Project Overview

- Summary

This exploratory data analysis report contains information in detail about the business performance of a FMCG company in Berlin in order to figure out trends, patterns, possible issues and recommendations to improve the business.

For instance:

- Showing fundamental KPIs on a monthly basis.
- Performance of subcategories in each year.
- Which supplier had the highest number of (ordering) Traders?
- Which supplier had the best performance in terms of quantity and revenue?

- Data Set

The datasets in this project contain 3 CSV files including Orders (about 470 K rows) , Stock Items and Venues during 2020 and 2021. (Link)

- Tools

Microsoft Excel
Microsoft SQL Server

- Analytical Skills:

Data Cleaning
EDA by writing SQL queries (**Link**)
Data Visualization

Prepared by
Hamed Movahedizadeh

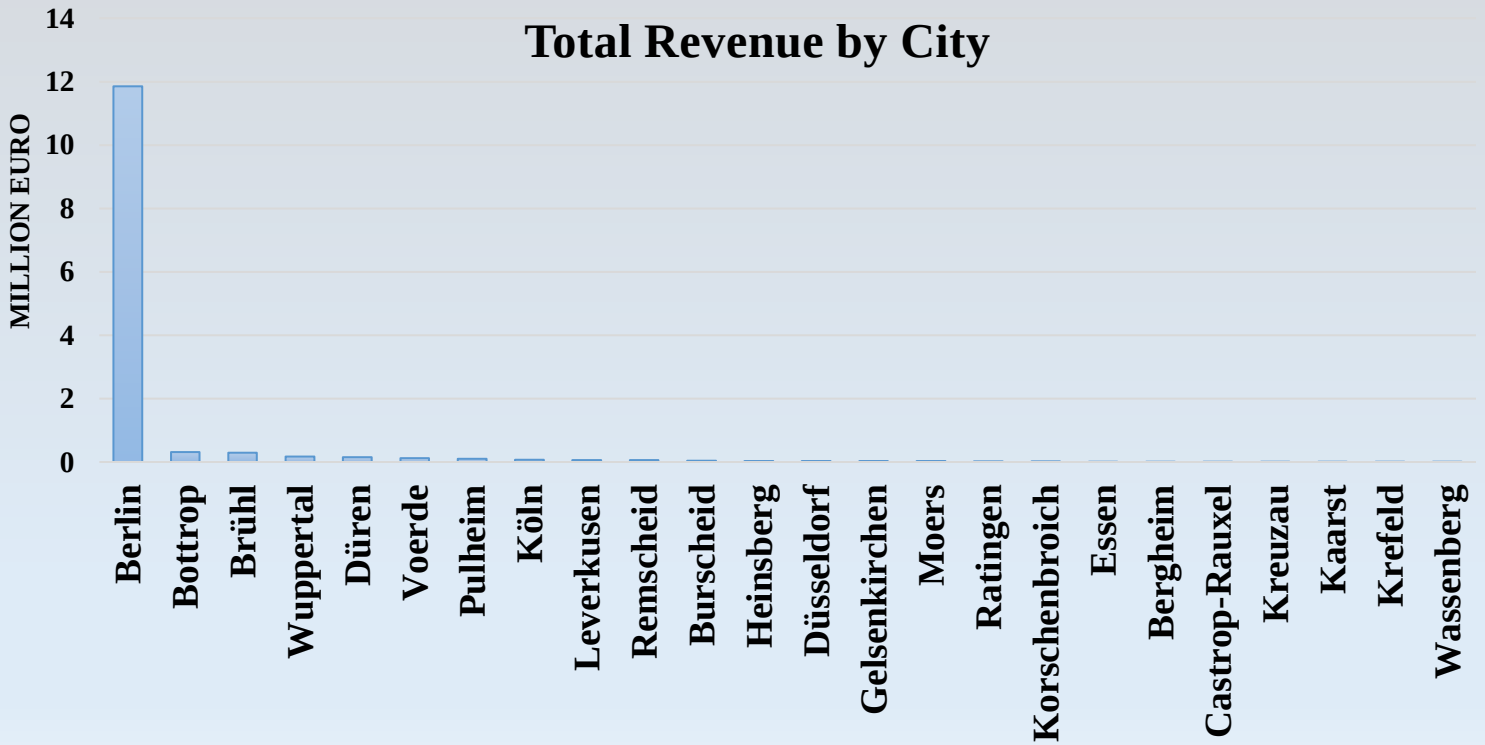
Cleaning and Analyzing

- Headers’ names have space
- Removed item Test(Filter Out) in Column Shop Type in table Venues
- Column City in table Venues has two similar cities with different names: Voerde (Niederrhein) and Voerde
- Removed Some values in column Price cent in table stock items which are zero (141 rows)
- Values for column Order Request Items Count in table Orders are Zero but Quantity is 1(4 rows)

Overview

- Total Traders : 75
- Number of cities : 24
- Total Revenue (euro) :
  - **2020** : 6,897,229 Million
  - **2021** : 6,608,008 Million
- Revenue Growth : **4%** ⬇

- **Kiosk / Späti / Büdchen / Trinkhalle :**
  - 84 % of Total Traders
  - 94% of Total Revenue

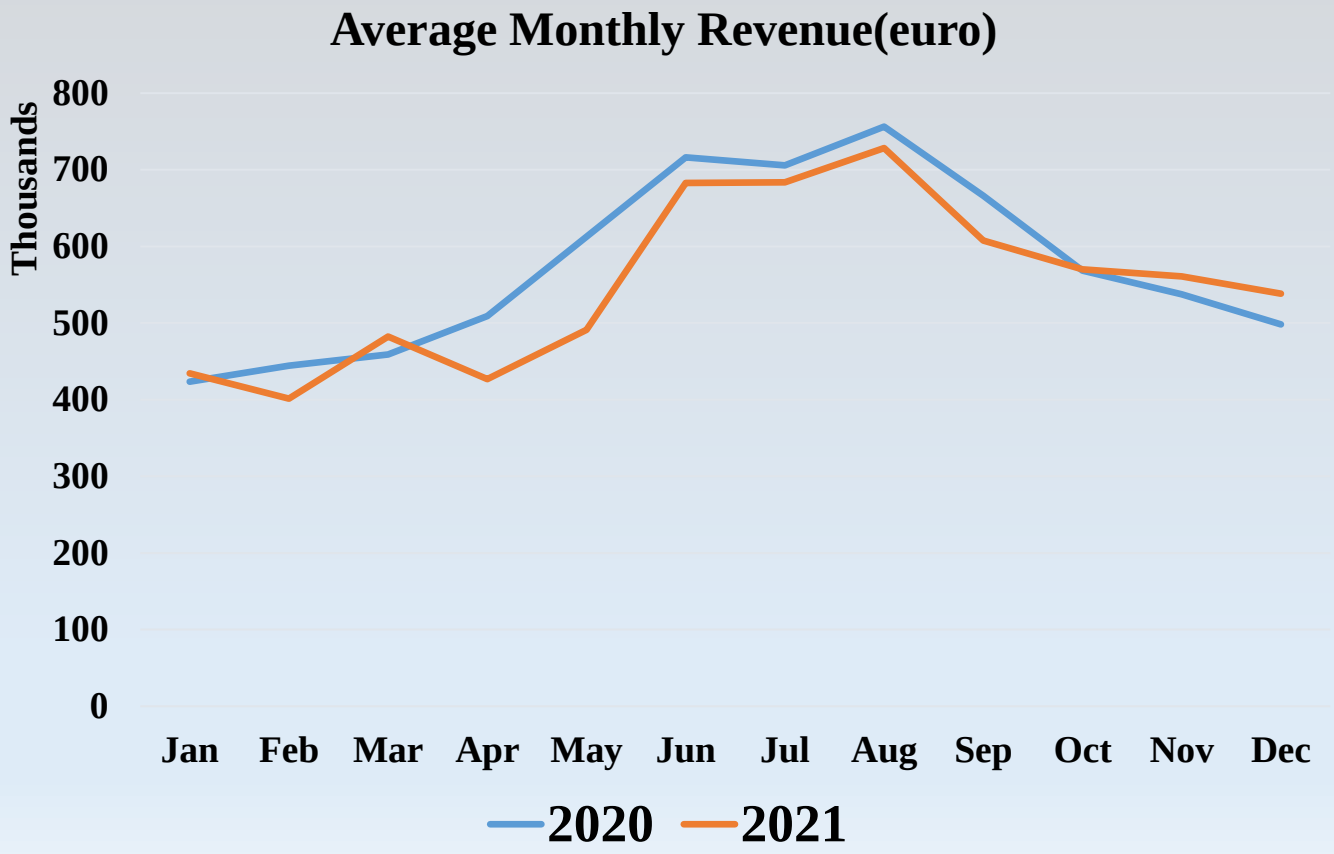


Monthly KPIs

- Almost Similar pattern but better yearly performance in 2021

2020 : **18%** ⬆
compared to the beginning of the year

2021 : **24%** ⬆
compared to the beginning of the year



Monthly KPIs

- Different pattern

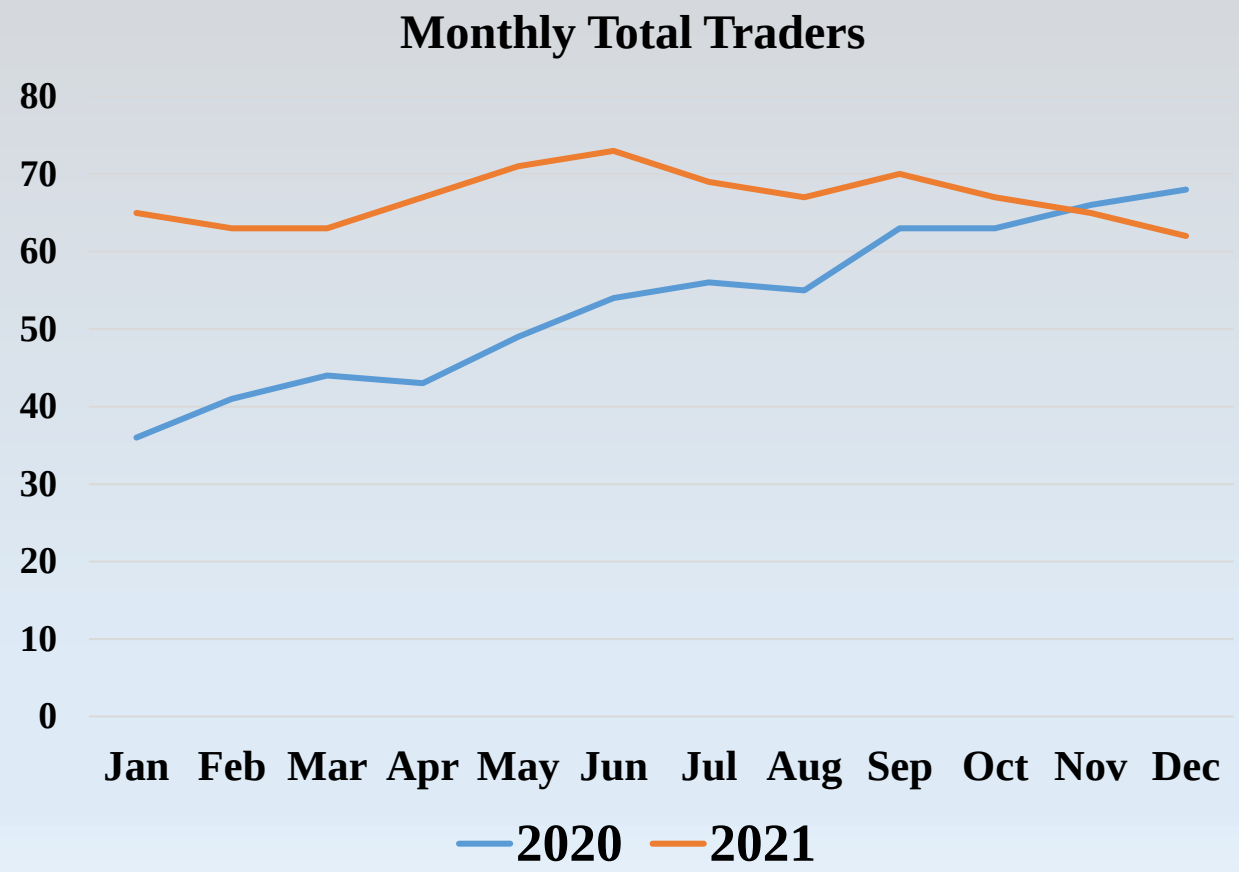
2020

89% ↑ at the end of the year compared to the beginning of the year

2021

5% ↓ at the end of the year compared to the beginning of the year

- There is about **9%** ↓ in Dec 2021 compared to Dec 2020



Monthly KPIs

2020

25% ↑ at the end of the year compared to the beginning of the year

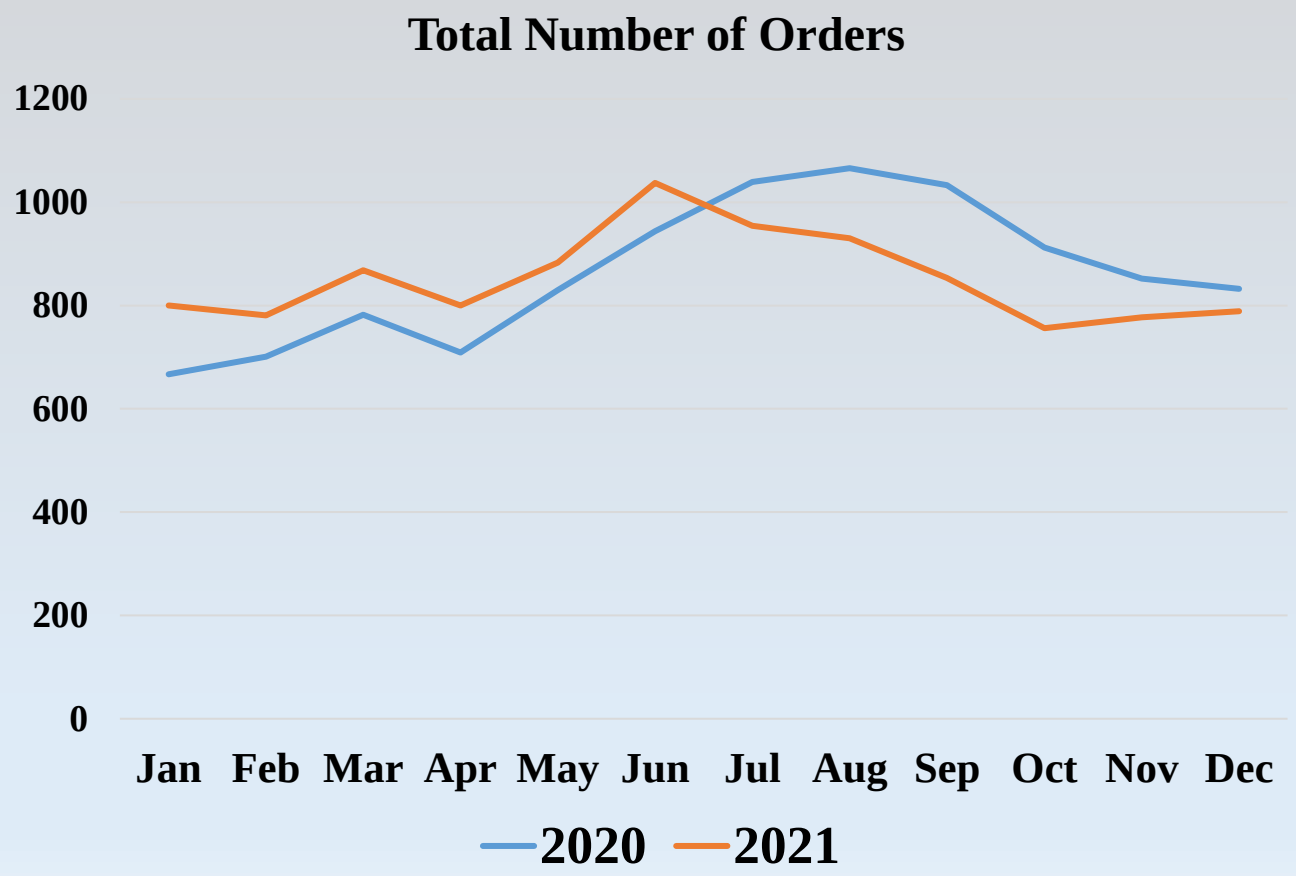
* Decline trend started from August

2021

1% ↓ at the end of the year compared to the beginning of the year

* Decline trend started from Jun

- There is about **5%** ↓ in Dec 2021 compared to Dec 2020



Monthly KPIs

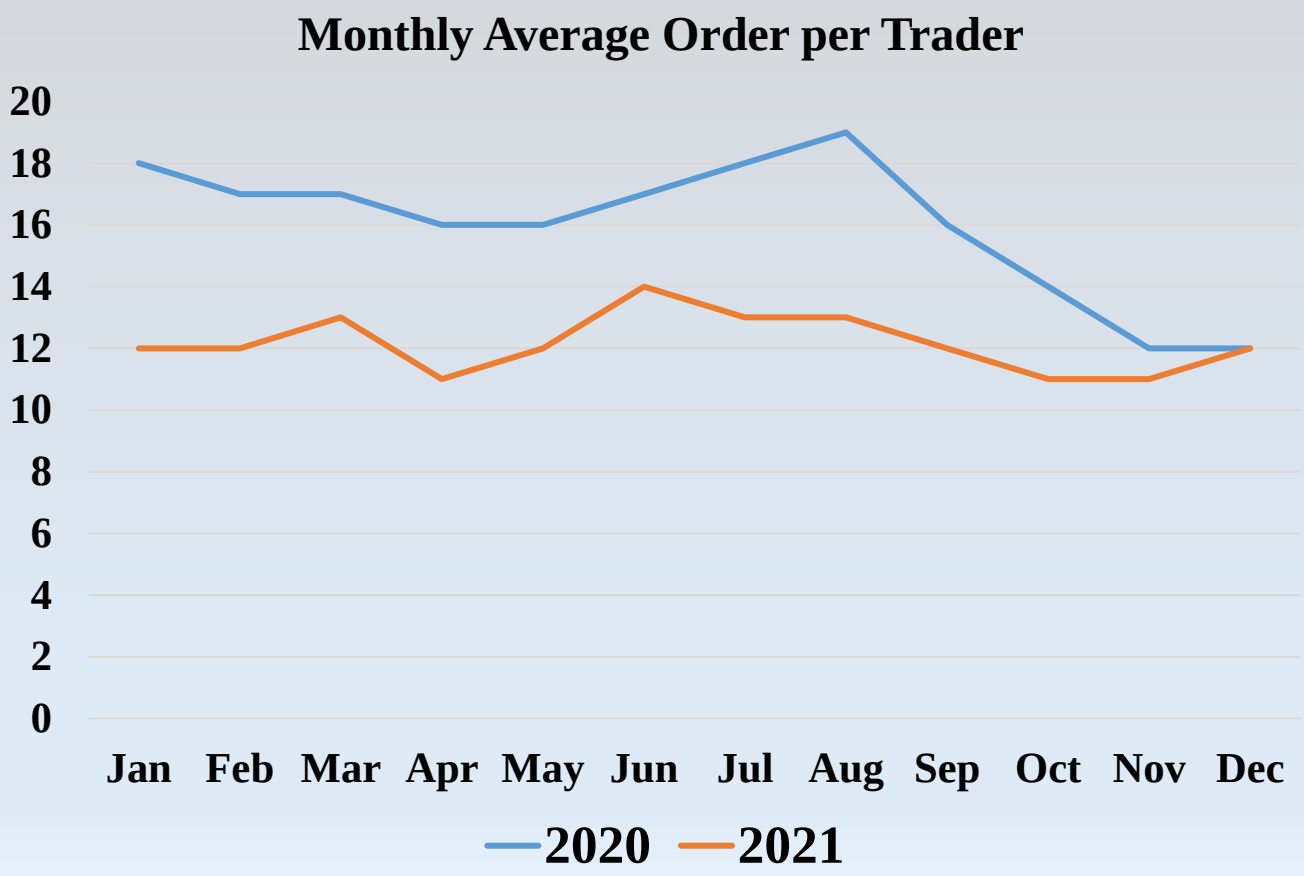
2020

33% ⬇ at the end of the year compared to the beginning of the year

2021

Some fluctuations in an almost fixed range.

- There is about **no growth** in Dec 2021 compared to Dec 2020



Monthly KPIs

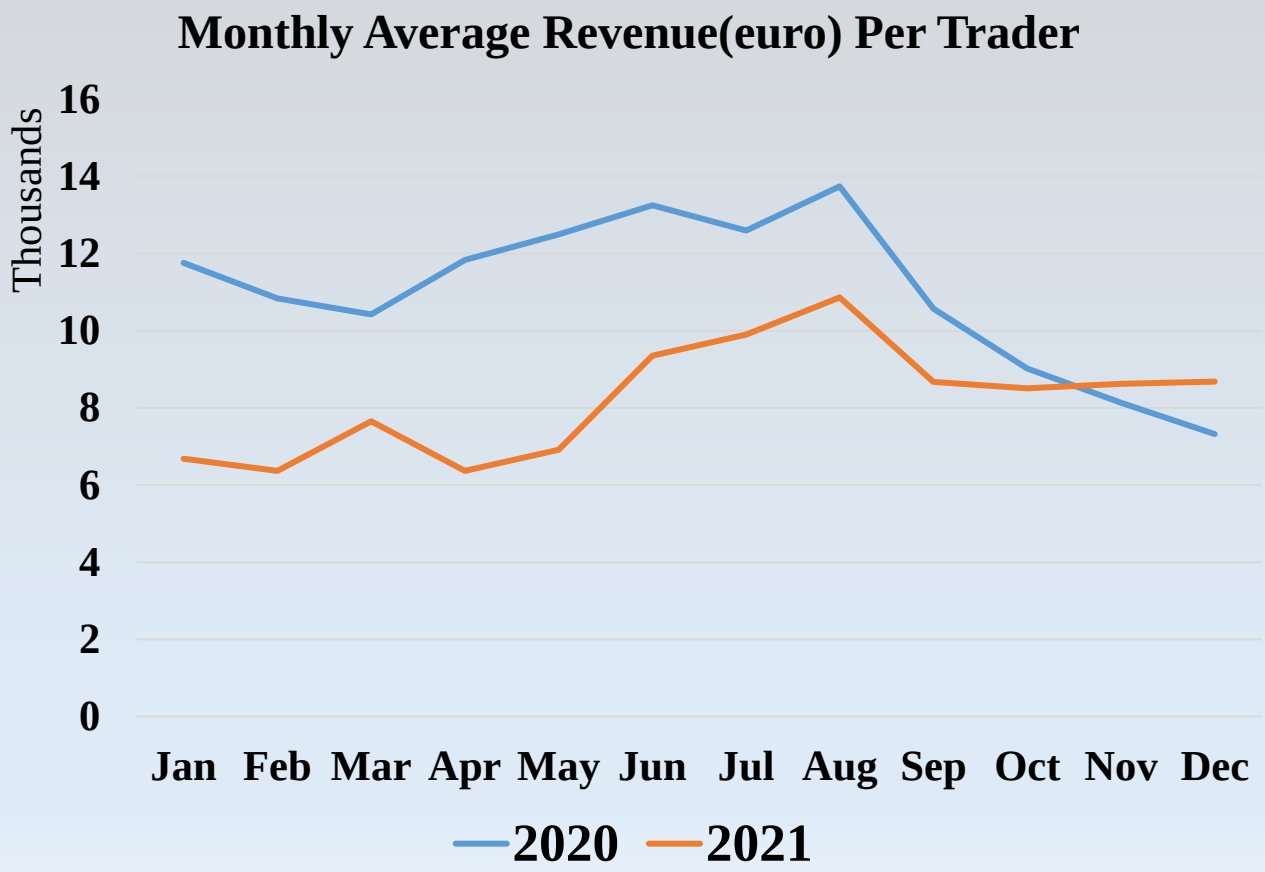
2020

38% ↓ at the end of the year
compared to the beginning of that year

2021

30% ↑ at the end of the year
compared to the beginning of the year

- There is about **18%** ↑
in Dec 2021 compared to Dec 2020



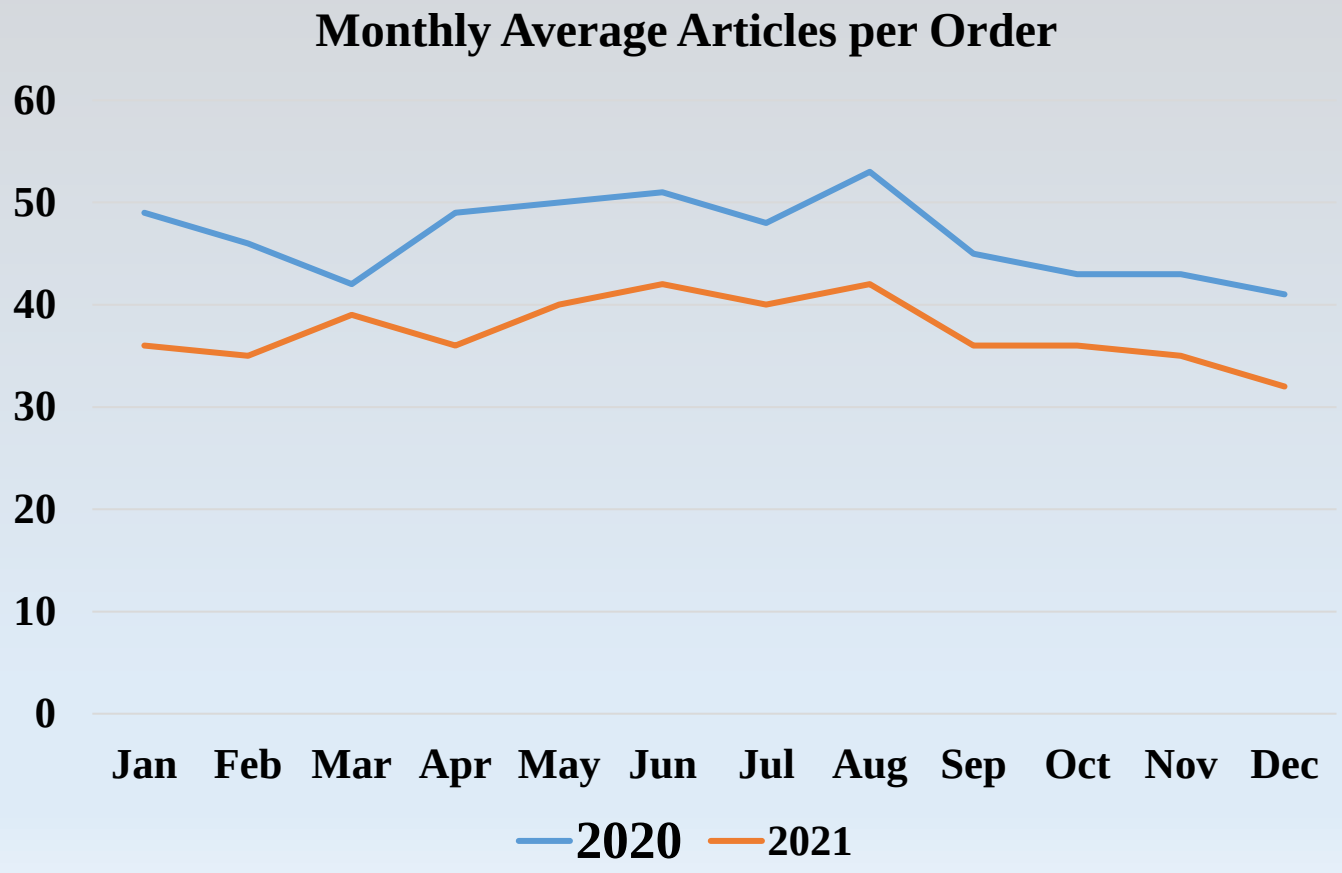
Monthly KPIs

- There are **negative** trends in both years

2020 : **16 %** ⬇
compared to the beginning of the year

2021 : **11 %** ⬇
compared to the beginning of the year

- There is about **22%** ⬇
in Dec 2021 compared to Dec 2020



Monthly KPIs

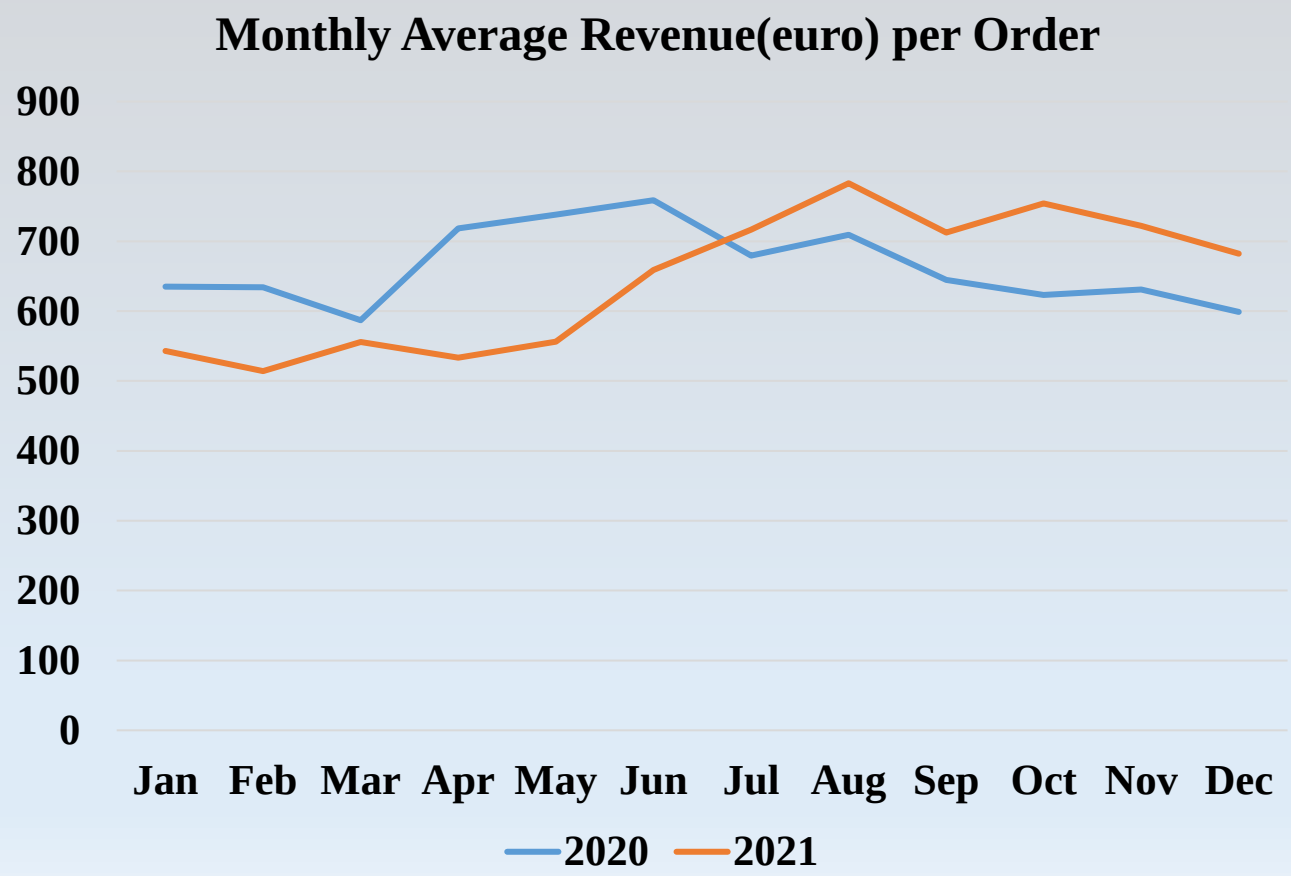
2020

6% ⬇ at the end of the year
compared to the beginning of the year

2021

26% ⬆ at the end of the year
compared to the beginning of the year

- There is about **14%** ⬆
in Dec 2021 compared to Dec 2020

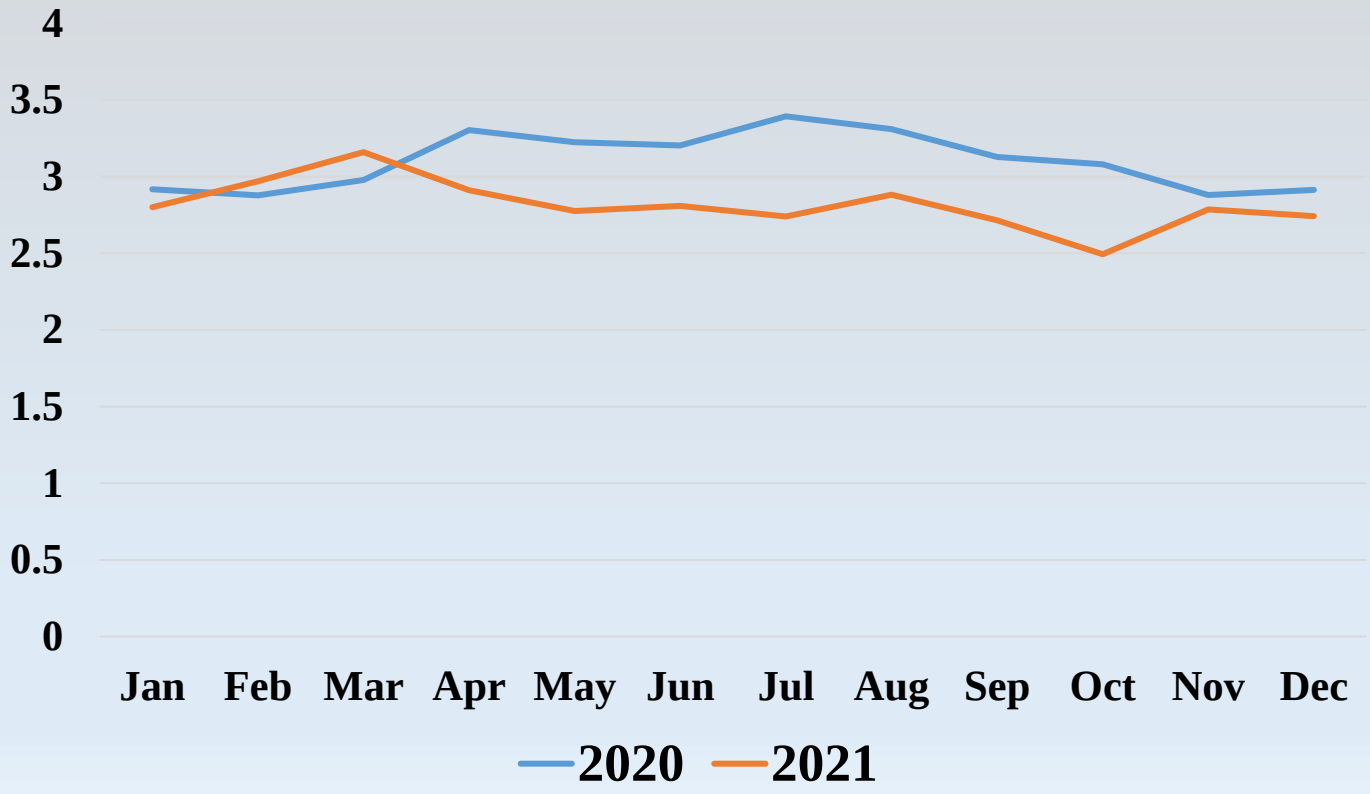


Monthly KPIs

Category 1

- There are some fluctuations in both years

- There is about **6%** ⬇ in Dec 2021 compared to Dec 2020



Monthly KPIs

Category 2

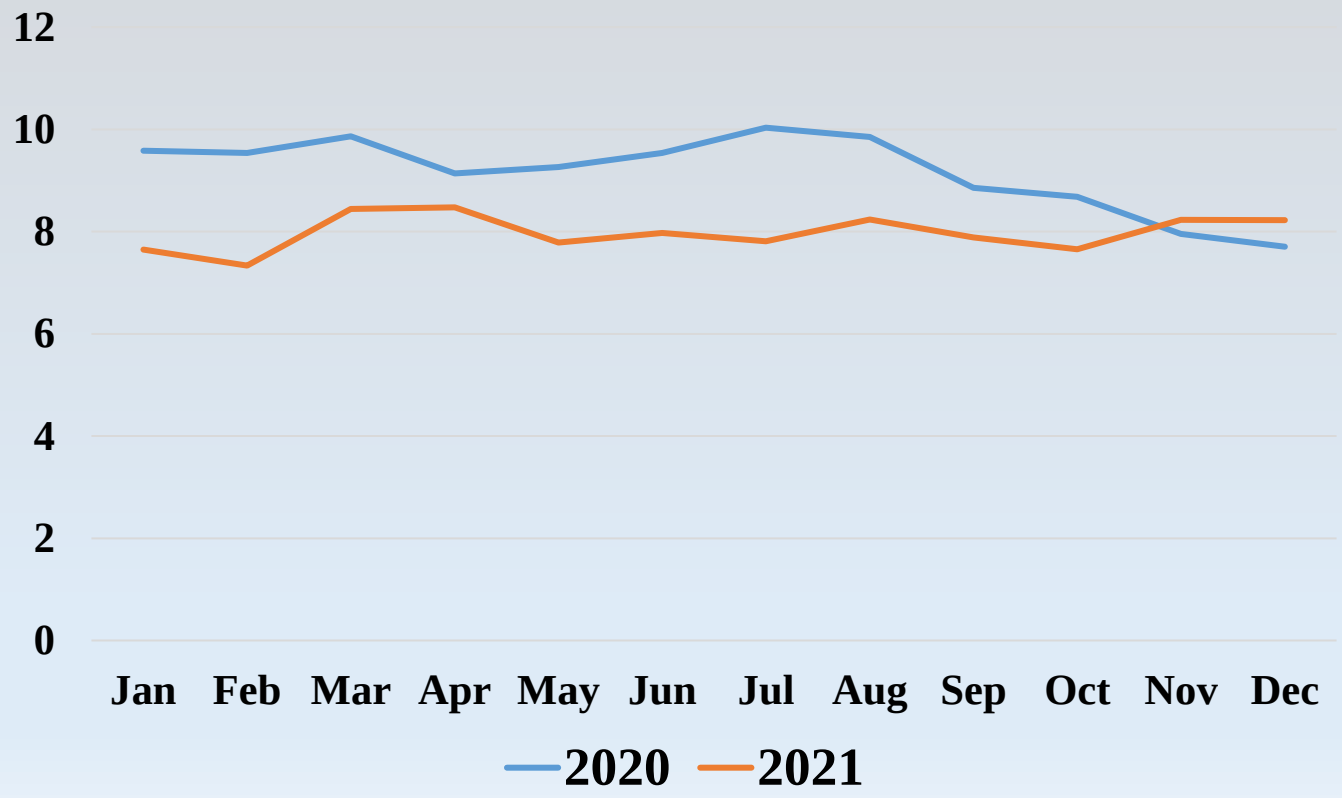
2020

20% ↓ at the end of the year compared to the beginning of the year

2021

8% ↑ at the end of the year compared to the beginning of the year

- There is about **7%** ↑ in Dec 2021 compared to Dec 2020



Monthly KPIs

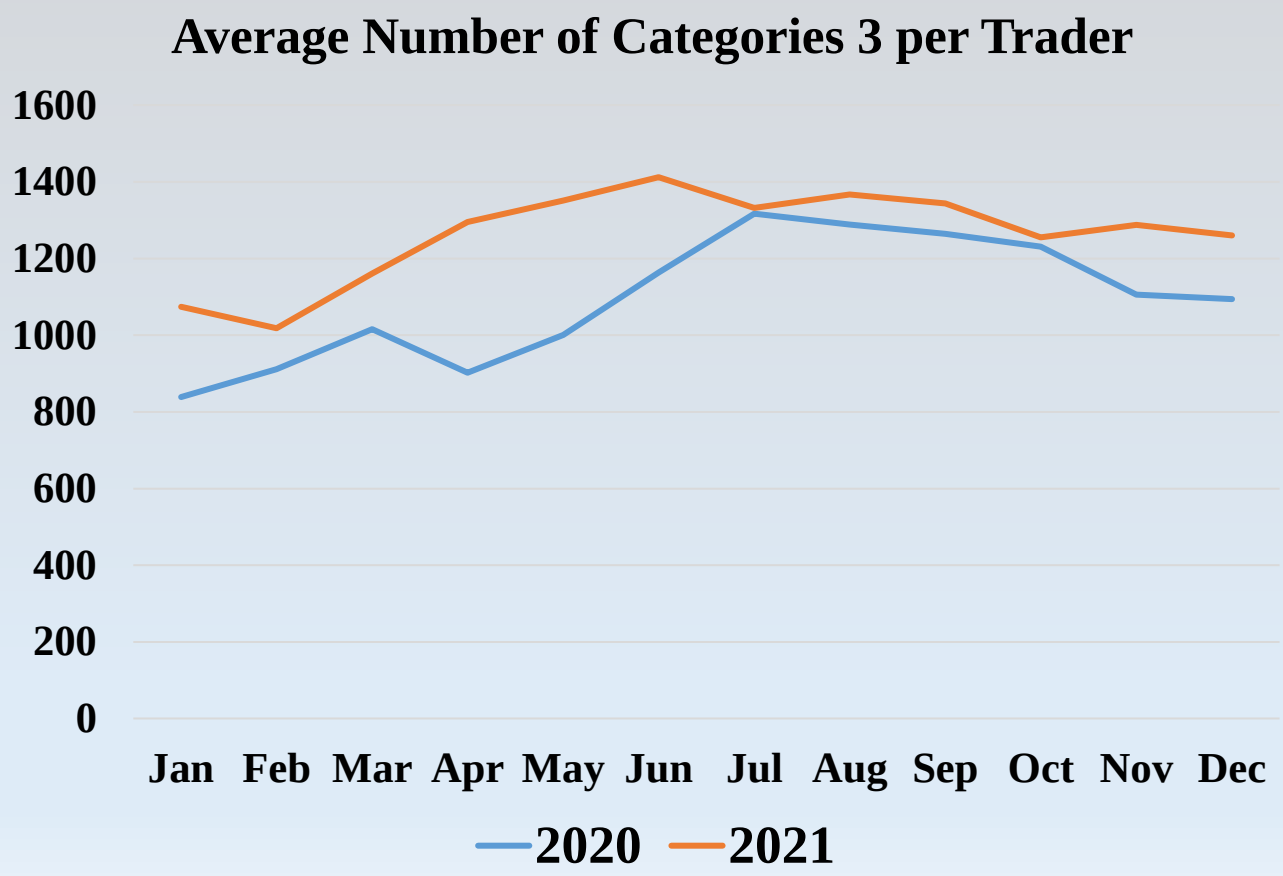
Category 3

- Positive Trend in both years
- Specially from Jan to Jun

2020 : 30 %

2021 : 17%

- There is about **15%** in Dec 2021 compared to Dec 2020

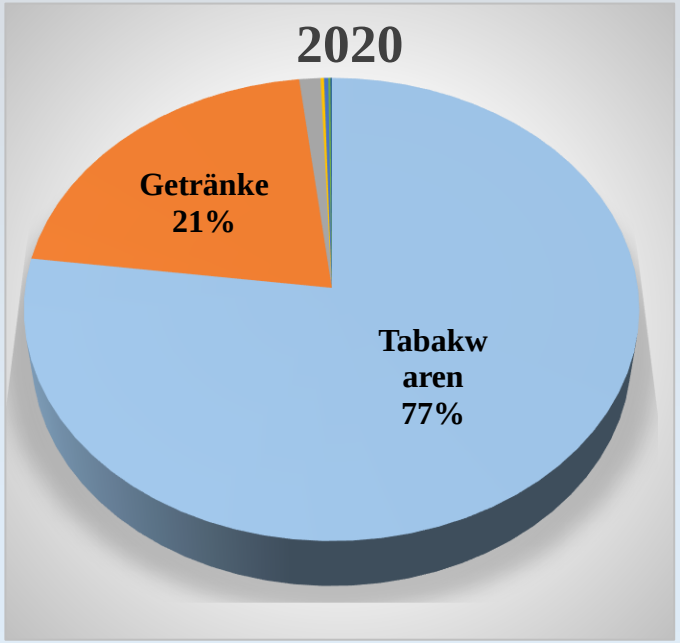


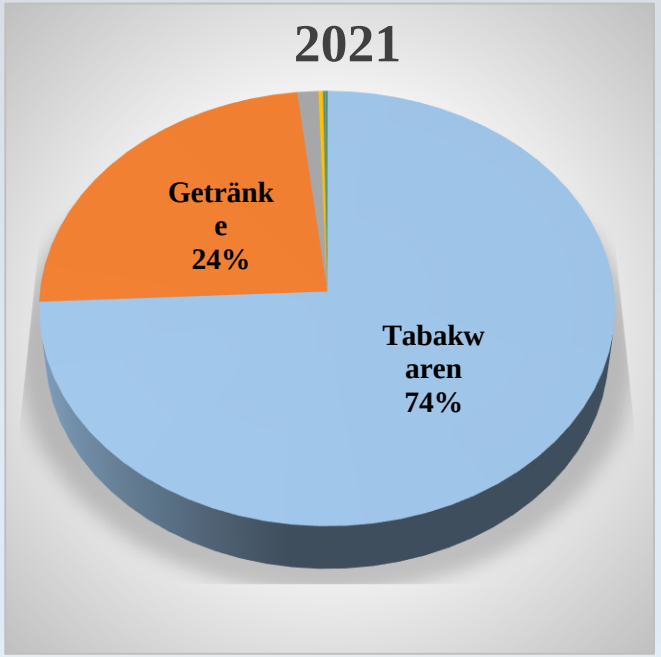
Category one - Revenue (euro)

- 98 % of Total Revenue belonged to :
  - **Tabakwaren & Getränke**

- **Getränke : 3%**
- **Tabakwaren : 3%**

- Total Revenue 2020 : **690 K**
- Total Revenue 2020 : **661 K**

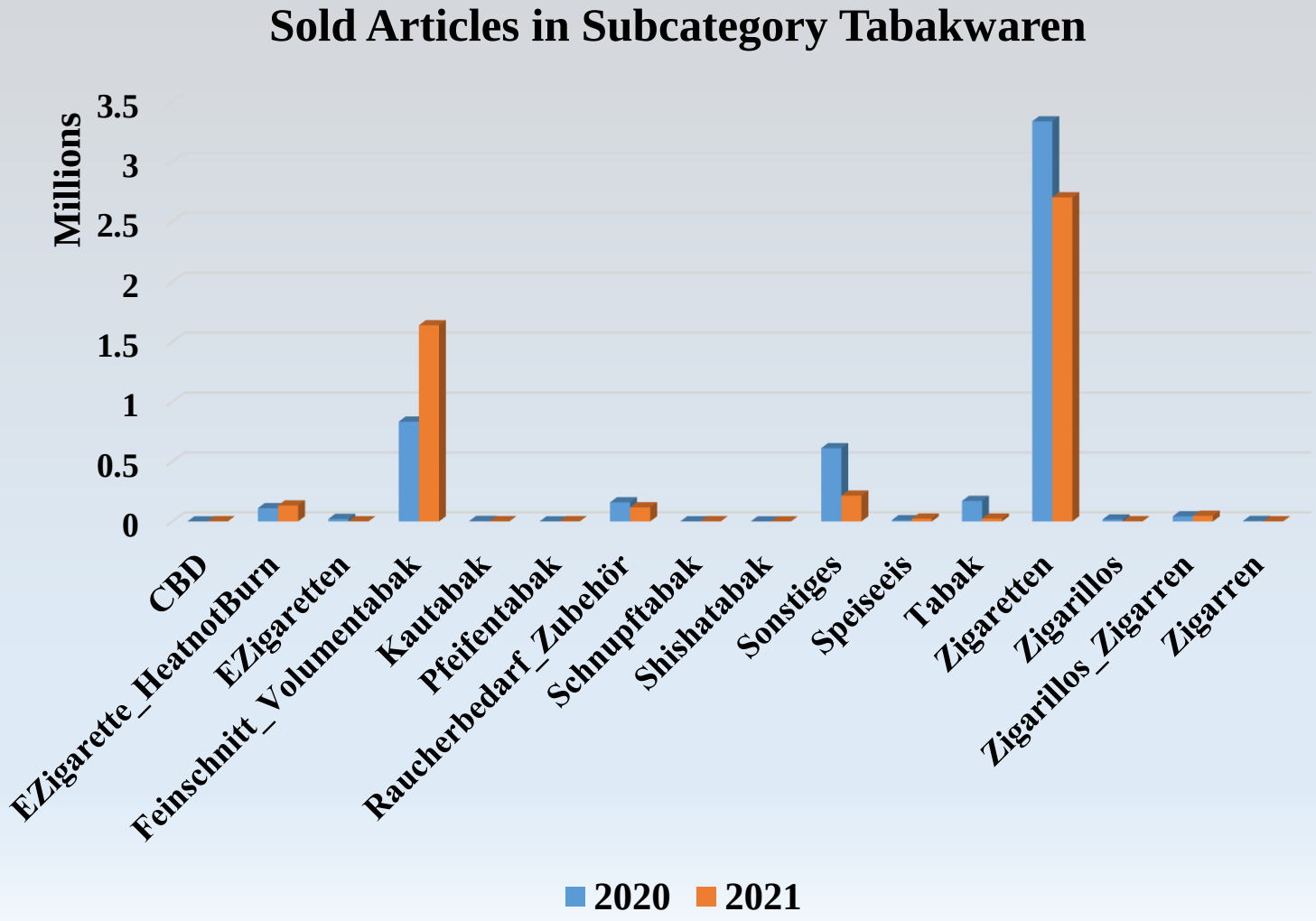




Sold Articles in Subcategory : Tabakwaren

Top 3 Subcategories :

1. Zigaretten
2. Feinschnitt_Volumentabak
3. Sonstiges

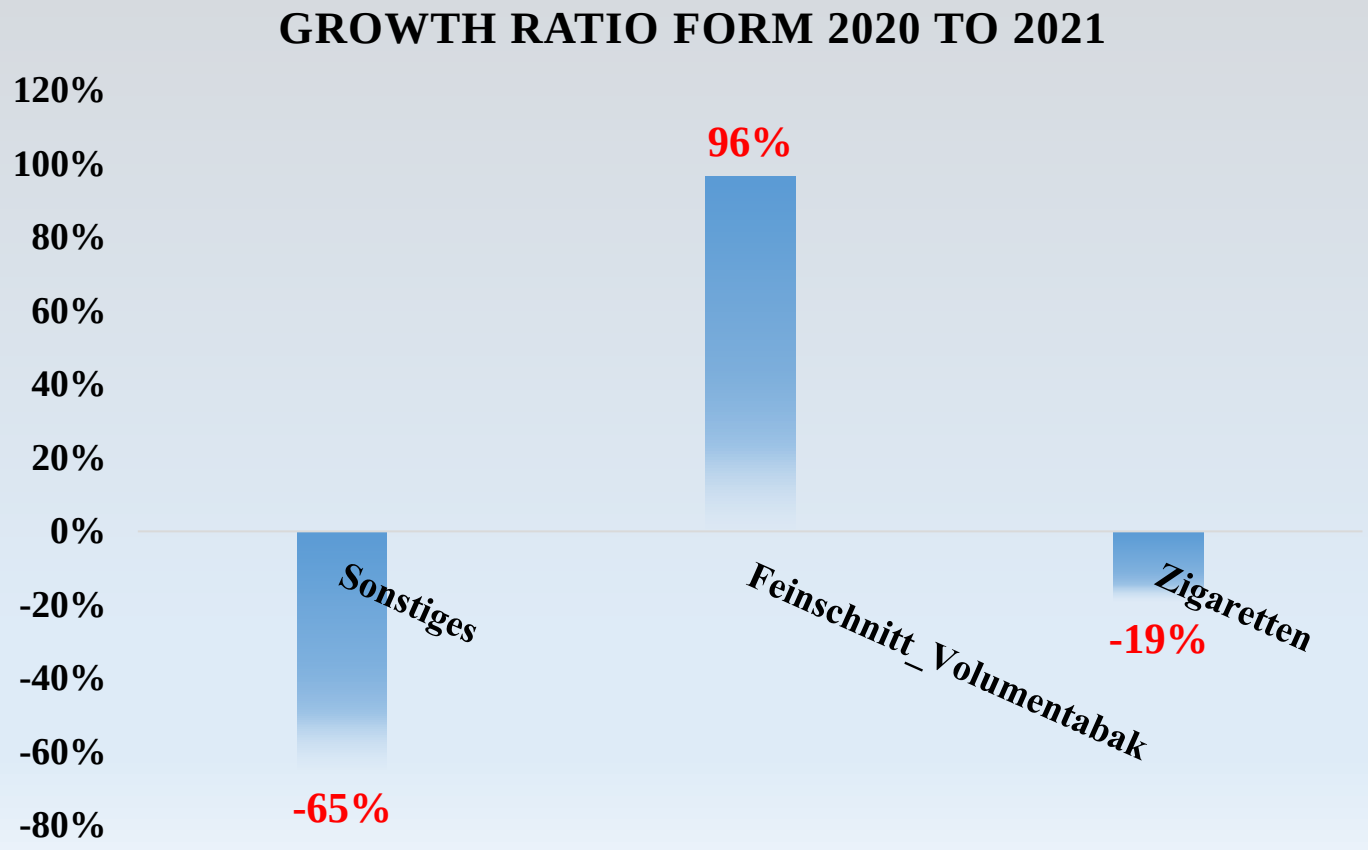


Sold Articles Growth in Subcategory :Tabakwaren

Feinschnitt_Volumentabak
Growth rate : **96 %**

Zigaretten
Decline rate : **19 %**

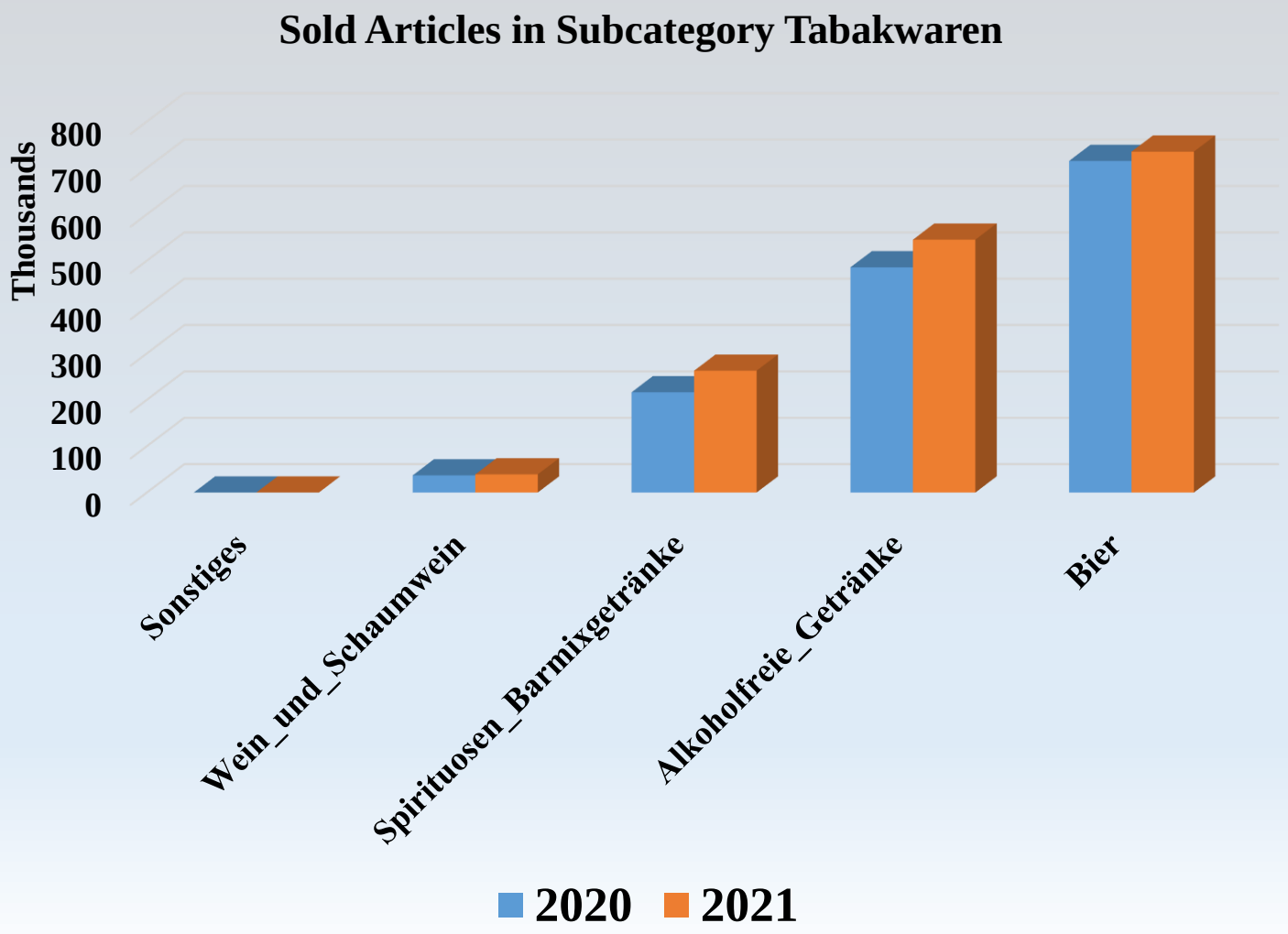
Sonstiges
Decline rate : **65 %**



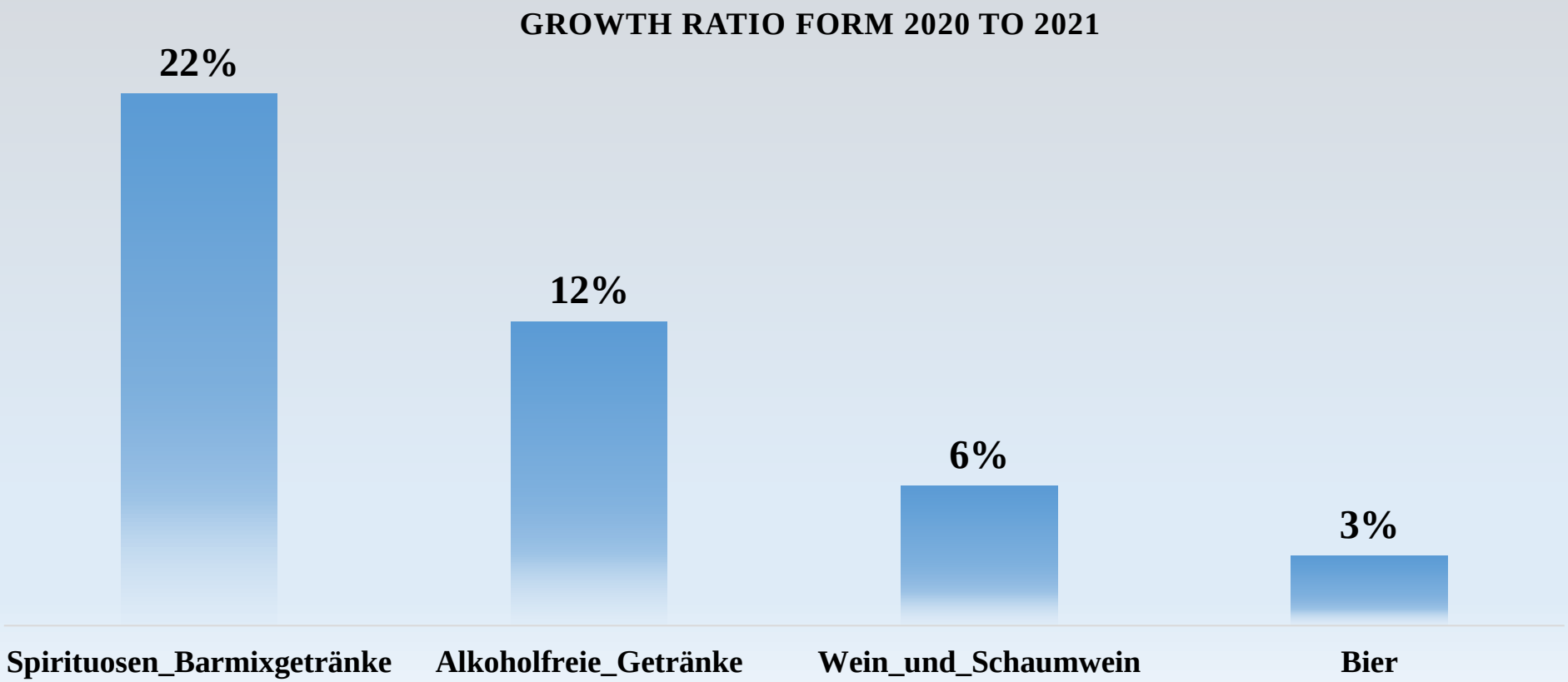
Sold Articles in subcategory: Getränke

Top 3 Subcategories :

1. Bier
2. Alkoholfreie_Getränke
3. Spirituosen_Barmixgetränke

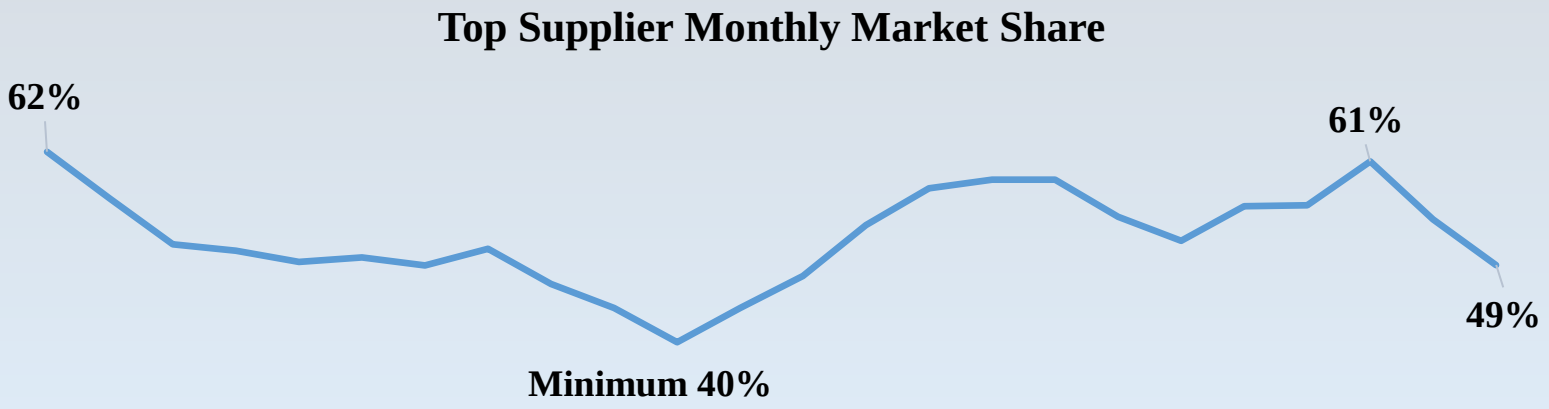


Sold Articles Growth in Subcategory: Getränke



Top Supplier’s Performance

Supplier ID	Total Traders	Total Orders	Total Quantity	Total Revenue(euro)	Total Market Share
24	53	10,952	557,024	6,999,723	52%



Possible Problems

1. Decline rate of yearly total revenue by **4%**
2. Different trends in monthly KPIs between 2020 and 2021
3. Low customer acquisition in 2021
4. High portion of Revenue belongs to Berlin and limited areas as well
5. High dependency to limited number of suppliers like supplier ID 24

Possible Problems

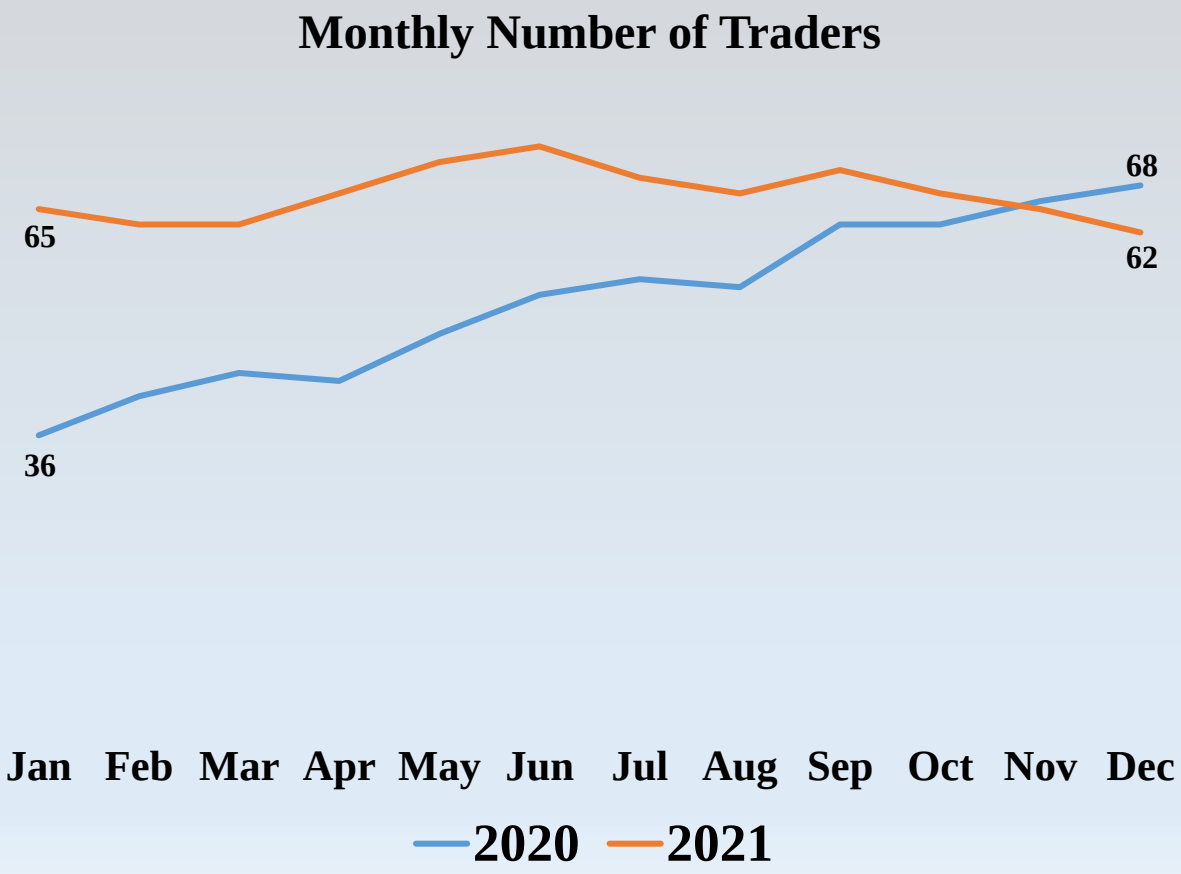
Monthly Number of Traders

Number of Traders

Total number of traders have different pattern in 2020 and 2021

In 2020 there is a considerable increasing trend (* maximum customer acquisition) while in 2021 we see some fluctuations with a declined ending

* Take a look at the next slide



Possible Problems

Low customer Acquisition

Only 5 new trades joined to the business in 2021

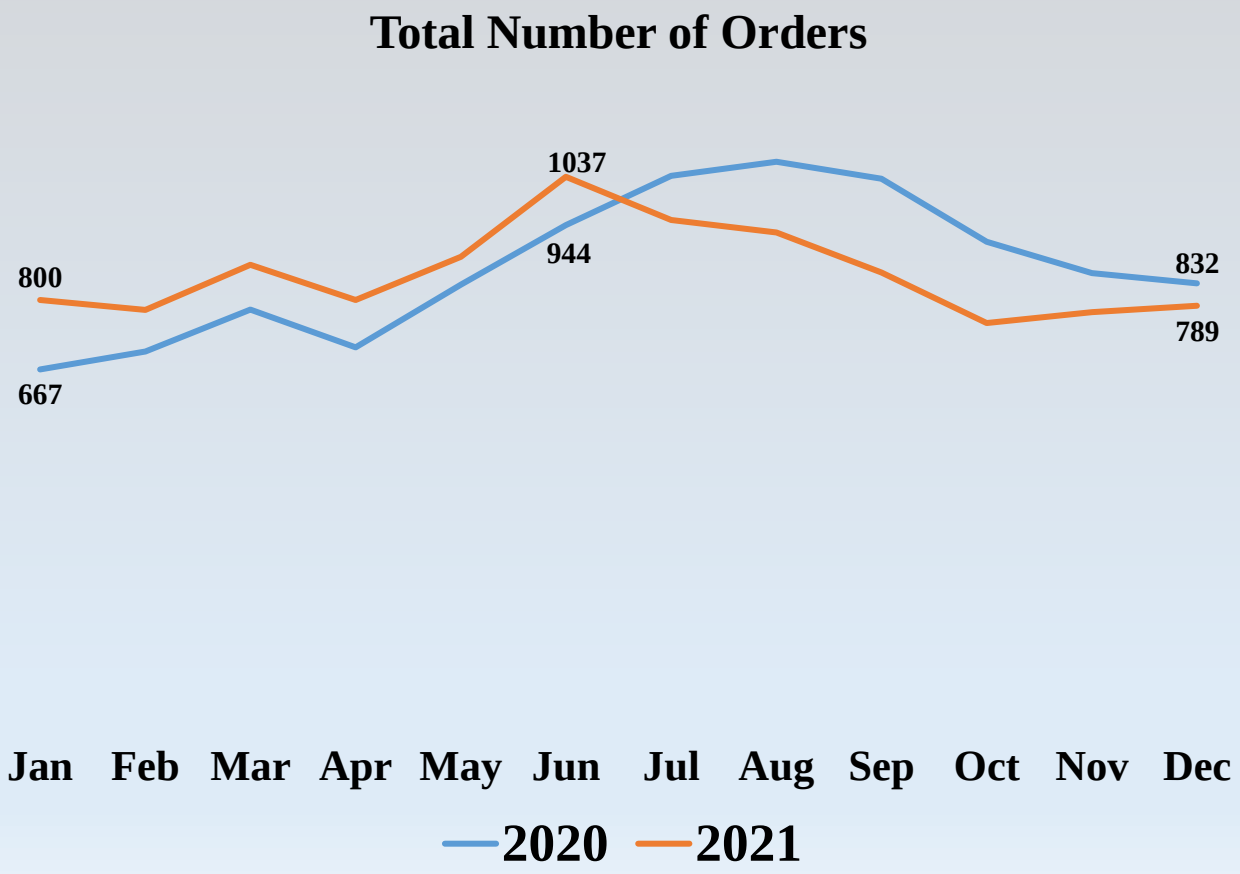
Possible Problems

Monthly Number of Orders

Number of Orders

Total number of monthly orders in 2021 from Jul to Dec was lower than that of in the same months in 2020

As result, there is a declined trend in 2021 compared to the beginning of the year, while in 2020 this trend is increasing.

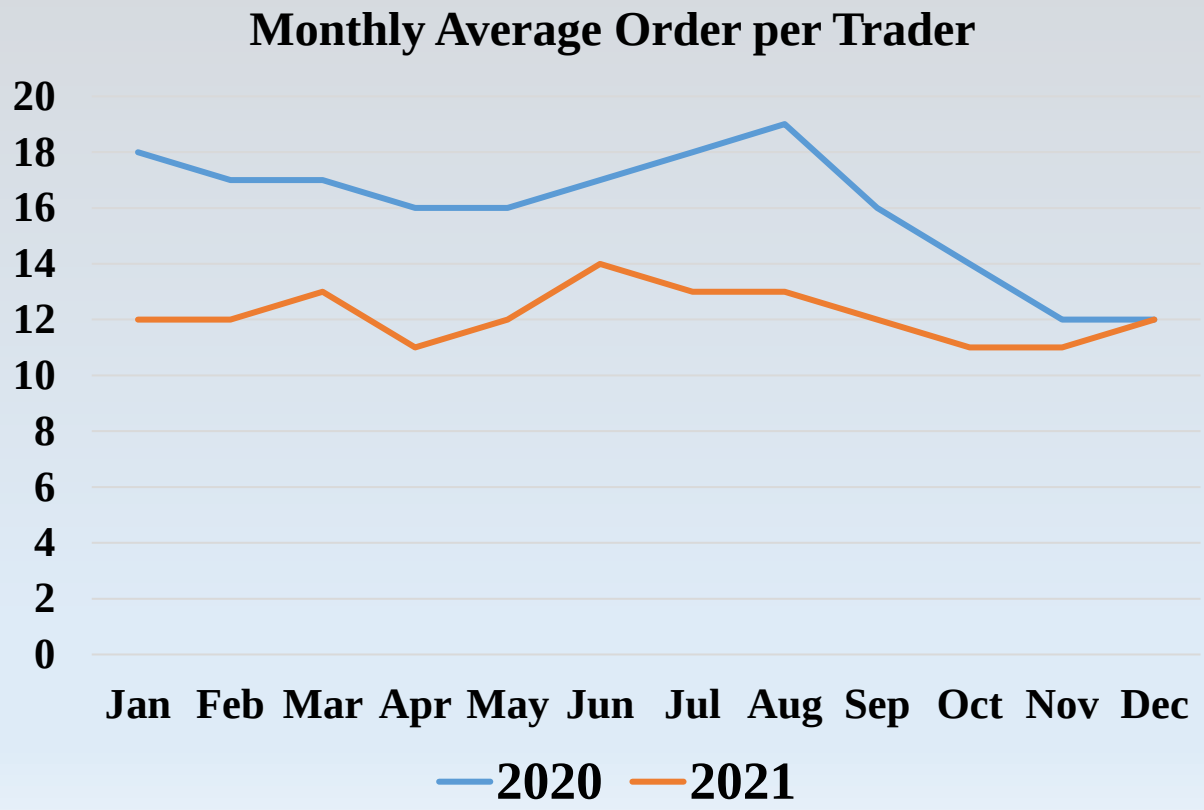


Possible Problems

Monthly Number of Orders per Trader

Consequence

- Generally speaking, since the number of traders had a much higher increasing rate than number of orders, therefore, average order per trader decreased, specially in 2020.



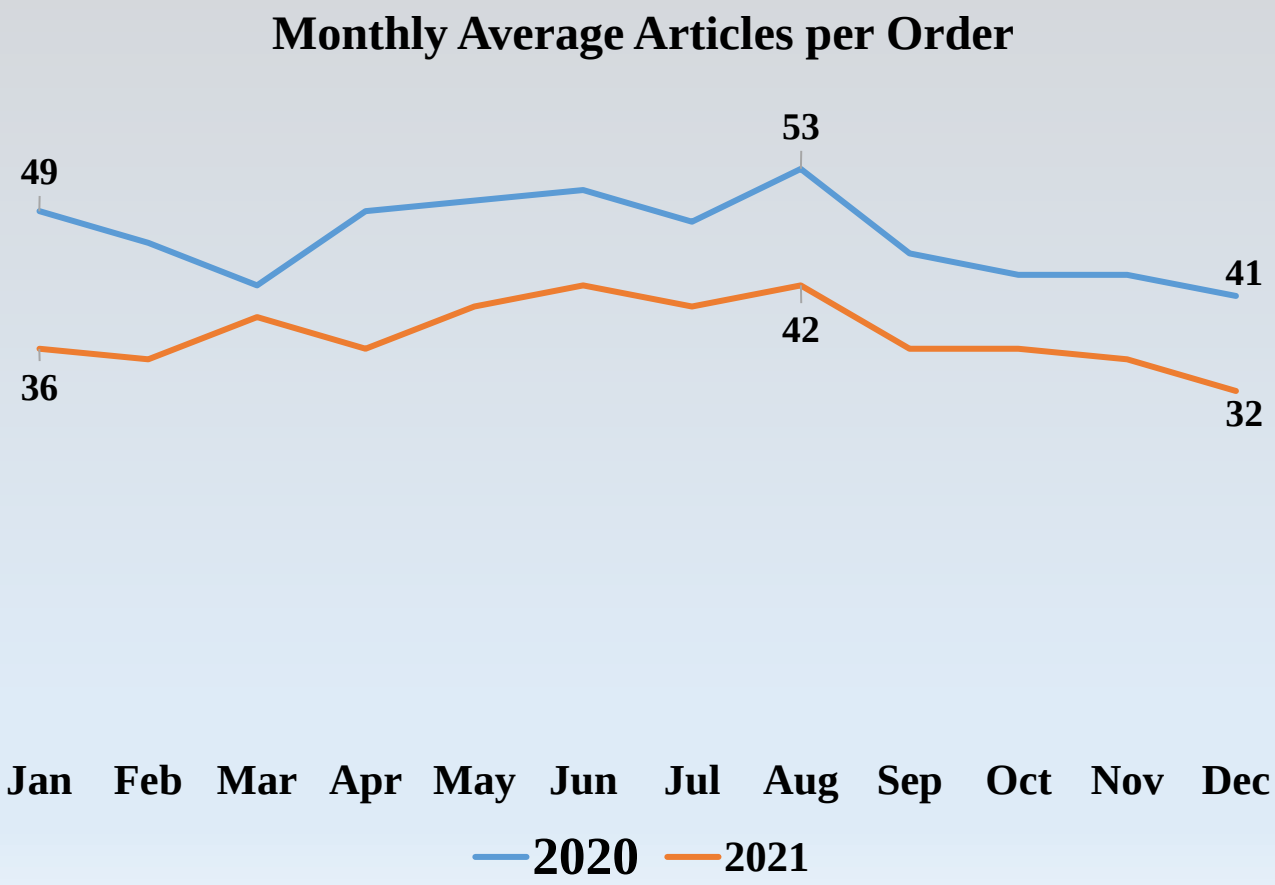
Possible Problems

Monthly Average Articles per Order

Average Articles per Order

As it is seen, there are negative trends in monthly average articles per orders in both years

It mean that customers' basket size decreased as well.



Possible Problems

High concentration to limited areas

High portion of Revenue belongs to Berlin

- **88%** of Total Revenue was earned in Berlin
- **55%** of total revenue in Berlin belongs to **5 areas**

Top 5 areas in Berlin

Postal Code	Name	Total Revenue(euro)	Percent
10247	Friedrichshain	1,711,265	14%
10245	Friedrichshain	1,702,534	14%
12059	Neukölln	1,471,629	12%
10249	Friedrichshain	896,128	8%
10999	Kreuzberg	707,736	6%

Possible Problems

High dependency to only one supplier

Minimum level of market share of this supplier was around **40%** on **Nov 2020**

It can be highly risky in terms of the company's high dependency to provide high quality service for its customers

Low quality service by suppliers

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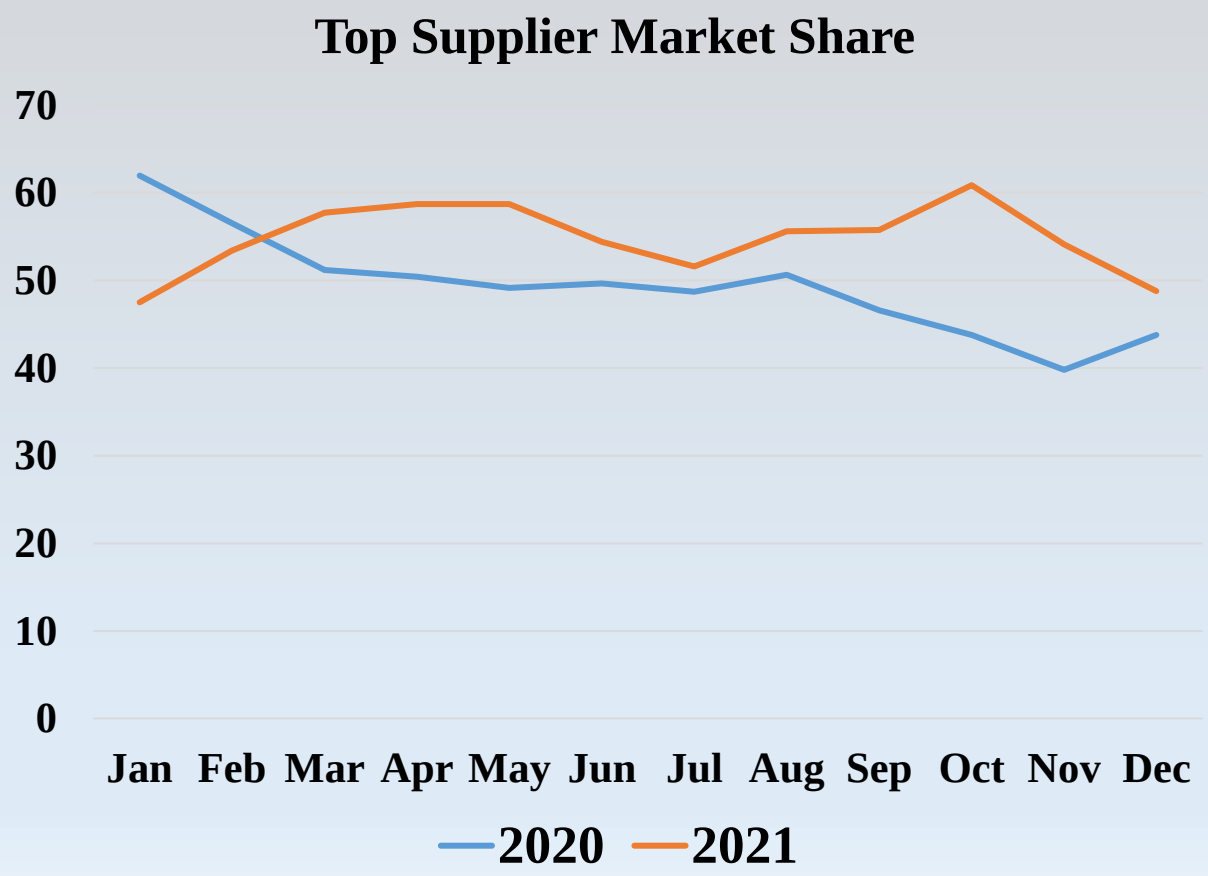
Lower tendency of traders to make an order through the application



Possible Solutions

- Increase marketing and distribution channels to cover more areas and also to less dependency of limited number of suppliers
- Increase customer acquisition rate by implementing attractive marketing campaign and promoting the business model’s competitive advantages
- Making a stronger relationship with current traders and make sure about their satisfaction and positive feedback (Web site need to be updated)
- Increase order value through assortments strategies:

➢ Cross-selling products: offering related or complementary products to a customer

➢ Upselling: offering the customers an upgrade for their purchases

➢ Offer the customers limited-time promotions.

➢ Offer bundle deals and bulk purchase options.