



Sales Analysis

OCTOBER 2022

Presentation Outline

1. Objectives
2. Dataset Preparation
3. Dataset Visualisation
4. Conclusions

Objectives

Context

- Retail company – with 8 physical stores and 2 virtual stores
- Virtual stores – one for own product, other specific to marketplace
- Dataset - 3 files provided : products, stores and transactions

Business Problem

- Assisting the business team to better understand the sales trends

Mission

- Perform the dataset cleaning (if required) and relevant data visualisation
- Help the business team answer the following questions:
 - 1- Evolution of the share of the business volume of the Marketplace
 - 2- Evolution of the volume of business by product category
 - 3- Evolution of the quantities sold by product
 - 4- For a given category and period
 - a- Distribution of sales by sales channel/country/store
 - b- Evolution of the average selling price
 - c- Sales by product
- Suggest any other relevant data visualisations

Dataset Preparation

The dataset has 3 files, all completed, representing a time period of 28 days.

This dataset is first checked and cleaned before any data visualisation.

Legend

Variable	% NaN	Type info
Name	0%	object

Dataset

*

Transactions (28787 obs. x 6 columns) – MAIN TABLE		
Realised transactions		
transaction_date [period 1March2021 to 28March2021]	0%	object
transaction_id	0%	int64
store_id	0%	int64
product_id	0%	int64
eur_amount	0%	int64
quantity	0%	int64

*

Magasins (9 obs. x 4 columns)		
Stores information		
store_id	0%	int64
channel	0%	object
country_iso	0%	object
is_marketplace	0%	object

Produits (1200 observations x 4 columns)		
Product information		
product_id	0%	int64
category	0%	object
is_marketplace_produc	0%	bool
Price	0%	int64

Dataset Preparation

The dataset cleaning is performed on python.

The dataset visualisation is done on Excel (very familiar with it) and Tableau (used to be familiar with it and used for specific visualisations)

Cleaning process followed

Duplicates

- 24 duplicate found in “transactions”
- ⇒ Remove the 24 transactions

Keys

- 200 product_id NON unique
 - 63 (product_id, category) non unique
 - 0 (product_id, is_marketplace_product) non unique
- ⇒ Assign a unique value to product_id in produits based on marketplace
- Current product_id + 100000 for brand product (is_marketplace FALSE)
 - Current product_id + 200000 for market product (is_marketplace TRUE)
- ⇒ Assign a unique value to product_id in transactions:
- Current product_id + 100000 for product not in marketplace (store_id <> 9)
 - Current product_id + 200000 for product in marketplace (store_id = 9)

Outliers

- No outliers identified from dataset variables
 - Computation of eur_amount_comp = product_price * product_qty
 - eur_amount_comp = eur_amount
- => No outliers / no action

Dates

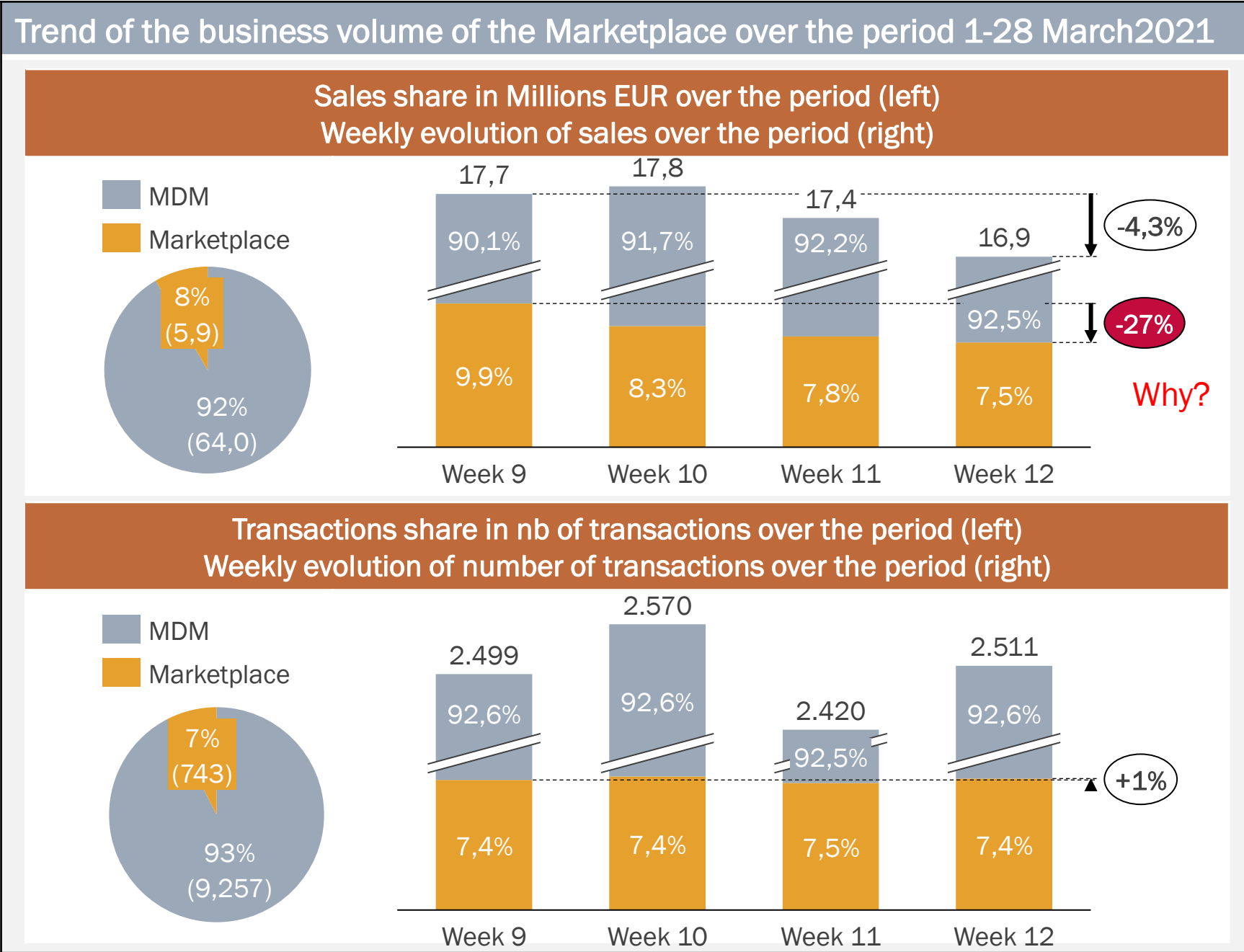
- Given the date range is over 28 days from 1st to 28 March 2021, and trends are analysed. This period got broken into 4 weeks for better interpretation

Dataset Visualisation

Marketplace Share Trend

Over the month of March, considering the Marketplace

- the sales share has decreased over the weeks, down to 27% after 3 weeks.
- the number of transactions remain steady to reach a 1% increase in the last week compared to first



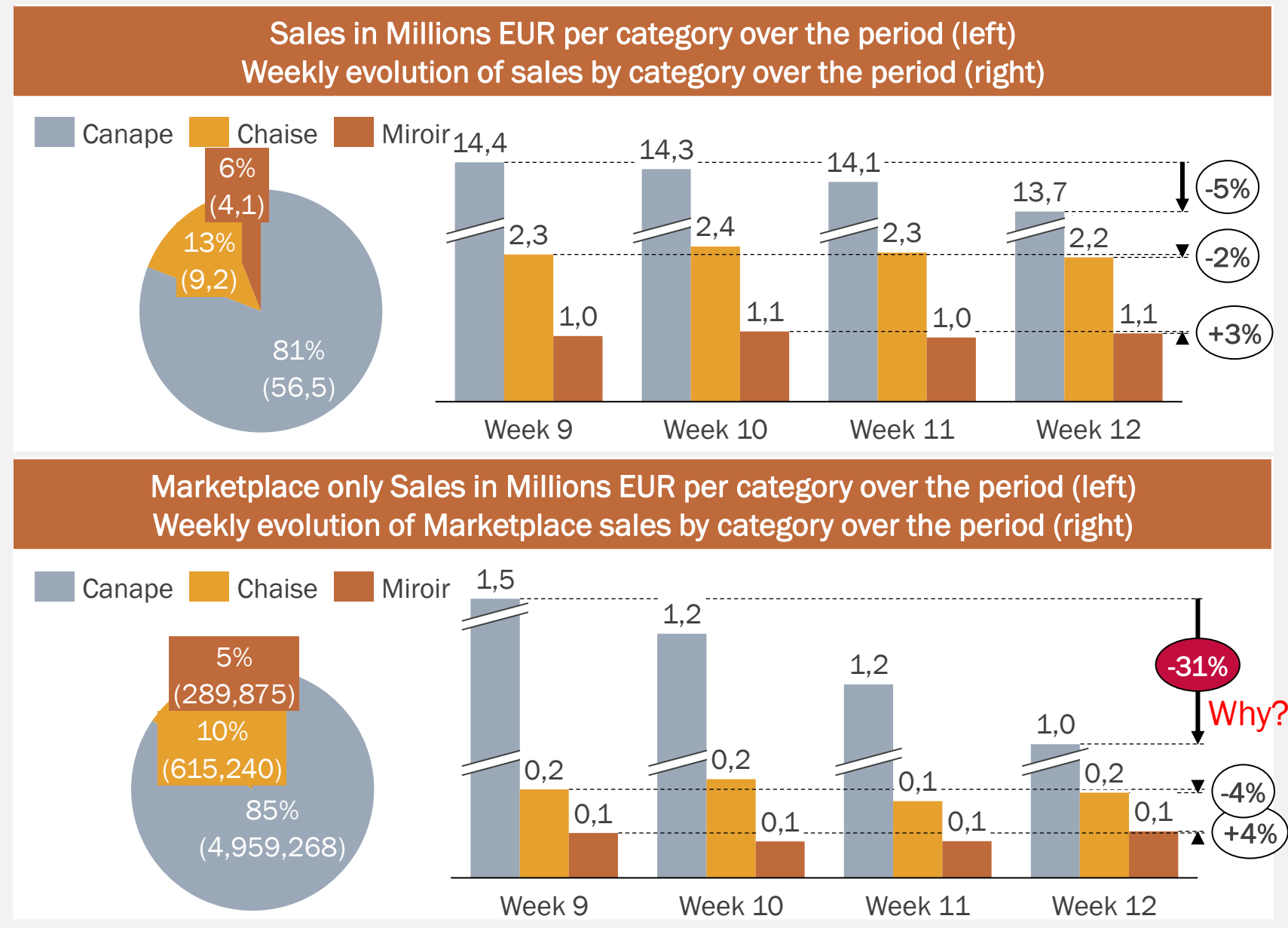
Dataset Visualisation

Category Trend

Over the month of March, considering the Categories

- the sales of category “Canape” has suffered overall
- the decrease of sales in marketplace is mostly explained by a decrease of sales for the category “Canape”, down to 31% after 3 weeks.

Trend of the volume of business by category over the period 1-28 March 2021



Dataset Visualisation

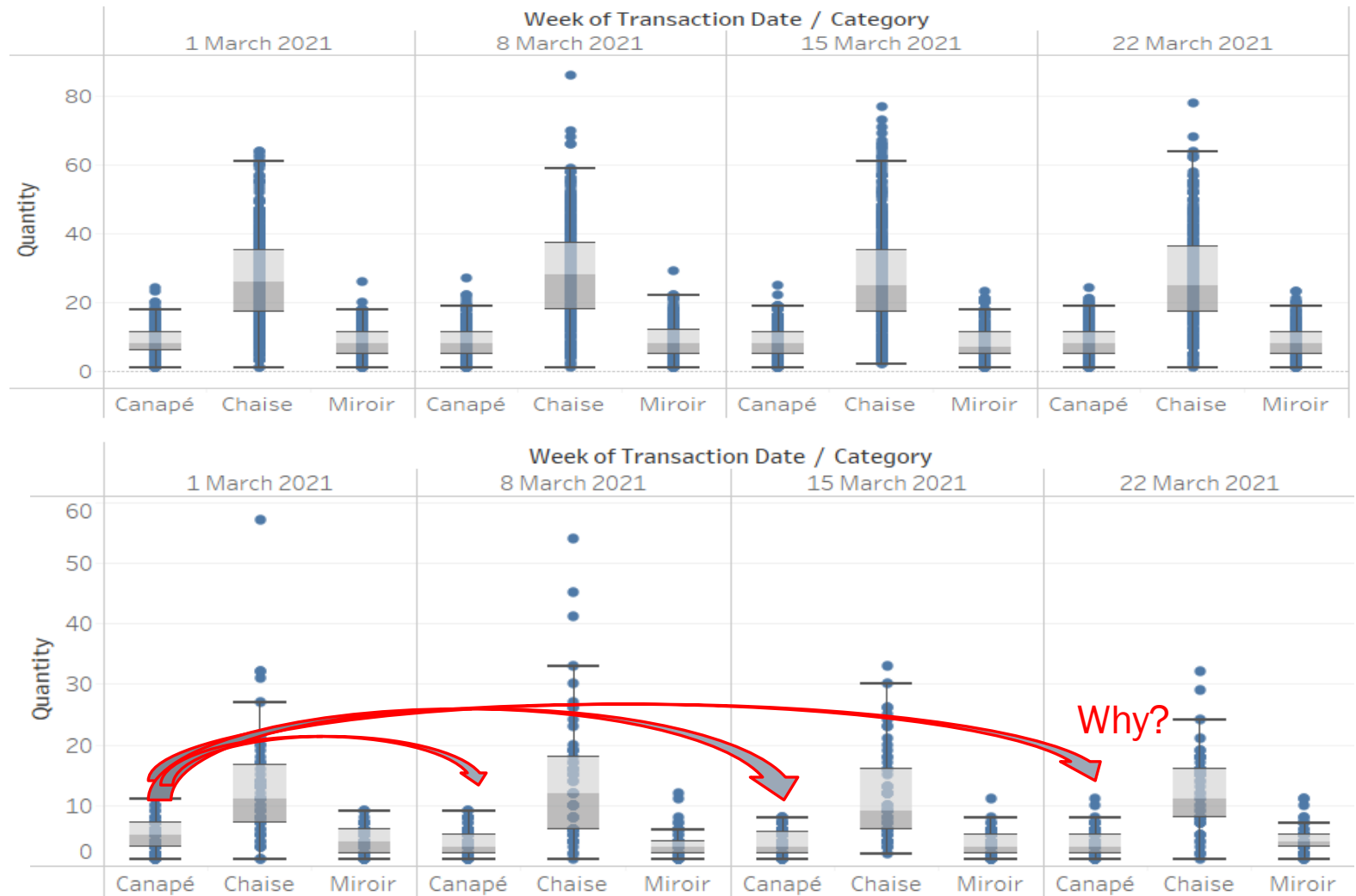
Product Trend

Over the month of March, considering the Categories and products,

- the quantity of products seems steady overall
- the “median” quantity sold of “Canape” category products in the marketplace has decreased, which could be linked to the decrease in sales for “Canape”.

Trend of the quantities sold by product over the period 1-28 March 2021

Weekly evolution of quantities per product and category over the period (top)
Weekly evolution of quantities per Marketplace product/category over the period (bottom)



Dataset Visualisation

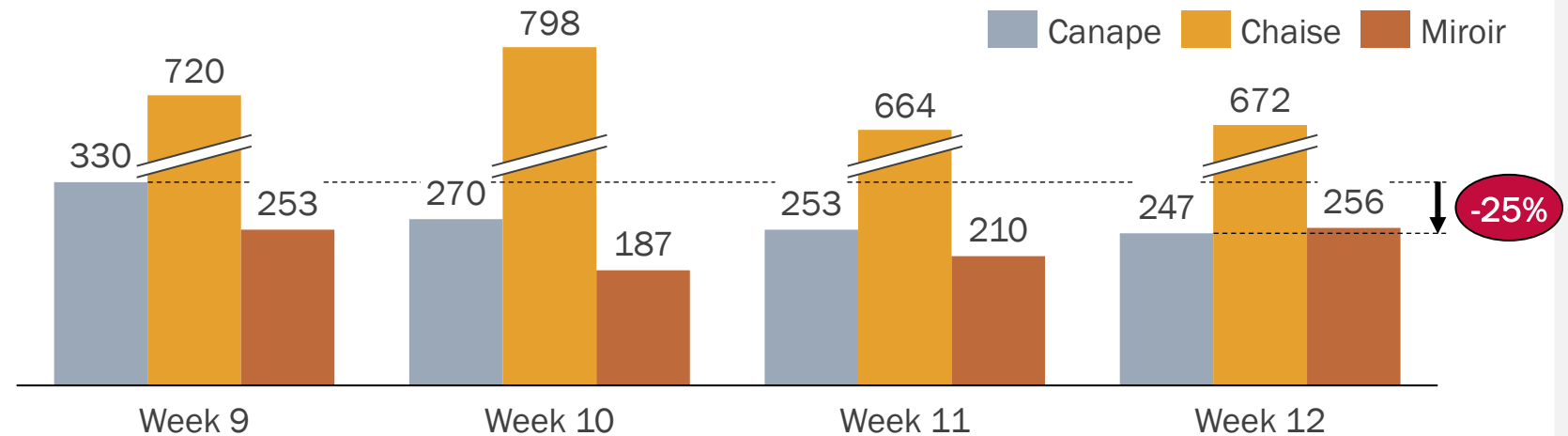
Product Trend

Over the month of March, considering the Marketplace,

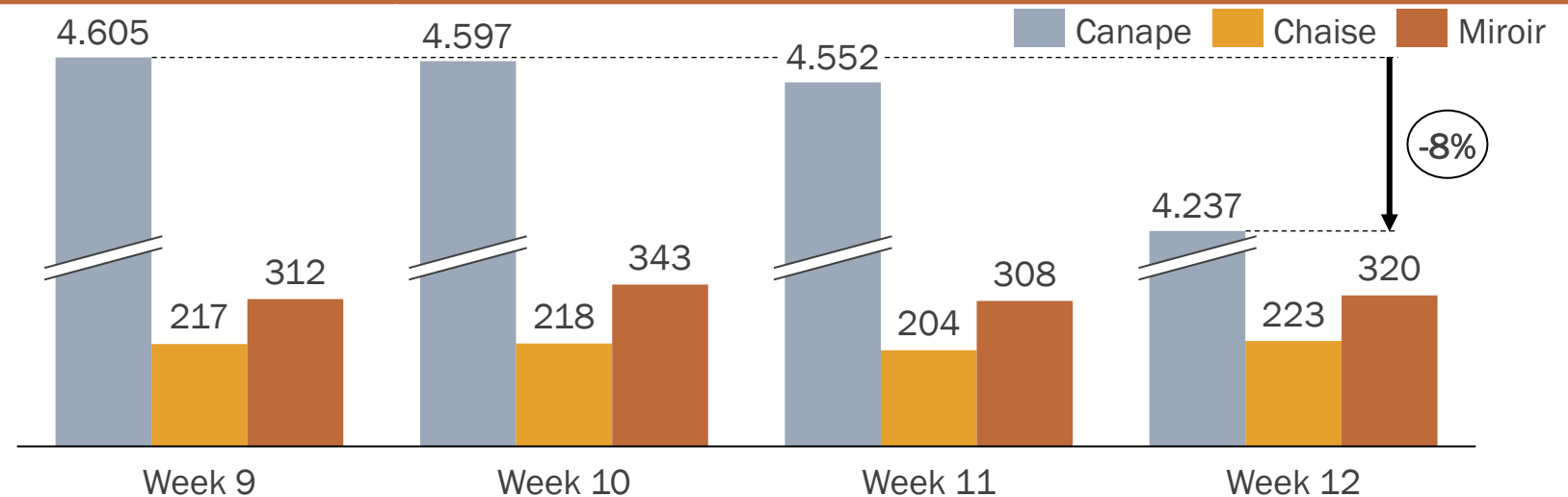
- the product quantity of “Canape” products has decreased to 25% at the end of the period
- the average price of “Canape” products sold has also reduced, mostly in the last week.

Trend of the quantities and average price by product over period 1-28 March 2021

Weekly evolution of Marketplace product quantities by category over the period



Weekly evolution of Marketplace product price average* (EUR) by category over the period



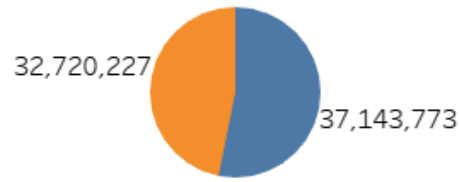
Dataset Visualisation

Dashboard (1/2)

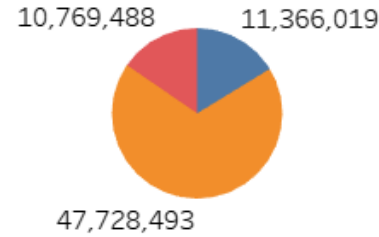
Dashboard (on Tableau) to view for a specific category and period (filter created),

- Sales distribution per channel/country/store
- Trend of average product price
- Sales per product – amount and quantity

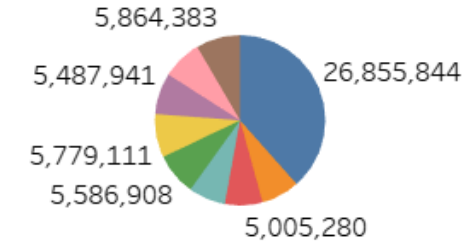
Sales per channel



Sales per country



Sales per store



Select period
01/03/2021 28/03/2021

Select category
☒ (All)
☒ Canapé
☒ Chaise
☒ Miroir

Select if Marketplace
☒ (All)
☒ Non
☒ Oui

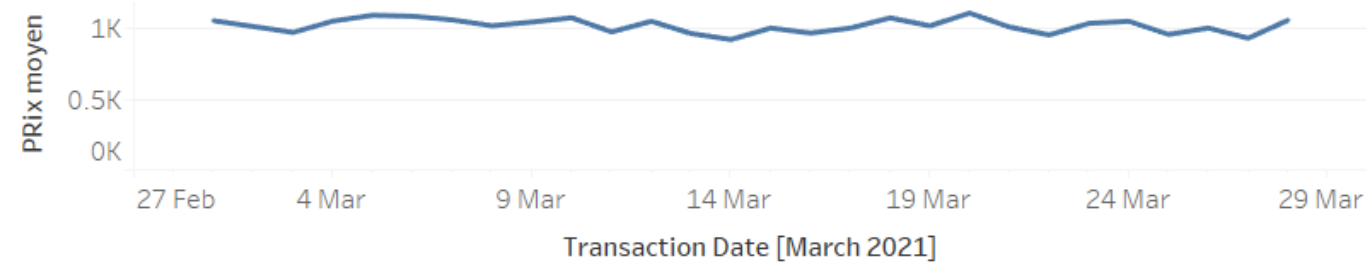
Channel
☒ Store
☒ Web

Country
☒ ES
☒ FR
☒ IT

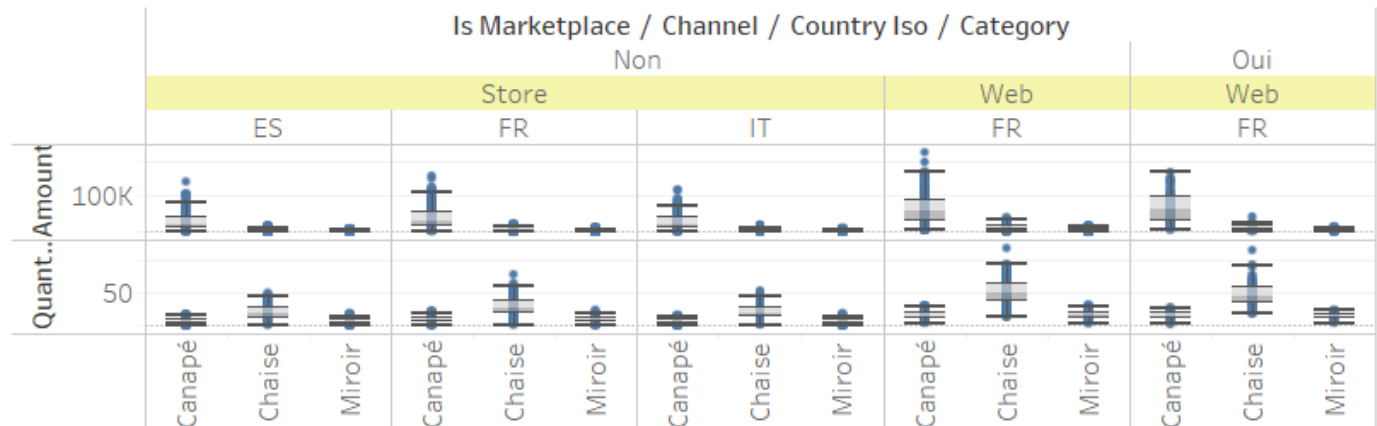
Store Id
1
2
3
4
5
6
7
8
9

Note:
- All amounts are in euros

Sales average price trend



Sales and quantities per product



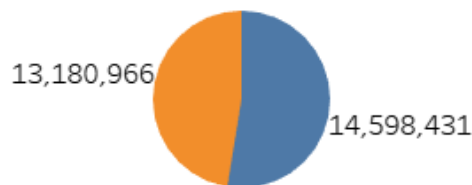
Dataset Visualisation

Dashboard (2/2)

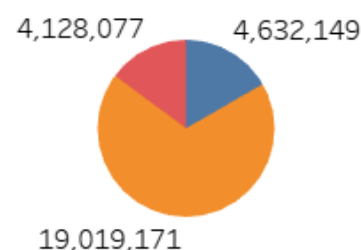
Dashboard “in action”
filtered for :

- Category = Canape
- Period = 15 March to 28 March 2021
- Marketplace and MDM

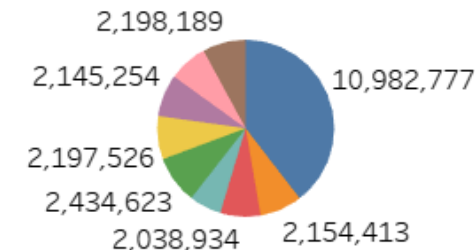
Sales per channel



Sales per country



Sales per store



Select period

15/03/2021 28/03/2021

Select category

☐ (All)

☒ Canapé

☐ Chaise

☐ Miroir

Select if Marketplace

☒ (All)

☒ Non

☒ Oui

Channel

☒ Store

☒ Web

Country

☒ ES

☒ FR

☒ IT

Store Id

☒ 1

☒ 2

☒ 3

☒ 4

☒ 5

☒ 6

☒ 7

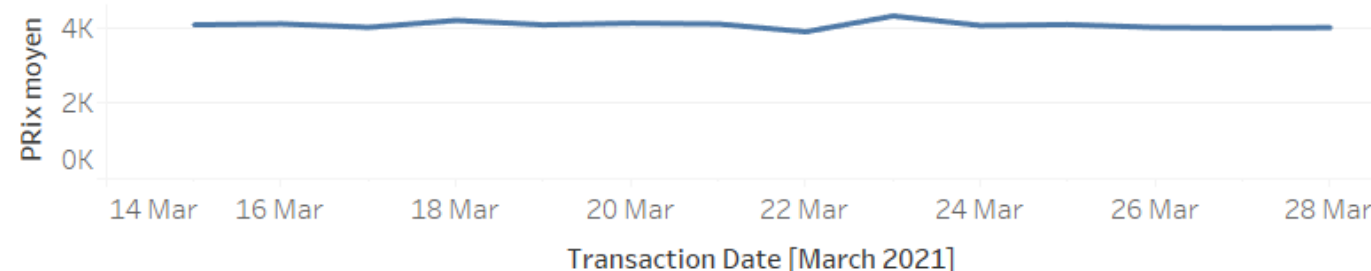
☒ 8

☒ 9

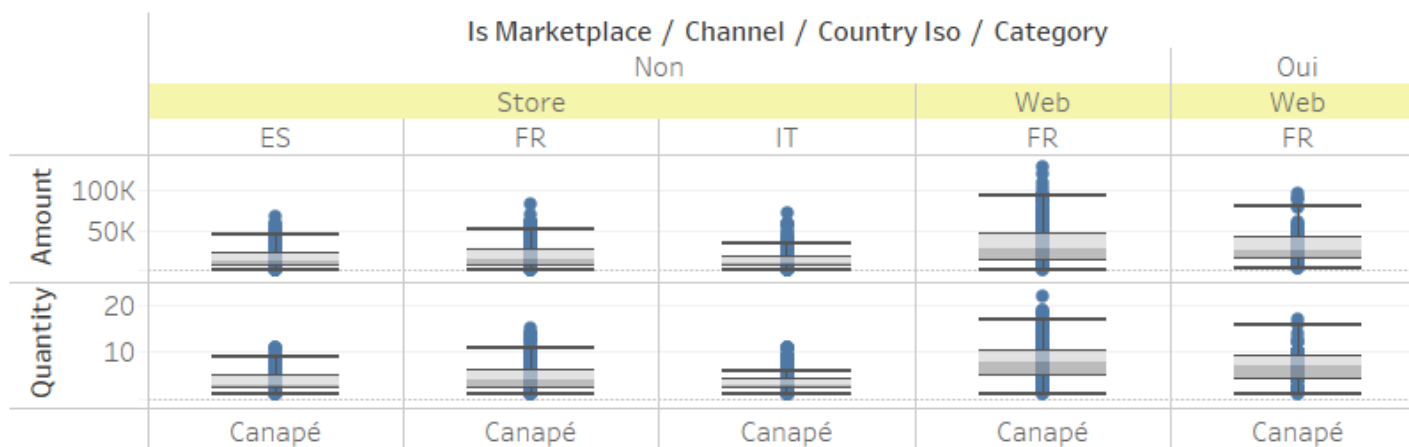
Note:

- All amounts are in euros

Sales average price trend



Sales and quantities per product



Conclusions

Conclusions

- We have identified some possible reasons for the important loss in sales in the marketplace.
- Further analysis could be made on the data provided to see if this same but lessen trend on MDM « Canape » products on web and physical stores could help explain further.
- All these findings should be further analysed with other relevant information that may have had an impact on this decrease such as:
 - Recent reviews
 - Seasonality
 - Competitor activity
 - Lowered perception of non MDM “canape” products
 - Customer information...
- Likewise the increase of sales of other products could be investigated for further growth.