The impact of Out of stock on the shopper behavior

Executive summary

ECR Italy

Purpose
The purpose of the association, established in 1993, can be summed up in the desire to work together to better meet the desires of the consumer, as quickly and cheaply as possible through a business process leading to shared benefits throughout the supply chain. Key aspects of the organization are the following: central role of the consumer, efficiency and effectiveness of the relationship between businesses achieved thanks to the adoption of a model of cooperation.

Objectives
ECR was created with the primary objective to re-engineer processes to reduce costs of the manufacturer-retailer system, contributing to the development of cooperation between the companies, for the benefit of the consumer.
Currently the association is seeking to increase the integration of the players of the chain to maximize the value in joint activities, working simultaneously in several respects: the demand, the supply chain organization and other aspects of the relationship between businesses.

Strategy
ECR Italy pursues its objectives by coordinating the dialogue between manufacturers and retailers, creating the right conditions for developing joint projects with quantified objectives, through the involvement of businesses and their managers, who directly contribute to the definition of common solutions.
ECR Italy therefore implements a methodology of work aimed at achieving tangible results by fostering an approach capable of generating a positive and constructive dialogue among the parties.

This document is the Executive Summary of the Book *Out of stocks: the shopper perspective and the impact on the shopper behavior*.
The full report of the analysis is available on the website: www.gs1it.org

ECR Italy, in collaboration with IRI, has conducted a study aimed at identifying the Out-of-Stock phenomenon from the Shoppers' perspective, and its quantification in terms of perceived annoyance and the effects on buying behaviour in the short and medium term.

The investigation was conducted through a quantitative study that approached the topic of Out-of-Stock from the Shoppers point of view. After investigating the general shopping habits (average amount of time spent at the store, average sum of receipt, …) of Shoppers, the study verified, in detail, what Shoppers buy: what departments and what categories are habitually part of their shopping cart.

This preliminary check was important for the purposes of the Out-of-Stock analysis: the most purchased departments/categories, which are those that penetrate the family and have the highest purchasing frequency, are also the most at risk, because they are more prone to being out of stock.

Specifically, in terms of category, in the typical Italian shopper's cart, the most common items are products for meal preparation: pasta, milk, coffee, fruits and vegetables, meat, biscuits, water. Whereas, in terms of non-food products, shampoo, laundry detergent and deodorant are the top categories.

After closely investigating the shopping habits of Shoppers, and then analysing the issue of Out-of-Stock, the first finding, by processing the information collected through the On-Line Diary, was that Shoppers, make 7 Shopping Trips per month on average and find at least 1 product Out-of-Stock at 41% of their trips, meaning that the phenomenon occurs 3 out of 7 times on average.

Figure 1 - Out-Of-Stock numbers

In the 5.468 shopping trips recorded on the On-Line Diary over one month, 6.633 products were found to be out-of-stock, an average of 1.2 products for every shopping trip.

From the analysis of the Departments, it was found that the ones most affected by out-of-stock are also most commonly the Shoppers choice of purchase, as they are characterised by a higher buying frequency and higher penetration, namely:

- Bulk products, which are Out-of-Stock at 14.7% of shopping trips (meaning 803);
- Fresh products (11.5% shopping trips).

On the other hand, there is minimum incidence of out-of-stock products in terms of baby and pet products, both food and non-food.
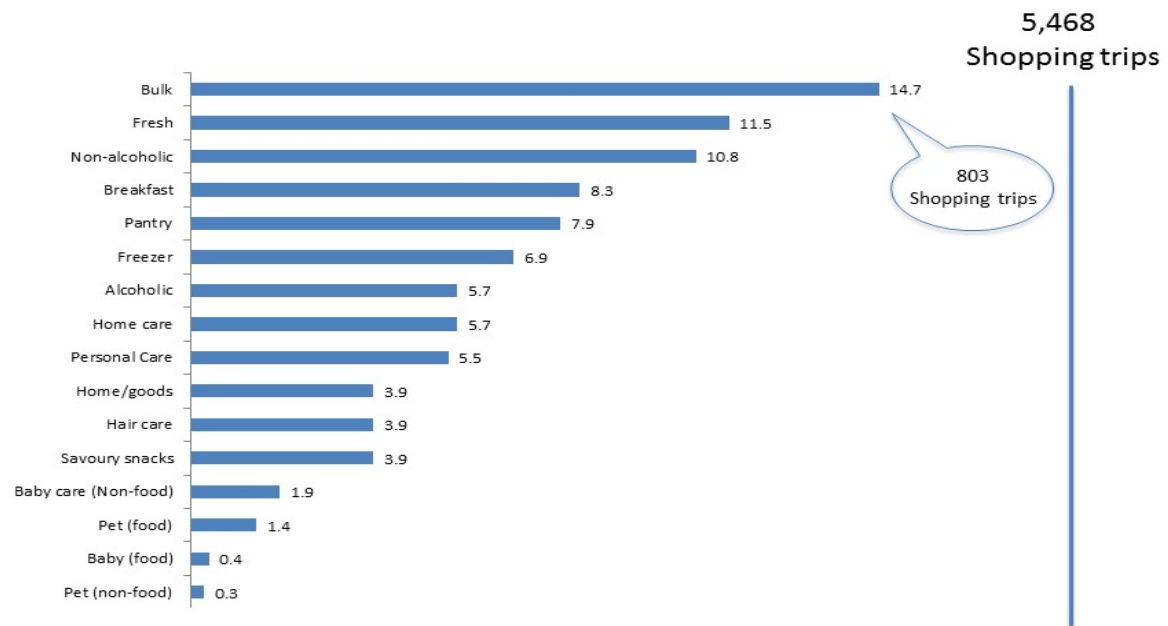
Figure 2 - OOS % in the departments (at least 1 product)

Within each Department the categories that contribute primarily to out-of-stock, that occur in the Department that they belong to, are the following:

- Bulk products: fruits and vegetables are Out-of-Stock at 8.4% of shopping trips (meaning 459)
- Fresh products: milk and yogurt/pudding
- Non-alcoholic beverages: water
- Breakfast products: coffee and biscuits
- Pantry: pasta
- Freezer: ice cream
- Alcoholic beverages: beer
- Home care: fabric softener and laundry detergent
- Personal care: deodorant
- Hair care: shampoo
- Savoury snacks: crisps
- Home/goods: toilet paper/kitchen roll.

The second variable that was analysed in the study on Shoppers was the level of annoyance created by Out-of-Stock: understanding the extent of this feeling is important because a high level of annoyance can lead to a change in a Shopper's shopping behaviour in the immediate and in the medium-long term.

How annoyed were you not to find the product on the shelf?

Annoyance rating (>Rather)
55%

(Very+Extremely)
25%

■ Not annoyed at all   ■ Slightly annoyed
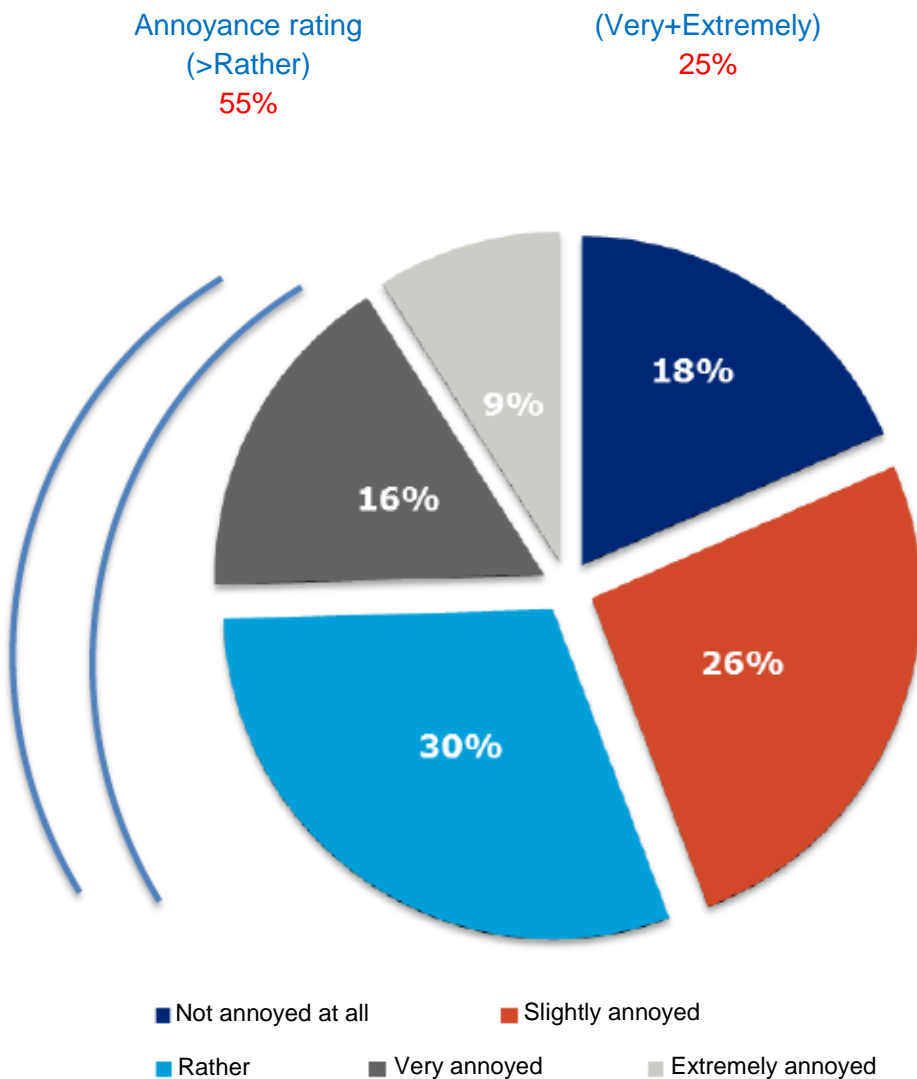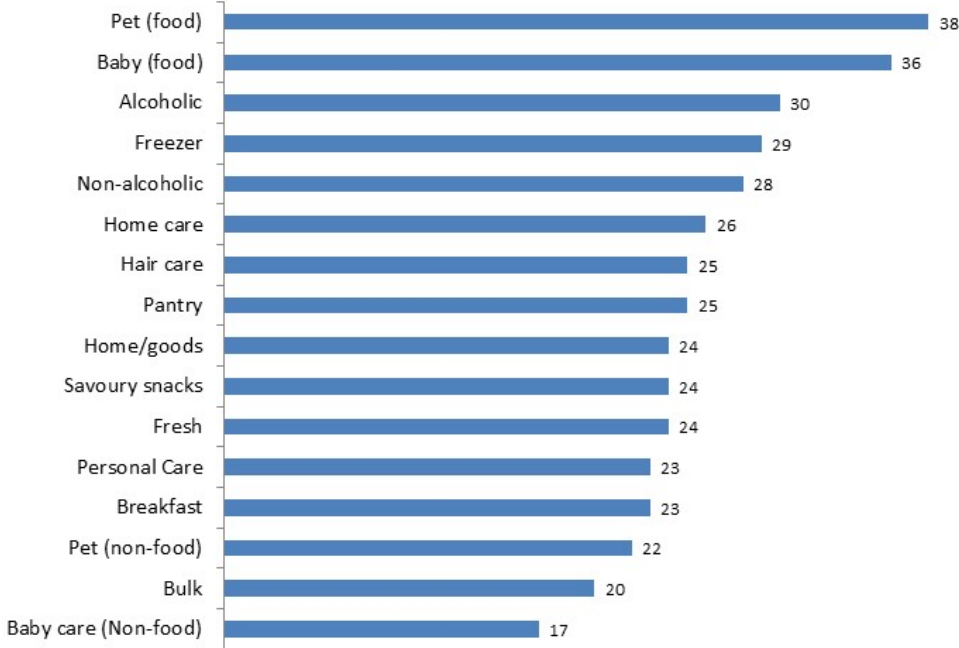■ Rather   ■ Very annoyed   ■ Extremely annoyed

Figure 3 - Extent of «annoyance»

From the "annoyance" ratings by Category, we can see that:
- The products that create more «annoyance» for Shopper, if they are Out-of-Stock, were savoury snacks (46%), dry pet food (45%), pet snacks (43%) and canned tomato (40%)

- The ones that generate less «annoyance» for Shopper are cereals (14%), UHT ready-meals (13%), bath and shower wash for children (12%) moist wipes for children (8%).

OOS3) How annoyed were you not to find the product on the shelf?

Department	Value
Pet (food)	38
Baby (food)	36
Alcoholic	30
Freezer	29
Non-alcoholic	28
Home care	26
Hair care	25
Pantry	25
Home/goods	24
Savoury snacks	24
Fresh	24
Personal Care	23
Breakfast	23
Pet (non-food)	22
Bulk	20
Baby care (Non-food)	17

Base: 5,468   «Annoyance»= Very+Extremely

Figure 4 - «Annoyance» rating by department

Now, by bringing together the two variables that were analysed thus far, it is possible to build a map that correlates the incidence of Out-of-Stock for each Department/Category, in ordinate on the Y axis, with the relative level of annoyance (very+extremely), in abscissa on the X axis, to cluster the products by risk level. The averages of each variable represent the separators that mark the four quadrants: the most critical quadrant is obviously the top right one, because it presents a high level for both variables.
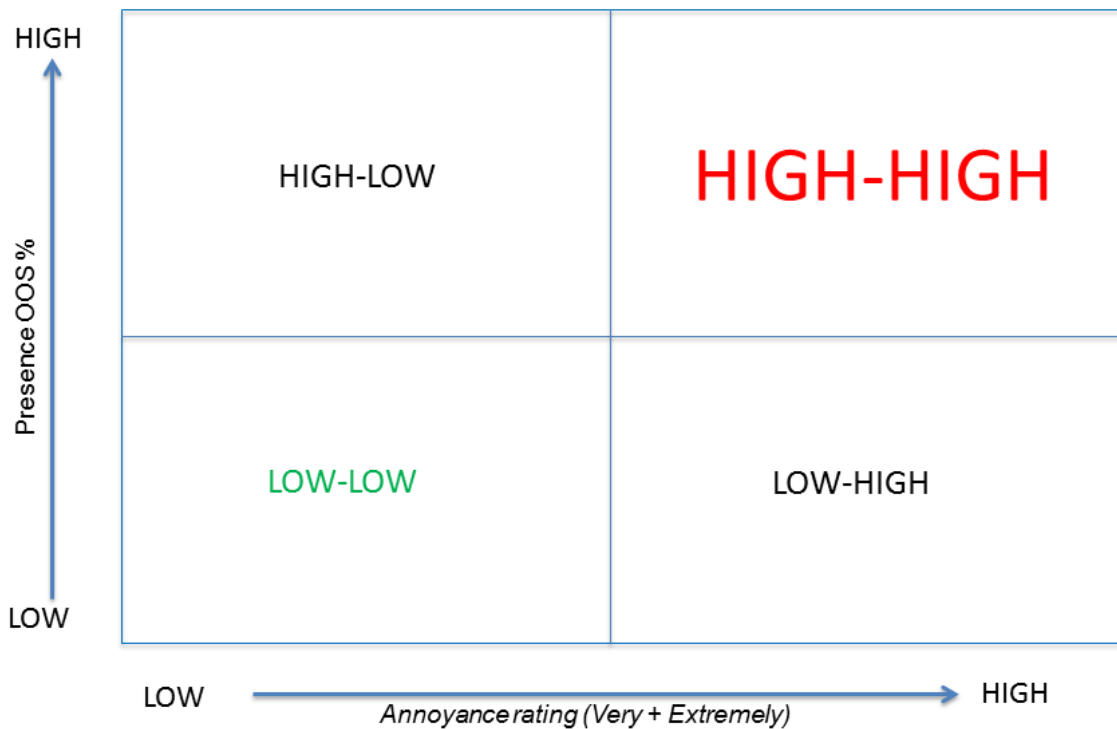
Figure 5 - Cross-impact of «annoyance» and OOS percentage incidence

In the map of single Categories, in foodstuffs the most critical products, positioned in the top right quadrant and therefore presenting a high level of out-of-stock as well as perceived annoyance, are: water, ice cream, beer, sweet baked snacks, soft drinks/tea. The products allocated in the top left quadrant also need to be kept under control, due to the high presence of Out-of-Stock, regardless of a lower level of annoyance: fruits and vegetables, milk, yogurt/pudding, meat, bread/bakery and pasta.
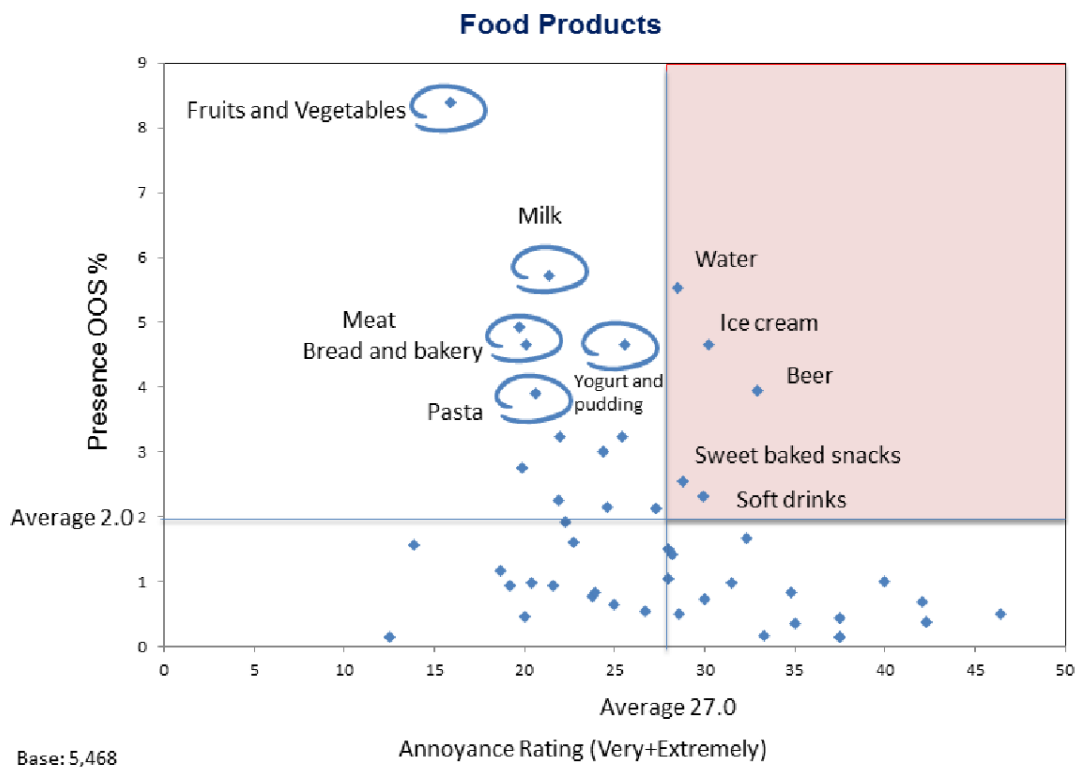

Figure 6 - Cross-impact of «annoyance» and OOS percentage incidence for category

In the same way as non-food, the greatest criticalities (top right quadrant) are concentrated on shampoo, deodorant, fabric softener, laundry detergents and dish/dishwasher products. Also toilet paper/kitchen roll presents a high Out-of-Stock level, all the while managing to contain the level of annoyance better (top left quadrant).
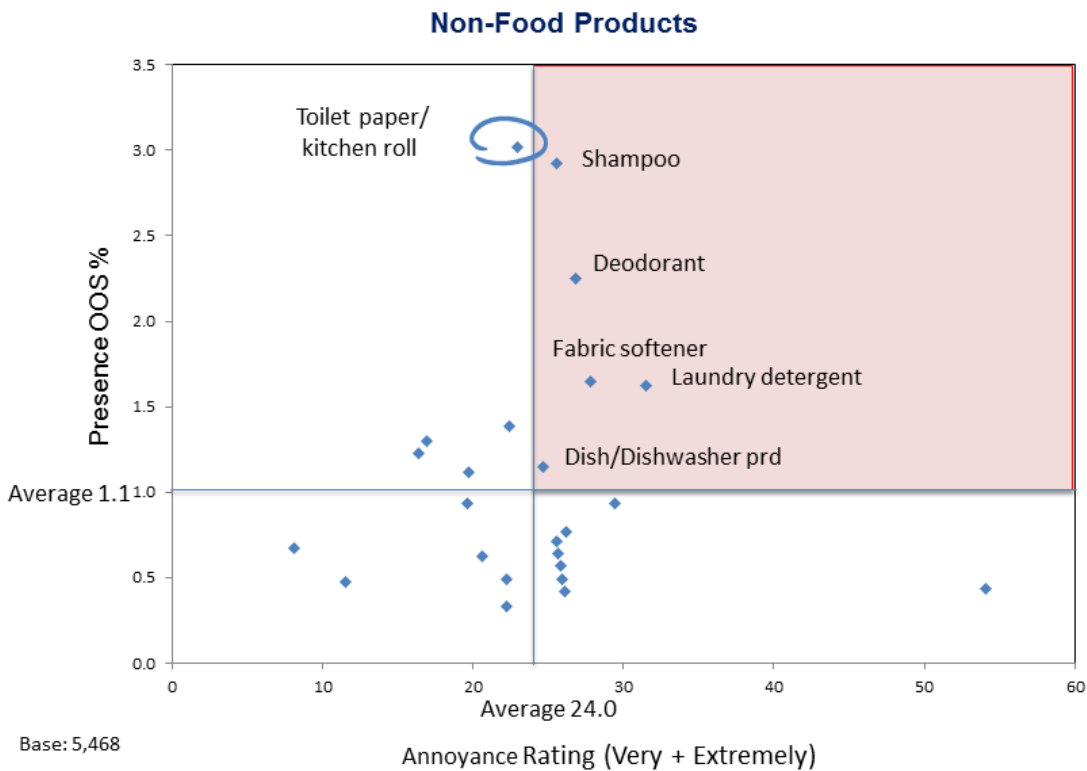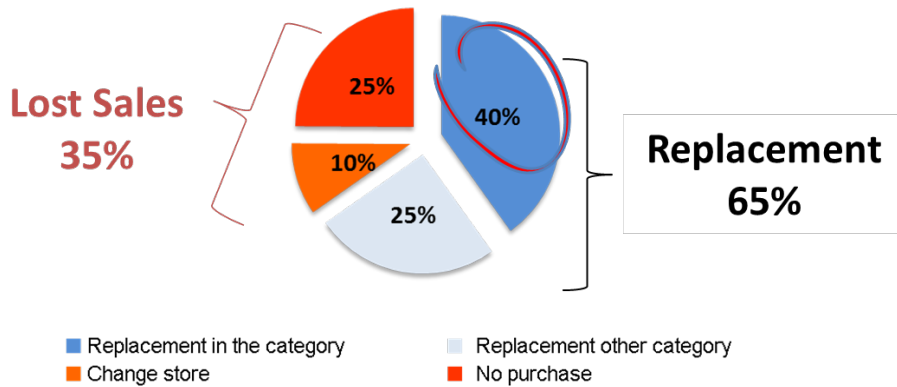
Non-Food Products

Figure 7 - Cross-impact of «annoyance» and OOS percentage incidence for category

From IRI Shopper studies conducted between 2011 and 2014 we learned that when faced with a shelf missing their product, shoppers change their buying behaviour and activate alternative strategies: they do not make the purchase, they buy at another store, they buy a replacement within the category, they replace it outside of the category.

The new study, launched by ECR Italy, confirms that when faced with a shelf where the item from the shopping list is missing, more than 6 out of 10 shoppers make a purchase to replace the product/s that they cannot find on their shopping trip, thereby limiting the probability of lost sales to approximately 35% of buyers.

If, for retailers, the «risk» linked to Out-of-Stock is limitable to 35%, the impact differs for manufacturers which, by adding brand switching in the category (23%), replacement with another category (25%) and no purchase (25%) the potential risk virtually rises to 73% of Shoppers.

OOS4) So what did you do?

Lost Sales 35%

25%
10%
25%
40%

Replacement 65%

- ■ Replacement in the category
- ■ Change store
- ☐ Replacement other category
- ■ No purchase

LOST SALES RISK FOR RETAILERS (max)

35%

Base: 5,468

LOST SALES RISK FOR MANUFACTURERS (max)

?

Figure 8 - Impact of OOS on buying behaviour – 1

Replacement in the category 40%

- • Same flavour/benefit/ variant 26%
- • Same package 15%
- • Same format 11%
- • Other 6%

- • Different flavour/benefit/ variant 17%
- • Different package 12%
- • Different format 8%
- • Other 5%

42%
58%

- ■ Same Brand
- ■ Other Brand

LOST SALES RISK MANUFACTURERS

73%

- • 23% Brand Switching (58% of the 40% of intra-category replacement)
- • 25% replacement in other category
- • 25% no purchase
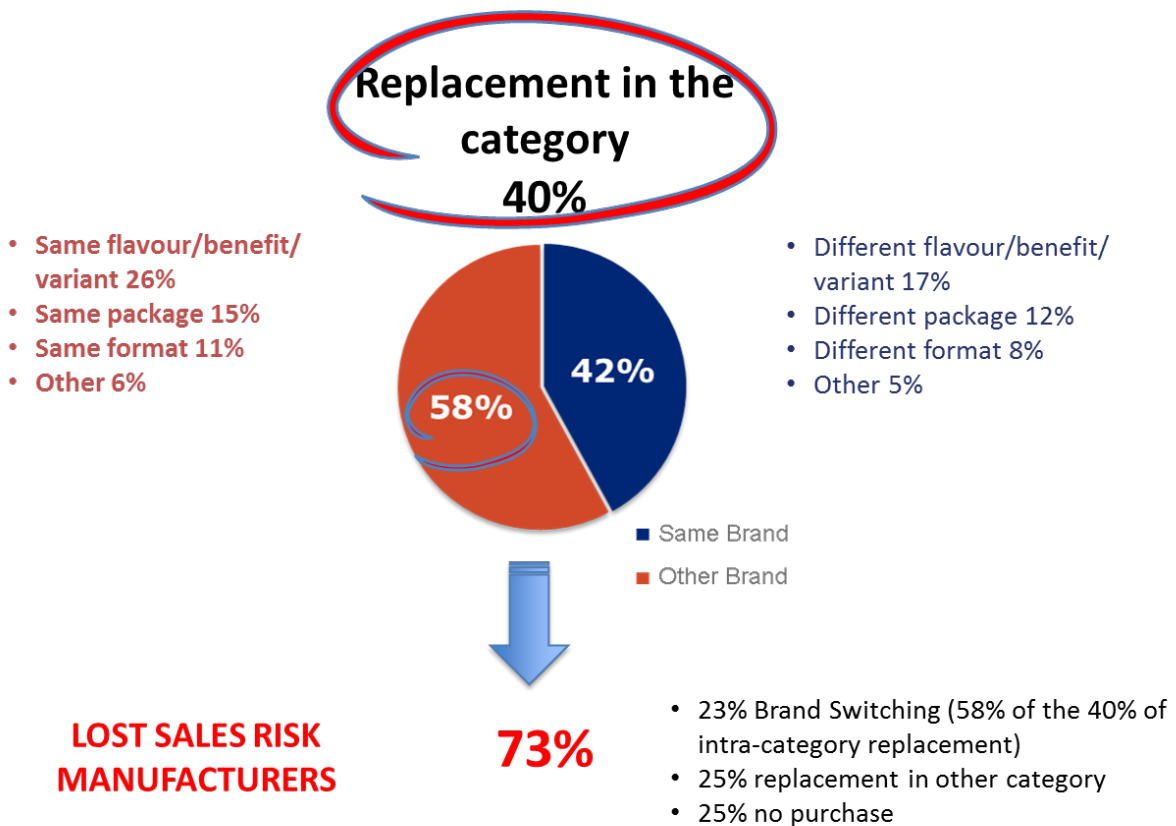
Figure 9 - Impact of OOS on buying behaviour – 2

The perceived Out-of-Stock rate and the subsequent consumer reaction depend on category variables such as level of predetermination, brand loyalty, range of assortment and reference division (food vs non food): for categories with high trust in the product and brand loyalty, the incidence of who changes store or makes no purchase in fact rises to over 40%.

To simultaneously analyse the risk levels for retailers and manufacturers, generated by the presence of out-of-stock in the various Categories, a "Risk Map" was built, which places the risk of lost sales for retailers in abscissa, and the risk of lost sales for manufacturers in ordinate, and identifies four quadrants based on the average risk levels for retailers (X axis) and for manufacturers (Y axis). Therefore the following are identified:

- In the top right quadrant the joint risk categories which, for example, in the case of shared manufacturer-retailer project, are those that relate to both
- In the bottom right quadrant the high risk categories for retailers, to be conducted from the retailer's point of view
- In the top right quadrant the high risk categories for the manufacturers, to be kept under control from the manufacturer's point of view
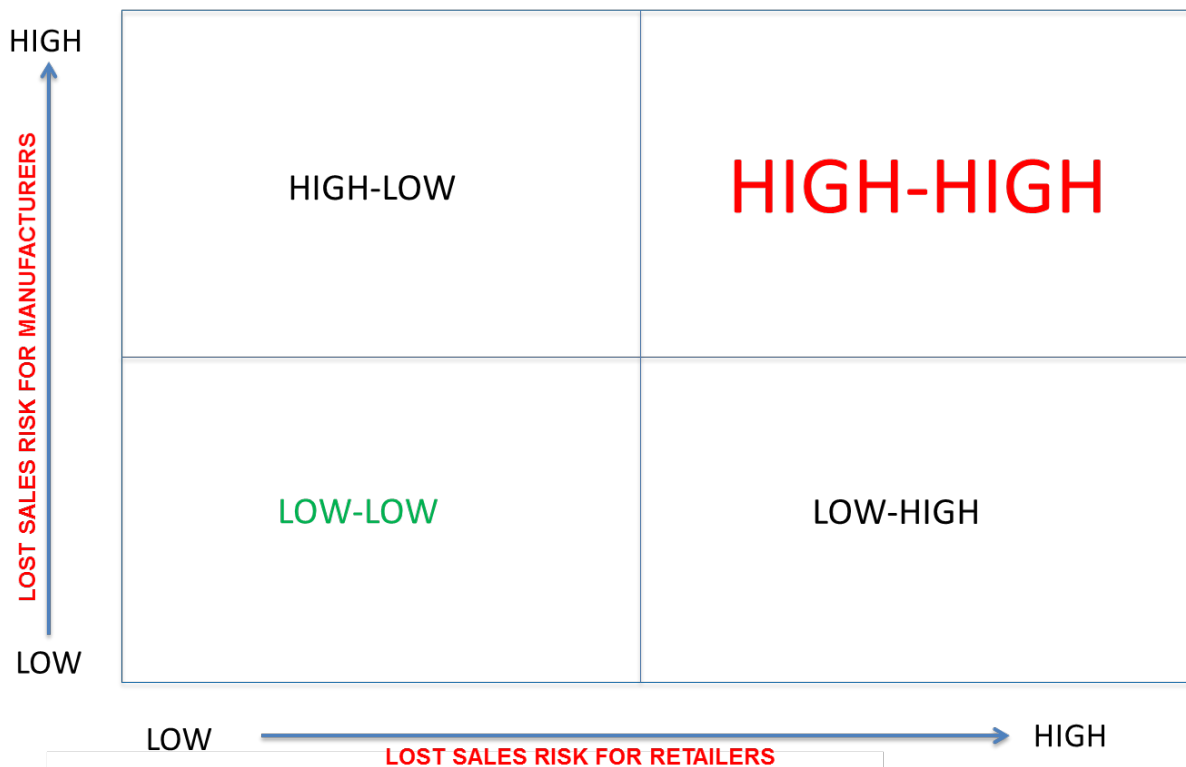

Figure 10 – Manufacturers | retailers risk by department

Moving on to analysing food products, using this logic and focusing only on the top right quadrant of the Risk Map described above, one can deduce that the joint high risk categories are: frozen ready meals, other frozen foods, seasonings, jarred baby food, packaged bread and replacements, tea/non-carbonated beverages, canned fish, frozen pizzas and canned tomato.
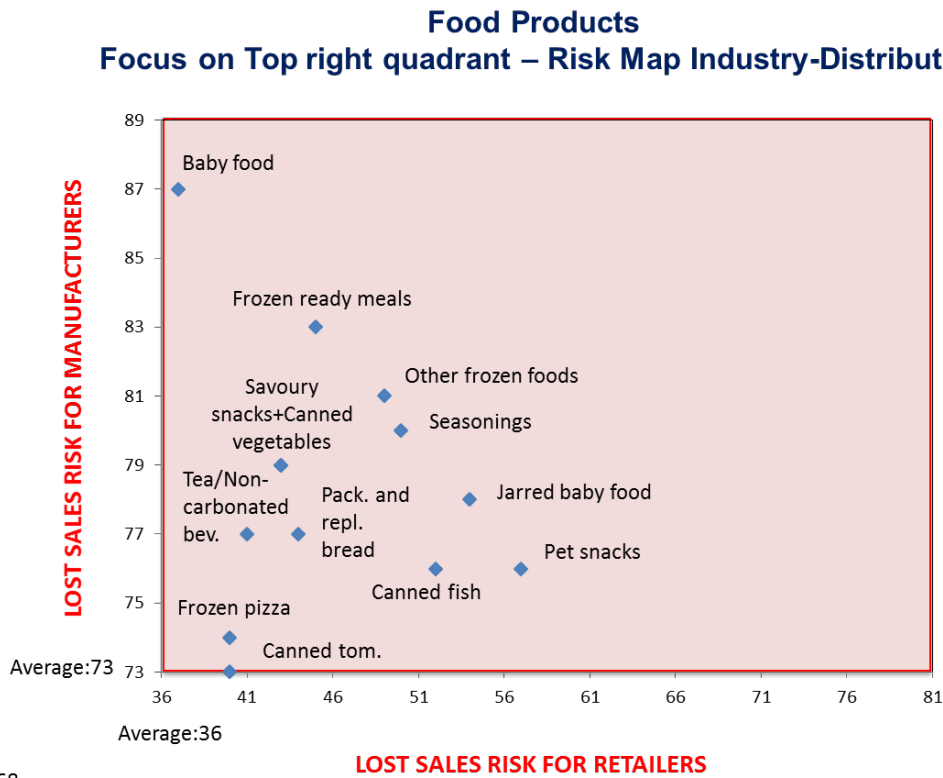
Food Products
Focus on Top right quadrant – Risk Map Industry-Distribution

Figure 11 - HIGH manufacturers | retailers risk by category

The same analysis process is reproduced for the non-food categories.
By using the same logic to build the "Risk map" of lost sales following Out-of-Stock for retailers-manufacturers, it is assumed that the most critical products for both are: body care, body cream, nappies and pet care and hygiene.

Non-Food Products
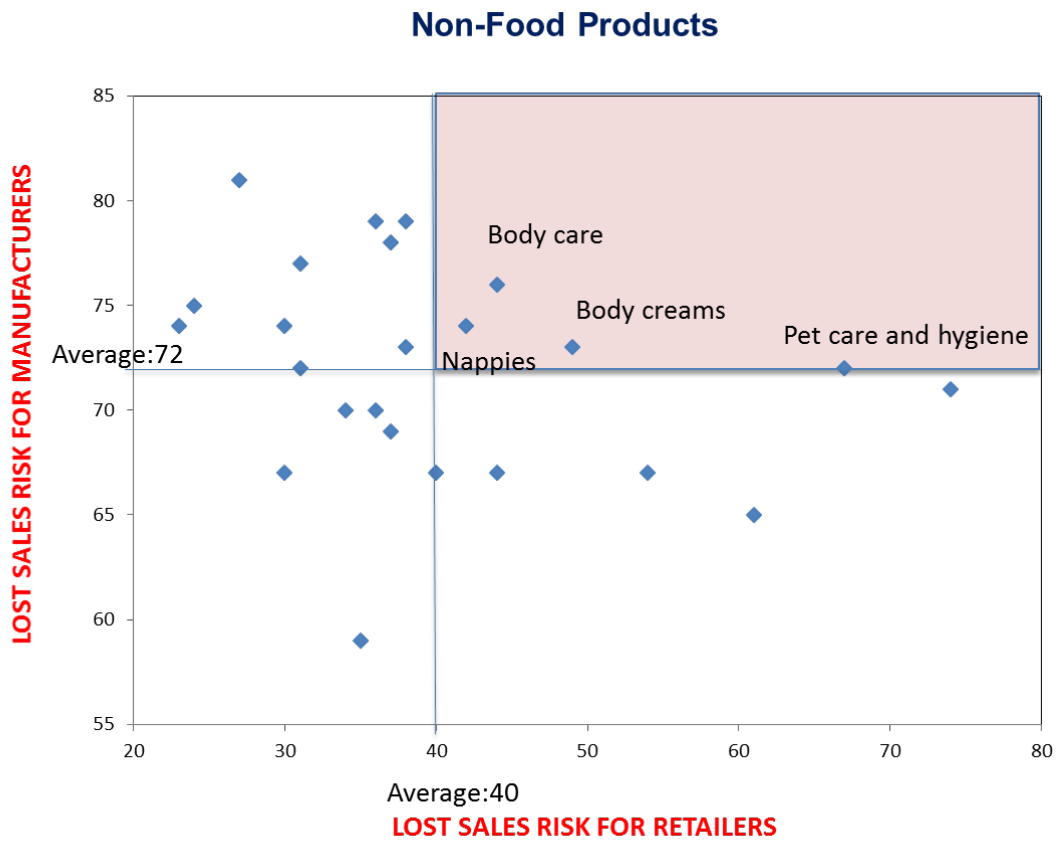
Base: 5,468

Figure 12 – Manufacturers | retailers risk by category

With the objective of providing operational guidelines, aimed at identifying the priorities and common areas of intervention for manufacturers and retailers or single product from the point of view of the retailer or point of view of the manufacturer, a further step was taken in the analysis process:

- The three variables analysed in the study were taken into joint consideration
    - ♦ % of Out-of-Stock
    - ♦ Annoyance rating
    - ♦ Risk of sales loss retailers - manufacturers
- The Categories with a high level of criticalities for all three variables have been identified.

This exercise was carried out by building a "Second level map" that adds the high risk level for manufacturers and retailers to the annoyance rating (very+extremely), represented in abscissa, and to the Out-of-Stock %, represented in ordinate.

Specifically, for food products the most critical products on the three variables and from the joint manufacturer-retailer point of view, are frozen pizzas and soft drinks, tea/non-carbonated beverages.
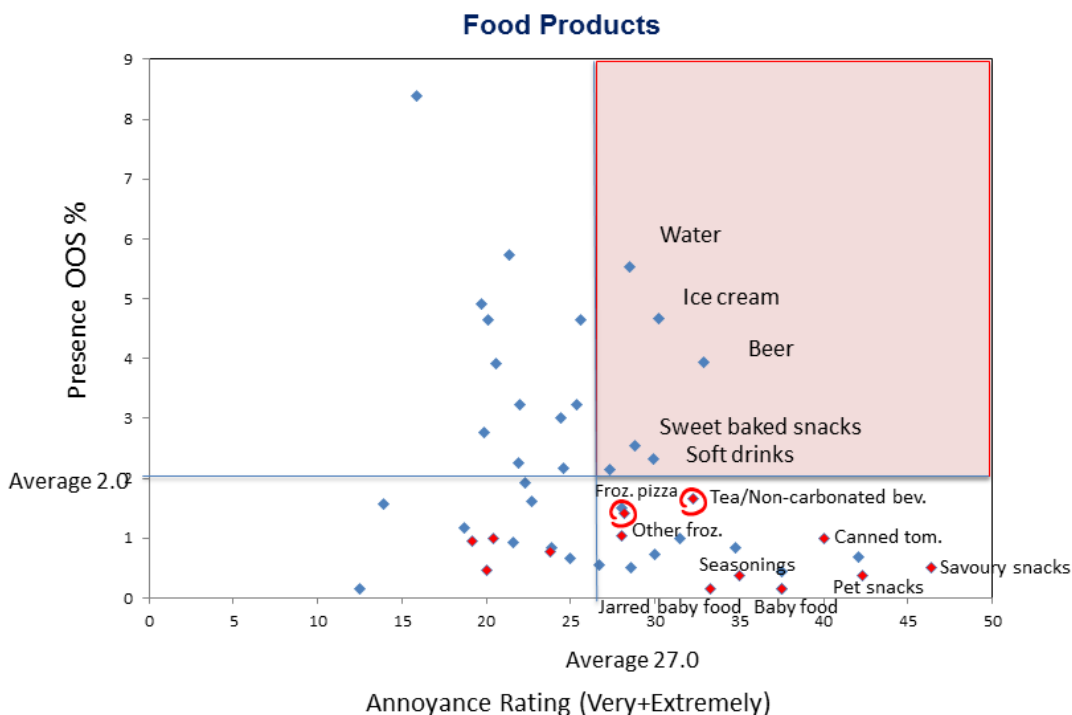

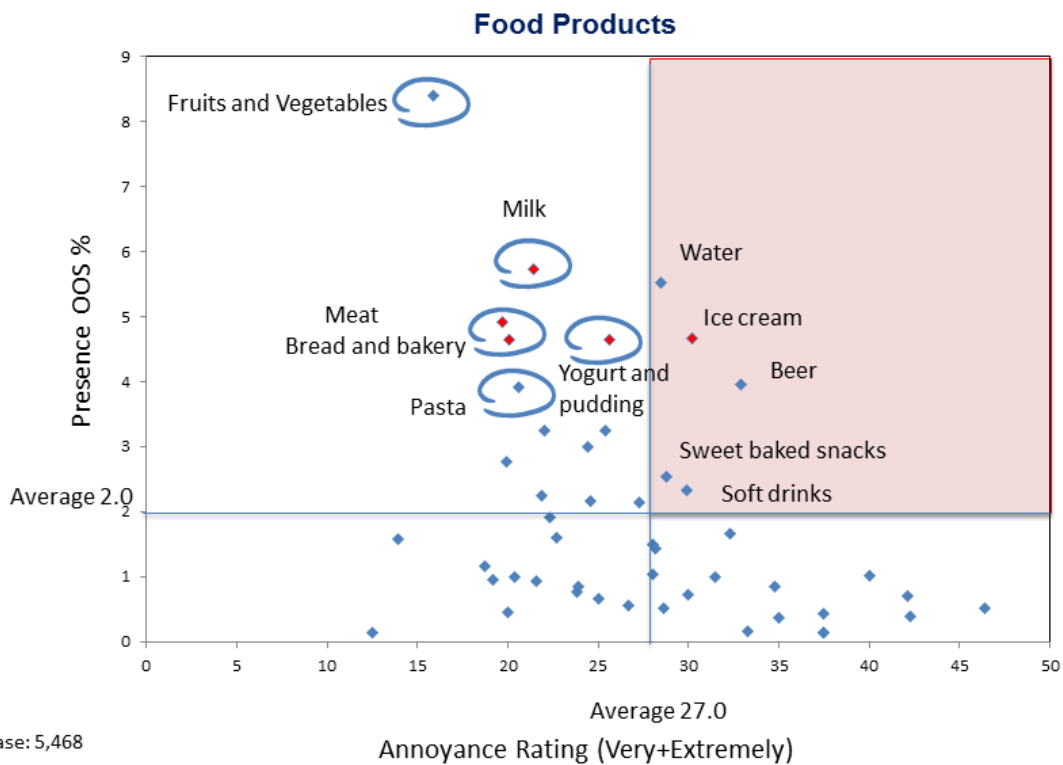*Figure 13 - The high risk for manufacturers and retailers (red categories) is added to the OOS percentage and the annoyance rating*

From the manufacturer point of view, it is nonetheless important to also keep the categories that are positioned in the top left quadrant in the Risk map under control. In fact, as we have seen above, they present a high level of criticality for the manufacturers, in terms of the risk of lost sales. Projecting these high risk categories only for the manufacturers in the "Second level map" and highlighting it in red, it is assumed that, in the food industry, the most critical Categories for the manufacturers in all three variables are: ice cream, yogurt/pudding, bread and bakery, meat and milk.
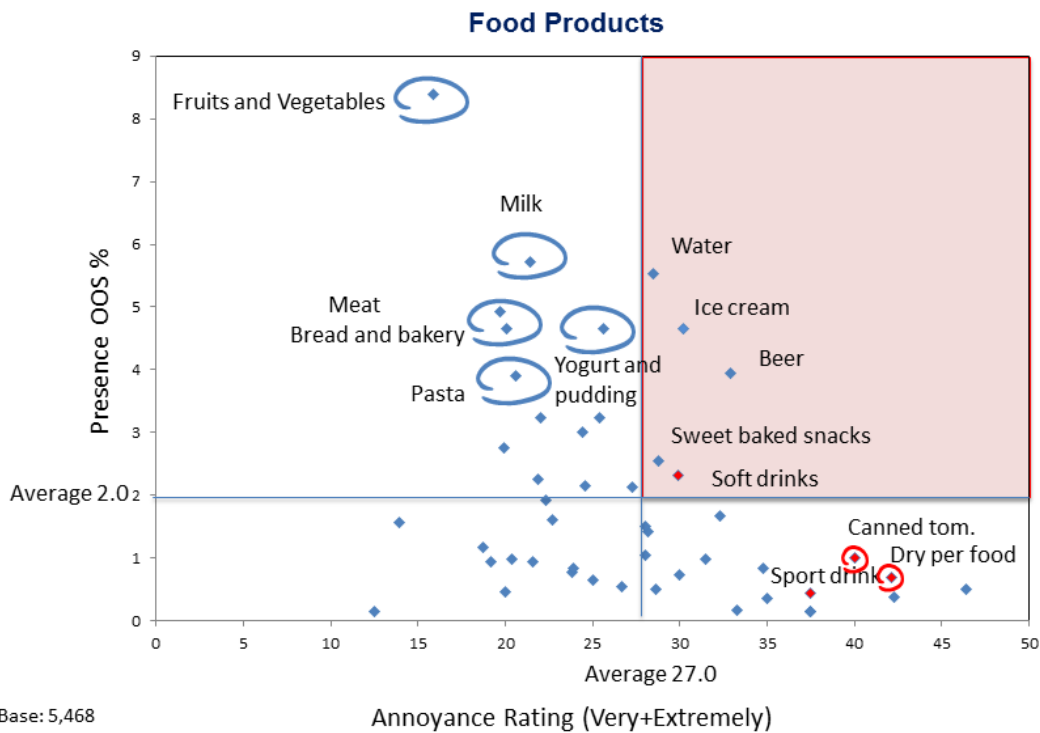

Figure 14 - The high risk for manufacturers (red categories) is added to the OOS percentage and the annoyance rating - Another HIGH risk for the manufacturer

Likewise, from the retailer point of view it is important to also keep the categories that are positioned in the bottom right quadrant in the Risk map under control because they present a high level of criticality for retail, in terms of the risk of lost sales. Projecting these high risk categories only for retailers in the "Second level map", it is found that, in the food industry, the most critical Categories for retailers in all three variables are: soft drinks, canned tomato, dry pet food and sports drinks.

Figure 15 - The high risk for retailers (red categories) is added to the OOS percentage and the annoyance rating - Another HIGH risk for the retailer

Likewise for non-food Categories, projecting the critical categories for manufacturers and retailers in the "Second level map", and highlighting them in red, body creams can be considered as the most critical Category of all three variables combined, for both manufacturers and retailers.
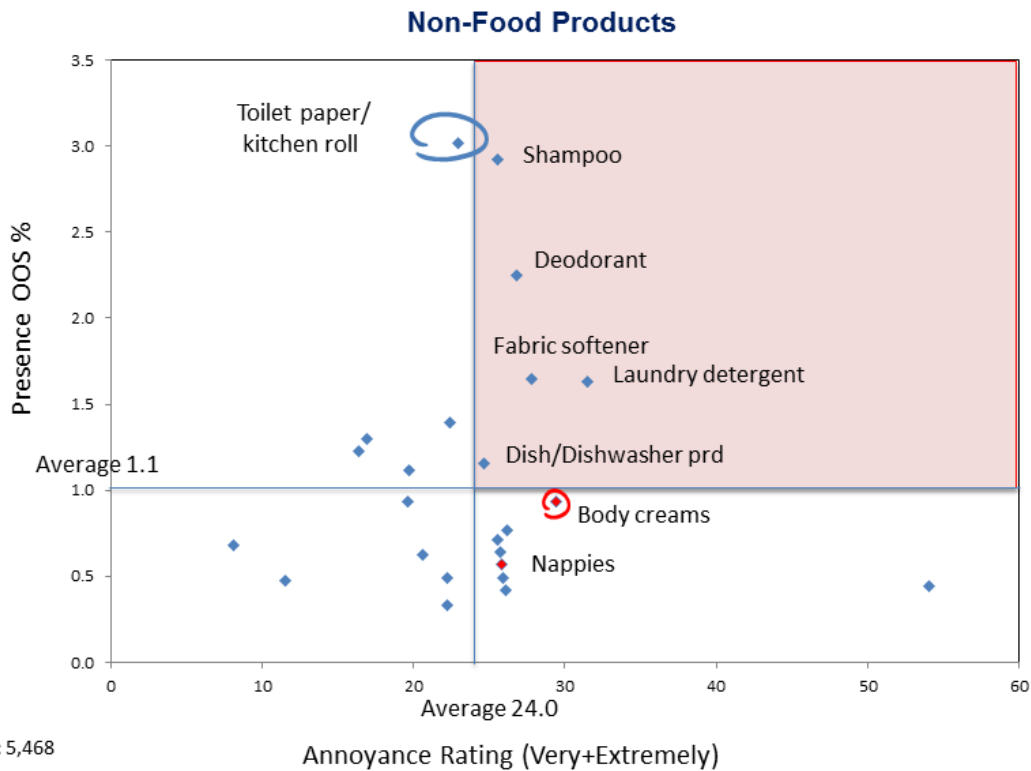

Figure 16 - The high risk for manufacturers and retailers (red categories) is added to the OOS percentage and the annoyance rating

On the other hand, focusing on the most critical categories for manufacturers, observing the top left quadrant of the "Second level map" toilet paper/kitchen roll is the most sensitive market in all three variables, followed by laundry detergents, detergents for small surfaces and other hair products.
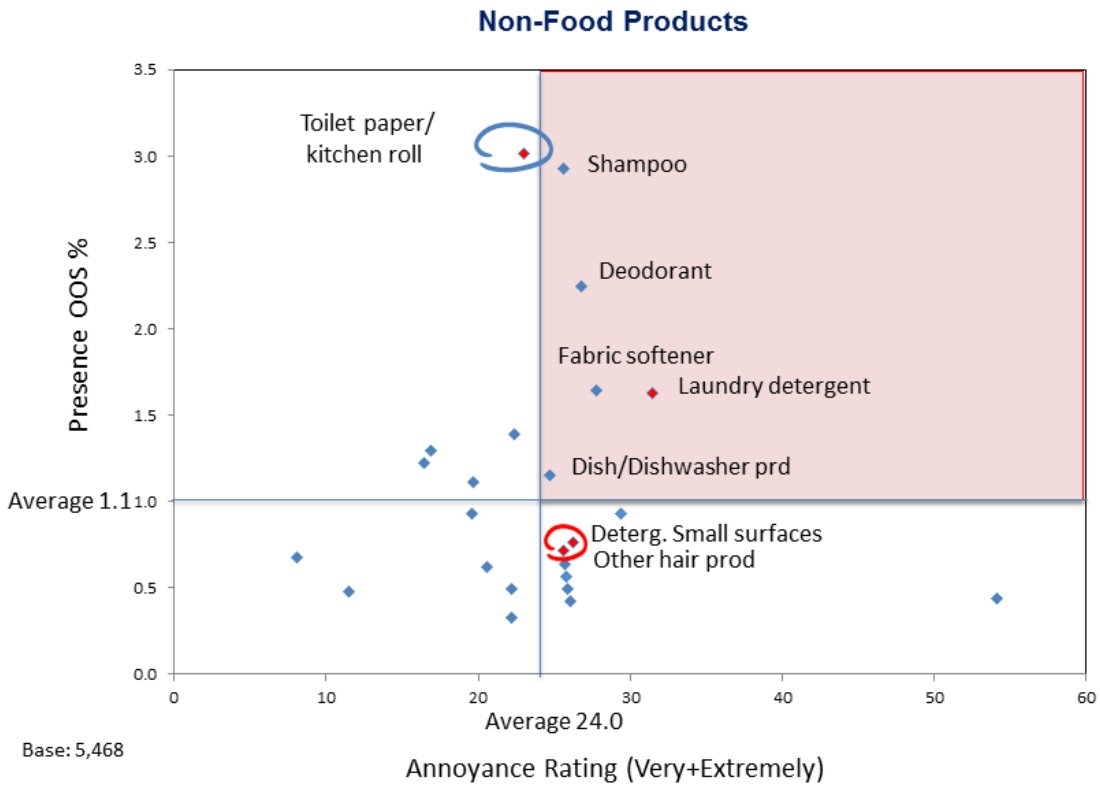

Figure 17 - The high risk for the manufacturers (red categories) is added to the OOS percentage and the annoyance rating - Another HIGH risk for the retailer

While focusing on the most critical categories for retail, observing the right side of the "Second level map", the most Categories on all three variables, highlighted in red, are: shampoo, deodorants, followed with a large margin by laundry additives, textile and goods.
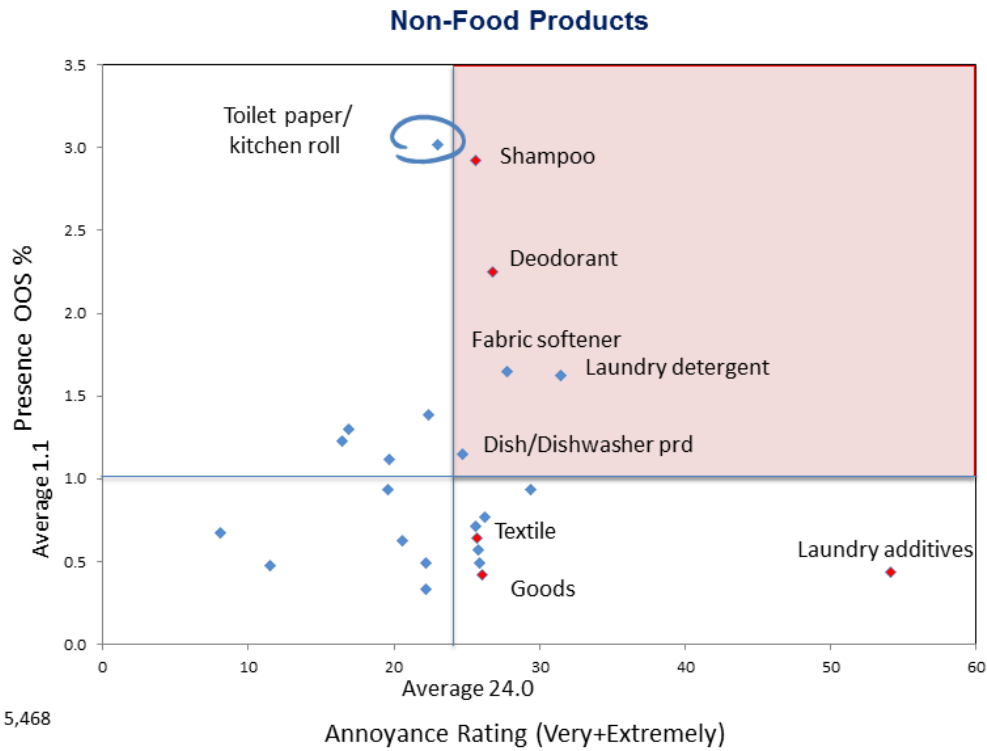

Figure 18 - The high risk for retailers (red categories) is added to the OOS percentage and the annoyance rating - Another HIGH risk for the retailer

There are also at least two other important aggravating factors that increase annoyance and promote, therefore, actions of detachment and moving away from the brand and from the store: the condition of special offer of the product and its inclusion in the flyer.

In fact only 1% of the panel being observed declares not to receive, take or be interested in the flyers, while almost all consumers, a full 83%, say that they use it to prepare their shopping list and 53% are guided by it to go to the relative store.

It is therefore easy to understand why the % of shoppers declaring a high level of annoyance in relation to the unavailable product grows if that product was subject to a special offer (59% vs 51%) and is higher still if the product was in the flyer: 66%.
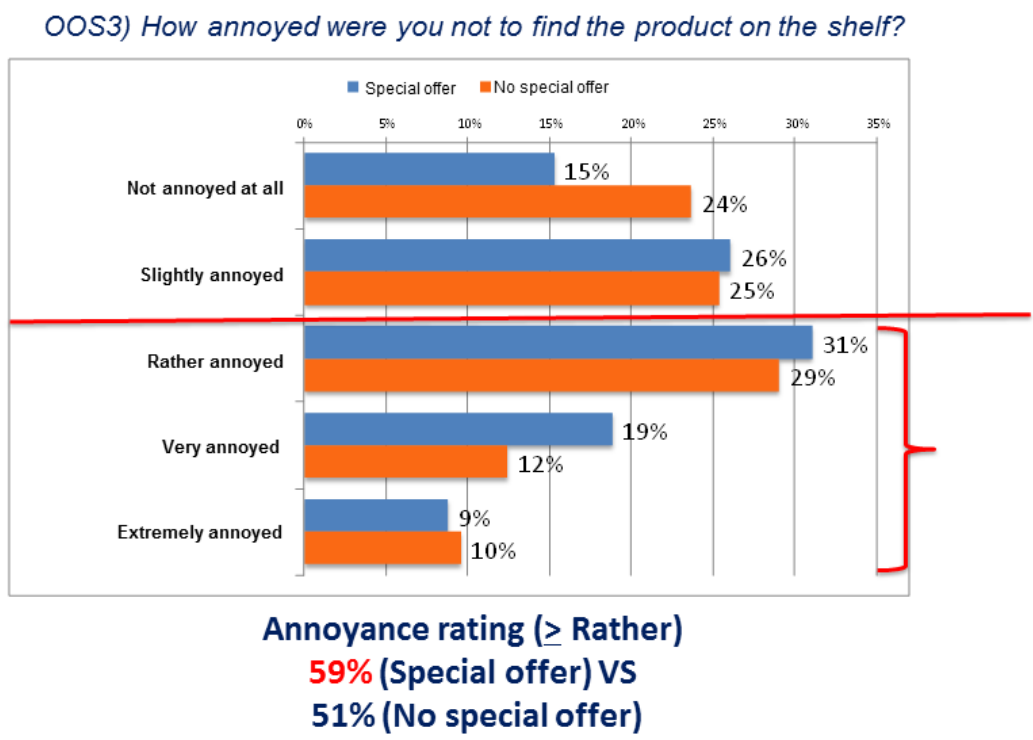

Figure 19 - Special offers and «annoyance» rating

And since the OOS experience does not only occur in the store, but the special offer and flyer are also retailers instruments, from the Shoppers point of view, the lack of availability of the product on the shelves is primarily the «responsibility» of retailers. The causes are identified as finished stock (23%) and slow re-stocking of shelves (22%) and only less so with the brand that "did not deliver the product" (11%).

If in the short term, manufacturers risk the greatest sales loss, in the long-term the expected impact weighs mainly on retailers and translates into erosion of store loyalty and the search for buying alternatives.
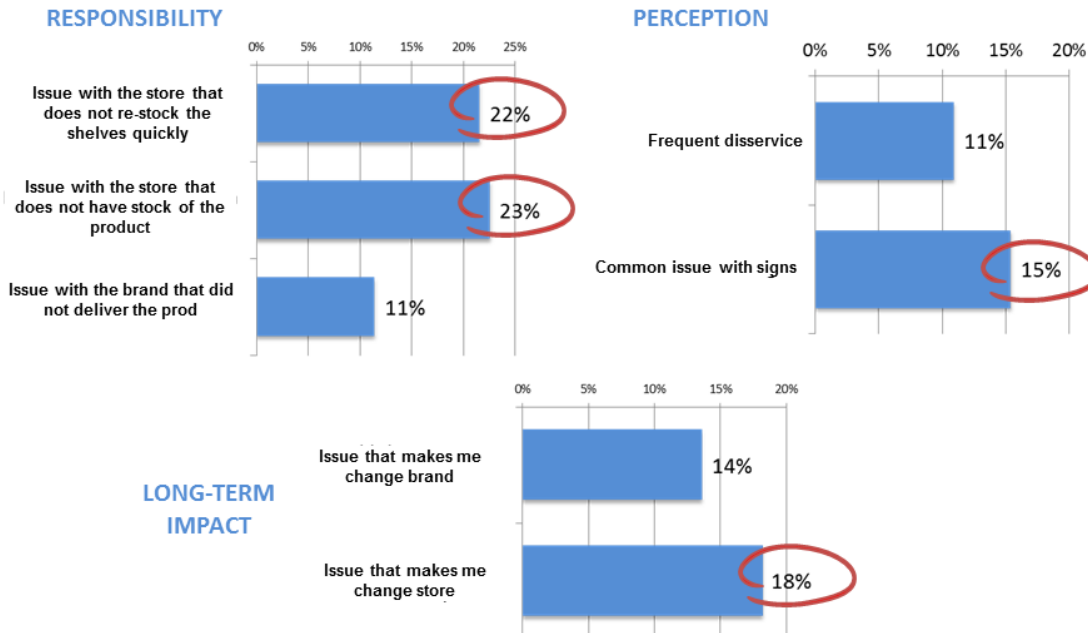

Figure 20 - Special offer flyer - The level of exposure and effects

On the whole, the study fully confirmed that failure to satisfy customer needs at the store can have serious consequences on brand loyalty and store loyalty. Accordingly, reducing Out-of-Stock is a winning investment for retailers and manufacturers and proves to be necessary for maintaining the customer base and guaranteeing brand and store loyalty.