb & pepper       | 0.3042843 | 0.3042843  | 1.0  |  |
| 9  | milk                | 0.4079844 | 0.4079844  | 1.0  |  |
| 10 | mineral water       | 0.4527750 | 0.4527750  | 1.0  |  |
| 11 | nan                 | 0.6285296 | 0.6285296  | 1.0  |  |
| 12 | shrimp              | 0.2151898 | 0.2151898  | 1.0  |  |

| 13 |                     | turkey        | 0.5272638 | 0.5272638  | 1.0  |
|----|---------------------|---------------|-----------|------------|------|
| 14 | whole wheat pasta   |               | 0.2653359 | 0.2653359  | 1.0  |
| 15 |                     | avocado       | 0.2030185 | 0.2030185  | 1.0  |
| 16 |                     | avocado       | 0.3037974 | 0.3037974  | 1.0  |
| 17 |                     | avocado       | 0.2921129 | 0.2921129  | 1.0  |
| 18 |                     | energy drink  | 0.2521908 | 0.2521908  | 1.0  |
| 19 |                     | french fries  | 0.3042843 | 0.3042843  | 1.0  |
| 20 |                     | milk          | 0.2711781 | 0.2711781  | 1.0  |
| 21 |                     | nan           | 0.3763388 | 0.3763388  | 1.0  |
| 22 | clothes accessories |               | 0.2512171 | 0.2512171  | 1.0  |
| 23 | clothes accessories |               | 0.3237585 | 0.3237585  | 1.0  |
| 24 | clothes accessories |               | 0.2108081 | 0.2108081  | 1.0  |
| 25 | clothes accessories |               | 0.3281402 | 0.3281402  | 1.0  |
| 26 |                     | cookies       | 0.3213242 | 0.3213242  | 1.0  |
| 27 |                     | cookies       | 0.2005842 | 0.2005842  | 1.0  |
| 28 |                     | cookies       | 0.2429406 | 0.2429406  | 1.0  |
| 29 |                     | eggs          | 0.3617332 | 0.3617332  | 1.0  |
| 30 |                     | eggs          | 0.2059396 | 0.2059396  | 1.0  |
| 31 |                     | nan           | 0.2409931 | 0.2409931  | 1.0  |
| 32 |                     | eggs          | 0.2848101 | 0.2848101  | 1.0  |
| 33 |                     | energy drink  | 0.3033106 | 0.3033106  | 1.0  |
| 34 |                     | energy drink  | 0.3033106 | 0.3033106  | 1.0  |
| 35 |                     | milk          | 0.2804284 | 0.2804284  | 1.0  |
| 36 |                     | mineral water | 0.2702044 | 0.2702044  | 1.0  |
| 37 |                     | nan           | 0.4819863 | 0.4819863  | 1.0  |
| 38 |                     | french fries  | 0.3709834 | 0.3709834  | 1.0  |
|    |                     | title1        | support   | confidence | lift |
| 0  |                     | avocado       | 0.3145082 | 0.3145082  | 1.0  |
| 1  |                     | burgers       | 0.2429406 | 0.2429406  | 1.0  |
| 2  |                     | chocolate     | 0.4756572 | 0.4756572  | 1.0  |
| 3  | clothes accessories |               | 0.3398247 | 0.3398247  | 1.0  |
| 4  |                     | cookies       | 0.3588120 | 0.3588120  | 1.0  |
| 5  |                     | eggs          | 0.4099318 | 0.4099318  | 1.0  |
| 6  |                     | energy drink  | 0.3213242 | 0.3213242  | 1.0  |
| 7  |                     | french fries  | 0.6548198 | 0.6548198  | 1.0  |
| 8  |                     | herb & pepper | 0.3042843 | 0.3042843  | 1.0  |
| 9  |                     | milk          | 0.4079844 | 0.4079844  | 1.0  |
| 10 |                     | mineral water | 0.4527750 | 0.4527750  | 1.0  |
| 11 |                     | nan           | 0.6285296 | 0.6285296  | 1.0  |
| 12 |                     | shrimp        | 0.2151898 | 0.2151898  | 1.0  |
| 13 |                     | turkey        | 0.5272638 | 0.5272638  | 1.0  |
| 14 | whole wheat pasta   |               | 0.2653359 | 0.2653359  | 1.0  |
| 15 |                     | avocado       | 0.2030185 | 0.2030185  | 1.0  |
| 16 |                     | avocado       | 0.3037974 | 0.3037974  | 1.0  |
| 17 |                     | avocado       | 0.2921129 | 0.2921129  | 1.0  |
| 18 |                     | energy drink  | 0.2521908 | 0.2521908  | 1.0  |
| 19 |                     | french fries  | 0.3042843 | 0.3042843  | 1.0  |
| 20 |                     | milk          | 0.2711781 | 0.2711781  | 1.0  |
| 21 |                     | nan           | 0.3763388 | 0.3763388  | 1.0  |
| 22 | clothes accessories |               | 0.2512171 | 0.2512171  | 1.0  |
| 23 | clothes accessories |               | 0.3237585 | 0.3237585  | 1.0  |
| 24 | clothes accessories |               | 0.2108081 | 0.2108081  | 1.0  |
| 25 | clothes accessories |               | 0.3281402 | 0.3281402  | 1.0  |
| 26 |                     | cookies       | 0.3213242 | 0.3213242  | 1.0  |
| 27 |                     | cookies       | 0.2005842 | 0.2005842  | 1.0  |
| 28 |                     | cookies       | 0.2429406 | 0.2429406  | 1.0  |
| 29 |                     | eggs          | 0.3617332 | 0.3617332  | 1.0  |
| 30 |                     | eggs          | 0.2059396 | 0.2059396  | 1.0  |
| 31 |                     | nan           | 0.2409931 | 0.2409931  | 1.0  |
| 32 |                     | eggs          | 0.2848101 | 0.2848101  | 1.0  |
| 33 |                     | energy drink  | 0.3033106 | 0.3033106  | 1.0  |

|    |                     |           |            |      |
|----|---------------------|-----------|------------|------|
| 34 | energy drink        | 0.3033106 | 0.3033106  | 1.0  |
| 35 | milk                | 0.2804284 | 0.2804284  | 1.0  |
| 36 | mineral water       | 0.2702044 | 0.2702044  | 1.0  |
| 37 | nan                 | 0.4819863 | 0.4819863  | 1.0  |
| 38 | french fries        | 0.3709834 | 0.3709834  | 1.0  |
| 39 | herb & pepper       | 0.2478091 | 0.2478091  | 1.0  |
|    | title1              | support   | confidence | lift |
| 0  | avocado             | 0.3145082 | 0.3145082  | 1.0  |
| 1  | burgers             | 0.2429406 | 0.2429406  | 1.0  |
| 2  | chocolate           | 0.4756572 | 0.4756572  | 1.0  |
| 3  | clothes accessories | 0.3398247 | 0.3398247  | 1.0  |
| 4  | cookies             | 0.3588120 | 0.3588120  | 1.0  |
| 5  | eggs                | 0.4099318 | 0.4099318  | 1.0  |
| 6  | energy drink        | 0.3213242 | 0.3213242  | 1.0  |
| 7  | french fries        | 0.6548198 | 0.6548198  | 1.0  |
| 8  | herb & pepper       | 0.3042843 | 0.3042843  | 1.0  |
| 9  | milk                | 0.4079844 | 0.4079844  | 1.0  |
| 10 | mineral water       | 0.4527750 | 0.4527750  | 1.0  |
| 11 | nan                 | 0.6285296 | 0.6285296  | 1.0  |
| 12 | shrimp              | 0.2151898 | 0.2151898  | 1.0  |
| 13 | turkey              | 0.5272638 | 0.5272638  | 1.0  |
| 14 | whole wheat pasta   | 0.2653359 | 0.2653359  | 1.0  |
| 15 | avocado             | 0.2030185 | 0.2030185  | 1.0  |
| 16 | avocado             | 0.3037974 | 0.3037974  | 1.0  |
| 17 | avocado             | 0.2921129 | 0.2921129  | 1.0  |
| 18 | energy drink        | 0.2521908 | 0.2521908  | 1.0  |
| 19 | french fries        | 0.3042843 | 0.3042843  | 1.0  |
| 20 | milk                | 0.2711781 | 0.2711781  | 1.0  |
| 21 | nan                 | 0.3763388 | 0.3763388  | 1.0  |
| 22 | clothes accessories | 0.2512171 | 0.2512171  | 1.0  |
| 23 | clothes accessories | 0.3237585 | 0.3237585  | 1.0  |
| 24 | clothes accessories | 0.2108081 | 0.2108081  | 1.0  |
| 25 | clothes accessories | 0.3281402 | 0.3281402  | 1.0  |
| 26 | cookies             | 0.3213242 | 0.3213242  | 1.0  |
| 27 | cookies             | 0.2005842 | 0.2005842  | 1.0  |
| 28 | cookies             | 0.2429406 | 0.2429406  | 1.0  |
| 29 | eggs                | 0.3617332 | 0.3617332  | 1.0  |
| 30 | eggs                | 0.2059396 | 0.2059396  | 1.0  |
| 31 | nan                 | 0.2409931 | 0.2409931  | 1.0  |
| 32 | eggs                | 0.2848101 | 0.2848101  | 1.0  |
| 33 | energy drink        | 0.3033106 | 0.3033106  | 1.0  |
| 34 | energy drink        | 0.3033106 | 0.3033106  | 1.0  |
| 35 | milk                | 0.2804284 | 0.2804284  | 1.0  |
| 36 | mineral water       | 0.2702044 | 0.2702044  | 1.0  |
| 37 | nan                 | 0.4819863 | 0.4819863  | 1.0  |
| 38 | french fries        | 0.3709834 | 0.3709834  | 1.0  |
| 39 | herb & pepper       | 0.2478091 | 0.2478091  | 1.0  |
| 40 | nan                 | 0.2702044 | 0.2702044  | 1.0  |
|    | title1              | support   | confidence | lift |
| 0  | avocado             | 0.3145082 | 0.3145082  | 1.0  |
| 1  | burgers             | 0.2429406 | 0.2429406  | 1.0  |
| 2  | chocolate           | 0.4756572 | 0.4756572  | 1.0  |
| 3  | clothes accessories | 0.3398247 | 0.3398247  | 1.0  |
| 4  | cookies             | 0.3588120 | 0.3588120  | 1.0  |
| 5  | eggs                | 0.4099318 | 0.4099318  | 1.0  |
| 6  | energy drink        | 0.3213242 | 0.3213242  | 1.0  |
| 7  | french fries        | 0.6548198 | 0.6548198  | 1.0  |
| 8  | herb & pepper       | 0.3042843 | 0.3042843  | 1.0  |
| 9  | milk                | 0.4079844 | 0.4079844  | 1.0  |
| 10 | mineral water       | 0.4527750 | 0.4527750  | 1.0  |
| 11 | nan                 | 0.6285296 | 0.6285296  | 1.0  |

|    |                     |           |           |            |      |
|----|---------------------|-----------|-----------|------------|------|
| 12 |                     | shrimp    | 0.2151898 | 0.2151898  | 1.0  |
| 13 |                     | turkey    | 0.5272638 | 0.5272638  | 1.0  |
| 14 | whole wheat pasta   |           | 0.2653359 | 0.2653359  | 1.0  |
| 15 |                     | avocado   | 0.2030185 | 0.2030185  | 1.0  |
| 16 |                     | avocado   | 0.3037974 | 0.3037974  | 1.0  |
| 17 |                     | avocado   | 0.2921129 | 0.2921129  | 1.0  |
| 18 | energy drink        |           | 0.2521908 | 0.2521908  | 1.0  |
| 19 | french fries        |           | 0.3042843 | 0.3042843  | 1.0  |
| 20 |                     | milk      | 0.2711781 | 0.2711781  | 1.0  |
| 21 |                     | nan       | 0.3763388 | 0.3763388  | 1.0  |
| 22 | clothes accessories |           | 0.2512171 | 0.2512171  | 1.0  |
| 23 | clothes accessories |           | 0.3237585 | 0.3237585  | 1.0  |
| 24 | clothes accessories |           | 0.2108081 | 0.2108081  | 1.0  |
| 25 | clothes accessories |           | 0.3281402 | 0.3281402  | 1.0  |
| 26 |                     | cookies   | 0.3213242 | 0.3213242  | 1.0  |
| 27 |                     | cookies   | 0.2005842 | 0.2005842  | 1.0  |
| 28 |                     | cookies   | 0.2429406 | 0.2429406  | 1.0  |
| 29 |                     | eggs      | 0.3617332 | 0.3617332  | 1.0  |
| 30 |                     | eggs      | 0.2059396 | 0.2059396  | 1.0  |
| 31 |                     | nan       | 0.2409931 | 0.2409931  | 1.0  |
| 32 |                     | eggs      | 0.2848101 | 0.2848101  | 1.0  |
| 33 | energy drink        |           | 0.3033106 | 0.3033106  | 1.0  |
| 34 | energy drink        |           | 0.3033106 | 0.3033106  | 1.0  |
| 35 |                     | milk      | 0.2804284 | 0.2804284  | 1.0  |
| 36 | mineral water       |           | 0.2702044 | 0.2702044  | 1.0  |
| 37 |                     | nan       | 0.4819863 | 0.4819863  | 1.0  |
| 38 | french fries        |           | 0.3709834 | 0.3709834  | 1.0  |
| 39 | herb & pepper       |           | 0.2478091 | 0.2478091  | 1.0  |
| 40 |                     | nan       | 0.2702044 | 0.2702044  | 1.0  |
| 41 | mineral water       |           | 0.3476144 | 0.3476144  | 1.0  |
|    |                     | title1    | support   | confidence | lift |
| 0  |                     | avocado   | 0.3145082 | 0.3145082  | 1.0  |
| 1  |                     | burgers   | 0.2429406 | 0.2429406  | 1.0  |
| 2  |                     | chocolate | 0.4756572 | 0.4756572  | 1.0  |
| 3  | clothes accessories |           | 0.3398247 | 0.3398247  | 1.0  |
| 4  |                     | cookies   | 0.3588120 | 0.3588120  | 1.0  |
| 5  |                     | eggs      | 0.4099318 | 0.4099318  | 1.0  |
| 6  | energy drink        |           | 0.3213242 | 0.3213242  | 1.0  |
| 7  | french fries        |           | 0.6548198 | 0.6548198  | 1.0  |
| 8  | herb & pepper       |           | 0.3042843 | 0.3042843  | 1.0  |
| 9  |                     | milk      | 0.4079844 | 0.4079844  | 1.0  |
| 10 | mineral water       |           | 0.4527750 | 0.4527750  | 1.0  |
| 11 |                     | nan       | 0.6285296 | 0.6285296  | 1.0  |
| 12 |                     | shrimp    | 0.2151898 | 0.2151898  | 1.0  |
| 13 |                     | turkey    | 0.5272638 | 0.5272638  | 1.0  |
| 14 | whole wheat pasta   |           | 0.2653359 | 0.2653359  | 1.0  |
| 15 |                     | avocado   | 0.2030185 | 0.2030185  | 1.0  |
| 16 |                     | avocado   | 0.3037974 | 0.3037974  | 1.0  |
| 17 |                     | avocado   | 0.2921129 | 0.2921129  | 1.0  |
| 18 | energy drink        |           | 0.2521908 | 0.2521908  | 1.0  |
| 19 | french fries        |           | 0.3042843 | 0.3042843  | 1.0  |
| 20 |                     | milk      | 0.2711781 | 0.2711781  | 1.0  |
| 21 |                     | nan       | 0.3763388 | 0.3763388  | 1.0  |
| 22 | clothes accessories |           | 0.2512171 | 0.2512171  | 1.0  |
| 23 | clothes accessories |           | 0.3237585 | 0.3237585  | 1.0  |
| 24 | clothes accessories |           | 0.2108081 | 0.2108081  | 1.0  |
| 25 | clothes accessories |           | 0.3281402 | 0.3281402  | 1.0  |
| 26 |                     | cookies   | 0.3213242 | 0.3213242  | 1.0  |
| 27 |                     | cookies   | 0.2005842 | 0.2005842  | 1.0  |
| 28 |                     | cookies   | 0.2429406 | 0.2429406  | 1.0  |
| 29 |                     | eggs      | 0.3617332 | 0.3617332  | 1.0  |

| 30 |                     | eggs          | 0.2059396               | 0.2059396 1.0 |
|----|---------------------|---------------|-------------------------|---------------|
| 31 |                     | nan           | 0.2409931               | 0.2409931 1.0 |
| 32 |                     | eggs          | 0.2848101               | 0.2848101 1.0 |
| 33 | energy drink        |               | 0.3033106               | 0.3033106 1.0 |
| 34 | energy drink        |               | 0.3033106               | 0.3033106 1.0 |
| 35 | milk                |               | 0.2804284               | 0.2804284 1.0 |
| 36 | mineral water       |               | 0.2702044               | 0.2702044 1.0 |
| 37 | nan                 |               | 0.4819863               | 0.4819863 1.0 |
| 38 | french fries        |               | 0.3709834               | 0.3709834 1.0 |
| 39 | herb & pepper       |               | 0.2478091               | 0.2478091 1.0 |
| 40 | nan                 |               | 0.2702044               | 0.2702044 1.0 |
| 41 | mineral water       |               | 0.3476144               | 0.3476144 1.0 |
| 42 | nan                 |               | 0.2502434               | 0.2502434 1.0 |
|    |                     | title1        | support confidence lift |               |
| 0  |                     | avocado       | 0.3145082               | 0.3145082 1.0 |
| 1  |                     | burgers       | 0.2429406               | 0.2429406 1.0 |
| 2  |                     | chocolate     | 0.4756572               | 0.4756572 1.0 |
| 3  | clothes accessories |               | 0.3398247               | 0.3398247 1.0 |
| 4  |                     | cookies       | 0.3588120               | 0.3588120 1.0 |
| 5  |                     | eggs          | 0.4099318               | 0.4099318 1.0 |
| 6  |                     | energy drink  | 0.3213242               | 0.3213242 1.0 |
| 7  |                     | french fries  | 0.6548198               | 0.6548198 1.0 |
| 8  |                     | herb & pepper | 0.3042843               | 0.3042843 1.0 |
| 9  |                     | milk          | 0.4079844               | 0.4079844 1.0 |
| 10 |                     | mineral water | 0.4527750               | 0.4527750 1.0 |
| 11 |                     | nan           | 0.6285296               | 0.6285296 1.0 |
| 12 |                     | shrimp        | 0.2151898               | 0.2151898 1.0 |
| 13 |                     | turkey        | 0.5272638               | 0.5272638 1.0 |
| 14 | whole wheat pasta   |               | 0.2653359               | 0.2653359 1.0 |
| 15 |                     | avocado       | 0.2030185               | 0.2030185 1.0 |
| 16 |                     | avocado       | 0.3037974               | 0.3037974 1.0 |
| 17 |                     | avocado       | 0.2921129               | 0.2921129 1.0 |
| 18 |                     | energy drink  | 0.2521908               | 0.2521908 1.0 |
| 19 |                     | french fries  | 0.3042843               | 0.3042843 1.0 |
| 20 |                     | milk          | 0.2711781               | 0.2711781 1.0 |
| 21 |                     | nan           | 0.3763388               | 0.3763388 1.0 |
| 22 | clothes accessories |               | 0.2512171               | 0.2512171 1.0 |
| 23 | clothes accessories |               | 0.3237585               | 0.3237585 1.0 |
| 24 | clothes accessories |               | 0.2108081               | 0.2108081 1.0 |
| 25 | clothes accessories |               | 0.3281402               | 0.3281402 1.0 |
| 26 |                     | cookies       | 0.3213242               | 0.3213242 1.0 |
| 27 |                     | cookies       | 0.2005842               | 0.2005842 1.0 |
| 28 |                     | cookies       | 0.2429406               | 0.2429406 1.0 |
| 29 |                     | eggs          | 0.3617332               | 0.3617332 1.0 |
| 30 |                     | eggs          | 0.2059396               | 0.2059396 1.0 |
| 31 |                     | nan           | 0.2409931               | 0.2409931 1.0 |
| 32 |                     | eggs          | 0.2848101               | 0.2848101 1.0 |
| 33 |                     | energy drink  | 0.3033106               | 0.3033106 1.0 |
| 34 |                     | energy drink  | 0.3033106               | 0.3033106 1.0 |
| 35 |                     | milk          | 0.2804284               | 0.2804284 1.0 |
| 36 |                     | mineral water | 0.2702044               | 0.2702044 1.0 |
| 37 |                     | nan           | 0.4819863               | 0.4819863 1.0 |
| 38 |                     | french fries  | 0.3709834               | 0.3709834 1.0 |
| 39 |                     | herb & pepper | 0.2478091               | 0.2478091 1.0 |
| 40 |                     | nan           | 0.2702044               | 0.2702044 1.0 |
| 41 |                     | mineral water | 0.3476144               | 0.3476144 1.0 |
| 42 |                     | nan           | 0.2502434               | 0.2502434 1.0 |
| 43 |                     | avocado       | 0.2891918               | 0.2891918 1.0 |
|    |                     | title1        | support confidence lift |               |
| 0  |                     | avocado       | 0.3145082               | 0.3145082 1.0 |
| 1  |                     | burgers       | 0.2429406               | 0.2429406 1.0 |

|    |                     |           |            |      |
|----|---------------------|-----------|------------|------|
| 2  | chocolate           | 0.4756572 | 0.4756572  | 1.0  |
| 3  | clothes accessories | 0.3398247 | 0.3398247  | 1.0  |
| 4  | cookies             | 0.3588120 | 0.3588120  | 1.0  |
| 5  | eggs                | 0.4099318 | 0.4099318  | 1.0  |
| 6  | energy drink        | 0.3213242 | 0.3213242  | 1.0  |
| 7  | french fries        | 0.6548198 | 0.6548198  | 1.0  |
| 8  | herb & pepper       | 0.3042843 | 0.3042843  | 1.0  |
| 9  | milk                | 0.4079844 | 0.4079844  | 1.0  |
| 10 | mineral water       | 0.4527750 | 0.4527750  | 1.0  |
| 11 | nan                 | 0.6285296 | 0.6285296  | 1.0  |
| 12 | shrimp              | 0.2151898 | 0.2151898  | 1.0  |
| 13 | turkey              | 0.5272638 | 0.5272638  | 1.0  |
| 14 | whole wheat pasta   | 0.2653359 | 0.2653359  | 1.0  |
| 15 | avocado             | 0.2030185 | 0.2030185  | 1.0  |
| 16 | avocado             | 0.3037974 | 0.3037974  | 1.0  |
| 17 | avocado             | 0.2921129 | 0.2921129  | 1.0  |
| 18 | energy drink        | 0.2521908 | 0.2521908  | 1.0  |
| 19 | french fries        | 0.3042843 | 0.3042843  | 1.0  |
| 20 | milk                | 0.2711781 | 0.2711781  | 1.0  |
| 21 | nan                 | 0.3763388 | 0.3763388  | 1.0  |
| 22 | clothes accessories | 0.2512171 | 0.2512171  | 1.0  |
| 23 | clothes accessories | 0.3237585 | 0.3237585  | 1.0  |
| 24 | clothes accessories | 0.2108081 | 0.2108081  | 1.0  |
| 25 | clothes accessories | 0.3281402 | 0.3281402  | 1.0  |
| 26 | cookies             | 0.3213242 | 0.3213242  | 1.0  |
| 27 | cookies             | 0.2005842 | 0.2005842  | 1.0  |
| 28 | cookies             | 0.2429406 | 0.2429406  | 1.0  |
| 29 | eggs                | 0.3617332 | 0.3617332  | 1.0  |
| 30 | eggs                | 0.2059396 | 0.2059396  | 1.0  |
| 31 | nan                 | 0.2409931 | 0.2409931  | 1.0  |
| 32 | eggs                | 0.2848101 | 0.2848101  | 1.0  |
| 33 | energy drink        | 0.3033106 | 0.3033106  | 1.0  |
| 34 | energy drink        | 0.3033106 | 0.3033106  | 1.0  |
| 35 | milk                | 0.2804284 | 0.2804284  | 1.0  |
| 36 | mineral water       | 0.2702044 | 0.2702044  | 1.0  |
| 37 | nan                 | 0.4819863 | 0.4819863  | 1.0  |
| 38 | french fries        | 0.3709834 | 0.3709834  | 1.0  |
| 39 | herb & pepper       | 0.2478091 | 0.2478091  | 1.0  |
| 40 | nan                 | 0.2702044 | 0.2702044  | 1.0  |
| 41 | mineral water       | 0.3476144 | 0.3476144  | 1.0  |
| 42 | nan                 | 0.2502434 | 0.2502434  | 1.0  |
| 43 | avocado             | 0.2891918 | 0.2891918  | 1.0  |
| 44 | french fries        | 0.2429406 | 0.2429406  | 1.0  |
| 0  | title1              | support   | confidence | lift |
| 0  | avocado             | 0.3145082 | 0.3145082  | 1.0  |
| 1  | burgers             | 0.2429406 | 0.2429406  | 1.0  |
| 2  | chocolate           | 0.4756572 | 0.4756572  | 1.0  |
| 3  | clothes accessories | 0.3398247 | 0.3398247  | 1.0  |
| 4  | cookies             | 0.3588120 | 0.3588120  | 1.0  |
| 5  | eggs                | 0.4099318 | 0.4099318  | 1.0  |
| 6  | energy drink        | 0.3213242 | 0.3213242  | 1.0  |
| 7  | french fries        | 0.6548198 | 0.6548198  | 1.0  |
| 8  | herb & pepper       | 0.3042843 | 0.3042843  | 1.0  |
| 9  | milk                | 0.4079844 | 0.4079844  | 1.0  |
| 10 | mineral water       | 0.4527750 | 0.4527750  | 1.0  |
| 11 | nan                 | 0.6285296 | 0.6285296  | 1.0  |
| 12 | shrimp              | 0.2151898 | 0.2151898  | 1.0  |
| 13 | turkey              | 0.5272638 | 0.5272638  | 1.0  |
| 14 | whole wheat pasta   | 0.2653359 | 0.2653359  | 1.0  |
| 15 | avocado             | 0.2030185 | 0.2030185  | 1.0  |
| 16 | avocado             | 0.3037974 | 0.3037974  | 1.0  |

|    |                     |           |            |      |
|----|---------------------|-----------|------------|------|
| 17 | avocado             | 0.2921129 | 0.2921129  | 1.0  |
| 18 | energy drink        | 0.2521908 | 0.2521908  | 1.0  |
| 19 | french fries        | 0.3042843 | 0.3042843  | 1.0  |
| 20 | milk                | 0.2711781 | 0.2711781  | 1.0  |
| 21 | nan                 | 0.3763388 | 0.3763388  | 1.0  |
| 22 | clothes accessories | 0.2512171 | 0.2512171  | 1.0  |
| 23 | clothes accessories | 0.3237585 | 0.3237585  | 1.0  |
| 24 | clothes accessories | 0.2108081 | 0.2108081  | 1.0  |
| 25 | clothes accessories | 0.3281402 | 0.3281402  | 1.0  |
| 26 | cookies             | 0.3213242 | 0.3213242  | 1.0  |
| 27 | cookies             | 0.2005842 | 0.2005842  | 1.0  |
| 28 | cookies             | 0.2429406 | 0.2429406  | 1.0  |
| 29 | eggs                | 0.3617332 | 0.3617332  | 1.0  |
| 30 | eggs                | 0.2059396 | 0.2059396  | 1.0  |
| 31 | nan                 | 0.2409931 | 0.2409931  | 1.0  |
| 32 | eggs                | 0.2848101 | 0.2848101  | 1.0  |
| 33 | energy drink        | 0.3033106 | 0.3033106  | 1.0  |
| 34 | energy drink        | 0.3033106 | 0.3033106  | 1.0  |
| 35 | milk                | 0.2804284 | 0.2804284  | 1.0  |
| 36 | mineral water       | 0.2702044 | 0.2702044  | 1.0  |
| 37 | nan                 | 0.4819863 | 0.4819863  | 1.0  |
| 38 | french fries        | 0.3709834 | 0.3709834  | 1.0  |
| 39 | herb & pepper       | 0.2478091 | 0.2478091  | 1.0  |
| 40 | nan                 | 0.2702044 | 0.2702044  | 1.0  |
| 41 | mineral water       | 0.3476144 | 0.3476144  | 1.0  |
| 42 | nan                 | 0.2502434 | 0.2502434  | 1.0  |
| 43 | avocado             | 0.2891918 | 0.2891918  | 1.0  |
| 44 | french fries        | 0.2429406 | 0.2429406  | 1.0  |
| 45 | energy drink        | 0.2453748 | 0.2453748  | 1.0  |
|    | title1              | support   | confidence | lift |
| 0  | avocado             | 0.3145082 | 0.3145082  | 1.0  |
| 1  | burgers             | 0.2429406 | 0.2429406  | 1.0  |
| 2  | chocolate           | 0.4756572 | 0.4756572  | 1.0  |
| 3  | clothes accessories | 0.3398247 | 0.3398247  | 1.0  |
| 4  | cookies             | 0.3588120 | 0.3588120  | 1.0  |
| 5  | eggs                | 0.4099318 | 0.4099318  | 1.0  |
| 6  | energy drink        | 0.3213242 | 0.3213242  | 1.0  |
| 7  | french fries        | 0.6548198 | 0.6548198  | 1.0  |
| 8  | herb & pepper       | 0.3042843 | 0.3042843  | 1.0  |
| 9  | milk                | 0.4079844 | 0.4079844  | 1.0  |
| 10 | mineral water       | 0.4527750 | 0.4527750  | 1.0  |
| 11 | nan                 | 0.6285296 | 0.6285296  | 1.0  |
| 12 | shrimp              | 0.2151898 | 0.2151898  | 1.0  |
| 13 | turkey              | 0.5272638 | 0.5272638  | 1.0  |
| 14 | whole wheat pasta   | 0.2653359 | 0.2653359  | 1.0  |
| 15 | avocado             | 0.2030185 | 0.2030185  | 1.0  |
| 16 | avocado             | 0.3037974 | 0.3037974  | 1.0  |
| 17 | avocado             | 0.2921129 | 0.2921129  | 1.0  |
| 18 | energy drink        | 0.2521908 | 0.2521908  | 1.0  |
| 19 | french fries        | 0.3042843 | 0.3042843  | 1.0  |
| 20 | milk                | 0.2711781 | 0.2711781  | 1.0  |
| 21 | nan                 | 0.3763388 | 0.3763388  | 1.0  |
| 22 | clothes accessories | 0.2512171 | 0.2512171  | 1.0  |
| 23 | clothes accessories | 0.3237585 | 0.3237585  | 1.0  |
| 24 | clothes accessories | 0.2108081 | 0.2108081  | 1.0  |
| 25 | clothes accessories | 0.3281402 | 0.3281402  | 1.0  |
| 26 | cookies             | 0.3213242 | 0.3213242  | 1.0  |
| 27 | cookies             | 0.2005842 | 0.2005842  | 1.0  |
| 28 | cookies             | 0.2429406 | 0.2429406  | 1.0  |
| 29 | eggs                | 0.3617332 | 0.3617332  | 1.0  |
| 30 | eggs                | 0.2059396 | 0.2059396  | 1.0  |

| 31 | nan                 | 0.2409931 | 0.2409931  | 1.0  |  |
|----|---------------------|-----------|------------|------|--|
| 32 | eggs                | 0.2848101 | 0.2848101  | 1.0  |  |
| 33 | energy drink        | 0.3033106 | 0.3033106  | 1.0  |  |
| 34 | energy drink        | 0.3033106 | 0.3033106  | 1.0  |  |
| 35 | milk                | 0.2804284 | 0.2804284  | 1.0  |  |
| 36 | mineral water       | 0.2702044 | 0.2702044  | 1.0  |  |
| 37 | nan                 | 0.4819863 | 0.4819863  | 1.0  |  |
| 38 | french fries        | 0.3709834 | 0.3709834  | 1.0  |  |
| 39 | herb & pepper       | 0.2478091 | 0.2478091  | 1.0  |  |
| 40 | nan                 | 0.2702044 | 0.2702044  | 1.0  |  |
| 41 | mineral water       | 0.3476144 | 0.3476144  | 1.0  |  |
| 42 | nan                 | 0.2502434 | 0.2502434  | 1.0  |  |
| 43 | avocado             | 0.2891918 | 0.2891918  | 1.0  |  |
| 44 | french fries        | 0.2429406 | 0.2429406  | 1.0  |  |
| 45 | energy drink        | 0.2453748 | 0.2453748  | 1.0  |  |
| 46 | french fries        | 0.2833495 | 0.2833495  | 1.0  |  |
|    | title1              | support   | confidence | lift |  |
| 0  | avocado             | 0.3145082 | 0.3145082  | 1.0  |  |
| 1  | burgers             | 0.2429406 | 0.2429406  | 1.0  |  |
| 2  | chocolate           | 0.4756572 | 0.4756572  | 1.0  |  |
| 3  | clothes accessories | 0.3398247 | 0.3398247  | 1.0  |  |
| 4  | cookies             | 0.3588120 | 0.3588120  | 1.0  |  |
| 5  | eggs                | 0.4099318 | 0.4099318  | 1.0  |  |
| 6  | energy drink        | 0.3213242 | 0.3213242  | 1.0  |  |
| 7  | french fries        | 0.6548198 | 0.6548198  | 1.0  |  |
| 8  | herb & pepper       | 0.3042843 | 0.3042843  | 1.0  |  |
| 9  | milk                | 0.4079844 | 0.4079844  | 1.0  |  |
| 10 | mineral water       | 0.4527750 | 0.4527750  | 1.0  |  |
| 11 | nan                 | 0.6285296 | 0.6285296  | 1.0  |  |
| 12 | shrimp              | 0.2151898 | 0.2151898  | 1.0  |  |
| 13 | turkey              | 0.5272638 | 0.5272638  | 1.0  |  |
| 14 | whole wheat pasta   | 0.2653359 | 0.2653359  | 1.0  |  |
| 15 | avocado             | 0.2030185 | 0.2030185  | 1.0  |  |
| 16 | avocado             | 0.3037974 | 0.3037974  | 1.0  |  |
| 17 | avocado             | 0.2921129 | 0.2921129  | 1.0  |  |
| 18 | energy drink        | 0.2521908 | 0.2521908  | 1.0  |  |
| 19 | french fries        | 0.3042843 | 0.3042843  | 1.0  |  |
| 20 | milk                | 0.2711781 | 0.2711781  | 1.0  |  |
| 21 | nan                 | 0.3763388 | 0.3763388  | 1.0  |  |
| 22 | clothes accessories | 0.2512171 | 0.2512171  | 1.0  |  |
| 23 | clothes accessories | 0.3237585 | 0.3237585  | 1.0  |  |
| 24 | clothes accessories | 0.2108081 | 0.2108081  | 1.0  |  |
| 25 | clothes accessories | 0.3281402 | 0.3281402  | 1.0  |  |
| 26 | cookies             | 0.3213242 | 0.3213242  | 1.0  |  |
| 27 | cookies             | 0.2005842 | 0.2005842  | 1.0  |  |
| 28 | cookies             | 0.2429406 | 0.2429406  | 1.0  |  |
| 29 | eggs                | 0.3617332 | 0.3617332  | 1.0  |  |
| 30 | eggs                | 0.2059396 | 0.2059396  | 1.0  |  |
| 31 | nan                 | 0.2409931 | 0.2409931  | 1.0  |  |
| 32 | eggs                | 0.2848101 | 0.2848101  | 1.0  |  |
| 33 | energy drink        | 0.3033106 | 0.3033106  | 1.0  |  |
| 34 | energy drink        | 0.3033106 | 0.3033106  | 1.0  |  |
| 35 | milk                | 0.2804284 | 0.2804284  | 1.0  |  |
| 36 | mineral water       | 0.2702044 | 0.2702044  | 1.0  |  |
| 37 | nan                 | 0.4819863 | 0.4819863  | 1.0  |  |
| 38 | french fries        | 0.3709834 | 0.3709834  | 1.0  |  |
| 39 | herb & pepper       | 0.2478091 | 0.2478091  | 1.0  |  |
| 40 | nan                 | 0.2702044 | 0.2702044  | 1.0  |  |
| 41 | mineral water       | 0.3476144 | 0.3476144  | 1.0  |  |
| 42 | nan                 | 0.2502434 | 0.2502434  | 1.0  |  |
| 43 | avocado             | 0.2891918 | 0.2891918  | 1.0  |  |

| 44 | french fries        | 0.2429406 | 0.2429406 | 1.0        |      |
|----|---------------------|-----------|-----------|------------|------|
| 45 | energy drink        | 0.2453748 | 0.2453748 | 1.0        |      |
| 46 | french fries        | 0.2833495 | 0.2833495 | 1.0        |      |
| 47 | clothes accessories | 0.2429406 | 0.2429406 | 1.0        |      |
|    |                     | title1    | support   | confidence | lift |
| 0  | avocado             | 0.3145082 | 0.3145082 | 1.0        |      |
| 1  | burgers             | 0.2429406 | 0.2429406 | 1.0        |      |
| 2  | chocolate           | 0.4756572 | 0.4756572 | 1.0        |      |
| 3  | clothes accessories | 0.3398247 | 0.3398247 | 1.0        |      |
| 4  | cookies             | 0.3588120 | 0.3588120 | 1.0        |      |
| 5  | eggs                | 0.4099318 | 0.4099318 | 1.0        |      |
| 6  | energy drink        | 0.3213242 | 0.3213242 | 1.0        |      |
| 7  | french fries        | 0.6548198 | 0.6548198 | 1.0        |      |
| 8  | herb & pepper       | 0.3042843 | 0.3042843 | 1.0        |      |
| 9  | milk                | 0.4079844 | 0.4079844 | 1.0        |      |
| 10 | mineral water       | 0.4527750 | 0.4527750 | 1.0        |      |
| 11 | nan                 | 0.6285296 | 0.6285296 | 1.0        |      |
| 12 | shrimp              | 0.2151898 | 0.2151898 | 1.0        |      |
| 13 | turkey              | 0.5272638 | 0.5272638 | 1.0        |      |
| 14 | whole wheat pasta   | 0.2653359 | 0.2653359 | 1.0        |      |
| 15 | avocado             | 0.2030185 | 0.2030185 | 1.0        |      |
| 16 | avocado             | 0.3037974 | 0.3037974 | 1.0        |      |
| 17 | avocado             | 0.2921129 | 0.2921129 | 1.0        |      |
| 18 | energy drink        | 0.2521908 | 0.2521908 | 1.0        |      |
| 19 | french fries        | 0.3042843 | 0.3042843 | 1.0        |      |
| 20 | milk                | 0.2711781 | 0.2711781 | 1.0        |      |
| 21 | nan                 | 0.3763388 | 0.3763388 | 1.0        |      |
| 22 | clothes accessories | 0.2512171 | 0.2512171 | 1.0        |      |
| 23 | clothes accessories | 0.3237585 | 0.3237585 | 1.0        |      |
| 24 | clothes accessories | 0.2108081 | 0.2108081 | 1.0        |      |
| 25 | clothes accessories | 0.3281402 | 0.3281402 | 1.0        |      |
| 26 | cookies             | 0.3213242 | 0.3213242 | 1.0        |      |
| 27 | cookies             | 0.2005842 | 0.2005842 | 1.0        |      |
| 28 | cookies             | 0.2429406 | 0.2429406 | 1.0        |      |
| 29 | eggs                | 0.3617332 | 0.3617332 | 1.0        |      |
| 30 | eggs                | 0.2059396 | 0.2059396 | 1.0        |      |
| 31 | nan                 | 0.2409931 | 0.2409931 | 1.0        |      |
| 32 | eggs                | 0.2848101 | 0.2848101 | 1.0        |      |
| 33 | energy drink        | 0.3033106 | 0.3033106 | 1.0        |      |
| 34 | energy drink        | 0.3033106 | 0.3033106 | 1.0        |      |
| 35 | milk                | 0.2804284 | 0.2804284 | 1.0        |      |
| 36 | mineral water       | 0.2702044 | 0.2702044 | 1.0        |      |
| 37 | nan                 | 0.4819863 | 0.4819863 | 1.0        |      |
| 38 | french fries        | 0.3709834 | 0.3709834 | 1.0        |      |
| 39 | herb & pepper       | 0.2478091 | 0.2478091 | 1.0        |      |
| 40 | nan                 | 0.2702044 | 0.2702044 | 1.0        |      |
| 41 | mineral water       | 0.3476144 | 0.3476144 | 1.0        |      |
| 42 | nan                 | 0.2502434 | 0.2502434 | 1.0        |      |
| 43 | avocado             | 0.2891918 | 0.2891918 | 1.0        |      |
| 44 | french fries        | 0.2429406 | 0.2429406 | 1.0        |      |
| 45 | energy drink        | 0.2453748 | 0.2453748 | 1.0        |      |
| 46 | french fries        | 0.2833495 | 0.2833495 | 1.0        |      |
| 47 | clothes accessories | 0.2429406 | 0.2429406 | 1.0        |      |
| 48 | clothes accessories | 0.2497565 | 0.2497565 | 1.0        |      |
|    |                     | title1    | support   | confidence | lift |
| 0  | avocado             | 0.3145082 | 0.3145082 | 1.0        |      |
| 1  | burgers             | 0.2429406 | 0.2429406 | 1.0        |      |
| 2  | chocolate           | 0.4756572 | 0.4756572 | 1.0        |      |
| 3  | clothes accessories | 0.3398247 | 0.3398247 | 1.0        |      |
| 4  | cookies             | 0.3588120 | 0.3588120 | 1.0        |      |
| 5  | eggs                | 0.4099318 | 0.4099318 | 1.0        |      |

| 6  | energy drink        | 0.3213242 | 0.3213242  | 1.0  |  |
|----|---------------------|-----------|------------|------|--|
| 7  | french fries        | 0.6548198 | 0.6548198  | 1.0  |  |
| 8  | herb & pepper       | 0.3042843 | 0.3042843  | 1.0  |  |
| 9  | milk                | 0.4079844 | 0.4079844  | 1.0  |  |
| 10 | mineral water       | 0.4527750 | 0.4527750  | 1.0  |  |
| 11 | nan                 | 0.6285296 | 0.6285296  | 1.0  |  |
| 12 | shrimp              | 0.2151898 | 0.2151898  | 1.0  |  |
| 13 | turkey              | 0.5272638 | 0.5272638  | 1.0  |  |
| 14 | whole wheat pasta   | 0.2653359 | 0.2653359  | 1.0  |  |
| 15 | avocado             | 0.2030185 | 0.2030185  | 1.0  |  |
| 16 | avocado             | 0.3037974 | 0.3037974  | 1.0  |  |
| 17 | avocado             | 0.2921129 | 0.2921129  | 1.0  |  |
| 18 | energy drink        | 0.2521908 | 0.2521908  | 1.0  |  |
| 19 | french fries        | 0.3042843 | 0.3042843  | 1.0  |  |
| 20 | milk                | 0.2711781 | 0.2711781  | 1.0  |  |
| 21 | nan                 | 0.3763388 | 0.3763388  | 1.0  |  |
| 22 | clothes accessories | 0.2512171 | 0.2512171  | 1.0  |  |
| 23 | clothes accessories | 0.3237585 | 0.3237585  | 1.0  |  |
| 24 | clothes accessories | 0.2108081 | 0.2108081  | 1.0  |  |
| 25 | clothes accessories | 0.3281402 | 0.3281402  | 1.0  |  |
| 26 | cookies             | 0.3213242 | 0.3213242  | 1.0  |  |
| 27 | cookies             | 0.2005842 | 0.2005842  | 1.0  |  |
| 28 | cookies             | 0.2429406 | 0.2429406  | 1.0  |  |
| 29 | eggs                | 0.3617332 | 0.3617332  | 1.0  |  |
| 30 | eggs                | 0.2059396 | 0.2059396  | 1.0  |  |
| 31 | nan                 | 0.2409931 | 0.2409931  | 1.0  |  |
| 32 | eggs                | 0.2848101 | 0.2848101  | 1.0  |  |
| 33 | energy drink        | 0.3033106 | 0.3033106  | 1.0  |  |
| 34 | energy drink        | 0.3033106 | 0.3033106  | 1.0  |  |
| 35 | milk                | 0.2804284 | 0.2804284  | 1.0  |  |
| 36 | mineral water       | 0.2702044 | 0.2702044  | 1.0  |  |
| 37 | nan                 | 0.4819863 | 0.4819863  | 1.0  |  |
| 38 | french fries        | 0.3709834 | 0.3709834  | 1.0  |  |
| 39 | herb & pepper       | 0.2478091 | 0.2478091  | 1.0  |  |
| 40 | nan                 | 0.2702044 | 0.2702044  | 1.0  |  |
| 41 | mineral water       | 0.3476144 | 0.3476144  | 1.0  |  |
| 42 | nan                 | 0.2502434 | 0.2502434  | 1.0  |  |
| 43 | avocado             | 0.2891918 | 0.2891918  | 1.0  |  |
| 44 | french fries        | 0.2429406 | 0.2429406  | 1.0  |  |
| 45 | energy drink        | 0.2453748 | 0.2453748  | 1.0  |  |
| 46 | french fries        | 0.2833495 | 0.2833495  | 1.0  |  |
| 47 | clothes accessories | 0.2429406 | 0.2429406  | 1.0  |  |
| 48 | clothes accessories | 0.2497565 | 0.2497565  | 1.0  |  |
| 49 | clothes accessories | 0.2064264 | 0.2064264  | 1.0  |  |
|    | title1              | support   | confidence | lift |  |
| 0  | avocado             | 0.3145082 | 0.3145082  | 1.0  |  |
| 1  | burgers             | 0.2429406 | 0.2429406  | 1.0  |  |
| 2  | chocolate           | 0.4756572 | 0.4756572  | 1.0  |  |
| 3  | clothes accessories | 0.3398247 | 0.3398247  | 1.0  |  |
| 4  | cookies             | 0.3588120 | 0.3588120  | 1.0  |  |
| 5  | eggs                | 0.4099318 | 0.4099318  | 1.0  |  |
| 6  | energy drink        | 0.3213242 | 0.3213242  | 1.0  |  |
| 7  | french fries        | 0.6548198 | 0.6548198  | 1.0  |  |
| 8  | herb & pepper       | 0.3042843 | 0.3042843  | 1.0  |  |
| 9  | milk                | 0.4079844 | 0.4079844  | 1.0  |  |
| 10 | mineral water       | 0.4527750 | 0.4527750  | 1.0  |  |
| 11 | nan                 | 0.6285296 | 0.6285296  | 1.0  |  |
| 12 | shrimp              | 0.2151898 | 0.2151898  | 1.0  |  |
| 13 | turkey              | 0.5272638 | 0.5272638  | 1.0  |  |
| 14 | whole wheat pasta   | 0.2653359 | 0.2653359  | 1.0  |  |
| 15 | avocado             | 0.2030185 | 0.2030185  | 1.0  |  |

| 16 | avocado             | 0.3037974 | 0.3037974 | 1.0        |      |
|----|---------------------|-----------|-----------|------------|------|
| 17 | avocado             | 0.2921129 | 0.2921129 | 1.0        |      |
| 18 | energy drink        | 0.2521908 | 0.2521908 | 1.0        |      |
| 19 | french fries        | 0.3042843 | 0.3042843 | 1.0        |      |
| 20 | milk                | 0.2711781 | 0.2711781 | 1.0        |      |
| 21 | nan                 | 0.3763388 | 0.3763388 | 1.0        |      |
| 22 | clothes accessories | 0.2512171 | 0.2512171 | 1.0        |      |
| 23 | clothes accessories | 0.3237585 | 0.3237585 | 1.0        |      |
| 24 | clothes accessories | 0.2108081 | 0.2108081 | 1.0        |      |
| 25 | clothes accessories | 0.3281402 | 0.3281402 | 1.0        |      |
| 26 | cookies             | 0.3213242 | 0.3213242 | 1.0        |      |
| 27 | cookies             | 0.2005842 | 0.2005842 | 1.0        |      |
| 28 | cookies             | 0.2429406 | 0.2429406 | 1.0        |      |
| 29 | eggs                | 0.3617332 | 0.3617332 | 1.0        |      |
| 30 | eggs                | 0.2059396 | 0.2059396 | 1.0        |      |
| 31 | nan                 | 0.2409931 | 0.2409931 | 1.0        |      |
| 32 | eggs                | 0.2848101 | 0.2848101 | 1.0        |      |
| 33 | energy drink        | 0.3033106 | 0.3033106 | 1.0        |      |
| 34 | energy drink        | 0.3033106 | 0.3033106 | 1.0        |      |
| 35 | milk                | 0.2804284 | 0.2804284 | 1.0        |      |
| 36 | mineral water       | 0.2702044 | 0.2702044 | 1.0        |      |
| 37 | nan                 | 0.4819863 | 0.4819863 | 1.0        |      |
| 38 | french fries        | 0.3709834 | 0.3709834 | 1.0        |      |
| 39 | herb & pepper       | 0.2478091 | 0.2478091 | 1.0        |      |
| 40 | nan                 | 0.2702044 | 0.2702044 | 1.0        |      |
| 41 | mineral water       | 0.3476144 | 0.3476144 | 1.0        |      |
| 42 | nan                 | 0.2502434 | 0.2502434 | 1.0        |      |
| 43 | avocado             | 0.2891918 | 0.2891918 | 1.0        |      |
| 44 | french fries        | 0.2429406 | 0.2429406 | 1.0        |      |
| 45 | energy drink        | 0.2453748 | 0.2453748 | 1.0        |      |
| 46 | french fries        | 0.2833495 | 0.2833495 | 1.0        |      |
| 47 | clothes accessories | 0.2429406 | 0.2429406 | 1.0        |      |
| 48 | clothes accessories | 0.2497565 | 0.2497565 | 1.0        |      |
| 49 | clothes accessories | 0.2064264 | 0.2064264 | 1.0        |      |
| 50 | clothes accessories | 0.3154819 | 0.3154819 | 1.0        |      |
|    |                     | title1    | support   | confidence | lift |
| 0  | avocado             | 0.3145082 | 0.3145082 | 1.0        |      |
| 1  | burgers             | 0.2429406 | 0.2429406 | 1.0        |      |
| 2  | chocolate           | 0.4756572 | 0.4756572 | 1.0        |      |
| 3  | clothes accessories | 0.3398247 | 0.3398247 | 1.0        |      |
| 4  | cookies             | 0.3588120 | 0.3588120 | 1.0        |      |
| 5  | eggs                | 0.4099318 | 0.4099318 | 1.0        |      |
| 6  | energy drink        | 0.3213242 | 0.3213242 | 1.0        |      |
| 7  | french fries        | 0.6548198 | 0.6548198 | 1.0        |      |
| 8  | herb & pepper       | 0.3042843 | 0.3042843 | 1.0        |      |
| 9  | milk                | 0.4079844 | 0.4079844 | 1.0        |      |
| 10 | mineral water       | 0.4527750 | 0.4527750 | 1.0        |      |
| 11 | nan                 | 0.6285296 | 0.6285296 | 1.0        |      |
| 12 | shrimp              | 0.2151898 | 0.2151898 | 1.0        |      |
| 13 | turkey              | 0.5272638 | 0.5272638 | 1.0        |      |
| 14 | whole wheat pasta   | 0.2653359 | 0.2653359 | 1.0        |      |
| 15 | avocado             | 0.2030185 | 0.2030185 | 1.0        |      |
| 16 | avocado             | 0.3037974 | 0.3037974 | 1.0        |      |
| 17 | avocado             | 0.2921129 | 0.2921129 | 1.0        |      |
| 18 | energy drink        | 0.2521908 | 0.2521908 | 1.0        |      |
| 19 | french fries        | 0.3042843 | 0.3042843 | 1.0        |      |
| 20 | milk                | 0.2711781 | 0.2711781 | 1.0        |      |
| 21 | nan                 | 0.3763388 | 0.3763388 | 1.0        |      |
| 22 | clothes accessories | 0.2512171 | 0.2512171 | 1.0        |      |
| 23 | clothes accessories | 0.3237585 | 0.3237585 | 1.0        |      |
| 24 | clothes accessories | 0.2108081 | 0.2108081 | 1.0        |      |

|    |                     |           |            |      |
|----|---------------------|-----------|------------|------|
| 25 | clothes accessories | 0.3281402 | 0.3281402  | 1.0  |
| 26 | cookies             | 0.3213242 | 0.3213242  | 1.0  |
| 27 | cookies             | 0.2005842 | 0.2005842  | 1.0  |
| 28 | cookies             | 0.2429406 | 0.2429406  | 1.0  |
| 29 | eggs                | 0.3617332 | 0.3617332  | 1.0  |
| 30 | eggs                | 0.2059396 | 0.2059396  | 1.0  |
| 31 | nan                 | 0.2409931 | 0.2409931  | 1.0  |
| 32 | eggs                | 0.2848101 | 0.2848101  | 1.0  |
| 33 | energy drink        | 0.3033106 | 0.3033106  | 1.0  |
| 34 | energy drink        | 0.3033106 | 0.3033106  | 1.0  |
| 35 | milk                | 0.2804284 | 0.2804284  | 1.0  |
| 36 | mineral water       | 0.2702044 | 0.2702044  | 1.0  |
| 37 | nan                 | 0.4819863 | 0.4819863  | 1.0  |
| 38 | french fries        | 0.3709834 | 0.3709834  | 1.0  |
| 39 | herb & pepper       | 0.2478091 | 0.2478091  | 1.0  |
| 40 | nan                 | 0.2702044 | 0.2702044  | 1.0  |
| 41 | mineral water       | 0.3476144 | 0.3476144  | 1.0  |
| 42 | nan                 | 0.2502434 | 0.2502434  | 1.0  |
| 43 | avocado             | 0.2891918 | 0.2891918  | 1.0  |
| 44 | french fries        | 0.2429406 | 0.2429406  | 1.0  |
| 45 | energy drink        | 0.2453748 | 0.2453748  | 1.0  |
| 46 | french fries        | 0.2833495 | 0.2833495  | 1.0  |
| 47 | clothes accessories | 0.2429406 | 0.2429406  | 1.0  |
| 48 | clothes accessories | 0.2497565 | 0.2497565  | 1.0  |
| 49 | clothes accessories | 0.2064264 | 0.2064264  | 1.0  |
| 50 | clothes accessories | 0.3154819 | 0.3154819  | 1.0  |
| 51 | clothes accessories | 0.2020447 | 0.2020447  | 1.0  |
|    | title1              | support   | confidence | lift |
| 0  | avocado             | 0.3145082 | 0.3145082  | 1.0  |
| 1  | burgers             | 0.2429406 | 0.2429406  | 1.0  |
| 2  | chocolate           | 0.4756572 | 0.4756572  | 1.0  |
| 3  | clothes accessories | 0.3398247 | 0.3398247  | 1.0  |
| 4  | cookies             | 0.3588120 | 0.3588120  | 1.0  |
| 5  | eggs                | 0.4099318 | 0.4099318  | 1.0  |
| 6  | energy drink        | 0.3213242 | 0.3213242  | 1.0  |
| 7  | french fries        | 0.6548198 | 0.6548198  | 1.0  |
| 8  | herb & pepper       | 0.3042843 | 0.3042843  | 1.0  |
| 9  | milk                | 0.4079844 | 0.4079844  | 1.0  |
| 10 | mineral water       | 0.4527750 | 0.4527750  | 1.0  |
| 11 | nan                 | 0.6285296 | 0.6285296  | 1.0  |
| 12 | shrimp              | 0.2151898 | 0.2151898  | 1.0  |
| 13 | turkey              | 0.5272638 | 0.5272638  | 1.0  |
| 14 | whole wheat pasta   | 0.2653359 | 0.2653359  | 1.0  |
| 15 | avocado             | 0.2030185 | 0.2030185  | 1.0  |
| 16 | avocado             | 0.3037974 | 0.3037974  | 1.0  |
| 17 | avocado             | 0.2921129 | 0.2921129  | 1.0  |
| 18 | energy drink        | 0.2521908 | 0.2521908  | 1.0  |
| 19 | french fries        | 0.3042843 | 0.3042843  | 1.0  |
| 20 | milk                | 0.2711781 | 0.2711781  | 1.0  |
| 21 | nan                 | 0.3763388 | 0.3763388  | 1.0  |
| 22 | clothes accessories | 0.2512171 | 0.2512171  | 1.0  |
| 23 | clothes accessories | 0.3237585 | 0.3237585  | 1.0  |
| 24 | clothes accessories | 0.2108081 | 0.2108081  | 1.0  |
| 25 | clothes accessories | 0.3281402 | 0.3281402  | 1.0  |
| 26 | cookies             | 0.3213242 | 0.3213242  | 1.0  |
| 27 | cookies             | 0.2005842 | 0.2005842  | 1.0  |
| 28 | cookies             | 0.2429406 | 0.2429406  | 1.0  |
| 29 | eggs                | 0.3617332 | 0.3617332  | 1.0  |
| 30 | eggs                | 0.2059396 | 0.2059396  | 1.0  |
| 31 | nan                 | 0.2409931 | 0.2409931  | 1.0  |
| 32 | eggs                | 0.2848101 | 0.2848101  | 1.0  |

| 33 | energy drink        | 0.3033106 | 0.3033106  | 1.0  |  |
|----|---------------------|-----------|------------|------|--|
| 34 | energy drink        | 0.3033106 | 0.3033106  | 1.0  |  |
| 35 | milk                | 0.2804284 | 0.2804284  | 1.0  |  |
| 36 | mineral water       | 0.2702044 | 0.2702044  | 1.0  |  |
| 37 | nan                 | 0.4819863 | 0.4819863  | 1.0  |  |
| 38 | french fries        | 0.3709834 | 0.3709834  | 1.0  |  |
| 39 | herb & pepper       | 0.2478091 | 0.2478091  | 1.0  |  |
| 40 | nan                 | 0.2702044 | 0.2702044  | 1.0  |  |
| 41 | mineral water       | 0.3476144 | 0.3476144  | 1.0  |  |
| 42 | nan                 | 0.2502434 | 0.2502434  | 1.0  |  |
| 43 | avocado             | 0.2891918 | 0.2891918  | 1.0  |  |
| 44 | french fries        | 0.2429406 | 0.2429406  | 1.0  |  |
| 45 | energy drink        | 0.2453748 | 0.2453748  | 1.0  |  |
| 46 | french fries        | 0.2833495 | 0.2833495  | 1.0  |  |
| 47 | clothes accessories | 0.2429406 | 0.2429406  | 1.0  |  |
| 48 | clothes accessories | 0.2497565 | 0.2497565  | 1.0  |  |
| 49 | clothes accessories | 0.2064264 | 0.2064264  | 1.0  |  |
| 50 | clothes accessories | 0.3154819 | 0.3154819  | 1.0  |  |
| 51 | clothes accessories | 0.2020447 | 0.2020447  | 1.0  |  |
| 52 | cookies             | 0.2215189 | 0.2215189  | 1.0  |  |
| 0  | title1              | support   | confidence | lift |  |
| 0  | avocado             | 0.3145082 | 0.3145082  | 1.0  |  |
| 1  | burgers             | 0.2429406 | 0.2429406  | 1.0  |  |
| 2  | chocolate           | 0.4756572 | 0.4756572  | 1.0  |  |
| 3  | clothes accessories | 0.3398247 | 0.3398247  | 1.0  |  |
| 4  | cookies             | 0.3588120 | 0.3588120  | 1.0  |  |
| 5  | eggs                | 0.4099318 | 0.4099318  | 1.0  |  |
| 6  | energy drink        | 0.3213242 | 0.3213242  | 1.0  |  |
| 7  | french fries        | 0.6548198 | 0.6548198  | 1.0  |  |
| 8  | herb & pepper       | 0.3042843 | 0.3042843  | 1.0  |  |
| 9  | milk                | 0.4079844 | 0.4079844  | 1.0  |  |
| 10 | mineral water       | 0.4527750 | 0.4527750  | 1.0  |  |
| 11 | nan                 | 0.6285296 | 0.6285296  | 1.0  |  |
| 12 | shrimp              | 0.2151898 | 0.2151898  | 1.0  |  |
| 13 | turkey              | 0.5272638 | 0.5272638  | 1.0  |  |
| 14 | whole wheat pasta   | 0.2653359 | 0.2653359  | 1.0  |  |
| 15 | avocado             | 0.2030185 | 0.2030185  | 1.0  |  |
| 16 | avocado             | 0.3037974 | 0.3037974  | 1.0  |  |
| 17 | avocado             | 0.2921129 | 0.2921129  | 1.0  |  |
| 18 | energy drink        | 0.2521908 | 0.2521908  | 1.0  |  |
| 19 | french fries        | 0.3042843 | 0.3042843  | 1.0  |  |
| 20 | milk                | 0.2711781 | 0.2711781  | 1.0  |  |
| 21 | nan                 | 0.3763388 | 0.3763388  | 1.0  |  |
| 22 | clothes accessories | 0.2512171 | 0.2512171  | 1.0  |  |
| 23 | clothes accessories | 0.3237585 | 0.3237585  | 1.0  |  |
| 24 | clothes accessories | 0.2108081 | 0.2108081  | 1.0  |  |
| 25 | clothes accessories | 0.3281402 | 0.3281402  | 1.0  |  |
| 26 | cookies             | 0.3213242 | 0.3213242  | 1.0  |  |
| 27 | cookies             | 0.2005842 | 0.2005842  | 1.0  |  |
| 28 | cookies             | 0.2429406 | 0.2429406  | 1.0  |  |
| 29 | eggs                | 0.3617332 | 0.3617332  | 1.0  |  |
| 30 | eggs                | 0.2059396 | 0.2059396  | 1.0  |  |
| 31 | nan                 | 0.2409931 | 0.2409931  | 1.0  |  |
| 32 | eggs                | 0.2848101 | 0.2848101  | 1.0  |  |
| 33 | energy drink        | 0.3033106 | 0.3033106  | 1.0  |  |
| 34 | energy drink        | 0.3033106 | 0.3033106  | 1.0  |  |
| 35 | milk                | 0.2804284 | 0.2804284  | 1.0  |  |
| 36 | mineral water       | 0.2702044 | 0.2702044  | 1.0  |  |
| 37 | nan                 | 0.4819863 | 0.4819863  | 1.0  |  |
| 38 | french fries        | 0.3709834 | 0.3709834  | 1.0  |  |
| 39 | herb & pepper       | 0.2478091 | 0.2478091  | 1.0  |  |

|    |                     |               |           |            |      |
|----|---------------------|---------------|-----------|------------|------|
| 40 |                     | nan           | 0.2702044 | 0.2702044  | 1.0  |
| 41 |                     | mineral water | 0.3476144 | 0.3476144  | 1.0  |
| 42 |                     | nan           | 0.2502434 | 0.2502434  | 1.0  |
| 43 |                     | avocado       | 0.2891918 | 0.2891918  | 1.0  |
| 44 |                     | french fries  | 0.2429406 | 0.2429406  | 1.0  |
| 45 |                     | energy drink  | 0.2453748 | 0.2453748  | 1.0  |
| 46 |                     | french fries  | 0.2833495 | 0.2833495  | 1.0  |
| 47 | clothes accessories |               | 0.2429406 | 0.2429406  | 1.0  |
| 48 | clothes accessories |               | 0.2497565 | 0.2497565  | 1.0  |
| 49 | clothes accessories |               | 0.2064264 | 0.2064264  | 1.0  |
| 50 | clothes accessories |               | 0.3154819 | 0.3154819  | 1.0  |
| 51 | clothes accessories |               | 0.2020447 | 0.2020447  | 1.0  |
| 52 |                     | cookies       | 0.2215189 | 0.2215189  | 1.0  |
| 53 |                     | nan           | 0.2185978 | 0.2185978  | 1.0  |
|    |                     | title1        | support   | confidence | lift |
| 0  |                     | avocado       | 0.3145082 | 0.3145082  | 1.0  |
| 1  |                     | burgers       | 0.2429406 | 0.2429406  | 1.0  |
| 2  |                     | chocolate     | 0.4756572 | 0.4756572  | 1.0  |
| 3  | clothes accessories |               | 0.3398247 | 0.3398247  | 1.0  |
| 4  |                     | cookies       | 0.3588120 | 0.3588120  | 1.0  |
| 5  |                     | eggs          | 0.4099318 | 0.4099318  | 1.0  |
| 6  |                     | energy drink  | 0.3213242 | 0.3213242  | 1.0  |
| 7  |                     | french fries  | 0.6548198 | 0.6548198  | 1.0  |
| 8  |                     | herb & pepper | 0.3042843 | 0.3042843  | 1.0  |
| 9  |                     | milk          | 0.4079844 | 0.4079844  | 1.0  |
| 10 |                     | mineral water | 0.4527750 | 0.4527750  | 1.0  |
| 11 |                     | nan           | 0.6285296 | 0.6285296  | 1.0  |
| 12 |                     | shrimp        | 0.2151898 | 0.2151898  | 1.0  |
| 13 |                     | turkey        | 0.5272638 | 0.5272638  | 1.0  |
| 14 | whole wheat pasta   |               | 0.2653359 | 0.2653359  | 1.0  |
| 15 |                     | avocado       | 0.2030185 | 0.2030185  | 1.0  |
| 16 |                     | avocado       | 0.3037974 | 0.3037974  | 1.0  |
| 17 |                     | avocado       | 0.2921129 | 0.2921129  | 1.0  |
| 18 |                     | energy drink  | 0.2521908 | 0.2521908  | 1.0  |
| 19 |                     | french fries  | 0.3042843 | 0.3042843  | 1.0  |
| 20 |                     | milk          | 0.2711781 | 0.2711781  | 1.0  |
| 21 |                     | nan           | 0.3763388 | 0.3763388  | 1.0  |
| 22 | clothes accessories |               | 0.2512171 | 0.2512171  | 1.0  |
| 23 | clothes accessories |               | 0.3237585 | 0.3237585  | 1.0  |
| 24 | clothes accessories |               | 0.2108081 | 0.2108081  | 1.0  |
| 25 | clothes accessories |               | 0.3281402 | 0.3281402  | 1.0  |
| 26 |                     | cookies       | 0.3213242 | 0.3213242  | 1.0  |
| 27 |                     | cookies       | 0.2005842 | 0.2005842  | 1.0  |
| 28 |                     | cookies       | 0.2429406 | 0.2429406  | 1.0  |
| 29 |                     | eggs          | 0.3617332 | 0.3617332  | 1.0  |
| 30 |                     | eggs          | 0.2059396 | 0.2059396  | 1.0  |
| 31 |                     | nan           | 0.2409931 | 0.2409931  | 1.0  |
| 32 |                     | eggs          | 0.2848101 | 0.2848101  | 1.0  |
| 33 |                     | energy drink  | 0.3033106 | 0.3033106  | 1.0  |
| 34 |                     | energy drink  | 0.3033106 | 0.3033106  | 1.0  |
| 35 |                     | milk          | 0.2804284 | 0.2804284  | 1.0  |
| 36 |                     | mineral water | 0.2702044 | 0.2702044  | 1.0  |
| 37 |                     | nan           | 0.4819863 | 0.4819863  | 1.0  |
| 38 |                     | french fries  | 0.3709834 | 0.3709834  | 1.0  |
| 39 |                     | herb & pepper | 0.2478091 | 0.2478091  | 1.0  |
| 40 |                     | nan           | 0.2702044 | 0.2702044  | 1.0  |
| 41 |                     | mineral water | 0.3476144 | 0.3476144  | 1.0  |
| 42 |                     | nan           | 0.2502434 | 0.2502434  | 1.0  |
| 43 |                     | avocado       | 0.2891918 | 0.2891918  | 1.0  |
| 44 |                     | french fries  | 0.2429406 | 0.2429406  | 1.0  |
| 45 |                     | energy drink  | 0.2453748 | 0.2453748  | 1.0  |

| 46 | french fries        | 0.2833495 | 0.2833495  | 1.0  |  |
|----|---------------------|-----------|------------|------|--|
| 47 | clothes accessories | 0.2429406 | 0.2429406  | 1.0  |  |
| 48 | clothes accessories | 0.2497565 | 0.2497565  | 1.0  |  |
| 49 | clothes accessories | 0.2064264 | 0.2064264  | 1.0  |  |
| 50 | clothes accessories | 0.3154819 | 0.3154819  | 1.0  |  |
| 51 | clothes accessories | 0.2020447 | 0.2020447  | 1.0  |  |
| 52 | cookies             | 0.2215189 | 0.2215189  | 1.0  |  |
| 53 | nan                 | 0.2185978 | 0.2185978  | 1.0  |  |
| 54 | eggs                | 0.2653359 | 0.2653359  | 1.0  |  |
|    | title1              | support   | confidence | lift |  |
| 0  | avocado             | 0.3145082 | 0.3145082  | 1.0  |  |
| 1  | burgers             | 0.2429406 | 0.2429406  | 1.0  |  |
| 2  | chocolate           | 0.4756572 | 0.4756572  | 1.0  |  |
| 3  | clothes accessories | 0.3398247 | 0.3398247  | 1.0  |  |
| 4  | cookies             | 0.3588120 | 0.3588120  | 1.0  |  |
| 5  | eggs                | 0.4099318 | 0.4099318  | 1.0  |  |
| 6  | energy drink        | 0.3213242 | 0.3213242  | 1.0  |  |
| 7  | french fries        | 0.6548198 | 0.6548198  | 1.0  |  |
| 8  | herb & pepper       | 0.3042843 | 0.3042843  | 1.0  |  |
| 9  | milk                | 0.4079844 | 0.4079844  | 1.0  |  |
| 10 | mineral water       | 0.4527750 | 0.4527750  | 1.0  |  |
| 11 | nan                 | 0.6285296 | 0.6285296  | 1.0  |  |
| 12 | shrimp              | 0.2151898 | 0.2151898  | 1.0  |  |
| 13 | turkey              | 0.5272638 | 0.5272638  | 1.0  |  |
| 14 | whole wheat pasta   | 0.2653359 | 0.2653359  | 1.0  |  |
| 15 | avocado             | 0.2030185 | 0.2030185  | 1.0  |  |
| 16 | avocado             | 0.3037974 | 0.3037974  | 1.0  |  |
| 17 | avocado             | 0.2921129 | 0.2921129  | 1.0  |  |
| 18 | energy drink        | 0.2521908 | 0.2521908  | 1.0  |  |
| 19 | french fries        | 0.3042843 | 0.3042843  | 1.0  |  |
| 20 | milk                | 0.2711781 | 0.2711781  | 1.0  |  |
| 21 | nan                 | 0.3763388 | 0.3763388  | 1.0  |  |
| 22 | clothes accessories | 0.2512171 | 0.2512171  | 1.0  |  |
| 23 | clothes accessories | 0.3237585 | 0.3237585  | 1.0  |  |
| 24 | clothes accessories | 0.2108081 | 0.2108081  | 1.0  |  |
| 25 | clothes accessories | 0.3281402 | 0.3281402  | 1.0  |  |
| 26 | cookies             | 0.3213242 | 0.3213242  | 1.0  |  |
| 27 | cookies             | 0.2005842 | 0.2005842  | 1.0  |  |
| 28 | cookies             | 0.2429406 | 0.2429406  | 1.0  |  |
| 29 | eggs                | 0.3617332 | 0.3617332  | 1.0  |  |
| 30 | eggs                | 0.2059396 | 0.2059396  | 1.0  |  |
| 31 | nan                 | 0.2409931 | 0.2409931  | 1.0  |  |
| 32 | eggs                | 0.2848101 | 0.2848101  | 1.0  |  |
| 33 | energy drink        | 0.3033106 | 0.3033106  | 1.0  |  |
| 34 | energy drink        | 0.3033106 | 0.3033106  | 1.0  |  |
| 35 | milk                | 0.2804284 | 0.2804284  | 1.0  |  |
| 36 | mineral water       | 0.2702044 | 0.2702044  | 1.0  |  |
| 37 | nan                 | 0.4819863 | 0.4819863  | 1.0  |  |
| 38 | french fries        | 0.3709834 | 0.3709834  | 1.0  |  |
| 39 | herb & pepper       | 0.2478091 | 0.2478091  | 1.0  |  |
| 40 | nan                 | 0.2702044 | 0.2702044  | 1.0  |  |
| 41 | mineral water       | 0.3476144 | 0.3476144  | 1.0  |  |
| 42 | nan                 | 0.2502434 | 0.2502434  | 1.0  |  |
| 43 | avocado             | 0.2891918 | 0.2891918  | 1.0  |  |
| 44 | french fries        | 0.2429406 | 0.2429406  | 1.0  |  |
| 45 | energy drink        | 0.2453748 | 0.2453748  | 1.0  |  |
| 46 | french fries        | 0.2833495 | 0.2833495  | 1.0  |  |
| 47 | clothes accessories | 0.2429406 | 0.2429406  | 1.0  |  |
| 48 | clothes accessories | 0.2497565 | 0.2497565  | 1.0  |  |
| 49 | clothes accessories | 0.2064264 | 0.2064264  | 1.0  |  |
| 50 | clothes accessories | 0.3154819 | 0.3154819  | 1.0  |  |

| 51 | clothes accessories | 0.2020447 | 0.2020447  | 1.0  |  |
|----|---------------------|-----------|------------|------|--|
| 52 | cookies             | 0.2215189 | 0.2215189  | 1.0  |  |
| 53 | nan                 | 0.2185978 | 0.2185978  | 1.0  |  |
| 54 | eggs                | 0.2653359 | 0.2653359  | 1.0  |  |
| 55 | energy drink        | 0.2911392 | 0.2911392  | 1.0  |  |
|    | title1              | support   | confidence | lift |  |
| 0  | avocado             | 0.3145082 | 0.3145082  | 1.0  |  |
| 1  | burgers             | 0.2429406 | 0.2429406  | 1.0  |  |
| 2  | chocolate           | 0.4756572 | 0.4756572  | 1.0  |  |
| 3  | clothes accessories | 0.3398247 | 0.3398247  | 1.0  |  |
| 4  | cookies             | 0.3588120 | 0.3588120  | 1.0  |  |
| 5  | eggs                | 0.4099318 | 0.4099318  | 1.0  |  |
| 6  | energy drink        | 0.3213242 | 0.3213242  | 1.0  |  |
| 7  | french fries        | 0.6548198 | 0.6548198  | 1.0  |  |
| 8  | herb & pepper       | 0.3042843 | 0.3042843  | 1.0  |  |
| 9  | milk                | 0.4079844 | 0.4079844  | 1.0  |  |
| 10 | mineral water       | 0.4527750 | 0.4527750  | 1.0  |  |
| 11 | nan                 | 0.6285296 | 0.6285296  | 1.0  |  |
| 12 | shrimp              | 0.2151898 | 0.2151898  | 1.0  |  |
| 13 | turkey              | 0.5272638 | 0.5272638  | 1.0  |  |
| 14 | whole wheat pasta   | 0.2653359 | 0.2653359  | 1.0  |  |
| 15 | avocado             | 0.2030185 | 0.2030185  | 1.0  |  |
| 16 | avocado             | 0.3037974 | 0.3037974  | 1.0  |  |
| 17 | avocado             | 0.2921129 | 0.2921129  | 1.0  |  |
| 18 | energy drink        | 0.2521908 | 0.2521908  | 1.0  |  |
| 19 | french fries        | 0.3042843 | 0.3042843  | 1.0  |  |
| 20 | milk                | 0.2711781 | 0.2711781  | 1.0  |  |
| 21 | nan                 | 0.3763388 | 0.3763388  | 1.0  |  |
| 22 | clothes accessories | 0.2512171 | 0.2512171  | 1.0  |  |
| 23 | clothes accessories | 0.3237585 | 0.3237585  | 1.0  |  |
| 24 | clothes accessories | 0.2108081 | 0.2108081  | 1.0  |  |
| 25 | clothes accessories | 0.3281402 | 0.3281402  | 1.0  |  |
| 26 | cookies             | 0.3213242 | 0.3213242  | 1.0  |  |
| 27 | cookies             | 0.2005842 | 0.2005842  | 1.0  |  |
| 28 | cookies             | 0.2429406 | 0.2429406  | 1.0  |  |
| 29 | eggs                | 0.3617332 | 0.3617332  | 1.0  |  |
| 30 | eggs                | 0.2059396 | 0.2059396  | 1.0  |  |
| 31 | nan                 | 0.2409931 | 0.2409931  | 1.0  |  |
| 32 | eggs                | 0.2848101 | 0.2848101  | 1.0  |  |
| 33 | energy drink        | 0.3033106 | 0.3033106  | 1.0  |  |
| 34 | energy drink        | 0.3033106 | 0.3033106  | 1.0  |  |
| 35 | milk                | 0.2804284 | 0.2804284  | 1.0  |  |
| 36 | mineral water       | 0.2702044 | 0.2702044  | 1.0  |  |
| 37 | nan                 | 0.4819863 | 0.4819863  | 1.0  |  |
| 38 | french fries        | 0.3709834 | 0.3709834  | 1.0  |  |
| 39 | herb & pepper       | 0.2478091 | 0.2478091  | 1.0  |  |
| 40 | nan                 | 0.2702044 | 0.2702044  | 1.0  |  |
| 41 | mineral water       | 0.3476144 | 0.3476144  | 1.0  |  |
| 42 | nan                 | 0.2502434 | 0.2502434  | 1.0  |  |
| 43 | avocado             | 0.2891918 | 0.2891918  | 1.0  |  |
| 44 | french fries        | 0.2429406 | 0.2429406  | 1.0  |  |
| 45 | energy drink        | 0.2453748 | 0.2453748  | 1.0  |  |
| 46 | french fries        | 0.2833495 | 0.2833495  | 1.0  |  |
| 47 | clothes accessories | 0.2429406 | 0.2429406  | 1.0  |  |
| 48 | clothes accessories | 0.2497565 | 0.2497565  | 1.0  |  |
| 49 | clothes accessories | 0.2064264 | 0.2064264  | 1.0  |  |
| 50 | clothes accessories | 0.3154819 | 0.3154819  | 1.0  |  |
| 51 | clothes accessories | 0.2020447 | 0.2020447  | 1.0  |  |
| 52 | cookies             | 0.2215189 | 0.2215189  | 1.0  |  |
| 53 | nan                 | 0.2185978 | 0.2185978  | 1.0  |  |
| 54 | eggs                | 0.2653359 | 0.2653359  | 1.0  |  |

| 55 | energy drink        | 0.2911392 | 0.2911392  | 1.0  |  |
|----|---------------------|-----------|------------|------|--|
| 56 | milk                | 0.2083739 | 0.2083739  | 1.0  |  |
|    | title1              | support   | confidence | lift |  |
| 0  | avocado             | 0.3145082 | 0.3145082  | 1.0  |  |
| 1  | burgers             | 0.2429406 | 0.2429406  | 1.0  |  |
| 2  | chocolate           | 0.4756572 | 0.4756572  | 1.0  |  |
| 3  | clothes accessories | 0.3398247 | 0.3398247  | 1.0  |  |
| 4  | cookies             | 0.3588120 | 0.3588120  | 1.0  |  |
| 5  | eggs                | 0.4099318 | 0.4099318  | 1.0  |  |
| 6  | energy drink        | 0.3213242 | 0.3213242  | 1.0  |  |
| 7  | french fries        | 0.6548198 | 0.6548198  | 1.0  |  |
| 8  | herb & pepper       | 0.3042843 | 0.3042843  | 1.0  |  |
| 9  | milk                | 0.4079844 | 0.4079844  | 1.0  |  |
| 10 | mineral water       | 0.4527750 | 0.4527750  | 1.0  |  |
| 11 | nan                 | 0.6285296 | 0.6285296  | 1.0  |  |
| 12 | shrimp              | 0.2151898 | 0.2151898  | 1.0  |  |
| 13 | turkey              | 0.5272638 | 0.5272638  | 1.0  |  |
| 14 | whole wheat pasta   | 0.2653359 | 0.2653359  | 1.0  |  |
| 15 | avocado             | 0.2030185 | 0.2030185  | 1.0  |  |
| 16 | avocado             | 0.3037974 | 0.3037974  | 1.0  |  |
| 17 | avocado             | 0.2921129 | 0.2921129  | 1.0  |  |
| 18 | energy drink        | 0.2521908 | 0.2521908  | 1.0  |  |
| 19 | french fries        | 0.3042843 | 0.3042843  | 1.0  |  |
| 20 | milk                | 0.2711781 | 0.2711781  | 1.0  |  |
| 21 | nan                 | 0.3763388 | 0.3763388  | 1.0  |  |
| 22 | clothes accessories | 0.2512171 | 0.2512171  | 1.0  |  |
| 23 | clothes accessories | 0.3237585 | 0.3237585  | 1.0  |  |
| 24 | clothes accessories | 0.2108081 | 0.2108081  | 1.0  |  |
| 25 | clothes accessories | 0.3281402 | 0.3281402  | 1.0  |  |
| 26 | cookies             | 0.3213242 | 0.3213242  | 1.0  |  |
| 27 | cookies             | 0.2005842 | 0.2005842  | 1.0  |  |
| 28 | cookies             | 0.2429406 | 0.2429406  | 1.0  |  |
| 29 | eggs                | 0.3617332 | 0.3617332  | 1.0  |  |
| 30 | eggs                | 0.2059396 | 0.2059396  | 1.0  |  |
| 31 | nan                 | 0.2409931 | 0.2409931  | 1.0  |  |
| 32 | eggs                | 0.2848101 | 0.2848101  | 1.0  |  |
| 33 | energy drink        | 0.3033106 | 0.3033106  | 1.0  |  |
| 34 | energy drink        | 0.3033106 | 0.3033106  | 1.0  |  |
| 35 | milk                | 0.2804284 | 0.2804284  | 1.0  |  |
| 36 | mineral water       | 0.2702044 | 0.2702044  | 1.0  |  |
| 37 | nan                 | 0.4819863 | 0.4819863  | 1.0  |  |
| 38 | french fries        | 0.3709834 | 0.3709834  | 1.0  |  |
| 39 | herb & pepper       | 0.2478091 | 0.2478091  | 1.0  |  |
| 40 | nan                 | 0.2702044 | 0.2702044  | 1.0  |  |
| 41 | mineral water       | 0.3476144 | 0.3476144  | 1.0  |  |
| 42 | nan                 | 0.2502434 | 0.2502434  | 1.0  |  |
| 43 | avocado             | 0.2891918 | 0.2891918  | 1.0  |  |
| 44 | french fries        | 0.2429406 | 0.2429406  | 1.0  |  |
| 45 | energy drink        | 0.2453748 | 0.2453748  | 1.0  |  |
| 46 | french fries        | 0.2833495 | 0.2833495  | 1.0  |  |
| 47 | clothes accessories | 0.2429406 | 0.2429406  | 1.0  |  |
| 48 | clothes accessories | 0.2497565 | 0.2497565  | 1.0  |  |
| 49 | clothes accessories | 0.2064264 | 0.2064264  | 1.0  |  |
| 50 | clothes accessories | 0.3154819 | 0.3154819  | 1.0  |  |
| 51 | clothes accessories | 0.2020447 | 0.2020447  | 1.0  |  |
| 52 | cookies             | 0.2215189 | 0.2215189  | 1.0  |  |
| 53 | nan                 | 0.2185978 | 0.2185978  | 1.0  |  |
| 54 | eggs                | 0.2653359 | 0.2653359  | 1.0  |  |
| 55 | energy drink        | 0.2911392 | 0.2911392  | 1.0  |  |
| 56 | milk                | 0.2083739 | 0.2083739  | 1.0  |  |
| 57 | mineral water       | 0.2249269 | 0.2249269  | 1.0  |  |

|    | title1              | support   | confidence | lift |
|----|---------------------|-----------|------------|------|
| 0  | avocado             | 0.3145082 | 0.3145082  | 1.0  |
| 1  | burgers             | 0.2429406 | 0.2429406  | 1.0  |
| 2  | chocolate           | 0.4756572 | 0.4756572  | 1.0  |
| 3  | clothes accessories | 0.3398247 | 0.3398247  | 1.0  |
| 4  | cookies             | 0.3588120 | 0.3588120  | 1.0  |
| 5  | eggs                | 0.4099318 | 0.4099318  | 1.0  |
| 6  | energy drink        | 0.3213242 | 0.3213242  | 1.0  |
| 7  | french fries        | 0.6548198 | 0.6548198  | 1.0  |
| 8  | herb & pepper       | 0.3042843 | 0.3042843  | 1.0  |
| 9  | milk                | 0.4079844 | 0.4079844  | 1.0  |
| 10 | mineral water       | 0.4527750 | 0.4527750  | 1.0  |
| 11 | nan                 | 0.6285296 | 0.6285296  | 1.0  |
| 12 | shrimp              | 0.2151898 | 0.2151898  | 1.0  |
| 13 | turkey              | 0.5272638 | 0.5272638  | 1.0  |
| 14 | whole wheat pasta   | 0.2653359 | 0.2653359  | 1.0  |
| 15 | avocado             | 0.2030185 | 0.2030185  | 1.0  |
| 16 | avocado             | 0.3037974 | 0.3037974  | 1.0  |
| 17 | avocado             | 0.2921129 | 0.2921129  | 1.0  |
| 18 | energy drink        | 0.2521908 | 0.2521908  | 1.0  |
| 19 | french fries        | 0.3042843 | 0.3042843  | 1.0  |
| 20 | milk                | 0.2711781 | 0.2711781  | 1.0  |
| 21 | nan                 | 0.3763388 | 0.3763388  | 1.0  |
| 22 | clothes accessories | 0.2512171 | 0.2512171  | 1.0  |
| 23 | clothes accessories | 0.3237585 | 0.3237585  | 1.0  |
| 24 | clothes accessories | 0.2108081 | 0.2108081  | 1.0  |
| 25 | clothes accessories | 0.3281402 | 0.3281402  | 1.0  |
| 26 | cookies             | 0.3213242 | 0.3213242  | 1.0  |
| 27 | cookies             | 0.2005842 | 0.2005842  | 1.0  |
| 28 | cookies             | 0.2429406 | 0.2429406  | 1.0  |
| 29 | eggs                | 0.3617332 | 0.3617332  | 1.0  |
| 30 | eggs                | 0.2059396 | 0.2059396  | 1.0  |
| 31 | nan                 | 0.2409931 | 0.2409931  | 1.0  |
| 32 | eggs                | 0.2848101 | 0.2848101  | 1.0  |
| 33 | energy drink        | 0.3033106 | 0.3033106  | 1.0  |
| 34 | energy drink        | 0.3033106 | 0.3033106  | 1.0  |
| 35 | milk                | 0.2804284 | 0.2804284  | 1.0  |
| 36 | mineral water       | 0.2702044 | 0.2702044  | 1.0  |
| 37 | nan                 | 0.4819863 | 0.4819863  | 1.0  |
| 38 | french fries        | 0.3709834 | 0.3709834  | 1.0  |
| 39 | herb & pepper       | 0.2478091 | 0.2478091  | 1.0  |
| 40 | nan                 | 0.2702044 | 0.2702044  | 1.0  |
| 41 | mineral water       | 0.3476144 | 0.3476144  | 1.0  |
| 42 | nan                 | 0.2502434 | 0.2502434  | 1.0  |
| 43 | avocado             | 0.2891918 | 0.2891918  | 1.0  |
| 44 | french fries        | 0.2429406 | 0.2429406  | 1.0  |
| 45 | energy drink        | 0.2453748 | 0.2453748  | 1.0  |
| 46 | french fries        | 0.2833495 | 0.2833495  | 1.0  |
| 47 | clothes accessories | 0.2429406 | 0.2429406  | 1.0  |
| 48 | clothes accessories | 0.2497565 | 0.2497565  | 1.0  |
| 49 | clothes accessories | 0.2064264 | 0.2064264  | 1.0  |
| 50 | clothes accessories | 0.3154819 | 0.3154819  | 1.0  |
| 51 | clothes accessories | 0.2020447 | 0.2020447  | 1.0  |
| 52 | cookies             | 0.2215189 | 0.2215189  | 1.0  |
| 53 | nan                 | 0.2185978 | 0.2185978  | 1.0  |
| 54 | eggs                | 0.2653359 | 0.2653359  | 1.0  |
| 55 | energy drink        | 0.2911392 | 0.2911392  | 1.0  |
| 56 | milk                | 0.2083739 | 0.2083739  | 1.0  |
| 57 | mineral water       | 0.2249269 | 0.2249269  | 1.0  |
| 58 | nan                 | 0.2224926 | 0.2224926  | 1.0  |
|    | title1              | support   | confidence | lift |

|    |                     |               |           |            |      |
|----|---------------------|---------------|-----------|------------|------|
| 0  |                     | avocado       | 0.3145082 | 0.3145082  | 1.0  |
| 1  |                     | burgers       | 0.2429406 | 0.2429406  | 1.0  |
| 2  |                     | chocolate     | 0.4756572 | 0.4756572  | 1.0  |
| 3  | clothes accessories |               | 0.3398247 | 0.3398247  | 1.0  |
| 4  |                     | cookies       | 0.3588120 | 0.3588120  | 1.0  |
| 5  |                     | eggs          | 0.4099318 | 0.4099318  | 1.0  |
| 6  |                     | energy drink  | 0.3213242 | 0.3213242  | 1.0  |
| 7  |                     | french fries  | 0.6548198 | 0.6548198  | 1.0  |
| 8  |                     | herb & pepper | 0.3042843 | 0.3042843  | 1.0  |
| 9  |                     | milk          | 0.4079844 | 0.4079844  | 1.0  |
| 10 |                     | mineral water | 0.4527750 | 0.4527750  | 1.0  |
| 11 |                     | nan           | 0.6285296 | 0.6285296  | 1.0  |
| 12 |                     | shrimp        | 0.2151898 | 0.2151898  | 1.0  |
| 13 |                     | turkey        | 0.5272638 | 0.5272638  | 1.0  |
| 14 | whole wheat pasta   |               | 0.2653359 | 0.2653359  | 1.0  |
| 15 |                     | avocado       | 0.2030185 | 0.2030185  | 1.0  |
| 16 |                     | avocado       | 0.3037974 | 0.3037974  | 1.0  |
| 17 |                     | avocado       | 0.2921129 | 0.2921129  | 1.0  |
| 18 |                     | energy drink  | 0.2521908 | 0.2521908  | 1.0  |
| 19 |                     | french fries  | 0.3042843 | 0.3042843  | 1.0  |
| 20 |                     | milk          | 0.2711781 | 0.2711781  | 1.0  |
| 21 |                     | nan           | 0.3763388 | 0.3763388  | 1.0  |
| 22 | clothes accessories |               | 0.2512171 | 0.2512171  | 1.0  |
| 23 | clothes accessories |               | 0.3237585 | 0.3237585  | 1.0  |
| 24 | clothes accessories |               | 0.2108081 | 0.2108081  | 1.0  |
| 25 | clothes accessories |               | 0.3281402 | 0.3281402  | 1.0  |
| 26 |                     | cookies       | 0.3213242 | 0.3213242  | 1.0  |
| 27 |                     | cookies       | 0.2005842 | 0.2005842  | 1.0  |
| 28 |                     | cookies       | 0.2429406 | 0.2429406  | 1.0  |
| 29 |                     | eggs          | 0.3617332 | 0.3617332  | 1.0  |
| 30 |                     | eggs          | 0.2059396 | 0.2059396  | 1.0  |
| 31 |                     | nan           | 0.2409931 | 0.2409931  | 1.0  |
| 32 |                     | eggs          | 0.2848101 | 0.2848101  | 1.0  |
| 33 |                     | energy drink  | 0.3033106 | 0.3033106  | 1.0  |
| 34 |                     | energy drink  | 0.3033106 | 0.3033106  | 1.0  |
| 35 |                     | milk          | 0.2804284 | 0.2804284  | 1.0  |
| 36 |                     | mineral water | 0.2702044 | 0.2702044  | 1.0  |
| 37 |                     | nan           | 0.4819863 | 0.4819863  | 1.0  |
| 38 |                     | french fries  | 0.3709834 | 0.3709834  | 1.0  |
| 39 |                     | herb & pepper | 0.2478091 | 0.2478091  | 1.0  |
| 40 |                     | nan           | 0.2702044 | 0.2702044  | 1.0  |
| 41 |                     | mineral water | 0.3476144 | 0.3476144  | 1.0  |
| 42 |                     | nan           | 0.2502434 | 0.2502434  | 1.0  |
| 43 |                     | avocado       | 0.2891918 | 0.2891918  | 1.0  |
| 44 |                     | french fries  | 0.2429406 | 0.2429406  | 1.0  |
| 45 |                     | energy drink  | 0.2453748 | 0.2453748  | 1.0  |
| 46 |                     | french fries  | 0.2833495 | 0.2833495  | 1.0  |
| 47 | clothes accessories |               | 0.2429406 | 0.2429406  | 1.0  |
| 48 | clothes accessories |               | 0.2497565 | 0.2497565  | 1.0  |
| 49 | clothes accessories |               | 0.2064264 | 0.2064264  | 1.0  |
| 50 | clothes accessories |               | 0.3154819 | 0.3154819  | 1.0  |
| 51 | clothes accessories |               | 0.2020447 | 0.2020447  | 1.0  |
| 52 |                     | cookies       | 0.2215189 | 0.2215189  | 1.0  |
| 53 |                     | nan           | 0.2185978 | 0.2185978  | 1.0  |
| 54 |                     | eggs          | 0.2653359 | 0.2653359  | 1.0  |
| 55 |                     | energy drink  | 0.2911392 | 0.2911392  | 1.0  |
| 56 |                     | milk          | 0.2083739 | 0.2083739  | 1.0  |
| 57 |                     | mineral water | 0.2249269 | 0.2249269  | 1.0  |
| 58 |                     | nan           | 0.2224926 | 0.2224926  | 1.0  |
| 59 |                     | french fries  | 0.2366114 | 0.2366114  | 1.0  |
|    |                     | title1        | support   | confidence | lift |

```
0      avocado  0.3145082  0.3145082  1.0
1      burgers   0.2429406  0.2429406  1.0
2      chocolate  0.4756572  0.4756572  1.0
3 clothes accessories  0.3398247  0.3398247  1.0
4      cookies   0.3588120  0.3588120  1.0
...
56     ...       ...       ...       ...
57     milk      0.2083739  0.2083739  1.0
58     mineral water  0.2249269  0.2249269  1.0
59     nan       0.2224926  0.2224926  1.0
59     french fries  0.2366114  0.2366114  1.0
60 clothes accessories  0.2419668  0.2419668  1.0
```

[61 rows x 4 columns]

In [ ]: